

Does Student Exchange Bring Symmetrical Benefits to Both Countries? An Exploration Case for China and Korea

SEONG-HUN YUN¹
Dongguk University, Seoul, Korea

This study probed the existence of symmetrical benefits of student exchange between Korea and China. People in the public diplomacy field have acclaimed the importance of student exchange between countries, given its promise of relationship building and the perennial appeal of symmetrical benefits. To measure symmetry, this study examined three effects of student exchange between China and Korea: conation for relationship building, belief, and attitude toward the host country. Latent mean analysis using survey data found that outside of personal relationships with host nationals, the norm was asymmetry, not symmetry. As findings failed to support perfect symmetry, this study discusses the potential of imperfect symmetry in future research.

Keywords: public diplomacy, student exchange, symmetrical effects

An Exploration Case for China and Korea

Public diplomacy scholars and practitioners alike embrace the values of student exchange between countries, as its purported outcomes include mutual understanding and relationship building. Underlying these goals is the assumption of symmetry of exchange effects for the dyadic countries. Symmetry can be intuitively understood through the symmetrical model of public relations (Grunig & Hunt, 1984), where balanced effects of communication through public relations cause both parties—organizations and publics—to change their belief, attitude, and behaviors. In an exchange setting “where symmetrical relationship building can take place,” the operative notion, according to Fisher (2010), is that “participants are equally open to the influence of the other while seeking to exert influence” (p. 272). The broader, new public diplomacy (e.g., Fitzpatrick, 2007) has elevated this idea to a foundational principle. Despite its centrality to student exchange, however, the premise of symmetry remains untested, as

Seong-Hun Yun: donggukpr@dongguk.edu

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literature has instead been preoccupied with asymmetrical effects on foreign students and their home countries (Flack, 1976; Lima, 2007; Yun, 2014). This situation highlights the need to explore whether student exchange delivers balanced effects on both sides.

There are two types of symmetry, one identified in literature and another newly conceived, their main difference being the direction of mobility. The first concerns the one-way flow of people that results in exchange of cultural learning. At issue is not the people, but the exchange of cultural learning as a final product of intercultural communication. The logic is that one-way mobility leads to interactions between people of two nations and ultimately to symmetrical, balanced benefits for both parties. This type of symmetry stems from theories of human communication, an exemplar of which is the convergence model in Rogers and Kincaid (1981). Such symmetry, which has been explored in one-way exchange (Eide, 1970; Olberding & Olberding, 2010; T.E. Systems, 2005), can be characterized as symmetry in intercultural communication.

The second type of symmetry, involving two-way physical and geographical mobility of people, becomes thinkable when the first type of intercultural symmetry has failed. In most real-life cases, intercultural communication in the context of one-way exchange has not fulfilled expectations but only produced asymmetrical effects on inbound students (Bu, 1999; Flack, 1976; Kramer, 2009). Born of this prevalence of asymmetry, the second type of symmetry is the symmetry of asymmetrical effects. It concerns how balanced or symmetrical the asymmetrical effects are on each group of exchanged students from both countries.

This study explores the second type of symmetry in bilateral exchange between China and Korea, delving into how balanced asymmetrical effects are on the conation for relationship-building behavior, attitude, and belief about the host country. Methodologically, it employs the statistical technique of latent mean analysis using survey data. It hopes to call attention to the untested premise of balanced effects in exchange.

Literature Review on Effects of Student Exchange

Asymmetrical Effects

No public diplomacy venue has garnered more support than has student exchange, with its appeal to the noble ideals of mutual understanding and relationship building between people and countries. U.S. Senator Fulbright envisioned it as a catalyst for humanizing international relations: "Educational exchange can turn nations into people, contributing as no other form of communication can to the humanizing of international relations" (U.S. Department of State, n.d.a, para. 13). The Fulbright Program began in 1946 with four legislative objectives of the Fulbright Act: (a) promote mutual understanding between people of the United States and the people of other countries; (b) strengthen ties; (c) promote international cooperation for education and cultural advancement; and (d) assist in the development of friendly, sympathetic, peaceful relations. The foremost underlying principle of these goals is mutuality or symmetry. All key outcomes are products of mutual acts: Mutual understanding occurs when both sides reciprocate learning and teaching, and the goals of "friendly relations," "cooperation" and "ties" are predicated on mutuality and reciprocity, not one-sided aspirations, acts, and changes.

However, inquiry into student exchange from the start swerved toward asymmetrical, one-way effects on foreign students in the Cold War milieu (Ketzler, 1955). Rather than what the United States learned from foreign Fulbright students, mainstream research focused on what foreign students learned from the United States and how their learning led to favorable attitudes and conations for friendly relations with America. The United States began administering exchange programs based on an opinion-leader model, bringing in foreign students with leadership capacity in their home countries. The one-way influence in this model occurs in two stages: during the foreign student's sojourn and after returning home. The first stage is defined by conversion: The student begins by better understanding the United States and ends by favorably evaluating it in terms of belief and attitude. In the second stage, returnees convey products of conversion to the general public in their homelands. Diffusion (i.e., ripple, multiplier, or spillover effects) marks this second stage; opinion-leader capacities expedite the process.

Despite the Cold War's demise, this asymmetrical vision still prevails in the literature, where the bulk of inquiry is directed at the first, sojourn-conversion stage. The guiding paradigm of research on this stage, according to Yun (2014), is attitude primacy: The focus is on formation and change of foreign students' attitudes toward the United States. Further, reviewing extant studies from the 1950s to the present in the United States, China, Japan, and Korea, Yun found this research paradigm was ascendant worldwide.

In contrast, research on the second diffusion stage has stayed peripheral, less abundant, and mostly anecdotal. This is attributable to the intractable difficulties of tracing long-term ripple effects on home societies and countries. A few notable works have presented feasible evidence on asymmetrical effects. The U.S. Department of State (n.d.b) states that 30 Fulbright alumni have served as heads of state or government of their home countries. Bellamy and Weinberg (2008) cited results from a global survey of foreign Fulbright returnees as proof of ripple effects: 96% shared experiences with fellow nationals through media or cultural activities upon returning home. Some studies have gone on to examine the diffusion behaviors of students still sojourning, a development made possible by evolving communication technology, notably the Internet. Vibber (2014), for instance, examined how foreign students in the United States diffuse real-time products of their conversion to compatriots at home via new media.

Such asymmetrical research gained further momentum in the early 2000s, when the notion of soft power surged to the forefront of public diplomacy. According to Nye (2004), the asymmetrical effects of attracting foreign students boost a host country's soft power. Importing foreign students is now globally proclaimed "a wise policy, as it enhances a host country's soft power" (Han & Zweig, 2010, p. 304). But research on asymmetrical benefits has elucidated only half of the big picture, neglecting the other half, namely, the symmetrical, balanced effects that are the central premise of student exchange.

Symmetry in Intercultural Communication

Probes into the symmetrical effects of student exchange have persisted throughout the long research history, albeit out of the limelight. Symmetrical research hinges on theories of human communication, such as Rogers and Kincaid's (1981) convergence model of communication, in which two communicators strive to reach mutual understanding. Regarding symmetry in exchange, the model implies that one-way mobility should suffice to create mutual understanding. Further incorporating the rubrics of human communication into intercultural communication in the setting of one-way exchange is Eide's (1970) theory, which views the international student as a cultural carrier between countries. In this model, the same conversion and diffusion processes occur on both sides, affecting foreign students and their home nationals as well as host nationals in intercultural interaction with foreign students and members of the wider host community.

The initial shift toward this intercultural mutual understanding was spearheaded by the Ogontz Plan for Mutual International Education, founded in 1961 in Philadelphia and co-sponsored by the U.S. government and community organizations. The program evolved from an international classroom at a junior high school to nurture constructive intercultural attitudes through planned interaction between U.S. and foreign students. With significant success, the Ogontz Plan has expanded to secondary schools and higher education institutions nationwide.

Professional exchange programs followed suit, producing a small body of formal evaluations of the balance among effects of intercultural communication. One such study is a 2001 assessment of the International Visitor Leadership Program (IVLP) and Sisters Cities Program (SCP) in Philadelphia, two projects that brought foreign professionals and citizens of foreign sister cities together with U.S. counterparts. Focusing on U.S. hosts, the study (T.E. Systems, 2002) found evidence for both conversion and diffusion: 94% described having basic to advanced knowledge about the foreign visitors' culture and country, compared with 75% before contact; further, 85% reported sharing this knowledge with family, friends, and colleagues. The latter finding led to the conclusion that "hosts/resources extend knowledge to others around them, which spreads positive impressions and perceptions of foreigners to other members of the community" (p. 7).

Another evaluation by T.E. Systems (2005), this one focused on both foreign visitors and U.S. hosts, found evidence of balanced effects on both sides. Concerning mutual understanding, 98% of visitors and 96% of hosts agreed that they had better knowledge of the other's country and culture. As for diffusion and relationship building, 94% of Americans reported sharing what they have learned, 87% had aroused friends' interest in the foreign visitors' country, and 76% planned to maintain friendship with visitors. Meanwhile, 81% of foreign visitors expressed strong interest in sustaining personal relationships with hosts. Olberding and Olberding (2010) investigated International Projects Week (IPW) in Cincinnati, which invited European middle schoolers into U.S. classrooms, and found mutual effects. Foreign students and U.S. hosts reported mutually increased understanding of one another's country in general, and of family life, religion, government, education, and economy in particular.

When making generalizations about all cases of one-way exchange, however, one should review the findings on balance in conversion and diffusion with caution. The modus operandi of intercultural communication in the IVLP and IPW, which affirmed balanced mutuality, is unlikely to be universal across the spectrum. Such programs are not natural field settings but experimental greenhouses trying to nurture mutual intercultural effects by carefully embedding foreign exchange students into U.S. host families for arranged intercultural interaction. Besides, the sojourn period—three weeks at IVLP and one week at IPW—was brief. The environment contrasted sharply with that experienced by most foreign students worldwide, many of whom never encounter such ideal, admittedly unrealistic conditions for intercultural interaction. Experiences of foreign students as a whole may not measure up to claims of balanced effects.

Research on Fulbright foreign students gives credence to this suggestion. Findings emerged decades ago on imbalanced effects between foreign students and Americans, with the mostly one-way effects impacting the foreign sojourners and leaving the hosts relatively unchanged. In a seminal review of extant studies covering the past two decades, Flack (1976) synthesized findings on the effects of foreign students' presence on U.S. college students and members of their wider communities. He concluded that "on most campuses, contacts between foreign and American students are intermittent and infrequent," and that "there is little evidence that . . . the effects of foreign students on members of the community, or the community as a whole, have been widespread or of significant or continuing depth"; even in some organized social contacts "the residue [effects] in the foreign student seems to exceed the residue in the host family or community" (pp. 114–115).

Still, Lima (2007) observed, "Frequently, the impact the international student makes on the host culture is far weaker than the impact the host culture makes on him" (p. 240). Kramer (2009) reported that "one searches in vain for affirmative descriptions of the radical changes that visiting students would introduce to American society in return. Where 'exchanges' between Americans and foreign students were sketched, they were deeply asymmetrical" (p. 779). If this is true for foreign students in the United States, one can reasonably expect a similar outcome in other host countries around the globe. Wherever international students sojourn, conversion and diffusion are likely to favor the host country. This hypothesis is troubling, given that symmetrical goodwill underlies the rationale for student exchange.

Symmetry in Asymmetrical Effects

Regarding the symmetrical effects of student exchange, one viable hope remains: Symmetry in asymmetrical effects on inbound students is feasible in theory, if it does occur. In other words, both countries may engage in two-way mobility, each exerting asymmetrical effects on the other's exchange students in turn. This idea was earlier explored by Weiss (1988, as cited in Signitzer & Coombs, 1992), who grappled with the notion of two-way communication in cultural diplomacy, particularly in art exhibitions exchanged between Austria and France, each taking turns to present its culture to the other's citizens (i.e., influence and teach them). Weiss' view of the exchange of art and the like as two one-way asymmetrical processes opens up the possibility of symmetry in asymmetrical effects.

The possibility rests on two-way exchange of students and calls attention to the current imbalance in student mobility. Altbach (2004) characterized the current flow as “having a strong South to North polarity” (p. 16) despite a trend in South-to-South flow. Kramer (2009) stated that “if the programs did not involve geographic exchanges, neither were they exchanges in their cultural economics” (p. 779). In his view, the balanced, geographic two-way exchange between the United States and Europe is an outlier: U.S.-centered student migrations resolve themselves into “exchange”: in other words, only if one either generalizes from a European-American axis or flattens the rest of world into a unitary, non-American space” (p. 778). His idea prepares the ground for possible ways to probe symmetry in asymmetrical effects.

Although few studies to date have investigated symmetry in asymmetrical effects, Kramer’s approach can be tested through synthesis of separate 2004 evaluation studies of two Fulbright student exchange programs: the U.S. Fulbright Student Program for outbound Americans (SRI International, 2005a) and the Visiting Fulbright Student Program for inbound foreign students (SRI International, 2005b). Each measured the given program’s level of success in fostering mutual understanding, multiplier behavior, and relationship linkage, using data from 1,087 U.S. students abroad and 1,609 foreign students in the United States between 1980 and 2000. Together they offer a basis for comparative analysis of symmetry in asymmetrical effects in two-way exchanges between U.S. students and those of “the rest of world [in] a unitary, non-American space.” The results of analysis substantiate this type of symmetry (Table 1).

Table 1. Symmetry in Asymmetrical Effects Between U.S. and Foreign Fulbrighters.

Exchange Effects		Foreign Students	U.S. Students
Learning/Understanding of host country	Increased knowledge and understanding	99%	100%
	• Culture and way of life	94%	100%
	• Political system/economy	84%/74%	97%/63%
	• Educational system	90%	95%
Multiplier behaviors with home nationals	Shared experiences of the host country through media or community activity	96%	98%
	• Informal conversation	92%	93%
	• Formal speeches, lectures, or presentations	44%	50%
	• Demonstrations of host country’s culture and customs	22%	28%
Linkages/ties with host country	• Maintained personal friendship	91%	97%
	• Revisited the host country	62%	69%
	• Participated in conferences, seminars, etc. in or about the host country	58%	63%

Note. Selected from SRI International, *Outcome Assessment of the U.S. Fulbright Student Program, 2005*, Washington, DC: U.S. Department of State and SRI International, *Outcome Assessment of the Visiting Fulbright Student Program, 2005*, Washington, DC: U.S. Department of State.

Rigorous replication is needed, however, because like most administrative evaluations, the two studies in the comparison are methodologically undemanding. They do not precisely define or operationalize central constructs such as understanding, and their measures have not been assessed for reliability and validity. These are common problems with agency appraisals, according to the U.S. Advisory Commission on Public Diplomacy (2014). On top of these failings, the two studies suffer from further limitations in three areas: subjects under study, theoretical construct, and study design. First, Fulbright students have become less representative of the current population of mobile international students, few of whom are taking part in governmental and civic exchange programs. The era of global education dawned around the new millennium, and masses of students worldwide now form a sea of global student mobility. As of 2009, the U.S. federal government, including the Fulbright program, was funding only 4,660 (0.7%) of 690,923 foreign students in the United States. A total of 86% were financed by families back home (61.9%) or college research/teaching scholarships (24.1%) (Institute of International Education, 2011). This trend is global, not unique to the United States.

Another drawback is the overly focused construct of understanding or learning of the host country. Most evaluation studies have naturally revolved on the notion by looking at how much students increased their knowledge of the host country. The consensus of their findings is that they do, as SRI International (2005a, 2005b) documented. However, acquiring knowledge through direct experience is too self-evident to merit scrutiny, and little is known about how this knowledge translates into positive or negative valence. Studies have argued that there is no clear evidence that mutual understanding automatically generates political support (Deutsch, 1970). Attitude theory (Ajzen, 2001) suggests that further knowledge instead injects evaluations (i.e., belief and attitude) with confidence or strength, a more potent prelude to behavior than the amount of knowledge. Moreover, evaluation research should emphasize relationship-building behavior over multiplying. Although the two behaviors are inseparable, the former is the primary goal of people exchange, as stipulated in the Fulbright Act. Therefore, the conation for nurturing ties and links with the host country should be in the fore.

Last, any probe into the symmetry in asymmetrical effects should nest in dyadic relations between two countries. Kramer's (2009) idea and this study's comparative analysis view symmetry in terms of a two-way mobility, largely balanced in quantities of exchangeees, so the research design set the United States on one side and the rest of the world on the other. However, examining the symmetry between two specific countries is quite different and more significant. The dyadic approach can parse findings on a lumped, overall symmetry, offering a compelling test of the symmetry in asymmetrical effects. In a between-country analysis, a balanced design with equal or comparable quantities of exchangeees is an unnecessary condition—despite the current norm of imbalanced two-way mobility between countries—because structural flow and the symmetry in asymmetrical effects are distinct matters. Even an imbalanced dyadic inquiry is viable, given some level of reciprocity in mobility.

RQ: How balanced or symmetrical are belief, attitude, and the conation for relationship building toward the host country between Korean and Chinese exchange students?

Method

Sample

With Chinese–Korean economic and cultural relations growing ever deeper, each country has become the largest source of inbound foreign students for the other. In 2012, Korean students constituted the largest group (62,855 or 21%) of foreign students in China (Belyavina, 2013). That same year, Chinese made up the largest foreign student group in Korea (55,427 or 63.8%). A convenience survey was conducted in person on college campuses with Chinese students in Seoul and Korean students in Beijing, who all identified as self-financed. Two versions of the survey questionnaire, one in Chinese and one in Korean, were administered after bilinguals had checked the equivalence in wording.

The surveys took place in November 2012 in Korea and March 2013 in China. In that five-month period, there was no abrupt political conflict between these countries that could potentially confound comparability. In fact, according to the Center for Strategic International Studies, a U.S.-based think-tank that tracks bilateral developments between China and Korea (Baker & Glosserman, 2013), the period heralded the beginning of closer Chinese–Korean relations. Under the new leaders Xi Jinping, then general secretary of the Chinese Communist Party, and Park Geun-hye, president of Korea, they shared the same policies on two challenges: North Korea's provocations (long-range rocket launches and nuclear tests) and territorial and historical disputes with Japan.

The Chinese survey resulted in 387 completed, usable questionnaires, and the Korean survey yielded 308 after those with missing values were discarded. Pearson's chi-square goodness-of-fit test was performed to see whether these samples were approximately proportionate to the corresponding foreign student populations in terms of levels of study. Language-course takers made up 19% of the total Chinese student population in Korea (Korean Ministry of Education, 2011) and 19.6% of the Chinese sample, undergraduates composed 66% of that total versus 59.7% of the sample, and graduate students constituted 15% versus 20.7%. The test result found the null hypothesis of equal proportions not retainable: $\chi^2(2) = 10.717, p = .005$. Nor did the null hypothesis hold for the Korean sample, with test statistics of $\chi^2(2) = 39.688, p < .000$. The Korean student population and sample proportions were 55% versus 37.3% for language-course takers, 40% versus 56.8% for undergraduates, and 5% versus 5.8% for graduate students, respectively.

With both samples found unrepresentative of populations, a tradeoff was made: The scope was narrowed to a homogeneous subgroup of undergraduates to ensure matching comparability, though at the expense of generalization of findings and statistical power. The subgroup appeared appropriate for this study, as undergraduates were quantitatively substantial and stayed long enough in the host country to form concrete beliefs, attitudes and conations. The final analysis involved 175 Korean and 231 Chinese undergraduates. The Korean sample was 46% male and 54% female, the average age was 23 years, and

the average length of stay was 61 months. In the Chinese sample, 41% were male and 59% female, the average age was also 23, and the average stay was 30 months long.

Instrumentation

The constructs for this study were adapted from Yun (2014), who measured attitude, belief and conation for relationship-building behavior toward the host country among international students (Table 2).

Belief. The definition of belief in this study corresponds to what Fishbein and Ajzen (1975) refer to as evaluations attached to attributes of an object. Country-of-origin studies have identified a broad range of country attributes. Martin and Eroglu (1993) tapped into three dimensions: political, economic, and technological. Yun (2014) used four areas to measure beliefs among international students: public life, techno-economics, diplomacy, and natural landscape/historical heritage. This study retained public life but replaced the other three areas with popular culture and people. Public life concerns social life in regards to governance and civil citizenship (four items); people captures the characteristics of host nationals, such as diligence and tolerance (four items); and popular culture refers to music, drama, movies, and fashion (three items). The selection rationale was that these dimensions reflect highly intimate environments of students' everyday life as insiders in the host country. Belief in each attribute was measured in an evaluation format, with subjects rating statements on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Conation. Conation is operationalized as intention for future behavior, since the subjects of this study were staying in the host country. Behavioral intention, according to Lutz (1981), is an individual's subjective estimate of his or her likelihood of engaging in a behavior. The primary reference behavior for conation in this study is building relationships, that is, nurturing linkages and ties with the host country. Behavior was measured in three dimensions: the individual level, where students maintain friendships and personal contacts with host friends, professors, and acquaintances (three items); the country level, where students engage in highly diverse activities that bring the homeland and host countries closer together (three items); and the more specific domain of the country-level relationship, where students increase the volume of human contacts between countries by attracting fellow citizens in their social networks to the host country as a destination for study abroad and tourism (two items). A 5-point Likert scale was used, ranging from 1 (*very unlikely*) to 5 (*very likely*).

Attitude. *Country attitude* in this study follows conventional theory, which defines attitude as a summary evaluation of an object, or the overall degree of favorability (Ajzen, 2001). The construct was measured at two reference points in time (before and after the stay) to compensate for the inability of cross-sectional data to track changes across time, and for practical and theoretical reasons: answering scores of retrospective questions from memory would cause respondents undue mental stress and likely result in unreliable measurements. Further, attitude is the pathway from belief to behavior. Mainstream unidimensional theory (ibid.) understands attitude as the consequence of belief and the antecedent of behavior. An implication of the theory is consistency between the three constructs in the direction of change (i.e., positive or negative). Knowledge of the direction of change in attitude across time should provide a vantage

point for the direction of change in belief and behavioral conation. Two items containing each reference point were measured on a 7-point semantic differential scale, from 1 (*strongly dislike[d]*) to 7 (*strongly like[d]*).

Table 2. Descriptive Statistics for Belief, Conation, and Attitude.

Construct/Dimension/Items	<i>M</i>	<i>SD</i>	Korean* <i>n</i> = 175	Chinese* <i>n</i> = 231
Belief				
PL1: The government guarantees political rights and civil liberty to its citizens	4.08	1.39		
PL2: The government provides its citizens with transparent, efficient public services	3.85	1.45	2.66 (.99)	4.80 (.83)
PL3: The citizenry observes high standards of public order and etiquette	3.74	1.78		
PL4: The citizenry enjoys high standards of living, welfare, and public security	3.84	1.62		
P1: The people respect foreigners	4.03	1.33		
P2: The people are considerate and tolerant of each other	3.73	1.40	3.58 (1.12)	4.18 (1.06)
P3: The people are diligent and smart	4.26	1.35		
P4: The people are trustworthy	3.67	1.35		
PC1: The country has attractive popular music	4.27	1.75		
PC2: The country has enjoyable TV dramas, light entertainment shows, and movies	4.53	1.66	2.99 (1.25)	5.45 (.97)
PC3: The country is a trend setter in fashion and beauty culture	4.37	1.89		
Conation				
PPC1: After returning home, how likely are you to recommend the host country to friends, family members, and acquaintances for study?	3.18	1.06	3.85 (.84)	3.29 (.82)
PPC2: . . . for tourism?	3.89	.95		
PR1: After returning home, how likely are you to maintain friendships with host friends?	3.74	1.00		
PR2: . . . keep in touch with host professors?	3.28	1.12	3.58 (1.04)	3.49 (.80)
PR3: . . . keep in touch with host acquaintances?	3.56	1.03		
CR1: After returning home, how likely are you to nurture relations at all levels between home and host country?	3.67	.98		
CR2: . . . work in the public or private sectors forging relations between home and host country?	3.71	.97	3.99 (.85)	3.50 (.81)
CR3: . . . help your family members, friends, acquaintances, and fellow countrymen better understand the host country?	3.78	1.00		
Attitude				
A1: In general, what is your overall evaluation of the host country?	4.88	1.18	5.29 (1.07)	4.57 (1.16)
A2: In general, what was your overall evaluation of the host country before coming?	4.58	1.26	4.16 (1.35)	4.90 (1.09)

Note. * = the composite means for all items for a construct except for country attitude (standard deviations). PL = public life, P = people, PC = popular culture, PPC = promoting people contacts, PR = personal relationships, CR = country relationships.

Results

Descriptive Statistics, Reliability, and Validity

Descriptive statistics were obtained for all 21 items of measurement using SPSS 18 software (Table 2). Kline's (2005) criterion was used to verify normality, and all the items were judged normal, with absolute values of skew and kurtosis smaller than the cutoff points of 3 and 10. The largest skew and kurtosis absolute values were .73 for item PPC2 and 1.14 for PL3. For brevity of presentation, Table 2 withheld other index values. Reliability and validity were assessed using AMOS 18, of a measurement model that includes six dimensional constructs of belief and conation but excludes the construct of attitude because it has a single indicator. To judge model fit, a set of indices was consulted: CFI > .90, TLI > .90, standardized RMR and RMSEA < .08 (Hair, Black, Babin, Anderson, & Tatham, 2006). The quality of measurement (Table 3) was evaluated using guidelines from Fornell and Larcker (1981). All standardized factor loadings were significant and greater than .70 in magnitude, construct reliability was greater than .70; convergent validity in terms of AVE was greater than .50; and discriminant validity by way of AVE was greater than SMC. Test statistics for model fit were reasonably acceptable: $\chi^2(137) = 382.17$, $p < .001$; $\chi^2/df = 2.79$; CFI = .952; TLI = .940; SRMR = .049 and RMSEA = .066. All factor loadings, with significance at $p < .001$, registered in magnitude between .70 and .94; construct reliability from .76 to .86; and convergent validity (AVE) between .60 and .79.

Main Analysis

The purpose of this study is to probe the symmetry or balance in asymmetrical effects on exchange students, specifically the attitude, belief, and conation toward the host country among Chinese students in Korea and Korean students in China. In statistical terms, the question is whether the means of effects are equal (i.e., balanced or symmetrical) in the two groups. Conation for relationship building and belief were subjected to latent mean analysis (LMA), as the groups are culturally different and both effects are measured with multiple indicators. CFAs were performed for LMA with two separate measurement models, one for conation and another for belief. A *t*-test was conducted for attitude, as it has just one indicator. Compared with the biggest SMC of .68 between public life and popular culture, the AVE for each of both dimensions was greater at .73 and .79, respectively.

Symmetry in conation and belief. LMA is a recommended technique for testing true mean differences between groups, based on measurement invariance that the same construct is being measured between groups. Steenkamp and Baumgartner (1998) recommended that three invariance tests—configural, metric, and scalar—be confirmed before group differences are assessed. Tests begin with subjecting an unconstrained baseline model to the configural test, proceed to examine invariance between the baseline and metric invariance model with all factor loadings constrained equal (i.e., the metric test),

and then arrive at the scalar test for the invariance between the metric invariance model and scalar invariance with all intercepts constrained equal. If a prior test disproves invariance between the compared models, no subsequent test can proceed. The typical criterion for assessing equivalence has been the result of a chi-square difference test, in that a significant difference means invariance. However, chi-square tests are sensitive to sample size, as are chi-square difference tests (Chen, 2007). Researchers have instead proposed the use of absolute changes in model fit indices, such as CFI, IFI, and RMSEA, robust to sample size. This study used the recommended cutoff values of $\Delta CFI \leq .01$, $\Delta IFI \leq .01$, and $\Delta RMSEA \leq .015$. Absolute changes meeting this set of criteria indicate that the null hypothesis of invariance should not be rejected.

Table 3. CFA of Measurement Model.

Dimension	Item	Standardized Factor Loading	Critical Ratio	Construct Reliability	VE
Public Life	PL1	.75			
	PL2	.82	17.24		
	PL3	.93	20.02	.83	.73
	PL4	.92	19.74		
People	P1	.80	15.30		
	P2	.84	16.06		
	P3	.70	13.36	.76	.60
	P4	.75			
Popular Culture	PC1	.86	26.47		
	PC2	.87	27.40	.79	.79
	PC3	.94			
Promoting People Contact	PPC1	.86			
	PPC2	.87	10.425	.75	.75
Personal Relationship	PR1	.76	16.60		
	PR2	.76	16.70	.83	.64
	PR3	.88			
Country Relationship	CR1	.76	15.81		
	CR2	.89	18.48	.86	.66
	CR3	.78			

Table 4 presents the results of invariance tests for the Chinese and Korean groups. For the conation measurement model, the essential three-level tests—configural, metric, and scalar—provided evidence that the model was invariant across both groups in factor structure, factor loadings, and intercepts; all the absolute changes in CFI, IFI and RMSEA met the criteria consulted. For the belief measurement, tests produced the same evidence through a series of model respecification. The first respecification occurred when the full model was initially deemed unacceptable due to a value (.093) of RMSEA greater than the cutoff (.08). The full model underwent modification by having error terms for two items (PC1 and PC2) covary with each other. The associated value of modification index was the greatest

(37.325), and both error terms are likely interrelated; popular music (PC1) often features in PC2 (as soundtracks for TV dramas and light entertainment shows) as well.

Table 4. Results of Measurement Equivalence Test for Chinese and Korean Student Groups.

	$\chi^2(p)$	<i>df</i>	$\Delta\chi^2(p)$	Δdf	CFI	ΔCFI	IFI	ΔIFI	RMSEA	$\Delta RMSEA$	Decision
Conation											
Full Model	55.255 (***)	17			.975		.975		.075		Accept
Configural Invariance	75.215 (***)	34			.972		.973		.055		Accept
Metric Invariance	85.022 (***)	39	9.787 (.082)	5	.969	-(.003)	.969	-(.004)	.054	-(.001)	Accept
Scalar Invariance	96.995 (***)	44	11.973 (*)	5	.964	-(.005)	.965	-(.004)	.055	+(.001)	Accept
Belief											
Full Model	185.164 (***)	41			.958		.958		.093		Reject
Respecified Full Model†	122.811 (***)	40	62.353 (***)	1	.976		.976		.071		Accept
Configural Invariance	156.677 (***)	80			.964		.965		.049		Accept
Metric Invariance	162.327 (***)	88	5.65 (.686)	8	.965	+(.001)	.966	+(.001)	.046	-(.003)	Accept
Scalar Invariance	219.837 (***)	96	57.510 (***)	8	.942	-(.023)	.942	-(.024)	.057	+(.011)	Reject
Partial Scalar Invariance††	181.471 (***)	94	19.144 (**)	6	.958	-(.007)	.958	-(.008)	.049	+(.003)	Accept

Note. † = The full model was respecified with both error terms covaried for the items PC1 and PC2.

†† = The scalar invariance model was respecified with both intercept terms set free for the items P4 and PC2.

*** $p < .001$; ** $p < .01$; and * $p < .05$.

The second respecification occurred during the scalar invariance test. Against the metric invariance model, the scalar model turned out different, as the absolute change (.023) in CFI and that (.024) of IFI were greater than the cutoff ($\leq .01$). Following guidelines from Chen (2007), the scalar invariance model was put to modification by freeing equality constraints on intercept terms for both items (P4 and PC2), in consultation with the resulting modification indexes. It is generally recommended that the intercept for one item (preferably the referent) be invariant across groups for a construct of study, so a partially modified model can be deemed invariant (Reise, Widaman, & Pugh, 1993).

Meeting guidelines by revision, the modified partial scalar invariance model was compared to the metric invariance model. The absolute change in CFI dropped within an acceptable range to .007 as did the change in IFI (.008). This finding implies that the intercepts were relatively equivalent across groups.

Based on measurement invariance, latent mean analyses followed with the factor means for the Chinese group (reference) fixed to zero. Table 5 presents the results for dimensions of conation and belief. For conation, the Korean group, as compared with the Chinese group, had statistically significant greater estimates of factor mean on two dimensions: promoting people contact ($\hat{\mu} = .593$) and country relationship (.481) at $p < .001$; in contrast, the Korean group had no statistically different estimate of factor mean on personal relationship (.140). For belief, the Korean group's statistically significant estimates of factor mean were lower in all three dimensions in comparison with the Chinese: public life (-1.687), people (-.705) and popular culture (-3.048) at $p < .001$. In conclusion, results indicated that for conation, equal and symmetrical effects existed only on the personal relationship level and not for promoting people contact or country relationship; for belief, no equal effects existed on any of the three dimensions. Associated d values were calculated using the formula from Cohen (1988) to understand the magnitude of asymmetry or imbalance (Table 5): small ($d = .20$), moderate ($d = .50$) and large ($d = .80$). For all but personal relationship, magnitude was moderate to large, with popular culture having the largest effect ($d = 2.801$) and country relationship the smallest ($d = .645$).

Symmetry in attitude. For current attitude, an independent two-sample t -test was performed. Its results showed that the Korean group had a statistically greater mean ($M = 5.29$, $SD = 1.07$) than did the Chinese group ($M = 4.57$, $SD = 1.17$): $t(404) = 6.37$, $p < .001$. An equal and balanced effect did not exist between the groups, and the size of associated effect ($d = .633$) ranged from moderate to large. The direction and magnitude of change in attitude before and after were probed by conducting a dependent paired-sample t -test for each group separately. In the Korean group, the attitude toward China changed significantly and positively: $\Delta M = 1.13$, $\Delta SD = 1.56$, $t(174) = 9.54$, $p < .001$. In the Chinese group, the attitude toward Korea changed significantly and negatively: $\Delta M = -.37$, $\Delta SD = 1.34$, $t(230) = -3.79$, $p < .001$. Regarding the magnitude of change, the Korean group showed a degree of positivity ($d = .721$) three times greater than the Chinese group's degree of negativity ($d = .251$). Balanced effects were not observed in the magnitude of temporal change or in direction (Table 5).

Table 5. Results of Latent Mean Analysis and t-test.

Construct/ Dimensions	Chinese		Korean		Effect Size (Cohen's <i>d</i>)
	$\hat{\mu}$	$\hat{\sigma}$	$\hat{\mu}$	$\hat{\sigma}$	
Conation					
Promoting People Contact	0	.738	.593	.684	.833***
Personal Relationship	0	.779	.140	1.023	.181
Country Relationship	0	.731	.481	.760	.645***
Belief					
Public Life	0	.579	-1.687	.673	2.687***
People	0	.960	-.705	.949	.738***
Popular Culture	0	.952	-3.048	1.209	2.801***
Attitude					
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Current	4.570	1.166	5.290	1.071	.633***†
Δ Current-Before	-.336	1.337	1.127	1.562	Chinese .251***†† Korean .721***††

Note. † = the test statistic for independent two-sample *t*-test.

†† = the test statistics for dependent paired-sample *t*-test.

****p* < .001

Discussion

The overall results suggest that symmetry in asymmetrical effects was absent in the case of Chinese and Korean students. Imbalance appeared to be the norm for belief, attitude, and—barring personal relationships—conation too. This finding casts doubt on the long-held claim that student exchange is a symmetrical tool of public diplomacy that equally benefits the countries engaged. This discovery and the dyadic method employed in this study can serve as a basis for practitioners of public diplomacy who aim to further evaluate gains and losses in two-way student mobility.

The asymmetry in the case of China and Korea merits closer attention, as balance sheet of student exchange appears mixed. In the area of belief, the Chinese viewed Korea more favorably than the Koreans did China. In the area of attitude and conation relative to the host country, the opposite was true. As for the question of who benefits more from the exchange of students, China appears to have a larger trade surplus, as conation has strategic importance. Compared to the Chinese student group, the Koreans

showed greater conation for country-level relationships with the host country, as well as for promoting people contacts by attracting home nationals for study and tourism in the host country and thus benefiting it economically. The most marked surplus for China is the asymmetrical, temporal change in attitude. Korea lost, though by only a small degree ($\Delta M = -.37$), as the Chinese attitude toward the country took a negative direction. However, China won by gaining a significant degree ($\Delta M = 1.13$) of positive change from the Koreans. Korea's deficit with China in the area of attitudinal change has become a noticeable trend. Studies on Chinese students in Korea have affirmed that the deficit is long term and enduring (Korean Educational Developmental Institute, 2010; Lee, 2012). Using the same indicator and scale as in this study, Lee found a significantly negative change among 418 Chinese students in Seoul ($\Delta M = -.33$, $p < .001$).

This study did not directly measure change in belief. However, the measured change in attitude provides indirect insight into what occurred in belief, as belief precedes attitude and both are prone to have a consistent direction of change. The same temporal change in valence must have happened in belief—that is, the Chinese belief soured and the Korean belief sweetened. The prediction for the Korean belief in particular dovetails with findings from recent studies. Ha (2010) studied the change in what foreign students from 23 countries living in Beijing believed about China's governance, similar to the dimension of public life in this study but with more focus on human rights, political freedom, and openness. The proportion of those with a positive belief increased from 34.25% before coming to China to 45.5%.

It is difficult to pinpoint a single explanation for opposite developments (China up vs. Korea down) in belief and attitude. A possible theory may be borrowed from studies on migrants' adaptation to foreign countries. Furnham and Bochner's (1986) theory on the mismatch between expectations and experience posits that migrants adapt better when their experience in a host country is better than expected, and vice versa. Extending this theory to the context of this study, sojourning students' belief and attitude toward the host country may change similarly. Ha (2010) qualitatively probed why foreign students in China experienced positive change in belief and found their level of experience exceeded prior expectations of the country. All described their experience of China as better than what Western and home media had led them to expect. In contrast, Chinese students' experience in Korea did not live up to expectations based on love of Korean popular culture (called Hallyu) (Korean Educational Developmental Institute, 2010). Ironically, by raising expectations, Hallyu—the primary source of Korea's appeal, for Chinese students—may be responsible for their later negative change in belief and attitude.

Another question the findings raise is why a discrepancy between the valences of belief and the other two constructs existed only in the Korean group. Their belief about China remained negative in absolute terms and contrasted with their positive attitude and conation (Table 2). The Koreans' beliefs about China may have had less to do with attitude and conation than attitude theory generally predicts, and something other than beliefs likely contributed to the discrepancy. Self-interest may be a relevant factor in Koreans' wish to gain education in China. Most Chinese students were drawn to Korea by Hallyu and motivated to learn more about the country, its culture, and its language. However, most Korean students turned to China for instrumental purposes, namely, a keen interest in future job prospects ("South Korean Students," 2013). Korean students have a larger stake in Chinese schooling than Chinese

have in Korean education. These divergent orientations are traceable in the asymmetrical interdependence between the Korean and Chinese economies. China has been Korea's biggest trading partner since 2004, accounting for 21.9% of the country's total exports in 2013. Korea had a share of 3.7% in Chinese total exports ("Economic Dependence," 2014). The tilt of Korea's interdependence with China is evident in the goods balance surplus (exports minus imports) of 59%, indicating that the Korean economy would suffer without the Chinese. Given China's economic dominance, the absolute qualities (i.e., evaluations) of China's attributes might not carry much weight in Koreans' attitude and conation toward country-level relationships with China.

The only appreciable area for symmetry is the conation for maintaining personal relationships, which suggests that the two groups of students were equally concerned with keeping up personal relationships with host nationals within social networks.

Limitations and Future Research

This study's findings suffered from defects in generalizability and validity. Regarding generalizability, the findings were based only on an undergraduate subgroup of international students and are not applicable to other subgroups. As for validity, findings came from students' self-reported perceptions and intention measured at one point in time and cannot be taken as conclusive for exchange effects. Besides, the sampling method was neither random nor systematic, and there is no guarantee that the two samples are representative of their respective populations. In the area of demographic variables, duration of stay influences adaptive change among sojourners. The time variable has been scrutinized with regard to impact on international students' attitudinal change toward the host country. The U-curve theory (Oberg, 1960) says that favorability drops at the beginning of the stay, reaches a trough, and then starts to bounce back with time.

In this study, differences in duration of stay across groups likely had a confounding effect on comparative findings. To attain validity, the average length of stay for each subsample (Chinese and Korean) should square with that of each population. The Korean group's average length of stay ($M = 61.47$ months) was, significantly, twice that of the Chinese group ($M = 30.10$): $t(235.03) = 11.09, p < .001$. No official data are currently available on either group's population parameters. However, anecdotal accounts of Korean students in China indicate that they stay longer than their Chinese counterparts in Korea. Yoo (2003) and Cheong (2007) discussed the phenomenon of "China kids," Korean students rushing to China early in life for secondary education. By the time they enter Chinese colleges, they have lived in the country for an extended period. In contrast, few early birds leave China for Korean high schools. Most Chinese students in Korea begin their college life either after a year-long language course or fresh out of high school in China. Notwithstanding anecdotal evidence, the validity of our findings remains open to question due to the uncertainty about both samples' representativeness.

Future research on a broad range of issues in bilateral exchange may be warranted and can be bolstered with panel studies. Theoretically, a line of research may delve into various levels of the symmetry in asymmetrical effects. This study raised the issue by comparing the means of asymmetrical effects on exchange students, which is a test of perfect symmetry. In reality, perfect symmetry is

abnormal. There is more or less symmetry in asymmetrical effects, with one side getting more and another less, as long as both gain anyhow; however, there definitely is none in our case of Korea losing (negative change in belief and attitude) and China gaining (positive). The same idea could be subjected to inquiry on a complex level, involving the general public of both countries. Inbound students likely have more favorable belief, attitude, and conation toward the host country than does the general public back home (Chung, 1998; Han & Zweig, 2010). In this case, a finding of perfect or imperfect symmetry would rest on comparison between differences in each pair of students and fellow citizens.

Future research also needs to go beyond the types of benefits studied here to explore different ones. This study tapped into the symmetry in the effects on the same attitudinal constructs regarding each host country—belief, attitude and behavioral conation—but exchange may entail different types of benefits for the respective countries. For example, one-way exchange may well bring the benefits of conversion and diffusion to a developed host country, whereas a developing sending country may gain other types of benefits, such as advanced knowledge and know-how in science, technology, among many other areas, and boosts in modernization and development. Indeed, if exchange produced only asymmetrical benefits, it would not have lasted this long. To conclude, future research on the various levels and faces of symmetry could aid in determining whether symmetrical goals are an attainable ideal or a noble disguise in a world of realpolitik.

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