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Does Being An Only Child Affect the Attitudes of Chinese Students?

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DOES BEING AN ONLY CHILD AFFECT THE ATTITUDES OF CHINESE STUDENTS?

By

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Thesis Summary

Three decades has passed since China started implementing regulations and policies for population control. Today, the ever-famous "One-Child Policy" is starting to not only lose its popularity, but also its effectiveness in spurring economic growth, as the social side effects get more and more prominent. In November 2013, a resolution passed by the State Council of China, allowing couples to have two children if one of the parents was an only child, signals a major shift in the controversial policy. As one of the many only children born in China, I have always wondered how the policy affects my generation as a whole. More specifically, I'm interested in the heavy social cost my parents' generation had to pay for the growth of economy and the slowing down of population growth, as well as the challenges in social adaptation my generation faces.

Most scholar literature and news articles assailed the policy for violation of human rights, while some analyzed the psychological capacities of the younger generation without siblings. Social scientists and economists focused on the labor shortage problem and argued that the issue of an "upside down pyramid"[1] will only get worse as time passes. Aside from researching what has been written about the topic and combine known ideas into a comprehensive paper, I will also be conducting surveys with a manageable sample size to get first-hand information. While unrealistic to tackle all aspects of impacts of the policy, looking at both the change in society (social and economical) and change in individuals (psychological) can be viable and that's exactly what I plan to do.

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[1] A term that's used to describe the social structure in which the young population can hardly satisfy the society's need for labor nor can it sufficiently care for its large older population, due to a declining birth rate and slower population growth.

In order to investigate the complex social impact in the past three decades—way more complex than simply talking sex discrimination and growing up with no siblings—I plan to segment my research into several sections. First, I will be looking at the issue of the "Upside down pyramid" and analyze the family planning policy's impact on China's demography. Extending from the idea of labor shortage, the second section will track the curve of China's urbanization and economic development under the policy. The third section follows with survey data and statistical analysis of comparisons between children who grew up with and without siblings, and the sample will majoring be drawn from three universities from mainland China, Hong Kong, and the United States. A short section that includes news updates will be included in the conclusion to track adjustments in the family planning policy.

China's skewed demography today calls for immediate action to not only amend the "One-Child Policy" that had been practiced for more than thirty years, but also possibly even phase out of the family planning period of China's socialist development. The desired outcome of my research will not be a simple conclusion, but a range of facts, data, and implication analysis.

Abstract

Three decades has passed since China started implementing regulations and policies for population control. Today, the ever-famous "One-Child Policy" is starting to not only lose its popularity, but also its effectiveness in spurring economic growth. This paper will discuss the heavy social cost the last generation had to pay for the growth of economy and the slowing down of population growth, as well as the challenges in social adaptation young adults face today. As part of the literature review, this paper examines the issue of the "Upside down pyramid" and analyzes the family planning policy's impact on China's demography. The second half consists of statistical analysis of data gathered from university students from Mainland China, Hong Kong and the United States. Comparisons between children who grew up with and without siblings are then made. This research highlights the differences in attitudes in social adaption between university students in China who are only children and who grew up with siblings, and their consequent implications on society.

Introduction

China today has a population of about 1.4 billion, which accounts for 20% of the world's population. While the population growth has slowed since the implementation of birth control policies, keeping the population down while sustaining a balanced demography remains a challenge. In an attempt to mitigate a near-certain demographic future of insufficient labor force and rapid aging, the Chinese government has adjusted its family planning policies in November 2013, allowing families in which one or more parents are only children to have a second child. This change is yet another attempt to correct the consequences that had taxed the government in the past thirty decades (Chamie, 2014).

Birth control endeavors have existed since the 1950s even though no formal regulation was carried out until 1979. Government officials started looking into the issue of population control soon after the formation of the People's Republic of China in 1949, and at the time, they thought a stable population size could quickly be achieved once the country decides to reduce birth rate by law. In his book *China's Changing Population*, Judith Banister pointed out that in a speech made in 1957, Chairman Mao Zedong said that he wished for the population to stay at 600 million (Banister, 1987). However, it soon became clear to the leaders of the country that population control is a long-term project and would require dedication of the mass. The earliest approaches of distributing contraceptives and condoms to discourage having more children than a family is economically able to raise was far from effective, mainly due to the public's reluctance to discuss issues concerning sex and family planning. In addition, with the country's

limited capital and infrastructure, the contraceptive were low in quality and the distribution methods are inefficient.

When political ideology differences between China and the Soviet Union caused a split, Khrushchev withdrew all the help they sent to help China industrialize. As a result, the Great Leap Forward started in 1958 and, without realizing that the country lacks the necessary technological and financial resources, Mao called for an attempt to industrialize the country without help from the Soviet Union (Watkins, 2014). The Great Leap Forward caused shortage in food production and in turn caused severe famines. Approximately 30 million people died as a result. Almost immediately following the Great Leap Forward was the Cultural Revolution in 1966. This ten-year chaos greatly hindered the development of the country, and prevented economic recovery from the Great Leap Forward to a certain extent. The idea of fertility reduction was not again mentioned until early 1970s, when the country showed first signs of stability. By this time, the government had learned more about contraceptives, sterilization, and abortion techniques to further enforce population control (Banister, 1987).

In the late 1970s, "Family Planning Policies" were written into state regulations through the Congress. The fundamentals of family planning policies include clauses like "encourage late marriages (after 23 for women and 25 for men[2])" and "encourage fewer children per family". Lenient as it sounds, the policy actually limits the number of births per family to one, exempting residents of Hong Kong, Macau, and foreign nationals from this policy. Rural families where firstborn is a girl or is disabled, families that are ethnic minorities, families that have previously adopted a child and the wife got pregnant, and

[2] The legal age for marriage is 20 for women and 22 for men.

remarried families can have a second child if they choose to. The group that was affected most by family planning policies was public functionary workers-teachers, civil servants, and clerks in state-owned enterprises. Some self-employed laborers can get away with paying a huge sum of penalty once they decide to violate the birth control policy, but since public function workers are so closely tied with government functions, very few can keep their jobs even if they pay the penalty.

A recent article on China's birth control endeavors by CNN revealed that by the 1990s, birth rate have significantly declined, and, according to the state news agency Xinhua, the one-child policy is believed to have prevented some 400 million births (Park & Armstrong, 2013). The effectiveness of the policy seems unquestionable even with a certain degree of flexibility that developed between rural families and family planning workers (including the above mentioned method of paying a fine). With the decline of coercion and forced abortion practices, the family planning policies gradually eased in the 2000s.

I grew up in a small town near the Yellow River in China. My mom was an elementary school music teacher and my dad was a pilot. I've always wanted a younger sister or brother growing up, but since both my parents were civil servants and would lose their stable jobs if they decide to give birth to a second child, I never needed up having a sibling. I did get all the attention from not only my parents, but also my grandparents and other relatives, and I enjoyed that. I'm not a fervent supporter of birth control policies as there are numerous social and economical issues that somewhat hindered the development and construction of China's new socialist system, but I enjoyed the benefits as an only child and the amount of investment my parents put on me. In order to

understand how my generation feels about their experience with no sibling and how that affected societal development, I will be reviewing literatures and scholar journals on how birth control policies affected the economic and social aspects of China in the past thirty years, as well as collecting first-hand data from young adults in mainland China, Hong Kong and the United States to analyze how single children are different psychologically from their peers with siblings.

Part I: Economical And Social Implications

The Upside-down Pyramid

The family planning policies that defined Chinese family life for more than three decades have resulted in great changes in China's demographics. Today, when the question "does China have enough people?" is asked, the answer is no longer as easy as it seems to be. With a population of 1.3 billion[3], the demographic structure is vastly different as it was thirty years ago. The new structure of an "upside down pyramid" arises as China approaches the verge of accelerated demographic decline. Few specific issues will be discussed in this section: the aging population and the shortage of adult labor, the uneven distribution of physical labor due to rapid urbanization of rural areas, and the declined birth rate of female due to gender discrimination.

The article "China's population: The most surprising demographic crisis" that was published in The Economist on May 5th, 2011 presented the graph (Figure 1) to illustrate the issue of an aging population. The Brookings Institution who made the graph predicted the growth of two age groups (20-24 and 65+) in the next two decades up to

[3] As of 2013.

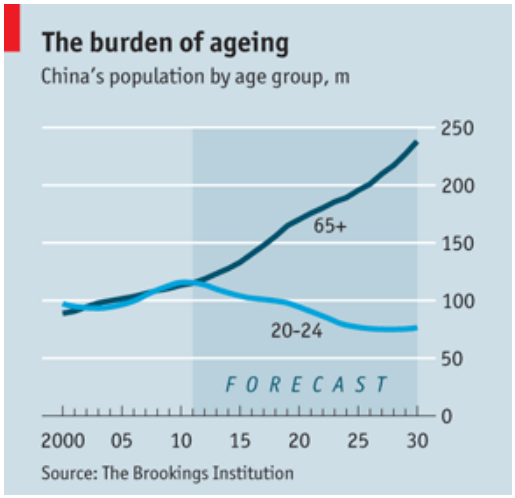


Figure 1, China's Population by age group

2030. It's clear that in the next couple of decades—assuming the policy does not change drastically—the young adult population will decline, as the 65+-age group grow larger in a much faster rate. According to the article, People above the age of 60 now represent 13.3% of the total population, up from 10.3% in 2000. In the same period, those under the age of 14 declined from 23% to 17% ("The Most Surprising Demographic Crisis", 2011). The skewing of the country's age distribution inevitably caused a lack of care for the older population. Heying Zhan, a professor at Georgia State University, explored this issue in her journal "Population Aging and Long-Term Care in China". She raised the idea of a "4-2-1 family structure", which means a single child would have to care for two parents and four grandparents. The work force population in China today faces the question of how they should properly care for their elders, as few can get support from the government due to the insufficiency of pension programs (Zhan 2013). According to a recent Sina Weibo (a Chinese social network website similar to Twitter) post, the government promised to develop old age pension when the family planning policies became a national policy in 1985 to encourage participation. Later on in the 1990s, the promise changed into "helping" families with old age pension. By 2005, the government sent out messages that encourage families to seek elder care on their own, and by 2012, they are encouraged to delay retirement to maintain an income at old age (Weibo, 2014).

Another point to consider is the fact that China experienced the aging problem

simultaneously with urbanization. While most developed countries experience declined birth rate and population aging after industrialization and a period of rapid development, China's family planning policy resulted in a skew demography *while* it's urbanizing. According to Zhan, t took the United States 120 years (1840-1960) to undergo the urbanization process, with its population transitioning from 10 percent urban to 70 percent urban (U.S. Census Bureau, 2006). If we take into consideration migrant workers who are generally not counted as urban residents by population census authorities, the similar urbanization process took China a quarter of the time (1980 to 2010) (Zhan, 54). The main issue with urbanization is the lack of physical labor in rural area and even some urban areas in the Western part of China. China today still relies largely on agriculture, and a good amount of the land that needs to be cultivated is not yielding desired results. In many rural families, the only son is usually sent to factories in nearby cities, if not smart enough to go to university. The labor shortage can lead to a wider wealth gap between urban and rural areas, and even between big cities and smaller-sized cities.

The last main issue to be considered is gender discrimination and sex ratio under the family planning policy. Sex ratio is defined as the proportion of male live births and female live births, and for industrialized countries, this number ranges from 1.03 to 1.07 (Hesketh et al, 2005). In her research on "The

Table 2. Ratio of Men to Women According to Birth Order in China, 1980 to 2001.*

Birth Order	In Urban Areas	In Rural Areas	Overall
First child	1.13	1.05	1.06
Second child	1.30	1.23	1.24
Third child	1.19	1.29	1.28
Fourth child or more	1.19	1.32	1.31
Average of all birth orders	1.16	1.15	1.15

* Data are from Kang and Wang.[19]

Figure 2 Ratio of Men to Women According to Birth Order in China, 1980 to 2001.

Effect of China's One-Child Policy after 25 Years", Terese Hesketh cited a chart on the ratio of men to women according to birth order in China from 1980 to 2001 (Figure 1). Her explanation for the increased ratio across birth order is that some urban Chinese couples chose to perform sex selection (meaning abortion for a female child) with their only child, while in rural areas, most couples perform sex selection on their second child, if their first one happen to be female (Hesketh et al, 2005). Professor Zhang Junsen at the Chinese University of Hong Kong raised a couple new points as to why the sex ratio in China is the way it is today. In his research on the effect of the One-Child policy on the sex ratio imbalance in China, Zhang argued that a skewed gender ratio seems to be a result of "a combination of a decreased fertility rate, male preference, and increased effectiveness of gender selection technologies (Zhang at al. 2011)." The cultural background of son preference has been deeply rooted in Chinese society, and one of the oldest Chinese family traditions was letting the oldest son inherit family wealth. When a birth quota is given to each family, the preference for boys is magnified. Together with technologies like ultrasounds, many families perform gender selective abortions.

Therefore, it seems that the family planning polices have shaped China's demography and presented issues in more than a few social aspects. However, did the sacrifice of a balanced demographic ratio bring about rapid economic development? In the next section, the evolution of China's economy from 1970 will be traced to see how population control affected growth of cities and distribution of wealth in modern China.

Economic Growth Under Family Planning Policies

It is widely believed by many that a decline in birth rate would hamper economic growth by causing labor shortage. However, in his cross-country study on the question "Do high birth rates hinder economic growth", Cheng argues that economic growth hinders population growth, not the other way around. He found that "the birth rates have a positive impact on economic growth, but the correlation becomes negative when birth rates reach a certain point. Moreover, the relationship again appears to be positive at another specific point" (Cheng 2011). This means that economic development is not always hampered by population growth.

High fertility rate and larger population essentially means that limited natural and tangible resources have to be shared by more people, while these people produce more and create more values. Since productivity has diminishing returns, it's only logical that the additional value per capita created is not as great as the amount consumed. The Chinese government thus stressed the importance of reducing population to achieve higher per capita GDP. Around the same time period when population control endeavors were made national policies in late 1970s, China started the Economic Reform. The country was to go through massive transformation, from "a command to a market economy, from an economy based on agriculture to one based on manufacturing and services, from one with high fertility and low longevity to one with low fertility and high longevity, and from an economy that was almost totally closed to one that, today, even before her accession to the WTO, is much more open than most countries at the same level of income" (Fernández 2007). The family planning policies aim to reduce fertility rate and raise per capita value created, thus increase longevity.

The economic reform was successful, and by developing market economy under socialism, China developed and capitalized its banking system, accumulated foreign exchange reserves, and regrouped and restructured old industries (Prasad 2011). The 25-year growth plan aim to reorient growth to make it more balanced and sustainable, and in order to achieve that, it's important to balance the relationship between economic growth and population growth.

Part II: Psychology Research and Data Analysis

We do not have solid knowledge on how the single child family dynamic on such a large scale influence the psychological development of this entire generation of children, however, a number of psychologist have examined the effects of birth order on personality, among which, theories of Alfred Adler and Frank Sulloway stands out.

Adler's and Sulloway's Theories: An overview

A colleague of Carl Jung and Sigmon Freud, Alfred Adler examined personality and arrived at a theory in which he rejects Freud's emphasis on sex and maintains that individuals strive toward superiority and overcome feelings of inferiority. The Austrian psychologist later investigated parenting styles and birth order, and arrived at the conclusion that birth order can often leave an enduring impression on not only the individual's personality, but also his/her style of life (Friedman & Shustack, 2012). Admittedly, distinct styles of parenting can affect the child's habitual way of dealing with everyday tasks, Adler argued that birth order and the total number of siblings of a child shape his or her psyche to a great extent.

Adler believed firstborn children tend to be serious, goal oriented, aggressive, competitive, high in self-esteem and anxious, while youngest children are the baby of the family and the bold, outgoing charmer who isn't afraid to test his or her luck ("Alfred Adler Research on Birth Order", 2014). The segment of Adler's theory of interest to this paper is his view on only children. According to Adler, only children can possess traits of both firstborn and youngest children. They can exhibit qualities on two end of the spectrum like dependence and selfishness. They may also show irresponsibility when they enter adulthood. In Adler's theory, firstborn and youngest children are more likely to encounter personality problems later in life as opposed to middle children, since the middle born child is likely to grow up with an other-centered point of view.

Parental behavior also plays a role in shaping only children's behaviors and personalities. Because the idea of "sibling rivalry" is nonexistent, only children get a great deal of attention and affection from their parents, especially their moms. These children won't have to fight for attention, or act better than their siblings to be "the better" one. Also, since only children have parents that are inexperienced and usually highly anxious, each small achievement they accomplished and every mistake they made are likely to be documented and recognized. This is again a double-edged sword. If a single child grows up being the center of attention in the family and is spoiled by inexperienced parents, he or she is likely to later experience interpersonal difficulties when the child realizes that he or she is not universally liked and admired ("Alfred Adler Research on Birth Order", 2014).

Frank J. Sulloway from the University of California, Berkeley approached the idea of birth order by accessing personality through a Five Factor Model of Personality

(conscientiousness, agreeableness, openness to experience, extroversion, and neuroticism). He believes that firstborn children are "in conflicts with their parents rather than identifying with them" (Sulloway, 1999). As a result, firstborn children tend to be accomplishment-oriented and results-oriented to prove that they are capable. By applying this research finding to Adler's theory that only children have characteristics of firstborns, one can hypothesize that the generation that comes from single child families is likely to be more competitive and aggressive than their counterparts from a different time period or a different country.

The birth order theory is by no means a perfect one, and merely taking Adler's conclusion to analyze the single child generation in China would be ill considered. One of the criticisms of these particular theories is that the studies about birth order neglects the fact that family size is generally related to socioeconomic status, which in turn is usually related to achievement. In a family with low socioeconomic status, firstborn children can enter the labor force much earlier than later born children, and that's probably something not as prevalent in more well off families. Another factor that might affect Adler's theory or cause inconsistent findings is the gender of siblings. For example, the youngest girl with three older brothers might act distinctively different from, say, if she had three older sisters.

The Effect on Education

In many parts of the world and especially Asian countries like China, a family unit is only considered complete when a child is born. A family unit is the carrier of the diverse needs of family members. Ways to meet the material, emotional and spiritual needs of family members are diverse: there are the production and supply of goods and

services, communication, insight and spiritual sustenance. From a rational perspective, parenting behavior is actually a human capital investment behavior. Investment here refers not only to the simple pursuit of economic returns, but also spiritual and emotional return, especially adding meaning to one's life and achieves self-actualization at old age. There are two parts to the cost of raising a child: one is direct costs, namely the cost of food, clothing, medical care, education, marriage and other expenses from pregnancy onward; these costs are characterized by material consumption or currency expenditures. Another part is the indirect costs, namely the loss of access to education, access to better jobs and opportunities for advancement and raising income for parents (mostly mothers) during the nursing and raising process of the child. This part of costs is known as opportunity cost. As the total cost for food, clothing and other expenses decrease due to a decreased household size, many families are capable of spending more on healthcare and education.

A substantial amount of human capital investment for developed countries goes into education for the child. Even though China still has many social welfare issues to solve before it can be considered a developed country, the implementation of the One Child Policy has shifted most Chinese families' investment towards their only child's education.

Before China started its population control endeavors, most Chinese families had more than two children. China had relied on agriculture for hundreds of years, and in order to have enough physical labor to plow the land, rural families had to expand their family size by having more children. The major source of family income was profit from crops, livestock, and occasionally from selling handmade crafts and commodity. The type

of family tradition where children are sent to the crop field at a very early age inevitably limited the level of education they receive. Many people were illiterate, and most young adults get married in the later teens or early twenties to have children. As China became more industrialized in the late 20th century, much of the land previously used for agriculture was confiscated by the state for reconstruction of towns and expansion of cities. Simply relying on plowing the land was not only insufficient to feed the household, but also no longer practical. Even rural families are starting to realize that sending their children to school was the only way then can find factory jobs that pay enough to support the family. As limitations on the number of birth per household became a national policy, the opportunity cost of sending an only child to the crop field became higher, thus causing the human capital investment on education to increase.

In urban areas, the increase in education investments mainly result from a combination of improved economic conditions and more competition for higher education. The economic reform started from 1979 created many urban jobs in the following few decades, and the influx of available capital to most households were used to send their only child to after-school classes. The policy of guaranteed job assignments for college graduates was abolished in the late 1990s by the Ministry of Education, causing college graduates to face the job hunting challenge their counterparts in earlier times never had to experience. In order to land a good job, many college graduates continued on to graduate school. Since this generation of young adults didn't have siblings, their parents were able and willing to continue investing in their graduate education.

Part III: Research On University Students in Mainland China and Hong Kong

Even until recently, research on psychological comparisons between children who grew up with and without siblings are limited. In an attempt to look at how having a sibling affect a young adult's personality and behavior, a questionnaire study was distributed to college students in three universities located in the United States, Mainland China, and Hong Kong Special Administrative Region of China. The questionnaire was designed to examine the following aspects of psychology: ability to interact/sympathize with others, ability to deal with pressure, view on success and ways about achieving it, and relationship with parents/independence.

Methods

The online survey targeted college students from mainly urban areas, and the results were gathered over a 2- week period. Participants were mainly from the University of South Carolina (19.5%), The Chinese University of Hong Kong (22.01%) and Ningbo University (40.25%), with the other 18.24% of survey population from other major universities in China and the United States. Among the 159 effective surveys gathered, 74 (46.53%) were male, and 85 (53.46%) were female. Only children accounted for 47.8% of the population, while children with siblings accounted for the other 52.2%. Among the 76 participants who were only children, 64 (84.2%) wished they had at least one sibling growing up.

The raw data was initially grouped by the aspect of personality they measure, with 10 questions under "ability to interact/sympathize with others", 5 under "ability to deal with pressure", 6 under "view on success and ways about achieving it", and 5 under "relationship with parents/independence". The data was then drafted onto an excel sheet

for calculation of standard deviation. A number value was assigned to each choice, with "strongly disagree" being 1, "disagree" being 2, "neutral" being 3, "agree" being 4, and "strongly agree" being 5. With the assigned value, the answer choices were quantified for further analysis. A correlation analysis was first conducted to look at the correlation between each question in the same group, with the null hypothesis H_0 being "There is no actual correlation between the two subjects" and the alternative hypothesis H_A being "There is a correlation between the two subjects". When the correlation coefficient is below 0.05, we reject the null hypothesis, accept the alternative hypothesis, and arrive at the conclusion that the two questions within the same group are correlated.

In order to further determine if all the questions we grouped together are measuring the topic of interest, a Cronbach's alpha coefficient was calculated for each group. Cronbach's alpha is a measure of internal consistency, or how closely related a set of items are as a group. A high value of alpha (normally higher than 0.7) is often used as evidence that the items measure an underlying (or latent) construct. As the average inter-item correlation increases, Cronbach's alpha increases as well. The coefficient is calculated using:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

N represents the number of questions in a group, c-bar is the average inter-item covariance among the questions, and v-bar is the average variance. The Cronbach's alpha coefficient for each proposed group were calculated to be the following:

Group	Cronbach's Alpha
Group 1 Ability to interact/sympathize with others	0.2957
Group 2 Measurement of relationship with parents/independence	0.1760
Group 3 Measurement on view on success and ways about achieving it	0.3118
Group 4 Measurement on ability to deal with pressure	0.4162

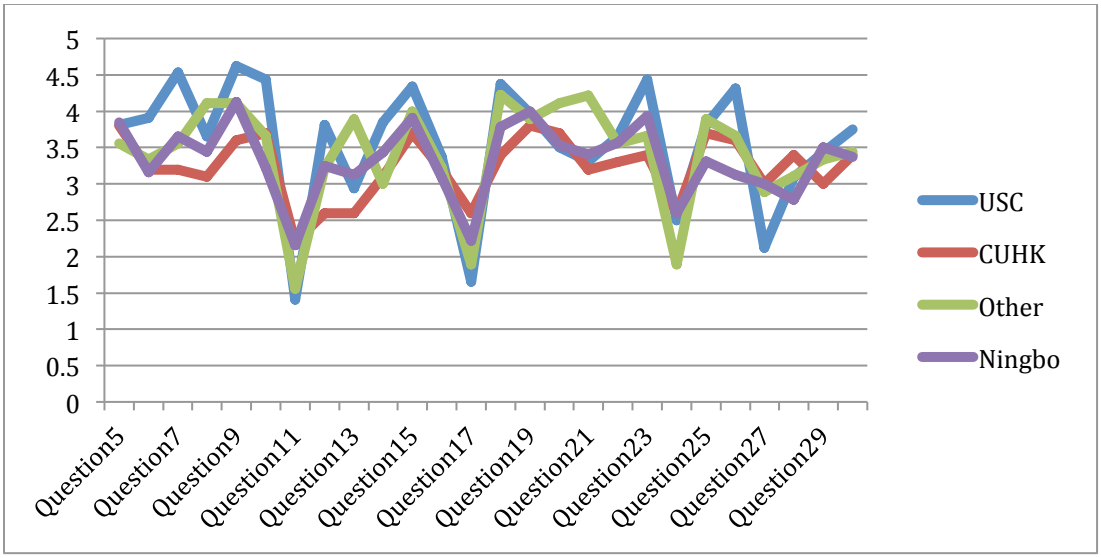
All of the calculated coefficient values were below 0.7, indicating weak correlations between all questions in these groups. As a result, the idea of grouping questions to measure different aspects of personality was abandoned, and each question will be looked at independently.

The difference in responses between single children and children who grew up with siblings can be assessed using the differences in means. By assigning values 1-5 to each of the answer choices, a weighted mean was calculated. The differences in means between single children and children with siblings varied from -0.5265 to 0.5224. The few questions that yielded an above-0.3 differences are: “I’m good at sending implicit messages (-0.4833)”, “My friends/significant other have told me that I hurt/neglect their feelings sometimes (0.3473)”, “I stand up to discrimination/unfair incidents/bribery when I encounter them (-0.4783)”, “I don't like being too close to my friends or significant other – distance and space makes the heart grow fonder (0.4809)”, “I deal well with pressure and can adjust my plans/goals accordingly (-0.4934)”, “One cannot change his/her fate (0.5224), “When I encounter difficulties and obstacles, I give up (-0.3236)”, “I believe that if I keep trying, I will eventually succeed (-0.4505)”, and with “I clean my own room/apt and help my parents with chores when I am home” having the biggest difference of -0.5265. A negative difference indicates that

children with siblings are more likely to agree with the statement, and a positive difference indicates that only children agree more with the description.

	The Chinese University of Hong Kong	University of South Carolina	Ningbo University	Other Universities
Only Children	21	3	32	20
Children with Siblings	10	32	32	9
Ratio	2.10	0.09	1.00	2.22

In order to further examine the data and to avoid sampling error, the effective answer sets were grouped by schools. By looking at the number of respondents in each category (presented above), it seems that the data for University of South Carolina should not be used in further comparison of means due to the large difference in ratio and small number of only children that participated. It seems that among the Chinese American students who took part in the survey, few are only children. In the following data analysis, comparisons will be conducted between The Chinese University of Hong Kong, Ningbo University, and Other Universities. We decided to keep the information from University of South Carolina in previous calculations of the means because when the line graph of data of children with siblings were graphed by university, the trend were similar (as presented below).



By mainly looking at the calculated means from The Chinese University of Hong Kong and Ningbo University with data from other universities as reference, a comparison chart is generated with differences in means higher than 0.3 highlighted (see below). Questions that have similar or drastically different responses at The Chinese University of Hong Kong and Ningbo University are examined and discussed in the next section.

Results & Discussion

	CUHK	Ningbo	Other
Question5	0.0572	-1E-04	0.3448
Question6	0.0382	0.031	0.0866
Question7	0.5144	-0.4374	-0.2052
Question8	0.2811	0.4059	-0.6611
Question9	0.2096	-0.2189	-0.5111
Question10	-0.2715	0.2608	0.2337
Question11	-0.1051	0.2813	0.7444
Question12	1.0666	-0.0624	-0.4219
Question13	1.0194	-0.0307	-0.9885
Question14	0.5668	0.0625	0.8003
Question15	0.1571	-0.4065	-0.1
Question16	-0.0572	0.0938	-0.2219

Question17	-0.4571	0.1876	0.2611
Question18	0.6476	0.2499	0.2278
Question19	0.2476	-0.3434	-0.3885
Question20	-0.3667	0.0622	-0.7111
Question21	-0.2003	-0.1871	-0.7718
Question22	-0.6332	-0.4997	-0.4052
Question23	0.5048	0.0311	-0.0163
Question24	0.3997	0.2191	0.9611
Question25	-0.2714	0.0316	-0.4385
Question26	-0.314	0.0628	-0.5163
Question27	-0.0472	0.1871	2.1114
Question28	-0.2972	0.0935	-0.0108
Question29	0.3806	-0.0318	0.5666
Question30	0.4096	-0.103	-0.0945

From the differences-in-means chart generated in the previous section, conclusions can be drawn to confirm that there are indeed differences in attitudes between single children and children who grew up with siblings.

Research results yield that single children are not as good at communicating implicitly, they are less likely to stand up to discrimination and unfair incidents when they encounter them, they are less likely to give up when facing obstacles, and they do not help their parents with house chores as much as their counterparts with siblings. At the same time, single children tend to neglect others' feelings, enjoy some distance with their friends and loved ones, and believe that if they keep trying they will eventually succeed. Many of these results corresponded with Adler's birth order theory. Adler believes that single children who have the characteristics of both first-born and last-born are more achievement oriented, thus it's not surprising that a single children respond better to obstacles in their life course and are more determined to achieve their goals. It's also concluded that single children are more likely to neglect others' feelings and enjoy

distance with friends and loved ones. Only children didn't grow up in situations where they had to constantly communicate with, fight with, give in to, or bond with someone close to their age. One can predict that they are less likely to detect and sympathize with a significant other in a relationship. This may even lead to higher rates of failed marriages because the generation of only child is not as adaptive in a close relationship with someone close to their age as their counterparts with siblings. Single children do less chores at home probably because of two reasons: the parents may have more time to do house work because they have less children to look after, or parents may be more likely to spoil a child if he/she is the only one they have.

When taking a closer look at students particularly from Mainland China and Hong Kong, question 7 is especially noteworthy. The statement associated with this question is "I deal well with pressure and can adjust my plans/goals accordingly." A positive difference for students from The Chinese University of Hong Kong indicates that single children are better at dealing with pressure and adjusting their goals, but responses from Ningbo University yielded a negative difference, indicating that children with siblings are able to deal with pressure better and can adjust their plans accordingly. This difference was not expected. A possible explanation for this difference is the rankings of the universities we conducted this survey in. The Chinese University of Hong Kong is one of the best Asian universities, ranked 3rd in Hong Kong and #12 in Asia ("World Rankings – Asia, 2013), while Ningbo University is ranked #161 in China ("宁波大学排名", 2014), with no world ranking information available. Since it's extremely difficult for mainland students (mostly single children in this case) to get into The Chinese University of Hong Kong, they may have lots of experience in handling stress and winning in competitions

before getting into college. Local Hong Kong students can get into the university much easier, thus they may not be as skilled in handling stress as they have less experience in high school from doing so. This, in turn, results in a better stress management score for only children at the Chinese University of Hong Kong. Students at Ningbo University, on the other hand, did not necessarily have to go through a tough selection process for admission, and the results came out as expected with single children less able to handle stress and adjust their goals, probably because they were spoiled by their parents growing up.

Question 22 is also noteworthy in that it yielded great negative difference regardless of the institution. The statement is "I clean my own room/apartment and help my parents with house chores when I'm at home." The consistency in responses indicates that single children are less likely to clean and do chores than children with siblings no matter where they are from. Question 29 that says "I always consult my parents before making major decisions" yielded relatively small difference much to our surprise, especially at Ningbo University. It seems that being an only child does not indicate an over-reliance on parents' opinions before decision-making for Chinese students. In other words, both only children and children with siblings have the habit of seeking advice from their parents before making big decisions, which may be because of their lack of experiences in the "real world".

The statement that yielded small to negligible positive difference is "I'm straightforward when communicating with others". This indicates that college students in China have the same attitude in terms of implicit communication regardless of their number of siblings. This may be due to the fact that in Asian cultures, it's considered

impolite in many cases to express ideas directly, especially to superiors. Having a sibling generally does not affect how a child is educated in their manners.

In possible future researches, a wider age range of participants can be used to better represent the Chinese population. Expanding participant pool can best eliminate errors that may have resulted from a small sample size and unrepresented age group. It would be interesting also to look at how much the same group of students has changed in their adaptive abilities and attitudes towards success once they have entered society and held real jobs.

Conclusion

In November 2013, the Chinese government announced relaxation of the One-Child Policy for families in which one or more parents are themselves only children. Up to now, many changes have taken place in China under the family planning policies, including demographic shift, economic development and transformation in attitudes of a generation of Chinese citizens. This generation that grew up as single children are now entering society, contributing their knowledge in different sectors of the work force, getting married and forming new families. This group of goal-oriented, determined people is under great pressure, and faces various kinds of challenges in communication. Before China reaches its so-called "mature stage of socialism" in mid-21st century, many more changes may take place, including those in national policies that affected almost three generations. No doubt uncertainty exists about the precise future demographic, economic and social impacts of family planning policies. For Chinese young adults, at

least, some positive characteristics they developed while growing up without siblings may help them adapt to the rapidly changing world today.

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Appendix 1

Survey on psychological differences between young adults who grew up with and without siblings in Mainland China, Hong Kong, and the United States.

Basic information

1. Please select the school you are currently attending
A. The Chinese University of Hong Kong
B. University of South Carolina
C. Ningbo University
D. Other (please specify) *

_____

2. Please indicate your gender
A. Male
B. Female

_____

3. Are you an only child?
A. Yes
B. No

_____

4. If you answered "Yes" to No.1, did you ever wish you had at least one sibling growing up?
A. Yes
B. No
C. Not Sure
D. I'm not an only child

_____

Each of the following statements presents a scenario, a personality trait or an ability, please respond accordingly and select the option that best describes your feeling towards the statement.

5. I'm straightforward when communicating with others
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

6. I'm good at sending implicit messages
A Strongly disagree

B Disagree
C Neutral
D Agree
E Strongly Agree

_____

7. I deal well with pressure and can adjust my plans/goals accordingly
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

8. It is important to me that my parents approve of my intended career.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

9. I believe that if I keep trying, I will eventually succeed
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

10. I think one should learn to go with the flow and adjust to the environment.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

11. One cannot change his/her fate
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

12. I'm satisfied with my current progress in terms of reaching my long-term goal.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

13. I hold summer/part-time jobs so I won't have to ask my parents for spending money.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

14. I can reach out to new people and become friends with them easily.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

15. When I encounter difficulties and obstacles, I rise to the challenge.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

16. Even though I have many friends, I feel it's time consuming and sometimes difficult to maintain my friendship with others.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

17. I encounter difficulties and obstacles in life, I give up.
A Strongly disagree
B Disagree
C Neutral
D Agree

E Strongly Agree

_____

18. I'm excited when doing something I've never done before.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

19. I'm good friends with my roommate(s), and we enjoy living together.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

20. I enjoy competing with my peers and prefer to work/study in a competitive environment.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

21. I study hard to not let my parents down / make them proud.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

22. I clean my own room/apartment and help my parents with house chores when I'm at home.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

23. When interacting with others, I can notice their emotional changes and infer their feelings accurately.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

24. My friends/significant other have told me that I neglect/hurt their feelings sometimes.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

25. I enjoy being alone or in small groups; I don't like being around big groups of people.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

26. I stand up to discrimination/unfair incidents/bribery in the workplace.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

27. I don't like being too close to my friends/significant other, distance and space make the heart grow fonder.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

_____

28. I believe that I'm only considered successful when I have better grades/earn more/live a more expensive lifestyle than my peers.
A Strongly disagree
B Disagree

C Neutral
D Agree
E Strongly Agree

---

29. I always consult my parents before making big decisions.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

---

30. I think I achieve success when I'm contributing to social welfares/the environment/helping others.
A Strongly disagree
B Disagree
C Neutral
D Agree
E Strongly Agree

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31. How do you feel about being in a romantic relationship?
A. I'm almost always serious about every relationship I start and won't give up easily
B. Chemistry is the most important composition of romance
C. Both marriage and romance are based on material (eg. income, social status, etc)
E. A romance relationship doesn't have to be serious; I just want to have fun.
F. Other (please specify)

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32. My ideal job
A. Achieves self-realization
B. Fits my personal strengths
C. Fits my interest
D. Has good relationship with coworkers
E. Has high social status
F. Is stable
G. Pays well
H. Others (please specify)

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33. Thanks for participating! If there's anything else you would like to add, please respond in the area below. If you are interested in research findings, please leave your email.