Decomposing Immigrants' Religious Mobility: Structural Shifts and Inter-religion Exchanges Among Chinese Overseas Students

X. Yousef Yang, Anning Hu & Fenggang Yang

Review of Religious Research
The Official Journal of the Religious Research Association

ISSN 0034-673X

Rev Relig Res
DOI 10.1007/s13644-017-0318-1

Springer

Rev Relig Res
DOI 10.1007/s13644-017-0318-1

ORIGINAL PAPER

Decomposing Immigrants' Religious Mobility: Structural Shifts and Inter-religion Exchanges Among Chinese Overseas Students

X. Yousef Yang[1] · Anning Hu[2] · Fenggang Yang[3]

Received: 7 February 2017 / Accepted: 20 October 2017

Abstract The religious mobility of immigrants has rarely received a systematic investigation that separates the two mutually exclusive mechanisms: the structural shift that occurs due to an overall environment favorable to certain religions, and the exchange effect that occurs when people voluntarily flow between any pair of two religions. Chinese overseas students constitute the largest foreign student body in the US whose religious mobility pattern remains unexplored and may differ significantly from other types of immigrants in earlier generations, especially regarding the assumed growth of Christianity and changes within other religions and non-religions. Applying quasi-symmetry log-linear model to the pre- and post-immigration religious identifications in a new sample of Chinese oversea students collected from the Midwest in 2016 (n = 916), this study shows that (1) Abrahamic religions including Christianity and Islam have the biggest structural advantage; (2) Eastern religions including Buddhism, Chinese folk religions, and generic polytheism have suffered from structural disadvantages; (3) religious nones (i.e. atheists and agnostics) have remained relatively stable with little structural variation; (4) net of the structural effects, there is a higher level of mutual exchange of members between Buddhism and polytheism, between atheism and agnostic, and between Christianity and atheism.

✉ Fenggang Yang
fyang@purdue.edu

X. Yousef Yang
xyang7@murraystate.edu

Anning Hu
huanning@fudan.edu.cn

[1] Department of Political Science and Sociology, Murray State University, Murray, KY, USA

[2] Department of Sociology, Fudan University, Shanghai, China

[3] Department of Sociology, Purdue University, West Lafayette, IN, USA

Published online: 08 November 2017

Keywords Conversion · Religious identification · Log linear modeling · Chinese overseas students · Immigration

Introduction

The religious landscape of the US is changing. The overall trend of religious transition, such as the rise of religious nones and religious pluralism, has called into question the conventional Christianity-focused research paradigm (Brenner 2016; Cadge and Howard Ecklund 2007; Edgell et al. 2006), and brought the inter relationship between religions to the fore. One important question in the studies of inter-religion relationship is the relative (dis)advantage in the capacity of recruiting members between religions, which has been noted to directly relate to a religion's "market shares" and matters for its social influences (Stark and Finke 2000). To examine this theme against the background of the recent transition of the US religious landscape, two issues need further investigation.

The first issue concerns the effect of immigration (Cadge and Howard Ecklund 2007). How immigration experience, even the temporary one, influences religious changes in a mobile population is an increasingly important question in this era of globalization. Indeed, when discussing the underpinning forces that shape recent changes of people's religious life (e.g., to estimate the cohort effect), scholars often focus more on native residents (e.g., Voas and Chaves 2016), while the differential attractiveness of various religions to immigrants is still elusive. This elusiveness appears even more salient if we consider the remarkable differences across chronological waves of immigrants. The common perception about the religion-immigration association, therefore, may not be well applicable to the recent immigrant groups, as we will discuss in the next few sections. On the other hand, demographic changes, instead of cultural shifts, may bring about a more powerful effect on the reshaping of religious landscape. For instance, Sherkat (2014) has found that demographic shifts such as immigration have had a broader impact on American religious statistics than explained by rational choice and the cultural environment. But still, the questions regarding to what extend immigrants change their religion to assimilate in the host society and which religion attracts more immigrant converts than others remain unsolved.

The second issue refers to the difficulty in precisely operationalizing and quantifying the (dis)advantages between religions. Enlightened by the religious mobility literature, religious change can be driven by two types of mechanisms: one captures the macro and socially structural factor—i.e., a preponderating population of a religion in the host country means a higher likelihood of immigrants to get imposed to and convert to that religion; the other concerns the preferences of immigrants that are entailed by the exchange of members between religions (Hu and Leamaster 2015). Throughout the following discussions, the former is named the structural shift and the latter is referred to as the exchange effect. These two types of advantages account for the transition of religious identification of immigrants from

mutually complementing perspectives, shedding light on important questions such as whether the influx of immigrants supplements the loss of Christians from the native residents, or which religions are more likely to exchange followers between one another in the eyes of immigrants.

This study investigates the mobility of religions before and after immigration using a 2016 survey of Chinese international students in the Midwestern US. This study adds new insights to the literature since most large-scale surveys on immigrants rarely inquired about the inheritance and transition of their religious identification ante- and post-immigration. Applying the quasi-symmetry log linear model, we have managed to separate the effects of the structural and exchange advantages, and engage the current scholarship with our findings.

Religious Conversion Among Immigrants

How immigration experience, even temporary one, influences religious changes in a mobilizing population is an increasingly important question in the era of globalization and transnational migration (Casanova 2001). Although immigrants may adopt the dominant religious beliefs of the local host population in the long run, this is by no means uniform, depending on both individual preference and local context. Seeing clearly the big picture of religious mobility or tenacity in an immigrant group thus lays the essential step stone to understand the role of transnational population mobility in the formation of immigrants' religious behaviors, as well as changes in the host country's religious landscape.

Religious conversion under some circumstances is a convenient channel for immigrants to be assimilated into the host society. When placed in a new environment as a minority member, adopting the majority's religion while retaining certain previous ethnic elements is often a natural consequence of the immigrants making sense and "making boundaries" of their identities (Carnes and Yang 2004; Wuthnow 2002). Immigrants may also adopt the majority religion simply because the option of conversion did not exist prior to immigration, due to either social pressure or to the entire non-existence of certain religions in the home country (the floor effect). For example, although as the least religious demographic group in the US, Chinese immigrants and their children have been converting to Protestantism at a comparatively high rate since the early twentieth century (Carnes and Yang 2004; Lien and Carnes 2004). The psychological motivation and manifest narratives behind their conversions may differ, but all narratives finally converge to their choice of conversion to the majority religion in the host society. Nevertheless, pre-immigration religious beliefs may still persist as a powerful trend when the host society presents certain barrier for immigrants to convert, or when the other social structural forces elevate the perceived importance of preserving one's pre-immigration faith. In an analysis of the General Social Survey, Sherkat (2014) showed that immigrants are less likely to switch from or abandon previous religions as compared to native-born Americans, even though more of them are converting to Christianity than any other religions. Local experience of racism constitutes another strong incentive for preserving pre-immigration religious traditions, especially when

the religion is simultaneously intertwined with ethnic identity (Foner and Alba 2008).

Whether immigrants convert to or resist certain religious traditions in the host society, the religious landscape in their host society has undeniably permeated and transformed not just their belief system and worldviews, but also the very organization of their religious practices. For example, Buddhists and Muslims began to design their religious loci in the congregational model of Christianity (Carnes and Yang 2004). At the very least, all immigrants have to deal with the reality that their (non)religious experience is now defined in terms of their relationship with the dominant religious tradition, and the struggle between religious switching and adherence is pressing. However, the extent to which conversion takes place among immigrants and the exact directions and sources of conversions have never been evaluated within a well-defined framework: conversion due to the structural shift that favors one or more religions, and conversion due to mutual and equal exchange between some religions.

Structural Shifts and Inter-group Exchanges

Mobility in social status in a population can be decomposed into two separate effects—structural shifts and exchange effects, and religious mobility involving changes in religious identities and belongings is one important type of social mobility (Sobel et al. 1985). The first mechanism refers to the structural advantage of certain religions. Suppose a population is an enclosed set of individuals without natural growth, and each individual may not belong to more than one religion, it follows that one conversion equals one apostasy (including "apostasy" from atheism). It is also reasonable to hypothesize that all religions are not equally likely to gain or lose members. A structural advantage appears when one religion receives proportionally more converts than others. To facilitate this effect, the overarching cultural atmosphere in a society may shape the structural opportunities of conversion, when many religious conversions or disaffiliations take place due to a specific worldview becoming popular in the dominant culture. Thus, the participants in relevant religious activities and organizations may accumulate more social capital and broaden their social networks which further convey concrete benefits (Becker and Dhingra 2001; Putnam 2001). This cultural favoritism applies to religions and nonreligions alike. Voas (2003), for one, demonstrates that the decline of institutionalized Christianity in the UK took place simultaneously as religious ritual for neonates fell out of fashion. Sherkat (2014) found that Unitarians and nonreligionists are more likely to come from other traditions, while institutionalized mainline Protestantism are rapidly losing members. Alternatively, as the rational choice theory of religion contends, certain types of service organization could elevate the attractiveness of the religion, while others suffer ineffective organizational capacity (Stark and Finke 2000; Stark and Iannaccone 1994). Denominations that value the congregational nature of the assembly and employ more democratic management may better satisfy the equilibrium of spiritual need and participation cost for attendants. Taken both approaches together, it is reasonable to assume that

some religions may overall attract more converts than others due to forces extraneous to individual decisions.

The phenomenon of structural advantage for some religions can be clearly illustrated among the overseas Chinese. While diasporic Chinese in Thailand and West Bengal adopt Buddhism, disproportionally more of those who migrate to North America have converted to Christianity (Yang 2000). In contrast, previously unaffiliated Chinese workers in Dubai are more likely to become Muslims or Christians (Wang 2016). While the proportion of Christians in nearly all Chinese societies in Asia, except for the small city-state of Singapore, has never exceeded 5–10% according to different estimates (Hu and Leamaster 2015; Yang 2006; Yang and Yang, in press), the proportion of Chinese Americans indicating they are either Protestants or Catholics varies from 20 to 35% (Carnes and Yang 2004; Pew Research Center 2013). Scholars found a larger number of converts to evangelical Protestantism have Buddhism background, a phenomenon featured in both Chinese and Korean Americans that illustrates both the structural advantage of Protestantism and the structural weakness of Buddhism in the US (Lien and Carnes 2004). Such phenomena reflect the structural advantages of particular religions in the process of converting immigrants (Wang and Yang 2006).

The religious mobility resulting from structural advantage should be differentiated from the mobility driven by religious exchange (Sobel et al. 1985). The exchange effect may be present regardless of structural shifts since there could always be exchange involving an equal number of converts in and out between two groups with the overall distribution unchanged (Berger and Snell 1957). In a sense, the structural advantage entails the effect of an exogenous social force that favors certain religions and caused a heterogeneous marginal distribution across religions, while the exchange mobility captures whether the exchange and personal preference between a pair of religions have caused any switching at the individual level. In this sense, the exchange advantages reveal the affinity or distance between two exchanging religions (Persson 1977; Sobel et al. 1985), which is expressed in frequent conversions between two religions sharing similar weltanschauung (Babchuk and Whitt 1990) or conversions that are promoted by political causes. For example, the exchange between Hinduism and Buddhism among India's Dalits has been politically promoted (Robinson and Clarke 2003); switching between different Protestant denominations is far more frequent than cross-religion conversion for Americans (Sherkat 2014). When there is no external flow and natural growth, the structural shifts and inter-group exchanges should exhaust all sources of mobility of an enclosed population. However, there is currently few to no studies that discuss the phenomenon of inter-religion mutual exchange and its account of the total religious mobility among immigrants, even fewer tried clarifying the exchange effect vis-a-vis structural shifts.

Structural Shifts and Exchanges Among Chinese Overseas Students

Based on the existing evidence, one may well conclude the structural advantage of Christianity among overseas Chinese in the US, although there could be another religious tradition enjoying the second strongest structural advantage (e.g. a religion

that is practiced more widely and normatively in America but not in China, such as Hinduism and Bahaism). Scholars found a larger number of Chinese converts to evangelicalism come from a Buddhism background (i.e. the structural advantage of Christianity and disadvantage of Buddhism). At the same time, Mainland China as the foremost origin place for the exodus of Chinese people is famously known for having the highest percentage of "convinced atheists" and "non-religious" people according to both the World Value Survey and China General Social Survey. Since many have speculated that the non-religion phenomenon of China is largely due by the political suppression and denigration of religions since the Republican era, would more atheist immigrants convert to a religion once the veil of stigma has been lifted (i.e. the structural disadvantage of atheism)? Regarding the exchange effect, would a higher proportion of Muslims convert to Christianity than Buddhism due to their Abrahamic affinity in theology? So far, all of these remain speculation, and ethnographies on religious conversion among Chinese immigrants could not systematically compare the likelihood of conversion to Christianity by prior (non)religious affiliations.

The uniqueness of immigration in the recent decades adds complexity to the relationship between immigration and religious conversion, particularly for those coming from non-European countries. The recent waves of Chinese overseas students present exactly such a case. As argued by segmented assimilation theory, non-European immigrants in the US can rarely transition into the racial majority social sphere, thus necessitating close bonds to their co-ethnic communities. For religious behaviors, this may imply that non-European immigrants of other faiths are less likely to convert to Christianity. Therefore, reflecting the argument of the segmented assimilation theory (Portes and Zhou 1993; Zhou 1997), simply assuming a gradual assimilation of Chinese overseas students into America's mainstream cultural and religious setting, seems to be problematic. Furthermore, unlike the earlier waves of Chinese students, the more recent ones are significantly wealthier, and fewer come to the States with an intention of immigration[1] (Yan and Berliner 2016). When the socio-economic gap between home and host societies closes and a revival of traditional values and nationalism accelerates among the Chinese (Liu 2005), at least the "openness factors" behind Chinese immigrants' conversion as described by Hall (2006) should diminish. Therefore, the conversion to Christianity due to the perceived modernity, or conversion by emulation (Van der Veer 1996; Yang 2005) may not well hold for more recent Chinese overseas students.

Attempting to shed light on the ambiguity of religious mobility pattern among Chinese overseas students, particularly that concerns structural shifts and exchange effects, this study will demonstrate with quasi-symmetric log-linear model about which religious traditions enjoy a structural advantage in gaining new members and which religious traditions mutually "exchange" converts at a greater rate.

[1] http://www.theatlantic.com/education/archive/2015/11/globalization-american-higher-ed/416502/.

Methodology

Sample

The dataset comes from a 2016 survey among Chinese international students at a public university. The target institution is one of the top five in the size of Chinese students in the US, who have enrolled in all major disciplines including but not limited to engineering, science, agriculture, and social sciences. Recruitment was conducted online and initiated by the emails sent to the entire target population. Three reminders were sent to the population during the next two weeks, which helped to reduce the non-response bias. The overall response rate was 22.4%, and we had considerably overachieved our initially needed sample size by having 916 valid respondents in total. Our sample is closely representative to the Chinese student population at the institution, as shown in the appendix. Because the university itself has prestigious engineering programs, the sample has a larger proportion of engineer students and smaller number of business and natural science students as compared to the Chinese student body in the entire United States.

Measuring Religions Among the Chinese

As extensively documented by scholars, the boundaries between some religions for the Chinese are often blurry (Leamaster and Hu 2014), so the definition of religions by the prevailing denomination-based approach is inappropriate for our research objectives. The non-congregational nature of traditional Chinese religions (Yang 1961), and their lack of distinct organizations in the management of spiritual belonging, leads many factual believers to be uncertain about their religious identity. Hence, it is not surprising that many Chinese hold more than one religious identities, especially outside of the Abrahamic tradition (Yang and Hu 2012).

Due to the ambiguity in the classification of religions in the Chinese context and significant existence of religious nones, we did not elicit answers from an explicit list of religious categories, but instead ask respondents to rate their level of belief in six major religions (Buddhism, Taoism, Protestantism, Catholicism, Folk religions, and Islam). Subsequently, mutually exclusive identities were constructed based on their responses. The construction of (non)religious groups is illustrated in Table 1: Buddhists are those who "believe more" or "believe entirely" exclusively in Buddhism; Christians refer to the respondents who "believe more" or "believe entirely" in Protestantism or Catholicism only; Chinese folk religionists are those who "believe more" or "believe entirely" in Taoism or folk religions only; general polytheists are defined to be those who "believe more" or "believe entirely" in all religious options; Muslims are the sampled cases who "believe more" or "believe entirely" in Islam exclusively; agnostics are those who did not choose "more believing" or "entirely believing" for any religion, while choosing "entirely disbelieving" for all religions further qualifies one as an atheist. We believe this newly designed measure of religious identifications is more desirable in light of the syncretic characteristics of Chinese citizens' religious life. Especially, it serves to

Table 1 The criteria for measuring (non)religious affiliations by beliefs in six major religious traditions

Choosing "more believe" or "entirely believe" in:	Buddhism	Taoism	Folk religions	Protestantism	Catholicism	Islam
Buddhist	Yes	No	No	No	No	No
Folk religionist	No	Yes	Yes	No	No	No
Christian	No	No	No	Yes	Yes	No
Muslim	No	No	No	No	No	Yes
Polytheist[a]	Yes	Yes	Yes	Yes	Yes	Yes
Agnostic	No	No	No	No	No	No
Atheist[b]	No	No	No	No	No	No

[a]Choosing at least three. [b]atheists are distinguished from agnostics by opting for "entirely disbelieve" in all religious traditions while agnostics chose "more disbelieve" for at least one tradition

better capture the more nuances of the religious nones, as well as people with multiple identities (Hu and Leamaster 2015).

Analytical Strategies

Cross tabulating the religious identities before and after immigration, we constructed a 6×6 cross table. Then, we adopted the log linear modeling with the quasi-symmetry specification described by Sobel, Hout and Duncan (SHD) (1985) to separate the structural and the exchange advantages.

Because total equal exchanges in every cell of the cross table lead to marginal homogeneity, it was traditionally challenging to separate structural shifts from local exchange effects (Mooijaart 1998). For example, when 100 Muslims become Christians, but 200 Christians convert to Muslim, we can hardly conclude there is an Islamic advantage without considering their relative sizes and mutual exchange with other religions. Denoting the cell frequency of the two-way cross table to be $F_{ij} = \alpha_j \beta_i \beta_j \gamma_{ij} \delta_{ij}$, the SHD model has the advantage of decomposing the structural and exchange effects by constraining row and column effects (that is, β_i and β_j where i = j) to be equal, and symmetric pairs (that is, δ_{ij} and δji where i $\neq$ j) to be equal, so that the model can be identifiable, where α_j represents the structural shift tendency for the jth category, fraction α_j/α_i is the relative structural advantage of the jth category over the ith category, and δ_{ij} represents the likelihood of choosing a different category relative to inheriting one's prior category *after* accounting for the marginal heterogeneity (hence the exchange advantage). γ_{ij} is an indicator, where it is valued unity if the quasi-symmetric assumption holds (that is the case for our study).

This SHD model specification is widely applied to study mobility issues in income or occupations (Goldthorpe 2005), but rarely utilized for religious assimilation and conversion—another archetypical socially and spiritually mobile event. Statistical estimation of the SHD modeling was implemented in Lem (Vermunt 1997).

Results

In order to determine the tenability of the model assumption that the entire mobility is decomposed into structural shift along the marginal and exchanges between pairs, we follow the conventional practices and first compare the quasi-symmetry model against the other configurations of the log-linear models. The comparative goodness of fit indices in Table 2 show that the quasi-symmetry model has the lowest discrepancy between actual and estimated statistics, and the estimates the Chi square, G-square, log-likelihood, and dissimilarity index all support the goodness of fit. Only the quasi-independence model is minimally better according to BIC, which severely penalizes the larger number of parameters in the quasi-symmetry model. However, the quasi-independence model, which assumes all non-diagonal cells to be independently distributed, has many misfit and a much higher Chi square value. Altogether, we conclude that the quasi-symmetry model has the best fit to the data among all candidate models, and its specification can best explain the patterns of religious changes in our sample.

Table 3 presents the religious mobility two-way table with columns as pre-immigration religious identities, and rows as post-immigration religious identities. The first panel of each cell contains the actual counts of people, the second panel has the estimated counts from the model, and the third panel has z-scores of the difference between actual and estimated counts. A small value of 0.1 was added to 0 counts to avoid inflating Pearson's Chi square (von Eye and Mun 2013). The quasi-symmetry model was able to generate estimates that almost perfectly match the actual counts, and none of the z-scores is larger than the threshold of 1.96. In fact, all z-scores are smaller than unity.

If the mobility table can be closely replicated under the specification of quasi-symmetry, as shown by Sobel et al. (1985), the pattern that Chinese overseas choose

Table 2 Comparative goodness of fit of different log-linear models

	X^2	G^2	Log-likelihood	d.f.	Likelihood test *p* value[a]	BIC	AIC	Dissimilarity index
Null	6525.59	2538.94	− 2906	48	–	5812	5812	0.7
R only	2795.43	1856.19	− 2565	42	0.000	5169	5142	0.67
C only	2886	1967	− 2594	42	0.000	5228	5201	0.67
Independence	2311.39	1232.41	− 2253	36	0.000	4585	4530	0.55
Quasi-independence	51.53	50.81	− 1662	29	0.000	3450	3362	0.04
Symmetry	41.25	46.99	− 1660	20	0.911	3506	3376	0.05
Quasi-symmetry	8.22	8.2	− 1641	15	0.001	3500	3348	0.01
Saturated	0	0	− 1637	0	–	3591	3369	0

[a]The likelihood ratio test comparing the current model with its previous one. The likelihood ratio test statistic approximates a Chi square distribution, thus *p* values are derived from the distribution function of Chi square

Table 3 Cross-classification of actual counts and estimated counts with z-scores of residuals for the Quasi-symmetry log-linear model

	Buddhism	Folk	Christian	Agnostic	Atheist	Polytheist	Islam
Buddhism	55	0.1	6	6	5	17	0.1
	55	0.1	5.7	8.6	2.9	15.7	0.2
	0	0.01	0.12	− 0.89	0.66	0.32	− 0.18
Folk	0.1	8	1	1	1	1	0.1
	0.1	8	1	0.9	0.8	1.2	0.2
	− 0.01	0	− 0.03	0.13	0.23	− 0.19	− 0.19
Christian	0.1	0.1	28	3	2	1	0.1
	0.4	0.1	28	2.8	2.1	0.9	0.1
	− 0.47	0.14	0	0.12	− 0.01	0.13	0.11
Agnostic	5	0.1	11	122	9	2	1
	2.4	0.2	11	122	11	2.5	0.8
	1.69	− 0.26	− 0.06	0	− 0.61	− 0.32	0.29
Atheist	0.1	0.1	13	19	281	3	0.1
	1.2	0.3	12.9	17	281	3.7	0.1
	− 1	− 0.37	0.03	0.49	0	− 0.38	− 0.14
Polytheist	10	1	9	7	7	108	0.1
	11	0.8	9	6.5	6.3	108	0.2
	− 0.38	0.24	− 0.04	0.2	0.29	0	− 0.17
Islam	0.1	0.1	0.1	0.1	0.1	0.1	3
	0.02	0.02	0.1	0.3	0.05	0.03	3
	0.51	0.55	− 0.08	− 0.42	0.25	0.4	0

$z = \left(m_{ij} - \hat{m}_{ij}\right)/\sqrt{\hat{m}_{ij}}$

a different religion emerges out of only two mechanisms: structural shift toward some religions and exchange between pairs of religions. The strength of these two mechanisms is shown in Table 4. Overall, when setting Atheism as the reference, Christianity is the only religious group that has seen a structural advantage $\left(\log(\hat{\alpha}_j) = 6.16\right)$ with a z-value larger than 1.96. The alpha for Buddhism is also marginally significant with a z-value of 1.90, indicating a strong structural shift taking people away from Buddhism $\left(\log\left(\hat{\alpha}_j\right) = 0.43\right)$. Other religious groups do not show a significant structural shift.

The cells below the diagonal represents the fraction of α_j/α_i, denoting the relative structural advantage of the jth religion (row) over the ith religion (column). For example, this fraction is 6.16 for Christianity over Atheism, but it is 16.67 (= 1/0.06) for Christianity over folk religion. The structural advantage of Christianity over Islam is only estimated to be 1.86, making Islam the second strongest religion in retaining and attracting members. Folk religion and Buddhism have very little structural advantage. In fact, they have suffered a structural disadvantage: Buddhism is only slightly stronger than folk religion (1.13) while weaker than all

Table 4 Model parameters for structural shift, relative structural advantages, and exchange effect

$\log(\hat{\alpha}_j)$	0.43 (0.22) Buddhism	0.38 (0.42) Folk	6.16 (1.61) Christian	1.54 (1.16) Agnostic	1 Atheist	0.59 (0.47) Polytheist	3.31 (4.52) Islam
Buddhism		< 0.01	0.04	0.06	0.02	0.17	< .01
		(− 0.004)	(< 0.001)	(0.01)	(0.002)	(0.02)	(< 0.001)
Folk	1.13		0.02	0.01	0.01	0.03	0.01
	(1.02, 1.19)		(0.005)	(0.003)	(0.002)	(0.007)	(0.001)
Christian	0.07	0.06		0.1	0.06	0.05	0.01
	(0.06, 0.07)	(0.06, 0.07)		(0.01)	(0.007)	(0.01)	(0.005)
Agnostic	0.28	0.25	4		0.07	0.04	0.03
	(0.27, 0.29)	(0.23, 0.28)	(3.86, 4.18)		(0.01)	(0.004)	(0.01)
Atheist	0.43	0.38	6.16	1.54		0.03	< 0.01
	(0.41, 0.44)	(0.36, 0.42)	(5.99, 6.34)	(1.51, 1.67)		(0.002)	(< 0.001)
Polytheist	0.72	0.64	10.44	2.61	1.69		< 0.01
	(0.69, 0.75)	(0.61, 0.71)	(9.92, 10.86)	(2.49, 2.68)	(1.63, 1.73)		(< 0.001)
Islam	0.13	0.11	1.86	0.47	0.3	0.18	
	(0.11, 0.15)	(0.10, 0.14)	(1.65, 2.11)	(0.41, 0.52)	(0.37, 0.34)	(0.16, 0.20)	

Exchange effect is $\hat{\delta}_{ij}$ (above diagonal), relative structural advantage is the fraction of $\hat{\alpha}_j/\hat{\alpha}_i$ (below diagonal). Confidence intervals in lower-diagonal parentheses by Fieller's theorem for fractions, standard errors in upper-diagonal parentheses

the others including polytheism. Atheism—defined as choosing "entirely disbelieve" in all religious categories—is situated interestingly in the middle: it has advantages over polytheism (1.69), folk religion (2.63 = 1/0.38), and Buddhism (2.32 = 1/0.43), but loses out to Christianity (0.16 = 1/6.16), agnostic (0.65 = 1/1.54), and Islam (0.30).

When structural shifts have been fixed, the remaining religious mobility must all come from the exchanges between some pairs of religions. The panel above the diagonal in Table 4 presents information about such exchange effects, which indicates how likely are the surveyed Chinese overseas students in each pair to mutually switch religion rather than sticking to their pre-immigration religions. If religious tenacity (inertia) is stronger, there would be much more people on the diagonal of the contingency table than off-diagonal cells. Unsurprisingly, all pairs are smaller than one, testifying to the fact that the respondents in the survey tend to keep their pre-immigration religion instead of converting to a different one. However, the exchange effects from some pairs are much greater than the other pairs, and they are significantly higher than zero. The highest exchange effect is found in the Buddhism-polytheism exchange (0.17), followed by the agnostic-

atheism exchange (0.07), Christian-atheism exchange (0.06), and Buddhism-agnostic exchange (0.06).

Overall, Christianity enjoys the strongest structural advantage among Chinese overseas students in the US, followed by Islam. Religious nones, i.e. agnostics and atheists, have moderate advantages, or to put it in another way, we have not seen particularly evident structural shift for them. Traditional Eastern religions, including generic polytheism, Buddhism, and Chinese folk religions, suffer from a structural disadvantage. In terms of exchange advantages, Buddhists tend to become polytheists or agnostics after immigration as compared to other religions, and vice versa. Agnostic people also tend to become atheists, and atheists tend to become agnostic or Christians. There is very limited chance of exchanging with other religions for Chinese folk religions and Islam.

Discussion

This study investigated religious mobility between pre- and post-immigration among Chinese overseas students in a public higher education institution, by decomposing mobility into two mutually complementary mechanisms: structural shifts and exchange effects. Christianity has shown the biggest structural advantage for this population, while Buddhism, Chinese folk religions, and general polytheism have respectively suffered from a disadvantaged structural shift. Although small in absolute size, the strength of a positive structural shift for Islam is second only to Christianity by preserving all its members from pre-immigration and attracting new members in post-immigration time. This finding bears more attention, because Islam, even in a Christian social setting, still shows considerable structural persistence and tenacity. Religious nones including atheists and agnostics have also had a smaller-scale structural advantage, but their overall sizes remain very stable when compared to other groups.

This pattern of religious mobility can be vividly compared with Chinese immigrants to North America of earlier generations. Although there were not many systematic studies within our examination quantifying these immigrants' religious switching patterns, several ethnographies can roughly depict a silhouette. Christianity is often the destination denomination for Chinese immigrants, with large waves of overseas Chinese leaving previous religions for Christianity, not only in Christian-dominated societies but also Muslim-majority countries such as Malaysia, Indonesia, and some the Gulf countries (Cheong and Tong 2017; Wang 2016). Given the minuscule size of Islam in East Asia, the religions which most of these Christian converts left behind could likely only have two sources: local eastern religions such as Buddhism and folk religions, or atheism/non-religions. Some qualitative studies showed that Christian converts often come from a Buddhism family (Lien and Carnes 2004), while others implied that more atheist Mainlanders are attracted to Christianity due to the relax of atheism education and its accompanying pluralism (Wang and Yang 2006; Yang 2005). This present study settles this disagreement by showing that atheism does not suffer from structural disadvantage, and thus is unlikely a major source of the religious switching to

Christianity in this population. Instead, most Christian converts do come from previous Buddhism or folk religious backgrounds.

Lastly, Islam has the second strongest structural advantage, despite small size of Muslims in the sample. Islam is largely an ethno-religion in China for ten minority ethnicities and an unrecognized existence of Han Muslim. The reification of the ten ethnicities into Islamic communities owing to the Stalinist ethnicization policy in China have elevated the significance of Islam to an encompassing social identity for them (Gladney 1998). Religious tenacity becomes stronger when religious identity is intertwined with ethnic identities (Chong 1998; Sherkat 2014), thus there is a structural advantage and net growth for Muslim Chinese students in the US. Altogether, these findings mirror the inter-generational religious mobility pattern within Mainland China where Christianity and Islam enjoy a structural growth while Buddhism suffers some losses (Leamaster and Hu 2014).

In addition to structural shifts, we have also found stronger exchange effects between Buddhism and polytheism, between atheism and agnostics, and between Christianity and atheism, respectively. Exchange between any Abrahamic religion and non-Abrahamic religion is weak at best. Using Christianity for instance, it has both lost and received members to and from agnostics and atheism, while Buddhism exchanges more intensively with polytheism, indicating an equal and random flow within the dyad of religions. Scholars since Weber have reasonably suspected and often found that religions of similar worldviews tend to feature believer exchanges (Babchuk and Whitt 1990; Sherkat 2014). Our evidence supports the affinity statement that Buddhism, folk religions and syncretic beliefs are culturally close and often overlap in practice (Overmyer 1976; Yang and Hu 2012). It is neither surprising that atheists and agnostics exchange members given their shorter distance on a religious continuum. However, not many have anticipated a moderate exchange effect between Christianity and atheism. The concept of liminal religious nones explains the affinity between atheism and Christianity from an angle of survey methodology: in America, a great number of religious nones switch back and forth in their report of religious identities depending on the contextual question of what religious identity means for them (Lim et al. 2010). Hence, the boundary between nonreligion and Christianity may be even thinner than that between distinct religious traditions. This interesting exchange between Christianity and atheism may also extend the theological contemplation of Weber, Hegel, and Löwith that Protestantism is a catalyst of the disenchanted *weltanschauung* (contrasting the mythical Catholic views on, for example, the place of Saints and the meaning of Eucharist) and atheism is a dialectic expression of Reformed Christianity (Hodgson 2005; Löwith 1949; Weber 2002/1905).

Acknowledgements Funding was provided by John Templeton Foundation (Grant No. 56480).

Appendix

See Table 5.

Table 5 The representativeness of sample by programs and grades

	In the sample			In the population			In the US[a]
	Undergraduate (%)	Graduate (%)	Total (%)	Undergraduate (%)	Graduate (%)	Total (%)	Total
Agriculture	2.7	3.5	6	2.9	2.2	5	Unknown
Education	0.7	1.6	2	0.3	0.7	1	1.7%
Engineering	18.4	21.5	40	19.2	14	35	18.6%
Human & health science	3.8	1.8	6	5.1	1.2	7	1.3%
Liberal arts	6.3	3.5	10	7.3	1.4	9	8.5%
Pharmacy	0.4	0.5	1	0.2	0.3	1	Unknown
Science	8.7	7.7	16	12.4	6.2	19	22.8%
Polytech	3.8	2.6	6	3.6	1.6	5	Unknown
Veterinary	0	0.3	0.3	0	0.01	0.2	Unknown
Business	9.5	2.7	12	14.5	2.5	18	24.3%
Total	54	46	100	70	30	100	

[a]Information on fields of study by national origin was obtained from: http://www.iie.org/Research-and-Publications/Open-Doors/Data/International-Students/Fields-of-Study-Place-of-Origin/2015-16

References

Babchuk, N., and H.P. Whitt. 1990. R-order and religious switching. *Journal for the Scientific Study of Religion* 29(2): 246–254. https://doi.org/10.2307/1387432.

Becker, P.E., and P.H. Dhingra. 2001. Religious involvement and volunteering: Implications for civil society. *Sociology of Religion* 62(3): 315–335. https://doi.org/10.2307/3712353.

Berger, J., and J.L. Snell. 1957. On the concept of equal exchange. *Behavioral Science* 2(2): 111–118.

Brenner, P.S. 2016. Cross-national trends in religious service attendance. *Public Opinion Quarterly* 80(2): 563–583.

Cadge, W., and E. Howard Ecklund. 2007. Immigration and religion. *Annual Review of Sociology* 33:359–379.

Carnes, T., and F. Yang. 2004. *Asian American religions: The making and remaking of borders and boundaries*. New York: NYU Press.

Casanova, J. 2001. Religion, the new millennium, and globalization: 2000 Presidential Address. *Sociology of Religion* 62(4): 415–441.

Cheong, W.K., and J.K. Tong. 2017. The localization of charismatic Christianity among the Chinese in Malaysia: A study of Full Gospel Tabernacle. In *Global Chinese Pentecostal and charismatic Christianity*, ed. F. Yang, J.K. Tong, and A. Anderson, 309. Boston, MA: Brill.

Chong, K.H. 1998. What it means to be Christian: The role of religion in the construction of ethnic identity and boundary among second-generation Korean Americans. *Sociology of Religion* 59(3): 259–286.

Edgell, P., J. Gerteis, and D. Hartmann. 2006. Atheists as "Other": Moral boundaries and cultural membership in American society. *American Sociological Review* 71(2): 211–234. https://doi.org/10.1177/000312240607100203.

Foner, N., and R. Alba. 2008. Immigrant religion in the US and Western Europe: Bridge or barrier to inclusion? *International Migration Review* 42(2): 360–392. https://doi.org/10.1111/j.1747-7379.2008.00128.x.

Gladney, D.C. 1998. *Ethnic identity in China: The making of a Muslim minority nationality*. Fort Worth, TX: Harcourt Brace College Publishers.

Goldthorpe, J.H. 2005. Progress in sociology: The case of social mobility research. In *Analyzing inequality: Life chances and social mobility in comparative perspective*, ed. S. Svallfors, 56–82. Stanford, CA: Stanford University Press.

Hall, B. 2006. Social and cultural contexts in conversion to Christianity among Chinese American college students. *Sociology of Religion* 67(2): 131–147.

Hodgson, P.C. 2005. *Hegel and Christian theology: A reading of the lectures on the philosophy of religion*. Oxford: Oxford University Press.

Hu, A., and R.J. Leamaster. 2015. Intergenerational religious mobility in contemporary China. *Journal for the Scientific Study of Religion* 54(1): 79–99. https://doi.org/10.1111/jssr.12168.

Leamaster, R.J., and A. Hu. 2014. Popular Buddhists: The relationship between popular religious involvement and Buddhist identity in contemporary China. *Sociology of Religion* 75(2): 234–259. https://doi.org/10.1093/socrel/srt057.

Lien, P.-T., and T. Carnes. 2004. The religious demography of Asian American boundary crossing. In *Asian American religions: The making and remaking of borders and boundaries*, ed. T. Carnes and F. Yang, 38–51. New York: NYU Press.

Lim, C., C.A. MacGregor, and R.D. Putnam. 2010. Secular and liminal: Discovering heterogeneity among religious nones. *Journal for the Scientific Study of Religion* 49(4): 596–618. https://doi.org/10.1111/j.1468-5906.2010.01533.x.

Liu, H. 2005. New migrants and the revival of overseas Chinese nationalism. *Journal of Contemporary China* 14(43): 291–316. https://doi.org/10.1080/10670560500065611.

Löwith, K. 1949. *Meaning in history: The theological implications of the philosophy of history*. Chicago, IL: University of Chicago Press.

Mooijaart, A. 1998. Log-linear and Markov modeling of categorical longitudinal data. In *Longitudinal data analysis: Designs, models and methods*, ed. C.C. Bijleveld, 318–370. Thousand Oaks, CA: Sage.

Overmyer, D.L. 1976. *Folk Buddhist religion*. Cambridge: Harvard University Press.

Persson, G. 1977. Pure mobility and pure exchange mobility. *Quality & Quantity* 11(1): 73–82.

Pew Research Center. (2013). *The Rise of Asian Americans*. Retrieved from Washington, DC. http://www.pewsocialtrends.org/2012/06/19/the-rise-of-asian-americans/.

Portes, A., and M. Zhou. 1993. The new second generation: Segmented assimilation and its variants. *Annals of the American Academy of Political and Social Science* 530: 74–96.

Putnam, R.D. 2001. *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.

Robinson, R., and S. Clarke. 2003. *Religious conversion in India: Modes, motivations, and meanings*. Oxford: Oxford University Press.

Sherkat, D.E. 2014. *Changing faith: The dynamics and consequences of Americans' shifting religious identities*. New York: NYU Press.

Sobel, M.E., M. Hout, and O.D. Duncan. 1985. Exchange, structure, and symmetry in occupational mobility. *American Journal of Sociology* 91: 359–372.

Stark, R., and R. Finke. 2000. *Acts of faith: Explaining the human side of religion*. Berkeley: University of California Press.

Stark, R., and L.R. Iannaccone. 1994. A supply-side reinterpretation of the "Secularization" of Europe. *Journal for the Scientific Study of Religion* 33(3): 230–252. https://doi.org/10.2307/1386688.

Van der Veer, P. 1996. *Conversion to modernities: The globalization of Christianity*. New York: Routledge.

Vermunt, J.K. 1997. *Department of methodology and statistics*. Tilburg: Tilburg University.

Voas, D. 2003. Intermarriage and the demography of secularization. *The British journal of sociology* 54(1): 83–108. https://doi.org/10.1080/0007131032000045914.

Voas, D., and M. Chaves. 2016. Is the United States a counterexample to the secularization thesis? *American Journal of Sociology* 121(5): 1517–1556.

von Eye, A., and E.Y. Mun. 2013. *Log-linear modeling: Concepts, interpretation, and application*. Hoboken, NJ: Wiley.

Wang, Y. (2016). Soul-searching among Chinese expatriates in Dubai: Reconsidering the contextual factors in religious conversion. In *Paper presented at the center on religion and Chinese society*. West Lafayette, IN.

Wang, Y., and F. Yang. 2006. More than evangelical and ethnic: The ecological factor in Chinese conversion to Christianity in the United States. *Sociology of Religion* 67(2): 179–192.

Weber, M. (2002/1905). *The Protestant ethic and the spirit of capitalism: And other writings*. Middlesex: Penguin.

Wuthnow, R. 2002. Religious involvement and status-bridging social capital. *Journal for the Scientific Study of Religion* 41(4): 669–684.

Yan, K., and D.C. Berliner. 2016. The unique features of Chinese international students in the United States. In *Spotlight on China: Chinese education in the globalized world*, eds. S. Guo and Y. Guo, 129–150. Rotterdam: Sense Publishers.

Yang, C.K. 1961. *Religion in Chinese society: A study of contemporary social functions of religion and some of their historical factors*. Berkeley, CA: University of California Press.

Yang, F. 2005. Lost in the market, saved at McDonald's: Conversion to Christianity in urban China. *Journal for the Scientific Study of Religion* 44(4): 423–441.

Yang, F. 2006. The red, black, and gray markets of religion in China. *The Sociological Quarterly* 47(1): 93–122.

Yang, F. 2000. *Chinese Christians in America: Conversion, assimilation, and adhesive identities*. College Station, PA: Penn State Press.

Yang, F., and A. Hu. 2012. Mapping Chinese folk religion in mainland China and Taiwan. *Journal for the Scientific Study of Religion* 51(3): 505–521.

Yang, X. Y., & Yang, F. (in press). Estimating religious populations with the network scale-up method: a practical alternative to self-report. *Journal for the Scientific Study of Religion*.

Zhou, M. 1997. Segmented assimilation: Issues, controversies, and recent research on the new second generation. *The International Migration Review* 31(4): 975–1008. https://doi.org/10.2307/2547421.