# 5. Tech coolies: Indian scientists and engineers entering the United States on H-1B visas

# **Roli Varma**

#### INTRODUCTION

After the abolition of the slave trade throughout the British Empire in the early 19th century, England began the Asian coolie trade. Coolie laborers were taken from Asian countries to colonies to work on cotton estates and sugar cane plantations as well as in railway construction, mines, and factories. Asian coolies under British rule carried the baggage of colonialism—the domination, cultural imposition, and exploitation of territories and their peoples by another nation through foreign rule (Butt, 2013). This coolie trade lasted until the early 20th century.

In the United States, the Asian coolie trade began with the opposition to slavery, which led to an increasing demand for cheap labor. Asian coolies, mostly from China, were brought willingly or reluctantly to the United States to work on the transcontinental railroad, in gold mines, on the Panama Canal, and on other projects. They contributed their labor in the building of American capitalism—commonly characterized "by private or corporate ownership of capital goods, by investments that are determined by private decision, and by prices, production, and the distribution of goods that are determined mainly by competition in a free market" (Merriam Webster, n.d.). In 1862, President Abraham Lincoln banned the coolie trade (Jung, 2005).

Historically, the system of coolie labor was established to replace the system of slave labor (Tinker, 1974). Consequently, coolie labor has been differentiated from the slave labor. Among other things, coolie laborers were granted freedom after a specified period of time, whereas slave laborers remained slaves for as long as they lived (Laurence, 1994). Sturman (2014, p. 1442) has argued that the coolie labor system emphasized the "legal infrastructure" and "specific conditions of life and work that would mark a legitimate labor system," and "new[ly] fram[ed] the humanity of the laborer at stake in this system." Coolie laborers were brought in via a signed contract to serve a particular employer or business for a fixed duration (Lai, 1993). This way, employers were provided with a regular supply of cheap labor from the outside. Coolie laborers were paid a pittance for their labor, and were expected to work in often awful and harsh conditions (Jung, 2005; Mongia, 2018). According to Mahmud (2013, p. 235), "The everyday reality for workers was marked by grinding overwork, low wages, malnutrition, persistent illness, and poor housing, as well as a range of punitive measures that included beatings, fines, and imprisonment." Once the contract was completed, coolie laborers supposedly earned their freedom to return to their birth country, signed another contract with the same or a different employer, or remained in the country. Because their employers were accustomed to slavery, they did not see any reason to change their manner of commanding labor; often, coolies were tricked and forced into the renewal of their contract (Gerstenberger, 2014). The system of coolie labor was exploitative, based on oppression and negligence.

The Asian coolie trade has ended, and the use of word "coolie" has faded from the Western countries. The word coolie carries the legacy of a derogatory slur which the British and Americans used for Asian indentured laborers (Bahadur, 2014). However, in the era of globalization-a worldwide phenomenon of technological, economic, political, and cultural exchanges in the last 50 years brought about by modern communication, transportation, and legal infrastructure as well as the political choice to consciously open cross-border links in international trade and finance (Guttal, 2007)-a new form of Asian coolie trade is taking place in the United States. Since the 1990s, a legal system of indentured labor has been implemented to deal with U.S. international competitiveness in the global market. American technology companies have been recruiting scientists and engineers from Asian countries to come and work in United States-companies that spend a large proportion of their revenues on research and development (R&D) and make products or provide services that embody technologies. Such companies can be found in the following industries: aerospace; communications; computers; electrical machinery; financial services; pharmaceuticals; semiconductors; and testing, measuring, and control instruments (National Science Board, 2018). Scientists and engineers with at least a bachelor's degree (or equivalent) come to work in the United States on a temporary specialty visa, commonly known as H-1B visa. It is granted for up to six years, with renewal in three years (U.S. Citizenship and Immigration Services [USCIS], n.d. a). They are sponsored by their employers and are able to remain in the United States as long as they have a business sponsor (Tannock, 2009).

Scientists and engineers coming directly from Asia on H-1B visas are serving the role of tech coolies by carrying the baggage of globalization. The word coolie is used in this chapter as the chapter reveals significant parallels with Asian coolies in the colonial era. The chapter shows that scientists and engineers coming from India to the United States on H-1B visas are indentured to a company. They enter into an indenture arrangement with a sponsoring company for work, wages, travel from India to the United States, and possible sponsorship for permanent U.S. immigration. They join the sponsoring company on a temporary contract and are not free to leave the company without finding another sponsor or leaving the country. Further, transferring an H-1B visa to another company risks rejection from USCIS. The sponsoring company, on the other hand, is free to sell the labor of the H-1B employee to other companies. Though it is required that the sponsoring company pay the H-1B employee the prevailing wages, the chapter shows that the H-1B program is a source of cheap foreign labor. Most importantly, the working conditions of H-1B employees are characterized by exploitation and stress originating from insecurity and excessive tolerance. If H-1B employees disagree with managers or speak out in the workplace, they face consequences. Since finding an employer in the United States that has a job opening which matches one's qualifications is a difficult task, people are forced to go through recruiters, and thus are heavily dependent on recruiters to manage their lives inside and outside the workplace.

The focus of the chapter is on scientists and engineers from India because they are overwhelmingly present in the United States. Over half of the H-1B petitions approved have been going to India; the next largest share (approximately 10 percent) has been going to China. For instance, of the H-1B petitions approved in 2017, 75.6 percent of the beneficiaries were born in India and 9.4 percent in China (USCIS, 2018). This number includes both those who came directly from India to work in the United States and those who came to the United States for education and then joined the workforce after acquiring their degrees. H-1B visa recipients tend to possess a bachelor's or higher-level degree. Nearly half of new H-1B visa recipients had a bachelor's degree (45.2 percent in 2017); the rest had an advanced degree (USCIS, 2018). Those holding a bachelor's as their terminal degree are likely to be those who came directly from India on H-1B visas to work in the United States. This chapter is only concerned with Indian scientists and engineers coming directly from India on H-1B visas; those getting their student visa converted to H-1B after acquiring an advance degree in the United States to work in academia or industrial and national R&D laboratories are likely be in a relatively more privileged position, and are not the focus of this chapter.

This chapter first outlines the history and features of the H-1B visa. Then it shows how Indian scientists and engineers on an H-1B visa are serving the role of "tech coolies." The chapter briefly presents several legal cases, which support the exploitation claims made in the chapter as well as reveal fraud within the H-1B visa program. The chapter concludes by discussing the objective reality of Indian scientists and engineers being reduced to tech coolies with the temporary worker visa program in the United States. The chapter is primarily based on scholarly literature, government documents, and news reports on the subject. Since 2000, the author has been doing fieldwork with Indian scientists and engineers in the United States and those who have returned to India.

# EVOLUTION OF THE H-1B WORK VISA

As the number of Asian coolies began to increase in the United States during the late 1800s and early 1900s, public opinion against them escalated to maintain white racial purity. Furthermore, Asian coolies were blamed for declining wages and other economic problems prevalent in the United States at that time (Jung, 2005). This resulted in restricting immigration from Asian countries with a series of acts such as the Chinese Exclusion Act of 1882, the Gentlemen's Agreement with Japan in 1907, the Barred Zone Act in 1917, and the Oriental Exclusion Act in 1924 (Inui, 1925; Gjelten, 2015; Murrin et al., 2015). Through these acts, the United States barred Asian immigrants because of their race and ethnicity and sought to remain a nation of white immigrants.

After World War II, the United States began to change its immigration policy from being based on skin color to being based on skills in demand. Economically, this change came about due to the growth of a new generation of high-technology industries arising from military programs during the war, the increasing demand for technical labor stemming from this growth, and a perceived shortage of skilled workers in the United States. Politically, support for a more liberal immigration policy was designed to show the superiority of American democracy compared to the communist ideology of the Soviet Union. From the 1940s to the 1960s, the United States witnessed the civil rights movement to end racial discrimination. In 1965, the United States changed its immigration policy from exclusion of undesirable Asians to the allocation of all immigrant visas according to a tiered preference system (Varma, 2007). The U.S. government expected Europeans to account for the vast majority of new immigrants (Daniels, 1998); the United States did not expect a large increase in Asian immigrants, because there were not enough Asians in the country to support kindred immigration.

Reflecting the emphasis on U.S. economic needs in 1952, U.S. Congress enacted an H-1 or non-immigrant visa for temporary workers of "distinguished merit and ability" (Chishti and Yale-Loehr, 2016, p. 3). The United States defines a non-immigrant as "an alien who is admitted to the United States for a specific temporary period of time" (USCIS, n.d. b). As the use of H-1 visas increased during the 1980s, American labor unions became concerned about foreign workers, and especially nurses, who constituted a large portion of H-1

visa recipients. In 1989, Congress separated nurses into a new H-1A category, with the remaining going into the H-1B category (Masselink and Jones, 2014).

The 1980s was a time when the United States began facing severe international competition with other major industrial countries in the technology sector. As Western Europe and Japan rebuilt their war-affected industries, they were able to manufacture an increasing amount of technology products needed for their domestic markets, thus relying less on U.S. products. By the mid-1980s, "Western Europe and Japan were able to compete with the U.S. in the export of [technology] products" (Varma, 1995, p. 234). An adequate supply of scientists and engineers in the United States was seen as critical to its economic growth, international competitiveness, and national security (Varma and Frehill, 2010). The United States was seen as facing a shortage of workers in the technology industry, that is, there were insufficient qualified workers to fill the marketplace demands for employment (U.S. Department of Commerce, 1997). For instance, U.S. Senator Spencer Abraham declared: "The one thing on which ... almost everyone is in agreement is that we face a serious worker shortage with respect to high-tech employment and skilled labor in America today" (cited in Alvarez, 2000, p. A1). The U.S. technology industry rigorously lobbied for temporary skilled workers from foreign countries (Information Technology Association of America, 1997, 1998).

In 1990, the H-1B visa program was over-hauled to help the United States maintain its scientific and technological edge as well as economic superiority in the global economy by allowing U.S. technology companies to hire temporary skilled workers from abroad to fulfill those jobs for which domestic labor was seen to be in short supply. The Immigration Act of 1990 created a category of 65,000 temporary foreign workers (H-1B visas) admitted for three years, extendable to six years, based on specialized education and technical skills in demand. Under the American Competitiveness and Workforce Improvement Act of 1998, the number of H-1B visas increased to 115,000 for fiscal years 1999 and 2000. Under the American Competitiveness in the Twenty-first Century Act of 2000, they expanded in number to 195,000 for the 2001, 2002, and 2003 fiscal years. Under the H-1B Visa Reform Act of 2004, the number of H-1B visas has reverted back to 65,000 per year, and there have been no changes to the H-1B quota; the only exception has been an additional 20,000 visas for aliens with U.S.-earned master's or higher degrees.

H-1B applications are accepted once a year during the annual registration window in April. Typically, the number of applications far exceeds the annual cap level. Once the registration window is closed, USCIS conducts a lottery to decide which companies will receive a number of visas. The H-1B work authorization is strictly limited to employment by the sponsoring employer. To protect domestic workers, the sponsoring employer has to file a Labor Condition Application (LCA) with the U.S. Department of Labor. With an

approved application, the employer then files a petition with USCIS for a non-immigrant worker (Form I-129). Among other things on the LCA form, the employer states that it has a job opening in a specialty occupation, the employment of a foreign worker will not adversely affect any U.S. national worker, the foreign worker will receive the prevailing wage and benefits for that position in the geographic location of work, and the LCA will be disclosed to the foreign worker (see USCIS website, https://www.uscis.gov, for details on H-1B, which are regularly updated).

If H-1B visa holders are married, their spouses come with them on an H-4 visa. This visa allows spouses to stay in the United States as dependents of H-1B visa holders; till 2015, it did not allow them to work in the United States. In 2015, USCIS made an exception by allowing the H-4 visa dependent spouses to work if (i) they have the immigration petition (I-140) to get a green card, or (ii) their spouse's H-1B visa extends beyond six years, which allows them to seek a green card. However, under President Donald Trump's (2017) executive order of "Buy American and Hire American," the future of work authorization for eligible H-4 visa holders is uncertain.

Basically, the H-1B visa program in the United States is a legal contract labor program, allowing U.S. companies to hire foreign technical workers temporarily for a maximum period of six years. After that time, they have to return to their birth country. H-1B visa holders are allowed to remain in the United States as long as they have a business sponsor. They are also able to stay and work in the United States if their employers sponsor them for permanent immigration. If a foreign technical worker is fired or the employer cancels his/her visa, that foreign technical worker loses his/her legal rights to work and stay in the United States and thus must return to his/her birth country.

It should be noted that the idea of a shortage of technology workers and the solution to this problem with the H-1B visa program are highly controversial. Critics have argued that the technology industry has manufactured the impression of a shortage to get cheap labor from abroad (e.g., Matloff, 1998; Teitelbaum, 2003; Hira, 2004). Michael Gildea of the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO), the largest federation of unions in the United States, has testified to the Congress that "[American workers] deserve better than to be victimized by guest worker programs like H-1B" (cited in Tannock, 2009, p. 322). Senator Charles Grassley has declared that the H-1B program "has become a government assisted way for employers to bring in cheaper foreign labor" (cited in Chishti and Yale-Loehr, 2016, p. 12). Some opponents seek strict limits on the employment-based temporary and permanent visa, whereas others strive for the elimination of the H-1B program all together (e.g., Coalition for the Future American Worker, National Hire American Citizens Professional Society, Organization for the Rights of American Workers, Rescue American Jobs Foundation).

## TEMPORARY SPECIALTY LABOR FROM INDIA

The globalization of science and industry has transformed young scientists and engineers in India into a highly mobile workforce. It is relatively easy for them to find employment in the United States and elsewhere because their knowledge can be transferred across national borders (Varma, 2007). Indian immigrants have been portrayed as "model immigrants" who have overcome various obstacles to be successful in the United States (Wadhwa, 2006). They are favored by U.S. companies due to their unique set of technical skills, their being well-versed in English, their willingness to relocate, their ability to work very hard, their reluctance to demand high wages and benefits, and their hesitation to complain about working conditions (Varma, 2010). Many consulting and body-shopping firms have emerged in India to supply scientists and engineers to U.S. and other global companies, facilitating their migration on H-1B visas at a profit (Aneesh, 2006). They attract potential young scientists and engineers by promising top salaries, a better standard of living, health benefits, a challenging work environment, and sponsorship for permanent U.S. immigration. For instance, one advertisement promised: "Go to America for Work." Another declared: "USA or Your Money Back."

Though H-1B is one program, Ontiveros (2017) has distinguished three different ways specialty workers are recruited from foreign countries to work in the United States. The first type is when U.S. technology companies such as Apple, Amazon, Cognizant, Facebook, Google, IBM, Intel, and Microsoft recruit scientists and engineers, mostly from India, through consulting firms. The U.S. companies tend to seek the best candidate for the position. They pay the consulting firms to provide scientists and engineers with the necessary skills and pay for the H-1B visa fee as required by U.S. law. However, the consulting firms also charge Indian scientists and engineers hefty fees for finding jobs in the United States and for the visa-related paperwork, even though U.S. law prohibits consulting firms from charging for such expenses. Upon arrival, U.S. companies immediately employ Indian scientists and engineers for work. Supposedly, the U.S. companies pay Indian scientists and engineers the salaries promised on the visa applications. These Indian scientists and engineers work long hours and tend to make slightly less money than their co-workers. Yet they feel hesitant to complain for fear of having their visa revoked and being deported. A 2019 survey of over 11,500 H-1B employees found that the majority of them feel pressure to outperform their non-H-1B peers. It quoted a respondent: "H-1B employees tend to tolerate more bullshit from managers because they cannot move to another company that easily, and they cannot just rage-quit. This is possibly the key reason why managers like H-1B-lower turnover rate and employees who will take more shit" (Emerson, n.d.). If the

U.S. companies like their work, they sponsor them for permanent residency. Until Indian scientists and engineers receive permanent residency, they rarely file any grievances, since the employer can stop the permanent residency process anytime. Ontiveros (2017) calls this the "pure H-1B" type.

The dependence on the pure H-1B type is becoming less common. It is partially because U.S. technology companies like to subcontract work to other companies rather than employing specialty workers directly to perform the needed work. Through subcontracting, U.S. companies reduce operating costs, minimize risks, and hire a firm that specializes in something outside their area of expertise. When subcontracting work, U.S. companies do not direct how that work should be performed or who should be hired. Typically, U.S. companies tell the subcontractor about what they want accomplished and let the subcontractor decide how to complete the work. The use of subcontractors makes it hard to hold U.S. companies legally responsible if, for example, specialty workers are under-paid or do not have any health benefits (Estruth, 2017). Almost every major U.S. technology company subcontracts a significant portion of its necessary work.

Since the late 1990s, many companies managed by Americans, Indians, or Indian Americans have emerged to perform contracted work on U.S. soil by relying on H-1B specialty workers. These subcontracting companies recruit Indian scientists and engineers from consulting firms. Indian scientists and engineers come to the United States after paying significant amounts of money to the consulting firms for the necessary paperwork, even though U.S. law forbids employers from charging potential employees for the business expenses associated with arranging visas to the United States. Typically, Indian scientists and engineers are given false information on the nature of the work, the work environment, and the pay associated with the work. Upon joining the subcontracting company, they discover that they are under-paid, under-employed, and expected to work long hours (Hogarth, 2006; Economic Times Bureau, 2013; U.S. Department of Justice, 2013). Though they are lured by the potential for permanent residence in the U.S, they have little chance of gaining it with subcontracting companies. Because these Indian scientists and engineers are performing work on U.S. soil, they are seen as displacing U.S. workers. Ontiveros (2017) calls this the "outsourcing H-1B" type. For the 2017 fiscal year, the top Indian outsourcing companies for new approved H-1B petitions were Tata Consulting Services, Tech Mahindra, Infosys Corporation, and Wipro Limited.

Finally, there are small body-shopping firms in India and the United States, mostly managed by Indians or Indian Americans, which recruit Indian scientists and engineers for a wide client base. These body-shopping firms maintain a large pool of Indian scientists and engineers with a wide range of technical skills that are in demand. They bring in Indian scientists and engineers on H-1B visas and house them in an apartment (commonly known as a "guest house") to wait for work. Typically, this apartment is shared with eight to ten people in a similar situation (Stock et al., 2014). These scientists and engineers have paid significant sums to body-shopping firms to arrange for their visas. They are told that they are going to the United States for work that is ready for them. Upon arrival, however, they learn that they have to wait for their turn for job placement and end up performing a series of short-term jobs as they become available. They cannot leave their employers since they have signed a contract to work for a given time period; if they leave before the end of the contract term, they have to pay a significant sum in liquidated damages (Roche and Cohn, 2000; Varma and Rogers, 2004). Most often, these Indian scientists and engineers sit on a "bench" waiting for a job to arrive. U.S. laws require employers to pay wages to H-1B visa holders during benching, even if they are in a non-productive status due to insufficient work. However, they are paid minimally. Once a job arrives, the body-shopping firms charge a cut of between 20 and 30 percent from their salaries, supposedly for living and business expenses. Since they, rather than the companies for whom H-1B visa holders are performing the work, are the official employers for these Indian scientists and engineers, it is easier for body-shopping firms to make various deductions from the paychecks of H-1B visa holders (Thibodeau, 2005; U.S. Department of Labor, 2011; Bhattacharya, 2018; Lerman, 2018; Baron, 2019). It is common to find cases of false information about the nature of jobs, pay, hours of work, location of work, and so forth. Ontiveros (2017) calls this the "body shop H-1B" type.

The 1990 Immigration Act requires the company to pay H-1B specialty workers the same wage as similarly employed U.S. workers, and give this information to the H-1B worker. Employers are required to attest to the Department of Labor that they will pay wages to the workers on H-1B visas that are equal to the actual prevailing wage for the occupation in the area of intended employment (U.S. Department of Labor, n.d.). However, the employer gets to determine what the prevailing wage is by various means. In other words, the legal definition of the prevailing wage requirement does not ensure H-1B workers are paid the actual market's prevailing wage (Varma and Rogers, 2004; Banerjee, 2006; Chakravartty, 2006; Bhattacharjee, 2007; Miano, 2007; Rudrappa, 2009; Hira, 2011; Palmer, 2018). Basically, employers "pick" the prevailing wage for a given job based on its location, title, description, and level. Each of these elements gives the employer discretion that results in a wage that is lower than the prevailing market value (Ontiveros, 2017). For instance, an employer can select the job title which has the lowest salary, include a minimum level of education and experience in the job description, decide that the job is to be at the entry level, and have the location for a job be at their units which are located in low-cost cities. In the words of Emerson (n.d.), the federal law "allows employers to misclassify H-1B recipients as entry-level employees, meaning they can be paid less." A combination of these selections can bring the wage down without violating laws. Employers, therefore, legally bring in Indian scientists and engineers at wages which tend to be below prevailing wages. It should be noted that Indian scientists and engineers on the H-1B visa program generally tend to be younger than their American counterparts. For instance, 66 percent of those granted H-1B status during fiscal year 2017 were between 25 and 34 years of age (USCIS, 2018). Employers prefer to bring in young Indian scientists and engineers, as they are more likely to readily accept a low pay rate because they are offered an opportunity to build their careers.

USCIS (2018) reported that the median (50th percentile) annual compensation of H-1B beneficiaries for initial employment during the 2017 fiscal year was \$75,000; over 60 percent of initial H-1B beneficiaries were in computer-related occupations with a \$76,000 median. It should be noted that these numbers show what employers agreed to pay the beneficiary at the time the applications were filed; they are not based on what employees received in reality. Furthermore, annual compensation numbers are based on full-time employment for 12 months, whereas H-1B beneficiaries coming directly from India may work fewer months than this, depending on the availability of work. Since Indian scientists and engineers coming directly from India on H-1B visas are likely to be employees of subcontracting companies, they work on projects on a contract basis. There may be several layers of subcontracting companies between the company outsourcing the work and the employer of the workers carrying out the project, and subcontractors charge commissions from H-1B employees' pay. If Indian scientists and engineers do not have new work when projects end, their salaries go down further.

Young Indian males dominate the H-1B scientists and engineers. Employers prefer young scientists and engineers, as they are less likely to have spouses and children and thus family commitments. If they are married, their wives come with them from India on H-4 visas. This visa allows them to stay in the United States as dependents of H-1B visa holders. It means women on H-4 visa cannot work in the United States, although some of them may be qualified to do so. The exception allowed by USCIS in 2015 applies mostly to those wives whose spouses are holding what this chapter noted as a "pure H-1B" visa; those whose spouses are on "outsourcing H-1B" or "body shop H-1B" visas are unlikely to be eligible to work (USCIS, n.d. c). Radhika (2016) calls them "visa wives," who become dependent spouses in the United States, which is known as "the land of opportunity." They are unable to use their education and prior employment experience to work or start a business. They lose their financial independence as soon as they arrive in the United States. Radhika (2016) outlines multiple cases of physical and emotional abuses by their husbands.

#### Tech coolies

Yet visa wives are unable to leave their spouses, as they cannot stay on in the United States in the absence of the primary H-1B applicant.

Despite such conditions, AFL-CIO and other American labor organizations have overlooked those on H-1B visas; instead, these "organizations have come to see the exploitation of low-skilled immigrant workers as a reason to reach out to them and include them in their organizing efforts" (Tannock, 2009, p. 318). Basically, the U.S. legal system allows contractors to bring skilled labor temporarily to the United States but keep them powerless (Ontiveros, 2017). As a result, Indian scientists and engineers on H-1B visas are not organized and have no power of collective bargaining. This becomes serious whenever there is economic slowdown and U.S. companies announce layoffs. For example, in 2001-2002 many U.S. technology companies such as Intel, Cisco, Sun Microsystems, Hewlett-Packard, IBM, Nortel, Yahoo, and America Online announced thousands of lavoffs, which included many H-1B visa holders (Varma and Rogers, 2004). This caused a growing number of Indians on H-1B visas to head back home. Once they lost jobs, they were considered "out of status" and needed to go back instead of finding another job in a different company. Those who might opt to stay in the United States would be rendered undocumented.

Considering the above conditions, an important question is why Indian scientists and engineers continue to go to the United States on H-1B visas. An answer to this can be found in global inequality, which leads people to leave developing countries for developed countries. A prevailing international imbalance in the standard of living and career opportunities produced by the developed United States and developing India dynamic creates incentives for migration, even though it may be temporary (Varma, 2007, p. 38). U.S. technology companies and Indian companies with business ties in the United States have been cultivating an image of the United States as "the land of opportunities." Since the implementation of the H-1B visa program in the United States, a pattern of aggressive recruitment has emerged in India. With jobs in U.S. technology companies, Indian scientists and engineers have an opportunity to improve their financial standing, gain prestige among their family members and community, acquire valuable work experience, and so forth. They strive to reach or maintain their middle-class status by holding down steady jobs in the United States.

As defined by Roy (2018, p. 32), "the middle class falls in the middle of the social hierarchy and occupies a socioeconomic position between the working and upper classes." The middle class in India began to emerge with the introduction of Western education and technology during British colonial rule. They acquired prestige through education, jobs, and wealth, which were monopolized by the British. They venerated Western ideas and the Western way of living. After India's independence from Great Britain in 1947, the middle class remained very small, mostly because independent India followed the policy of democratic socialism till 1990. India nationalized key industries, discouraged private enterprises from growing, and limited foreign investments in the country. The 1980s witnessed a gradual move towards a mixed economy with the growth of the private sector. In 1991, India liberalized its economic policies by opening its doors to foreign investments, making the economy more market oriented and expanding the role of private enterprises (Aneesh, 2006). This began expanding the middle class in terms of numbers as well as increasing their aspiration. With such a history, the Indian middle class seeks to climb the economic ladder primarily through education. Middle-class families ingrain into their children that education is the only way to maintain their lifestyles and not face hardship. They raise their children to become doctors, scientists, or engineers. Children end up spending the majority of their time studying sciences and mathematics, learning early on to work very hard. Through education and hard-work ethics, Indian students hope to find good jobs in or outside India after their graduation from university.

India has a long history of British colonialism, first with the East India Company rule from 1757 to 1857, and followed by the British Raj from 1858 to 1947. Under colonialism, India suffered economic exploitation, political detriment, and social racial inferiority (Tharoor, 2016). Indians were portrayed as traditional and incapable of being scientific, logical, and rational, in sharp contrast to the English. For instance, British civil servant Sir Charles Edward Trevelyan wrote, "We [British] have nothing to give to the natives but our superior knowledge. Everything else we take from them" (cited in Kumar, 1982, p. 63). Attempting to lift up racially inferior Indian people became a justification for British colonialism. Though India was de-colonized from Great Britain in 1947, colonialists' values continue to hold power over Indian people (Young, 2003). Indians seem to have internalized that Western values are superior to their own. For instance, a white complexion is desired and brown skin is not considered beautiful. Similarly, for the purposes of education, the English language medium is considered better than the Indian one. Working in the United States is automatically considered superior to working in India. Indians, therefore, come to the United States for work with high hopes of social prestige. It is this middle-class value which gets eroded after coming to the United States on a H-1B visa to work in outsourcing and body-shopping companies.

## SELECTED LEGAL CASES

The Center for Immigration Studies has produced two maps using publicly available U.S. Department of Labor data. The first map identifies about 2000 employers who use the H-1B visa above average. The second map deals with

a smaller group of employers who have been identified by the Department of Labor as abusing the H-1B program (Griffith and North, 2017). The Department of Labor maintains a list of the companies that are declared fraudulent or have been debarred, and it is available to the public. Below are some prominent cases which show how companies violated H-1B rules and exploited Indian scientists and engineers.

- A class action lawsuit on behalf of 800 employees with the job titles of software engineer or senior software engineer, most of whom were on H-1B visas and many coming from India, was filed against Siebel Systems. Between January 2000 and October 2005, these employees were given almost impossible tasks to complete with very short deadlines. This resulted in employees being overworked, having sleep deprivation, and suffering health problems. In 2006, a civil settlement of \$27.5 million was reached (Hogarth, 2006). Siebel Systems, founded by an American, was a software company principally engaged in the design, development, marketing, and support of customer relationship management applications. In 2005, the Oracle Corporation bought Siebel Systems.
- 2. Computech Corporation, founded by an Indian American, has been bringing in workers mostly from India on H-1B visas to perform various tasks of its clients. In 2005, an investigation by the U.S. Department of Labor revealed that Computech frequently benched H-1B visa employees without wages, and failed to pay them the prevailing wage rate in their geographic areas of employment. The U.S. Department of Labor ordered Computech to pay its employees \$2.25 million in back wages and an additional \$400,000 fine. The company was also prohibited, for the next 18 months, from participating in the H-1B visa program (Thibodeau, 2005). Computech handles enterprise resource planning implementations, application support and development, and remote database management.
- 3. NBC Bay Area's Investigative Unit and the Center for Investigative Reporting conducted a yearlong investigation on the practices surrounding H-1B visas (Stock et al., 2014). They tracked court cases involving consultancy companies or their executives in the United States. In total, these court filings involved more than 600 fraudulent H-1B visas and petitions. They narrated a court case concerning Silicon Valley Systech (SVS), which was founded by an Indian American. It recruited foreign workers mostly from India on H-1B visas and then subcontracted them to major technology firms throughout the country. SVS had charged its employees substantial fees (over \$2,000) to cover the cost of their H-1B visa applications. When these employees came to the United States, they were benched to wait for work. Approximately eight to ten of them were confined in a small guesthouse. When they finally got the work, SVS kept

approximately 30 percent of their salaries for expenses and taxes, in addition to the actual federal and state taxes. A class action lawsuit was filed against SVS; however, midway through the lawsuit's process in 2009, it went out of business, leaving its H-1B employees with nothing.

- 4. Tata Consultancy Services (TCS) is an Indian multinational information technology service and consulting company. In 2006, a class action lawsuit on behalf of its H-1B visa employees mostly from India was filed against TCS in the United States. The suit alleged that from February 2002 to June 2005 TCS failed to pay them the gross wages promised. Further, TCS forced them to sign over their U.S. federal and state tax refund cheques to the company. In 2013, TCS entered into an agreement with the U.S. government to settle for \$30 million (Economic Times Bureau, 2013). TCS operates in 46 countries, including the United States.
- 5. The Lambents Group, founded by an Indian American, sponsored H-1B visa workers to work as information technology consultants for client companies. An investigation by the U.S. Department of Labor (2011) revealed that the company had failed to pay the prevailing wages to its H-1B employees as required. In 2011, the company was found to owe its ten employees on H-1B visas a total of \$185,241.81 in back wages and was ordered to pay civil money penalties of \$72,000.
- In 2013, Infosys Corporation, an Indian company involved in consulting, 6. technology, and outsourcing, agreed to a \$34 million civil settlement with the U.S. government on allegations of systematic visa fraud and abuse of the immigration process at its Texas location (U.S. Department of Justice, 2013). Infosys brings foreign nationals mostly from India into the United States in order to perform work and fulfill contracts with its customers under two visa classification programs, H-1B and B-1 (non-immigrant visas that allows the holder to visit the United States to work on some business-related project). The U.S. government alleged that in order to increase profits, minimize the costs of securing visas, increase flexibility of employee movement, obtain an unfair advantage over competitors, and avoid tax liabilities, Infosys used B-1 visa holders to perform skilled labor which should have been performed either by qualified U.S. nationals or by H-1B visa holders. In other words, Infosys used workers with low qualifications and thus low salary to perform highly qualified jobs.
- 7. In 2018, the U.S. Department of Labor found Cloudwick Technologies guilty of severely underpaying its employees hired on H-1B visas. Some of the H-1B employees brought from India were promised salaries of up to \$8,300 per month; instead, they received as little as \$800 net per month. The company also made illegal deductions from their salaries. The U.S. government has ordered the company to pay \$173,044 in back wages to 12 of its H-1B employees (Bhattacharya, 2018). Cloudwick Technologies

is a U.S.-based software company, owned by an Indian American. It is a leading provider of bimodal digital business services and solutions. Its clients include Apple, Comcast, Verizon, and Visa.

- 8. The U.S. Department of Justice has charged Indian-American chief executive officer Pradyumna Kumar Samal of the companies Divensi and Azimetry in Redmond, Washington, with H-1B visa fraud from 2012 to 2015. According to the Justice Department, these two companies got H-1B visas approved for projects that did not exist, and when the workers on H-1B visas came to the United States from India, they were assigned to different projects. In addition, the companies charged its H-1B employees substantial fees for visa applications (Lerman, 2018). Divensi and Azimetry were in the business of providing information technology staff to big technology companies. Basically, staffing companies obtain H-1B visas and bring in foreign workers who are then placed with the companies in the United States as needed.
- 9. In 2019, Anjaneyulu Katam, an Indian American, was sentenced to a year in prison for H-1B visa fraud. He had falsified visa applications, work experience documents, and work contracts in order to secure H-1B visas for Indians. Under a plea agreement he was fined \$5,000 and was to forfeit \$1.1 million in assets. Some Indians who received an H-1B visa through his staffing companies did not have work waiting for them upon their arrival in the United States. At least two H-1B employees were made to pay their own visa application fees (Baron, 2019). Katam was the head of a technology staffing company in New York.
- 10. In 2019, Mu Sigma, an Indian Management Consulting Firm, agreed to a \$2.5 million settlement for visa fraud. Instead of employing H-1B employees, it illegally employed B-1 visitor visa holders for work. It paid its B-1 employees wages in India which were lower than U.S. wages. Its employees were required to sign a contract to work for an agreed duration and were to reimburse the company with up to \$10,000 of the H-1B visa costs if they failed to do so (U.S. Immigration and Custom Enforcement, 2019). Mu Sigma primarily offers data analytics services.

#### CONCLUSION: BEING REDUCED TO TECH COOLIES

This chapter has labeled scientists and engineers coming directly from India on H-1B visas to work in the United States as "tech coolies." Like during the Asian coolie trade era, scientists and engineers coming to the United States directly from India on the H-1B visa program remain indentured to the company. Previously, Varma and Rogers (2004) argued that Indian information technology workers on H-1B visas in the United States are not able to switch jobs and thus are indentured to a company. Ontiveros (2007) has shown that the U.S. guest worker program includes many important features of slavery and involuntary servitude. Hira (2011) has pointed out that it is "the employer, rather than the worker, [who] holds the visa, and as a result H-1B workers are in a state of indentured servitude." This is primarily because they are only "free" to sell their labor for wages based on contracts with companies. They neither have any real control over their own labor nor have much control over their living conditions. Instead, contractors who sponsor the visas effectively own and control the labor of Indian scientists and engineers on H-1B visas. It is the contractors who dictate where and for whom they could work. Furthermore, Indian scientists and engineers are restricted, as they cannot leave a job or change employers without risking deportation. They do not engage with prevailing market salaries or standard U.S. working conditions because their salaries are controlled by contractors. Indian scientists and engineers retain an alienated outsider position because their situations do not allow them to become full members of the scientific community or U.S. society, given that most are not long-term employees and cannot become permanent residents. Without these connections and basic rights, they are prevented from utilizing the U.S. legal and social system to improve their economic conditions and social status. Essentially, the U.S. immigration system allows contractors to import skilled labor on H-1B visas but keeps those workers indentured.

Despite the fact that scientists and engineers coming directly from India on H-1B visas are exploited, they do not see themselves as tech coolies. Their expectations are high as they are in the United States and their identities are heavily invested in their middle-class values. They know that the company depends on them to develop a new product or process, or to improve an existing product or process. They are involved in the mental work due to their specialized knowledge and technical skills. This contributes to maintaining a boundary with manual workers. Indian scientists and engineers can, therefore, point out exploitative conditions under H-1B visas while resisting identification with manual workers. Being called a tech coolie brings even deeper resentment, as in India coolies are railway porters who carry passengers' heavy luggage on their heads for meager payments. Objectively, Indian scientists and engineers coming directly on H-1B visas experience an erosion of their position; subjectively, they try to maintain their status vis-à-vis manual workers. Whether they like it or not, as this chapter has shown, scientists and engineers coming directly from India on H-1B visas serve the role of tech coolies.

An important question is, then, what can be done about this situation? To protect scientists and engineers coming directly from India (and elsewhere) on H-1B visas from possible exploitation, Ontiveros (2017) has proposed that the condition of having a business sponsor to stay in the country should be removed. Instead, USCIS should modify its policy to allow them to remain in the United States for the length of the visa, even if they do not have a job,

are fired, or quit. This will give them some bargaining power to combat low pay and/or poor working conditions, as well as granting them a control over their labor. Ultimately, therefore, it will be the Indian scientists and engineers and not the visa sponsors who will be in control of their own labor. Gordon (2006, p. 563) does not believe it is possible to make a good guest worker program. Instead, she has proposed the creation of "transnational labor citizenship, which would entitle the holder to come and go freely between the sending country and the United States and to work in the United States without restrictions."

#### REFERENCES

- Alvarez, Lizette. (2000, October 4). Congress Approves a Big Increase in Visas for Specialized Workers. New York Times, A1. https://www.nytimes.com/2000/10/04/ us/congress-approves-a-big-increase-in-visas-for-specialized-workers.html.
- Aneesh, Aneesh. (2006). Virtual Migration. Durham, NC: Duke University Press.
- Bahadur, Gaiutra. (2014). Coolie Woman: The Odyssey of Indenture. Chicago, IL: University of Chicago Press.
- Banerjee, Payal. (2006). Indian Information Technology Workers in the United States: The H-1B Visa, Flexible Production and the Racialization of Labor. *Critical Sociology*, 37, 425–445.
- Baron, Ethan. (2019, March 26). Prison for Visa Fraud in Case Involving Bay Area Workers. *Mercury News*. https://www.mercurynews.com/2019/03/26/h-1b-prison -for-visa-fraud-in-case-involving-bay-area-workers/.
- Bhattacharjee, Yudhijit. (2007). U.S. Immigration Policy: Study Finds Foreign High-Tech Workers Earn Less. *Science*, 316(5822), 184.
- Bhattacharya, Ananya. (2018, May 2). A US Tech Company Promised Its H-1B Workers \$8,000 a Month but Paid Them \$800. https://qz.com/1268241/h-1b-visa -abuse-a-california-company-promised-its-foreign-workers-8000-and-paid-them -800/.
- Butt, Daniel. (2013). Colonialism and Postcolonialism. In Hugh LaFollette (ed.). The International Encyclopedia of Ethics (pp. 892–898). Malden, MA: Wiley-Blackwell.
- Chakravartty, Paula. (2006). Symbolic Analysts or Indentured Servants? India High-Tech Migrants in America's Information Economy. *Knowledge Technology* and Policy, 29, 27–43.
- Chishti, Muzaffar and Yale-Loehr, Stephen. (2016). *The Immigration Act of 1990: Unfinished Business a Quarter-Century Later*. Washington D.C.: Migration Policy Institute.
- Daniels, Roger. (1998). Changes in Immigration Law and Nativism since 1924. In Franklin Ng (ed.), *The History and Immigration of Asian American* (pp. 65–86). New York: Garland Publishing.
- Economic Times Bureau. (2013, February 28). TCS to Pay \$30 Million to Settle Employee Class Action Suit in US. *Economic Times*. https://economictimes .indiatimes.com/tech/ites/tcs-to-pay-30-million-to-settle-employee-class-action-suit -in-us/articleshow/18701530.cms.
- Emerson, Sarah. (n.d.). Exclusive Survey Reveals Discrimination against Visa Workers at Tech's Biggest Companies. https://onezero.medium.com/visa-workers-at-techs -biggest-companies-speak-out-about-discrimination-298c9fa686b6.

- Estruth, J. Alden. (2017, November 16). Subcontracting: Silicon Valley's Riskiest Work. Washington Post. https://www.washingtonpost.com/news/made-by-history/ wp/2017/11/16/subcontracting-silicon-valleys-riskiest-work/.
- Gerstenberger, Heide. (2014). The Political Economy of Capitalist Labor. Viewpoint Magazine, No. 4, 1–17.
- Gjelten, Tom. (2015). A Nation of Nations: A Great American Immigration Story. New York: Simon & Schuster.
- Gordon, Jennifer. (2006). Transnational Labor Citizenship. Southern California Law Review, 80, 503–588.
- Griffith, Bryan and North, David. (2017). *H-1B Employer Maps: Dependent, Willful Violator, and Debarred.* Washington D.C.: Center for Immigration Studies.
- Guttal, Shalmali. (2007). Globalization. Development in Practice, 17, 523-531.
- Hira, Ron. (2004). U.S. Immigration Regulations and India's Information Technology Industry. *Technological Forecasting and Social Change*, 71, 837–854.
- Hira, Ron. (2011, December 27). H-1B Workers Are in a State of Indentured Servitude. U.S. News. https://www.usnews.com/debate-club/should-h-1b-visas-be-easier-to -get/h-1b-workers-are-in-a-state-of-indentured-servitude.
- Hogarth, Marie-Anne. (2006, November 16). Siebel to Pay \$27.5 Million in OT Lawsuit. San Francisco Business Times. https://www.bizjournals.com/eastbay/ stories/2006/11/13/daily43.
- Information Technology Association of America. (1997). *Help Wanted: The IT Workforce Gap at the Dawn of a New Century*. Arlington, TX: Information Technology Association of America.
- Information Technology Association of America. (1998). *Help Wanted: A Call for Collaborative Action for the New Millennium*. Arlington, TX: Information Technology Association of America.
- Inui, Kiyo Sue. (1925). The Gentleman's Agreement: How It Has Functioned. *The Annals of American Academy of Political and Social Science*, 122, 188–198.
- Jung, Moon-Ho. (2005). Outlawing "Coolies": Race, Nation, and Empire in the Age of Emancipation. American Quarterly, 57, 677–701.
- Kumar, Deepak. (1982). Racial Discrimination and Science in Nineteenth Century India. Indian Economic and Social History Review, XIX, 63–82.
- Lai, Walton Look. (1993). Indentured Labor, Caribbean Sugar: Chinese and Indian Migrants to the British West Indies, 1838–1918. Baltimore, MD: Johns Hopkins University Press.
- Laurence, Keith O. (1994). A Question of Labour: Indentured Immigration into Trinidad and British Guiana, 1875–1917. New York: St. Martin's Press.
- Lerman, Rachel. (2018, August 30). Redmond CEO Charged with Fraud on More than 100 H-1B Visa Applications. *Seattle Times*. https://www.seattletimes.com/ business/technology/redmond-ceo-charged-with-fraud-on-more-than-100-h-1b-visa -applications/.
- Mahmud, Tayyab. (2013). Cheaper than a Slave: Indentured Labor, Colonialism and Capitalism. Whittier Law Review, 34, 215–243.
- Matloff, Norman. (1998). Debunking the Myth of a Desperate Software Labor Shortage. Testimony to the US House Judiciary Committee Subcommittee on Immigration. act .jinbo.net/drupal/sites/default/files/policy/itaa.real.pdf.
- Masselink, Leah E. and Jones, Cheryl B. (2014). Immigration Policy and Internationally Educated Nurses in the United States: A Brief History. *Nursing Outlook*, 62, 39–45.
- Merriam Webster. (n.d.). Capitalism. https://www.merriam-webster.com/dictionary/ capitalism.

- Miano, John. (2007). Wages and Skill Levels for H-1B Computer Workers. Washington D.C.: Center for Immigration Studies.
- Mongia, Radhika. (2018). *Indian Migration and the Empire*. Durham, NC: Duke University Press.
- Murrin, John M., Hämäläinen, Pekka., Johnson, Paul E., Brunsman, Denver., and McPherson, James M. (2015). *Liberty, Equality, Power: A History of the American People.* Boston, MA: Cengage Learning.
- National Science Board. (2018). *Science and Engineering Indicators*. Arlington, TX: National Science Foundation.
- Ontiveros, Maria L. (2007). Noncitizen Immigrant Labor and the Thirteenth Amendment: Challenging Guest Worker Programs. *University of Toledo Law Review*, 38, 923–939.
- Ontiveros, Maria L. (2017). H-1B Visas, Outsourcing and Body Shops: A Continuum of Exploitation for High Tech Workers. *Berkeley Journal of Employment and Labor Law*, 38, 1–47.
- Palmer, Jack. (2018). Intimidation, Rape and Slavery: The Untold Story of H-1B Workers. Progressives for Immigration Reforms. https://progressivesforimmigra tionreform.org/untold story h1b/.
- Radhika, M.B. (2016). Visa Wives: Emigration Stories of Indian Women in the US. London: Ebury Press.
- Roche, Walter F. and Cohn, Gary (2000, Feburary 21). Indentured Servants for High-Tech Trade. *Baltimore Sun.* https://www.baltimoresun.com/bal-visavendors022100 -htmlstory.html.
- Roy, Abhijit. (2018). The Middle Class in India: From 1947 to the Present and Beyond. *Education about Asia*, 23, 32–37.
- Rudrappa, Sharmila. (2009). Cyber-Coolies and Techno-Braceros: Race and Commodification of Indian Information Technology Guest Workers in the United States. University of San Francisco Law Review, 44, 353–372.
- Stock, Stephen, Putnam, Julie, Pham, Scott, and Carroll, Jeremy. (2014, October 27). Silicon Valley's "Body Shop" Secret: Highly Educated Foreign Workers Treated Like Indentured Servants. NBC Bay Area: The Investigative Unit. https://www .nbcbayarea.com/investigations/Silicon-Valleys-Body-Shop-Secret-280567322 .html.
- Sturman, Rachel. (2014). Indian Indentured Labor and the History of International Rights Regimes. *The American Historical Review*, 119, 1439–1465.
- Tannock, Stuart. (2009). White-Collar Imperialisms: The H-1B Debate in America. Social Semiotics, 19, 311–327.
- Teitelbaum, Michael S. (2003). Do We Need More Scientists? The Public Interest, 153, 40–53.
- Tharoor, Shashi. (2016). An Era of Darkness: The British Empire in India. New Delhi: Aleph Book Company.
- Thibodeau, Patrick. (2005, December 12). Computech Agrees to Pay \$2.65 M in H-1B Worker Case. Computer World. https://www.computerworld.com/article/2561321/ computech-agrees-to-pay--2-65m-in-h-1b-worker-case.html.
- Tinker, Hugh. (1974). A New System of Slavery: Export of Indian Labour Overseas, 1830–1920. New York: Oxford University Press.
- Trump, Donald J. (2017, August 18). Presidential Executive Order on Buy American and Hire American. https://www.whitehouse.gov/presidential-actions/presidential -executive-order-buy-american-hire-american/.

- U.S. Citizenship and Immigration Services [USCIS]. (n.d. a). H-1B Specialty Occupations, DOD Cooperative Research and Development Project Workers, and Fashion Models. https://www.uscis.gov/working-in-the-united-states/temporary -workers/h-1b-specialty-occupations-dod-cooperative-research-and-development -project-workers-and-fashion.
- U.S. Citizenship and Immigration Services [USCIS]. (n.d. b). Glossary. https://www .uscis.gov/tools/glossary.
- U.S. Citizenship and Immigration Services [USCIS]. (n.d. c). Employment Authorization for Certain H-4 Dependent Spouses. https://www.uscis.gov/working -in-the-united-states/temporary-workers/h-1b-specialty-occupations-and-fashion -models/employment-authorization-for-certain-h-4-dependent-spouses.
- U.S. Citizenship and Immigration Services [USCIS]. (2018). *Characteristics of H-1B Specialty Occupation Workers. Fiscal Year 2017*. Washington D.C.: U.S. Department of Homeland Security.
- U.S. Department of Commerce. (1997). America's New Deficit: The Shortage of Information Technology Workers. Washington D.C.: U.S. Department of Commerce.
- U.S. Department of Justice. (2013, October 30). Indian Corporation Pays Record Amount to Settle Allegations of Systemic Visa Fraud and Abuse of Immigration Processes. https://www.justice.gov/usao-edtx/pr/indian-corporation-pays-record -amount-settle-allegations-systemic-visa-fraud-and-abuse.
- U.S. Department of Labor. (n.d.). H-1B Program. https://www.dol.gov/agencies/whd/ immigration/h1b.
- U.S. Department of Labor. (2011). Administrator, Wage and Hour Division v. The Lambents Group. Washington D.C.: Administrative Review Board.
- U.S. Immigration and Custom Enforcement. (2019, September 19). Indian Management Consulting Firm Agrees to \$2.5 Million Global Settlement in North Texas for Visa Fraud, Inducing Aliens to Enter US. https://www.ice.gov/news/releases/indian -management-consulting-firm-agrees-25-million-global-settlement-north-texas -visa.
- Varma, Roli. (1995). Restructuring Corporate R&D: From an Autonomous to a Linkage Model. *Technology Analysis and Strategic Management*, 7, 231–247.
- Varma, Roli. (2007). Harbingers of Global Change: India's Techno-Immigrants in the United States. Lanham, MD: Lexington Books.
- Varma, Roli. (2010). India-Born in the U.S. Science and Engineering Workforce. American Behavioral Scientist, 53, 1064–1078.
- Varma, Roli and Frehill, Lisa M. (2010). Special Issue on Science and Technical Workforce. American Behavioral Scientist, 54, 943–948.
- Varma, Roli and Rogers, Everett M. (2004). Indian Cyber Workers in US. *Economic and Political Weekly*, 39, 5645–5652.
- Wadhwa, Vivek. (2006, September 13). Are Indians the Model Immigrants? *Bloomberg Business Week*. https://wadhwa.com/articles-list/2013/9/13/bloomberg -businessweek-are-indians-the-model-immigrants.
- Young, Robert J.C. (2003). *Post-Colonialism: A Very Short Introduction*. Oxford: Oxford University Press.

108