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Gender and cultural differences in the
empathy-altruism hypothesis
among university students in Hong Kong

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Abstract

This study aims to examine the authenticity of empathy-altruism hypothesis in university students of Hong Kong, and whether gender and cultural factors would determine its effectiveness. One hundred and eighty-eight year one university students in Hong Kong participated and were categorized by gender and language major as it related to cultural values. Participants were asked to fill in a questionnaire to measure their empathy level after watching a video clip that portrayed a message of encouraging help by feeling for others. Independent t-test, chi-square and comparison of frequency percentage were employed to determine the difference in empathic score and the corresponding relation to the hypothetic situational altruistic behavior. Results showed no significant differences between male and female's empathy scores. Except for categorizing the participants by willingness to be a volunteer worker, a marginal significant difference was found, with female participants' empathy score higher than male participants. No statistical significant result was obtained in all kinds of classification in cultural dimension. For the investigation of the relation of empathic level and altruistic behavior, significant result was found only in female participants, who were willing to participate in hypothetic altruistic behavior. Implications, limitations and improvements of the present study were explained in discussion for suggesting future investigation.

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Introduction

Many scholars have studied the reasons behind people engaging in pro-social behaviors. One of the important questions in this field is whether pure altruism really exists. Batson (1987, 1991) introduced the empathy-altruism hypothesis to prove the existence of altruistic behavior, which is motivated by empathic feeling. Nevertheless, some people in the society could be considered as more helpful than others. Batson tried to explain this individual difference through his hypothesis that people help for purely altruistic reasons if they feel empathy. Otherwise, people would help according to their own self interest. Thus, factors that influence the level of empathic feeling become a determinant in altruistic behavior. Based on Batson's empathy-altruism hypothesis, researchers have found that several factors would lead to the differences, which included gender, personality and emotional states (Aronson et al., 2001).

Purpose of Study

The objectives of the present research were to examine the authenticity of this hypothesis in university students of Hong Kong. In addition, according to a number of studies has shown that there is a gender difference on empathy scale, to investigate whether gender would be a factor that determines the effectiveness of this hypothesis.

Furthermore, in reference with research that people from collectivistic culture would more likely to feel empathy for in-group members (Batson et al., 2001). It is believed that altruistic behavior would be more likely to be evoked when the helpee is considered as an in-group member, which can be foresee that there would be cultural difference in empathy for people from the collectivistic and individualistic cultures. Through understanding the role of culture in the concept of in-groups and out-groups, another objective of the current research was to explore the cultural difference in empathy-altruism hypothesis.

Significance of Study

Firstly, this study is significant to one because I would like to fulfill my personal interest in understanding human nature in helping behavior. I always prefer an optimistic view to a Freudian negative view on human nature because of the numerous stories about people helping each other in the society. I believe that altruistic motivators are rooted inside humans, which is something good that involve no manipulation. However, it seems those helping situations involving self interest are more common in daily lives, which possibly cover the bright side of people (Sabini, 1995). This is because reward, such as material and psychological benefit, is observable and measurable in most pro-social occasions. Nevertheless, I believe that helping behavior is not purely a kind of positive outcome in cost benefit analysis. As

people become less likely to care about the pure altruistic motive, I would like to bring this goodwill to the society. It is because cost of helping does not always involve little effort, especially for situations such as marrow donation where the donor may bear a health risk. In such cases, they may get emotional comfort as the primary benefit. Something must be important to motivate a person to help. Therefore, through proving Batson's empathy-altruism hypothesis in university students in Hong Kong, it can enrich the evidence for the existence of altruism, thus changing the dominating negative view in society by exalting the beautiful side of human nature.

Secondly, by verifying empathy is the key factor that would lead to higher probability of the occurrence of altruistic behavior, the current study provides indicators for charitable organizations to increase their chance for receiving help by developing advertising strategy that enhance empathic feeling of potential helpers. I believe that everybody will experience an occasion when they need help and wish to obtain help. Since everybody is favorable to altruistic behavior, increasing its chance of happening fills the world with harmony.

Thirdly, if empathy is the crucial key that leads to different kinds of general altruistic behavior, the next step is to identity the determinants that can induce empathic feeling. This is the rationale of the present study to focus on gender and cultural differences in empathy and altruism. Different kinds of altruistic behavior

may require different kinds of strengths. For example, in helping in a fire situation, people with physical strength, with males and females, would be considered as more capable in performing such type of helper. It is easy to imagine that everybody can act as a helping role differently and some people can help more effectively in some situations. For instance, according to Hong Kong Red Cross (2005), male donors are suggested to give blood four times a year. Because females lose blood through menstruation, they are suggested to give blood three times a year at most. This frequency of blood donation is determined by the life expectancy of red blood cells, which is roughly 120 days. Therefore, fewer donations would be obtained if only females are willing to help. As a result, if there is a gender difference in empathy, it can provide explanation and suggestion to increase empathic feeling of the particular gender. Similarly, people from different cultures may have different levels of empathic feeling towards the helpee. Of importance is whether the cultural identity of helpee is considered as an in-group member by the helper. If this is the case, people can work on this concept to increase the likelihood of altruism in the world to serve the common good. This provides a more conducive social environment that can enhance acceptance and cooperation among people.

Literature Review

Altruism

Altruism is generally defined as any form of voluntary act intended to favor another without expectation of reward (Smith & Mackie, 2000; Batson et al. 2002; Aronson et al., 2004). It is a specific kind of motivation to benefit another without consciously considering for one's own self interest (Hall, 1999). In other words, altruism refers to a kind of selfless help, which based on pure desire to help others (Aronson, Wilson, Akert, & Fehr, 2004.) Nevertheless, altruism is not a synonym for pro-social behavior. The latter refers to helping behavior of favoring another person with the goal that may involve benefits to self (Smith & Mackie, 2000; Aronson et al., 2004). For instance, people donating money to tsunami relief fund may not always be selfless. In the case that the donation is for the sake of tax exemption, its motive would not be regarded as altruistic. The major difference between altruism and pro-social behavior is that altruism does not involve the element of self interest (Myers, 1996).

Pro-social behavior in social exchange perspective

In the past decades, psychologists have been researching on the internal processes underneath helping behavior and having an enduring debate on the existence of true altruism (Cialdini, 1991). With the presence of self interest, helping

behaviors are mostly explained by the social exchange perspective. Here, the basic idea stated that people only participate in helping behavior when rewards outweigh costs, which seems giving a cynical view to helping behavior. Nevertheless, helping behavior that involving cost and benefit seem occupied a wide range of situations as the expense and reward in the cost-benefit analysis are not necessary to be explicit as money reward. Aronson et al. (2004) have listed out some possible psychological benefits of helping, including increasing feeling of self-worth, maintaining social connection, gaining social approval and relieving one's distress and guilty feeling. While the costs of helping may involve time and financial constraints. From the above, we can see that costs and benefits can also be implicit as verbal praise or be interpreted as staying away from potential physical danger. In some cases, the reward does not follow immediately after the pro-social act. That the motive of anticipation of distant reward would also be considered as self-centered based (Buss, 2001). As above, helping acts that explained by social exchange perspective seemed providing a negative picture. However, the nature of the pro-social acts is basically positive. Trivers (1971) introduced the ideology of reciprocal altruism, which stated that helping act that were repaid later which resulting the altruist finally rewarded, both helper and helpee would benefit.

Gender and cultural difference in altruism

For the reason of why some people are more helpful, base on the folklore that females are more helpful, Eagly and Crowley (1986) hypothesized that there is gender differences in altruistic behavior. Results showed neither sex was more altruistic than the other. Nevertheless, there was a difference between the helping styles according to gender. Men helped in more chivalrous way such as saving person from drowning and from burning building. While women helped in more nurturing ways and involved in long term commitment such as spending time in school for teaching children how to read.

For the cultural dimension, both adults and children from collectivistic culture which placing greater emphasis on connectedness and needs of in-group, are more likely to help in-group members but less likely to help out-group members than people from individualistic culture (Aronson et al, 2004). To explore the difference between the two types of culture by definition, collectivistic culture stands for a society in which people from birth onwards are integrated into strong cohesive in-groups, while individualistic culture stands for a society in which the ties between individuals are loose that everyone is expected to look after himself or herself. Hui and Villareal (1989) identified the relationship between psychological needs and corresponding cultural group for people in Hong Kong and America, which the

former represented collectivism and the latter referred to individualism. Results

showed that Hong Kong participants were found positively related to the needs of

affiliation, succor, and nurturance while negatively related to the needs for autonomy.

In contrast, American subjects were found negatively associated with needs for

affiliation, nurturance and succor. Furthermore, Triandis, Bontempo and Villareal

(1988) concluded that collectivists would pay more concern on the integrity and tend

to have intense emotional attachment towards the in-group, while members of

individualism would pay less concern and have less emotional attachment to the

in-group members. Triandis (1995) indicated that this cultural difference was caused

by the process of forming social identity, which collectivists emphasize individual

submergence to group goals. Davis (1980) investigated the relationship between

collectivistic cultural attitude and empathy, which was viewed as a multidimensional

system consisting both affective and cognitive components. The affective element and

the family, as well as society were found most crucial to the construct value in

collectivism. Triandis (1990) also highlighted collectivists emphasized on the

perception of in-group norm, automatic obedience to in-group authorities and

willingness to fight and die for the in-group. These in-group ideas further led to

distrust and uncooperative with out-group members that increase in response to

external threat.

Empathy-altruism hypothesis

In order to investigate the determinants that make the individual differences in altruistic behaviour, Batson (1987, 1991) introduced the empathy-altruism hypothesis, which refers to

> "the claim that feeling empathic emotion for someone in need evokes altruistic motivation to relieve that need has been called the empathy-altruism hypothesis. According to this hypothesis, the greater the empathic emotion, the greater the altruistic motivation." (Batson et al., 2002, p. 488) .

In other words, if people felt empathy, they will help regardless of whether it is in their interest to do so, even when the costs outweigh the rewards. However, if people do not feel empathy for someone who is in trouble, they will only help if it is in their interest to do so (Smith & Mackie, 2000). The empathy-altruism hypothesis suggested that people help for the sake of helping that pure altruism exists. Thus, the two factors underlying helping behaviour, empathy versus self-interest, become a major concern in research for investigating altruism. Toi and Batson (1982) tried to distinguish that empathy, rather than cost, is contributing to altruism. Results showed that 80% of people in high empathy condition helped regardless of costs, which consistent with the empathy-altruism hypothesis. However, in the low empathy condition, cost became an important factor. By considering the cost of not helping, 75% of

participants in high cost and 35% of low cost of not helping would help, which was

consistent with social exchange theory. In reference to this theory, pro-social behavior

is motivated by the learning principle to maximize rewards and minimize costs, which

always involves cost and benefit analysis that provide a cynical view of helping

behavior. (Aronson et al., 2004)

Early explanations of the role of empathy in altruism

Although empathy is a crucial factor in contributing to altruism, the nature of

empathy was doubted by some researchers that empathy could also be interpreted as

egoistic. Smith, Keating, and Stotland (1989) suggested that the empathy is guided by

empathic joy that was considered as egoistic, which referred to empathetically

aroused individuals help for the sake of feel joy at the needy individual's relief. They

proposed the empathy joy hypothesis, which stated:

> "The prospect of empathic joy, conveyed by feedback from the help recipient, is
>
> essential to the special tendency of empathic witnesses to help…. The
>
> empathically concerned witness …helps in order to be happy" (Smith et al., 1989,
>
> p.641).

To test the above explanation, Batson et al. (1991) conducted another study in which

participants were told that they either would or would not know whether their helping

actions were successful or not. Results showed that empathic joy has its own limit on

empathy-altruistic behavior. Other researches also determined that empathy triggers altruism that people whose empathy is aroused regardless of other people knowing their helping behavior (Shaw, Batson & Todd, 1994; Fultz et al., 1986; Hall, 1999). Nevertheless, Cialdini, Schaller, Houlihan, Arps, Fultz and Beaman (1987) believed that empathy relate to helping act might not be induced by the empathic joy, but by the negative stress. They concluded that empathy-based help is selfishly rather than selflessly motivated by the explanation of the idea of negative state relief. That seeing other people's suffer induced a negative affection state, in which the sadness would evoke the person's feeling of empathy and turn it into a helping act to relieve their negative emotion, which is again a self-centered motive. However, another experiment revealed that reaction to other's need with facial distress was negatively related to intentions to help (Eisenberg and Miller, 1988). Similarly, result of Batson's experiment again showed that empathic participants helped more than distressed participants, which means that empathy may lead to helping victims for their own sake (Batson et al. 1989).

In addition, Batson et al. (2002) categorized the self benefits that can result from helping another for whom one feels empathy into three general classes, including reducing one's empathic arousal, gaining social and self-rewards and avoiding possible social and self-punishments for not helping. Experiments were employed to

test the above three egoistic alternatives, however, all results supported the empathy-altruism hypothesis instead (Batson et al., 1988; Batson & Weeks, 1996).

Nevertheless, both scholars, Batson and Cialdini agree that if people help another person solely for the sake of relieving own stress, the behavior will be a self-centered helping behavior but not altruism (Buss, 2001). Batson's hypothesis does not deny that there are possible occasions of egocentric motives in altruistic behavior. And this is supported by Hoffman's view on egoistic motive that can also be regarded as other-centered

"Aside from its egoistic element, empathic distress has certain dimensions that clearly mark it as an altruistic motive. First, it is aroused by another's misfortune, not just one's own; second, a major goal of the ensuring action is to help the other, not just the self; and third, the potential for gratification for the actor is contingent on the actor's doing something to reduce the other's distress." (Hoffman, 1981, p.134).

Empathy

Smith and Mackie (2000) pointed out that Batson's definition of empathy, which refers to the competence to sense and experience another's experiences, emotions, thoughts and attitudes, is critical in empathy-altruism hypothesis. The origin of the word empathy is from a German term "Einfuhlung" that initially used in aesthetics,

which referred to the tendency of observers to project themselves into what they observe, especially for sense of beauty in physical object, which was not related to psychology. Later, Titchener (1909) translated this German term into English. Before, Lipps (1903) was the first scholar to use the term "Einfuhlung" in psychological context. Nevertheless, before the term empathy was established, the word "sympathy" was used by psychologists that people often mixed up the concept of sympathy and empathy (Buss, 2001). Wispe (1986) believed that these two concepts are not alike and are initially created in separate traditions. Therefore, clear distinction between sympathy and empathy should be defined:

"In empathy, the empathizer 'reaches out' for the other person. In sympathy, the sympathizer is 'moved by' the other person. In empathy, we substitute ourselves for others. In sympathy, we substitute others for ourselves" (Wispe, 1986, p. 318).

Similarly, Aronson et al. (2004) pointed out sympathy is more like a feeling of sorry and pity thus the two concepts were separated, which less effort is required to feel sympathy than empathy. Batson et al. (2002) later defined empathy as a possible source of altruistic motivation that refers to

"an other-oriented emotional response elicited by and congruent with the perceived welfare of someone else." (Batson et al., 2002, p.486).

They also identified seven other empathy concepts, including knowing another person's internal state; assuming the physical posture of an observed other; coming to feel as another person feels; projecting oneself into another's situation; imagining how another is feeling; imagining how one would think and feel in another's place; and being upset by another person's suffering (Batson et al., 2002). Wegner (1980) believes empathy is related to self concept that is arisen from confusion between self and other. Batson, Sager, Garst, Kang, Rubchinsky and Dawson (1997) disagreed and contended that

> "One must recognize the uniqueness of the other and his or her experience, distinct from oneself and one's own experience, to appreciate the plight of and to feel for another" (p.497) (Batson et al., 1997).

Thus, empathy is defined as the similar definition as above, which mainly focus on understanding and comprehension of others (Aronson et al., 2004).

The existence of empathy can also be explained by many with a biological and evolutional approach (Hoffman, 1981; Zahn-Waxler & Radke-Yarrow, 1990). In view of the biological approach, empathy is a feeling that underlying reproductive consideration, which can help one to maintain the number of offspring by increasing the chance of survival. And the empathic feelings extend from kin relations to similar and alike individuals or even a wide range of species (Batson, 1991; Kerbs, 1975;

Shelton & Rogers, 1981). While for the evolutional approach, the extension is usually

relate to cognitive generalization that is based on adopting others, which induce basic

native impulse to care for offspring when they are in need (Batson, 1987; Hoffman,

1981; MacLean, 1973). In reference to the above definitions, empathy is not

necessary for the helper to feel distress and sadness. Empathy is an inborn affective

nature for human to save people of same species for survival. Nevertheless, helping

behavior may not only due to empathy but also personal distress in real life situation

(Batson, Fultz, & Schoenrade, 1987). Whether the helper can share the same emotion

as the helpee may depend on the relationship between both parties and relevant shared

past experience (Buss, 2001).

Gender difference in empathy

Eisenberg and Lennon (1983) pointed out that it is undoubtedly true that females

are more empathic than males. Many researches support Eisenberg and Lennon's

statement (Batson, Sympson & Hindman et al., 1996; Hall, 1999). The reason behind

the difference can be explained by the greater role in reproduction for females as girls

are taught to be more empathic through the socialization process (Buss, 2001). This

explanation also provides insight to why females would be considered as more helpful

in nurturing ways.

Concept of in-groups and out-groups

Abrams Hogg and Marques (2005) first assumed that social life is taken part within a framework of relationships where people would look for inclusion and belongingness. Then he pointed out that cultural connection can provide a basic framework for inclusion and exclusion of global community that helps in explaining how, when and why people become in-groups or out-groups, in which social life is all about the personal, social and cultural consequences of who are include or exclude and how people feel about it. On the one hand, social inclusion may benefit the in-group members for providing positive social identity. On the other hand, social exclusion can also be a means to bring psychological benefits to in-group members.

Effects of language learning on self identity

In reference to the research done by linguistic scholars in exploring the interaction between linguistic, racial, gendered and national identities, it is believed that experiences of second language learning serve as a role in shaping the formation of new self identities, which people would perceive themselves as member of that language cultural community. Ohara (2001) stated that students in United States engaging in Japanese language learning may try to manipulate their language usage to fit their own beliefs about Japanese society and culture, especially in the dynamic nature of gender identity. It is caused by their increased gender identity awareness

through the language learning process that would facilitate the construction of gender

identity in Japanese. Similarly, Jackson (2007) found that Hong Kong students

participate in study abroad program showed higher degree of developing closer

relationships across cultures because of their rising awareness of the importance on

intercultural adjustment through the second language learning process.

Cultural difference in empathy

Eisenberg, Fabes, Carlo and Miller (1991) proposed that family cohesiveness is a

kind of empathy enhancers, which its extension can probably become a cultural

difference. In addition, Hoffman (2000) indicated that empathic feeling was biased to

favor one's in-group, including family and friends. It can be explained by another

research that perceived similarity of helper and helpee would increase the empathic

feeling (Batson et al., 1995) Therefore, by understanding the role of culture in the

concept of in-groups and out-groups, it can be foresee that there would be cultural

difference in empathy, especially for the collectivistic and individualistic cultures.

Some researches found that the social identity is comparatively stronger in

collectivistic cultures and subcultures (Buss, 2001). Collectivist's strong belief of their

in-group social identity would become a motivation to benefit the entire cultural

group as a whole. As a result, Batson et al. (2002) concluded that people from

collectivistic culture would more likely to feel empathy for in-group members so that

altruistic behavior would be more likely to be evoked when the helpee is considered as an in-group member.

Kohlberg's theory of moral development

The principle of empathy altruism hypothesis can be viewed as a decision making process that related to moral judgment. To investigate the cognitive component of moral development, Kohlberg (1976) proposed a stage theory of morality. Three levels of moral reasoning were identified, including preconventional, conventional and postconventional morality. In addition, each level was further divided into two stages. In simply speaking, the first two stages were punishment-obedience orientation and instrumental relativist orientation, in which people would act under external control, such as avoiding punishment. The next two stages were good boy –nice girl orientation and law and order orientation. People in these two stages were able to identify authority figures and understand the laws of society. They would try to obtain praise by obeying the authorities and social laws. Followed by the second last stage was the social contract orientation. People would make judgments according to social agreement and social contracts, such as norms. Finally, the last stage was universal ethical principle orientation. People in this stage would make decision according to ethical principles that can apply across time and cultures. Nevertheless, very few people could attain the last stage of morality. As a

consequence, Kohlberg and Ryncarz (1990) proposed a seventh stage of morality of cosmic orientation. People in this stage would regard the effect of their actions on the universe as a whole instead of purely on other people. However, Gilligan (1982) criticized Kohlberg's theory by pointing out its over-simplicity of purely focusing on right and justice. She pointed out that caring attitude should also be considered for preventing gender biased. Besides, Blum (1994) pointed out that the moral orientation stages in Kohlberg's theory should come before moral judgment. As a result, moral orientations become an important issue for researches in recent decades. In the presence of all orientations such as law-abiding and self-actualization, empathy and altruistic orientation were the two main orientations for pro-social behavior. Hoffman (2000) concluded that there was a close relationship between empathy and moral principles. He also concluded that empathy was the main motive for altruistic behavior, which involved both cognitive and affective components. His developmental model of empathy further supported Batson's empathy-altruism hypothesis, which the ability of recognizing other feelings beyond the immediate situation was regarded as the empathic drive that led to altruism.

Relationship between moral orientation and altruistic motivation in Chinese context

Through the theory of empathy-based guilt, Hoffman (2000) stated that the altruistic motives could be induced by guilty feelings, which was associated with

affective perspective taking and cognitive role taking. Through the evidence of higher

occurrence of altruistic behavior without expecting rewards, Eisenberg (2000)

demonstrated the extensiveness of altruistic motivations even towards strangers,

whose relationship was considered as distant from them. Wong (2003) has studied on

the guilt proneness to moral orientations in Hong Kong Chinese Adolescents, which is

similar to the current research in terms of age and cultural context. Results revealed

two statistically significant differences that female adolescents were more prone to

guilt and more altruistic to their close relatives than male adolescents, which provided

an explanation for the gender difference in empathy, which females often scored

higher than males. At the same time, this study also exhibited the importance of the

helper-helpee relationship. Fang (1980) described that

"Chinese concept of human nature is a caring human-oriented belief" (Fang,

1980).

He stated that one of the goals that Chinese culture proposed in human development

was empathy. In reference to Fang, Ma (1985a) proposed the hierarchy of human

relationships as a hypothetic construct for altruism, which included five levels entitled

from R1 to R5. The five levels included first kin or closed relatives, best friends or

intimates, strangers who are very weak or who are elites of the society, common

strangers and someone you dislike or enemies respectively. People would regard the

person as the most important from R1, to the least important, R5. Another research in comparing Hong Kong, China and England subjects in this hierarchy of human relationships proved that Chinese participants had the strongest orientation for altruistic behavior, especially towards R1 relatives. (Ma, 1989) According to the conclusion that social experiences underlie the growth of moral reasoning (Kohlberg, 2000) and the traditional emphasis of collective decision making (Stander & Jensen, 1993), it is believed that people grown up in Chinese culture would have the highest likelihood to perform altruistic behavior.

Research Hypotheses

In this study, the empathy score, gender of male and female serve as the independent variable (IV_1). While the language major that categorized into the three cultural groups serve as another independent variable (IV_2) in cultural comparison. In both kinds of comparisons, the empathy score on the empathy scales served as the dependent variable (DV).

According to the literature of the previous study, the present study hypothesized that the empathy score of female participants would be higher than male participants. In addition, under the cultural dimension, it was hypothesized that the empathy scores for the individualistic group would be higher than the mixed and collectivistic group respectively since the hypothetic question in this study gave no specification on the

helpee's identity, which served as a role as an out-group member.

For the investigation on altruistic behavior base on empathic emotion, it was also hypothesized that the group of participants with higher averaged empathy score would show higher possibility to participant in altruistic behavior. Based on the research methodology of Kohlberg's research about theory of morality of using hypothetic stories, the current study employed a similar approach by providing a hypothetic situation for participants to opt for their choice, which would serve as an indicator of altruistic behavior. In gender dimension, female group would shower higher degree of altruistic behavior than the male group. While in the cultural dimension, higher degree of altruistic behavior would be found in individualistic group than the mixed and collectivistic group respectively. The following hypotheses formed the main focus of present study:

H1: empathy score of female participants will be higher than male participants

H2: empathy scores for the individualistic group will be higher than the mixed and collectivistic group respectively.

H3: Female group will show higher degree of altruistic behavior than male group.

H4: Individualistic group will show higher degree of altruistic behavior than mixed and collectivistic group respectively.

This paper will provide a review of literature on concepts of empathy and altruism, followed by the methodology and results of the present study. Discussion will extend the implications and limitations of the current study to suggest recommendations for future research.

Method

Participants

Two hundred and eighty five year one university students in Hong Kong majoring in language studies were invited to participate in this research study. A total of 194 subjects actually participated in the administration, with 188 valid questionnaires obtained. For the sample of the administration consent form and participant consent form, see Appendix I and II. With the intention of analyzing the data for the corresponding research question, subjects were divided into two groups by different criteria.

For the first research question in investigating the gender differences in empathy, subjects were divided into two groups by gender.

The male group was formed by male students with an average age of 19.81 years old (range from 18 to 22; S.D. = 1.25), which occupied 17.5% of the total number of participants. ($N_M = 31$)

The female group was formed by female students, with a mean age of 19.55

years old (range from 18 to 30; S.D. = 1.465), which occupied 82.5% of the total

number of respondents. (N_F = 157)

For the second research question in determining the cultural difference in

empathy, subjects were divided into three groups by their specialized chosen

languages:

First group was defined as <u>collectivist group</u>, which subjects were only majoring

languages for collectivistic culture such as Chinese, Korean and Japanese. (Hui and

Villareal, 1989) There were totally 96 participants with a mean age of 19.54 years old

(range from 18 to 26; S.D. = 1.264), which occupied 51% of the total number of

participants. (N_{Col} = 96)

Second group was named as <u>individualist group</u>. Participants in this group were

only majoring languages for individualistic culture such as French, Spanish and

English. (Hui and Villareal, 1989) Totally there were 30 participants in this group with

an average age of 20.07 years old (range from 18 to 30; S.D. = 2.406), which

occupied 16% of the total number of participants. (N_{Ind} = 30)

Third group was called <u>mixed group</u>, which respondents were majoring a

combination of languages for both collectivistic and individualistic culture, such as a

combination of Chinese and English. Totally there were 62 participants with a mean

age of 19.44 years old (range from 18 to 22; S.D. = 0.952), which occupied 33% of

the total number of participants. ($N_{Mix} = 62$)

Materials

A total of 285 sets of research questionnaires were prepared. Each set of questionnaire contained four pages. The first page was an invitation letter to the research study while the second page was a participant consent form. The third page included research instruction, demographic data session and Chinese translation to five statements in the empathy scale that participants may encounter difficulties in understanding. The last page contained an empathy scale with 30 statements that required respondents to circle the number that truly reflected their opinion. In addition, a hypothetic question that asked for respondent's willingness to participate in altruistic behavior. For the sample of the research questionnaire, see Appendix III.

The empathy scale was described by Caruso and Mayer in 1998, which can be used for measuring general empathy and specific emotional empathy for adolescents and adults (Caruso & Mayer, 1998 a). There are totally 30 statements on the scale, in which a principal components analysis yielded six meaningful factors, including empathy suffering, positive sharing, responsive crying, emotional attention, feeling for others and emotional contagion (Caruso & Mayer, 1998 b). In reference to the current research, the factor of feeling for others was the key determinant on empathy-altruistic behavior. Accordingly, by the high alpha reliabilities for all scale

scores, ability to demonstrate significant relationships to a number of behavioral

criteria and the flexibility in providing detailed sub-scales, the scale was employed to

measure the emotional empathy in altruistic behavior (Caruso and Mayer, 1998 c).

A video clip entitled named "將心比心，齊來捐血" (To feel for others, give

blood) (Hong Kong Red Cross, 1994) that was published by the Hong Kong Red

Cross was also employed in this research study as the universal stimulus of emotional

empathy for two reasons: the significant result of the pilot test in testing the validity

of arousing empathy feelings and its easy accessibility and popularity that was used in

real life altruistic behavior by charitable organization. For the detail of the pilot test

report, see Appendix III.

Facilities and Apparatus used in Study

A lecture room and a set of computer with projector and sound equipment were

employed for playing the video clip for each administration. In addition, a set of

computer with installed statistical program Statistical Product and Service Solution

(SPSS) was used for data input and analysis.

Pilot Tests

There were totally three pilot tests in this research study for testing the

effectiveness of video clips, feasibility of the hypothetic question and the

understanding of the Chinese translation of the empathy scale in the research

questionnaire.

Firstly, in order to have a universal tool to activate the empathic emotions of participants, two video clips were selected from the website of Hong Kong Red Cross Blood Transfusion Service as a source to arouse audience's empathy feeling according to their central message. This video clips were selected because they were simply and clearly stated, and the clips were readily available online. Aside from the easy accessibility, another reason for choosing these two particular clips was because they were used in actual promotions by charitable organization in the past. One of the clip (Clip A) was named "將心比心, 齊來捐血" (To feel for others, give blood) and was published in 1994, giving a message to ask the audience to think and feel as a blood recipient, which served as the empathic situation. While another clip (Clip B) was named "各行各業, 齊來捐血" (All trades and professions, let's all give blood) and published in 1997, was an advertisement containing no empathic arousing slogan that only encouraging people from different professions to donate blood.

A group of 25 students were invited to participate in this pilot test. They were randomly allocated into 2 groups, A and B. Group A had 13 students and Group B had 12 students. Both groups of participants took this pilot test separately while Group A participants watched Clip A and Group B participants watched Clip B.

At the beginning of this pilot test, participants received a set of questionnaire

which had fields for filling in their gender, age and 2 sets of empathy scale stated in the previous part. Then, they were told to do fill in the first set of empathy scale and demographic data. Next, the video clips were shown to them according to their assigned group. After watching the video clip, they were asked to do the second set of questionnaire.

The empathy score of participants in group A and B were calculated. Results showed that video clip A could raise the averaged score for feeling for others in the empathy scale while there was no difference between the averaged score for feeling for others in the empathy scale before and after watching video clip B. Base on the result of this pilot test, Clip A was employed in this research study.

The second pilot test was used to test the feasibility of hypothetic question in the last part of the research questionnaire. During the beginning stage, the hypothetic question was drafted as "The hypothetic question below requires your decision, YES or NO: If you had the opportunity, would you join the blood donation campaign in university" However, participants may think that there would be a negative consequence on not participating in the campaign organized by the university. Because participants are require to provide information about their medical condition, there may be concern about sensitive information being revealed. In addition, needles are used as means for blood donation, which some participants may refuse because

they afraid of needles but not because they are not willing to donate blood. As a consequence, due to these concerns, this question was abandoned. Then, five alternative questions were drafted as followed:

The hypothetic question below requires your decision, YES or NO:

If you had the opportunity, would you

1. help someone to find a lost contact lens?

2. donate money to a charity organization?

3. join the activity of "walks for millions"(百萬行) ?

4. give old clothes to a charity organization?

5. be a volunteer worker for a charity organization?

Later, three main questions were selected, including number 1, 2, and 5. This is because the "walk" in option 3 identified the charity organization (The Community Chest) and donating old clothes in option 4 seemed cost nothing, which the level is not as similar as blood donation. Then an informal pilot test was then performed by presenting the three questions to 20 university students for asking their understanding, response and comment.

For question 1, one of them said that she did not understand the situation. The other one said that he was willing to help, but he was afraid of "stepping on the lens which makes the case even worse". For question 2, some of them were concerned

about how much they are going to donate and felt that it was not appropriate to use "money" as the means of helping. Finally, for question 5, all participants responded that they understand the question clearly on this. As a result, question 5 was employed to be the hypothetic question in the survey.

Thirdly, a pilot test for testing the understanding of the Chinese translation of the empathy scale in the research questionnaire was performed because some participants in the first pilot test reflected that they did not understand the English meaning of some statements. Totally five statements on the empathy scale were translated into Chinese by the researcher and a graduate in the field of translation and interpretation. Both Chinese and English statements were presented to 10 university students for checking their understanding of the Chinese translation. Results showed that they had no difficulty in getting the message of the statements in Chinese and caught the same meaning as the English version. Base on the result of this pilot test, the five Chinese translation statements were also employed in the research questionnaire.

Procedure

The whole administration process was scheduled on three days: 13th, 15th, and 16th November in 2006 and each administration lasted for 30 minutes. The three groups of participants were invited to participate in present study with permission from the researcher's former language instructors. For each administration, each

participant was given a set of research questionnaire and consent form. After listening to the researcher's explanation about the purpose, participant roles and how the data would be used in the research study, participants were asked to sign the consent form if they agreed to participate. For participants who were not willing to participate in the study, they were welcome to leave the lecture theatre immediately. Perhaps because of the teacher's statement of helping the researcher, all participants agreed to participate in the present study. Then, the respondents were asked to read the instruction and fill in the demographic information including, age, gender, major and year of study and the administration date. Participants were prohibited to fill in the empathy scale before watching the video clip of "將心比心，齊來捐血" (To feel for others, give blood). After watching the video clip, participants were asked to circle their degree of agree on the 30 statements on the empathy scale and their decision of the hypothetic question about whether they were willing to give their helping hand, "Yes" for they are willing to be a volunteer worker for a charitable organization, while "No" for they are not willing to be a volunteer worker for a charitable organization. Completed research questionnaires were then collected by the researcher. The data collected utilized SPSS for analysis. Two hundred and eighty five year one university students in Hong Kong majoring in language studies were invited to participate in this research study. A total of 194 subjects actually participated in the administration, with 188

valid questionnaires obtained.

Statistical Analysis

For the comparison of empathy scores, Independent t-test at the .05 level of significance was employed as a means to compare the empathy scores in different groups of participants.

For the sake of investigating the gender difference in empathy level, three independent t-testes were performed. First is the general comparison between the empathy scores of males and females. ($N_{Male} = 31$; $N_{Female} = 157$) The second and the third t-testes were also employed to compare the empathy differences between male and female participants, which the former test only compared participants who expressed their willingness to be a volunteer worker in a charity organization ($N_{Male\ Yes} = 20$; $N_{Female\ Yes} = 137$), while the latter one for participants who were not willing to. ($N_{Male\ No} = 11$; $N_{Female\ No} = 20$)

Similarly, same statistical analyzing technique was employed to investigate the cultural differences in empathy scores. The only difference was three t-testes would be performed for each type of comparison. For instance, in the general comparison, there were three pairs of comparison, Collectivistic Group VS Mixed Group, Individualistic Group VS Mixed Group, and Collectivistic Group VS Individualistic Group. ($N_{Col} = 96$; $N_{Mix} = 62$; $N_{Ind} = 30$) Likewise, instead of the general comparison,

another two types of comparison for participants who were ($N_{Col\ Yes}$= 75; $N_{Mix\ Yes}$ = 56; $N_{Ind\ Yes}$ = 26) or were not ($N_{Col\ No}$ = 21; $N_{Mix\ No}$ = 6; $N_{Ind\ No}$ = 4) willing to be a volunteer worker in a charity organization were performed respectively.

In order to investigate the relationship between empathy scores and altruistic behavior that whether high empathy scores would result in altruistic behavior in different groups of participants, Chi-squares test was employed as a means to calculate whether the observed frequencies were significantly different from the frequencies expected by chance at the .05 level of significance. In each type of comparison, participants would first be divided into Yes or No group according to their willingness to be a volunteer worker in a charity organization. In each Yes or No group, they will be categorized into two sub-groups of high empathic sub-group and low empathic sub-group according to their empathy scores. An empathy score ranged from 13 to 20 would be regarded as the high empathic group, while an empathy score which was equal or less than 12 would be regarded as the low empathic group. The critical value of 12 was derived from the design of the empathy scale. Since the four target questions were evaluated by a five-point scale, which 3 is a neutral value, by multiplying 3 to 4, equals to 12. The value was therefore set to be the optimal cutting value.

Base on the division above, totally 10 chi-square testes were performed. For

instance, the <u>Males Yes Group (M $_{Yes}$)</u> (High empathic sub-group VS Low empathic sub-group), which was used for calculating the number of participants in the high empathic sub-group was statistically significant higher than the low empathic sub-group. While the <u>Males No Group (M $_{No}$)</u> (High empathic sub-group VS Low empathic sub-group), which was used for calculating the number of participants in the high empathic sub-group was statistically significant lower than the low empathic sub-group. Same division of Yes and No groups were applied to other four dimensions, including female <u>(F $_{Yes}$</u> and <u>F $_{No}$)</u>, collectivistic <u>(Col $_{Yes}$</u> and <u>Col $_{No}$)</u>, mixed <u>(Mix $_{Yes}$</u> and <u>Mix $_{No}$)</u>, and individualistic <u>(Ind $_{Yes}$</u> and <u>Ind $_{No}$)</u> dimensions.

Results

Gender differences in university students' empathy score

The results of the present study are summarized in Tales 1-4. Table 1 shows the levels of empathy scores by male and female university students. As can be seen, under general comparison, female participants scored higher than male participants in the empathy scale although the difference was not significant. (means = 12.13, 12.86) However, by categorizing them by their willingness to be a volunteer worker in a charity organization, the present study found a marginal significant result in the "Yes" group, which males' empathy score was significantly lower than males'. (means = 12, 13.01, $t = -1.968$, $p < .05$) By contrast, there was no significant difference in the "No"

group. Unexpectedly, males scored higher than females in this group. (means = 12.36, 11.85)

Table 1. Gender differences in university students' empathy score

	Mean	SD	Mean	SD	t-value
A. *General Comparison*					
	Males (n=31)		Females (n=157)		
Empathy Score	12.13	2.802	12.86	2.179	-1.373
B. *Willing to be a volunteer worker in a charity organization*					
	M_{Yes} (n=20)		F_{Yes} (n=137)		
Empathy Score	12	2.224	13.01	2.127	-1.968*
C. *Not willing to be a volunteer worker in a charity organization*					
	M_{No} (n=11)		F_{No} (n=20)		
Empathy Score	12.36	3.749	11.85	2.323	.413

Note: * = Result significant at $p < .05$

Cultural differences in university students' empathy score

The comparison of the levels of empathy scores were shown in Table 2 according to cultural categorization, including Collectivistic, Mixed and Individualistic Group. Overall, the mixed group scored the highest, followed by the collectivistic group, while the individualistic group scored the least. (means = 12.95, 12.65, 12.60 respectively) Nevertheless, differences between all comparisons of empathy means among the three groups were not significant, especially for the comparison between collectivistic group and individualistic group. (means = 12.65, 12.60, t = .090, p < .05)

Table 2. General cultural differences in university students' empathy score

	Mean	SD	Mean	SD	t-value
A. *Collectivistic Group VS Mixed Group*					
	Col (n=96)		Mix (n=62)		
Empathy Score	12.65	2.521	12.95	1.995	-.806
B. *Individualistic Group VS Mixed Group*					
	Ind (n=30)		Mix (n=62)		
Empathy Score	12.60	2.191	12.95	1.995	-.767
C. *Collectivistic Group VS Individualistic Group*					
	Col (n=96)		Ind (n=30)		
Empathy Score	12.65	2.521	12.60	2.191	.090

Note: * = Result significant at $p < .05$

Cultural differences in university students' empathy score who are willing to be a volunteer worker in a charity organization.

In Table 3, only participants who are willing to be a volunteer worker in a charity organization were included in the statistical tests. The results indicated that the empathy scores of the three cultural groups were alike. Again, the mixed culture group scored the highest. (mean = 12.96) However, compared to the general cultural comparison in Table 2, the rank order of the individualistic group and collectivistic group was reversed. (means = 12.88, 12.81)

Table 3. Cultural differences in university students' empathy score who are willing to be a volunteer worker in a charity organization

	Mean	SD	Mean	SD	t-value
A. *Collectivistic Group VS Mixed Group*					
	Col$_{Yes}$ (n=75)		Mix$_{Yes}$ (n=56)		
Empathy Score	12.81	2.3	12.96	1.981	-.394
B. *Individualistic Group VS Mixed Group*					
	Ind$_{Yes}$ (n=26)		Mix$_{Yes}$ (n=56)		
Empathy Score	12.88	2.179	12.96	1.981	-.164
C. *Collectivistic Group VS Individualistic Group*					
	Col$_{Yes}$ (n=75)		Ind$_{Yes}$ (n=26)		
Empathy Score	12.81	2.3	12.88	2.179	-.138

Note: * = Result significant at $p < .05$

Cultural differences in university students' empathy score who are not willing to be a volunteer worker in a charity organization.

Table 4 displayed the cultural differences in empathy scores for participants who are not willing to be a volunteer working in a charity organization. The rank order of the three cultural groups was the same as Table 2. The mixed group again scored the highest, followed by the collectivistic group and individualistic group. (means = 12.83, 12.05, 10.75) The difference was bigger among the comparison between the individualistic group and mixed group although this disparity was still not significant. ($t = -1.624$, $p < .05$)

Table 4. Cultural differences in university students' empathy score who are not willing to be a volunteer worker in a charity organization

	Mean	SD	Mean	SD	t-value
A. *Collectivistic Group VS Mixed Group*					
	Col_{No} (n=21)		Mix_{No} (n=6)		
Empathy Score	12.05	3.186	12.83	2.317	-.560
B. *Individualistic Group VS Mixed Group*					
	Ind_{No} (n=4)		Mix_{No} (n=6)		
Empathy Score	10.75	1.258	12.83	2.317	-1.624
C. *Collectivistic Group VS Individualistic Group*					
	Col_{No} (n=21)		Ind_{No} (n=4)		
Empathy Score	12.05	3.186	10.75	1.258	.792

Note: * = Result significant at p < .05

Relationship between empathy scores and altruistic behavior in Gender Dimension

Chi-Square statistics across groups and subgroups in dimensions of gender were

summarized in Table 5.

Table 5. Chi-Square statistics across groups and subgroups in dimensions of gender

Dimension	Group (High or Low)	Sub-group (Yes or No)	Frequency	Chi-square (χ^2)
Male	High	Yes	11	.200
		No	9	
	Low	Yes	6	.091
		No	5	
Female	High	Yes	80	3.861*
		No	57	
	Low	Yes	7	1.800
		No	13	

Note: * = Result significant at p < .05

In male dimension, of the 20 participants in the Male Yes (M_{Yes}) Group, 11 were

in high empathic sub-group (empathy score larger than 12), and 9 were in the low

empathic sub-group (empathy score equal to or less than 12). Inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=20) = .200, p < .05.

Likewise, of the 11 participants in the Male No (M_{No}) Group, 6 were in high empathic and 5 were in the low empathic sub-group. Again, inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=11) = .091, p < .05.

In female dimension, of the 137 participants in the Female Yes (F_{Yes}) Group, 80 were in high empathic and 57 were in the low empathic sub-group. Consistent with the prediction, the differences between the high and low empathic subgroups were statistically significant as χ^2 (1, N=137) = 3.861, p < .05.

Nevertheless, of the 20 participants in the Female No (F_{No}) Group, 7 were in high empathic and 13 were in the low empathic sub-group. Inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=20) = 1.800, p < .05.

Relationship between empathy scores and altruistic behavior in Cultural Dimension

Chi-Square statistics across groups and subgroups in dimensions of culture were summarized in Table 6.

Table 6. Chi-Square statistics across groups and subgroups in dimensions of culture

Dimension	Group (High or Low)	Sub-group (Yes or No)	Frequency	Chi-square (χ^2)
Collectivistic	High	Yes	45	3.000
		No	30	
	Low	Yes	9	.429
		No	12	
Mixed	High	Yes	31	.643
		No	25	
	Low	Yes	4	.667
		No	2	
Individualistic	High	Yes	15	.615
		No	11	
	Low	Yes	0	Not
		No	4	Applicable

Note: * = Result significant at p < .05

In the collectivistic dimension, of the 75 participants in the Collectivistic Yes (Col $_{Yes}$) Group, 45 were in high empathic sub-group, and 30 were in the low empathic sub-group. Inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=75) = .083, p < .05.

Likewise, of the 21 participants in the Collectivistic No (Col $_{No}$) Group, 9 were in high empathic and 12 were in the low empathic sub-group. Again, inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=21) = .429, p < .05.

In the mixed dimension, of the 56 participants in the Mixed Yes (Mix $_{Yes}$) Group, 31 were in high empathic sub-group, and 25 were in the low empathic sub-group.

Also inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=56) = .643, p < .05.

Similarly, of the 6 participants in the Mixed No (Mix $_{No}$) Group, 4 were in high empathic and 2 were in the low empathic sub-group. Again, inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=6) = .667, p < .05.

In the individualistic dimension, of the 26 participants in the Individualistic Yes (Ind $_{Yes}$) Group, 15 were in high empathic sub-group, and 11 were in the low empathic sub-group. Again, inconsistent with the prediction, the differences between the high and low empathic subgroups were not statistically significant as χ^2 (1, N=26) = .613, p < .05.

However, of the 4 participants in the Individualistic No (Ind $_{No}$) Group, all of them were in the low empathic sub-group, which violated the assumption of the Chi-square test. By the inapplicability of chi-square test, no statistic result could be drawn from this group.

To investigate the gender and cultural difference by comparing the frequency of Yes and No response in the hypothetic question, a ratio was calculated by dividing the number of Yes response by the number of No response, which reflected how many

Yes response would occur for every No response obtained. The corresponding

frequency percentage and ratio were summarized in Table 7.

Table 7. Comparison of frequencies on responses in hypothetic question

| | Frequency Percentage | | |
Group	Yes	No	Ratio (Yes/No)
Male	65	35	1.9
Female	87	13	6.85
Collectivistic	78	22	3.6
Mixed	90	10	9
Individualistic	87	13	6.85

To observe the gender difference, 65% of male participants responded Yes while

35% responded No in the hypothetic question. For females participants, 87% reported

Yes while 13% reported No. By comparing the ratio of male and female group, a large

difference was observed. (Male = 1.9; Female = 6.85) This large disparity reflected

that female participants were more willing to be a volunteer worker in a charitable

organization than male participants regardless of empathy score.

To compare the statistical ratio above, similar result was found in cultural

dimension. For the frequency percentage in each group, the Yes and No responses for

the collectivistic group were 78% and 22% respectively. While for the mixed group,

the percentage was 90% to 10%. For the individualistic group, 87% and 13% were

obtained for Yes and No responses. Unexpectedly, the ratios ranked from the highest

to lowest were 9, 6.85 and 3.6 for the mixed, individualistic and collectivistic group

respectively.

Discussion

Implications and limitations of study

The results of the present study revealed a number of unexpected findings which were inconsistent with the literature researches. In comparisons of empathy scores according to the gender division, the differences in general empathy score for males and females were not significant. In the next analysis that participants were narrowed down by their willingness to be a volunteer worker in a charity organization, a marginal significant result that females showed higher empathy scores than males was found in the group that participants expressed their willingness to be a volunteer worker. However, significant result could not be obtained for the other group. This result implied that participants who do not actually participate in altruistic behavior would not show gender difference in empathy score. Only the female university students would reflect a higher empathy score with respect to altruistic behavior. The result was consistent with Krystina, Finlay and Trafimow's (1998) research on helping victim of AIDS that no significant gender differences were observed in self-reports of empathy toward victims of AIDS, whereas females were more likely to engage in volunteer work than males.

The result of the present study could be explained by the higher level of self awareness. Since people having high level of self awareness would be more

competent to feel for others, and that self awareness would help them to balance the disparity between how they perceive themselves and how they realize their actual performance in reality, which help them to reflect themselves truly. However, this assumption requires further research for clarification. In addition, the marginal difference could also be due to the limitation that an unexpected few number of male participants in actual administration, which caused an extreme unequal number of participants in the two gender groups. Therefore, approximately even number of participants in both genders would be suggested in further studies. In addition, since the study only focused on university students in Hong Kong who aged around 20, whether age of personal experience could be a factor contributing to the similarity or difference remains uncertain. Nevertheless, Eisenberg and Miller (1987) pointed out that age of respondents is not crucial, whereas the method of empathy assessment should be more important.

By the assumption that cultural factors could be a possible explanation of the results, the present study recruited participants also according to their language major in university. Since the hypothetic question in the current study indicated that no identification of the helpee would be revealed, it was assumed that the perception of the helpee by participants would more tend to as an out-group instead of an in-group member. Therefore, it was hypothesized that individualistic group would score higher

and more likely to express willingness for altruistic behavior than the collectivistic group since they help people without considering whether the helpee is in-group or out-group. The mixed cultural group was assumed to have an empathy score lie between the individualistic and collectivistic groups. It was unexpected to yield a ranking that the mixed, collectivistic and individualistic groups were scored the highest to lowest respectively in the empathy scale. Nevertheless, all independent t-tests showed statistically insignificant in all comparisons according to the cultural groups, which implied language majoring although provides students to immerge in a different culture, however, it is not effective to change the cultural belief related to empathy than the local cultural environment as they actually spend more time in local context.

Overall, results in the present study showed limited statistically significant difference in empathy level in gender and cultural dimension, which were inconsistent with the classical literature. Nevertheless, in reference to a more recent research, Hyde (2005) suggested the gender similarities hypothesis that males and females are more psychologically similar than they are different in empathy and context where measurement occurs would be one of the determinant of this gender difference. Monk-Turner, Blake, Chniel, Forbes, Lensey, & Madzuma (2002) provided another evidence for the gender similarity that no significant difference in helping behavior

between male and female subjects was obtained. As above, the findings provided an insight that empathy is no longer dominant by females. It is speculated this balance may be caused by socialization process, which females receive more tertiary education in Hong Kong compared to the past that promote less gender stereotype on their gender identity. Nevertheless, this suggestion required further investigation to be proved.

For cultural explanation, LeBel (2006) pointed out participants in both collectivistic and individualistic cultural groups would help in life-threatening situations. While for less serious situations, participants from individualistic culture, such as American, viewed helping as a matter of choice while subjects from collectivistic culture, such as Indian, viewed helping as a moral responsibility, which demonstrated the collectivistic characteristics of interdependence. In reference to Davis (1980), both family and society play an important role in cultural group identity formation. By referring to the Hong Kong situation, the traditional type of extended family is no longer dominant the society, nowadays the society norm shifted this idea to have nuclear family through the socialization process like industrialization and globalization.

According to the biological explanation of empathy-altruism hypothesis, the altruistic instinct is motivated by the desire for increasing survival possibilities of

close kinship. As a consequence, the shift in family size would result in reduction of number of in-group members, which affects the construct of cultural identity. That weaken in-group identity thus explained the result of low empathy score and less altruistic behavior when comparing the collectivistic group to the mixed and individualistic group.

For the investigation of the relationship between empathy scores and altruistic behavior in gender dimension, again, only the female groups who were willing to be a volunteer worker in a charity organization obtained a significant result in the difference between the frequencies of high and low empathy scores. Although the other group of females who were not willing to be volunteer worker obtained an expected higher frequency for the low empathic group, the difference was not statistically significant enough. While for the both male yes and no groups, the number of participants in high and low empathic group were nearly the same, which indicated that male university students were less likely to elicit altruistic behavior according to their empathy level. Empathy would not be a strong determinant for altruistic behavior of male university students in Hong Kong context. However, the result could also be explained by the incongruent empathy scale as the previous studies in literature. Since the empathy scale employed by the present study was a general empathy scale, which contained a combination of different empathy measures.

Although it was suggested by the scale developer for the possibility of using the scale in research, the items that were selected to be included in the present study were limited. Myyry (2003) also stated that the strength of the association between empathy and altruism was dependent on method of assessing empathy. Nevertheless, an alternative explanation could be derived in reference to the literature that females were more likely to engage in long term altruistic behavior, such as working as a volunteer worker in a school for teaching children, which pointed out a limitation of the current research. (Eagly & Crowley, 1986) Belansky and Boggiano (1994) further supported this idea by suggesting females are less likely to engage in helping behavior in non-emergency than males. Andreoni and Vesterlund (2001) found that women were more tend to be egalitarian for sharing while men were more tend to behave in either extreme of selfish or selfless. Therefore, it seemed the content of the hypothetic situation originally favored female participants to answer Yes.

For the investigation of the relationship between empathy scores and altruistic behavior in cultural dimension, similar to the result of the comparison of empathy score, no significant result could be concluded under the cultural dimensions. While in the collectivistic yes group, the chi-square was almost reached to the critical cutoff chi-square value when compared to other groups. However, this result might again due to the abundant number of participants in the collectivistic group. Therefore,

research recruiting even number of participants for each group would be an important concern, especially for employing chi-square test. Nevertheless, this limitation induced a design error in this study about the hypothetic question, which only required Yes or No decision, restricted the choice of statistical tests such as correlation. Although it was stated in the perceived similarity of helper and helpee would increase the empathic feeling (Batson et al., 1995), another research found that shared group membership did not affect the empathic altruism (Batson et al., 1997), which may provide an alternative explanation to the result in present study. Furthermore, since the present research hypothetic question provided no options for explaining participant's choices, and the nature of the hypothetic situation assumed no responsibility for the participants, which may result in another limitation on inaccurate perception of the hypothetic situation. Finally, employing a video clip that was shown in the past might result in another limitation of the research. Although the familiarity could positively smooth the administrative process, there are uncertain negative consequences. For instance, if the video clip or the movie star in that clip was negatively critiqued by peers of the participants, participants might have already built up a negative appraisal towards the clip in the past. As a result, participants perceived the message of the video clip with prejudice.

In addition to gender and cultural explanations, other factors have also been

proved as a role that would take part in influencing the effect of empathy-altruistic behavior. Instead of indicating general difference, the majority of these factors explain empathy-altruistic behavior by individual differences such as personality (Siem & Spence, 1986; Tice & Baumeister, 1985), positive and negative emotion (Aronson et al., 2004) and other situational determinants might provide alternative occasion of empathy, which situational forces may affect the quick decision to help or not (Clary & Orenstein, 1991; Clary & Snyder, 1991). Due to the sole manipulation on situation in the current study, personality difference and mood of participants might also affect the results. Another interpretation was derived from Levine (2001), who revealed a large cross-cultural variation in situation of helping strangers from independent field experiments in twenty-three large cities around the world. Results showed the overall rate of altruistic behavior ranked from 93% in Rio de Janeiro in Brazil to 40% in Kuala Lampur in Malaysia. Surprisingly, the possibility for participants to elicit helping behavior was not related to that particular cultural categorization, but was negatively related to a country's economic productivity, which may fit into Hong Kong well developed economic situation that suggest another aspect for further investigation.

Recommendations and further investigation

In order to improve the research design, several alternative methods can be

employed. First, to increase the number of hypothetic questions that requires either Yes or No decision. Second, to replace the Yes or No decision with a five or seven point scales to increase its variability for analysis. Third, in order to investigate the effect of in-group and out-group, one more option can be added to the hypothetic question, which can specify a cue on whether the helpee should be considered as an in-group or out-group members. Fourthly, having manipulation on variables such as personality type in the process of screening participants would help in reducing possible influence on the main findings. Experiments with laboratory setting may reduce the effect of other possible determinants. Fifthly, in order to investigate whether the balance in gender empathic level would be caused by the socialization process and increasing opportunity for receiving tertiary education compared to the past that promote less gender stereotype on their gender identity. Since the present study also employed university students as participants, focus group that aims for seeking the impacts of past education experience on gender identity would be preferred. Sixthly, to overcome the limitation that the content of the hypothetic situation seemed originally favored female participants to answer Yes, instead of stating the task as a volunteer worker, a list of equal number of gender stereotype tasks can be provided for the participants to select how they are willing to do such type of specific duties, which may help in balancing the original difference between

the gender helping styles. Seventhly, to deal with the limitation on inaccurate perception of the hypothetic situation, interviews can be arranged to explore the reasons behind participant's choices in the hypothetical question and how they actually perceived the hypothetic helpee as an in-group or out-group member. Similarly, the research design can also be improved by providing reasons for participants to select after they answered the hypothetic question. The options may include fame, emotional fulfillment, a mean for spending leisure time, or simply, I want to help. A blank line can also be added for participant to fill in their own reason, which can help in explore the finding in future research. Finally, in reference to the association between empathy development and Kohlberg's theory of morality (1976), with Wong's (2003) and Ma's (1989) research findings about moral orientations in Hong Kong and Chinese contexts, future researches on investigating the relationships between guilty feelings, moral development and empathy-altruism hypothesis may provide a complete understanding of gender and cultural differences in altruism within the local context.

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Appendix I – Sample of Administration consent form

RE: Administrative Consent for Research

Dear Teacher's name,

I am writing to request administrative consent to conduct research with your institution, the City University of Hong Kong.   I am a bachelor degree undergraduate in the Applied Social Studies Department at the City University of Hong Kong. My research is being conducted under the supervision of Dr. Betty C. Eng. I am requesting the participation of the students from your lecture of **course name** to explore the dimensions of gender difference in empathy. My research will be analyzed quantitatively and statistically to trace how the gender difference in empathy shapes or contributes to altruistic behavior.

The subjects will be invited to participate to watch a video clip for 1 minute and completing their response to a questionnaire composed of 30 statements. It is anticipated that my whole data collection process will be conducted in 10 minutes. Participants who give written consent will be randomly selected for follow-up interview for 1 hour to investigate their learning experience.

Confidentiality and privacy will be maintained as far as possible within my control. Pseudonyms will be used or information that may identify you or your institution will be obscured or deleted as appropriate. All data will be stored in a secured location and will be viewed only by my thesis supervisor and myself. All data will be disposed of within one year, with written notes shredded or electronically deleted.

At any time, participants may withdraw from the research study without any negative consequences. Should participants decide to withdraw from the study, the data collected from their participation will not be used and will be destroyed within one year.

If your institution agrees to provide the administrative support for my research study, please sign the enclosed consent form. I have also included the invitation letter to the participants and sample questionnaire for your information. It is hoped that my research study will broaden understanding gender difference in empathy towards

altruistic behavior.　Please feel free to contact me at Tel. (852) xxxx-xxxx, should you have any further questions or concerns.

<div style="text-align: center;">

Sincerely,
Woo Man Sze Zisi
(852) xxxx-xxxx
email: xxxxxxxx@student.cityu.edu.hk

</div>

Encl: Letter to Participants
      Sample Questionnaire

Appendix II – Sample of Participant consent form

<div align="right">November 13, 2006</div>

RE: Participation in Research Study

Dear Student,

I am writing to invite you to participate in my research study to explore the dimensions of the gender difference in empathy. My research will be written in the quantitatively and statistically to trace how the gender difference in empathy shapes or contributes towards altruistic behavior. I am a bachelor degree undergraduate in the Applied Social Studies Department at the City University of Hong Kong and my research is being conducted under the supervision of Dr. Betty C. Eng.

Your participation will require you to participate in watching a video clip for 1 minute and filling your responses to a 30 statements. It is anticipated that my whole data collection process will be conducted in 10 minutes. Participants who give written consent will be randomly selected for follow-up interview for 1 hour to investigate their learning experience.

Confidentiality and privacy will be maintained as far as possible within my control. Pseudonyms will be used or information that may identify you or your institution will be obscured or deleted as appropriate. All data will be stored in a secured location and will be viewed only by my thesis supervisor and myself. All data will be disposed of within one year, with written notes shredded or electronically deleted.

If you agree to participate in my research study, please sign the enclosed consent form. It is hoped that my research study will broaden the understanding of gender difference in empathy towards altruistic behaviors. Please feel free to contact me at Tel. (852) xxxx-xxxx, should you have any further questions or concerns.

<div style="margin-left: 50%;">
Sincerely,
Woo Man Sze Zisi
(852) xxxx-xxxx
email: xxxxxxxx@student.cityu.edu.hk
</div>

Encl: Consent form

PARTICIPANT CONSENT – PART A

I _____ agree to participate in the research project that Woo Man Sze Zisi is conducting to study gender difference in the research project that under the supervision of Dr. Betty C. Eng of the City University of Hong Kong. I agree to participate in the 10-minute data collection process.

I understand confidentiality and privacy of my information will be maintained as far as possible within the control of the researcher. I understand that the written material will be edited to remove information which could reveal the identity of the participants or the institution. Materials from their participation will be used for a class assignment, undergraduate research thesis, conference presentations, research projects, and/or publications.

I have read, understand, and am satisfied with the nature, scope and terms of the research as stated in the attached letter.

_____   _____

Signature of Participant   Date

_____   _____

Name in Block Letters   Student Number

_____   _____

Signature of Researcher   Date
Email: xxxxxxxx@student.cityu.edu.hk
Tel. (852) xxxx-xxxx

PARTICIPANT CONSENT – PART B

I _____ agree to be interviewed for 1 hour for the follow-up interview for investigating learning experience. The location for the interviews will be negotiated.

_____   _____

Signature of Participant   Date

RESEARCH QUESTIONNAIRE

Steps:

1. Please complete Part A below.
2. Please watch the video clip of
   "To feel for others, give blood (將心比心，齊來捐血)"
3. *****You are not permitted to fill in the questionnaire in Part B before watching the video clip *****
4. Please **CIRCLE** the number that truly reflects your opinion about 30 statements in the table.

PART A

1. **Age:** _____
2. **Gender:** _____
3. **Program:** (Please circle)

AJS / AAPRC / AABCSCE / AABCSCJ /

BCSEJ / AABCSFE / AABCSSE / AABCSKE

4. **Year:** _____
5. **Today's Date:** _____

PART B – Research Questionnaire

Participants may encounter difficulties in some of the questions in Part B. Below is the Chinese translation these questions.

7. I always try to tune in to the feelings of those around me.
   → 我總會設法調整自己的想法去理解圍繞我週邊的人感受。

9. Too much is made of the suffering of pets or animals.
   → 我認爲有太多令動物或寵物痛苦的事發生。

15. It's easy for me to get carried away by other people's emotions.
   → 我容易被其他人的情感所影響。

17. If a crowd gets excited about something so do I.
   → 假如週邊的人群感到興奮，我也同樣感到興奮。

19. I feel deeply for others.
   → 我能感受別人的深處感受。

		Strongly Disagree < 1 2 3 4 5> Agree
1.	I feel like crying when watching a sad movie.	1 2 3 4 5
2.	Certain pieces of music can really move me.	1 2 3 4 5
3.	Seeing a hurt animal by the side of the road is very upsetting.	1 2 3 4 5
4.	I don't give others' feelings much thought.	1 2 3 4 5
5.	It makes me happy when I see people being nice to each other.	1 2 3 4 5
6.	The suffering of others deeply disturbs me.	1 2 3 4 5
7.	I always try to tune in to the feelings of those around me.	1 2 3 4 5
8.	I get very upset when I see a young child who is being treated meanly.	1 2 3 4 5
9.	Too much is made of the suffering of pets or animals.	1 2 3 4 5
10.	If someone is upset I get upset, too.	1 2 3 4 5
11.	When I'm with other people who are laughing I join in.	1 2 3 4 5
12.	It makes me mad to see someone treated unjustly.	1 2 3 4 5
13.	I rarely take notice when people treat each other warmly.	1 2 3 4 5
14.	I feel happy when I see people laughing and enjoying themselves.	1 2 3 4 5
15.	It's easy for me to get carried away by other people's emotions.	1 2 3 4 5
16.	My feelings are my own and don't reflect how others feel.	1 2 3 4 5
17.	If a crowd gets excited about something so do I.	1 2 3 4 5
18.	I feel good when I help someone out or do something nice for someone.	1 2 3 4 5
19.	I feel deeply for others.	1 2 3 4 5
20.	I don't cry easily.	1 2 3 4 5
21.	I feel other people's pain.	1 2 3 4 5
22.	Seeing other people smile makes me smile.	1 2 3 4 5
23.	Being around happy people makes me feel happy, too.	1 2 3 4 5
24.	TV or news stories about injured or sick children greatly upset me.	1 2 3 4 5
25.	I cry at sad parts of the books I read.	1 2 3 4 5
26.	Being around people who are depressed brings my mood down.	1 2 3 4 5
27.	I find it annoying when people cry in public.	1 2 3 4 5
28.	It hurts to see another person in pain.	1 2 3 4 5
29.	I get a warm feeling for someone if I see them helping another person.	1 2 3 4 5
30.	I feel other people's joy.	1 2 3 4 5

PART C – Decision	
The hypothetic question below requires your decision, YES or NO: **If you had the opportunity, would you be a volunteer worker for a charity organization?**	Yes / No