Missionaries and the Birth of International Development

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Abstract

The United States is the world's leading provider of foreign aid. Is this driven by humanitarian motives or strategic interests? Using the travel routes of Student Volunteer Movement recruiters as an instrument, I document that exposure to American Protestant missionaries played a crucial role in boosting congressional support for major foreign aid bills that initiated the modern era of U.S. development assistance. Missionary influence led church denominations to advocate for aid in congressional testimony and encouraged policymakers to frame it in terms of human dignity rather than strategic interests. Beyond advocacy in Congress, missionaries became key experts on non-Western socities, producing social science research and advising the U.S. government. In the long run, missionary influence contributed to a sustained commitment to global development, reflected in increased Peace Corps participation.

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1. Introduction

U.S. foreign policy has been a major force in shaping the global economy, marked by a recurring tension between isolationism and internationalism. Among various foreign policies, foreign aid could serve as a bellwether of a nation's commitment to cooperative internationalism. During the second half of the 20th century, the United States emerged as the world's leading provider of foreign aid in absolute terms (Qian, 2015), making a significant contribution to improved living standards in low-income countries (Bendavid *et al.*, 2012; Galiani *et al.*, 2017; Kremer *et al.*, 2021; Pritchett, 2022; Shastry & Tortorice, 2025).

The post–World War II era witnessed a surge in international cooperation for global development, driven by the belief that wealthy nations should support the development of poorer countries (Myrdal, 1970; Sen, 1999; Duflo & Banerjee, 2011). However, this support has often proven fragile. Limited incentives exist for sustaining long-term commitments when aid recipients lie beyond national borders (Enke, 2024). This lack of interest poses a major challenge, as preferences for international development in donor countries could play a crucial role in foreign aid allocation (Mosley, 1985; Lumsdaine, 1993; Chong & Gradstein, 2008; Collier, 2008; Milner & Tingley, 2010; Enke *et al.*, 2023). This fragility was starkly illustrated in 2025 when the Trump administration sought to dismantle the U.S. Agency for International Development, highlighting the diffuse and vulnerable nature of its constituency.

There are two contrasting views on the nature of foreign aid. One perspective contends that foreign aid functions merely as a political bribe—a tool used to advance geopolitical interests rather than to address humanitarian needs (Morgenthau, 1962). If aid is driven solely by strategic objectives, its moral justification and long-term viability become questionable. On the other hand, the humanitarian view holds that foreign aid embodies a commitment to poverty alleviation, aiming to promote development regardless of immediate political gain (Lumsdaine, 1993). While both perspectives may capture important facets of a complex reality, the empirical support for the latter view has remained largely absent in existing research (Alesina & Dollar, 2000; Qian, 2015).

This paper addresses this gap by presenting a novel evidence to the debate: the role of Protestant missionaries in shaping American attitudes toward foreign aid. I aim to show that the missionaries raised awareness about global poverty, ultimately contributing to congressional support for landmark foreign aid legislation in the United States. Protestant foreign missions in early twentieth-century America offer a compelling setting to explore how foreign policy preferences are shaped and translate into policy outcomes. At a time

when the United States remained relatively isolated from non-European nations, missionaries were among the first Americans to establish sustained contact with distant cultures, well before diplomats or commercial representatives. This early exposure to communities vastly different from their own broadened missionaries' worldview, fostering a more globalist perspective that motivated them to engage in international development. Their influence extended far beyond religious circles, as they engaged in public speeches, publications, and advocacy in the media and Congress, shaping the foreign policy preferences of many Americans (Brown, 1907; Hocking, 1932; Gallagher, 1946; Gold, 2002; Bays & Widmer, 2009; Hollinger, 2018).

Quantifying the impact of exposure to missionaries on support for foreign aid is empirically challenging. To investigate this link, I compile a novel dataset using archival records from the Student Volunteer Movement (SVM, 1886–1964), which represented over 75 percent of all American missionaries during this period (Hodges, 2017, p. 48). This dataset includes biographical records of 12,265 missionaries and 24,841 runner-up applicants from various Protestant denominations.

Based upon this newly digitized data, I construct a shift-share variable, where the "shift" measures the share of missionaries per denomination and the "share" measures the proportion of that denomination's members in each congressional district. Then I examine its effect on landmark congressional votes that established modern development assistance between 1948 and 1961.

The baseline empirical strategy generates variation in exposure to missionaries across denominations and regions based upon the list of colleges visited by travel secretaries for the Student Volunteer Movement in 1886-87. These secretaries played a crucial role in missionary recruitment during the movement's early phase. I construct an instrumental variable by measuring exposure to travel secretaries at the denominational level. This variable is created by counting the number of church members from each denomination within the counties that were visited by the travel secretaries. This approach captures a channel through which local interactions of a church member diffuse nationally through church denominations. In the 1880s, the primary motivation for foreign missions was urgent religious conversion, rather than developmental projects like building schools or hospitals, which emerged only after prolonged engagement with developing countries (Hollinger, 2018, p.9). This initial religious motivation is arguably orthogonal to future support for foreign aid. Nevertheless, several identification challenges warrant careful consideration. First, recruiters might have selectively targeted denominations more receptive to foreign mission opportunities. Second, the proximity to denominational colleges could have influenced

outcomes through channels other than exposure to travel secretaries. Third, while early missionaries may not have been explicitly motivated by development goals, a general interest in foreign countries - distinct from international development concerns - might have affected both missionary activities and support for foreign aid.

I validate this instrumental variable strategy in several steps. First, the proposed instrument captures exposure to travel secretaries at the denominational level, excluding denominations directly affiliated with the colleges visited by the secretaries. The exclusion of the directly targeted denominations allows us to capture only the unintended, indirect exposure. Second, to address concerns that the effect is driven by proximity to denominational colleges, I control for denominational exposure from counties with Young Men's Christian Association (YMCA) chapters, the primary determinant of visits by travel secretaries. Third, I provide evidence that the proposed instrument is not associated with increased interest in non-European countries before the SVM, as indicated by the lack of a preexisting trend in the birth of authors writing about non-European regions. Fourth, the instrument is not associated with congressional support for isolationist foreign policies, such as the Chinese Exclusion Act (1882) or the McKinley Tariff (1890).

Using this instrumental variable approach, I find that congressmen representing denominations with greater exposure to missionaries were more likely to support major foreign aid legislation that established the modern development assistance. The effects are economically significant: a 10 percent decrease in the total number of missionaries reduces the probability of a pro-foreign aid vote by 8 percentage points.

The baseline identification strategy may not completely be considered exogenous if travel secretaries considered the broader denominational composition around their destination colleges. To address this concern, I also adopt two complementary approaches. First, I leverage timing variation in exposure to the YMCA. Denominational exposure to YMCA chapters can be split into distinct time periods based on the establishment dates of YMCA chapters in different counties. I find that denominational exposure to the YMCA prior to 1886 (when the Student Volunteer Movement began) predicted larger numbers of missionaries and greater foreign aid support. In contrast, YMCA exposure after 1886 showed no such effects. Given that the exact timing of the Student Volunteer Movement was unpredictable even to its organizers, this temporal variation within a narrow window provides further reassurance that the estimated effect is driven by the push factor from the travel secretaries, rather than by pre-existing differences in global interests.

A second alternative strategy exploits the changes in congressional district boundaries, which arise due to shifts in population and evolving political incentives. Although redis-

tricting is designed to balance representation and is driven by demographic changes and political maneuvering, foreign aid is not a primary concern in this process. This suggests that the changes in district boundaries are largely exogenous with respect to foreign aid support, while still producing shifts in the denominational composition of each district. By leveraging this exogenous variation, I can further identify the causal effect of exposure to travel secretaries on higher congressional support for foreign aid.

To shed light on the causes of these effects, I examine congressional hearing records to further document the influence of missionaries. By the mid-1950s, foreign aid programs encountered increasing resistance. During congressional hearings on the Mutual Security Act, Congress invited religious organizations to gain a deeper understanding of electorates' preferences regarding foreign aid programs. I identify a list of denominations that advocated for foreign aid during these hearings. The results shows that denominations with higher missionary exposure were more likely to appear on this list. Moreover, I find that following this Congressional testimony, congressional representatives more exposed to missionaries began to incorporate moral universalism in their speeches. This finding aligns with evidence that the discourse surrounding foreign aid advocacy during the 1950s increasingly emphasized principles of moral universalism, defending foreign aid on the grounds of human dignity and equality of status rather than the threat of communism or strategic interests, in order to appeal to religious constituents (Turek, 2024). While previous studies have primarily focused on self-interest and material benefits in shaping foreign aid (Alesina & Dollar, 2000; Kuziemko & Werker, 2006; Faye & Niehaus, 2012), my findings highlight the role of moral preferences (Myrdal, 1970; Lumsdaine, 1993; Enke *et al.*, 2023).

I next turn to more granular, individual-level variation to trace the role of missionaries in generating knowledge about non-European countries. I demonstrate that missionaries played a crucial role in deepening understanding of these regions, providing insights that would otherwise have been unavailable. I combine individual archival records with bibliometric database analysis, comparing actual missionaries with a control group of candidates who volunteered but were not selected for service. The number of available slots to serve as missionaries was limited, and a key factor determining treatment assignment was religiosity rather than interest in foreign countries. Mission boards prioritized individuals with strong religious dedication over those primarily motivated by curiosity about foreign cultures. If selection had been based primarily on interest in foreign countries, estimating the exposure effect on foreign cultures, even in comparison to the runners-up, would be challenging. However, the primary selection criteria were religious background, which was unrelated to interest in foreign countries. A comparison of missionaries and runners-up, matched to

census data, shows that they shared many socioeconomic characteristics. This comparison reveals that missionary experience tripled the likelihood of individuals authoring works on foreign subjects compared to the control group. The results remained robust when controlling for county fixed effects or using inverse probability weighting estimates. The content of these publications was primarily related to social sciences rather than religious topics.

The knowledge brought back by missionaries had important policy implications. World War II and the subsequent waves of decolonization increased the demand for understanding non-European regions. In the mid-twentieth century, missionaries and their children gained prominence for their unique insights into non-European regions. Using a dataset measuring regional expertise during World War II (WWII), I show that the government valued missionary experience for understanding the Asia-Pacific theater. Further analysis based on additional data reveals that missionaries played a significant role in foreign intelligence, even compared with other prominent experts on foreign countries. These results indicate that missionaries held a unique position to influence understanding of foreign countries on the eve of the birth of international development.

Finally, as a long-term measure of preference for global development efforts, I investigate the effects on Peace Corps volunteers across counties between 1961 and 2000. I find that missionary exposure also predicts a higher number of Peace Corps volunteers, suggesting a shift from religious to secular forms of international development.

Related literature. This paper contributes to several strands of literature. First, this paper contributes to the literature on the determinants of foreign aid (Eisensee & Strömberg, 2007; Lumsdaine, 1993; Alesina & Dollar, 2000; Kuziemko & Werker, 2006; Faye & Niehaus, 2012; Nunn & Qian, 2014). While existing research focuses on patterns of foreign aid allocation between countries, there is limited evidence on how support for foreign aid is formed within donor countries, with only a handful of studies (Milner & Tingley, 2010; Paxton & Knack, 2012; Mueller, 2024; Kaufmann *et al.*, 2019; Queralt, 2023). I provide new evidence suggesting that the policy preferences of nonstate actors, which are arguably distinct from economic gains in donor countries, may play a significant role in foreign aid allocation.

Second, this paper adds to the growing body of work on the determinants of moral universalism, a concept that spans various policy issues (Tabellini, 2008; Graham *et al.*, 2009; Hruschka & Henrich, 2013; Henrich, 2020; Enke, 2020; Enke *et al.*, 2023; Figueroa & Fouka, 2023; Enke *et al.*, 2024). Previous research highlights determinants such as ancestral livelihood (Le Rossignol & Lowes, 2022), the effects of missionaries on developing countries

(Bergeron, 2019), the history of American westward expansion (Bazzi *et al.*, 2024), and market access (Henrich *et al.*, 2010; Enke, 2023; Posch & Raz, 2024). This paper presents evidence consistent with the view that intergroup contact shapes attitudes toward foreign countries. These findings also align with existing research that highlights the importance of moral dimensions in shaping policy preferences for foreign aid (Myrdal, 1970; Lumsdaine, 1993; Kertzer *et al.*, 2014; Enke *et al.*, 2023).

Third, it investigates the effects of intergroup contact on attitudes toward outgroup members (Allport, 1954; Boisjoly *et al.*, 2006; Bazzi *et al.*, 2019; Carrell *et al.*, 2019; Finseraas *et al.*, 2019; Indacochea, 2019; Scacco & Warren, 2018; Rao, 2019; Mousa, 2020; Alan *et al.*, 2021; Billings *et al.*, 2021; Dahl *et al.*, 2021; Lowe, 2021; Steinmayr, 2021; Bailey *et al.*, 2022; Corno *et al.*, 2022; Agte & Bernhardt, 2023; Bagues & Roth, 2023; Okunogbe, 2024; Bursztyn *et al.*, 2024). I examine whether extended intergroup contact—knowing that a member of one's own group has a positive relationship with outgroup members—can foster favorable attitudes toward the outgroup (Wright *et al.*, 1997; Miles & Crisp, 2014). Indirect contact through media can scale up more easily than direct contact can, promoting social integration even when direct intergroup interaction is limited (Marble *et al.*, 2021; Grady *et al.*, 2023; Siddique *et al.*, 2024). Foreign missions offered a distinctive channel for cross-cultural understanding in America. Missionaries working abroad engaged deeply with local cultures, often learning new languages to translate scriptures, teach, or provide medical care. This complemented domestic intergroup contact with immigrants, which was typically conducted in English and constrained by the segregated social structure of the early 20th century. Existing research on the effects of immigration on natives' attitudes presents contrasting findings. On one hand, increased exposure to immigrants can lead to more negative attitudes (Tabellini, 2020). On the other hand, it can also foster greater sympathy (Bursztyn *et al.*, 2024). My paper offers a potential explanation for these conflicting results by highlighting the role of 'network brokers'–individuals who serve as bridges between otherwise disconnected groups who may facilitate mutual understanding (Burt, 1992). This suggests that the effect of contact may vary depending on the presence of brokers.

This study also addresses the literature on the role of foreign missions in economic development (Woodberry, 2012; Bai & Kung, 2015; Wantchekon *et al.*, 2015; Cagé & Rueda, 2016; Waldinger, 2017; Valencia Caicedo, 2019; Becker & Won, 2021; Calvi *et al.*, 2022; Izumi *et al.*, 2023; Becker & Won, 2024; Brown, 2024; Sola, 2024). While previous research has focused on the developmental effects of foreign missions abroad, I examine their impact on missionaries themselves and how they shaped values and cultures in missionaries' home communities (Gallagher, 1946; Gold, 2002; Tyrrell, 2010; Hollinger, 2018; Turek, 2020;

Crawfurd, 2021; Berinsky *et al.*, 2023; Conroy-Krutz, 2024). This paper further contributes to the literature by moving beyond simple counts of missionary stations. It traces individual missionaries' travels and biographies in detail. Few studies take this individual-level approach (Becker & Won, 2024), which highlights the crucial role of individuals in shaping broader economic outcomes.

2. Background

2.1 Foreign missions and American understanding of non-European countries

The Student Volunteer Movement (1886-1964) was the largest missionary movement in American history, originating from a local YMCA conference in 1886 (Beahm, 1941; Ramsey, 1988). By 1920, it had attracted approximately 48,000 volunteers, with 12,000 ultimately serving abroad, representing about 75 percent of American missionaries overseas at that time (Hodges, 2017, p. 48).

Interactions on the ground with local communities gradually led many missionaries to prioritize educational and medical missions over religious conversion. While the indigenous population often showed indifference to Christianity, building schools and hospitals attracted more attention and approval from them (Ramsey, 1988, p.89). A joint report by several denominations involved in this movement reveals that many of these missionaries began shifting their focus from religious conversion to educational and social welfare efforts (Hocking, 1932). The growing numbers of missionaries were teachers, doctors, nurses, agricultural experts, architect, rather than pastors. Historical records show that exposure to diverse races and religions often led missionaries to gain a deeper understanding and respect for foreign cultures (Brown, 1907; Gallagher, 1946; Gold, 2002; Hollinger, 2018).

As the priorities evolved, many missionaries began to engage deeply with local development challenges, moving beyond their original religious goals. Some pursued advanced studies in fields related to these issues, further broadening their expertise. For instance, John Lossing Buck, an agricultural missionary in China, wrote a dissertation on the Chinese rural economy and went on to work as an agricultural economist for the UN Food and Agriculture Organization. These missionaries produced scholarly works on a wide range of topics including agricultural development, nursing practices, medicine, psychology, geography, international relations, and the histories of their host countries (Laubach, 1925; Higginbottom, 1926; Wilson, 1926; Earle, 1929; Buck, 1930; Cressey, 1930; Manchester, 1931; Wright, 1941; Landon, 1943; Haring, 1946; Wiser & Wiser, 1971).

World War II and the subsequent waves of decolonization positioned many missionaries as key authorities when the U.S. government began navigating global affairs. Missionaries were among the few experts on non-European regions, and their insights were highly valued, as demonstrated by their substantial contributions to the war effort. Before the Japanese attack on Pearl Harbor, the U.S. government had underestimated Japan's military capabilities and the likelihood of war. Stanley Hornbeck, a special adviser to the Secretary of State, believed as late as November 1941 that Japan would back down in response to a U.S. trade embargo (Wohlstetter, 1962, pp. 264-65). General Douglas MacArthur even suggested that the pilots involved in the attack must have been white mercenaries, doubting Japan's ability to execute such an operation (Andrew, 2018, p. 636).

In contrast, those with missionary connections in China or Japan recognized the growing threat of Japanese militarism and expressed concerns about potential conflict before WWII. Edwin Reischauer, a missionary's son and later a professor of Asian Studies, proposed a Japanese language training program in 1940, believing war with Japan was likely and the U.S. was unprepared (Japan Society of Boston, 2022). Ernest Price, a former missionary in China and political scientist, warned of conflict after observing Japan's puppet state in China (Price, 1935). Walter Judd, a former medical missionary in China and later a U.S. congressman, delivered 1,400 speeches across 46 states between 1938 and 1940, warning of the growing threat from Japan and the dangers of an isolationist foreign policy (Gao & Osburn Jr, 2016).

When the need arose for better understanding of Japan and the Asia-Pacific region, very few individuals in the US had relevant knowledge about these regions. It required understanding "the Communist Party of India and the puppet regime in Nanking, inflation in Burma and guerillas in the Philippines, trade routes in the Congo basin and rival cliques in the Japanese Army." (Katz, 1989) When the U.S. government assembled a small group of individuals with actual knowledge of these areas, many were missionaries or their children. They held key positions in intelligence agencies and the State Department (Reynolds, 2005; Packard, 2010; Hollinger, 2018; Price, 2016; Thomas, 2016; Sutton, 2019). Their knowledge and network was relevant even for people without direct connections with missionaries. John Fairbank, a prominent American historian of Chinese history, extensively relied on missionary networks during his research in China and later while working for the Office of Strategic Services (OSS) during World War II (Fairbank, 1983). Hollinger (2018, p.233) indicates that academics who had been missionaries or were raised as missionary children were among the leading authorities on non-Western countries until the mid-1960s.

2.2 Missionary influence on U.S. foreign aid

During the latter half of the twentieth century, the U.S. increased its spending on foreign aid. Although U.S. foreign aid as a share of GDP is not higher than that of many other advanced economies, the country remained the largest donor in absolute terms (Qian, 2015). Foreign aid reached its peak at 3 percent of U.S. GDP during the Marshall Plan era, and throughout subsequent decades of the Cold War, its share fluctuated between 1 percent and slightly below 0.5 percent (Ingram, 2024).

Foreign aid accounts for a significant portion of the budget in many developing countries. By the 1980s, net foreign aid had surpassed net foreign direct investment from multinational corporations as the primary financial flow from advanced countries to the developing world (Lumsdaine, 1993, p.105). In some recipient countries, foreign aid accounted for over 10 percent of GDP (World Bank, 2005).

Support for foreign aid in advanced economies, particularly in the post-World War II period, was rooted in both political and cultural factors. Lumsdaine (1993) argues that in Scandinavian countries, the labor unions' internationalist doctrine, which emphasized political equality, was closely linked to support for foreign aid. Meanwhile, in the United States, Christianity played a prominent role in shaping foreign aid, emphasizing values of compassion and charity. One purpose of this paper is to explain these characteristics as an endogenous outcome of the activities carried out by followers of the religion, rather than as inherent traits.

The U.S. foreign aid initiative was not entirely novel; by the time the Point Four Program was launched in 1949, American missionaries had long been active in low-income countries. Missionaries had established schools, hospitals, social service centers, and demonstration farms (Maddox, 1956; Curti, 1963; Bremner, 1988; Curtis, 2018; Turek, 2020).

Missionaries influenced public opinion in the U.S. through their extensive public outreach. Hundreds of missionaries who had served in China alone gave an estimated 30,000 speeches annually in colleges, churches, and community gatherings, reaching millions of Americans (Reed, 1983, p. 127). Their efforts sparked an interest in international humanitarian work. By 1920, about 5 percent of American college students were learning about foreign missions, even without intending to become missionaries (Ramsey, 1988, p. 71). Their influence extended beyond the church, shaping public opinion in the U.S. through their outreach efforts and engagement with broader society. Henry Luce, the son of Presbyterian missionaries in China and founder of Time magazine, was a leading voice advocating for U.S. global leadership through humanitarian aid in his famous essay "American Cen-

tury" (Luce, 1941). Similarly, Walter Judd, a former missionary and later a Republican congressman, became a key figure in promoting foreign aid (Gao & Osburn Jr, 2016; Turek, 2024).

The role of religious organizations in building support for foreign aid became more prominent by the mid-1950s. Critics of foreign aid argued that it wasted taxpayers' money by giving assistance to undeserving recipients. On the other hand, proponents emphasized the moral duty to promote justice and freedom globally and to counter the legacy of colonialism, often invoking religious principles. Religious groups, representing different denominations, rallied public support for foreign aid by appealing to moral and ethical arguments during the congressional hearings on the Mutual Security Act. The rhetoric of congressmen defending foreign aid programs shows that they took into account the importance of religious constituents in garnering public backing for aid expansion (Turek, 2024; US Congress House Committee on Foreign Affairs, 1957).

3. Data

Student Volunteer Movement records. The building block of this paper's data is manually constructed from a historical archive housed at the Yale Divinity Library. The Student Volunteer Movement tracked all individuals who volunteered for missionary work. For this study, I have scanned and digitized this individual-level data, which is scattered across several repositories in the archive. The dataset includes personal information such as individual names, birth years, states and towns of residence, destination countries, and religious denominations, with varying levels of detail depending on available records. For more details on the digitization process, see Appendix C.1.

The digitization process yielded data on 12,265 missionaries and 24,841 volunteers who did not ultimately serve as missionaries. This dataset includes notable figures introduced in the background section, such as Henry W. Luce, Walter Judd, or John Lossing Buck.

Congressional voting. Data on roll-call voting by U.S. congressmen is sourced from VoteView (Poole & Rosenthal, 2000). I focus on the final roll call votes for five landmark pieces of legislation that expanded foreign aid: the Marshall Plan (1948), Point Four Program (1949), Mutual Security Act (1951), Funding for the International Development Association (1960)[1], and the Foreign Assistance Act (1961), which was followed by the establishment of the U.S. Agency for International Development (USAID). These key foreign

[1]The International Development Association offers additional funding for developing countries within the World Bank.

aid bills were identified through Lumsdaine (1993) and Stathis (2014), focusing on legislation that targeted broad groups of countries rather than specific nations. I exclude congressmen who did not participate in the voting from the analysis, as non-participation was most commonly due to travel and scheduling limitations rather than strategic considerations.

As placebo outcome variables, I also examine congressional votes on foreign policies related to support for isolationism, including the Chinese Exclusion Act (1882), the McKinley Tariff Act (1890), and the Immigration Act (1891).

Census of Religious Bodies. The number of church members of each Protestant denominations in each county is gathered from the Census of Religious Bodies (1890). This data is combined with a standard county level data from National Historical Geographic Information System (NHGIS). I link 47 Protestant denominations to the Census of Religious Bodies (1890) to create a variable that captures the county-level exposure to the missionaries. The 1890 census is regarded as being of exceptionally high quality (Finke, 1989).

Travel secretaries and YMCA chapters. To construct the instrumental variable, I use the routes of the travel secretaries of the Student Volunteer Movement in 1886 and 1887. The places that were visited by travel secretaries is available in the *Missionary Review of the World* magazine from February 1887 to June 1887. February 1887 edition includes the locations in the previous months. The denominational affiliations of colleges visited by travel secretaries were obtained from Xiong & Zhao (2023) and cross-referenced with the predominant denominations of college students recorded in the Student Volunteer Movement archives.

Travel secretaries set their routes in coordination with local YMCA chapters. I use the location of local YMCA chapters. To recover the location of all YMCA chapters in 1881, 1884, and 1889, I use *Intercollegian* magazine. Access to the microfilmed records of this magazine is available at the New York Public Library.

Denominational support for foreign aid in congressional testimony. I identify denominations supporting foreign aid programs from congressional hearings (US Congress House Committee on Foreign Affairs, 1957, p.196). Harper Sibley, Chairman of the Department of Church World Service of the National Council of Churches, testified at the hearings, emphasizing that denominations affiliated with the Church World Service had been actively involved in private aid distribution to developing nations. He reported that over 35 million individuals participated in these efforts, which resulted in $110 million in aid disbursements between 1946 and 1956.

Moral universalism in congressional speech. To measure moral universalism in congressional speech, I follow Enke (2020), who applied the Moral Foundations Dictionary from Graham *et al.* (2009) to the congressional speech data in Gentzkow *et al.* (2019). This measures moral universalism embedded in congressional speech based on the word frequency of each congressman's speech.

Moral universalism is characterized by the fair treatment of both ingroup and outgroup members, whereas moral particularism involves giving preferential treatment to ingroup members over outgroup members. Evidence suggests that moral universalism is linked to support for foreign aid and internationalist foreign policies (Kertzer *et al.*, 2014; Enke *et al.*, 2023), and expressions of moral universalism in congressional speech are associated with constituents' tendencies to direct charitable donations to more distant regions (Enke *et al.*, 2024).

Other geographic controls. To count the number of college students in each county, I use Xiong & Zhao (2023). To construct standard control variables at the county level, I use county level censuses from National Historical Geographic Information System (NHGIS) and individual level census data (Ruggles *et al.*, 2010). County market access data is taken from Donaldson & Hornbeck (2016) and Hornbeck & Rotemberg (2021). I use market access in 1900. Agricultural land suitability is from Ramankutty *et al.* (2002). I transform county-level data into congressional district-level data, following the popluation-weighting method by Ferrara *et al.* (2024).

Individual census. To measure the socioeconomic background of individual missionaries, I link data on missionaries and volunteers to the US individual level census data from 1900 and 1910. I follow Abramitzky *et al.* (2021) to implement an automated iterative linking procedure to the census data. Details on the linking process is explained in Appendix B.1.

Publication output. To estimate the effects on the understanding of foreign cultures, I use two distinct bibliometric datasets to measure knowledge output. First, I collect graduate dissertation data from ProQuest Dissertations Theses. I match individuals to this dataset using first name, middle initial, and last name. Second, I gather data from OpenAlex, which provides publication data on books, academic journals, and conference proceedings. For this dataset, I match on exact names for publications between 1880 and 1945. Based on dissertation or publication titles, I classify output as foreign-related if the title includes foreign country or region names. The list of keywords used for this classification is provided in Appendix C.3.

Regional expertise during WWII. I quantify the policy relevance of knowledge output

in the context of WWII, when the US government attempted to understand Asia-Pacific regions (Hollinger, 2018; Sutton, 2019).

I use two different data sources to compile a list of individuals involved in foreign intelligence during WWII. First, I use the roster of world specialists from the Ethnographic Board (Bennett, 1947), a branch of the Smithsonian Institution during WWII to serve as a clearinghouse for intelligence agencies in the US military and the State Department. The Ethnographic Board consulted various universities, academic societies, industries, and missionary churches to compile a roster of individuals knowledgeable about foreign countries, especially non-European areas. These rosters were sent to the Office of Strategic Services, the Board of Economic Warfare, the War Department, the Navy Department, the State Department, and many other intelligence agencies. I collect and digitize this data from the Smithsonian Institution Archives in Washington, DC.

Apart from the Smithsonian roster, I use the Office of Strategic Services (OSS) roster, which is available online.[2] A limitation of this record is that it primarily provides only the individual's name. In some instances, an army serial number is included, but this is limited to a subset of the individuals listed. Some individuals on the roster served in European countries or held roles unrelated to intelligence work, such as typists or drivers. While visiting the National Archives is theoretically an option, it is impractical due to the large number of individuals (23,980) included in this roster. For the purposes of this paper, I restrict my sample to those who can also be identified in the OpenAlex foreign publication data. The intersection of these two datasets provides a list of social scientists specializing in non-European areas within the OSS.

Wikipedia biographies. To gain a broader understanding of the role of missionaries in shaping knowledge about foreign countries, I use data from Wikipedia (Laouenan *et al.*, 2022). I first limit the sample to individuals who were active in the United States. I then narrow it down to those born between 1880 and 1925 and who passed away after 1940, focusing on those who might have contributed to intelligence services.

To determine the missionary background of each individual, I use an automated Python script to scan Wikipedia biographies for the term 'missionar*.' This process identifies individuals who were missionaries, missionary children, or who attended missionary schools during their childhood. I then manually verify each case to confirm whether the individual was indeed a missionary or a missionary child and to identify the country where they served or were born. For the outcome variable, I conduct a similar keyword search for terms such

[2] https://www.archives.gov/files/iwg/declassified-records/rg-226-oss/personnel-database.pdf

as 'Second World War,' 'World War II,' and keywords related to intelligence or language work. A comprehensive list of these keywords is provided in Appendix C.4.

Peace Corps volunteers. As a measure of support for international development in the long run, I use the number of Peace Corps volunteers in each county. Through a Freedom of Information Act request, I obtained data on 159,246 Peace Corps volunteers across US zip codes from 1961 to 2000. I map this data to the county level using ZIP code coordinates. 135,255 volunteers have information on zip code.

Geographical data. When there is a need to construct a crosswalk between town or city name to counties, I make use of Geographic Names Information System (GNIS) from United States Geological Survey and Berkes *et al.* (2023).

4. Effect on foreign aid

4.1 Conceptual framework

To motivate the empirical analysis, I outline a conceptual framework that explains the relationship between intergroup contact and foreign aid. This framework builds upon insights from existing models of social learning and moral universalism (Bardhan & Udry, 1999; Enke *et al.*, 2023). Mathematical derivations supporting this framework are presented in Appendix A. I discuss only the main insights here.

The central idea is that contact with foreign communities, facilitated by missionaries, fosters a shift in perspectives on foreign affairs due to a broader recognition of global needs. Public opinion on foreign policy is not solely driven by elites but also significantly shaped by social influences from peers in local communities (Kertzer & Zeitzoff, 2017). In my conceptual framework, the information and experiences shared by missionaries leads to a shift in public attitudes toward moral universalism and foreign aid.

Donors initially have less information about the welfare of foreign communities (the outgroup) compared to their own (the ingroup), which results in a preference for allocating aid domestically. However, as contact with the outgroup increases—either directly through personal experience or indirectly by observing others' interactions—donors' understanding of the outgroup's needs improves. This learning process, driven by Bayesian updating, gradually shifts preferences toward a more universalistic attitudes. Learning can spill over from a small group to broader society, with stronger effects if the quality of contact is high and if those with direct contact have close ties with those indirectly exposed.

Empirically, I present three findings to support this conceptual framework. First, re-

gions influenced by missionary exposure show increased support for foreign aid. Second, missionary-influenced areas see a rise in congressional speeches emphasizing moral universalism. Lastly, I document that missionaries were among the most significant producers of knowledge about outgroups, such as non-European societies, offering insights that influenced public policy.

4.2 Empirical framework

I estimate the impact of missionary exposure on the support for foreign aid based on the following equation:

$$aid_c = \beta Exposure_c + \mathbf{X}_\mathbf{c}'\gamma + \varepsilon_c \tag{1}$$

where c denotes a congressional district. The outcome variable aid_c is an indicator for pro-foreign aid vote. The vector $\mathbf{X_c}$ includes controls to adjust for confounding variables. The error term ε_c is clustered by state.

Missionaries traveled across states to deliver speeches at local churches, and their publications influenced college students studying missions in different states. To capture their influence through churches across space, I construct a shift-share variable to define $Exposure_c$ at the county or congressional district level. I count the number of missionaries from each denomination in the Student Volunteer Movement records and link each denomination to the 47 denominations in the Census of Religious Bodies (1890). $Exposure_c$ is defined as follows.

$$Exposure_c = \sum_o \left(\frac{POP_{co}}{POP_c}\right)\left(\frac{M_o}{POP_o}\right) \tag{2}$$

In this variable, o represents a Protestant denomination (e.g. Southern Baptist). POP_o indicates the number of church members from denomination o, and POP_{co} indicates the church members from denomination o in county c. M_o indicates the number of missionaries in denomination o. $Exposure_c$ captures the denominational exposure to missionaries $\left(\frac{M_o}{POP_o}\right)$ interacted with the share of denomination in each county $\left(\frac{POP_{co}}{POP_c}\right)$.

Control variables. $\mathbf{X_c}$ include other variables to rule out confounding factors. The control variables are classified into core controls, baseline YMCA exposure (which will be explained in the next subsection), religious controls, and socioeconomic controls. Core controls include the share of all 47 denominations involved in the Student Volunteer Movement, lati-

tude, longitude, and state fixed effects. Political controls include Congressmen's ideological conservatism (DW-NOMINATE first dimension) and Republican Party fixed effects. These controls help isolate constituents' preferences from those of the politicians (Mian *et al.*, 2010). Religious controls include the shares of missionaries, evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, and African Americans.

4.3 Instrumental variable strategy

The baseline specification faces a challenge: the allocation of missionaries across denominations (M_o) is not random. The number of missionaries from each denomination reflects not only the effect of exposure to foreign missions but also various other denominational characteristics. This self-selection into foreign missions could correlate with support for foreign aid through channels other than direct missionary exposure.

The direction of potential bias in OLS estimates of missionary exposure's effect on foreign aid support is unclear a priori. Upward bias might occur if more educated and internationally oriented denominations were more likely to host missionaries, as these denominations may have already been more supportive of foreign aid. Denominations with higher levels of education, wealth, or exposure to international trade might have both attracted missionaries and shown greater support for foreign aid, potentially leading to an overestimation of the missionaries' influence.

Conversely, a downward bias could emerge if missionary volunteers, often coming from theologically and politically conservative backgrounds, were inclined to oppose foreign aid programs that did not align with their religious goals. Many missionaries were frequently associated with conservative theological and political views (Ramsey, 1988, p.110), which may have led to skepticism toward secular humanitarian efforts that lacked a focus on spreading religious values. This skepticism could have been especially pronounced for aid directed at racially different countries or programs framed purely as internationalist initiatives, which some denominations might have perceived as conflicting with their priorities. Such attitudes could align with broader isolationist tendencies, reflecting reluctance toward foreign interventions and global engagement.

To isolate the effect of foreign missions from other denominational characteristics, I

construct a push factor based on the travel locations of initial promoters of the Student Volunteer Movement. Previous research indicates that travel secretaries who promoted the opportunities to serve as missionaries played a crucial role in the successful recruitment of missionaries (Beahm, 1941; Ramsey, 1988; Parker, 1994; Gold, 2002). Travel secretaries recruited students on campuses, with early volunteers inspiring future missionaries. Missionaries kept ties with colleges and seminaries to encourage more church members to join (Ramsey, 1988, p.p.55-66). During the 1880s and 1890s, before significant interracial contact occurred, the primary motivation for foreign missions was rapid religious conversion rather than establishing long-term institutions like schools or hospitals (Hollinger, 2018, p.9). The variation in exposure to travel secretaries in 1886-87 is plausibly exogenous to pre-existing interests in global development.

While the concept of global development may not have existed at the time, it is possible that these denominations were interested in foreign countries even without the presence of foreign missions. To further ensure that the instrumental variable is unrelated to pre-existing interest in global development, I exclude directly targeted denominations and focus on indirectly targeted ones when constructing the instrumental variable. This means that directly targeted denomination is excluded from the instrumental variable. For example, if the travel secretaries visited Princeton University, which is affiliated with the Northern Presbyterians, I assume that all other denominations in that county are exposed to the travel secretaries, except for the Northern Presbyterians. Travel secretaries primarily visited small, denominational colleges (Ramsey, 1988, p.12), with their choice of schools reflecting denominations they expected would be most receptive to missionary recruitment efforts. The proposed instrument measures the indirect influence on denominations located in the same area where other denominations received missionary visits. News of visits to denominational colleges spread locally through newspapers and peer interactions, sparking interest in missionary work among non-targeted denominations. This highlights spillover effects beyond the initially targeted groups.

More formally, the instrument is defined at the denomination level as follows:

$$Travel_o = \sum_{c \neq j(o)} POP_{co} \mathbf{1}[Travel_c] \tag{3}$$

where $Travel_c$ equals one for counties visited by the travel secretaries. $j(o)$ represents the county where denomination o has an institutional affiliation with the colleges visited by the travel secretaries. This variable is constructed with 47 denominations that participated in the Student Volunteer Movement to ensure the results are not driven by denominations

unrelated to foreign missions.

When the outcome variables are defined at the congressional district level, the denomination-level exposure to travel secretaries is mapped onto these geographical units using the following shift-share structure:

$$TravelExposure_c = \sum_o \left(\frac{POP_{co}}{POP_c}\right)\left(\frac{Travel_o}{POP_o}\right) \tag{4}$$

which is the interaction between the share of denomination members in each county and the share of missionaries in each denomination. This specification demonstrates that when a denomination in one area is exposed to travel secretaries, the influence can extend nationwide through denominational networks. These networks facilitate the spread of ideas and behaviors by promoting role models and shared norms via channels such as denominational conferences, church bulletins, and college networks. Similar to studies showing that local productivity spillovers can propagate nationwide through firm networks (Giroud *et al.*, 2024b,a), I assume that local exposure to travel secretaries at the denominational level influences church members in the same denomination far beyond the immediate region.

The identifying assumption of this instrumental variable approach is that denominations indirectly influenced by travel secretaries would support foreign aid only because of their exposure to foreign missions. A potential concern with this instrument is that certain denominations may have been inherently more likely to be exposed to travel secretaries than others. For instance, if travel secretaries visited counties with specific denominational compositions or socioeconomic characteristics associated with interest in foreign missions, the instrument could be endogenous even after excluding directly targeted denominations.

To tackle this issue, I adopt two different approaches. First, I construct a comparable measure using counties that had YMCA chapters but were not visited by travel secretaries and control for this measure of YMCA presence unrelated to travel secretaries. The travel routes were determined in coordination with local YMCA chapters (Beahm, 1941; Ramsey, 1988). The Student Volunteer Movement began in 1886-1887, following an event at YMCA conference for a Bible study in Mount Hermon, Massachusetts. A foreign mission recruiter, initially seeking only a few volunteers, gave a speech that unexpectedly inspired 100 attendees to volunteer, sparking a large-scale missionary movement (Kelleher, 1974, p.20). Figure 1 shows the counties visited by travel secretaries and those with local YMCA chapters between 1881 and 1890. Assuming that travel secretaries did not fully consider the denominational composition surrounding the colleges they visited to promote foreign missions, controlling for this factor could further reassure that the results are driven by

exposure to the travel secretaries rather than by proximity to denominational colleges.

To validate this assumption, Figure 2 examines counties visited by the travel secretaries. For ease of interpretation, all variables are standardized to have a mean of zero and a standard deviation of one. As explained in the subsection 4.6, a one standard deviation increase in the exposure to missionaries corresponds to a 40 percent change in the total number of missionaries across all denominations. It compares three groups of counties: those visited by travel secretaries ($Travel_c$), those with YMCA chapters but without visits, and the remaining counties without any of those. Diamonds represent the regression coefficients of county covariates on indicators for counties visited by travel secretaries, while hollow triangles represent coefficients of covariates on indicators for counties with YMCA chapters but without the visits.

Figure 2 shows that counties visited by travel secretaries had more college students, were more urbanized, and had more denominations involved in the Student Volunteer Movement. Yet, the figure also indicates that counties with YMCA chapters are generally comparable to counties visited by travel secretaries, except for differences in the share of manufacturing workers and college students. This is consistent with the travel secretaries' focus on recruiting college students for missionary work. To the extent that the instrumental variable excludes denominations affiliated with universities visited by the travel secretaries, the counties visited by travel secretaries and those with YMCA chapters are broadly comparable. Controls for the baseline exposure to YMCA chapters in counties that had YMCA chapters but were not visited by travel secretaries, will account for potential bias arising from proximity to YMCA chapters.

As a second approach to address the possibility that travel secretaries may have perfectly taken into account the local denominational composition in their destinations, I use temporal variations in exposure to YMCA chapters across denominations. I demonstrate that YMCA exposure just before the start of the Student Volunteer Movement influenced missionary recruitment and support for foreign aid, whereas additional exposure to the YMCA immediately after the initial travels had no effect on travel exposure or congressional support for foreign aid. As outlined in the background, the exact timing of the Student Volunteer Movement was unforeseeable (Kelleher, 1974, p.27). The timing variation in YMCA activities immediately before and after the movement's initiation in 1886 is plausibly exogenous. This approach provides additional evidence that exposure to travel secretaries, rather than just YMCA chapters, was the key channel of influence. It can be seen as analogous to a three-stage least squares method, as it pays more attention to the sources of exogenous variation in travel secretaries' visits. I discuss the results in Section

4.6.

Table 1 presents the first-stage regression results at the denominational level, with the number of missionaries per denomination as the dependent variable. The main independent independent variable is the exposure to travel secretaries, $Travel_o$. Column (1) demonstrates that a 1,000-person increase in the exposed population correlates with 9 additional missionaries per denomination. Columns (2) and (3) incorporate additional controls, including the number of members in each denomination, an indicator for evangelical denominations, and per capita church property. Column (4) includes the control for the baseline YMCA exposure, which is constructed from counties with YMCA chapters but without visits from travel secretaries.

4.4 Validity of the instrument

To assess the plausibility of the identifying assumption, I check whether interest in foreign countries had already been increasing in the exposed counties. There is a lack of comprehensive data capturing support for foreign aid prior to 1886. Private donations to foreign countries began in the early 1900s, largely driven by missionaries campaigning for famine relief (Curtis, 2018). While no perfect measure for foreign aid exists during pre-treatment period, Wikipedia biographies offer a potential proxy for gauging interest in foreign countries. I match each individual's name to the OpenAlex bibliometric database for 1860-1945, focusing on publication titles that include foreign region names (using keywords as described in Appendix C.3). For all Wikipedia authors who can be matched with publications on foreign subjects, I use birthplace data by counting the number of authors born in each U.S. county who wrote about foreign countries (Laouenan *et al.*, 2022). Then, I estimate the following equation:

$$authors_{ct} = \sum_{\tau \neq 1880} \gamma_\tau (TravelExposure_c \times D_\tau) + \sum_k \sum_{\tau \neq 1880} \theta_{k\tau} (X_{kc} \times D_\tau) + \delta_c + \delta_{st} + \varepsilon_{ct} \quad (5)$$

The outcome variable is the number of Wikipedia authors born in each county c and birth cohort t (1850–1940), whose names are matched to publications on non-European countries published between 1860 and 1960. This increase reflects not only missionaries but also others influenced by early exposure to missionaries. The treatment variable, $TravelExposure_c$, is interacted with decade fixed effects. I also control for baseline YMCA exposure and the share of SVM denominations in 1890, both interacted with decade fixed effects, as well as

county and state-year fixed effects.

Figure 3 illustrates that, while there is no discernible pre-existing trend in the number of authors born across different decades, a notable increase emerges for individuals born after 1900 in counties with higher exposure. As discussed in the previous section, historian John Fairbank relied extensively on missionaries as sources for his research on China (Fairbank, 1983), suggesting that this observed increase in authorship may be linked to such missionary exposure. These findings provide evidence against the notion of a pre-existing interest in non-European regions in areas more influenced by the travel secretaries.

4.5 Results: Legislative support for foreign aid

This section documents the impact of exposure to missionaries on U.S. foreign aid by analyzing five landmark pieces of legislation: the Marshall Plan (1948), the Point Four Program (1949), the Mutual Security Act (1951), U.S. participation in the International Development Association (1960), and the Foreign Assistance Act of 1961, which was followed by the establishment of the U.S. Agency for International Development (USAID).

In this section, the unit of analysis is the congressional district. I examine whether congressmen representing constituents exposed to missionaries are more likely to support major foreign aid bills in Congress. I stack five different congressional periods and then control for congress fixed effects (which is similar to time fixed effects) to account for differences in each foreign aid bill.

Table 2 documents the results. The measure of exposure to missionaries represents the number of missionaries per million church members in each denomination. In other words, it reflects the effect of sending 47 additional missionaries (one for each of the 47 denominations). The outcome variables are indicator variables equal to one hundred if a Congressman voted "Yea" on the passage of foreign aid. I find that representatives of constituents influenced by missionaries were more likely to vote "Yea" on major foreign aid bills. Column (1) and Column (2) present OLS estimates, where Column (2) controls for YMCA exposure, congressmen's ideology, Republican party fixed effects, religious controls, and state fixed effects. It indicates that sending one more missionary from each denomination is associated with a zero to six percentage point increase in the probability of voting for foreign aid, though this result is not statistically significant. In contrast, the coefficients in Column (3) from the IV estimate show that missionaries per million church members in each denomination leads to a 0.7 percentage point increase in the probability of voting for foreign aid. Controlling for baseline YMCA exposure in Column (4) increases the first-stage F-statistic

while reducing the estimated coefficients. Including additional predetermined covariates further decreases the coefficient magnitude.

I run separate regressions for each foreign aid bill in Figure B.6 and Figure B.7. The results indicate that exposure to missionaries also influenced support for the Marshall Plan, which was primarily targeted at European countries, with the exception of Turkey. This suggests that contact with missionaries fostered a more universalistic perspective, leading to broader support for foreign aid beyond America's immediate interests. Notable figures like Henry Luce and Walter Judd were strong advocates of the Marshall Plan, reflecting this shift toward a more inclusive, global outlook.

As placebo outcome variables, I also examined congressional votes on foreign policies related to isolationism, including the Chinese Exclusion Act (1882), the McKinley Tariff Act (1890), and the Immigration Act (1891). The results showed that exposure to missionaries was unrelated to support for isolationist foreign policies during the pre-treatment period. This result lends additional credence to the exclusion restriction.

Figure B.8 presents the results of heterogeneous effects based on the type of missionaries. The first two columns show regressions of pro-foreign aid votes on the number of missionaries who published materials about foreign countries. These results remain robust even after controlling for the total number of missionaries, suggesting that publishing activity is a significant predictor of support for foreign aid. This relationship will be further explored in the next section using individual-level data.

The subsequent columns break down the data by different continents and regions. Notably, the number of missionaries in the Middle East and South America is a particularly strong predictor of pro-foreign aid votes. However, since the distribution of missionaries across various regions was not randomized, I refrain from making causal claims. It is challenging to disentangle these effects from denominational influences, as certain denominations were more likely to send missionaries to specific regions.

Magnitude of the effect size. To focus on the most relevant counterfactual scenario, I hold shares constant and adjust only the shift in the shift-share variable—the number of missionaries—when calculating the counterfactual. While shift-share variables can change if shares vary, that is not the relevant counterfactual in this context, as the focus is on exposure to foreign missions.

Column (7) shows that missionaries per million increase probability of pro-foreign aid vote by 0.4 percentage points. Table 1 shows that the average number of missionaries per denomination is 207.55. This suggests that a 10 percent increase in the number of mission-

aries (equivalent to 20.755 missionaries per denomination) corresponds to an 8 percentage point increase in the probability of a pro-foreign aid vote.

To facilitate comparison with other studies in the literature, I calculate the magnitude in terms of a persuasion rate, defined as the share of congressional representatives who changed their votes in response to missionary exposure out of those who could have done so. The persuasion rate is expressed as

$$f = t\frac{dv}{de}\frac{1}{1-v_0} \tag{6}$$

where t is turnout, v is foreign aid support, e is missionary exposure, and v_0 represents the baseline foreign aid support level without missionary presence.

To determine v_0, I set each congressional district's missionary exposure to the lowest level found in the data based upon Column (7) in Table 2. Then I calculate the predicted outcomes and took their average. This calculation reveals $v_0 = 0.11$, suggesting that without any missionary influence, 11 percent of congresspeople would have supported foreign aid. Accordingly, $dv = 0.57(= 0.68 - 0.11)$. I set $de \approx 1$ because over 95 percent of the population in the 1950s identified as Christians (Newport, 2015), and over 99 percent of congressional districts had denominations participating in the Student Volunteer Movement. Over the sample period, 1,951 out of 2,138 congresspeople participated in the foreign aid vote, resulting in a turnout rate of 0.91. This yields a persuasion rate of 58 percent.

This persuasion rate of 58 percent exceeds the 12 percent effect of Fox News availability on Republican voting (DellaVigna & Kaplan, 2007) and the 28 percent impact of Father Coughlin's radio broadcasts on Roosevelt's vote share (Wang, 2021). It is similar 50 percent persuasion rate of exposure (as opposed to availability) to Fox News on Republican vote share (Martin & Yurukoglu, 2017). The persuasion rate falls below both the 66 percent rate found for anti-Putin TV stations' effect on opposition voting (Enikolopov *et al.*, 2011) and the 79 percent rate observed for evolution education in classrooms (Arold, 2024). These effects are higher than typical persuasion rates, which range from 6 to 20 percent (DellaVigna & Gentzkow, 2010).

4.5.1 OLS-IV gap

The gap between OLS and IV estimators suggests that, under the identifying assumption of this paper, the OLS estimator is downward biased. This suggests that initially conservative denominations, which were more likely to send missionaries due to their evangelical zeal,

may have been counterfactually less supportive of foreign aid without exposure to missionaries. The OLS estimate captures this initial negative correlation between missionary-sending propensity and support for foreign aid, leading to an underestimation of the effect of exposure. This interpretation is consistent with historical accounts that missionaries in the Student Volunteer Movement were theologically and socially conservative (Ramsey, 1988, p.110), and that contact with different groups led missionaries to reevaluate racial hierarchies in the United States (Gallagher, 1946; Gold, 2002; Hollinger, 2018).

I provide empirical evidence related to this point. If the downward bias in the OLS estimate is driven by religious conservatism, we should expect the OLS estimator to be more biased for more conservative denominations. To test this, I split both the treatment and instrumental variables into two categories based on whether a denomination is classified as evangelical or mainline Protestant (Steensland *et al.*, 2000). I classify 20 denominations as evangelical and group the remaining 27 as mainline Protestants.[3] Evangelical Protestants are considered to be more politically conservative.

I run separate regressions for exposure to evangelical missionaries and exposure to mainline missionaries. The results in Table 4 show that the OLS estimator for evangelical missionaries is negative, while the OLS estimator for mainline missionaries is positive. When estimating the IV regressions, the OLS-IV gap is smaller for mainline Protestants, suggesting that the IV addresses the bias in the OLS estimator related to religiosity, which may have otherwise underestimated the effects of foreign missions. The IV approach, by leveraging the exogenous variation in missionary activity due to YMCA exposure, isolates the effect of missionary experiences that are independent of the initial predispositions of these denominations.

These results align with Ramsey (1988, p.86), who discusses the tension between Anglo-Saxon ethnocentrism and the egalitarian belief that all humans deserve respect during the early period of foreign missions. Allport (1954, pp. 444-456) highlights the dual nature of religion: it can either reinforce ethnocentric prejudice and exclusivity or serve as a universalistic force being inclusive towards outgroup members. The findings of this paper suggest that interreligious contact may help foster the universalistic aspects of religion.

[3] I first identify the evangelical denominations and group the remaining ones into mainline denominations. For example, while the Universalist Church does not strictly fall into either the evangelical or mainline categories, I classify it with the mainline denominations, as it is generally considered to have a relatively liberal political inclination.

4.5.2 Robustness

First, I constructs a restricted sample after excluding counties with YMCA chapters or travel secretaries' visit. This allows us to evaluate whether the results are driven by that had a direct connection with travel secretaries or whether the indirect spillover through denominations mattered. Although the sample size got reduced, I find that the results are qualitatively and quantitiatvely the same (Table B.10).

The results are robust to alternative methods of calculating standard errors. Recent literature on shift-share designs has more rigorously identified the conditions necessary for establishing causal relationships (Adao *et al.*, 2019; Goldsmith-Pinkham *et al.*, 2020; Borusyak *et al.*, 2022). In my research setting, the shock is assumed to be exogenous, while the shift could potentially be endogenous. Borusyak *et al.* (2022) demonstrate that under this assumption, identification can be achieved by transforming geographical data into shock-level data. Following their methods, I re-estimate the same equation at the shock level, and the results remain robust. I also calculate standard errors following Adao *et al.* (2019) and test for spatial correlation using 100km, 300km, and 500km distance cutoffs, following Conley (1999); Colella *et al.* (2019). These standard errors are presented in Table B.11.

There may be concerns that the shares in the shift-share variable are endogenous and that this endogeneity is driving the results. Adao *et al.* (2019) examines this issue by interacting randomly generated shifts with shares and testing whether the simulated shift-share variable over-rejects the null hypothesis. Following this method, I run the same regression with randomly generated shifts, where the share of denomination is interacted with these shifts. I find that the null hypothesis is rejected less than 5% of the time at the 95% significance level. Adjusting for standard errors as suggested by Adao *et al.* (2019) again confirms the robustness of the results.

Lastly, Figure B.9 estimates the regression equation after excluding one denomination to assess whether the results are driven by a single denomination. Similarly, Figure B.10 estimates the equation by excluding one state from the sample.

4.6 Alternative identification strategies

4.6.1 Temporal fluctuation in exposure to YMCA

A potential threat to identification arises if travel secretaries selected the colleges they visited by considering the characteristics of surrounding denominations, even after excluding

the directly targeted denominations and controlling for the baseline YMCA exposure.

This section constructs an alternative treatment variable by leveraging the temporal fluctuations in YMCA exposure to further clarify that the estimated effect arises specifically from the exposure to travel secretaries. Counties acquired YMCA chapters at different times—some before 1881, others in 1884, and still others in 1889. Since the Student Volunteer Movement began in 1886, it was not foreseeable in 1884 that a major missionary movement would soon start. Thus, YMCA exposure just before 1886 would affect travel secretaries' visits, while YMCA chapters established in 1889 should not influence missionary recruitment or support for foreign aid. Figure B.3 demonstrates that counties with YMCA chapters in 1884 and 1889 are similar across a range of characteristics. By comparing the estimated coefficients of YMCA exposure before and after the start of the Student Volunteer Movement, I show that the effect is specific to YMCA exposure just before the movement's inception.

To capture this variation in exposure, I construct a measure of denominational YMCA exposure at different time points:

$$YMCA_{o\tau} = \sum_{c} POP_{co} \mathbf{1}[YMCA_{c\tau}] \tag{7}$$

where $YMCA_{c\tau}$ equals one for counties that had YMCA chapters in year τ. I construct three different measures of YMCA exposure at the denomination level: exposure up to 1881, new exposure in 1884, and new exposure in 1889. The denominational exposure to YMCA at different points in time is then mapped onto congressional districts using a shift-share structure, as outlined in Equation 4.

Table 5 presents the results. Columns (1)-(4) show the first-stage regression results at the denomination level, while Columns (5)-(8) display the second-stage regression results at the congressional district level. Columns (1) and (5) regress the outcome variables on the aggregate YMCA exposure between 1881 and 1889. The results indicate that YMCA exposure predicts both travel exposure and a higher likelihood of pro-foreign aid votes in Congress.

The subsequent columns split this aggregate measure of YMCA exposure into three variables based on the timing of new YMCA chapter openings. Independent variables in columns (5)-(8) are standardized to have a mean of zero and a standard deviation of one. The findings reveal that YMCA exposure before 1884 (prior to the start of the Student Volunteer Movement in 1886) predicts both travel exposure and foreign aid votes.

Since YMCA exposure after the travel secretaries' initial promotion does not predict additional travel exposure, it should not increase the probability of pro-foreign aid congressional votes, as shown in columns (6)-(8). These results suggest that the impact of the YMCA on foreign aid votes is closely tied to the specific timing, particularly before the visits of the travel secretaries. By exploiting variation in exposure to travel secretaries, this analysis provides further evidence that the effect stems from the Student Volunteer Movement, not YMCA characteristics independent from the Student Volunteer Movement.

4.6.2 Changes in congressional district boundary changes

Another way to pinpoint the causal effects of exposure to missionaries on congressional support for foreign aid is to exploit the changes in congressional district boundaries. These boundaries constantly evolve over time, primarily in response to population shifts revealed by the decennial census. The principle requires that districts have roughly equal populations; thus, as some areas grow or decline, redistricting ensures balanced representation. In addition, political considerations, such as efforts to gerrymander for electoral advantage, also play a role in how these boundaries are redrawn.

On the other hand, support for foreign aid is not a primary factor in this process, meaning that boundary changes are largely exogenous to attitudes toward foreign aid. This exogeneity can have significant implications for congressional support. For example, consider the case of missionary-congressman Walter Judd, a Republican who represented Minnesota's 5th district from 1943 to 1963 and was a staunch supporter of foreign aid. After the 1960 census, redistricting shifted his district to become predominantly Democratic, leading to his defeat by Otto Passman, a Democrat opposed to foreign aid

To implement this idea in the empirical analysis, I replace the state fixed effects in Equation 1 with congressional district fixed effects. In doing so, the within-district variation captures the impact of changes in the composition of religious denominations that arise from shifts in district boundaries. The results are displayed in Table B.9. These estimates reveal that increased exposure to travel secretaries is associated with higher levels of congressional support for foreign aid. The effect remains robust after controlling for baseline YMCA exposure, political orientation, religious demographics, and a suite of socioeconomic factors.

4.7 Evidence for preference shift

To shed light on the mechanisms, I present additional evidence on preferences for international development at the denomination and congressional district levels.

Denominational support in congressional testimony. I start by presenting evidence of preferences for international development at the denomination level. I turn to congressional hearings from 1957, a period marked by intense debate over the continuation of foreign aid programs. During these hearings, Congress sought input from various stakeholders, including religious organizations, to present their perspectives. Over a three-day period, testimonies from these religious groups, predominantly in favor of foreign aid, were documented (US Congress House Committee on Foreign Affairs, 1957; Turek, 2024).

To measure a denomination's involvement in the Church World Service, I use the list of denominations mentioned in the congressional hearings (US Congress House Committee on Foreign Affairs, 1957, p.196). By 1957, some denominations from 1890 had consolidated into larger groups. I aggregate these denominations into a single observation, reducing the sample size from 47 to 40. The independent variables include the number of missionaries, YMCA exposure in 1884 and 1890, the number of denomination members, church property per capita, and a dummy variable for evangelical denominations. The results are presented in Table 6.

Columns (1)-(3) show the regression of the outcome variable on the number of missionaries, controlling for other factors. The analysis reveals that sending 100 more missionaries is associated with a four-percentage-point increase in the probability that a denomination was involved in the Church World Service. I find that the 2SLS coefficient is approximately 15, suggesting that the OLS estimate may be underestimated. The estimated coefficients were not precise at conventional levels of statistical significance. However, the Anderson-Rubin weak IV 95 percent confidence interval was statistically significant (Andrews *et al.*, 2019), and the reduced form regression, where the outcome is directly regressed on the instrument, was significant at conventional levels.

Congressional speech. During the mid 1950s, advocates of foreign aid started employing the rhetoric of moral universalism to justify their stance and appeal to religious voters (Turek, 2024). Based on this observation, I present additional evidence to examine whether exposure to missionaries had any effects on moral universalism in congressional speech. Using moral universalism in congressional speech as an outcome, I estimate the following equation:

$$universalism_{ct} = \sum_{\tau \neq 1900} \gamma_\tau (TravelExposure_c \times D_\tau) + \sum_k \sum_{\tau \neq 1900} \theta_{k\tau} (X_{kc} \times D_\tau) + \delta_c + \delta_t + \varepsilon_{ct} \tag{8}$$

where $universalism_{ct}$ is the moral universalism in congressional district c in congress t, standardized to have a mean zero and a standard deviation of one. The treatment variable interacts the exposure to travel secretaries with congress fixed effects. Controls include the share of missionary denominations and baseline YMCA exposure interacted with congress fixed effects, congress fixed effects (δ_t), and congressional district fixed effects (δ_c). All time-invariant variables are measured during the 85th Congress, when the rhetoric of moral universalism in defense of foreign aid heightened (Turek, 2024).

The results are shown in Figure 5. I find that a one standard deviation increase in exposure to travel secretaries led to a 0.3 standard deviation increase in moral universalism in congressional speeches after the 85th Congress, consistent with historical evidence of a surge in moral arguments about foreign aid during this period. While this surge cannot definitively be attributed solely to foreign aid without more detailed analysis of the content of the speeches, the timing of this rise in moral universalist rhetoric aligns with previous research indicating that it occurred during the mid-1950s.

5. Missionaries as catalysts for regional knowledge

5.1 Research design

This section demonstrates that missionaries contributed to the production of social scientific knowledge, which was taken seriously as an important input in foreign policy perspectives. This exercise highlights the extent to which missionaries were regarded as credible sources to understand foreign countries at that time.

To estimate the impact of foreign missions on the understanding of foreign culture, I estimate the following equation:

$$pub_i = \theta Mission_i + \mathbf{X_i'}\rho + \varepsilon_i \tag{9}$$

where pub_i is an indicator variable for publication output or foreign intelligence during WWII. X_i is a vector of individual characteristics.

$Mission_i$ is a dummy equal to one for missionaries and zero for individuals who volunteered to be missionaries but did not become one eventually. The estimated coefficient θ captures the effects of being missionaries under the identifying assumption that these volunteers who did not eventually become missionaries represent a counterfactual outcome, reflecting what would have happened to missionaries had they not embarked on their mis-

sions. The process of becoming a missionary began with individuals signing a declaration card, followed by filling out application blanks. The control group in this study comprises those who completed the application, indicating their serious consideration of missionary work. This control group, consisting of individuals who were genuinely interested in missionary work and went so far as to submit applications, represents a highly comparable group and provides a compelling counterfactual outcome. An example in the control group is Kenneth Lee Pike (1912-2000), who initially applied to become a missionary but was rejected, yet later became a renowned linguist and anthropologist studying indigenous languages in Mexico (Pike, 2015).

Several factors contributed to volunteers not ultimately becoming missionaries despite initial applications. First, the Student Volunteer Movement faced significant organizational challenges in reaching out to applicants (Ramsey, 1988, p.67). One notable issue was the frequent loss of contact with applicants, often because students changed their residences after graduation or relocation, making it difficult to maintain communication (Student Volunteer Movement, 1891, p.36). Second, budget constraints played a role. The Movement relied heavily on volunteers and a small donor base, operating with limited financial resources (Parker, 1994, p.111). Despite an abundance of volunteers, some had to wait years for missionary opportunities. Third, as time passed, alternative career paths emerged. Some students who initially considered missionary work pursued other vocations, such as ministries in city churches (Ramsey, 1988, p.57). Fourth, various idiosyncratic factors intervened, including parental opposition, responsibilities towards aging parents, health issues, and college tuition concerns (Parker, 1994, p.180). In some cases, even highly committed individuals who submitted multiple applications did not become missionaries for reasons that remain unclear (Parker, 1994, p.180). Previous research has also considered this group of applicants comparable to those who became missionaries (Ramsey, 1988, p.65).

The impact of foreign missions may be overestimated if mission boards selected applicants who were already knowledgeable about foreign countries before becoming missionaries or who would have become experts on foreign countries regardless of their mission experience. However, religiosity, rather than interest in world affairs or foreign cultures, was considered the most crucial criterion for missionary selection. "The boards do not commission mere physicians or school-teachers, but missionaries...[which should be] above everything else a spiritual guide." (Brown, 1907, p.77) These individuals had limited knowledge about their destinations and were primarily motivated by religious devotion when applying to become missionaries (Ramsey, 1988, p.148). Missionaries were often described as having a "blank slate" mindset due to their general lack of understanding of non-European countries

before beginning their work (Bays & Widmer, 2009, p.17). Those who showed interest in foreign countries without strong religious commitment were screened out by the missions board (Student Volunteer Movement, 1891, p.54). Since religiosity was the main selection criterion, it is plausible to assume that both missionaries and runners-up came from similar backgrounds and likely had a comparable level of interest in foreign countries.

To further address concerns that selection into missionary work may not be as random as assumed, Appendix B.19 leverages political instability in Turkey as an exogenous source of variation, which disrupted exposure to foreign cultures. Specifically, I compare missionaries in Turkey with those in other countries before and after 1915, showing that missionaries in Turkey, who often had to return to the U.S. for exogenous reasons, were less likely to publish works about Turkey or other foreign countries.

5.2 Balance checks

To evaluate the plausibility of the identifying assumption, I compare missionaries with volunteers who did not ultimately become missionaries. I match archival records to 1900 or 1910 individual-level census data using names, birth years, and addresses, employing the iterative census linkage method (Abramitzky *et al.*, 2021). The analysis compares volunteers to the general population, and missionaries to non-missionary volunteers, controlling for birth year, census year (1900 and 1910), gender, and county fixed effects. I restrict the sample to individuals younger than twenty. As shown in Appendix B.1, the probability of being matched in the census is higher for volunteers who did not eventually become missionaries. This is because missionaries who sailed abroad were not enumerated in the census. However, the difference in matching probability disappears when the sample is restricted to individuals born after 1890, as the census enumeration occurred before they became missionaries, during the period when they were still living with their parents.

Panel (a) of Figure 6 shows the differences between missionaries and non-missionaries under various specifications. I take the average of the 1900 and 1910 covariates when an individual is matched to both censuses. Hollow circles represents the raw difference after only controlling for birth year and female fixed effects. The results indicate that missionaries and volunteers differ in terms of whether their parents had religious occupations, foreign-born status, parents' foreign-born status, city population, and farm household status. As has been shown in Table B.12, these differences decrease when county fixed effects are controlled for, but differences still remain for parents having religious occupations, parents being immigrants, and farm household status. In the filled diamonds, I present differences

after reweighting the control group so that the mean and variance of parents having religious occupations, parents' foreign-born status, foreign-born status, city population, and farm household status are made equal, following Hainmueller (2012). The results indicate that the variables not directly targeted by entropy balancing remain well-balanced after reweighting.

5.3 Results

Panel (b) of 6 presents the estimated effect on knowledge output with and without controlling for county or denomination fixed effects, as well as inverse probability-weighted estimates based on entropy balancing. Table 7 presents regression results from Equation 9, with unadjusted estimates (without birth year and gender controls) and those with controls for birth year, gender, county, and denomination fixed effects. The results indicate that the estimated coefficients remain consistent across all specifications.

The probability of writing about foreign subjects in the control group is 0.7 percent, while the estimated effects of missionary experience range from 2.4 to 3 percentage points. This indicates that being a missionary increases the probability of becoming an author who writes about foreign subjects by three to four times. The analysis reveals a 0.6 percentage point increase in the probability of missionaries writing graduate dissertations about foreign countries, with no effect on other topics. This suggests that missionary experience specifically enhanced knowledge production about foreign countries, rather than increasing overall graduate school attendance. These findings suggest that foreign missions contributed to increased knowledge production about foreign countries without significantly influencing the overall likelihood of becoming authors or attending graduate school.

5.4 Evaluating the role of missionaries against other experts

While previous analyses document that missionary experience increased expertise on foreign countries, potentially valued by the government in times of crisis, it does not fully address the missionaries' importance in a broader landscape of knowledge about non-European countries. The landscape of foreign expertise could be more diverse, including academics and journalists without missionary background who facilitated cross-cultural understanding. To investigate whether the role of missionaries in understanding foreign countries in a broader landscape, I compare missionaries with other prominent individuals from Wikipedia biographies. The outcome variable is an indicator whether an individual served as a regional expert during WWII, and the independent variable is whether an individual is a missionary or a child of missionaries.

Table 8 displays the results. I find that having a missionary background (being a missionary or their child) is associated with about a 7 percent point higher probability of joining intelligence missions relative to other prominent individuals. The coefficients become even larger when I narrow down my sample to indivisuals whose names can be matched to publications about foreign countries in OpenAlex (Column (3)) or those whose names were mentioned in the Smithsonian roster (Column (4)). Even among selected group of regional experts, missionaries were more likely to work for the government during WWII.

Appendix Table B.16 documents additional results. I find that the coefficient size was larger for missionary children and those who did their work in China or Japan. This suggests that longer exposure to foreign cultures from an earlier age enabled them to develop a deeper understanding. Interestingly, missionaries in the Philippines were less likely to become intelligence officers. This is likely because the US already had substantial knowledge about the Philippines due to colonization. This also suggests that for much of the non-European world that was not a US colony, missionaries played a crucial role.

A potential concern with this analysis is that the sample is restricted to individuals who appear on Wikipedia. Selection into having a biography may be non-random. The estimated coefficients could be biased upwards if less talented individuals are more likely to be included in Wikipedia if they are missionaries (negative selection). I test this possibility in Appendix B.21, using the number of views for each biography as the outcome, and find evidence against negative selection.

6. Longer-run effects: Peace Corps volunteers

The declining importance of religion in the United States, coupled with the proliferation of alternative channels for international engagement, may diminish the role of missionaries as conduits for foreign cultural understanding. However, missionaries could still maintain a lasting influence by shaping long-term preferences toward international engagement and cultural understanding.

To broaden the scope of analysis, I turn my attention to the Peace Corps. This extension is for three reasons. First, the number of Peace Corps volunteers can serve as a measure of preference for international development efforts in a non-religious context over the long term. Second, there are notable parallels between missionaries and Peace Corps volunteers, as both groups predominantly consist of white middle-class individuals sent abroad to facilitate economic development (Bays & Widmer, 2009, p. 18). Third, foreign aid is not just about monetary transfers; survey evidence indicates that the American public prefers channeling

aid through private organizations or the Peace Corps rather than direct contributions to recipient countries (Lumsdaine, 1993, p. 149).

The results are presented in Table 9. While the OLS estimates lose statistical significance upon the inclusion of additional controls, the IV estimates and reduced-form estimates remain robust. To address the skewed distribution, I applied the inverse hyperbolic sine transformation. The results are robust to using a log transformation after excluding counties without Peace Corps volunteers. The results show that a one standard deviation increase in the exposure to missionaries could account for 82 percent (0.6 log points) larger numbers of Peace Corps volunteers between 1961-2000.

7. Conclusion

Using hand-collected archival data, this study documents that missionaries played a crucial role in fostering understanding of non-European countries and shaping preferences for development assistance during the period when the concept of development assistance was being institutionalized.

The findings of this paper align with recent evidence highlighting the significance moral dimensions in policy preferences (Enke *et al.*, 2023). Myrdal (1970) and Lumsdaine (1993) argues that, in persuading voters to support foreign aid, the notion of a moral obligation to assist those in need has proven more effective than appeals to national interest or incentive-based arguments that foreign aid benefits donor countries.

An interesting topic for future research is the effect of missions in the latter half of the twentieth century, a period when evangelical denominations expanded their influence. A central debate during the fundamentalist-modernist controversy was whether religious conversion should take precedence over developmental initiatives. After the controversy, many liberal Christians began shifting toward secular missions, focusing on poverty relief, literacy programs, and other non-religious efforts. While liberal denominations gained greater social or political influence as a consequence, this transition allowed evangelical Christians, who prioritized religious conversion, to strengthen their influence within religious communities. Evangelical Christians' mission activities in the latter half of the century developed distinct political orientations abroad (Sola, 2024). Whether this shift in the missionary landscape had different consequences domestically warrants further exploration.

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Table 1: YMCA exposure and foreign missions in Protestant denominations (first stage)

	(1)	(2)	(3)	(4)
	DV: Number of missionaries			
	Mean DV: 207.55			
Travel exposure (thousand)	9.51***	7.97***	7.63***	6.55**
	(1.20)	(2.35)	(2.25)	(2.72)
YMCA without travel (thousand)				0.00
				(0.00)
Members (thousand)		0.18	0.21	
		(0.20)	(0.20)	
D(Evangelical)			-10.10	
			(54.45)	
Church property per capita (std)			20.13	
			(60.85)	
Observations	47	47	47	47
R-squared	0.76	0.76	0.77	0.78
p[Travel exposure=YMCA]				0.02

Note: Unit of analysis is a Protestant denomination that had at least one volunteers in the Student Volunteer Movement. Regressions of a number of missionaries from each denomination on the marginal exposure to YMCA in 1884. Number of missionaries from each denomination is taken from the Student Volunteer Movement records. Evangelical indicates whether a denomination is evangelical (Steensland *et al.*, 2000). Church property and the number of church attendents from each denomination is taken from Census of Religious Bodies, 1890. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2: Congressional votes on foreign aid, 1948-1961

DV: D[Pro foreign aid vote]×100	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Mean DV: 68.58				
Estimation method	OLS	OLS	IV	IV	IV	IV	IV
Exposure to missionaries (per million)	-0.01	0.09*	0.70**	0.57**	0.64**	0.55***	0.41**
	(0.04)	(0.06)	(0.35)	(0.27)	(0.25)	(0.20)	(0.18)
Observations	1,951	1,951	1,951	1,951	1,951	1,951	1,951
R-squared	0.21	0.36	-0.02	0.07	0.21	0.29	0.35
Core controls	Y	Y	Y	Y	Y	Y	Y
Baseline YMCA		Y		Y	Y	Y	Y
Political controls		Y			Y	Y	Y
Religious controls		Y				Y	Y
Socioeconomic controls							Y
AR weak IV [p-value]			0.00	0.00	0.00	0.00	0.00
KP F-stat			8.32	14.52	15.27	39.85	28.01

Note: Note: Unit of analysis is a congressional district over five Congresses (80th, 81st, 82nd, 86th, and 87th). Regressions of a pro-foreign aid vote on the exposure to missionaries instrumented by the exposure to travel secretaries. Core controls include the share of denominations involved in the Student Volunteer Movement, latitude, longitude, state fixed effects, and congress fixed effects. Baseline YMCA exposure is denominational exposure to YMCA chapters in counties with YMCA chapters and without travel secretaries' visit. Political controls include DW-NOMINATE score (first dimension) and Republican Party fixed effects. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, and African Americans. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Congressional votes on foreign policy, 1882-1890 (placebo results)

DV: D[Isolationist vote]×100	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estimation method	OLS	OLS	IV	IV	IV	IV	IV
Exposure to missionaries (per million)	0.15***	0.03	0.11	0.14	-0.09	-0.02	0.10
	(0.04)	(0.04)	(0.10)	(0.10)	(0.12)	(0.10)	(0.09)
Observations	939	938	939	939	938	938	938
R-squared	0.28	0.38	0.28	0.28	0.37	0.38	0.39
Core controls	Y	Y	Y	Y	Y	Y	Y
Baseline YMCA		Y		Y	Y	Y	Y
Political controls		Y			Y	Y	Y
Religious controls		Y				Y	Y
Socioeconomic controls							Y
AR weak IV [p-value]			0.28	0.17	0.46	0.82	0.27
KP F-stat			8.16	16.42	13.66	39.99	23.93

Note: Note: Unit of analysis is a congressional district over two Congresses (47th and 51st). Regressions of isolationist foreign policy votes on the exposure to missionaries instrumented by the exposure to travel secretaries. Core controls include the share of denominations involved in the Student Volunteer Movement, latitude, longitude, state fixed effects, and congress fixed effects. Baseline YMCA exposure is denominational exposure to YMCA chapters in counties with YMCA chapters and without travel secretaries' visit. Political controls include DW-NOMINATE score (first dimension) and Republican Party fixed effects. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, and African Americans. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Heterogeneous effects by denomination

DV: D(Pro foreign aid vote)×100	(1)	(2)	(3)	(4)	(5)	(6)
Estimation method	OLS	IV	OLS	IV	OLS	IV
Mainline missionaries (per million)	0.10**	0.18**			0.10**	0.45**
	(0.04)	(0.08)			(0.04)	(0.18)
Evangelical missionaries (per million)			-0.16**	1.28*	-0.14*	1.43*
			(0.07)	(0.77)	(0.07)	(0.74)
Observations	1,951	1,951	1,951	1,951	1,951	1,951
R-squared	0.23	0.23	0.23	0.07	0.23	0.02
Core controls	Y	Y	Y	Y	Y	Y
Religious controls	Y	Y	Y	Y	Y	Y
AR weak IV [p-value]		0.01		0.07		
KP F-stat		49.44		8.55		5.82

Note: Unit of analysis is a congressional district over five Congresses (80th, 81st, 82nd, 86th, and 87th). Regressions of a pro-foreign aid vote on the exposure to missionaries instrumented by the exposure to travel secretaries. Treatment and instrumental variables are divided into two categories respectively, based on whether or not a denomination belongs to evangelical denominations. Core controls include the share of denominations involved in the Student Volunteer Movement, latitude, longitude, state fixed effects, and congress fixed effects. Baseline YMCA exposure is denominational exposure to YMCA chapters in counties with YMCA chapters and without travel secretaries' visit. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Alternative identification strategy: YMCA exposure as an instrument

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DV: Travel exposure				D(Pro foreign aid vote)×100			
YMCA exposure	0.38***				18.15***			
	(0.02)				(5.87)			
YMCA 1881		0.58*	1.04***			19.29*	18.87**	
		(0.30)	(0.24)			(10.64)	(7.80)	
YMCA 1884		0.83***		1.33***		3.68		16.63***
		(0.22)		(0.19)		(7.06)		(4.92)
YMCA 1889		-0.22	-0.09	0.01		-4.51	-8.77	-7.16
		(0.22)	(0.25)	(0.18)		(9.48)	(6.79)	(4.90)
Observations	47	47	47	47	1,951	1,951	1,951	1,951
R-squared	0.92	0.96	0.93	0.94	0.21	0.22	0.39	0.39
p[Equal coef.]		0.00	0.02	0.00		0.47	0.05	0.01
Core controls					Y	Y	Y	Y
Additional controls							Y	Y

Note: Unit of analysis is denomination in Columns (1)-(4) and congressional district in Columns (5)-(8). Additional controls in Columns (5)-(8) refer to all controls in Table 2. YMCA exposure is constructed based on the denominational composition of counties with local YMCA chapters between 1881 and 1889. Columns (2)-(4) and (6)-(8) divide YMCA exposure into three groups: exposure from counties with YMCA chapters established before 1881 (YMCA 1881), counties with chapters established between 1881 and 1884 (YMCA 1884), and counties with chapters established between 1884 and 1889 (YMCA 1889). *** p<0.01, ** p<0.05, * p<0.1

Table 6: Denominational support for foreign aid

	(1)	(2)	(3)	(4)	(5)	(6)
	DV: D(Church World Service)×100					
	Mean DV: 50					
Estimation method	OLS	OLS	IV	IV	RF	RF
Missionaries (hundred)	4.50**	4.02*	15.20*	15.09		
	(1.74)	(2.05)	(8.54)	(10.41)		
AR weak IV 95 percent confidence interval			[6.8,48.7]	[4.8,55.9]		
Travel exposure (thousand)					0.76***	0.58**
					(0.25)	(0.28)
YMCA without travel (thousand)						-0.16
						(0.18)
Members (thousand)	-0.01	-0.01	-0.09	-0.09	-0.04**	
	(0.02)	(0.02)	(0.06)	(0.07)	(0.02)	
D(Evangelical)		-36.68**		-37.88**	-33.72*	
		(17.26)		(17.31)	(17.67)	
Church property per capita (std)		-3.06		-11.89	-4.64	
		(9.61)		(10.99)	(9.06)	
Observations	40	40	40	40	40	40
R-squared	0.12	0.24	-0.20	-0.08	0.27	0.14
p[Travel exposure=YMCA]						0.11
KP F-stat			3.16	2.64		

Note: Unit of analysis is a Protestant denomination that had at least one volunteer in the Student Volunteer Movement. Regressions of an indicator whether a denomination participated in the Church World Service on the number of missionaries from each denomination. Denominations that were consolidated by 1957 are aggregated into one observation. Number of missionaries from each denomination is taken from the Student Volunteer Movement records. Evangelical indicates whether a denomination is evangelical denomination (Steensland *et al.*, 2000). Church property and the number of church attendants from each denomination is taken from Census of Religious Bodies, 1890. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Effects of foreign missions on knowledge production

Outcome:	Grad. dissertation foreign subjects		Grad. dissertation nonforeign subjects	
(dummy×100)	(1)	(2)	(3)	(4)
Mission	0.64***	0.95***	-0.32*	0.31
	(0.08)	(0.12)	(0.16)	(0.22)
Control outcome mean:	0.13	0.13	2.46	2.46
Observations	37,106	29,380	37,106	29,380
R-squared	0.00	0.07	0.00	0.08
controls		Yes		Yes
Outcome:	Author foreign subjects		Author nonforeign subjects	
(dummy×100)	(5)	(6)	(7)	(8)
Mission	2.37***	3.04***	-0.73***	-0.06
	(0.16)	(0.22)	(0.26)	(0.34)
Control outcome mean:	0.7	0.7	6.35	6.35
Observations	37,106	29,380	37,106	29,380
R-squared	0.01	0.09	0.00	0.08
controls		Yes		Yes
Outcome:	Smithsonian Institution roster		Office of Strategic Services	
(dummy×100)	(9)	(10)	(11)	(12)
Mission	1.00***	1.21***	0.11***	0.14***
	(0.09)	(0.13)	(0.04)	(0.05)
Control outcome mean:	0.07	0.07	0.05	0.05
Observations	37,106	29,380	37,106	29,380
R-squared	0.01	0.07	0.00	0.08
controls		Yes		Yes

Note: Unit of analysis is an individual. Regressions of an indicator of non-European regional expertise on an indicator of being missionaries conditional on being volunteers to the Student Volunteer Movement. The outcome variables in Columns (1) to (4) indicate whether individual names can be matched to the ProQuest Dissertations Theses database, while Columns (5) to (8) indicate whether individual names can be matched to publications about foreign subjects using OpenAlex. The outcomes in Columns (9) and (10) reflect whether an individual's name can be matched to the Smithsonian roster (Bennett, 1947). The outcomes in Columns (11) and (12) capture whether an individual's name can be matched to the Office of Strategic Services roster or publications about foreign subjects according to OpenAlex. Odd-numbered columns report raw differences, while even-numbered columns document differences after controlling for birth year, gender, county, and denomination fixed effects. Robust standard errors, clustered by county, are provided in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8: Regional expertise during WWII: Evidence from Wikipedia

	(1)	(2)	(3)	(4)
DV: dummy×100	Intelligence or language experts during WWII			
missionaries or children	7.33***	7.03***	15.63***	63.15***
	(1.37)	(1.39)	(4.78)	(13.71)
Control outcome mean	3.00	3.00	4.31	7.80
Missionaries	489	489	70	7
Observations	74,966	74,966	4,474	148
birth cohort FE		Y	Y	Y
female FE		Y	Y	Y
occupation FE		Y	Y	Y
pub. foreign			Y	
Smithsonian roster				Y
R-squared	0.00	0.02	0.01	0.23

Note: Unit of analysis is an individual. Regressions of an indicator of whether an individual served as an intelligence or language expert during WWII on an indicator of whether an individual has a missionary background. The variable "missionary or children" is an indicator equal to one if an individual is a missionary or the child of missionaries. The sample is restricted to individuals with a Wikipedia biography who were active in the United States, born after 1880, before 1925, and who died after 1945. The sample in Column (3) is restricted to individuals whose names can be matched to publications about foreign subjects. The sample in Column (4) is restricted to individuals whose names can be matched to the Smithsonian Institution roster. Occupation is taken from Laouenan *et al.* (2022). Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

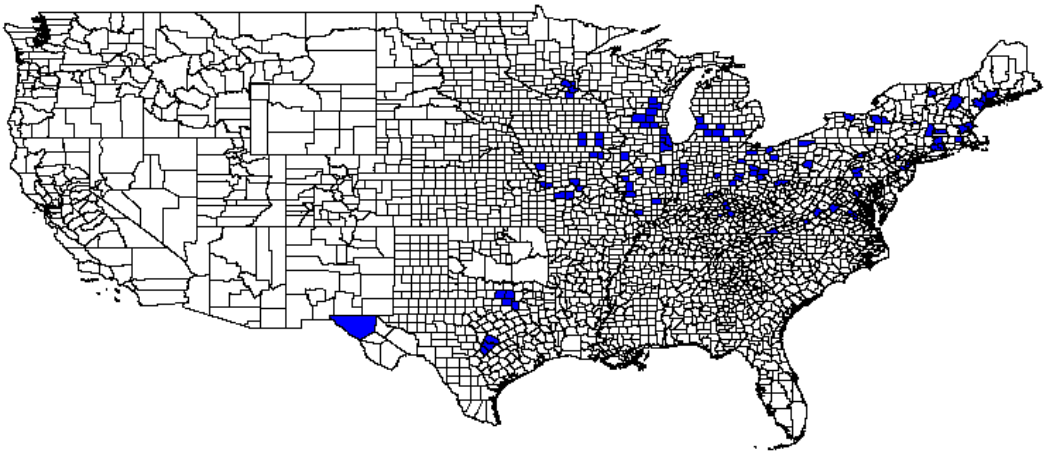
Table 9: Peace Corps volunteers

	(1)	(2)	(3)	(4)	(5)	(6)
	DV: Peace Corps volunteers					
Estimation method	OLS	OLS	IV	IV	IV	IV
Exposure to missionaries (std)	0.19**	0.23***	0.65**	0.53*	0.58***	0.60***
	(0.08)	(0.08)	(0.25)	(0.29)	(0.18)	(0.17)
DV transform:	asinh	asinh	asinh	asinh	asinh	log
Observations	2,807	2,807	2,808	2,808	2,785	2,469
R-squared	0.56	0.58	0.55	0.57	0.63	0.61
Baseline controls	Y	Y	Y	Y	Y	Y
Religious controls		Y		Y	Y	Y
Socioeconomic controls					Y	Y
KP F-stat			20.23	19.37	18.43	33.70
AR weak IV [p-value]			0.00	0.05	0.00	0.00

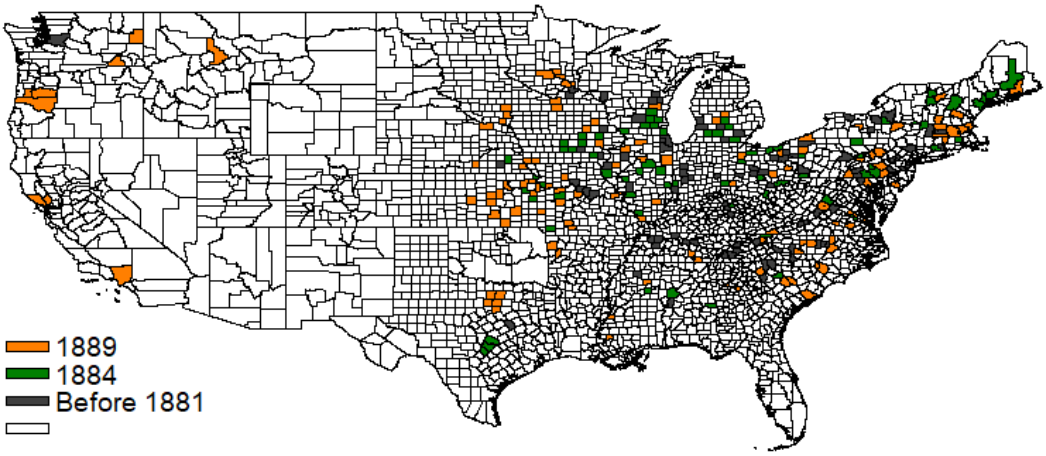
Note: Unit of analysis is a county. Regressions of the number of Peace Corps volunteers on the exposure to missionaries instrumented by the exposure to travel secretaries during 1886-87. Baseline controls include log population, latitude, longitude, the share of denominations involved in the Student Volunteer Movement, baseline YMCA exposure, and state fixed effects. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Socioeconomic controls include urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, and African Americans. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure 1: YMCA chapters and travel secretaries

(a) Travel secretaries

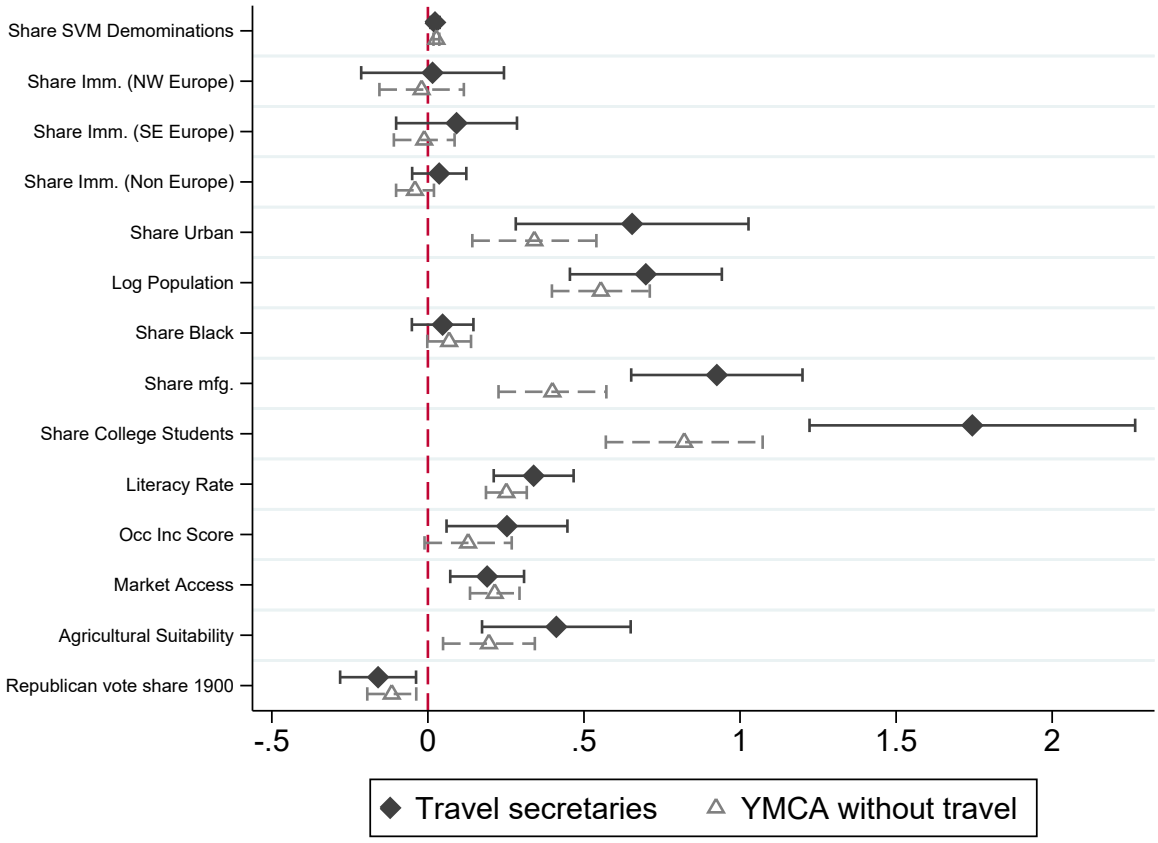


(b) YMCA chapters, 1881-1890



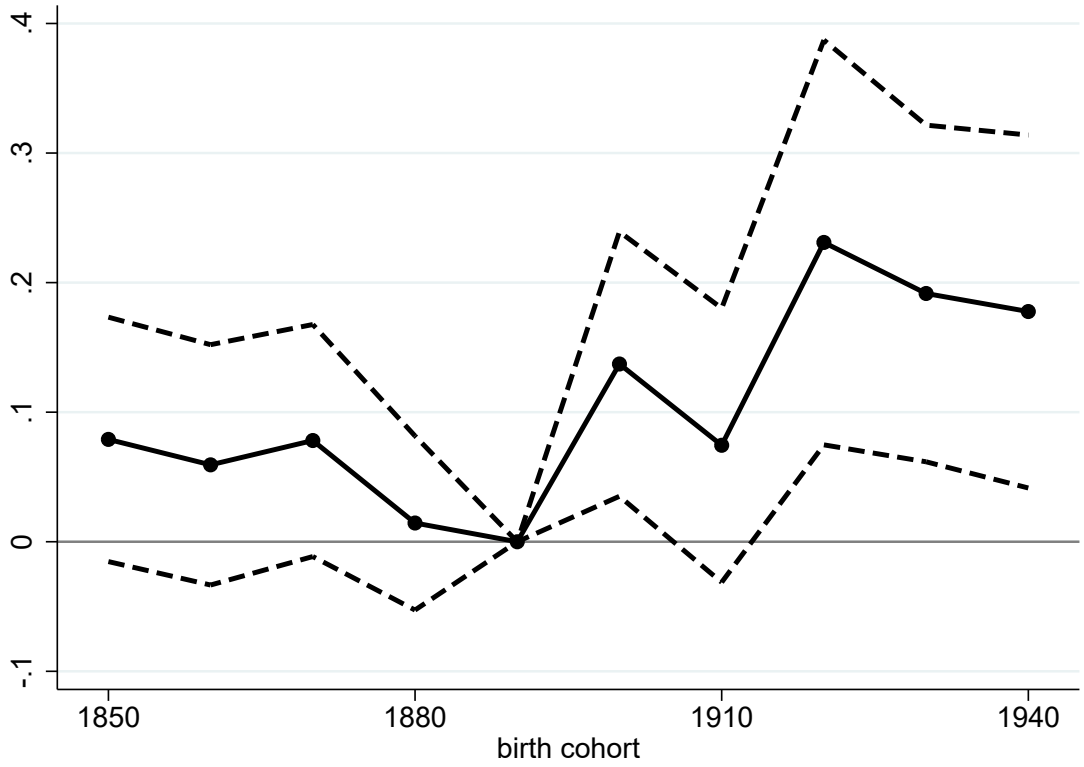
Note: Figure (a) shows the locations visited by travel secretaries. Figure (b) illustrates the spatial expansion of local YMCA chapters between 1881 and 1890. Data on travel secretaries' itinerary is constructed from *Missionary Review of the World* magazine, February 1887 to June 1887 (Beahm, 1941, p. 80). Data on local YMCA chapters is taken from *Intercollegian* magazine published between 1881 and 1890.

Figure 2: Balance in travel routes



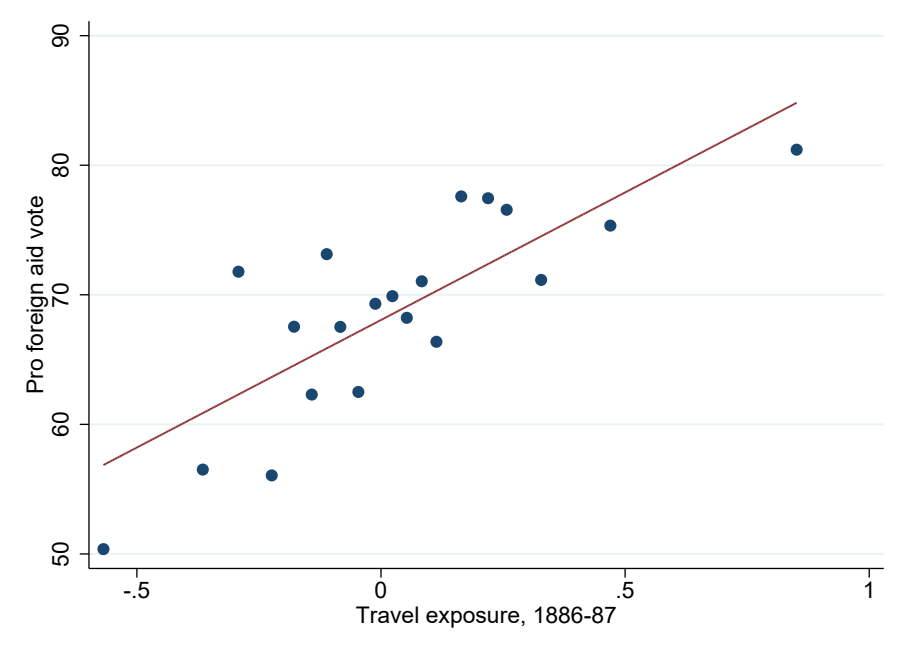
Note: The unit of analysis is the county. All variables are standardized to have a mean of zero and a standard deviation of one. Coefficient plot from regressions of covariates on indicator variables for counties visited by the travel secretaries during 1886-87 (diamonds) and counties with YMCA chapters that did not receive a visit (hollow triangles). The results control for state fixed effects, and error bars represent 95 percent confidence intervals. Standard errors are clustered at the state level.

Figure 3: Effects on the number of Wikipedia authors writing about non-European countries



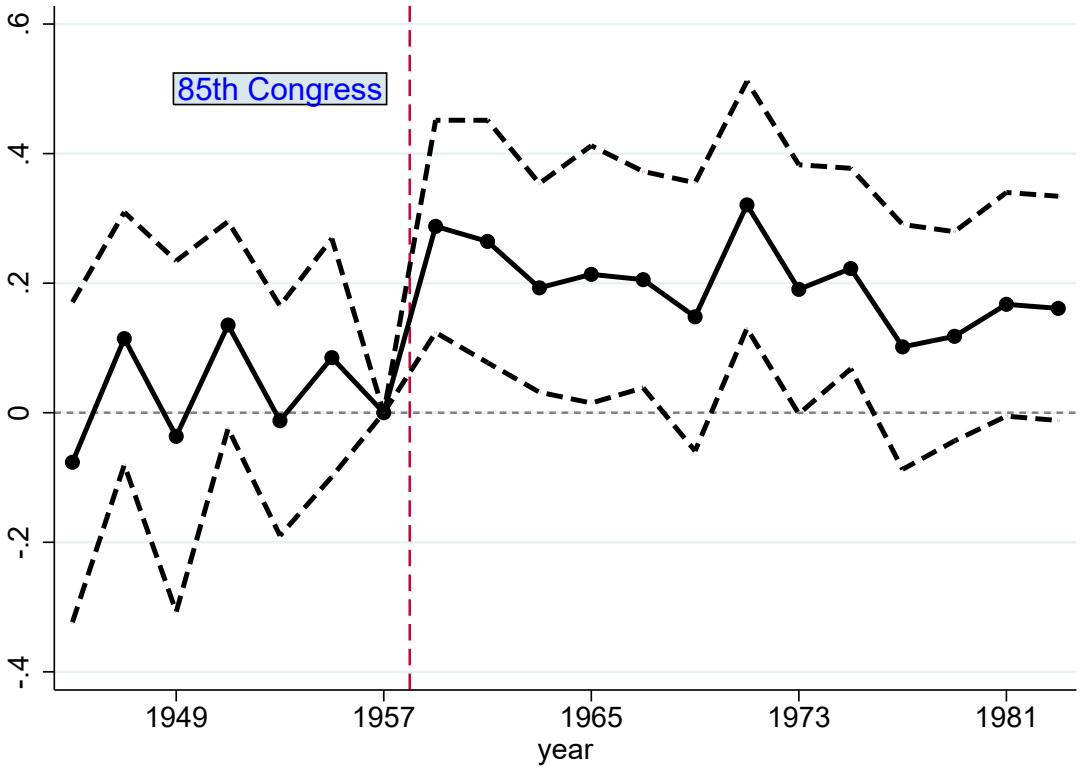
Note: Unit of analysis is county-birth cohort (decade). The outcome variable is the number of Wikipedia authors, matched to publication records between 1860 and 1960, born in each county for each birth cohort. The independent variable is the interaction between travel exposure and decade fixed effects. Controls include the share of Student Volunteer Movement denominations, baseline YMCA exposure (both interacted with decade fixed effects), as well as state-by-year and county fixed effects. Standard errors are clustered at the county level, and error bars represent 95 percent confidence intervals.

Figure 4: Effects on foreign aid legislation



Note: Unit of analysis is a congressional district by congressional terms. Coefficients from reduced-form regression results of a Congressman vote "Yea" for the foreign aid bill on the marginal YMCA exposure in 1884, after controlling for the baseline YMCA exposure, share of SVM denominations, Republican party fixed effects, DW-NOMINATE score (first dimension), latitude, longitude, and state fixed effects.

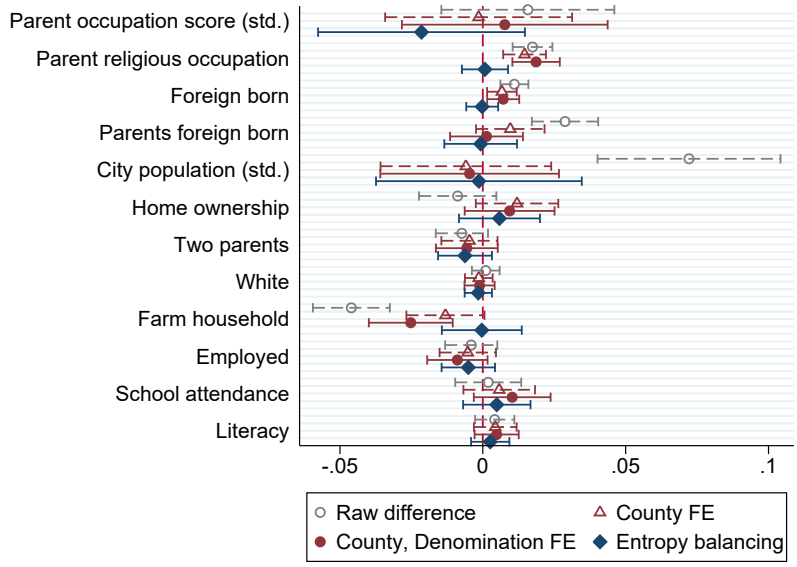
Figure 5: Moral universalism in Congressional speech



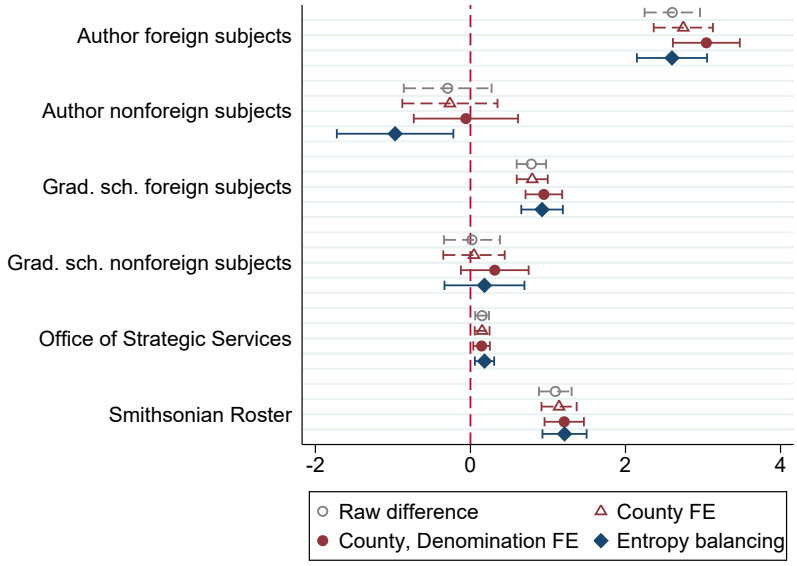
Note: Unit of analysis is a congressional district by congessional term. Coefficients from the regressions of moral universalism in congressional speeches on the marginal exposure to YMCA in 1884 (Equation 8). Outcome variable is a standardized score of moral universalism in congressional speech (Enke, 2020). The marginal exposure to YMCA in 1884 is interacted with congress fixed effects. Control variables include the YMCA control, the share of missionary denominations interacted with congressional period fixed effects, congressional district fixed effects and congress fixed effects. Error bars indicate 95 percent confidence intervals. Error terms are clustered by state.

Figure 6: Covariate balance and effects of missionary experience: Individual-level analysis

(a) Covariate balance

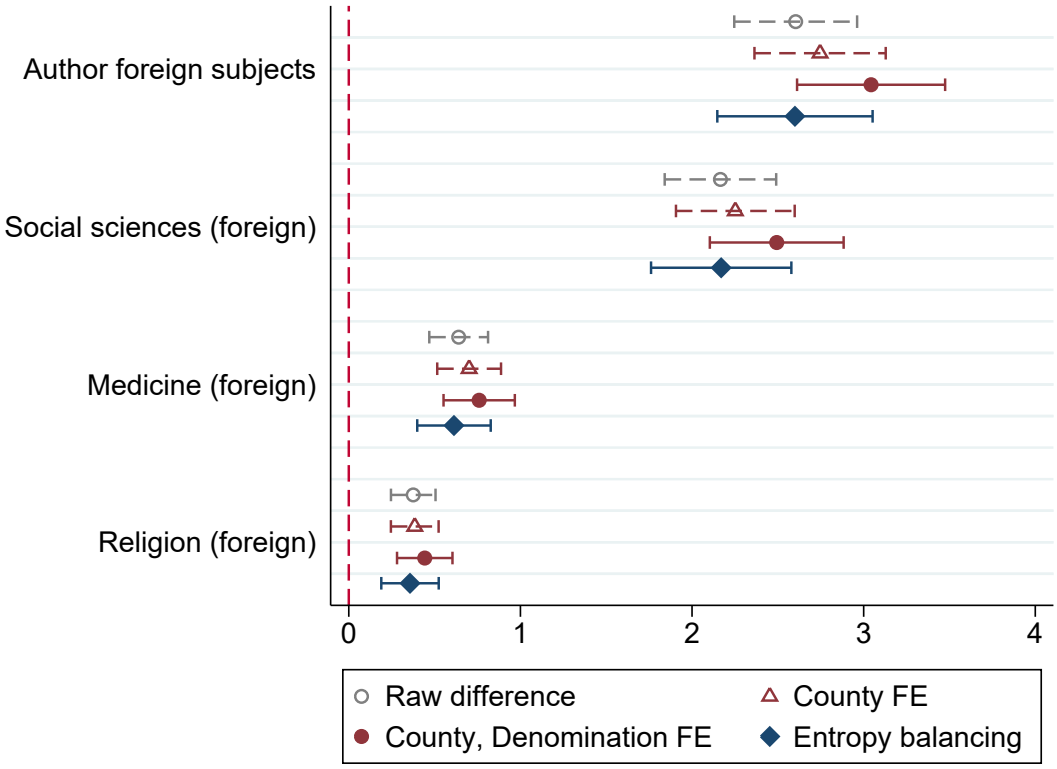


(b) Effects of missionary experience on knowledge output



Note: Raw difference indicates the difference between missionaries and volunteers, controlling for birth year and female fixed effects. The hollow triangle additionally controls for county fixed effects, while the filled circle adds controls for denomination fixed effects. The filled diamond represents differences after reweighting the control group using entropy balancing, where indicators such as parents' religious occupation, foreign born status, parents' foreign born status, farm household status, as well as continuous variables like city population, birth year, and female indicators are weighted to have equal means and variances, following Hainmueller (2012). Indicators in Panel (a) are scaled to one, while those in Panel (b) are scaled to one hundred. The control group means for each variable are 0.7, 0.13, 6.35, 2.46, 0.05, and 0.07, respectively. Error bars indicate 95 percent confidence intervals, based on robust standard errors.

Figure 7: Publication by field



Note: The figure presents results from Equation 9 across different concepts. Each concepts are explained in Section B.16. Error bars indicate 95 percent confidence intervals. Foreign-related publications were classified as social science if they included any of the following terms: agriculture, demography, development, economics, history, political science, or sociology. A publication was categorized under medicine and nursing if it included terms such as bacteria, immunology, medicine, nursing, pathology, or virology. Publications were classified as religion if they included terms related to religion, Christianity, or theology.

Appendix

A. Conceptual framework: Intergroup contact and foreign aid

This section introduces a conceptual framework for understanding how intergroup contact shapes decisions in foreign aid allocation. The goal of this exercise is to illustrate the link between contact hypothesis and moral universalism (Allport, 1954; Enke *et al.*, 2023) based on a model of social learning (Bardhan & Udry, 1999). We consider a model of a donor allocating aid towards two distinct groups: an ingroup (i) and an outgroup (o). The donor must divide their budget between these groups, where $m \in [0, 1]$ represents the share allocated to the outgroup, while $(1 - m)$ is designated for the ingroup.

Here, m reflects the weight placed on the welfare of the outgroup, while $(1-m)$ represents the weight given to the ingroup's welfare. A value of m closer to 0.5 can be interpreted as a more universalistic preference. The variable m can be empirically observed as the proportion of the foreign aid budget. It allows for testing whether increased contact—such as through foreign missions—leads to a greater allocation of aid.

A.1 Model setup

The utility from aid allocation is modeled using a quadratic loss function that captures both quantitative and qualitative dimensions:

$$\Pi_t = \Pi_{ot} + \Pi_{it} = -[m(a_{ot} - \tau_{ot})]^2 - [(1 - m)(a_{it} - \tau_{it})]^2 \tag{10}$$

where a_{ot} and a_{it} represent the aid inputs for the outgroup and ingroup, respectively, while τ_{ot} and τ_{it} denote the target aid levels for each group. The time period t allows for dynamic analysis of aid allocation decisions.

While m represents the quantitative allocation, the parameters a and τ capture qualitative factors influencing the effectiveness of aid. These factors include institutional capacity and governance quality in recipient countries, the strength of diplomatic ties and trust between donors and recipients, and local conditions that impact aid outcomes. They also reflect risks of aid misappropriation and the capacity for monitoring and evaluation. The gap between actual inputs and target levels reflects the potential utility loss due to insufficient understanding.

A.2 Uncertainty and belief structure

The model incorporates a Bayesian learning mechanism where donors operate under uncertainty about the true target levels τ_{ot} and τ_{it}. Initially, donors hold prior beliefs about these target levels. After implementing aid inputs a_{ot} and a_{it}, they observe the outcomes and update their beliefs about the target levels through Bayesian updating. For each group, the target level consists of a true underlying value plus a random shock:

$$\tau_{ot} = \tau_o^* + \mu_{ot},$$
$$\tau_{it} = \tau_i^* + \mu_{it},$$

where $\mu_{ot} \sim N(0, \sigma_{ou}^2)$ and $\mu_{it} \sim N(0, \sigma_{iu}^2)$ are normally distributed independent and identically distributed shocks with mean zero and variances σ_{ou}^2 and σ_{iu}^2, respectively. At time t, the person does not know the true values of τ_o^* and τ_i^* but holds beliefs about them, which are distributed as $\tau_o^* \sim N(\tau_{ot}^*, \sigma_{o\tau t}^2)$ and $\tau_i^* \sim N(\tau_{it}^*, \sigma_{i\tau t}^2)$.

These beliefs capture the uncertainty in the donor's understanding of the true target levels, allowing for a Bayesian updating process as new information about τ_{ot} and τ_{it} is observed over time. The uncertainty about the outgroup is assumed to be greater than that about the ingroup, so that $\sigma_{o\tau t}^2 \geq \sigma_{i\tau t}^2$ and $\sigma_{ou}^2 \geq \sigma_{iu}^2$.

This specification captures two distinct sources of uncertainty. First, donors face uncertainty about the true target levels (τ_o^* and τ_i^*), reflected in their beliefs, which follow normal distributions with means τ_{ot}^* and τ_{it}^* and variances $\sigma_{o\tau t}^2$ and $\sigma_{i\tau t}^2$, respectively. These variance terms represent uncertainty that can be reduced through learning and experience. Second, there are random shocks (μ_{ot} and μ_{it}) with constant variances σ_{ou}^2 and σ_{iu}^2, representing inherent randomness in aid effectiveness that cannot be eliminated through learning. While donors can improve their understanding of the true target levels through experience (reducing $\sigma_{o\tau t}^2$ and $\sigma_{i\tau t}^2$), they cannot eliminate the fundamental uncertainty captured by σ_{ou}^2 and σ_{iu}^2.

A.3 Optimal input decision

The optimal input levels are determined by maximizing the expected utility with respect to aid inputs:

$$\max_{a_{ot}} E\{-m^2(a_{ot} - \tau_{ot})^2\}$$

$$\Rightarrow E\{-2m^2(a_{ot} - \tau_{ot})\} = 0$$

$$\Rightarrow a_{ot} = E(\tau_{ot}) = E(\tau_o^* + \mu_{ot}) = \tau_{ot}^*$$

Similarly, $a_{it} = \tau_{it}^*$.

A.4 Expected utility and optimal allocation of aid towards outgroup

The expected utility can be expressed as:

$$\begin{aligned} E(\Pi_t) &= E\left(-m^2\left(\tau_{ot}^* - \tau_{ot}\right)^2 - (1-m)^2\left(\tau_{it}^* - \tau_{it}\right)^2\right) \\ &= E\left(-m^2\left(\tau_{ot}^* - \tau_o^* - \mu_{ot}\right)^2 - (1-m)^2\left(\tau_{it}^* - \tau_i^* - \mu_{it}\right)^2\right) \\ &= -m^2\sigma_{o\tau t}^2 - m^2\sigma_{ou}^2 - (1-m)^2\sigma_{i\tau t}^2 - (1-m)^2\sigma_{iu}^2 \end{aligned}$$

The first-order condition for optimal allocation yields:

$$\frac{\partial E(\Pi_t)}{\partial m} = -2m(\sigma_{o\tau t}^2 + \sigma_{ou}^2) - (2m-2)(\sigma_{i\tau t}^2 + \sigma_{iu}^2) = 0$$

This results in the optimal allocation:

$$m^* = \frac{\sigma_{i\tau t}^2 + \sigma_{iu}^2}{\sigma_{o\tau t}^2 + \sigma_{ou}^2 + \sigma_{i\tau t}^2 + \sigma_{iu}^2}$$

The optimal allocation parameter m^* provides insights into moral universalism in aid distribution. The model predicts that as uncertainty about outgroup target levels decreases ($\sigma_{o\tau t}^2 \downarrow$), leading to higher allocation to the outgroup ($m^* \uparrow$). This mechanism promotes more universal aid allocation patterns through learning and reduced uncertainty. If the uncertainty about the outgroup ($\sigma_{o\tau t}^2 + \sigma_{ou}^2$) is greater than that about the ingroup ($\sigma_{i\tau t}^2 + \sigma_{iu}^2$),

then m^* below 0.5. This reflects the tendency to favor ingroup beneficiaries in aid allocation decisions. However, when uncertainties about both groups are identical ($\sigma^2_{o\tau,t} + \sigma^2_{ou} = \sigma^2_{i\tau,t} + \sigma^2_{iu}$), the optimal allocation would be $m^* = 0.5$, representing perfect moral universalism where ingroup and outgroup are treated equally.

A.5 Learning dynamics under direct contact

The uncertainty about outgroup needs evolves through a Bayesian learning process. Since the ingroup is already well understood, there is no additional updates regarding the ingroup. After choosing input a_{ot}, donors observe output Π_{ot} and update their beliefs about τ^*_o. Suppose the variance of the belief about τ^*_o at time $t-1$ is $\sigma^2_{o\tau,t-1}$. The variance of beliefs is updated following Bayes' rule:

$$\sigma^2_{o\tau t} = \frac{1}{\frac{1}{\sigma^2_{o\tau,t-1}} + \frac{1}{\sigma^2_{ou}}}$$

$$= \frac{1}{\frac{1}{\sigma^2_{o\tau,0}} + \frac{N_{t-1}}{\sigma^2_{ou}}}$$

where N_{t-1} represents the cumulative number of direct interactions with the outgroup. This specification shows how direct contact reduces uncertainty through learning, as more interactions (higher N_{t-1}) decrease the variance $\sigma^2_{o\tau t}$, representing increased confidence in the donor's understanding of the true outgroup target level τ^*_o. Here, σ_{ou} represents the quality of interaction; higher-quality interactions (lower σ_{ou}) result in more effective learning and a greater reduction in uncertainty. Thus, more accurate and meaningful interactions with the outgroup enhance the donor's understanding of τ^*_o more effectively.

A.6 Learning dynamics under indirect contact

The model extends to incorporate learning from others' experiences. Individuals can observe others' interactions with the outgroup, albeit with additional noise: $\tau_{ot} + \epsilon_{ot}$ where $\epsilon_{ot} \sim N(0, \sigma^2_\epsilon)$. This creates a composite uncertainty term $\sigma^2_{ov} = \sigma^2_{ou} + \sigma^2_\epsilon$. The expanded variance equation becomes:

$$\sigma^2_{o\tau t} = \frac{1}{\frac{1}{\sigma^2_{o\tau,t-1}} + \frac{1}{\sigma^2_{ou}} + \frac{1}{\sigma^2_{ov}}}$$

$$= \frac{1}{\frac{1}{\sigma^2_{o\tau,0}} + \frac{N_{t-1}}{\sigma^2_{ou}} + \frac{M_{t-1}}{\sigma^2_{ov}}}$$

This specification reveals the potential of indirect contact in promoting universal aid allocation. When the noise in indirect learning (σ^2_ϵ) is sufficiently small and the number of observed interactions (M_{t-1}) is large enough, individuals can significantly reduce their uncertainty about the outgroup even without direct contact. Each individual's interactions generate informational spillovers that benefit others in the network, creating positive externalities in learning about outgroup needs. This implies that the social value of intergroup contact exceeds its private value. Moreover, the effectiveness of both direct and indirect learning depends on the precision of the signals received (σ^2_{ou} and σ^2_{ov}, respectively). Higher quality interactions lead to faster learning and convergence toward more universal allocation patterns ($m^* \to 0.5$). These dynamics suggest that promoting high-quality intergroup contact, whether direct or indirect, can accelerate the evolution toward more universal aid allocation patterns through both individual learning and social spillover effects.

A.7 Implications for empirical anlaysis

The conceptual framework provides an explanation for the empirical findings about missionaries' influence on foreign aid support. The model's key implications map closely to the empirical evidence: Increased indirect contact (M_{t-1}) can reduce uncertainty about outgroup needs ($\sigma^2_{o\tau t}$) even without direct interaction, particularly when there is high-quality information transmission (σ_ϵ) between those with and without direct contact. This aligns with the finding that constituencies with greater missionary exposure were more likely to support foreign aid bills. Missionaries, acting as reliable sources of information about outgroups (low σ_{ou}), effectively transmitted knowledge about foreign communities back to their home constituencies.

B. Additional results

B.1 Census match

I employ an iterative record linking procedure to match archival records to census data (Abramitzky *et al.*, 2021). An individual and a census record are considered matched if they share the same NYSIIS-standardized first and last name, middle initial, address, and have estimated birth years within two years of each other. If only one census observation matches only one archival sample, I consider those records linked and remove them from the pool of possible matches. If the match is not unique, the records are not linked.

I match individuals under forty years old across each census, beginning with the most stringent criteria. I then repeat the procedure, gradually relaxing the matching variables by using less detailed names or geographic identifiers. The matching process follows these steps:

- Match based on first and last names, middle initial, birth year, and county of residence.
- Match based on first and last names, birth year, and county of residence.
- Match based on first and last names, middle initial, birth year, and state of residence (rather than county).
- Match based on first and last names, birth year, and state of residence (rather than county).
- Match based on first and last names, middle initial, and birth year.
- Match based on first and last names and birth year.

The data includes 33,535 individuals with name and birth year information. Of these, 33,478 individuals have birth years after 1858, comprising the sample matched to the 1900 census (40 years of age in 1900 plus two years of allowable gap for census matching). Among them, 28,256 individuals are matched to either the 1900 or 1910 census records, resulting in a census match rate of 84 percent.

The automated linking procedure may result in some false positives. As suggested by Bailey *et al.* (2020), a more unique match can enhance matching accuracy. To improve the reliability of the matches, I further restrict the sample to individuals who are unique

within ±2 years of age (Abramitzky *et al.*, 2021). This refinement yields 22,402 matched individuals, achieving a match rate of 67 percent.

In the baseline matching procedure, I consider an individual matched if there is only one unique combination of name, birth year, and location in both the census record and the archival sample. For example, a match would be made if there is only one John Smith born in 1897 who lives in Illinois in 1900 in both datasets.

For a more conservative matching approach, I implement additional stringency. In this case, I drop matches if there are similar individuals within a close age range in the same location. For instance, I would drop the match for John Smith born in 1897 in Illinois if there is another John Smith in Illinois born in 1895.

This match rate is at the higher end of the distribution compared to existing studies that match external data to individual census records (Bleemer & Quincy, 2021; Moreira & Pérez, 2022; Aneja & Xu, 2022) or perform census-to-census or census-to-patent matching (Sarada *et al.*, 2019; Abramitzky *et al.*, 2020), which report 20 to 40 percent match rates. This higher rate is presumably due to the Student Volunteer Movement records containing detailed data on county of residence and birth years. Matching procedures that involve more accurate birth years or county of residence allow for more unique matches between external data and census records, resulting in about 57 to 69 percent match rates in such cases (Michelman *et al.*, 2022; Ang & Chinoy, 2023).

For the 1900 census, the match rate is 71 percent, as 32,658 individuals have birth years between 1858 and 1902, and 23,059 individuals were matched. For the 1910 census, the match rate is 72 percent, as 32,484 individuals have birth years between 1868 and 1912, and 23,461 individuals are matched.

To examine whether the census match rate differs by treatment status, I regress an outcome variable indicating whether an individual is matched to either the 1900 or 1910 census on the treatment indicator, controlling for baseline characteristics such as birth year, gender, and county fixed effects. The results are presented in Table B.1.

Panel A displays the results from the baseline matching procedure. I find a notable difference: missionaries were 3.45 percentage points less likely to be matched to census records. This discrepancy is likely attributable to missionaries residing abroad at the time of the census, thus not being enumerated in the U.S. census.

However, when I narrow the sample to individuals born after 1890 (who were younger than twenty at the time of the census survey), this difference disappears. This observation provides an additional rationale for restricting attention to individuals younger than 20 in

the balance test presented in Table B.12.

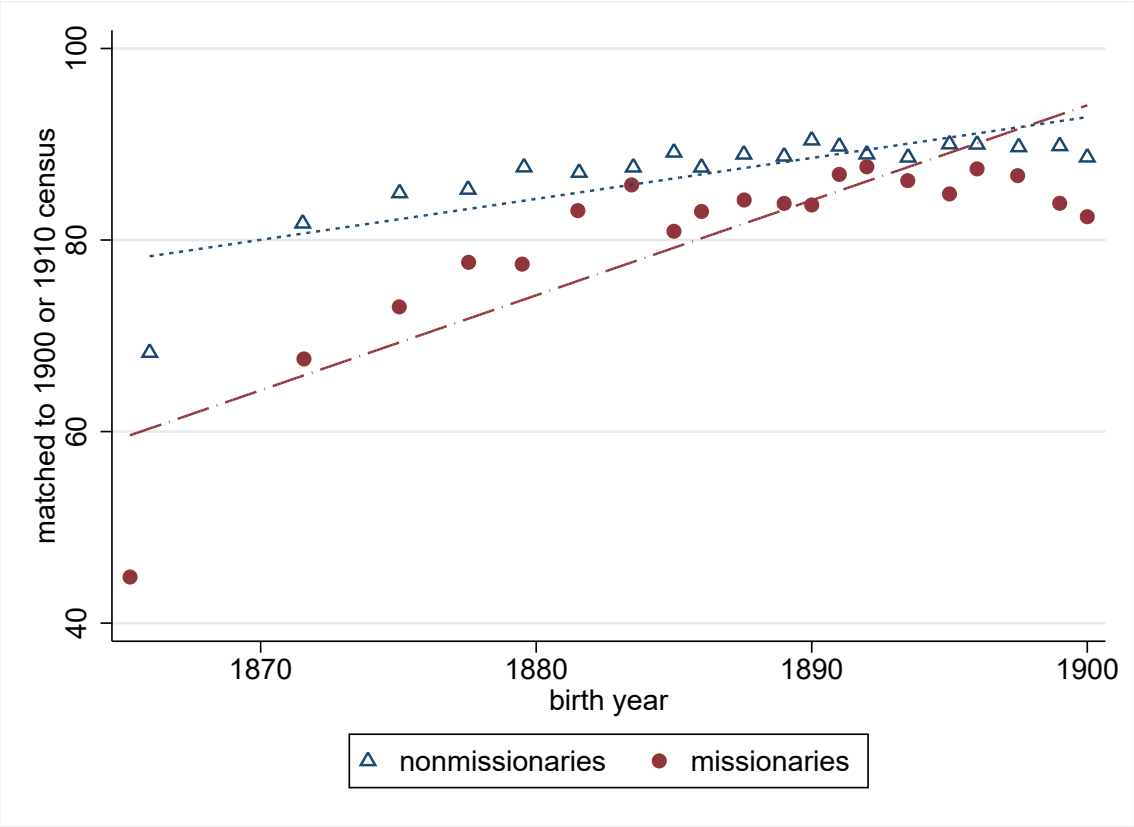
Table B.1: Matching to the census

	(1)	(2)	(3)
DV:	Matched to 1900 or 1910 census		
Panel A: Baseline matching			
Mission	-3.45***	-0.24	-5.20***
	(0.50)	(0.81)	(0.64)
Observations	29,351	11,859	16,854
R-squared	0.10	0.14	0.16
Control outcome mean	87.09	88.55	85.77
Controls	Yes	Yes	Yes
Sample restriction	no	birthyear >1890	birthyear ≤1890
Panel B: Conservative matching			
Mission	-3.65***	0.12	-6.11***
	(0.65)	(1.01)	(0.84)
Observations	29,351	11,859	16,854
R-squared	0.09	0.14	0.13
Control outcome mean	69.65	73.03	66.90
Controls	Yes	Yes	Yes
Sample restriction	no	birthyear >1890	birthyear ≤1890

Note: Unit of analysis is an individual in the Student Volunteer Movement archival records. Regressions of an indicator equal to one hundred if an individual is matched to either 1900 or 1910 census data on an indicator for missionaries. Outcome variable in Panel A is defined by the baseline matching procedure described in Section B.1. Outcome variable in Panel B is defined by a more conservative matching restricting the matched sample to those unique within ±2 years of age. Control variables include birth year, female, denomination, and county fixed effects. *** p<0.01, ** p<0.05, * p<0.1

B.2 Census match rate by birth year

Figure B.1: Census match rate by birth year



Note: Binscatter plot where the vertical axis indicates whether an individual is matched to 1900 or 1910 census and the horizonatl axis is the birth year.

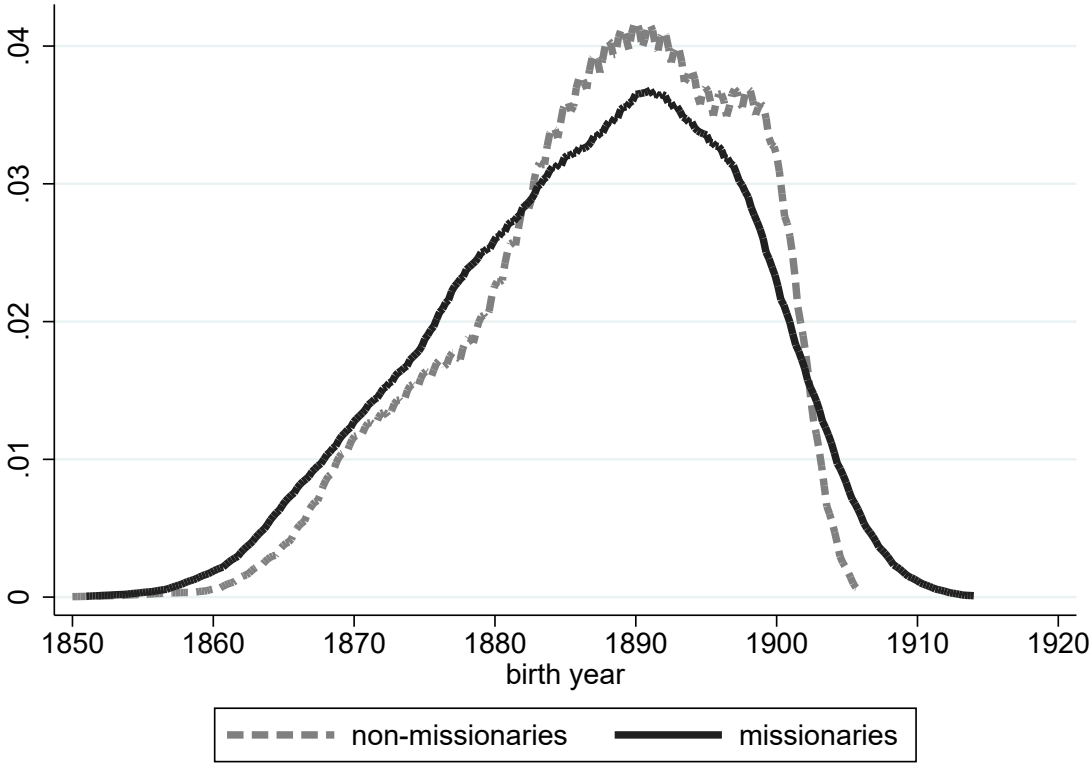
Table B.2: Balance test with a more conservative census match

Variables	(1) diff (s.e.)	(2) control mean	(3) N	(4) age
Parental occ. score ($00)	0.15 (0.23)	20.96	21,419	[0,20]
Parent religious occ.	2.38*** (0.45)	6.13	21,419	[0,20]
Foreign born	0.51** (0.24)	1.64	21,419	[0,20]
Foreign born parents	1.11* (0.63)	17.01	21,419	[0,20]
City pop. (000s)	-1.22 (2.12)	106.61	21,419	[0,20]
Home ownership	1.27 (0.82)	63.21	21,419	[0,20]
Two parents	0.47 (0.46)	90.41	21,419	[0,20]
White	-0.03 (0.19)	98.26	21,419	[0,20]
Farm household	-1.38* (0.78)	39.35	21,419	[0,20]
Employed	-0.01 (0.60)	11.49	11,138	[10,20]
School attendance	-0.20 (0.78)	84.89	11,138	[10,20]
Literacy	-0.33 (0.21)	98.74	11,138	[10,20]

Note: This is the same results in Table B.12 except that this table restricts the sample to the matches between the archival records and the census that are unique within ±2 years of age to reduce the false positives in the census matching process. *** p<0.01, ** p<0.05, * p<0.1

B.3 Demographics of missionaries

Figure B.2: Kernel density plot of birth year



Note: Kernel density plots of birth years in the archival records by missionaries and non-missionaries. Ten individuals born before 1850 have been excluded for presentational purpose. N=33,401. Samples include everyone in the records who volunteered to be missionaries.

Table B.3: Number of volunteers by state

State	Volunteers	State	Volunteers per million
ILLINOIS	2724	OKLAHOMA	5854.384
OHIO	2624	OREGON	1574.417
PENNSYLVANIA	2609	WASHINGTON	1451.1
NEW YORK	2220	CALIFORNIA	1270.559
IOWA	2126	IDAHO	1232.447
KANSAS	1536	SOUTH DAKOTA	1164.814
CALIFORNIA	1535	IOWA	1111.985
MICHIGAN	1341	COLORADO	1091.708
INDIANA	1338	KANSAS	1076.312
MASSACHUSETTS	1165	NORTH DAKOTA	1034.375
MISSOURI	1152	NEBRASKA	931.1462
NEBRASKA	986	OHIO	714.5355
TEXAS	979	ILLINOIS	711.9054
MINNESOTA	924	MINNESOTA	709.7723
NORTH CAROLINA	820	MICHIGAN	640.4351
VIRGINIA	739	INDIANA	610.289
WISCONSIN	667	SOUTH CAROLINA	555.9663
NEW JERSEY	666	MONTANA	552.365
SOUTH CAROLINA	640	VERMONT	526.4393
GEORGIA	594	MASSACHUSETTS	520.3348
KENTUCKY	532	NORTH CAROLINA	506.8151
TENNESSEE	508	PENNSYLVANIA	496.195
WASHINGTON	507	WYOMING	477.7201
OREGON	494	NEW JERSEY	460.921
COLORADO	450	CONNECTICUT	448.9064
SOUTH DAKOTA	383	VIRGINIA	446.2614
OKLAHOMA	362	TEXAS	437.9288
CONNECTICUT	335	ARIZONA	436.0953
MISSISSIPPI	335	MISSOURI	429.9817
ALABAMA	327	FLORIDA	406.2112
MARYLAND	275	WISCONSIN	395.4045
WEST VIRGINIA	274	NEW YORK	370.1324
ARKANSAS	248	WEST VIRGINIA	359.2058
MAINE	206	DISTRICT OF COLUMBIA	325.5321
NORTH DAKOTA	189	GEORGIA	323.2912
VERMONT	175	MAINE	311.6085
FLORIDA	159	NEW HAMPSHIRE	310.7322
NEW HAMPSHIRE	117	RHODE ISLAND	303.9021
RHODE ISLAND	105	TENNESSEE	287.4087
IDAHO	104	KENTUCKY	286.2316
LOUISIANA	82	MARYLAND	263.8168
DISTRICT OF COLUMBIA	75	MISSISSIPPI	259.7705
MONTANA	73	NEW MEXICO	247.4071
NEW MEXICO	38	ARKANSAS	219.8233
DELAWARE	36	NEVADA	218.5267
WYOMING	29	ALASKA	218.3951
ARIZONA	26	ALABAMA	216.1245
UTAH	24	DELAWARE	213.6587
NEVADA	10	UTAH	115.4373
HAWAII	9	HAWAII	100.0111
ALASKA	7	LOUISIANA	73.30677

Note: Number of volunteers (missionaries and volunteers who did not become missionaries) by state. Data is sourced from the Student Volunteer Movement records. The number of missionaries per million residents is calculated using the 1890 state population. State address is available for 33,879 out of 37,106 volunteers.

Table B.4: Number of missionaries by state

State	Missionaries	State	Missionaries per million
PENNSYLVANIA	976	OKLAHOMA	1261.442
ILLINOIS	940	CALIFORNIA	451.1104
OHIO	930	WASHINGTON	403.5605
NEW YORK	822	IDAHO	379.2143
IOWA	656	KANSAS	346.1575
CALIFORNIA	545	OREGON	344.2045
KANSAS	494	IOWA	343.1149
MASSACHUSETTS	453	SOUTH DAKOTA	334.5417
MICHIGAN	433	NORTH DAKOTA	317.4273
INDIANA	349	NEBRASKA	283.3102
MISSOURI	340	COLORADO	276.5661
MINNESOTA	339	MINNESOTA	260.4035
NEBRASKA	300	OHIO	253.2462
TEXAS	268	ILLINOIS	245.6649
NEW JERSEY	265	MICHIGAN	206.7922
VIRGINIA	256	MASSACHUSETTS	202.3276
WISCONSIN	224	VERMONT	195.5346
NORTH CAROLINA	205	CONNECTICUT	186.2627
SOUTH CAROLINA	177	PENNSYLVANIA	185.6214
KENTUCKY	168	NEW JERSEY	183.3995
GEORGIA	166	INDIANA	159.186
TENNESSEE	152	ALASKA	155.9965
WASHINGTON	141	VIRGINIA	154.5912
CONNECTICUT	139	SOUTH CAROLINA	153.7594
COLORADO	114	NEW YORK	137.049
SOUTH DAKOTA	110	WISCONSIN	132.7895
OREGON	108	DISTRICT OF COLUMBIA	130.2129
ALABAMA	93	MISSOURI	126.9043
MARYLAND	93	NORTH CAROLINA	126.7038
MAINE	80	MONTANA	121.0663
OKLAHOMA	78	MAINE	121.013
WEST VIRGINIA	76	TEXAS	119.8825
MISSISSIPPI	65	WYOMING	115.3118
VERMONT	65	WEST VIRGINIA	99.63372
NORTH DAKOTA	58	NEW HAMPSHIRE	95.60991
ARKANSAS	57	RHODE ISLAND	95.51209
NEW HAMPSHIRE	36	KENTUCKY	90.38891
FLORIDA	34	GEORGIA	90.34736
RHODE ISLAND	33	MARYLAND	89.21805
IDAHO	32	FLORIDA	86.86277
DISTRICT OF COLUMBIA	30	TENNESSEE	85.9963
LOUISIANA	17	ARIZONA	83.86448
MONTANA	16	ALABAMA	61.46659
NEW MEXICO	9	NEW MEXICO	58.59642
WYOMING	7	ARKANSAS	50.5239
UTAH	6	MISSISSIPPI	50.40323
ALASKA	5	HAWAII	44.44938
ARIZONA	5	DELAWARE	29.67482
DELAWARE	5	UTAH	28.85933
HAWAII	4	LOUISIANA	15.19775
NEVADA	0	NEVADA	0

Note: Number of missionaries by state. Data is sourced from the Student Volunteer Movement records. The number of missionaries per million residents is calculated using the 1890 state population. State address is available for 10,974 out of 12,265 missionaries.

Table B.5: Number of volunteers by denomination

Denomination	Volunteers	Denomination	Volunteers per million
Methodist Episcopal Church	9547	Dunkard (Old Order)	109499
Presbyterian Church in the United State of America (North)	4927	Christian Missionary Association	26525.2
Regular Baptist (North) Church	4101	Mennonite Church	15809.81
Congregationalist Church	2679	Free Methodist Church	11935.81
Regular Baptist (South) Church	1633	Associate Reformed Synod of the South	8940.125
Presbyterian Church in the United States (Southern)	1291	Christian (Christian Connection) Church	8840.583
Disciples of Christ Church	1142	Reformed Presbyterian Church in the United States (Synod)	8416.872
Christian (Christian Connection) Church	802	United Presbyterian Church	8124.828
United Presbyterian Church	767	Friends (Orthodox) Church	7844.117
Methodist Episcopal Church (South)	688	Presbyterian Church in the United States (Southern)	7232.655
Friends (Orthodox) Church	628	Wesleyan Methodist Connection of America Church	6801.069
United Brethren in Christ Church	601	Presbyterian Church in the United State of America (North)	6309.783
Protestant Episcopal Church	587	Congregationalist Church	5240.672
Lutheran Synodical Conference Church	550	Christian Reformed Church	5212.51
Dunkard (Old Order)	483	Regular Baptist (North) Church	5145.894
Evangelical Association Church	426	Reformed Church in America	4539.099
Reformed Church in America	422	Methodist Episcopal Church	4283.379
Free Methodist Church	270	Seventh-day Adventist	4187.576
Mennonite Church	270	Moravian Church	3331.909
Reformed Church in the United States	207	Evangelical Association Church	3196.207
Freewill Baptist Church	175	United Brethren in Christ Church	2964.973
United Norwegian Lutheran Church of America	164	Mennonite Brethren in Christ	2695.418
Cumberland Presbyterian Church	161	Plymouth Brethren	2554.47
Methodist Protestant Church	127	German Augsburg Synod (Lutheran)	2425.107
Seventh-day Adventist	121	United Synod in the South (Lutheran) Church	2189.177
Wesleyan Methodist Connection of America Church	112	Evangelical Missionary Church	2103.049
German Evangelical Synod of North America Church	95	Freewill Baptist Church	1990.944
Reformed Presbyterian Church in the United States (Synod)	89	Disciples of Christ Church	1790.089
United Synod in the South (Lutheran) Church	82	Lutheran Synodical Conference Church	1541.743
Associate Reformed Synod of the South	76	United Norwegian Lutheran Church of America	1367.886
Christian Reformed Church	65	Church of God	1290.323
Moravian Church	39	Regular Baptist (South) Church	1289.231
Church of God	28	Protestant Episcopal Church	1121.946
General Council (Lutheran) Church	23	Seventh-day Baptist	1093.733
Christian Missionary Association	20	Reformed Church in the United States	1016.115
Norwegian Lutheran Church in America	18	Cumberland Presbyterian Church	983.4403
German Augsburg Synod (Lutheran)	17	Methodist Protestant Church	903.0662
Plymouth Brethren	17	Welsh Calvinistic Methodist Church	864.6439
African Methodist Episcopal Church	12	Methodist Episcopal Church (South)	573.9264
Advent Christian Church	11	German Evangelical Synod of North America Church	506.8505
Welsh Calvinistic Methodist Church	11	Amish Mennonite Church	495.0005
Seventh-day Baptist	10	Advent Christian Church	426.0923
Amish Mennonite Church	5	Norwegian Lutheran Church in America	324.6051
Mennonite Brethren in Christ	3	General Council (Lutheran) Church	70.9338
Evangelical Missionary Church	2	Universalist Church	40.76142
Universalist Church	2	African Methodist Episcopal Church	26.62188
Joint Lutheran Synod of Ohio and Other States Church	1	Joint Lutheran Synod of Ohio and Other States Church	14.41857

Note: Number of missionaries by denomination. Data is sourced from the Student Volunteer Movement records. Samples are restricted to denominations with at least one volunteer in the Student Volunteer Movement records. The number of volunteers per million for each denomination is calculated using the 1890 Census of Religious Bodies. Denominational affiliation is available for 33,507 out of 37,106 volunteers.

Table B.6: Number of missionaries by denomination

Denomination	Missionaries	Denomination	Missionaries per million
Methodist Episcopal Church	2520	Dunkard (Old Order)	29698.48
Presbyterian Church in the United State of America (North)	1774	Christian Missionary Association	7957.56
Regular Baptist (North) Church	1088	Mennonite Church	4860.054
Congregationalist Church	922	Reformed Presbyterian Church in the United States (Synod)	3782.864
Presbyterian Church in the United States (Southern)	378	Free Methodist Church	3050.263
Regular Baptist (South) Church	360	Associate Reformed Synod of the South	2940.83
Disciples of Christ Church	296	United Presbyterian Church	2828.33
United Presbyterian Church	267	Christian (Christian Connection) Church	2381.005
Christian (Christian Connection) Church	216	Presbyterian Church in the United State of America (North)	2271.88
Methodist Episcopal Church (South)	193	Friends (Orthodox) Church	2148.389
Protestant Episcopal Church	179	Presbyterian Church in the United States (Southern)	2117.695
Friends (Orthodox) Church	172	Congregationalist Church	1803.621
United Brethren in Christ Church	172	Wesleyan Methodist Connection of America Church	1760.991
Reformed Church in America	161	Reformed Church in America	1731.741
Lutheran Synodical Conference Church	150	Christian Reformed Church	1523.657
Dunkard (Old Order)	131	Regular Baptist (North) Church	1365.212
Evangelical Association Church	112	Seventh-day Adventist	1280.498
Mennonite Church	83	Plymouth Brethren	1202.104
Free Methodist Church	69	Methodist Episcopal Church	1130.629
Reformed Church in the United States	68	Moravian Church	1110.636
United Norwegian Lutheran Church of America	60	United Brethren in Christ Church	848.5446
Freewill Baptist Church	43	Evangelical Association Church	840.3172
Reformed Presbyterian Church in the United States (Synod)	40	Church of God	691.2442
Cumberland Presbyterian Church	38	United Synod in the South (Lutheran) Church	640.7347
Seventh-day Adventist	37	German Augsburg Synod (Lutheran)	570.6134
Wesleyan Methodist Connection of America Church	29	United Norwegian Lutheran Church of America	500.4462
Methodist Protestant Church	27	Freewill Baptist Church	489.2034
German Evangelical Synod of North America Church	27	Disciples of Christ Church	463.9811
Associate Reformed Synod of the South	25	Lutheran Synodical Conference Church	420.4755
United Synod in the South (Lutheran) Church	24	Protestant Episcopal Church	342.1267
Christian Reformed Church	19	Reformed Church in the United States	333.7964
Church of God	15	Amish Mennonite Church	297.0003
Moravian Church	13	Regular Baptist (South) Church	284.2149
General Council (Lutheran) Church	9	Welsh Calvinistic Methodist Church	235.812
Plymouth Brethren	8	Cumberland Presbyterian Church	232.1164
Christian Missionary Association	6	Seventh-day Baptist	218.7466
Advent Christian Church	5	Advent Christian Church	193.6783
German Augsburg Synod (Lutheran)	4	Methodist Protestant Church	191.9904
Norwegian Lutheran Church in America	4	Methodist Episcopal Church (South)	160.9997
Amish Mennonite Church	3	German Evangelical Synod of North America Church	144.0522
Welsh Calvinistic Methodist Church	3	Norwegian Lutheran Church in America	72.13446
Seventh-day Baptist	2	General Council (Lutheran) Church	27.7567
African Methodist Episcopal Church	2	Joint Lutheran Synod of Ohio and Other States Church	14.41857
Joint Lutheran Synod of Ohio and Other States Church	1	African Methodist Episcopal Church	4.43698
Evangelical Missionary Church	0	Evangelical Missionary Church	0
Mennonite Brethren in Christ	0	Mennonite Brethren in Christ	0
Universalist Church	0	Universalist Church	0

Note: Number of missionaries by denomination. Data is sourced from the Student Volunteer Movement records. Samples are restricted to denominations with at least one volunteer in the Student Volunteer Movement records. The number of missionaries per million for each denomination is calculated using the 1890 Census of Religious Bodies. Denominational affiliation is available for 9,755 out of 12,265 missionaries.

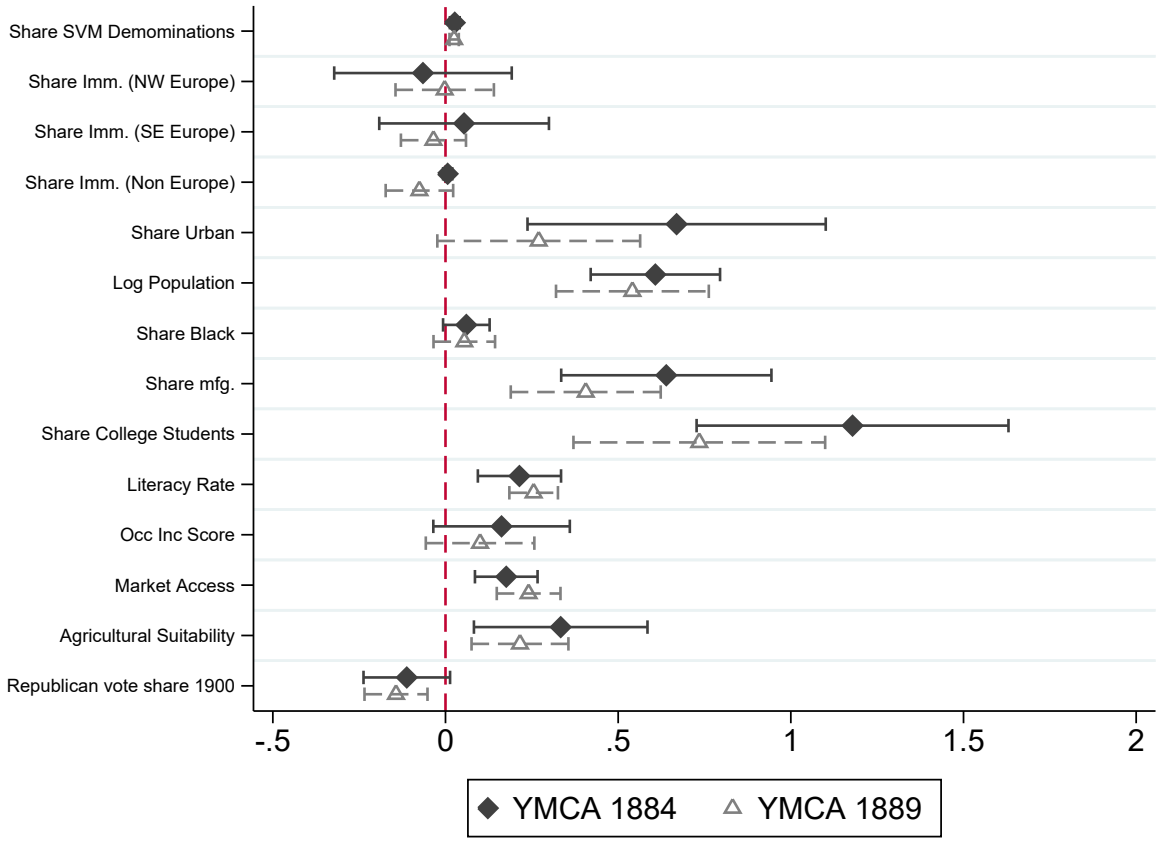
Table B.7: Top 50 destination list

destination	count	destination	count
China	2497	Ceylon	19
India	1452	United States	16
Africa	785	Singapore	16
Japan	635	Micronesia	15
South America	492	Palestine	15
Korea	322	Jamaica	13
Mexico	230	Europe	12
Philippines	196	Madagascar	11
Turkey	186	Java	10
Burma	165	Peru	10
Egypt	107	Panama	9
Persia	99	Gabon	8
Syria	84	Italy	7
Brazil	77	Uruguay	7
Cuba	74	Bolivia	7
West Indies	74	Russia	7
Siam	71	France	6
Alaska	70	Sierra Leone	6
Malaysia	55	Tibet	5
Hawaii	53	Cyprus	5
Puerto Rico	52	Belgium	5
Chile	37	Colombia	5
Saudi Arabia	26	Venezuela	5
Laos	23	Bulgaria	5
Argentina	23	Congo	4

Note: Number of missionaries by destination: Destination data is available for 8,195 out of 12,265 missionaries. This list highlights the top 50 most frequent destinations, based on records from the Student Volunteer Movement.

B.4 Balance between counties with YMCA chapters established in 1884 vs. 1889

Figure B.3: County balance for YMCA openings in 1884 and 1889

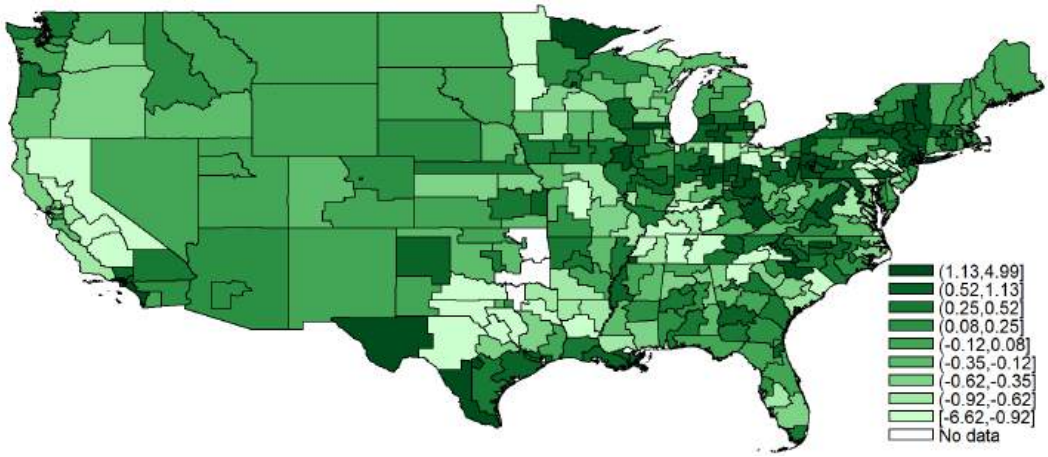


Note: The unit of analysis is the county. All variables are standardized to have a mean of zero and a standard deviation of one. Coefficient plot from regressions of covariates on indicator variables for counties that got YMCA chapters in 1884 (diamonds) and counties got YMCA chapters in 1889 (hollow triangles). The results control for state fixed effects, and error bars represent 95 percent confidence intervals. Standard errors are clustered at the state level.

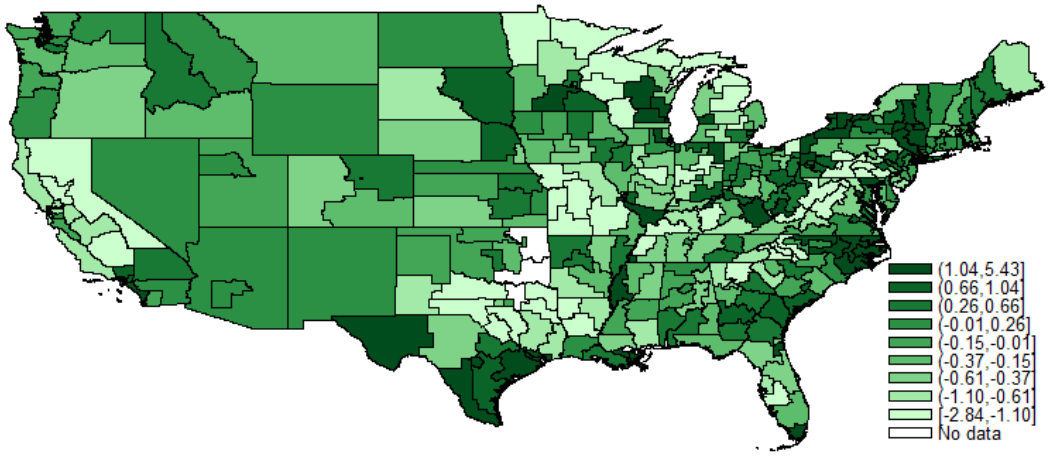
B.5 Treatment and instrumental variables

Figure B.4: Treatment and instrumental variables

(a) Exposure to missionaries



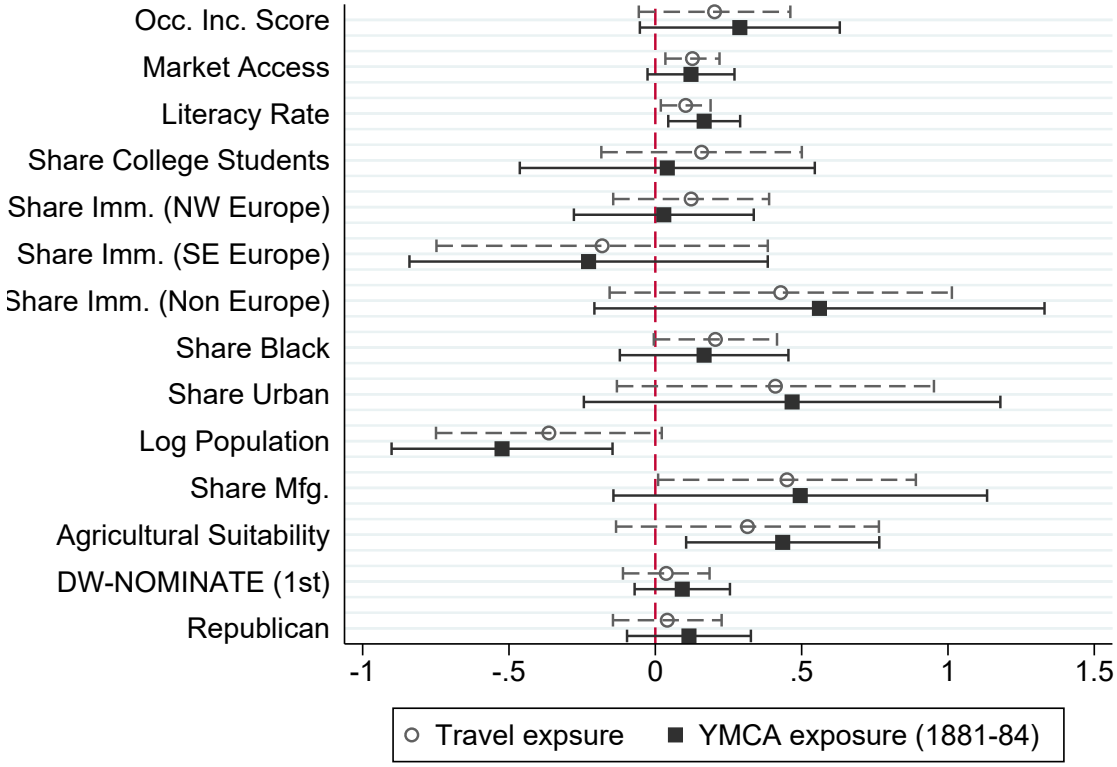
(b) Exposure to travel secretaries, 1886-87



Note: Exposure to missionaries and exposure to travel secretaries are standardized after controlling for state fixed effects. Polygons indicate congressional districts in the 87th Congress.

B.6 Balance in exposure to the instrumental variables

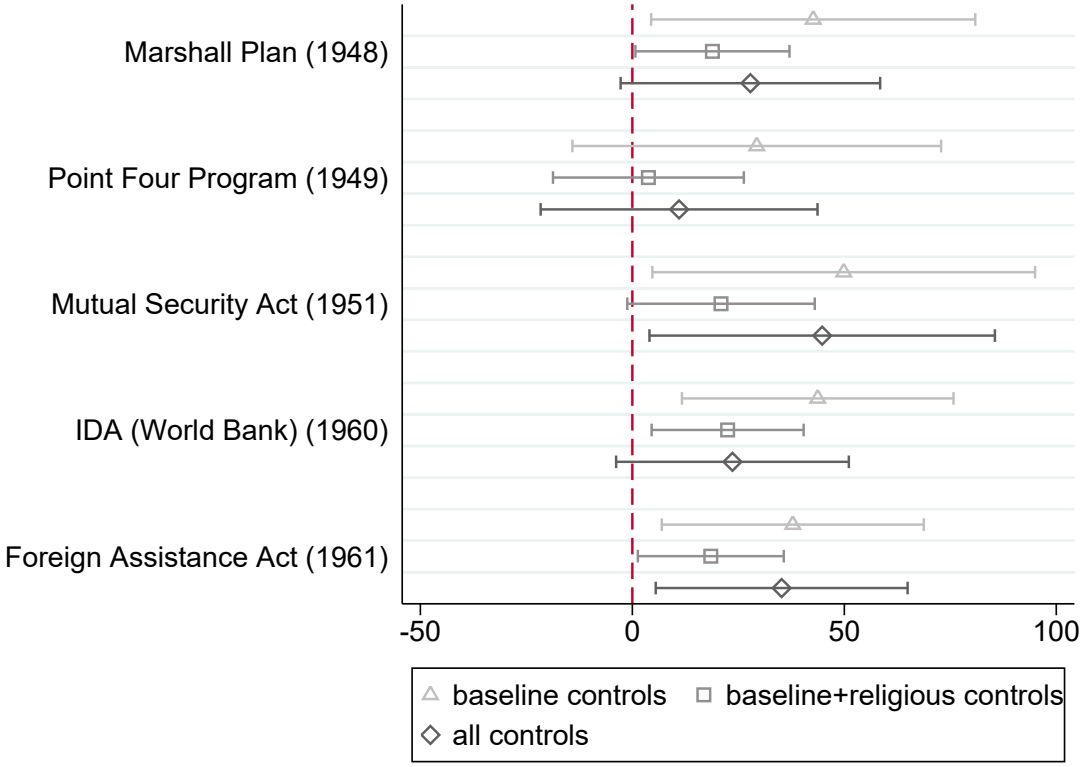
Figure B.5: Balance in exposures



Note: Unit of analysis is a congressional district by congressional terms. The circles represent coefficients from regressions of congressional district covariates on travel exposure, controlling for baseline YMCA exposure. Square markers indicate coefficients from regressions of congressional district covariates on YMCA exposure in 1881-84, controlling for YMCA exposure in 1889 (as explained in Section 4.6). All regressions include state fixed effects, time fixed effects, and the share of missionary denominations. Error bars indicate 95 percent confidence intervals, and standard errors are clustered at the state level.

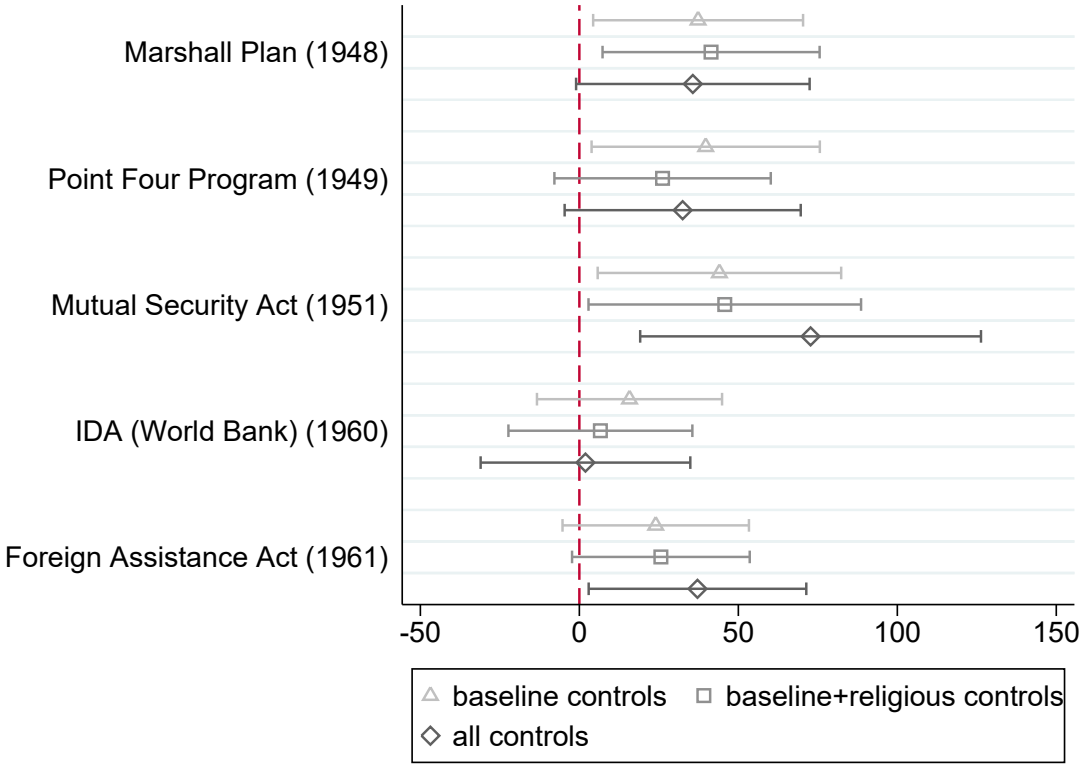
B.7 Effects on congressional votes: Bill-specific estimates

Figure B.6: Effects on foreign aid legislation: Travel exposure as an IV



Note: Unit of analysis is a congressional district. Coefficients from IV regression results of a Congressman vote "Yea" for the foreign aid bill on the exposure to missionaries instrumented by the travel exposure. Core controls include the YMCA controls, share of SVM denominations, Republican party fixed effects, DW-NOMINATE score (first dimension), latitude, longitude, and state fixed effects. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, African Americans. Religious controls include the shares of missionaries, evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Error bars indicate 95 percent confidence intervals. Standard errors are robust to heteroscaedasticity.

Figure B.7: Effects on foreign aid legislation: YMCA exposure as an IV



Note: Unit of analysis is a congressional district. Coefficients from IV regression results of a Congressman vote "Yea" for the foreign aid bill on the exposure to missionaries instrumented by YMCA exposure in 1881 and 1884. The instrumental variable is explained in Section 4.6. Core controls include the YMCA exposure in 1889, share of SVM denominations, Republican party fixed effects, DW-NOMINATE score (first dimension), latitude, longitude, and state fixed effects. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, African Americans. Religious controls include the shares of missionaries, evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Error bars indicate 95 percent confidence intervals. Standard errors are robust to heteroscaedasticity.

B.8 Heterogeneity by publishing activity and destinations

Table B.8: Landmark legislation on foreign aid: Excluding districts with YMCA chapters

DV: D[Pro foreign aid vote]×100	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Publishing missionaries (per million)	2.62***	3.79**					
	(0.84)	(1.73)					
Exposure to missionaries (per million)		-0.73					
		(0.91)					
Africa			0.93				
			(0.73)				
East Asia				0.58***			
				(0.17)			
South Asia					0.55**		
					(0.26)		
Middle East						2.35***	
						(0.73)	
South America							2.20**
							(0.96)
Observations	1,951	1,951	1,951	1,951	1,951	1,951	1,951
R-squared	0.37	0.37	0.36	0.37	0.36	0.37	0.36
Core controls	Y	Y	Y	Y	Y	Y	Y
Religious controls	Y	Y	Y	Y	Y	Y	Y

Note: Unit of analysis is a congressional district over five Congresses (80th, 81st, 82nd, 86th, and 87th). Regressions of a pro-foreign aid vote on the exposure to missionaries instrumented by the exposure to travel secretaries. Core controls include the share of denominations involved in the Student Volunteer Movement, latitude, longitude, state fixed effects, and congress fixed effects. Baseline YMCA exposure is denominational exposure to YMCA chapters in counties with YMCA chapters and without travel secretaries' visit. Political controls include DW-NOMINATE score (first dimension) and Republican Party fixed effects. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.9 Congressional vote: Exploiting congressional district boundary change

Table B.9: Landmark legislation on foreign aid: Excluding districts with YMCA chapters

	(1)	(2)	(3)	(4)	(5)
DV: D[Pro foreign aid vote]×100					
Travel exposure (std.)	33.77***	23.11***	19.20**	22.85***	20.59**
	(8.30)	(8.82)	(7.98)	(8.49)	(9.89)
Observations	1,945	1,945	1,945	1,945	1,945
R-squared	0.52	0.52	0.58	0.58	0.59
Core controls	Y	Y	Y	Y	Y
Baseline YMCA		Y	Y	Y	Y
Political controls			Y	Y	Y
Religious controls				Y	Y
Socioeconomic controls					Y

Note: Unit of analysis is a congressional district over five Congresses (80th, 81st, 82nd, 86th, and 87th). Regressions of a pro-foreign aid vote on the exposure to travel secretaries. Core controls include the share of denominations involved in the Student Volunteer Movement, latitude, longitude, congressional district fixed effects, and congress fixed effects. Baseline YMCA exposure is denominational exposure to YMCA chapters in counties with YMCA chapters and without travel secretaries' visit. Political controls include DW-NOMINATE score (first dimension) and Republican Party fixed effects. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, and African Americans. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.10 Congressional vote: Excluding districts with YMCA chapters

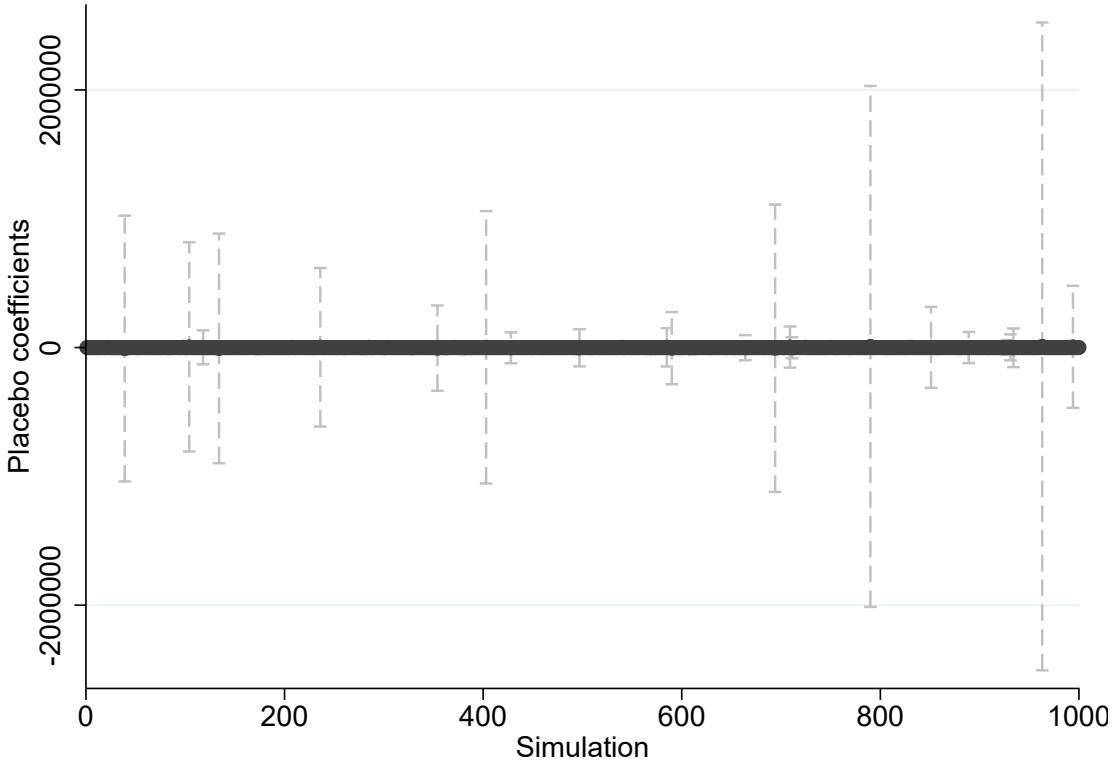
Table B.10: Landmark legislation on foreign aid: Excluding districts with YMCA chapters

DV: D[Pro foreign aid vote]×100	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Mean DV: 66.33			
Exposure to missionaries (std)	2.84	8.06**	38.98**	34.55*	36.23**	26.59**	22.39**
	(2.98)	(3.36)	(19.38)	(20.32)	(17.40)	(11.82)	(10.99)
Observations	1,678	1,678	1,678	1,678	1,678	1,678	1,678
R-squared	0.21	0.36	0.13	0.15	0.29	0.34	0.36
Core controls	Y	Y	Y	Y	Y	Y	Y
Baseline YMCA		Y		Y	Y	Y	Y
Political controls		Y			Y	Y	Y
Religious controls		Y				Y	Y
Socioeconomic controls							Y
AR weak IV [p-value]			0.01	0.01	0.00	0.00	0.01
KP F-stat			16.66	10.56	10.99	26.74	24.51

Note: Unit of analysis is a congressional district over five Congresses (80th, 81st, 82nd, 86th, and 87th). Regressions of a pro-foreign aid vote on the exposure to missionaries instrumented by the exposure to travel secretaries. Core controls include the share of denominations involved in the Student Volunteer Movement, latitude, longitude, state fixed effects, and congress fixed effects. Baseline YMCA exposure is denominational exposure to YMCA chapters in counties with YMCA chapters and without travel secretaries' visit. Political controls include DW-NOMINATE score (first dimension) and Republican Party fixed effects. Religious controls include the shares of evangelical Protestants, mainline Protestants, Catholics, Orthodox Jews, and Mormons. Socioeconomic controls include log population, urbanization rate, occupational income score, agricultural land suitability, market access, literacy rate, and the shares of college students, manufacturing workers, Northern and Western European immigrants, Eastern and Southern European immigrants, non-European immigrants, and African Americans. Robust standard errors clustered by state in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.11 Randomly generated shift

Figure B.8: Randomly generated shift



Note: Unit of analysis is a congressional district by five congressional terms (80th, 81st, 82nd, 86th, and 87th). The sample excludes congressional districts that include local YMCA chapters between 1881 and 1890 and districts visited by the travel secretaries of the Student Volunteer Movement. Instrumental variables regressions of the pro foreign aid vote on the share of exposure to missionaries. The independent variable is instrumented using a shift-share instrument from randomly generated shift. Specifically, The instrument is constructed by interacting denominational share of county population with a random shift (with mean zero and variance one). The figure shows the coefficients and 95 percent confidence intervals from instrumental variables regressions where the instrument was generated with 1,000 random shifts. Regressions include the set of all YMCA, baseline, socioeconomic, and religious controls in Table 2 and cluster standard errors by state.

B.12 Robustness to alternative standard errors

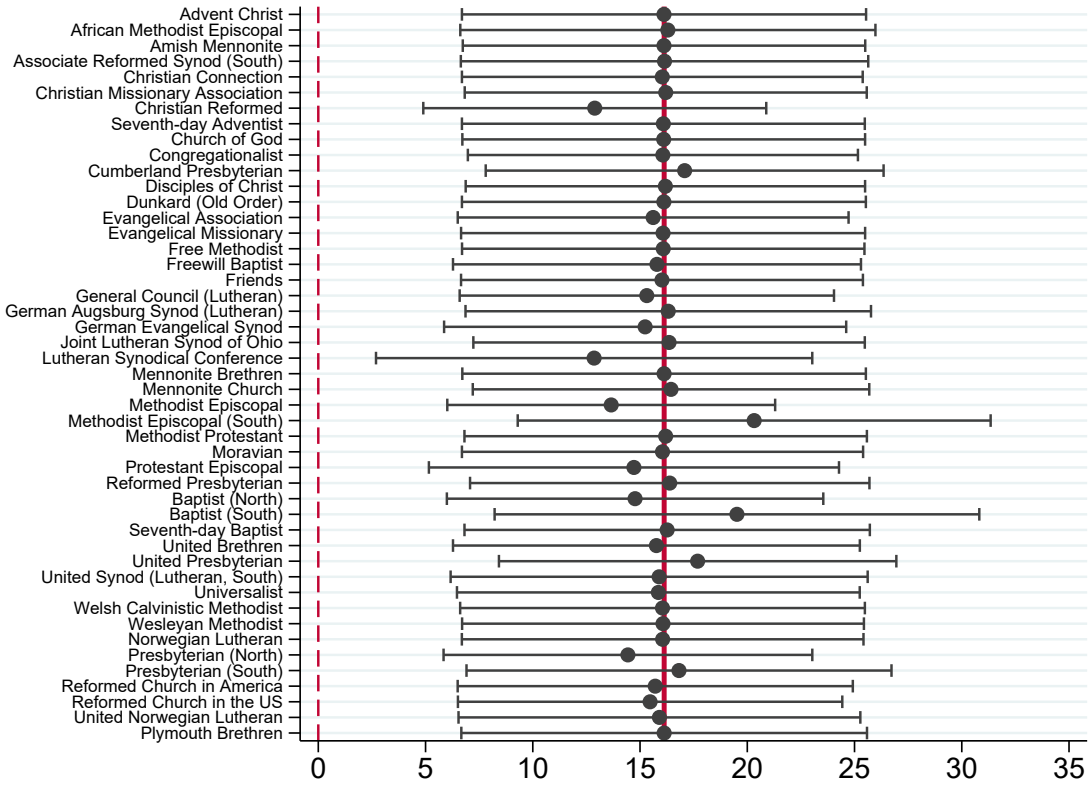
Table B.11: Robustness to alternative standard errors

DV: D(Pro foreign aid vote)×100	(1)	(2)	(3)	(4)	(5)
Travel exposure (std.)	19.14	19.33	21.71	20.37	15.91
Standard errors:					
Clustered by state	(5.22)	(5.72)	(4.75)	(5.35)	(5.14)
Adao *et al.* (2019)	(3.92)	(3.94)	(3.19)	(3.13)	(3.27)
Borusyak *et al.* (2022)$^{+}$	(5.59)	(5.86)	(3.73)	(3.69)	(4.32)
Conley (1999) (100km)	(4.01)	(4.20)	(4.42)	(4.17)	(4.48)
Conley (1999) (300km)	(3.63)	(3.74)	(4.25)	(4.80)	(4.16)
Conley (1999) (500km)	(4.27)	(4.38)	(4.99)	(4.98)	(4.98)
Observations	1,951	1,951	1,951	1,951	1,951
R-squared	0.22	0.22	0.38	0.38	0.39
Core controls	Y	Y	Y	Y	Y
Baseline YMCA		Y	Y	Y	Y
Political controls			Y	Y	Y
Religious controls				Y	Y
Socioeconomic controls					Y

+Number of observations for Borusyak *et al.* (2022)'s standard error is 235 since the unit of analysis is denomination by congressional terms ($235 = 47 \times 5$). Standard errors clustered by denomination. Note: *** p<0.01, ** p<0.05, * p<0.1

B.13 Leave one denomination out

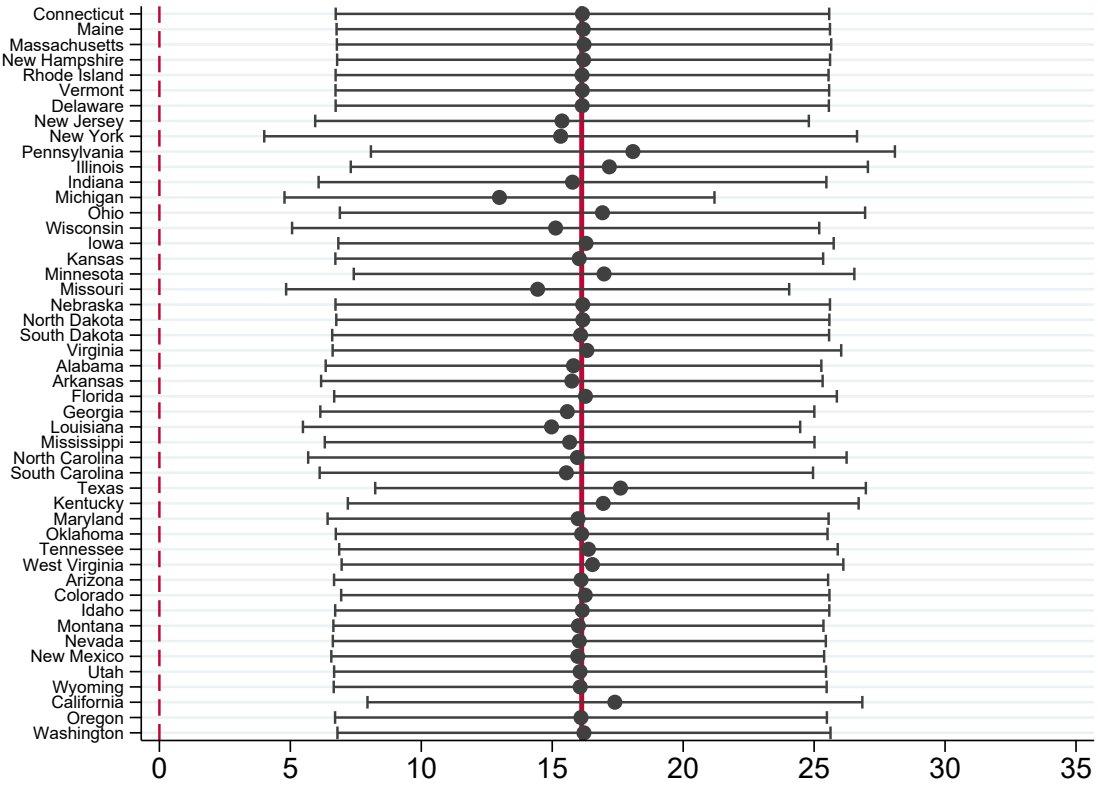
Figure B.9: Leave one denomination out estimator



Note: Unit of analysis is a congressional district by congressional terms. Reduced form regressions of the foreign aid vote on the marginal exposure to YMCA in 1884. Regressions include the set of all YMCA, baseline, socioeconomic, and religious controls in Table 2 and cluster standard errors by state. Regressions with all 47 denominations are plotted in the solid red line. Regressions after leaving out one denomination is drawn with 95 percent confidence intervals.

B.14 Leave one state out

Figure B.10: Leave one state out estimator

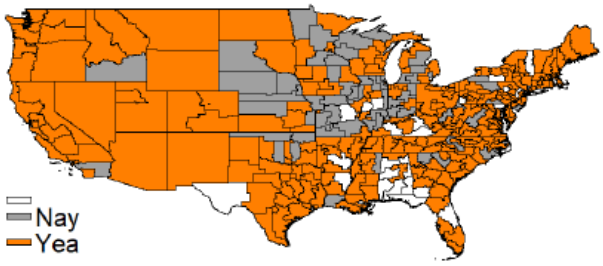


Note: Unit of analysis is a congressional district by congressional terms. Reduced form regressions of the foreign aid vote on the marginal exposure to YMCA in 1884. Regressions include the set of all YMCA, baseline, socioeconomic, and religious controls in Table 2 and cluster standard errors by state. Regressions with all 48 states are plotted in the solid red line. Regressions after leaving out one state is drawn with 95 percent confidence intervals.

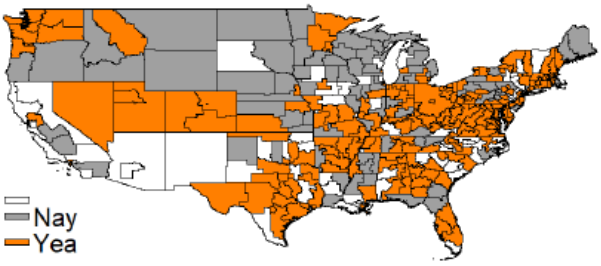
B.15 Congressional voting on foreign aid

Figure B.11: Congressional voting on foreign aid

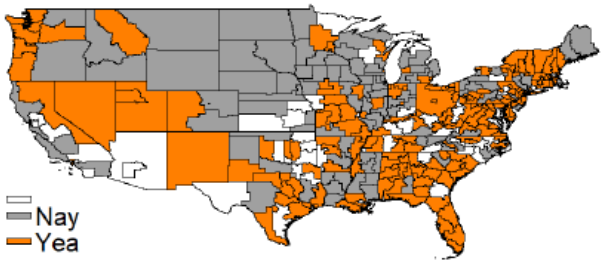
(a) Marshall Plan (1948)



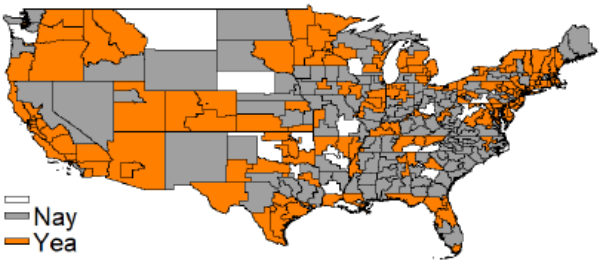
(b) Point Four Program (1949)



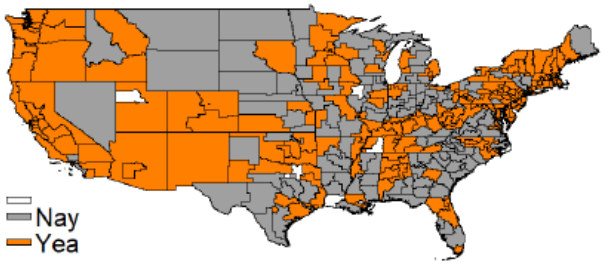
(c) Mutual Security Act (1952)



(d) International Development Association (1960)



(e) Foreign Assistance Act (1961)



Note: Congressional voting on key foreign aid legislation. Congressional districts that voted 'Yea' on the passage of foreign aid are highlighted in orange, while those that voted 'Nay' are shown in gray. Districts where no vote was recorded are left blank.

B.16 Publication

Table B.12 presents both the selection into volunteering and the selection into becoming missionaries, conditional on being volunteers. Column (1) compares volunteers to the general population, revealing several differences. First, people who applied to become missionaries are more likely to have parents with higher incomes and in religious occupations[4]. Second, applicants are less likely to be foreign-born or have foreign-born parents. Third, volunteers are more likely to live in owned houses, be white, attend school, demonstrate higher literacy rates, more likely to have both parents present, and less likely to live in farm households.

Column (4) shows that many of the previously observed differences diminish when the sample is restricted to volunteers, comparing missionaries to non-missionaries within this group. However, some significant distinctions remain. Missionaries are more likely to have parents in religious occupations, even among volunteers. Notably, missionaries are also more likely to be foreign-born compared to volunteers who did not embark on missions. Yet, as column (5) indicates, the vast majority were white, suggesting they were primarily European immigrants with limited exposure to non-European regions. It is reassuring that missionaries and non-missionary volunteers do not differ significantly in terms of parental income, race, or school attendance.

In columns (1) to (8) of B.13, I categorize the ProQuest dissertation data into four groups: social sciences, philosophy & religion, STEM, and language. A dissertation is classified as social sciences if the `category` variable in the ProQuest database is assigned as "social sciences". Similarly, "philosophy & religion" is assigned when the category is "philosophy", and STEM when it is either "Applied sciences", "Biological sciences", "Earth sciences", "Health and environmental sciences", or "Pure sciences". The "language" category is assigned when the category is "language".

In the OpenAlex bibliometric data, each publication output is assigned 'concepts' based on an automated classifier trained on Microsoft Academic Graph's corpus.[5] Using this variable, I classified foreign-related publications as social science if any of the concepts include the following terms: agriculture, demography, development, economics, history, political science, or sociology. A foreign-subject publication is categorized as medicine and nursing if the concepts include bacteria, immunology, medicine, nursing, pathology, or virology. Publications are classified as religion if the concepts include religion, Christianity, or theology. These keywords were chosen based on my manual inspection of frequent concepts in

[4]Religious occupations are defined as household heads with occ1950 codes for clergymen (009) or religious workers (078).

[5]https://docs.openalex.org/api-entities/concepts

foreign-related publication outputs published between 1880-1945.

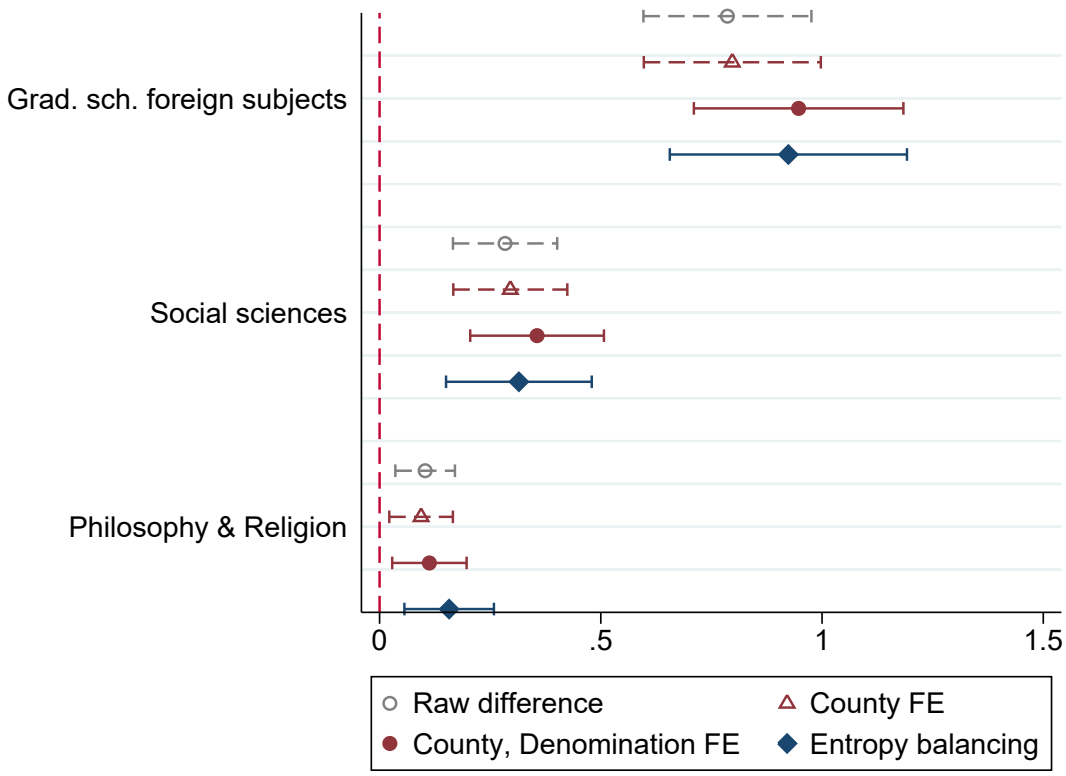
The results in Figure B.12 and Table B.13 indicate that the effect on graduate dissertations and publications about foreign subjects was primarily driven by output related to social sciences or topics relevant to economic development. In contrast, the probability of pursuing graduate studies in STEM-related fields or language was statistically indistinguishable from zero.

Table B.12: Balance checks: volunteers and missionaries

	volunteers – general population			missionaries – volunteers			
	diff (s.e.)	control mean	N	diff (s.e.)	control mean	N	age
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Parental occ. score ($00)	2.10 (0.10)***	18.85	65,816,681	0.01 (0.19)	20.69	27,532	[0,20)
Parent religious occ.	5.54 (0.18)***	0.42	65,816,681	1.86 (0.36)***	5.48	27,532	[0,20)
Foreign born	-1.02 (0.16)***	2.87	65,816,681	0.38 (0.20)*	1.76	27,532	[0,20)
Foreign born parents	-7.76 (0.44)***	25.73	65,816,681	1.13 (0.56)**	18.26	27,532	[0,20)
City pop. (000s)	-3.21 (5.49)	282.05	65,816,681	-0.84 (2.11)	131.22	27,532	[0,20)
Home ownership	8.39 (0.37)***	46.70	65,816,681	1.13 (0.72)	60.45	27,532	[0,20)
Two parents	1.54 (0.21)***	89.57	65,816,681	0.10 (0.41)	90.27	27,532	[0,20)
White	4.95 (0.30)***	87.45	65,816,681	-0.23 (0.21)	97.11	27,532	[0,20)
Farm household	-1.53 (0.36)***	39.60	65,816,681	-0.98 (0.66)	38.98	27,532	[0,20)
Employed	-8.00 (0.29)***	21.41	25,522,632	0.36 (0.55)	12.51	14,084	(10,20)
School attendance	14.65 (0.33)***	64.82	25,522,632	-0.42 (0.76)	82.62	14,084	(10,20)
Literacy	2.33 (0.16)***	92.74	25,522,632	-0.16 (0.20)	98.29	14,084	(10,20)

Note: Unit of analysis is an individual. Column (1) reports the differences between the general population and volunteers to the Student Volunteer Movement (including those who did not eventually become missionaries). Column (4) measures the differences between missionaries and non-missionaries, conditional on being volunteers. Both columns provide differences after controlling for census year (1900 and 1910), birth year, gender, and county fixed effects. Columns (2) and (5) indicate the mean of each variable for non-volunteers and non-missionaries. Columns (3) and (6) document the number of observations. The samples are drawn from archival records matched to the 1900 and 1910 censuses and are limited to individuals under 20 years old from family households. All variables, except for parental occupational score and city population, are indicator variables multiplied by 100. The parental occupational score reflects the median total income (in hundreds of 1950 dollars) of all individuals' parents with that occupation in 1950. City population is measured in thousands. Robust standard errors clustered by county in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure B.12: Graduate dissertation by field



Note: The figure presents results from Equation 9 across different graduate school subfields. "Social Sciences" refers to graduate dissertation output on foreign subjects within the social sciences. "Philosophy & Religion" captures dissertation output on foreign subjects in philosophy or religion. Error bars indicate 95 percent confidence intervals.

Table B.13: Effects on publication by subfield

Outcome:	Grad. dissertation social sciences		Grad. dissertation philosophy & religion	
(dummy×100)	(1)	(2)	(3)	(4)
Mission	0.18*	0.44***	0.09***	0.11***
	(0.10)	(0.14)	(0.03)	(0.04)
Observations	33,733	29,380	33,733	29,380
R-squared	0.00	0.06	0.00	0.05
Control group mean	0.57	0.57	0.01	0.01
Controls		Y		Y
Outcome:	Grad. dissertation STEM		Grad. dissertation language	
(dummy×100)	(5)	(6)	(7)	(8)
Mission	-0.26***	-0.16	-0.07	-0.03
	(0.10)	(0.12)	(0.06)	(0.09)
Observations	33,733	29,380	33,733	29,380
R-squared	0.00	0.07	0.00	0.08
Control group mean	0.81	0.81	0.30	0.30
Controls		Y		Y
Outcome:	Author foreign subjects social sciences		Author foreign subjects medicine & nursing	
(dummy×100)	(9)	(10)	(11)	(12)
Mission	2.01***	2.49***	0.64***	0.76***
	(0.16)	(0.20)	(0.09)	(0.12)
Observations	33,733	29,380	33,733	29,380
R-squared	0.01	0.09	0.00	0.06
Control group mean	0.54	0.54	0.08	0.08
Controls		Y		Y

Note: Unit of analysis is an individual. Regressions of an indicator of publication output on an indicator of being missionaries conditional on being volunteers to the Student Volunteer Movement. Odd-numbered columns report raw differences, while even-numbered columns document differences after controlling for birth year, gender, county, and denomination fixed effects. Definition of outcome variables are available in Appendix B.16. Robust standard errors, clustered by county, are provided in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.17 Heterogeneous effects by denomination

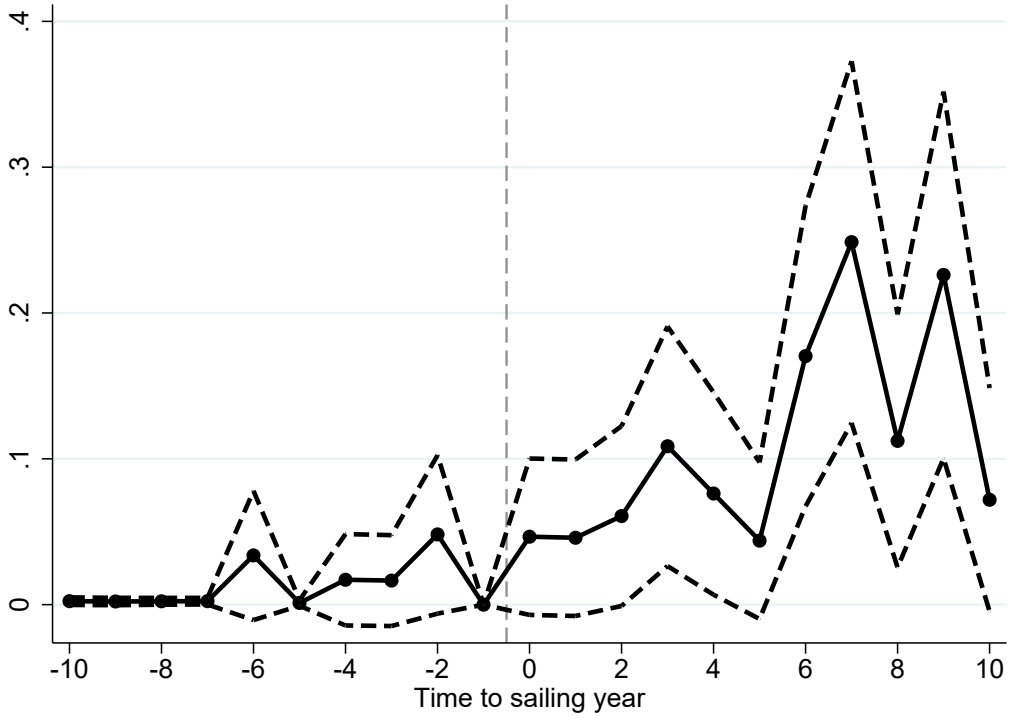
Table B.14: Effects on regional expertise during WWII

DV:(dummy×100)	Author foreign subjects		Grad. dissertation foreign subjects		Grad. dissertation social sciences	
	(1)	(2)	(3)	(4)	(5)	(6)
Mission	2.30***	2.49***	1.56***	1.35***	0.67	0.84***
	(0.56)	(0.36)	(0.40)	(0.25)	(0.46)	(0.27)
Mision	0.83		-0.69*		-0.27	
×Mainline	(0.59)		(0.41)		(0.47)	
Mission		0.75*		-0.56**		-0.56*
×Hocking report		(0.44)		(0.26)		(0.29)
Observations	29,380	29,380	29,380	29,380	29,380	29,380
R-squared	0.09	0.09	0.07	0.07	0.06	0.06
Control group mean	0.65	0.65	0.65	0.65	0.65	0.65
DV:(dummy×100)	Smithsonian roster		Office of Strategic Services		WWII Army Enlistment	
	(7)	(8)	(9)	(10)	(11)	(12)
Mission	0.57**	0.75***	0.01	0.02	-0.14	0.07
	(0.27)	(0.19)	(0.05)	(0.06)	(0.09)	(0.15)
Mission	0.72**		0.15**		0.18	
×Mainline	(0.28)		(0.06)		(0.12)	
Mission		0.63***		0.17**		-0.06
×Hocking report		(0.23)		(0.08)		(0.16)
Observations	29,380	29,380	29,380	29,380	29,380	29,380
R-squared	0.07	0.07	0.08	0.08	0.07	0.07
Control group mean	0.07	0.07	0.05	0.05	0.24	0.24

Note: Unit of anlayis is an individual. Regressions of an indicator for serving as an area expert during WWII on an indicator for being missionaries. All outcome variables are indicator variables. Columns (1) to (4) represent whether individual names can be matched to the Smithsonian Institution roster of world specialists, while Columns (5) to (8) indicate whether individual names can be matched to the Office of Strategic Services and the publication output about foreign countries in OpenAlex. Mainline is an indicator variable for the mainline protestant denominations (Steensland *et al.*, 2000) and Hocking report is an indicator variable for denominations that were involved in Hocking (1932)'s report. Robust standard errors clustered by county in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.18 Leveraging variation in sailing years

Figure B.13: Effect on publication about foriegn subjects



Note: Differences-in-difference estimator where the outcome is the first publication about foreign countries of an individual relative to the years in which they were sent as missionaries. Control groups include volunteers who did not become missionaries and not-yet-treated missionaries. Estimators based on local projections approach (Busch & Girardi, 2023; Dube *et al.*, 2023). Error bars indicate 95 percent confidence interval where standard errors are clustered by individuals.

B.19 Estimating the effect of exposure to foreign countries: Serving in Turkey

To further address concerns that the differences between missionaries and volunteers who did not eventually sail may not be as good as random, I compare missionaries in Turkey with other missionaries before and after 1915. Turkey was undergoing significant political instability during this period, including the Armenian Genocide and the Turkish War of Independence. These political changes were exogenous to the missionaries' choices, yet they disrupted their opportunities to engage with and learn about foreign cultures.

For example, missionary Henry H. White initially went to Turkey in 1915 but had to return because his school was closed during the Armenian Genocide.[6] A 1921 local newspaper article also reports that Mustafa Kemal opposed many foreign influences and another missionary in my sample, Theodore D. Riggs, was expelled from Turkey (Morning Union, 1921). In the case of Henry H. White, he later served as a missionary in China. However, many other missionaries who went to Turkey after 1915 were likely less exposed to foreign countries.

If missionaries were purely attracted to their mission out of curiosity about foreign cultures, those whose work in Turkey was disrupted would have likely pursued other occupations and continued to write about foreign countries. To test whether the reduced exposure to foreign culture in Turkey due to political instability affected publication output, I regress three different types of publication output on the interaction between serving in Turkey and sailing after 1915.

The sample is restricted to missionaries who sailed after 1900 (the first year of missionary sailing to Turkey in my data), whose sailing year is available, and whose destination country is recorded. The control group consists of missionaries who went to other countries, not volunteers who did not sail. Out of 6,263 such missionaries, 138 missionaries served in Turkey between 1901-1923. Using these missionaries, I estimate the following equation

$$pub_{idt} = \beta_t(Turkey_d \times After1915_t) + \delta_d + \delta_{c(d),t} + \varepsilon_{idt} \tag{11}$$

where pub_{idt} represents the publication output of a missionary i who was sent to destination d in year t. The estimated coefficient β_t captures the effect of being assigned to Turkey after 1915 on publication output. δ_d controls for destination fixed effects, while $\delta_{c(d),t}$ accounts for continent-by-sailing-year fixed effects. Error terms are clustered at the destination region level.

[6] I learned this from the personal memoir I received from his grandson and an economist Lawrence H. White.

In Table B.15 and Figure B.14, I find that the instability in Turkey reduced publication output not only about Turkey but also about foreign subjects. If the selection into missionary work, compared to the runner-up volunteers, was purely driven by interest in foreign countries rather than religiosity, we would expect the coefficients in columns (3) and (4) to be zero, as these individuals would have eventually learned about foreign cultures through other channels. However, that was not the case. Lastly, I checked for authorship on non-foreign subjects and found no significant differences. Out of 138 missionaries in Turkey, only one person's name could be matched to graduate dissertation data on foreign subjects, so I do not include this outcome in my analysis.

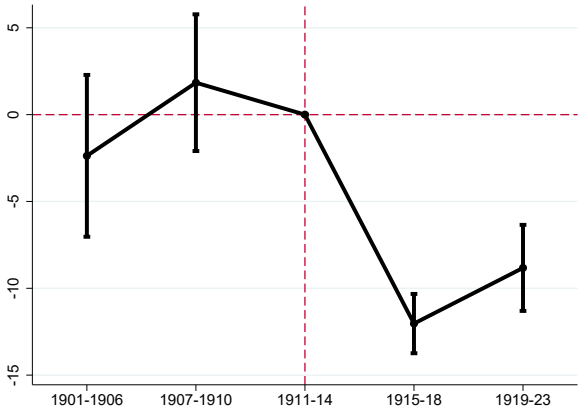
Table B.15: Missionaries in Turkey after 1915

	Pub. Turkey		Pub. foreign subjects		Pub. all subjects	
DV: (dummy×100)	(1)	(2)	(3)	(4)	(5)	(6)
Turkey×Sail after 1915	-10.09***	-9.58***	-10.11***	-7.08***	3.63***	1.78
	(0.04)	(0.97)	(0.46)	(2.40)	(0.67)	(2.93)
Observations	6,263	5,459	6,263	5,459	6,263	5,459
R-squared	0.10	0.11	0.02	0.05	0.02	0.05
Control group mean	0.05	0.05	4.00	4.00	6.62	6.62
Destination FE	Y	Y	Y	Y	Y	Y
After 1915 FE	Y	Y	Y	Y	Y	Y
Individual controls		Y		Y		Y
Continent-by-After 1915 FE		Y		Y		Y

Note: The unit of analysis is a missionary, for whom the sail year and destination country are available. Regressions are performed with an indicator of publication output as the dependent variable, focusing on the interaction between serving in Turkey and a dummy variable equal to one for missionaries who sailed in 1915 or later. The outcome variables in Columns (1) and (2) indicate whether individual names can be matched to publications with titles that include the words "Turkey," "Turkish," or "Ottoman," using data from OpenAlex. The outcome variables in Columns (3) and (4) capture whether individuals can be matched to publications about foreign subjects, also using OpenAlex. In contrast, the outcome variables in Columns (5) and (6) reflect whether individuals can be matched to authors who did not write about foreign subjects. Odd-numbered columns show raw differences, controlling for destination fixed effects and a time dummy set to one if the sailing year is 1915 or later. Even-numbered columns add further controls for birth year fixed effects, gender fixed effects, and a destination continent-by-time dummy for the year 1915 or later. Robust standard errors, clustered by 49 destination regions, are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure B.14: Missionaries in Turkey after 1915

(a) Publication on Turkey



(b) Publication on foreign subjects

(c) Publication on all subjects

Note: The panel names represent the outcome variables. The estimated coefficients, along with 95 percent confidence intervals clustered by destination region, are displayed. The coefficients reflect the interaction between serving as a missionary in Turkey and the time indicator for the sailing year. Controls include destination, birth year, gender, denomination fixed effects and continent by sailing year bin fixed effects.

B.20 Differential effects of missionary experience

Table B.16: Differential effects of missinoary experience: Evidence from Wikipedia

	(1)	(2)
DV: Intelligence or language experts during WWII		
missionaries	2.97**	
	(1.36)	
missionary children	13.90***	
	(2.96)	
Japan		21.58***
		(6.92)
China		9.64***
		(3.55)
US or UK		-0.69
		(1.46)
Philippines		-9.84***
		(3.73)
Observations	74,966	74,966
R-squared	0.02	0.02
Control outcome mean	3.00	3.00
birth cohort FE	Yes	Yes
female FE	Yes	Yes
occupation FE	Yes	Yes
Equal coef [p-value]	0.00	0.00

Note: Unit of analysis is an individual. Regressions of an indicator of whether an individual served as an intelligence or language expert during WWII on an indicator of whether an individual has a missionary background. The variable "missionaries" is equal to one if an individual was a missionary. The variable "missionary children" is equal to one if an individual was the child of a missionary. Country names in the independent variables represent the missionary experience in the respective countries. The sample is restricted to individuals with a Wikipedia biography who were active in the United States, born after 1880, before 1925, and who died after 1945. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

B.21 Selection into Wikipedia

This section examines the possibility of differential selection. One potential concern with the results in Table 8 is that missionaries might be more likely to appear in Wikipedia biographies. Consider two experts who worked for the government during WWII: one a missionary, the other not. It is possible that descendants of missionaries are more likely to add their ancestors to Wikipedia than those of non-missionaries. Even if there's no difference in the probability of working for the government, the regression results from Wikipedia may yield a significant effect due to this selection bias.

To address this concern, I replace the outcome variable with the number of views each biography received from 2015 to 2018, using data from Laouenan *et al.* (2022). This outcome variable serves as a proxy for the individuals' general fame or ability, which is arguably outside the control of those who initially wrote the Wikipedia biographies. If the results were driven by differential selection into Wikipedia biographies, we would expect to find a negative association between being a missionary and the number of views. However, the results in Table B.17 show that this is not the case.

Table B.17: Testing for differential selection

	(1)	(2)	(3)	(4)	(5)	(6)
DV: (dummy×100)	ln(Wikipedia views, 2015-18)					
missionaries or children	0.28***	0.39***	0.67**	2.09*		
	(0.08)	(0.08)	(0.27)	(1.07)		
missionaries					0.22**	
					(0.09)	
missionary children					0.64***	
					(0.13)	
missionary background						
in Japan						0.44
						(0.30)
in China						0.70***
						(0.17)
in India						0.26
						(0.26)
in Burma						-0.37
						(0.59)
in Korea						0.02
						(0.27)
in US or UK						-0.15
						(0.14)
in the Philippines						0.19
						(0.46)
Observations	74,951	74,951	1,134	88	74,951	74,951
R-squared	0.02	0.10	0.01	0.11	0.10	0.10
Control outcome mean	8.41	8.41	8.23	8.28	8.41	8.41
birth cohort FE		Yes	Yes	Yes	Yes	Yes
female FE		Yes	Yes	Yes	Yes	Yes
occupation FE		Yes			Yes	Yes
Equal coef [p-value]					0.01	0.02
sample restriction			academics	academics		
Smithsonian roster				Yes		
pub. foreign			Yes			

Note: Unit of analysis is an individual. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

B.22 Preference for internationalist foreign policy

To understand the foreign policy preferences of missionaries or their children, this section examines the association between missionary experience and the propensity to express political opinions to understand missionaries' attitudes towards foreign individuals. China is a particularly interesting case for this investigation. It was one of the most common destination countries for missionaries and was undergoing significant transformations during this period. These changes included the rise of the Chinese Communist Party, the conflict between the Nationalist and Communist parties, and invasions by various foreign powers. This geopolitical instability created circumstances in which foreign individuals were compelled to take a stance on many issues. The limited information about China due to the communist takeover also highlights the importance of missionaries who were present before these events.

To explore this idea, I focus on individuals with a missionary background and their political expressions related to China. I use Wikipedia biographies, restricting my sample to individuals whose names can be linked to publications about developing countries and whose biographies mention China. I manually read through the biographies and exclude any individuals who were not physically present in China before World War II.

I construct outcome variables to determine whether an individual showed political expressions or actions in favor of China or the Chinese. Examples include "steering American foreign policy and popular sentiment in favor of the Kuomintang leader," "overtly pro-Chinese Communist sympathies," "backed admitting China to the United Nations," "outrage at Japanese atrocities in China," and "enduring concern was to restore contact between China and the United States." Mere charitable activities, such as running a hospital or teaching in China, do not count.

The analysis involves regressing these measures of political actions on whether an individual is a missionary or their child, along with other controls. I compare missionaries with foreign-related publications to non-missionaries with similar publications to see if their political actions, as evidenced in Wikipedia, differ. The results are presented in Table B.18. The results indicate that missionaries were about 20-30 percentage points more likely to publicly express opinions in favor of China. In column (3), I exclude individuals who visited China as soldiers during the war, and the results remain robust. In columns (4) and (5), I split the treatment indicators between individuals who were missionaries themselves and those who were children of missionaries. In contrast to the previous results on World War II intelligence, I found that the propensity to express political opinions in favor of China

does not differ between missionaries and their children.

Table B.18: Political actions or expressions in favor of China

Political expressions in favor of China (×100)	(1)	(2)	(3)	(4)	(5)
missionaries or children	31.77***	27.14***	24.64**		
	(9.57)	(9.73)	(10.27)		
missionaries				23.25*	25.08*
				(13.13)	(14.01)
missionary children				39.15***	24.28*
				(13.21)	(14.45)
Observations	161	159	118	161	118
R-squared	0.13	0.26	0.32	0.14	0.32
Control outcome mean	7.52	7.52	10.75	7.52	10.75
birth cohort, female, occupation FE		Yes	Yes		Yes
excluding military contact			Yes		Yes
Equal coef [p-value]				0.39	0.97

Note: *** p<0.01, ** p<0.05, * p<0.1

C. Data appendix

C.1 Student Volunteer Movement records

The Student Volunteer Movement (SVM) records are available at the Yale Divinity School Library in both table and individual application formats.[7] I photographed the following sources:

Series I: Volunteer and Inquirer Forms and Statistics—Statistics and Records

- Box 126: Two volumes recording sailed volunteers alphabetically by name (1886-1926)
- Box 131: Two volumes (1886-1905)
- Oversized boxes 23-25: Statistics by denomination (1905-1922)

These records are available in table formats (See Figure C.15). Box 126 contains a list of missionaries from 1886 to 1926, including individual names, denominations, destination countries, sailing years, and serial numbers. This source comprises 734 images. It does not include information about the universities the individuals attended or their addresses.

Box 131 includes a list of missionaries and volunteers from 1886 to 1905. These records contain names, denominations, addresses, school names, and serial numbers. For missionaries, the address column lists destination country names instead of addresses. I supplemented this information with data from application blanks (which will be explained below). This source consists of 1,458 images.

Oversized boxes 23 to 25 contain lists of missionaries and volunteers from 1905 to 1922. These records include names, denominations, addresses, school names, and serial numbers. This source contains 1,765 images. All records are handwritten. I digitized all available data into table formats.

Series I: Volunteer and Inquirer forms and statistics—Application Blanks

The application blanks are available in individual application format (See Figure C.16). I photographed all available application blanks, totaling 62,693 images. This data includes papers from individuals who filled out the application form multiple times. Application blanks began to appear after 1890, so the earliest missionaries and volunteers are missing from this record. The names of the missionaries who sailed before 1890 are all provided in the table format data described above.

[7] https://archives.yale.edu/repositories/4/resources/250

The application blanks cover all available individuals after 1890 and helps identify all missionaries who initially appeared in the table data as volunteers but eventually became missionaries.

Due to the historical nature of these handwritten documents, they had to be photographed rather than scanned. Consequently, OCR software such as Transkribus, Amazon Textract, or Microsoft Azure did not perform well. As a result, human research assistants were hired to manually transcribe the data.

Only application forms stamped with 'SAILED' were digitized, indicating that the individual eventually became a missionary. Due to budget constraints, not all application forms were digitized. The drawback of not digitizing applications without the 'SAILED' stamp is the potential loss of some volunteers in the control group, especially those who sailed after 1922, when participation in the movement began to decline.

Additional sources on the list of missionaries

The list of missionaries who sailed between 1901 and 1923 is available in certain issues of *Intercollegian* magazine and several Student Volunteer Convention reports.

- 1901-1905: *Intercollegian* magazine[8]
- 1906-1909: Turner (1910)[9]
- 1910-1913: Turner (1914)[10]
- 1914-1923: Stauffer (1924)[11]

Linking process After photographing and digitizing all archival records, I hired two independent groups of assistants: one group transcribed the data, and the other reviewed it for spelling errors.

The table format data provides a comprehensive list of individuals who volunteered to be missionaries between 1886 and 1922. However, whether an individual ultimately served as a missionary remains unclear in many cases. For instance, if a volunteer filled out an application in 1920, they are recorded in the table format data; however, they may have become a missionary after the table data was compiled, such as in 1927. To accurately identify those who ultimately served as missionaries, I rely on individual application data,

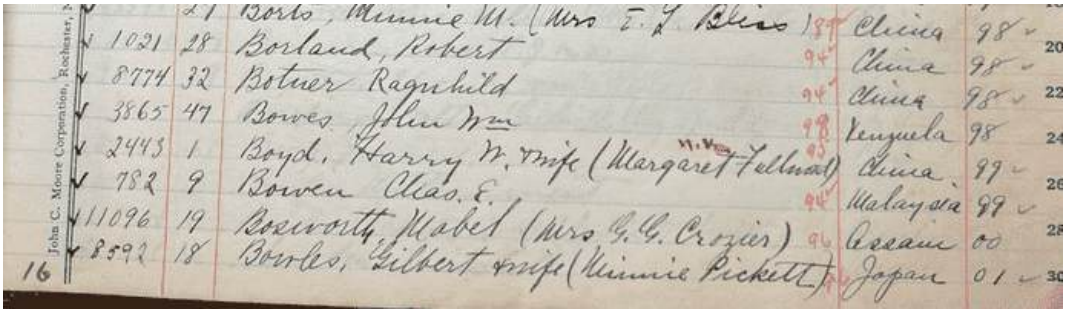
[8] https://www.nypl.org/research/research-catalog/bib/cb6079643
[9] https://babel.hathitrust.org/cgi/pt?id=uc1.$b53209&seq=537
[10] https://www.nypl.org/research/research-catalog/bib/b13455128
[11] https://babel.hathitrust.org/cgi/pt?id=wu.89065733792&seq=489

which is available until 1938. This ensures that I do not mistakenly include individuals who volunteered in 1922 but became missionaries later in life.

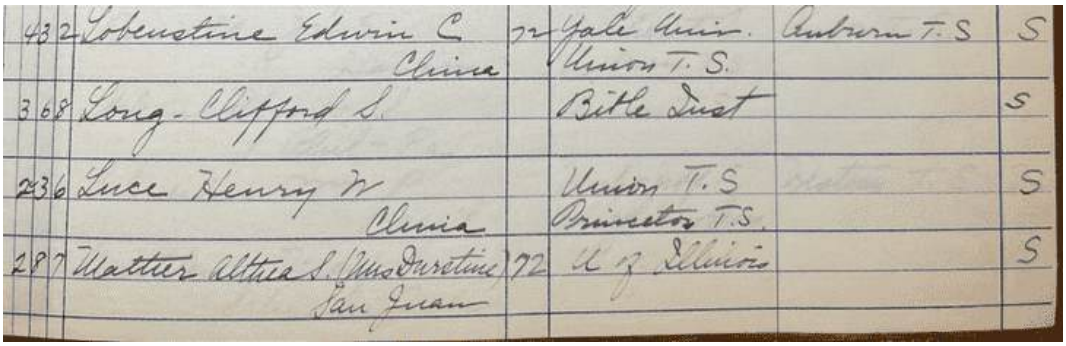
After digitizing all available records, I combine and harmonize the data using Stata's `reclink2` function, supplemented by manual review. To link records across different archives, I use individual names, serial numbers, birth years, and addresses.

Figure C.15: Sample pages from the Student Volunteer Movement records

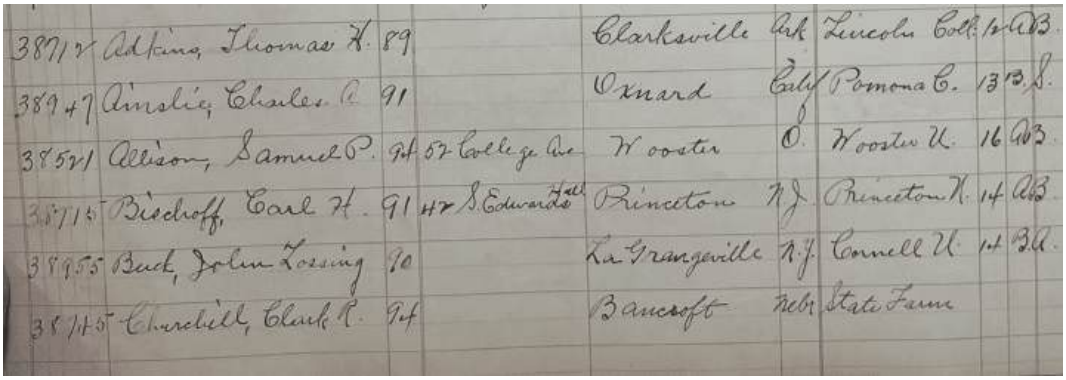
(a) Records on sailed volunteers, 1886-1926



(b) Records on volunteers, 1886-1905



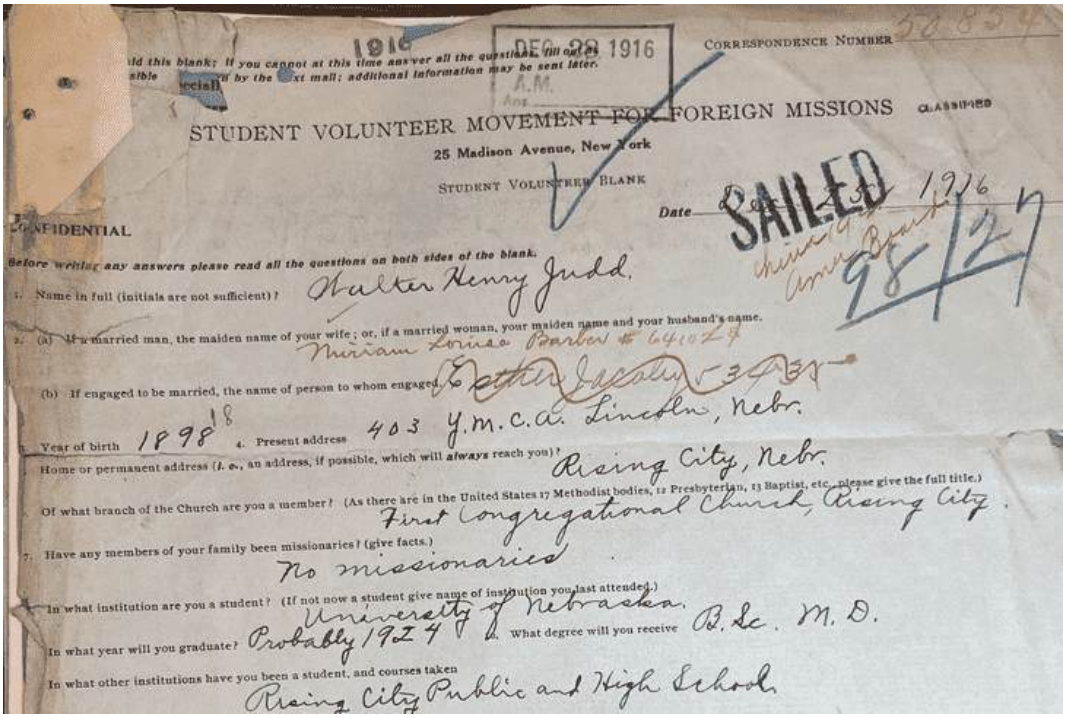
(c) Records on volunteers, 1905-1922



Sources: Yale Divinity School Archives. Student Volunteer Movement for Foreign Missions records. (a) Box 126: Two volumes recording sailed volunteers alphabetically by name (1886-1926) (b) Box 131: Two volumes (1886-1905) (c) Oversized boxes 23-25: Statistics by denomination (1905-1922). The above records show missionaries such as Gilbert Bowles, Henry W. Luce, and John Lossing Buck.

Figure C.16: Sample pages from the Student Volunteer Movement records

(a) Application paper



Source: Yale Divinity School Archives. Student Volunteer Movement for Foreign Missions records. Series I: Volunteer and Inquirer forms and statistics—Application Blanks. The image above is an application submitted by Walter Judd, who served as a medical missionary and later became a Republican Congressman.

C.2 Variable definitions and sources

C.2.1 Individual data

- Individual-level census data (1900, 1910): Ruggles *et al.* (2010). Sample in the balance test is restricted to children in the household younger than twenty (`relate` variable in the census: Child [301], Adopted child [302], Stepchild [303], Adopted [304], Child-in-law [401], Step child-in-law [402], Grandchild [901], Step grandchild [903], Grandchild-in-law [904])
  - Parental occupation score ($00): Occupational income score (`occscore`) of the household head (`relate`=101).
  - Parent religious occupation: Household head has one of the following two occupations: Clergymen (`occ1950`=9) or Religious workers (`occ1950`=78)
  - Foreign born: `nativity`=5
  - Parent foreign born: Father foreign, mother native (`nativity`=2), Mother foreign, father native (`nativity`=3), Both parents foreign (`nativity`=4)
  - City pop (000)s: `citypop`
  - Home ownership: Owned or being bought (`ownershp=10`)
  - Two parents: Married-couple family household (`hhtype`=1)
  - White: Race: white (`racwht`=2)
  - Farm household: Farm status (`farm`=2)
  - Employed: In the labor force (`labforce`=2)
  - School attendance: In school (`school`=2)
  - Literacy: able to read and write (`lit`=4)
- Publication output
  - Book or article publication: OpenAlex
  - Graduate dissertation: Dissertations - ProQuest accessed through Proquest TDM studio[12]. To reduce false positives, I exclude matches where the gap between the degree year and the birth year of volunteers or missionaries is less than twenty years or more than forty years, ensuring the individual's age at degree completion is between twenty and forty.

[12] https://tdmstudio.proquest.com/home

- Wikipedia biography: Laouenan *et al.* (2022)
  - Additional details on keyword search is explained in Appendix C.4.
- Smithsonian Roster: Sourced from Smithsonina Institution Archives. Record Unit 87—Ethnogeographic Board (Washington, D. C.). [13] I digitize the following records:
  - Personnel lists of Africa (Installments I-IV)
  - Personnel list of Asia
  - Personnel lists of Oceania (Installments I-VI)
  - Asiatic geographers compiled by George B. Cressey
  - African list 127
  - Partial list of personnel with field experience in Burma
  - American Political Science Association—Political scientists with competence regarding foreign countries
- Office of Strategic Services: Sourced from the National Archives webpage.[14]

C.2.2 Regional data

- County boundary map (1900): National Historical Geographic Information System (NHGIS)
- County & congressional district boundary adjustment: Adjusted by population weight (`m2_weight`). Ferrara *et al.* (2024)
- County population, 1890: National Historical Geographic Information System (NHGIS)—1890 Census: Population, Housing, Agriculture Manufacturing Data (1890_cPHAM)
- County characteristics, 1900: National Historical Geographic Information System (NHGIS)—1900 Census: Population, Housing, Agriculture Manufacturing Data (1900_cPHAM) and individual level census (IPUMS USA)
  - Urbanization rate: Population in Cities of 25,000 and Over/Total population
  - Share African Americans: (male black Americans+female black Americans)/Total population

[13] https://siarchives.si.edu/collections/siris_arc_216694
[14] https://www.archives.gov/files/iwg/declassified-records/rg-226-oss/personnel-database.pdf

  - Occupational income score: Average occupational income score in Ruggles *et al.* (2010) for individuals who are older than fifteen
  - Literacy rate: Share of individuals older than fifteen who can read and write (`lit=4`)
  - Share of manufacturing workers: Total Number of Salaried Officials, Clerks, etc. in Manufacturing/Total population
  - Northern and Western European immigrants: foreign born individuals from Australia, Austria, Belgium, Canada (English), Canada (French), Denmark, England, Finland, France, Germany, Holland, Ireland, Luxembourg, Norway, Norway and Denmark, Scotland, Sweden, Switzerland, Wales
  - Eastern and Southern European immigrants: foreign born individuals from Greece, Hungary, Bohemia, Italy, Poland (not otherwise specified), Poland (Austrian), Poland (German), Poland (other), Poland (Russian), Poland (unknown), Portugal, Romania, Russia, Spain, Turkey
  - Non-European immigrants: foreign born individuals from Asia (country unspecified), Atlantic Islands, Japan, China, Cuba, Central America (country unspecified), Mexico, Pacific, Islands, South America (country unspecified), West Indies, Asia (except China)
  - County market access, 1900: Hornbeck & Rotemberg (2021)
  - Agricultural land suitability: Ramankutty *et al.* (2002)
  - Number of college students for each county in 1890: Xiong & Zhao (2023)

- Census of Religious Bodies: Association of Religion Data Archives webpage—Data Archives—Categories—US Church Membership Data—County-level data—Statistics of Churches in the United States, County File, 1890
  - Number of evangelical and mainline Protestants: Classify each denomination according to Steensland *et al.* (2000)
  - Catholics: Number of Roman Catholic Church communicants or members (rcathmem)
  - Orthodox Jews: Number of Jewish (Orthodox) communicants or members (jewormem)
  - Mormons: Number of the Church of Jesus Christ of Latter-day Saints communicants or members (latdymem)

  - Church property and members at the denomination level: Value of church property and the number of communicants or members of each denomination is aggregated at the national level.

- Participation in Church World Service (at the denomination level): Sourced from (US Congress House Committee on Foreign Affairs, 1957, p.196)

- Local YMCA chapters: *Intercollegian* magazine. I digitized the records in the following five issues: January 1881, January 1884, November 1884, December 1889, November 1890. Records are available in micfofilm at New York Public Library.[15]. Sample page is shown in Figure C.18.

- Itineraries of the Travel Secretaries: *Missionary Review of the World* magazine from February 1887 to June 1887.[16]

- Congressional voting on foreign aid bills: House of Representatives' Congressional votes were sourced from VoteView (Poole & Rosenthal, 2000).

  - Considered to vote "Yea" if `cast_code` is 1 or 2. Considered to vote "Nay" if `cast_code` is 5 or 6. Considered absent if `cast_code` is 7 or 8.
  - Marshall Plan: 80th Congress, roll number: 109
  - Point Four Program: 81st Congress, roll number: 190
  - Mutual Security Act: 82nd Congress, roll number: 153
  - Participation in International Development Association: 86th Congress, roll number: 159
  - Foreign Assistance Act of 1961: 87th Congress, roll number: 87

- Peace Corps volunteers: Raw data on the number of volunteers by zipcode is obtained from Freedom of Information Act request. Coordinates of zipcode were sourced from US Census Bureau's 2016 TIGER/Line® Shapefiles: ZIP Code Tabulation Areas, simplemaps.com, and unitedstateszipcodes.org, and then were overlaid onto the 1900 county shape file.

[15] https://www.nypl.org/research/research-catalog/bib/cb6079643
[16] https://onlinebooks.library.upenn.edu/webbin/serial?id=missionrevworld

Figure C.17: Sample records from the Ethnographic Board (Smithsonian Roster)

(a) Personnel list of Oceania—Installment IV

Boot, Dr. Earnest R. (b. 1916, Wisc.), historian. Box 824, R.F.D. No. 3, Annapolis, Md. (2474); Dept. of English and History, U.S. Naval Academy, Annapolis, Md.

Bowles, Dr. Gordon T. (b. 1904, Japan), anthropologist. 134 Hilldale Road, Lansdowne, Penna.; Far Eastern Division, Board of Economic Warfare, Commerce Dept. Bldg., Washington, D.C. (District 2200, ext.2827).

Boyes, Major Alfred (b. 1898, England), mining engineer. P.O. Box 234, Keewat Minn. (4422); Butler Bros., Cooley, Minn. (Nashwauk 85).

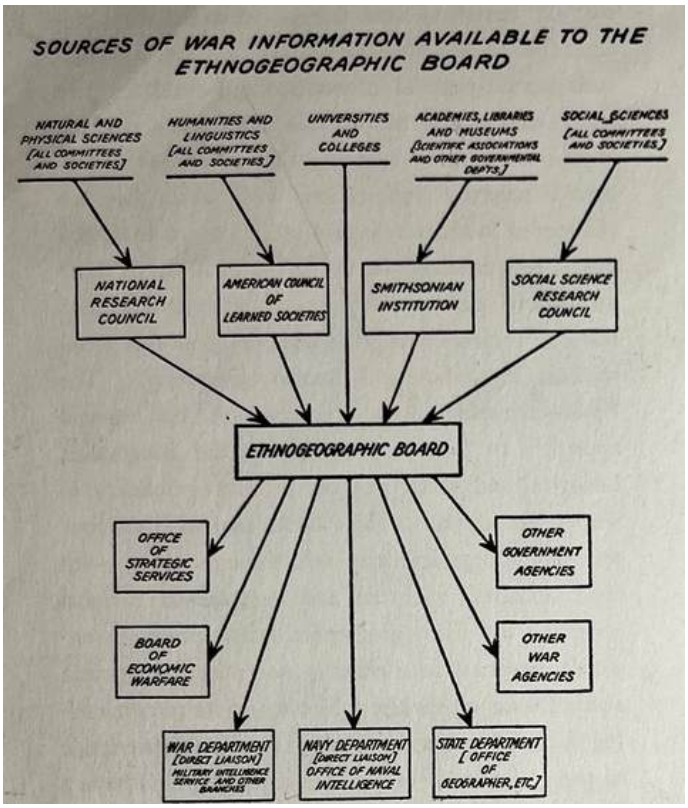
Bredin, Mrs. Dee van B. (b. 1900, Sumatra), writer, photographer, and radio commentator. 2 Sutton Place South, New York, N.Y. (Plaza 8-2954).

Brevet, Jan (b. 1888, Java), salesman. 2146 Northwest 33rd Ave., Portland, Ore. (Be. 5796); By-Products Dept., Swift and Co., North Portland, Ore. (Un. 1156).

Brown, Lawrence E. (b. 1901, Ind.), oil worker. 315 Minner Ave., Oildale, Calif. (2-6176).

Bryan, Lieut. Park A. (b. 1905, Ind.), officer in U.S.

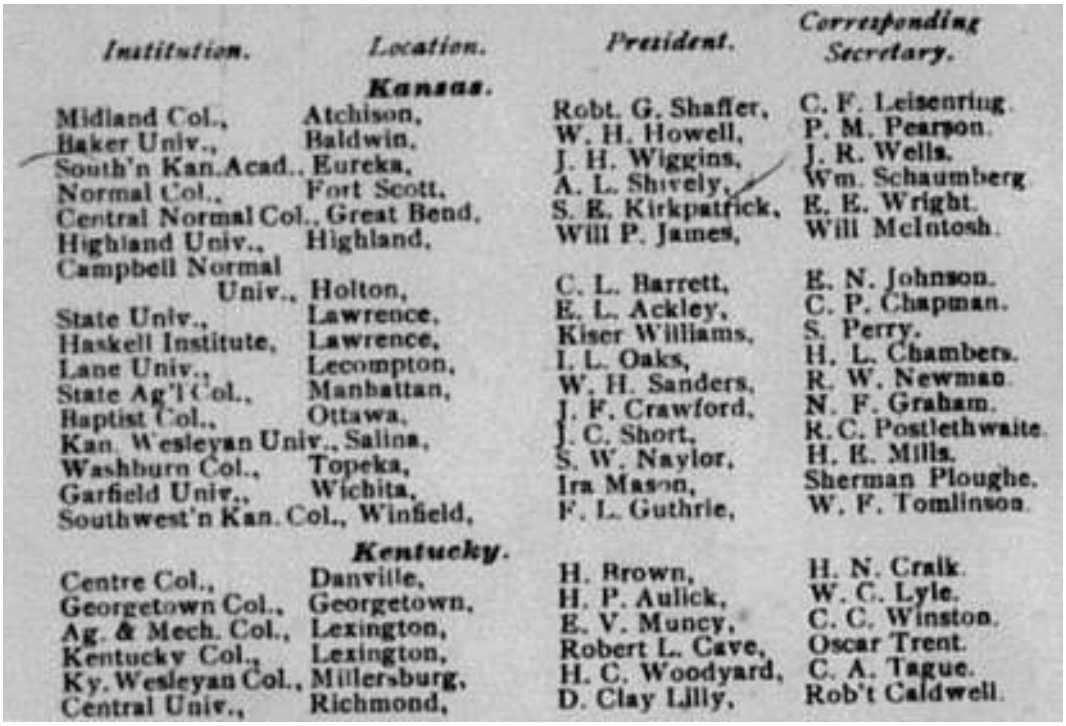
(b) Distribution of Smithsonian roster



Sources: Smithsonian Institution Archives. Figure (a) is a sample page of the Smithsonian roster and Figure (b) is a flow chart explaining how the roster was compiled and distributed.

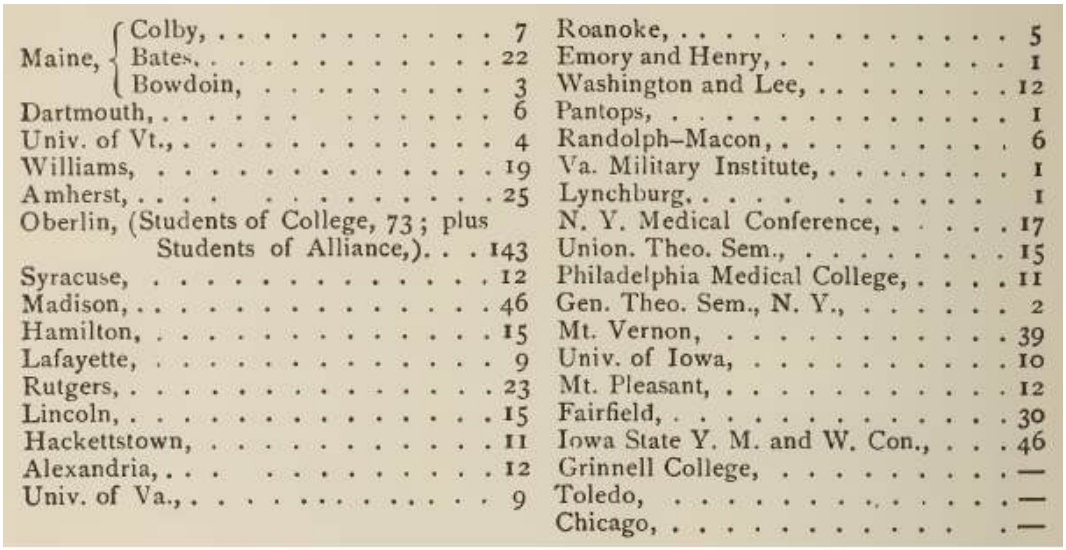
Figure C.18: Sample records on YMCA chapters and SVM travel secretaries

(a) YMCA chapters



Institution.	*Location.*	*President.*	*Corresponding Secretary.*
	Kansas.		
Midland Col.,	Atchison,	Robt. G. Shaffer,	C. F. Leisenring.
Baker Univ.,	Baldwin,	W. H. Howell,	P. M. Pearson.
South'n Kan. Acad.,	Eureka,	J. H. Wiggins,	J. R. Wells.
Normal Col.,	Fort Scott,	A. L. Shively,	Wm. Schaumberg.
Central Normal Col.,	Great Bend,	S. E. Kirkpatrick,	E. E. Wright.
Highland Univ.,	Highland,	Will P. James,	Will McIntosh.
Campbell Normal Univ.,	Holton,	C. L. Barrett,	E. N. Johnson.
State Univ.,	Lawrence,	E. L. Ackley,	C. P. Chapman.
Haskell Institute,	Lawrence,	Kiser Williams,	S. Perry.
Lane Univ.,	Lecompton,	I. L. Oaks,	H. L. Chambers.
State Ag'l Col.,	Manhattan,	W. H. Sanders,	R. W. Newman.
Baptist Col.,	Ottawa,	J. F. Crawford,	N. F. Graham.
Kan. Wesleyan Univ.,	Salina,	J. C. Short,	R. C. Postlethwaite.
Washburn Col.,	Topeka,	S. W. Naylor,	H. E. Mills.
Garfield Univ.,	Wichita,	Ira Mason,	Sherman Ploughe.
Southwest'n Kan. Col.,	Winfield,	F. L. Guthrie,	W. F. Tomlinson.
	Kentucky.		
Centre Col.,	Danville,	H. Brown,	H. N. Craik.
Georgetown Col.,	Georgetown,	H. P. Aulick,	W. C. Lyle.
Ag. & Mech. Col.,	Lexington,	E. V. Muncy,	C. C. Winston.
Kentucky Col.,	Lexington,	Robert L. Cave,	Oscar Trent.
Ky. Wesleyan Col.,	Millersburg,	H. C. Woodyard,	C. A. Tague.
Central Univ.,	Richmond,	D. Clay Lilly,	Rob't Caldwell.

(b) Travel secretaries' itineraries



Maine,	Colby, ... 7	Roanoke, ... 5	
	Bates, ... 22	Emory and Henry, ... 1	
	Bowdoin, ... 3	Washington and Lee, ... 12	
Dartmouth, ... 6		Pantops, ... 1	
Univ. of Vt., ... 4		Randolph–Macon, ... 6	
Williams, ... 19		Va. Military Institute, ... 1	
Amherst, ... 25		Lynchburg, ... 1	
Oberlin, (Students of College, 73; plus Students of Alliance,) . . . 143		N. Y. Medical Conference, ... 17	
Syracuse, ... 12		Union. Theo. Sem., ... 15	
Madison, ... 46		Philadelphia Medical College, ... 11	
Hamilton, ... 15		Gen. Theo. Sem., N. Y., ... 2	
Lafayette, ... 9		Mt. Vernon, ... 39	
Rutgers, ... 23		Univ. of Iowa, ... 10	
Lincoln, ... 15		Mt. Pleasant, ... 12	
Hackettstown, ... 11		Fairfield, ... 30	
Alexandria, ... 12		Iowa State Y. M. and W. Con., . . . 46	
Univ. of Va., ... 9		Grinnell College, ... —	
		Toledo, ... —	
		Chicago, ... —	

Sources: (a) *Intercollegian*, December 1889. (b) *Missionary Review of the World*, February 1887.

C.3 Foreign country keywords

To identify publications about foreign countries, I searched for titles that included the following keywords, published between 1880 and 1945: africa, arab, arabia, argentina, asia, assam, brazil, burma, central america, ceylon, chile, china, corea, cuba, east indies, egypt, formosa, india, iran, iraq, japan, kenya, korea, laos, lebanon, malay, malaysia, manchuria, melanesia, mesopotamia, mexico, mongol, ottoman, palestine, persia, peru, philippine, philippines, polynesia, siam, singapore, south america, syria, tibet, turkey, turkish, west indies

C.4 Wikipedia keywords

To identify individuals who served as intelligence or language experts during WWII, I ran an automated Python script for each Wikipedia biography. An individual is classified as a regional expert during WWII if the biography mentions both WWII-related terms and intelligence-related terms.

WWII-related words are 'second world war', 'world war', 'world war two'. Intelligence-related words are as follows: office of strategic services, cryptograph, cryptanaly, army specialized, naval intelligence, military intelligence, intelligence officer, signal intelligence, coordinator of information, office of war information, board of economic warfare, foreign service, translat*, interpre*.

This approach allows for a comparison between missionaries and other influential individuals. It also enables us to examine the role of missionaries' children. While it is theoretically possible to study children's outcomes using census data, this method presents challenges. Missionary children who grew up in foreign countries do not appear in US census records until they return as adults, making it difficult to match them in the data. The Wikipedia data provides a shortcut for measuring the impact on missionary children, circumventing these challenges. It also allows for capturing other prominent missionaries outside the Student Volunteer Movement.

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