Being different leads to being connected:

On the adaptive function of uniqueness in "open" societies

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Uniqueness and relational mobility

Abstract

The current research proposes that high need for uniqueness (NFU) brings individuals positive life outcomes by helping them be connected with, rather than isolated from, others in societies where social relationships are mobile and generally open to outsiders. In societies characterized by a high mobility of relationships (relational mobility) that may result in market-like competitive circumstances (e.g., America), NFU may increase chances of social success by leading individuals to develop their unique "selling points." In contrast, high NFU may bring worse results in closed societies (e.g., Japan) because of the associated risk of being ostracized. This hypothesis was examined and confirmed by three studies which employed cross-national as well as cross-regional comparisons within a single nation. A pilot study first confirmed that for societies higher in relational mobility, a high NFU person was viewed more favorably as a friend. Studies 1 and 2 found that NFU was more positively associated with life satisfaction, relationship satisfaction (Study 2), as well as income (Study 2) in societies higher in relational mobility.
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Previous cross-cultural studies have revealed that there are systematic differences between cultural groups in the strength of individuals' desire to be different from others, or their need for uniqueness (NFU). Though many studies have found that humans are not free from social influences (e.g., Asch, 1951), and suggest social learning (or copying others' behaviors) is central to humanity (e.g., Boyd & Richerson, 1985; Rendell et al., 2010), people in some societies (typically Western societies) have been found to have a greater tendency to pursue uniqueness, rather than to conform to others, than people from the other parts of the world (Aaker & Schmitt, 2001; Bond & Smith 1996; Burns & Brady, 1992; Kim & Markus, 1999; Kim & Sherman, 2008; but see also Yamagishi, Hashimoto, & Schug, 2008). Accordingly, in some societies such as America, people try more to be different from each other than people in other societies.

From these findings, one may think that in such societies where strong motivations to be unique are prevalent, people are socially disconnected from each other. Importantly, however, being unique or differentiated from others does not necessarily mean being disconnected. A recent study by Slotter, Duffy, and Gardner (2014) found that temporal increase of differentiation need did not harm relationships. Also, those who are motivated to be unique are not necessarily motivated to be isolated from others. It was found that individuals who preferred uniqueness tended to use social support to deal with stressors (Kim & Sherman, 2008). Similarly, Americans, who have been found to have a greater tendency to pursue uniqueness, are more likely to disclose sensitive information about the self than East Asians (e.g., Schug, Yuki, & Maddux, 2010; see
also Kim, Sherman, Ko & Taylor, 2006). Also, Allik and Realo (2004) found that social capital such as trustworthiness was greater in societies high in individualism, for which the pursuit of uniqueness is an important aspect (e.g., Triandis, 1995). The previous findings thus speak against the possibility that individuals in societies where uniqueness is pursued are disconnected from each other, though little is known about the mechanisms underlying the relationship between uniqueness and social connectedness.

As described below, the current article proposes a hypothesis that NFU is an adaptive response to help its possessors have beneficial social relationships in certain socio-ecological environments.

Social functionality of NFU and relational mobility

The current research proposes that one's NFU brings better life outcomes if one resides in a society where social relationships are mobile and open to outsiders. Relational mobility is a socio-ecological factor which is defined as the degree to which individuals have opportunities to voluntarily form new, and terminate old, relationships in a given society or social context (Falk, Heine, Yuki, & Takemura, 2009; Schug et al., 2010; Yuki, Sato, Takemura, & Oishi, 2013; Yuki et al., 2007; see Yuki & Schug, 2012, for a review). This variable is higher in North America than in East Asia, and helps explain the cultural differences in several psychological processes including self-evaluation, self-disclosure, and emotional experiences (Falk et al., 2009; Schug et al., 2009, 2010; Sznyker et al., 2012; see also Yamagishi & Yamagishi, 1994, for pioneering work on a similar concept; and Anderson, Adams, & Plaut, 2008; Chen, Chiu, & Chan, 2009; Oishi, 2010; Yamagishi et al., 2008, for similar theoretical frameworks). As described below, the social functionality of NFU is also expected to be influenced by this socio-ecological variable.
It is hypothesized that, in societies high in relational mobility, NFU helps its possessors have beneficial social relationships. By the term "society," I mean a wide range of collectives ranging from one’s local community to a nation. In a society high in relational mobility (an "open society" in Yamagishi et al.’s [2008] terminology) where people generally have many opportunities to form new relationships, it is beneficial for individuals to keep seeking a better relationship partner (a person who, for example, has better resources, better abilities, and is more willing to help him/her), rather than being fixated on the current partner. However, even in a high mobility society, new relationships are not guaranteed to be reciprocated because relationship partners have their own relationship choices to make. A person who is attractive to one may also be attractive to others, and it is likely that there are other competitors who also wish to have a social relationship with the same person. As a result, free but competitive interpersonal markets can emerge in high mobility societies. It is thus necessary for individuals to show their attractiveness (or benefits that they can uniquely provide) in order to be chosen as a relationship partner. But it is sometimes costly and difficult to be the "best" in a popular field where many people compete. One possible strategy in such a competitive environment is to look for one's own unique niche where few people have committed, and develop unique "selling points" that nobody else has. In addition, societies high in relational mobility have higher chances that one will meet a person who desires his/her unique "selling points" (Fischer, 1975). Thus, the cost of choosing a less popular field for one's niche is relatively low. In short, in a high relational mobility society, it can be efficient and helpful for individuals to have high NFU and pursue unique niches so that they can have desirable social relationships while avoiding overcompetition.
On the other hand, high NFU may bring worse outcomes to its possessors in a society low in relational mobility. In a low relational mobility society, relationships and groups are exclusive and closed to outsiders, and the opportunity to form new relationships is scarce. Therefore, it can be enormously problematic to be ostracized from one's current relationships. Once ostracized, individuals will have difficulty to find those who accept them, and will be totally isolated in the worst case. In such a socio-ecological environment, having high NFU is not adaptive as it may lead individuals to be deviant from social norms and, at worst, ostracized by current peers. Rather, conformity is more beneficial since it helps individuals avoid standing out, and lowers the risk of being ostracized.

This argument does not necessarily mean that people residing in a high mobility society always benefit from being unique and never show conformity. In fact, conformity has been observed in western societies (e.g., Asch, 1951), and has been suggested to have fundamental functions such as protecting oneself from danger (Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006). Nevertheless, from the aforementioned rationale, it is expected that advantages and disadvantages of uniqueness and conformity may also depend on societal levels of relational mobility.

The current article reports three studies which tested this hypothesis through cross-national comparisons as well as cross-regional comparisons in a single nation. If the hypothesis is correct, high NFU should lead to higher chances of social success in a high mobility society than in a low mobility society. Thus, it is predicted that individuals high in NFU are regarded more favorably as friends in societies higher in relational mobility. A pilot study first examined this prediction. Then two studies examined if NFU is connected to life outcomes (life satisfaction, relationship
satisfaction, and income) more positively in societies higher in relational mobility (Studies 1 and 2).

The pilot study also tested another important assumption that the predicted correlation between relational mobility and how favorably someone high in NFU is viewed would be observed more clearly at the societal level than the individual level. The aforementioned hypothesis argues that NFU is adaptive in a society where people compete with each other over desirable relationship partners. If an individual is the only one who has chances to form social relationships and have no competitors, the one does not have to develop one's unique "selling points."

High NFU can bring a satisfying social life through social interactions (i.e., help one be chosen over other competitors) in market-like competitive environments. Thus, NFU has social functionality when people generally have many opportunities to form social relationships and, consequently, compete with each other. This suggests that functionality of high NFU emerges as a macro-level phenomenon, and thus the appropriate unit of analysis is at a higher level of analysis (e.g., region) rather than at the individual level. To investigate this issue empirically, relational mobility was assessed by measures which could be administered at the individual-level, and the correlation was examined at both levels.

**Pilot study**

The hypothesis suggests that high NFU brings better life outcomes (e.g., life satisfaction) by helping its possessors be socially connected with others in high mobility societies, while it may lead them to be disliked by others in low mobility societies. To assess this relational mobility-dependent social functionality of NFU, a pilot study
examined if a person who has high NFU is more likely to be favored as a friend in societies higher in relational mobility, through data from five different societies.

**Method**

*Participants.* The pilot study was conducted online. Forty five participants (36 females and 9 males) were from California (University of California, Santa Barbara) in the United States, 56 participants (39 females and 17 males) were from British Columbia (University of British Columbia) in Canada, 66 participants (34 females and 32 males) were from Greater London (London School of Economics) in the United Kingdom, 131 participants (47 females and 84 males) were from Hokkaido, Japan's northern island (Hokkaido University), and 35 participants (20 females, 14 males, and 1 unknown) were from Kansai, a central area of western Japan (five different universities and one college).

*Procedure.* Two measurements of relational mobility were administered. The first one was the relational mobility scale, which was originally developed by Yuki et al. (2007; see also Schug et al., 2009, 2010). This scale included 12 items asking about situations in which students from the same school were embedded (i.e., others who generally shared socio-ecological conditions with a participant). Sample items included "They have many chances to get to know other people," "It is easy for them to meet new people." Thus, when analyzed at the individual-level, the relational mobility scale captures the individual differences in perceived level of relational mobility in each participant's environment. On the other hand, when analyzed at the site-level, a score on the relational mobility scale reflects an average view among participants from the same site about their environment. Response options were provided on 7-point bipolar scales,
with options ranging from 1 (Strongly disagree) to 7 (Strongly agree). Alpha coefficients for each site (California, British Columbia, London, Hokkaido, and Kansai) were satisfactory, Cronbach's $\alpha$s > .71. Participants were also instructed to report the number of new friendships and acquaintanceships that they had formed in the past week. This served as the second measure of relational mobility in their local environment (Schug et al., 2010).

Participants were then asked to complete 32 items which were designed to assess their willingness to be a friend with those who had high NFU. These items were created from the items of the NFU scale (32 items including "Whenever I take part in group activities, I am somewhat of a nonconformist", Snyder & Fromkin, 1977). Participants were instructed to indicate their willingness to become a friend with a person such as "A person, who is somewhat of a nonconformist whenever he/she takes part in group activities", with options ranged from 1 (I would definitely not want to become their friend) to 7 (I would definitely want to become their friend). Alpha coefficients for each site were acceptable, Cronbach's $\alpha$s > .64. Average score across all 32 items was used as an index of likeability of individuals high in NFU (Likeability of high NFU).

Results and Discussion

Means and standard deviations of all the variables are shown in Table 1. Consistent with the hypothesis, the sites higher in the two measures of relational mobility (e.g., California) were also higher in likeability of high NFU than some other sites (e.g., Kansai). It is necessary, however, to examine the correlations between relational mobility measures and likeability of high NFU as more rigorous tests of the hypothesis.
Before proceeding to correlation analyses, I examined the intra-class correlation for each variable to see within-site similarities. It has been suggested that it is appropriate to examine correlations at higher levels (e.g., site-level for the current study) rather than at the individual-level when intra-class correlations are larger than .05 (Fischer et al., 2009). In this study, intra-class correlations were significant for all the variables, and reached the criterion value (.05): ICCs = .09, .07, and .05, ps < .003, for the relational mobility scale, the number of new friends/acquaintances in the past week, and likeability of high NFU, respectively. Then I calculated the site-level score for each variable by averaging individual scores within sites.

The site-level correlation analysis between relational mobility scale and likeability of high NFU revealed that their relationship was, as expected, in a positive direction, Pearson's $r = .45, p > .40$, Spearman's $\rho = .50, p > .40$, but did not reach statistical significance. However, once controlling for gender ratio which was different between the sites, $\chi^2(N = 332) = 35.34, p < .001$, an exceptionally strong positive correlation was found (Figure 1), indicated by Pearson's $r = .88, p = .118$, Spearman's $\rho = .95, p = .055$. Also, the site-level correlation analysis between the number of new friends/acquaintances and likeability of high NFU showed the same pattern. The zero-order correlation was strongly positive, Pearson's $r = .87, p = .053$, Spearman's $\rho = .90, p = .083$, and the partial correlation controlling for gender ratio was also strongly positive, Pearson's $r = .95, p = .051$, Spearman's $\rho = .90, p = .097$. These results suggest that, as expected, individuals with high NFU are more likely to be accepted as a friend in societies higher in relational mobility.

On the contrary, individual-level correlations showed weaker patterns. The within-site correlations between the relational mobility scale and likeability of high
NFU were not significant, $r < .22, p > .220$, except for $r = .32, p = .016$ in British Columbia and $r = -.15, p = .079$ in Hokkaido (partial correlations controlling for dummy-coded gender were not significant either, $r < .22, p > .219$, except for $r = .32, p = .017$ in British Columbia and $r = -.15, p = .092$ in Hokkaido). In addition, the number of new friends/acquaintances did not correlate with likeability of high NFU in any sites (parentheses delineate results of partial correlations controlling for dummy-coded gender): Pearson's $r$ ranged from $-.08 (-.08)$ to $.13 (.12), p > .308 (.327)$. 

To sum up, the site-level analyses yielded the pattern consistent with the hypothesis: individuals high in NFU were regarded more favorably as friends in societies higher in relational mobility (e.g., Greater London area). The individual-level analyses, on the contrary, revealed much weaker correlations. As described earlier, however, this is rather consistent with the hypothesis: social functionality of high NFU emerges as a macro-level phenomenon, rather than individual-level phenomenon. Building on these findings of the pilot study, I focused on macro-level effects of relational mobility in Studies 1 and 2.

**Study 1**

The results of the pilot study support the hypothesis that social attractiveness of individuals high in NFU increases along with the rise of societal relational mobility. It is yet untested if high NFU is really more adaptive (or more likely to lead to a successful social life) in societies higher in relational mobility. Study 1 examined if the associations between NFU and satisfaction with one's own life vary between societies differing in relational mobility. Data were collected from California in the United States,
as well as Hokkaido and Kansai in Japan. Relational mobility was measured at these three sites as well.

Method

Participants. Participants in California were 102 students (79 females and 23 males) at University of California, Santa Barbara. Japanese participants were 117 students (51 females and 66 males) at Hokkaido University in Hokkaido region and 112 students (46 females, 62 males, and 4 who failed to indicate their gender) at Kyoto University in the Kansai region.

Procedure. Study 1 was carried out online. Participants who accessed the online survey completed four scales: 1) the Satisfaction With Life Scale (SWLS, five items including "In most ways my life is close to my ideal," Diener, Emmons, Larsen, & Griffin, 1985), 2) a scale to assess a participant's anticipation about their satisfaction with life in the future, included as another index of life outcomes (Anticipated SWLS, five items including "In most ways my life will be close to my ideal," Sato, Yuki, Takemura, Schug, & Oishi, 2008), 3) the Need For Uniqueness scale (NFU, 32 items including "Whenever I take part in group activities, I am somewhat of a nonconformist", Snyder & Fromkin, 1977), and 4) the relational mobility scale, which was used in the pilot study. Response options were provided on 7-point bipolar scales, with options ranging from 1 (Strongly disagree) to 7 (Strongly agree). Alpha coefficients for each scale and for each site (California, Hokkaido, and Kansai) were satisfactory, Cronbach's $\alpha$s $>.71$.

Results and Discussion

A One-way ANOVA on relational mobility revealed that the difference between the three sites were significant, $F(2, 324) = 12.41, p < .001, \eta_p^2 = .07$. Post hoc analyses
revealed that relational mobility was significantly higher in California ($M = 5.29, SD = .84$) than in Hokkaido ($M = 4.98, SD = .73$) and Kansai ($M = 4.76, SD = .76$), and the difference between Hokkaido and Kansai was also significant.\textsuperscript{3,4}

Although not a specific focus, cultural differences in the other scales were also found in a manner consistent with previous findings. NFU was higher in California ($M = 4.13, SD = .67$) than in Hokkaido ($M = 3.80, SD = .48$) and Kansai ($M = 3.84, SD = .68$), $F(2, 324) = 9.14, p < .001, \eta_{p}^2 = .05$ (for studies showing similar cultural differences, see Burns & Brady, 1992; Kim & Markus, 1999; but see also Yamagishi et al., 2008). Significant differences were also found for both SWLS and anticipated SWLS, $F_s(2, 324) = 5.06$ and $43.96, ps = .007$ and $< .001, \eta_{p}^2 = .03$ and .21, respectively. For SWLS, California residents had higher scores ($M = 5.02, SD = 1.20$) than Hokkaido residents ($M = 4.49, SD = 1.23$), while Kansai residents differed from neither of them. When collapsing the two sites in Japan, the difference between two countries was significant, $F(1, 325) = 6.73, p = .01, \eta_{p}^2 = .02$, indicating that Americans had higher SWLS than Japanese. For anticipated SWLS, California residents ($M = 5.62, SD = .98$) were higher than Hokkaido residents ($M = 4.34, SD = 1.13$) and Kansai residents ($M = 4.48, SD = 1.12$), while Hokkaido and Kansai did not differ from each other (see Diener, Diener, & Diener, 1995, for similar cultural differences).

The focus of Study 1 was in the differences in the associations of NFU with SWLS/anticipated SWLS between the three sites. From the mean scores of relational mobility described above, the associations between NFU and SWLS/anticipated SWLS were predicted to be most positive in California, least positive (or most negative) in Kansai, and Hokkaido would fall in between these two.

This prediction was supported. First, simple regression analyses of SWLS on
NFU were performed for the three sites separately. The coefficients of NFU on SWLS was positive in California \( (b = .29, p = .099) \), virtually zero in Hokkaido \( (b = .03, ns) \), and nominally negative in Kansai \( (b = -.25, p > .10) \). More importantly, multiple regression analysis including NFU (centered around the overall mean), two dummy-coded variables for site ("Hokkaido" and "Kansai", with "California" as the reference category), and their interactions as predictors revealed that the California-Kansai difference in the effect of NFU on SWLS was significant \( (b = -.54, p = .032) \), while Hokkaido did not differ from California \( (b = -.26, p > .30; \text{adjusted } R^2 = .03, p = .012) \). The Hokkaido-Kansai difference was revealed to be non-significant \( (b = .28, p > .34) \) by another multiple regression analysis with differently coded dummy variables for site ("Hokkaido" and "California", with "Kansai" as the reference category) (adjusted \( R^2 = .03, p = .012) \).

Stronger results were found in the association between NFU and anticipated SWLS. Simple regression analyses of anticipated SWLS on NFU were performed for the three sites separately. It was found that the associations were positive in California \( (b = .39, p = .006) \), virtually zero in Hokkaido \( (b = .05, ns) \), and negative in Kansai \( (b = -.37, p = .020) \). Multiple regression analysis of anticipated SWLS on NFU (centered around the overall mean), two dummy-coded variables for site ("Hokkaido" and "Kansai", with "California" as the reference category), and their interaction effects revealed that the association in California was more positive than in Kansai \( (b = -.76, p = .001) \), and not different from Hokkaido \( (b = -.35, p > .18; \text{adjusted } R^2 = .23, p < .001) \). Another multiple regression analysis with differently coded dummy variables for site ("Hokkaido" and "California", with "Kansai" as the reference category) revealed that the Hokkaido-Kansai difference was not significant \( (b = .42, p > .10; \text{adjusted } R^2 = .23, p \)
As in the pilot study, effects of individual-level scores of the relational mobility scale (moderating effect on the association between SWLS/anticipated SWLS and NFU) were also examined. Multiple regression analyses of SWLS on NFU, relational mobility scale score (both were centered around the overall mean), and the interaction between them was performed. The relational mobility scale had a significant positive effect \( (b = .22, p = .014) \), NFU \( (b = .06, p > .56) \) and the interaction \( (b = -.10, p > .38) \) were non-significant (adjusted \( R^2 = .01, p = .084 \)). Likewise, multiple regression analyses on anticipated SWLS showed that the interaction between NFU and the relational mobility scale was not significant \( (b = -.06, p = .597) \), while the relational mobility scale had a significant \( (b = .24, p = .007) \) and NFU had a marginally significant \( (b = .19, p = .076) \) effects (adjusted \( R^2 = .03, p = .010 \)).

Thus, it was demonstrated that the associations between NFU and SWLS/anticipated SWLS were congruent with societal levels of relational mobility. NFU had more positive effects on SWLS and anticipated SWLS in California where relational mobility was the highest among three sites, than in Kansai where the lowest relational mobility was found. In Hokkaido, where relational mobility fell in between the other two sites, the effects of NFU also fell in-between. Thus, societal-level comparisons provide supports for the hypothesis: Having high NFU brings better life outcomes in societies higher in relational mobility.

On the other hand, the moderating effects of the relational mobility scale at the individual-level were found to be non-significant. This is consistent with the findings of the pilot study, and in line with the hypothesis that functionality of high NFU in relationally mobile environments emerge as a macro-level phenomenon through social
interactions. However, a disadvantage of Study 1 is that it only consisted of three societies. Study 2 was conducted to overcome this limitation.

Study 2

Study 2 was a replication of Study 1: examining if NFU had more positive effects on life outcomes in environments that are higher in relational mobility. However, analyses of Study 2 included more regions than Study 1. Though the societal differences found in Study 1 were consistent with the hypothesis, only three regions were included in the analyses. Thus the findings of Study 1 were unsatisfactory as evidence of macro-level phenomenon that social functionality of NFU increased with the rise of relational mobility of a local environment. Also, Study 2 employed regional comparison within a single nation, Japan, rather than relying on cross-national comparison. Because the findings from the pilot study and Study 1 mainly depended on contrasts between Japan and western societies, it was possible that other factors that varied between the countries (e.g., language) might have contributed to the findings. By examining within-nation regional differences as a "just minimal difference" approach, a more conservative test of the hypothesis can be provided (see Kitayama, Ishii, Imada, Takemura, & Ramaswamy, 2006; Üskül, Kitayama, & Nisbett, 2008, for a similar approach). In Study 2, therefore, the association between NFU and life outcomes (such as life satisfaction) was calculated for each region first. Then it was examined if the regional difference in the NFU-life outcome association was explained by the difference in relational mobility across regions.

Another advantage of Study 2 was that it employed objective measures of life outcomes and relational mobility. The hypothesis suggests that NFU may or may not
help individuals obtain beneficial relationships through actual social interactions, depending on societal levels of relational mobility (the actual amount of opportunities for new relationships). Though Study 1 used a subjective index for relational mobility (i.e., the relational mobility scale, which assesses perceptions of amount of opportunities for new relationships) and I assume that perception of relational mobility reflects the actual level of relational mobility in a society, it is important to explore whether convergent effects will emerge from objective measures. Similarly, although Study 1 employed subjective indices for life outcomes (e.g., life satisfaction), social relationships, which include a broad range of relationships from formal job contracts to casual friendships, may bring resources which are objectively observable (e.g., money). Obtaining convergent evidence across both subjective and objective measures would provide strong support for the relational mobility-dependent functionality of NFU.

**Method**

Data from the Japan Survey on Information Society 2004 (JIS2004, Naoi, 2004) was analyzed. The JIS2004 is a nation-wide survey based on random sampling of men and women, ages 20-79, living in Japan. Thus, though Study 1 relied only on data from university students, Study 2 analyzed data consisting of a representative sample of Japan.

In this survey, responses were collected through face-to-face interviews as well as on a subsequent self-administered questionnaire. The original sample size was 2,000 and the completion rate was 64.3%, yielding 1,286 respondents (685 females).^6^

**NFU measure.** Participants were asked to indicate the importance to them of "trying out new things ahead of other people," "living differently from others," and "getting information that other people don't have," with options ranging from 1
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Important to 4 (Not Important). Average of reversed score from these three items was used as an index of NFU (Cronbach's $\alpha = .75^7$, $M = 2.30$, $SD = .71$).

*Life outcomes.* Three measures of life outcomes were analyzed. The first was life satisfaction. Participants were asked to "think about your present circumstances. Generally speaking, how satisfied are you with your life?" The second one was relationship satisfaction. If the hypothesis is correct, it is expected that individuals high in NFU have more satisfying social relationships in high-mobility environments than in low-mobility environments. Participants were asked to indicate how satisfied they were with their *personal relationships*. For both of these items, response options were provided on 11-point scales, with options ranging from 0 (Dissatisfied) to 10 (Satisfied) ($Ms = 6.05$ and $6.41$, $SDs = 2.09$ and $2.05$, for life satisfaction and relationship satisfaction, respectively).

The third measure of life outcome is more objective: income. Gross household income was measured on an ordinal scale, ranging from 1 (none), 2 (less than 700,000 JPY), 3 (between 700,000 and 1.5 million JPY), all the way up to 17 (23 million JPY and above). The modal response was 6 (between 3.5 million and 4.5 million JPY, 8.9%), $M = 7.78$, $SD = 3.28$.

*Region-level relational mobility.* Participants of the JIS2004 can be divided into 11 geographical regions based on their current residence. To assess regional difference in relational mobility, responses to the following two items were analyzed. The first item asked participants how important it was "to broaden your interpersonal relationships", with options ranging from 1 (Important) to 4 (Not Important, reversed score was used in the analysis, $M = 3.37$, $SD = .75$). There should be more opportunities to form new relationships in regions where residents are on average more willing to
broaden their interpersonal relationships than in regions where residents tend to commit to narrow social relations. Hence, the average score of this item (willingness to broaden network) was used as an index of region-level relational mobility.

The other item was about service years. Participants were asked to report how many years they had been working for their current company/organization in total ($M = 15.07$, $SD = 13.46$). The regional average of this variable (service years) was used to represent the *stability* of the job market (i.e., how low relational mobility is in the job market) in the respective regions (Yuki et al., 2013). It was expected that the strength of within-region association between NFU and income would be more strongly connected with this measure than willingness to broaden network, which is presumably related to more casual social relationships.

**Results and Discussion**

I first computed the unstandardized regression coefficients of NFU on life satisfaction within each of the 11 regions (i.e., individual-level associations between the two variables were calculated within each region). Then, I tested whether the regression coefficients were more positive in regions higher in the average score of willingness to broaden network by using the weighted least squares procedure (weighting by sample size and standard deviation; Kenny, Kashy, & Bolger, 1998). I conducted these two-step analyses as opposed to a multilevel analysis because the data provider limited the types of analyses that a visitor could conduct on their website, and the original individual-level responses (raw data) were not available.

As predicted, the strength of the association between NFU and life satisfaction was positively correlated with the regional average of willingness to broaden network, $b = 1.53$, $p = .067$ (Figure 2A). That is, NFU predicted life satisfaction more strongly in
regions where people were willing to broaden their social relationships than in regions where people tended to stay in their narrow social relationships.

The same analytical procedures were taken for the association between NFU and relationship satisfaction. A weighted linear regression revealed that, as predicted, the strength of the association between NFU and relationship satisfaction was positively correlated with the regional average of willingness to broaden network, $b = 2.19, p = .069$ (Figure 2B).

In addition, we examined the indirect effect of NFU on life satisfaction through relationship satisfaction. The hypothesis suggests that the reason why individuals high in NFU are more likely to have a satisfying life in high mobility societies is because they are more likely to have satisfying social relationships. Thus, the effect of NFU on life satisfaction should be an indirect, rather than direct, effect through relationship satisfaction. To calculate the indirect effect of NFU, the unstandardized regression coefficient of NFU on relationships satisfaction was calculated for each region first. Then, they were multiplied by the unstandardized regression coefficient of relationship satisfaction (mediator) on life satisfaction for each region (controlling for effect of NFU). This product represents the indirect effect of NFU on life satisfaction for each region. The region-level correlation analysis between the indirect effect of NFU and the regional average of willingness to broaden network revealed that they were positively correlated, Pearson's $r = .72, p = .013$. In contrast, the direct effect of NFU on life satisfaction (unstandardized regression coefficient of NFU on life satisfaction controlling for relationship satisfaction) was, as predicted, not correlated with the regional average of willingness to broaden network, Pearson's $r = .02, p = .956$.

On the other hand, the relationship between the NFU-income association and
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willingness to broaden network was weak and non-significant. A weighted linear regression of the within-region association between NFU and income ($b$ of NFU on income) on the regional average of willingness to broaden network did not reveal a significant relationship, $b = -.78, p > .664$. Given that income was measured on an ordinal scale, weighted linear regression using within-region regression coefficient $b$ might not be appropriate, and thus another method of analysis was also employed. First, within each region, a Spearman's rank-correlation $\rho$ between NFU and income was calculated. Then the calculated within-region rank-correlations were subjected to Fisher-$z$ transformations. A region-level correlation analysis was performed to examine if the Fisher-$z$ transformed rank-correlation (between NFU and income) was associated with the regional average of willingness to broaden network. The region-level correlation was, however, again non-significant, Pearson's $r = -.40, p > .219$.

However, the other measure of relational mobility, namely, regional average of service years (representing the stability of the job market), yielded the predicted pattern. In the following analyses, the regional average of respondent's age was controlled for as it was correlated with regional average of service years, $r = .60, p < .001$. As predicted, a weighted linear regression analysis of the NFU-income association ($b$ of NFU on income) on regional average of service years (as well as regional average of age) found a negative association, $b = -.16, p = .057$. Also, it was examined if within-region rank-correlation between NFU and income (Fisher-$z$ transformed Spearman's $\rho$) was associated with regional average of service years (controlling for average age). As shown in Figure 2C, the regional average of service years had a negative relationship with the within-region NFU-income association, indicated by Pearson's $r = -.73, p = .016$. These results suggest that, as hypothesized, NFU has a more positive effect on
income when one lives in a region where people change their jobs more frequently.

In addition, weighted linear regression analyses were conducted to examine the relationships between average service years and associations of NFU with the other life outcome measures. It was shown that regional average service years predicted neither within-region association between NFU and life satisfaction ($b = .04, p > .366$) nor within-region association between NFU and relationship satisfaction ($b = -.01, p > .903$).

**General Discussion**

Results from three studies provided convergent support for the hypothesis. The pilot study found that individuals with high NFU were viewed more favorably as a friend in high mobility societies (California, British Columbia, and London) whereas they were less preferred in low mobility societies (Kansai). Study 1 showed that the associations between NFU and life outcomes (satisfaction with life and anticipated satisfaction with life) were congruent with societal levels of relational mobility. In California, where relational mobility was the highest among three sites, NFU had a positive effect on life satisfaction, while NFU had a rather negative effect in Kansai (the lowest in relational mobility), and no effect in Hokkaido (falling in-between in relational mobility). These results suggest that NFU is more adaptive in a high mobility society than in a low mobility society. Study 2, in which the large social survey data in Japan was analyzed, replicated the findings from Study 1. NFU had more positive associations with life satisfaction as well as relationship satisfaction in regions where people are more willing to broaden their interpersonal relationships on average. Similarly, it was found that NFU had more positive effects on income in regions where
job markets were more mobile. Taken together, these three studies yield clear support for the hypothesis. High NFU, which drives individuals to be different from others, helps them be connected with, rather than isolated from, other people and brings better life outcomes in socio-ecological environments where social relationships are relatively open and mobile. In closed societies, on the other hand, high NFU is associated with worse social outcomes.

It is presumably possible to view the current findings consistent with the optimal distinctiveness theory (Brewer, 1991). It has been found that assimilation motivation is stronger for in-group settings while differentiation motivation is stronger for out-group settings (e.g., Pickett & Brewer, 2001). By definition, the amount of opportunities for interactions with outsiders is greater in high mobility societies than in low mobility societies. The current findings that need to be unique or differentiated from others is more adaptive in high mobility society are congruent with the view that individuals are motivated to be differentiated outside their current in-group.

Nonetheless, the current study has also brought, and shown evidence for, a new idea. The optimal distinctiveness theory suggests that being unique helps one have a meaningful sense of identity (e.g., Vignoles, Chryssochoou, & Breakwell, 2000); but as shown by the current study, uniqueness also brings social consequences, such as being liked by, having satisfying relationships with, and earning money through interactions with others.

Many cross-cultural studies have been conducted on the dimensions of independence-interdependence (Markus & Kitayama, 1991) and have found that independent mentalities such as NFU are more prevalent in some societies than in others (for a recent review, see Heine, 2012). In this literature, however, little attention
has been paid to what roles such independence plays in social life. Prior work examining the effects of relational mobility have suggested that independent mentalities, such as highly positive self-evaluation (Falk et al., 2009), may bring successful social life in high mobility societies. Collectivistic mentalities, on the other hand, such as internalization of personality traits expected from people for one to have, are believed by people to be adaptive in low mobility societies (e.g., Chen et al., 2009). However, it has hardly been examined if the associations between such culturally-specific tendencies and life outcomes are really dependent on societal level of mobility (see Oishi & Kesebir, 2012; Oishi & Schimmack, 2010; Yuki et al., 2013, as exceptions). By taking NFU as an example, the current research demonstrates that independence/individualism is associated with positive evaluations from others, satisfying social relationships, satisfying life, and increased income, in societies high in relational mobility. These findings suggest that independence/individualism is not psychology of individuals who stay away from others, it is rather for individuals who attempt to have desirable social relationships in mobile societies (see also a discussion on "universalism" by Yamagishi, Jin, & Miller, 1998). From this viewpoint, "independent" people can be seen as individuals who interact with each other by using their "independent" mentalities and, accordingly, collectively create a particular type of society. This perspective can enable us to investigate not only the psychology of independent individuals, but also a society at a macro-level that is collectively created by such independent people, in a unified theoretical framework.

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Table 1. Means and standard deviations for each site (Pilot study)

<table>
<thead>
<tr>
<th></th>
<th>Relational mobility scale</th>
<th>Number of new friends/acquaintances</th>
<th>Likeability of high NFU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$  $\text{(SD)}$</td>
<td>$M$  $\text{(SD)}$</td>
<td>$M$  $\text{(SD)}$</td>
</tr>
<tr>
<td>CA</td>
<td>5.05  (.81)</td>
<td>2.96  (3.61)</td>
<td>4.27  (.46)</td>
</tr>
<tr>
<td>BC</td>
<td>4.77  (.76)</td>
<td>2.13  (3.06)</td>
<td>4.28  (.48)</td>
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<td>London</td>
<td>4.69  (.94)</td>
<td>3.00  (6.72)</td>
<td>4.36  (.49)</td>
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<tr>
<td>Hokkaido</td>
<td>4.36  (.79)</td>
<td>.99   (1.59)</td>
<td>4.21  (.34)</td>
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<tr>
<td>Kansai</td>
<td>4.52  (.87)</td>
<td>.51   (.92)</td>
<td>4.01  (.43)</td>
</tr>
</tbody>
</table>
Figure Captions

Figure 1. Scatter plot of the regions with linear regression line predicting likeability of individuals high in need for uniqueness from relational mobility scale (the residuals from regressions predicted by within-region proportion of males were used).

Figure 2. Moderation by relational mobility on the association between NFU and life outcomes. (A) Within-region regression coefficient ($b$) of NFU on life satisfaction plotted against regional average score of willingness to broaden network, (B) Within-region regression coefficient ($b$) of NFU on relationship satisfaction plotted against regional average score of willingness to broaden network, (C) Within-region rank correlation coefficient (Fisher-z transformed Spearman's $\rho$) between NFU and household income plotted against regional average of service years (the residuals from regressions predicted by regional average age were used). Linear regression lines are presented. NFU = Need for Uniqueness; CG = Chugoku; HD = Hokkaido; HR = Hokuriku; KS = Kansai; KT = Kanto; NKS = North Kyushu; SK = Shikoku; SKS = South Kyushu; TH = Tohoku; TK = Tokai; TS = Tosan
Figure 1

Likeability of individuals high in need for uniqueness (Controlling for proportion of male within regions) vs. Relational mobility scale (Controlling for proportion of male within regions)

- British Columbia
- London
- Hokkaido
- California
- Kansai
Figure 2A

Regional average score of willingness to broaden network

With-region regression coefficient (b) of NFU on life satisfaction

-0.60 -0.20 0.20 0.60 1.00

3.10 3.20 3.30 3.40 3.50

Regional average score of willingness to broaden network
Figure 2B

Regional average score of willingness to broaden network

HD
SK
KS
NKS
SKS
KT
CG
TH
TS

Within-region regression coefficient ($b$) of NFU on relationship satisfaction

-1.00
-0.80
-0.60
-0.40
-0.20
0.00
0.20
0.40
0.60
0.80
1.00
3.10 3.20 3.30 3.40 3.50

Regional average score of willingness to broaden network
Figure 2C

Regional average of service years
(Controlling for regional average age)

Within-region Fisher-z transformed rank-correlation between NFU and income
(Controlling for regional average age)
Footnotes

1 Intra-class correlations were calculated by HAD7.3 (Shimizu, Murayama, & Daibo, 2006).

2 Gender difference was found in the number of new friends/acquaintances.

Dummy-coded gender (female as the reference category) was negatively associated with the number of new friends/acquaintances (Spearman's $\rho = -.16$, $p = .004$), suggesting that females were more likely to get new friends/acquaintances than males. The association between dummy-coded gender and relational mobility scale was slightly negative but not significant (Pearson's $r = -.08$, $p = .127$). Likeability of high NFU was not associated with gender (Pearson's $r = -.01$, $p = .864$).

3 For all reported post hoc analyses, Modified Sequentially Rejective Bonferroni Procedures (Shaffer, 1986) were performed.

4 Proportions of male participants were different between sites, $\chi^2(N = 327) = 33.32$, $p < .001$. However, the effect of site on relational mobility remained significant after controlling for the effect of gender, $p < .011$, and relational mobility was not different between genders, $p = .294$.

5 Gender had marginally significant effect on anticipated SWLS, $b = -.21$, $p = .096$, indicating that females had higher anticipated SWLS than did males. Other than that, gender did not effect on SWLS, and did not moderate the effects of NFU on SWLS or anticipated SWLS, $ps > .10$. Also, the California-Kansai differences in the effects of NFU on SWLS/anticipated SWLS remained significant after controlling for the effects of gender, $ps < .042$.

6 The JIS survey data can be analyzed at the website of Social Research Database on Questionnaires (SRDQ), [http://srdq.hus.osaka-u.ac.jp/en/](http://srdq.hus.osaka-u.ac.jp/en/). Though the original
individual-level responses (raw data) are not available, a visitor can compute descriptive
statistics (e.g., means, variances) and conduct several types of analyses including
regression analysis at this website.

Cronbach’s $\alpha$ cannot be calculated directly at the SRDQ website. Thus I calculated $\alpha$
for the three items of NFU based on descriptive statistics (variances of the individual
items and variance of the sum of them) that could be computed at the website.