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Intercultural friendship formation of Japanese university students: social anxiety may shape their priorities and agency

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We examined which affinity-inducing factors Japanese university students (N = 46) consider important in intercultural friendship formation, and whether social anxiety and autistic tendencies shape their perceived importance of these factors and their agency in past intercultural friendships. Participants indicated the factors they considered most important in forming intercultural friendships, described their past experiences of intercultural friendship formation, and completed measures of social anxiety and autistic tendencies. Results suggest that the culturally distinct partner's interpersonal qualities (i.e., sociability and generosity), proximity, and similar interests were the most important factors. Lower social anxiety significantly predicted the selection of the partner's generosity as important, while higher social anxiety significantly predicted a greater likelihood of having taken non-agentive than agentive roles in past intercultural friendships. These findings may reflect differing levels of sensitivity toward uncertainty in intercultural interactions. Autistic tendencies did not predict factor selection or role types.

KEYWORDS

affinity-inducing factors, agency, autistic tendencies, intercultural friendship formation, social anxiety

1 Introduction

Globalization has brought people of diverse backgrounds into closer contact. According to [Pew Research Center \(2023\)](#), 79% of people across 24 countries have traveled abroad, and 50% feel close to people worldwide. Cultural exposure is linked to perspective-taking ([Fan et al., 2015](#)) and innovation ([Chaudhry et al., 2021](#); [Hewlett et al., 2013](#); [Prenzel et al., 2024](#)). However, rather than capitalizing on intercultural interactions, people may avoid intercultural interactions due to anxiety and uncertainty ([Duronito et al., 2005](#); [Rajan et al., 2021](#)).

Forming intercultural friendships is often difficult ([Kudo et al., 2017](#); [Willoughby-Know and Yates, 2021](#)). Navigating different cultural values, communication styles, and languages can increase misunderstanding, frustration, and conflict ([Sias et al., 2008](#)), limiting opportunities for meaningful friendships (e.g., [Gareis et al., 2011](#); [Kastner, 2021](#); [Kudo et al., 2019](#); [Kudo and Simkin, 2003](#)). As a result, intercultural friendships may arise non-agentively (i.e., passively or incidentally), rather than agentively (i.e., proactive), through shared classes or group activities that allow relationship development with minimal effort ([Kudo et al., 2019](#); [Kudo and Simkin, 2003](#)).

Challenges in intercultural friendships are expected, as similarity (e.g., in gender, race, and preferences) and proximity are well-documented predictors of affinity ([Fawcett and Markson, 2010](#); [Festinger et al., 1950](#); [Kogachi and Graham, 2021](#); [Lieberman et al., 2021](#);

Shutts et al., 2013). Dissimilarity and unfamiliarity common in intercultural interactions can therefore hinder friendship formation.

Conversely, discovering similar cultural backgrounds or individual tastes (e.g., hobbies), and attending campus events that afford intercultural interactions, can facilitate friendships (Alkharusi and Segumpan, 2024; Kudo and Simkin, 2003; Sias et al., 2008). Moreover, a target's sociability and generosity can lead to positive social interactions and increase approachability (e.g., Davydenko et al., 2020; Kudo and Simkin, 2003). Other facilitating factors include skills to communicate in the same language (Jacobi, 2020), cultural knowledge (Gudykunst, 2004), and positive attitudes toward other's culture (Kudo and Simkin, 2003). Collaborative projects can also improve mutual cultural knowledge and attitudes (Gareis et al., 2018).

While many factors influence affinity with intercultural others, little research has examined which ones individuals consider most important. Our first goal was to identify which factors Japanese university students perceive as important in forming intercultural friendships. Japanese universities provide a unique context for intercultural interactions: most courses are conducted in Japanese, requiring language proficiency among international students (Iriyama and Sugimoto, 2022; Ota, 2011). Additionally, Japanese students often expect international peers to preserve group harmony by following Japanese interpersonal norms (e.g., using honorific language) (Tanaka et al., 2011) and may feel frustrated when expectations are violated (Yamaguchi and Kobayashi, 2020). This creates a setting where adaptation to Japanese norms of communication is emphasized over mutual adjustment. Studying our research question in this context offers a useful contrast to previous research conducted primarily in English-speaking settings.

Intercultural friendship development depends on both situational elements (e.g., collaboration, proximity) and individual characteristics (e.g., language skills, personality; Meng et al., 2021). This aligns with Kudo et al.'s (2017, 2019) view that intercultural friendship emerges from the intersection of opportunities for relationship development, or environmental affordances (Gibson, 1979), and individuals' agency to act on them, or effectivities (Snow, 1994). Because individuals often do not take an agentive role in intercultural friendship development (Kudo and Simkin, 2003; Kudo et al., 2019; Gareis et al., 2011), it is important to consider individual characteristics that may underlie this hesitancy.

Our second goal was to examine how social anxiety and autistic tendencies might influence intercultural friendship formation. Particularly, intolerance of uncertainty, the tendency to respond negatively to uncertain situations (Dugas et al., 2004), is linked to social anxiety (Boelen and Reijntjes, 2009; Li et al., 2020) and is also associated with anxiety among autistic individuals (Jenkinson et al., 2020). When unfamiliar with the target's cultural background, individuals high in these traits may experience heightened anxiety. Consequently, they may prioritize reducing uncertainty in intercultural interactions and show less agency in friendship development.

In summary, we aimed to (1) examine which affinity-inducing factors Japanese university students find important in intercultural friendship formation, and (2) examine whether social anxiety and autistic tendencies are associated with (a) perceived importance of affinity-inducing factors, and (b) roles (agentive or non-agentive) in past intercultural friendships.

2 Method

2.1 Participants

Our sample consisted of 46 Japanese-speaking young adults (31 male and 15 female), ranging from 18 to 25 years old ($M_{\text{age}} = 20.09$, $SD_{\text{age}} = 1.62$), that were attending Hitotsubashi University, which has a strong emphasis on social science disciplines. Participants were recruited through the university's participant recruitment portal (i.e., SONA system) and by advertising to graduate students, who were free to participate or decline. All participants received a 1,000-yen gift card for their participation.

2.2 Measures

Participants completed four measures, two regarding intercultural friendship formation and two regarding sociability, in a lab at a university.

2.2.1 Important contributing factors to intercultural friendship formation

Participants were presented with a list of 20 items of contributing factors to friendship formation (see Table 1) and were instructed to select five factors that they think are most important for becoming friends with an individual from a different cultural background. As intercultural friendship experiences could span from as early as the childhood years, we created our list of potential contributing factors to intercultural friendship formation based on a literature search of variables that are associated with children's social preferences and affiliation, rather than limiting our focus to older age groups. Indeed, 9 out of 32 participants (28%) reported forming friendships with individuals with different cultural backgrounds as early as elementary or junior high school. We conducted our literature search in Web of Science with the search query: "children" (Abstract) AND "liking" OR "social preferences" OR "affiliation" (All Fields). Results were refined to articles published in the research area of psychology, in English, and in the past 20 years of the search date (2004 to 2023). After screening results for relevance, we extracted information about variables relevant to children's social preferences and affiliation, yielding the 20 overall potential contributing factors to friendship formation in our list. Each item was scored as a 1 if the participant selected it as an important contributing factor to intercultural friendship formation, and 0 if otherwise.

2.2.2 Experience of intercultural friendship formation

Participants provided a free text response to a prompt asking them to recall an experience of becoming friends with an individual from a different cultural background and to write what served as contributing factor(s) to the friendship formation. Participants had the option of indicating "Not applicable" and to provide a blank response if they had no experience of intercultural friendship formation. In the case of prior experience in becoming friends with multiple individuals from a different culture, participants were instructed to write their response based on their experience with the individual that they became most close with.

TABLE 1 Descriptive statistics for important contributing factors to intercultural friendship formation.

Factors that potentially affect intercultural friendship formation	Overall sample %	Social anxiety		Autistic tendencies	
		Low %	High %	Low %	High %
Target is sociable	63	70	57	70	57
Belonging to the same community, such as the same university, as the target	59	65	52	61	57
Similar interests and preferences with the target	57	52	61	52	61
Target is generous	57	78	35	74	39
One has an understanding of the target's culture	46	35	57	48	43
Target speaks Japanese	37	30	43	26	48
Target has an understanding of Japanese culture	37	26	48	30	43
Collaborating with the target, such as in club activities or group work	37	43	30	43	30
Target has favorable attitudes towards Japanese people	35	35	35	30	39
Surrounding others are friends with the target	22	22	22	17	26
Target's behaviors are in accordance with Japanese social norms	20	4	35	9	30
Target is of the same gender	11	17	4	17	4
Experience exposing oneself to the target's culture	7	4	9	9	4
Target's country has good relations with Japan	7	9	4	4	9
Target's culture shares similarities with Japanese culture	4	0	9	0	9
Target is similar in physical appearance to oneself	2	4	0	4	0
Target is of high socioeconomic status	2	4	0	4	0
Target is of the same race	0	0	0	0	0
Target is of the same religion	0	0	0	0	0
Experience becoming friends with someone from the target's culture	0	0	0	0	0

"Target" refers to the intercultural other and "one" refers to the participant themselves.

Participant responses were classified into one of two categories: (a) non-agentive, whereby the intercultural friendship formation occurred without any active role by the participants themselves (e.g., an international student happened to be in the same university club, being assigned to course group work with an international student), or (b) agentive, whereby participants took an active role in the intercultural friendship formation (e.g., taking part in a study-abroad program to experience intercultural interactions, spontaneously helping an international student in Japan who was struggling to understand Japanese). Coding was conducted separately by the last author and a research assistant blind to the research questions of the study. Inter-coder agreement was 91%, and discrepancies were resolved by the second author.

2.2.3 Liebowitz social anxiety scale

Participants completed the Japanese version of the Liebowitz Social Anxiety Scale (LSAS; Asakura et al., 2002; Liebowitz, 1987), a 24-item self-report questionnaire assessing social anxiety. Participants rated their fear and avoidance of various social situations (e.g., meeting strangers, speaking up at a meeting) on a Likert scale from 0 (*no fear/no avoidance*) to 3 (*severe fear/usually avoid*). Scores of individual items were summed, with higher scores reflecting higher social anxiety.

2.2.4 Autism-Spectrum quotient

Participants completed the Japanese version of the Autism-Spectrum Quotient (AQ; Baron-Cohen et al., 2001; Wakabayashi et

al., 2004), a 50-item self-report questionnaire assessing autistic tendencies in the general population. Participants rated each item, reflecting autistic traits such as difficulties in social interaction and restrictedness in interests, from a Likert scale ranging from 1 (*agree*) to 4 (*disagree*). For each item, scores were dichotomized as 0 or 1, with a score of 1 reflecting the presence of an autistic trait (e.g., agreeing or somewhat agreeing to having the trait). Scores of individual items were summed, with higher scores reflecting higher autistic tendencies.

2.3 Statistical analyses

We computed descriptive statistics on the percentage of participants who selected each item as an important contributing factor to intercultural friendship formation. We also computed the percentage of participants who belonged to each category of prior experience of intercultural friendship formation (i.e., no experience, agentive, non-agentive). In addition, we conducted median splits to classify participants into groups with lower or higher social anxiety and lower or higher autistic tendencies. For each of these groups, we computed the same percentages described above.

In order to reduce the number of our main analyses, we conducted preliminary binomial tests examining which factors were overall deemed unimportant in intercultural friendship formation. These tests suggested that 11 out of 20 factors were not selected by the majority of the sample (significantly below 50% at $p < 0.001$). For the

remaining 9 factors, logistic regression analyses were conducted to examine whether participants' social anxiety and autistic tendencies were associated with the likelihood of selecting each factor as having an important role in intercultural friendship formation.

A multinomial regression analyses was conducted to investigate whether participants' social anxiety and autistic tendencies were associated with their category membership with regards to prior intercultural friendship formation. The "agentive" group was set as the reference group to examine whether lower social anxiety and autistic tendencies would be associated with the likelihood of belonging in the "agentive" category compared to the "no experience" or "non-agentive" category. Participants' age and gender (coded as 1 = male and 2 = female) were included as covariates in the logistic and multinomial regression analyses.

3 Results

3.1 Important contributing factors to intercultural friendship formation

Table 1 presents the percentage of the overall sample, as well as the percentages for individuals with lower versus higher autistic tendencies and lower versus higher social anxiety (based on a median split), who identified each of the 20 potential contributing factors as important in intercultural friendship formation.

Table 2 presents the results of the logistic regression analyses conducted to examine whether participants' social anxiety and autistic tendencies were associated with the likelihood of selecting each factor as having an important role in intercultural friendship formation. As discussed prior, only factors endorsed by a substantial portion of the overall sample (i.e., those that remained after excluding factors whose selection rates were significantly below 50%) were included in the analysis. Social anxiety, but not autistic tendencies, was associated with the likelihood of selecting "Target is generous," such that participants with higher social anxiety were less likely to select the factor as being important for intercultural friendship formation compared to participants with lower social anxiety. Social anxiety and autistic tendencies were not significantly associated with the likelihood of selecting other factors. Additionally, logistic regression analyses

indicated that gender was associated with the likelihood of selecting two factors, with detailed results available in the supplementary material.

3.2 Agency in intercultural friendship formation

Table 3 shows the percentage of participants in each category of prior intercultural friendship experience (i.e., no experience, agentive, or non-agentive) for the overall sample, as well as for participants with lower and higher levels of social anxiety and autistic tendencies (based on median splits). As shown in Table 4, results of the multinomial logistic regression suggested that social anxiety (but not autistic tendencies) was significantly associated with agency in intercultural friendship formation, such that participants with higher social anxiety had higher odds of belonging in the "non-agentive" category than the "agentive" category. Neither social anxiety nor autistic tendencies were significantly associated with participants' membership in the "no experience" versus "agentive" category.

4 Discussion

4.1 Key factors influencing intercultural friendship formation

Over half the participants selected four factors: "Target is sociable," "Belonging to the same community, such as the same university," "Similar interests and preferences," and "Target is generous." As sociability signals altruism (Mehu et al., 2007) and generosity signals trustworthiness (Przepiorka and Liebe, 2016), participants may have selected these factors because they help reduce anxiety in intercultural interactions. Consistent with this idea, one participant described how the generosity of their host family encouraged openness: "When I was in my third year of junior high school, I stayed with a host family in Canada and became close to them. They were very generous, which made it easy for me to open up" (translated from Japanese by the first author). Another participant described how the target's sociable personality facilitated friendship formation; "I became friends with a

TABLE 2 Results of logistic regression analyses examining whether social anxiety and autistic tendency predict factors considered important in intercultural friendship formation.

Factors that potentially affect intercultural friendship formation	Social anxiety		Autistic tendencies	
	OR [95% CI]	p	OR [95% CI]	p
Target is sociable	0.99 [0.96, 1.03]	0.56	0.91 [0.80, 1.03]	0.12
Belonging to the same community, such as the same university, as the target	1.01 [0.97, 1.04]	0.76	0.96 [0.86, 1.08]	0.52
Similar interests and preferences with the target	0.99 [0.96, 1.03]	0.65	1.07 [0.95, 1.20]	0.28
Target is generous	0.94 [0.89, 0.98]	0.01	1.02 [0.90, 1.15]	0.79
One has an understanding of the target's culture	1.03 [0.99, 1.07]	0.18	0.96 [0.84, 1.09]	0.49
Target speaks Japanese	1.00 [0.97, 1.04]	0.90	1.04 [0.93, 1.17]	0.50
Target has an understanding of Japanese culture	1.03 [0.99, 1.07]	0.12	0.97 [0.86, 1.10]	0.65
Collaborating with the target, such as in club activities or group work	0.97 [0.93, 1.01]	0.20	1.02 [0.89, 1.16]	0.80
Target has favorable attitudes towards Japanese people	1.00 [0.97, 1.03]	0.93	1.03 [0.92, 1.16]	0.57

TABLE 3 Descriptive statistics for prior intercultural friendship experience.

Category of experience in intercultural friendship formation	Total %	Social anxiety		Autistic tendencies	
		Low %	High %	Low %	High %
No experience	30	35	26	30	30
Non-agentive	43	26	61	30	57
Agentive	26	39	13	39	13

TABLE 4 Results of multinomial regression analysis examining whether social anxiety and autistic tendencies predict category membership in past intercultural friendship formation.

Categories	Social anxiety		Autistic tendencies	
	OR [95% CI]	<i>p</i>	OR [95% CI]	<i>p</i>
Non-agentive vs. agentive	1.07 [1.02, 1.14]	0.01	0.93 [0.80, 1.09]	0.39
No-experience vs. agentive	1.01 [0.97, 1.06]	0.55	1.06 [0.91, 1.23]	0.46

The “agentive” group was set as the reference group.

Korean exchange student through a club. The friendship started when they, being a talkative person, struck up conversations with me several times” (translated from Japanese by the first author). Preference for shared group membership reflects findings that proximity predicts affinity (e.g., Festinger et al., 1950; Kudo and Simkin, 2003). Similarly, preference for shared interests supports evidence that individual similarities promote affinity (e.g., Liberman et al., 2021).

We also found that gender predicted the selection of two factors. Female participants were more likely than male participants to select “One has an understanding of the target’s culture,” and less likely to select “Collaborating with the target, such as in club activities or group work,” (see supplementary material). This finding suggests that gender shapes perceptions of what constitutes friendship activities, which may have influenced participants’ evaluations of the importance of certain factors in intercultural friendship formation. This idea is in line with past literature suggesting that friendship values are emphasized to varying degrees depending on gender (e.g., Felmlee and Peoples, 2016; Rudolph and Dodson, 2022).

4.2 Individual characteristics in intercultural friendship formation

Lower social anxiety significantly predicted selecting “Target is generous,” suggesting that less socially anxious individuals may focus more on inner qualities than on reducing uncertainty. In contrast, autistic tendencies were not significantly associated with any factor.

Although social anxiety was not significantly associated with other affinity factors, we observed a trend (see Table 1) whereby those with higher social anxiety were more likely to consider mutual cultural understanding (“One has an understanding of the target’s culture”; “Target has an understanding of Japanese culture”) and norm alignment (“Target speaks Japanese”; “Target’s behaviors are in accordance with Japanese social norms”) as crucial to intercultural

friendship formation. These preferences may reflect a desire for predictability, as generosity alone may not increase approachability for socially anxious individuals if intercultural uncertainty remains unaddressed. The importance of reducing intercultural uncertainty among socially anxious participants is evident in the account of one participant with high social anxiety, who described how a friendship developed without realizing that the target was from another culture: “We became close while playing games together in a community of people with the same interests. At first, I did not think of them as someone from a different culture because their Japanese was so good, but I later found out that they were” (translated from Japanese by the first author). This trend also aligns with findings that Japanese students are more motivated to form relationships with international students who accommodate Japanese norms (Tanaka et al., 2011). Our findings suggest that in Japanese contexts, where much intercultural communication occurs in Japanese and harmony is emphasized, adhering to local norms is important in forming intercultural friendships.

Participants with higher social anxiety were significantly more likely to have taken non-agentive than agentive roles, possibly because uncertainty intensifies social anxiety (Boelen and Reijntjes, 2009). Indeed, several participants high in social anxiety who had a non-agentive intercultural friendship formation described how their friendships developed gradually through shared activities, suggesting that this process helped reduce communication uncertainties. For example, one participant recalled: “When I was in elementary school, we sat near each other, gradually started talking, and became friends” (translated from Japanese by the first author). Similarly, another participant explained: “In my university’s women’s lacrosse club, there was a senior who was a Korean exchange student, and we became friends through participating in club activities together” (translated from Japanese by the first author). Autistic tendencies did not significantly predict role type, pointing to research suggesting that individuals high in autistic tendencies may experience difficulties, but not necessarily anxiety, in unfamiliar social situations (Bejerot et al., 2014; Spain et al., 2018).

4.3 Limitations and future directions

A key limitation is the limited generalizability of the findings, as the sample included only Japanese participants. Cultural diversity varies by country and may shape attitudes toward intercultural friendships. For instance, greater exposure to other cultures is linked to increased empathy (Zhao et al., 2024). Future research should therefore examine how different levels of exposure to cultural diversity affect the perceived importance of affinity factors in intercultural friendships. It also remains unclear whether intolerance of uncertainty explains why socially anxious individuals avoid agentive roles. Therefore, we suggest that future studies directly examine this relationship. In addition, research could explore what environmental affordances promote intercultural contact among socially anxious individuals. Finally, we suggest exploring other individual characteristics, such as the personality traits in the Five-Factor Model (Costa and McCrae, 1992) and cultural empathy (Zhang and Noels, 2023), to further clarify how personal factors shape intercultural friendship formation.

5 Conclusion

Despite growing global connectedness (Pew Research Center, 2023), forming intercultural friendships remains challenging (Kudo and Simkin, 2003). We found that students value the target's interpersonal qualities and common ground as key facilitators of intercultural friendship. Individual characteristics may also shape intercultural experiences; socially anxious students were more likely to have experienced non-agentive rather than agentive friendship formation. Further clarifying these dynamics can help foster intercultural friendships that are accessible and meaningful across different individual profiles.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found at: https://osf.io/hyg9a/overview?view_only=8d1a8f968191409a8ed2330253d62b6c.

Ethics statement

The studies involving humans were approved by Hitotsubashi University Research Ethics Review Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

NG-T: Data curation, Formal analysis, Writing – original draft, Writing – review & editing. MI: Conceptualization, Investigation, Methodology, Writing – review & editing. MS: Conceptualization, Data curation, Formal analysis, Funding acquisition, Methodology, Writing – original draft, Writing – review & editing.

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Conflict of interest

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