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SYNDROME**

**Humor Appreciation, Social Competence,  
and Self-esteem in Children with Asperger Syndrome**

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### **Abstract**

This study examined the humor appreciation ability, social competence (peer relations and self-management/compliance), and self-esteem of children with Asperger Syndrome (AS) as compared with typically developing children, which were matched on age and gender. 10 boys and 1 girl, aged 8-12, were recruited for each group. Results showed no significant impairment in humor appreciation for children with AS, and they are comparable to typical ones in comprehending humorous materials. The two groups also differed in their social competence (peer relations and self-management/compliance) significantly. Besides, humor appreciation ability plays an important role of the social competence and self-esteem for AS children but was less to do with typical children. The humor appreciation ability of AS children predicts relatively stronger their peer relations and nonetheless their level of self-esteem.

In concluding sections, separate investigations of positive and negative styles of humor, and more specific domains in social competence with AS children were suggested, as different humor styles could predict contrary results, and also predict various social skills quality with different magnitudes.

## Introduction

The earliest understanding about Asperger syndrome (AS) could be traced back to Hans Asperger's work in 1944. He identified a group of children who exhibited social peculiarities and social isolation, nonetheless with average cognitive and language development. In later years, Wing (1981) brought the Asperger syndrome to the attention of clinical professionals when she published a paper in which she discussed the syndrome based on her work with 35 individuals aged from 5 to 35. In 1994, the American Psychiatric Association added the syndrome to its list of pervasive developmental disorders identified in the *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV*; American Psychiatric Association, 1994). The most recent identification of AS has been included in the *Diagnostic and Statistical Manual of Mental Disorders (4<sup>th</sup> ed., Text Revision; DSM-IV-TR*, American Psychiatric Association, 2000). The diagnostic criteria for AS are qualitative impairment in social interaction in terms of the use of non-verbal behavior, unable to maintain peer relationship appropriately, difficulty with social or emotional reciprocity, occupational functioning impairment, and repetitive and stereotyped motor movements, etc.

McLaughlin-Cheng (1998) concluded their meta-analysis on the literature on autism and AS that, children and adolescents with AS perform better than those with autism on intelligence and cognitive measures as well as measures of adaptive behavior functioning. Their language comprehension is within normal limits, their performance were stable but the

hidden meaning in language is often missed (Green, 1990).

Moreover, Bishop & Inderbitzen (1995) noted, the nature and extent of one's relationships with peers during adolescence may influence self-esteem, intellectual development, academic achievement, and behavioral functioning. People with AS are socially impaired, and it is suspected that their impairment would cause them unsuccessful experiences with peers and also the self.

### **Literature Review**

#### *Asperger syndrome and Humor*

Paulos (1980) defined humor as “a complex and human phenomenon, any understanding of it will necessarily enrich our understanding of thought in general”. Humor also plays a major role in human life and it facilitates their communication of feelings, opinions, and exchanging ideas (Brownell & Gardner, 1988). Nahamow (1986) defined it as “a core part of human behavior and considered to be a defining human attribute”.

Asperger (1944) originally observed and recorded down some common features of four children, who were lack of social skills, although they possess relatively unimpaired language and intelligence, he coined the term “Asperger syndrome” based on these characteristics he found from these children. Asperger later made some changes on description of this kind of people (i.e. people with AS) after seeing over 200 of them, and he analyzed five remaining salient features – social ineptitude, insistence for sameness, deficits in nonverbal language,

stereotypes, and in lack of humor.

Researchers generally believed that these children were noted to have no sense of humor, especially in reference to themselves. In the absence of genuine humor, however, these children exhibited originality of thought and language and occasionally came up with wittiness (Green, 1990; Tantam, 1988; Wing, 1996). Asperger (1944) and Frith (1991) also claimed that they are “rarely relaxed and carefree and never achieve that particular wisdom and deep intuitive human understanding that underlie genuine humor”.

Conflicting results from some researchers, e.g. Lyons & Fitzgerald (2004), claimed that people with AS could basically understand and appreciate humor, both verbal and non-verbal, i.e., slapstick humor and simple jokes, though they are not as competent as overall typically developing children. Some children with AS are gifted, and this factor has also been accounted for their sense of humor, especially in their interested areas, such as philosophical and mathematical humor. Moreover, the highly developed linguistic and computational abilities are advantages of people with AS to grasp the games of appreciating humor.

Evidence showed that, some individuals with AS are able to master the cognitive processing of humor, i.e. incongruity and its resolution and switching of meanings as depicted by the production of relatively complex word games (Lyons & Fitzgerald, 2004). We could know that individuals with AS comprehend humor from a more cognitive / intellectual perspective. And their cognitive processes are by logical principles, concreteness and

motivated by obsessive characteristics.

A study by Swiatek (2001) that, gifted adolescents acknowledged the feeling that they are different from others, and experienced social difficulties that are related to being gifted. Females are more likely than males to deny giftedness and maintain high activity levels, whereas males are more likely than females to use humor. This study could to some extent generalize to the case of AS children, in which part of them are gifted, it is possible that they will use humor to handle difficult social situations. This study indicated that giftedness (AS children with higher IQ) facilitates children to generate sense of humor for them to handle interpersonal conflicts, which also improves their sociability.

Adams & Earles (2003) reported the inconsistent pattern of how children with AS respond to humor comic stories too. They reported, participant 1 smiles to three comic episodes, participant 2 did not respond positively to any episodes, and participant 3 laughed at all five episodes. Werth et al. (2001), nevertheless, described a case study with a lady, Grace, with high-functioning autism, having a great sense of humor. Researchers claimed that her behavior may be a kind of obsessive creativity though. For instance, she loves to frequently invent humorously incongruous and often irrelevant word plays. She was reinforced because normal listeners perceived it as funny. Grace also has a predominant form of humor, which were the acoustic properties of the word plays. Her great sense of humor also enhances her ability to answer riddles, jokes, or use her sense of humor in teasing and

sneering. However researchers perceived Grace self-generated “humorous products”, usually structured but clumsy, and regarded the production as self-stimulating behavior.

Emerich et al. (2003) adopted Garfield cartoons and jokes to examine the comprehension of humorous materials by adolescents with AS in comparison to typically developing adolescents aged 11-17. The two groups were matched on age and gender. Cartoon comics and jokes were given to participants, and were asked to pick up the funniest endings. Participants with AS tended to choose straightforward endings for cartoon comic tasks, though their number of errors were not significantly different from typically developing participants; whereas for joke tasks, AS people performed significantly more poorly than those who were typically developing. The study showed that there is barrier for people with AS to comprehend humorous materials to a certain extent. The present study adopted a similar methodology, but only using cartoon comics, to examine the ability of appreciating humorous materials in participants with AS and typically developing ones. The reason why the present study only used cartoons but discarded jokes task was that, as the targeted participants were younger than that of Emerich et al.’s (2003), researcher aimed at using cartoons to attract their attention and keep concentration span longer. Details would be elaborated later in the research methodology part.

From all the above literature review, it seems that the question of whether an individual with AS could comprehend or appreciation humorous materials is still remain unanswered. At

this stage, we could not draw any definite conclusion yet. Thus it calls for further investigation. Besides, sense of humor acts as the facilitator for a person in interpersonal relationships, the present study is unique in the sense that it particularly added the social competence and self-esteem as variables, aiming at explaining if there would be any predictive power for the sense of humor with other variables of children with AS.

#### *Theories on Humor Appreciation*

Among the literatures (quoted by Herzog & Larwin (1988), e.g. McGhee, 1979; McGhee & Goldstein, 1983; Paulos, 1980; Raskin, 1985), psychodynamic and cognitive theories are the two main perspectives to explain humor appreciation. Psychodynamic theories emphasize on sex and aggression instincts (Freud, 1905). Cognitive approaches focus on the structure of the humorous stimuli and the cognitive processes of a person to appreciate humor. Researchers emphasized the concept of incongruity as the key throughout the cognitions. Incongruity is defined as inconsistency existed in at least two potential meanings in a humor stimulus, one of them is normal and congruent to what the person perceived or expect; whereas the other one is comparatively unexpected and out of prediction by the person. The person could only solve the incongruity by accepting the sudden perception of the unexpected meaning for the stimulus, and realize it as “fit” for the situation, humor responses resulted. (Dixon, 1980; Paulos, 1980).

Herzog & Larwin (1988) used another approach in explaining humor appreciation,



which is derived from theories of environmental preference. They attempted to explain the humor appreciation by what people like or dislike about their environment. Derived from the informational model of environmental preference (Kaplan, 1987; Kaplan & Kaplan, 1982), information is always regarded as crucial and essential for human survivals. Therefore, there are no doubts some preferred contents with survival values for human to be processed. The two main emphases of the cognitive process theory are understanding and exploration. The former refers to action that the person comprehends their environmental surroundings. The latter means the process for the person to generate and sustain his or her interests in the environment. Both processes have survival values, thus environments that engage both cognitive processes should be preferred.

How to understand humor appreciation by the above theories? According to Herzog & Larwin (1988), the process of understanding humor appreciation by the informational model of environmental preference is just similar to the incongruity-resolution process of cognitive humor theories. Both perspectives emphasize that people can perform the appreciation only if they can make sense of the stimulus. Yet, they concluded the other four positive predictors of cartoon appreciation were visual humor, artwork, vulgarity, and originality.

The second model, incongruity resolution model, is a two stage model (Suls, 1972). This model depicts why people found a joke or cartoon to be funny. In the first stage, the perceiver finds his expectation about the text was inconsistent with the ending of the joke or cartoon;

his expectations about the picture disconfirmed by the caption, incongruity encountered. In the second stage, because the incongruity occurred, perceiver engages the problem solving process in order to solve the inconsistency and reconcile the incongruent part of the humor.

Herzog & Larwin (1988) also suggested that, it was probably a correct conclusion that cartoon appreciation is best predicted by a combination of variables concerned with incongruity resolution or comprehension of the cartoon and variables concerned with maintaining cognitive involvement or interest in the cartoon. Also, best-like humorous cartoons should be able to encourage cognitive processes of the perceivers, and continue to be contributive to audiences' environment preferences.

*Affective Reciprocity, Joint Attention, & Theory of Mind*

According to the generally most accepted research diagnostic interview for autism (Dossator, 2004), the Autism Diagnostic Interview (Revised), Tanguay, Robertson, & Derrick (1998) had factor analyzed the interview items, and identified three main groupings that they summed as (i) Affective Reciprocity, (ii) Joint Attention, and (iii) Theory of Mind (ToM). They stated that, individuals with AS are less impaired on Affective Reciprocity, but they have more problems which were associated with Joint Attention and ToM.

Affective Reciprocity is the quality that a person is responsive to others' affect or emotions. This quality could usually be seen in those infants less than one year of age. It is the tendency to produce responses for social interactions and social cues from others. Such

deficits could be indicated by people of AS lacking responsiveness to other people's distress (Bacon et al., 1998) and absence of empathy (Travis & Sigman, 1998). This is in contrast to Joint Attention and ToM, which are related to pragmatic skills and identifying and following set social rules (Tanguay, Robertson, & Derrick, 1998).

Joint Attention is the ability which will appear on a one-year-old to realize that, other people has the capacity to share interest in the object of their interest. Tanguay et al., (1998) reported that, at two to four months of age, 30% of children are capable to follow their mother's line of sight or to an object automatically; by 14 months, all typically developing children can do so without verbal or gestural prompting. Children with autism, however, do not seem to recognize the emotional and contextual meaning of facial expressions, gestures and the non-verbal expressions of emotion (Hobson, 1986). Besides, autistic children could not play symbolically by pretending or imagining. Reddy, Williams, & Vaughan (2002) said they are in lack of laughter in response to a funny face or tease or clown around; they sometimes appear to be "deaf" (not responsive to human talk), and are unable to understand irony, sarcasm and jokes. Mundy et al. (1993) claimed that, the infrequent initiation of joint attention of children with AS is also a kind of indicator that they fail to integrate their object world with their social world.

Lastly, the Theory of mind (ToM) states that the ability to think about and act on information about ones own and others mental states, i.e. to take the perspective of others

when it is different from their own (Lyons & Fitzgerald, 2004). Although children with AS are relatively competent on nonverbal concept formation tasks, specifically those that require perceptual organization and spatial visualization (Ehlers et al., 1997), they are comparably poor in understanding social mores, social judgment, and interpreting interpersonal situations. Individuals with AS also have difficulty in showing empathy and appreciating the feelings and thought of others (Barnhill, 2001; Baron-Cohen, Leslie, & Frith, 1985). Researchers gave children with AS ToM tasks in examining their respective abilities. ToM tests consist of the first-order and second-order tasks. The first-order ToM tests assess the children in their ability to recognize that people differ in their thoughts even in the same situation. Second-order ToM tests examine the children's ability to interpret the mental states of others, such as making inferences on other people's thoughts, beliefs, desires, emotions, and intentions (Papp, 2006). Research on ToM suggests that individuals with AS can perform first-order ToM tests, but not passing the second-order tests (Baron-Cohen, 1995). That means, they can understand people have different thoughts even if they encounter the same events, but they may not be able to infer others' thinking, emotions or intentions, etc. Papp (2006) added, some children with AS could pass second-order tests. For this subgroup of children, they are seemingly without apparent deficits in ToM, there was still a gap between the automatic mind-reading ability a typically developing person has.

Many researchers claimed the lacking of ToM as the core deficits in autism

(Baron-Cohen, 1988; Happé, 1993; Tager-Flusberg, 1993). Evidence from Phillips, Baron-Cohen, & Rutter (1998) showed that the specific deficits related to ToM in autistic individuals, especially deficits in shared attention and understanding of others' intentions and desires are causes of their social deficits. According to Ozonoff et al. (1991), although children and youth with AS may be able to complete ToM exercises, they encounter difficulties in applying those skills in real-life situations. The ToM challenges they face, are related to a variety of issues, including (a) difficulty inferring the intentions of others, (b) a lack of understanding of how their own behavior affects others, and (c) difficulty with turn-taking and other reciprocal skills.

Hence, they encounter problems in interpersonal relationships, perception, and communication. This is also the barrier for them to experience other individuals who are important in their social environment. A total lack of ToM would result in a condition which the person shut down their perception to the outside world, showing minimal or no interaction with their surroundings at all (Happé, 2003).

#### *Central Coherence theory*

Central coherence theory is another theory that accounts for the social deficits of people with AS. Happé (1999) claimed that behaviors that are characteristic for autism, such as impaired social communication and stereotyped play, are assumed to arise because of this weak central coherence.

This theory hypothesizes individuals with autism have a qualitatively different style of information processing (Frith, 1989). This theory posits that people with autism spectrum disorders process information more locally, in a detail-focused way, and take less account of context. They may find it difficult to understand abstract information, and prefer things to be as concrete as possible. As stated before, the humor appreciation is an incongruence resolution process, in which someone finds something humorous because the information they processed is out of their straightforward attribution. AS people prefer concrete and straightforward everyday life information, under this theory, it is difficult for them to appreciate humor. Humor may be something out of their expectation, and is not coherence with their cognitive process and perception.

Studies by Happé (1999) and Jarrold & Russell (1997) measuring central coherence skills like perceptual or verbal semantic tasks revealed that autistic individuals have a tendency for fragmented perception and benefit less from the context of meaning in sentences, narratives and memory tests. They found out, individuals with AS differed from their typically developing peers in their degree of central coherence. Individuals with AS were weaker because they can process information more globally only if instructions were given. They returned to local processing when no such instructions are provided. (Mottron, Belleville, & Menard, 1999; Rinchart et al., 2000). Thus, their weakness in central coherence implies that they fail to process information more globally or take account of context during

cognition. Behaviors which belong to characteristics for autism, such as impaired social communication and stereotyped play, are assumed to arise because of this.

### *Asperger Syndrome and Social Competence*

Social competence refers to the skills and strategies that allow individuals to have meaningful friendships; forge close, emotion-based relationships; productively collaborate with groups, teams, and work partners; manage public social settings; and participate in family functioning (Gutstein & Whitney, 2002). Denham et al. (2001) emphasized that social competence is a critical variable predicting success in future life.

Social competence is defined as three elements: (1) secure attachment to other people, (2) instrumental social learning, and (3) experience-sharing relationships. Any significant deficits in any of these areas would result in eventual social failure (Bruner, 1983; Emde, 1989; Fogel, 1993; Gottman, 1984; Gutstein & Whitney, 2002).

Hobson (1993) stated that people with AS “do not fully understand what it means for people to share and coordinate their experiences”, and Mundy et al. (1993) said they are in lack of the desires to share their interests and happiness with others. Compared with typical developing ones, they do not conduct much exploration of the self and put less concern on their relationship building and maintenance (Gutstein & Whitney, 2002). According to ToM, their impairment appears because they are unable to interpret their own and other people’s mental states, thus also hard to predict and explain others’ behaviors. Frith et al. (1994)

claimed this was the reason why individuals with AS remain impaired in their everyday social interactions. As Papp (2006) noted that children with AS could perform ToM to some extent, Bowler (1992) explained it as they could solve the tasks by applying their comparatively fluent verbal and cognitive capabilities.

In friendship development, to share experiences with peers is so critical, thus the deficits of people with AS do not allow them to have essential skills for building reciprocal relationships. Besides, Wimpory, Hobson, Williams, & Nash (2000) reported significantly less emotional engagement and ability to express in individuals with AS than their typical peers. They take fewer social initiations. Even if they start the conversation with peers, it would be mostly about providing information to peers on topics which they are interested in deeply. Concerning gestures, they have limited shifting in eye gaze, do not point to or show objects to partners for the sake of sharing their feelings and experiences with them. Therefore, we can see the inferiority in skills of individuals with AS to create smooth peer relations. Church et al. (2000) also identified two distinct patterns of interaction among children with AS, as either they were quite and unassuming, demanding less from peers; or they were energetic, active, and violated social boundaries, adopting as “in your face” style of interacting. These social styles are believed to make typical peers uncomfortable, thus hindering children with AS to develop good peer relationships.

Children with AS are clumsy and nonetheless strangest in their social interactions



patterns. This syndrome has been described as the foremost social disorders (Asperger, 1944; Frith, 1991; Green, 1990; Kerbeshian, Burd, & Fisher, 1990; McLaughlin-Cheng, 1998; Myles & Adreon, 2001; Myles & Simpson, 2001; Szatmari, 1991; Wing, 1981). However, compared with those autistic children, people with AS are different in terms of their desire for social interactions with others, and wanting to be part of the social environment (Wing, 1981). Church et al. (2000) claimed that, children with AS aged 8-12 (as same as the target group of the present study), have highly variable social skills but always sounds odd. None of their participants, reported by their parents, teachers, and health-care providers, had deep, reciprocal relationships with other children, but several had superficial relationships with other children. They quoted an example that one child view “Mario”, a video game character as his “best friend”. Most of them never asked to have a friend over or asked to make telephone calls to other children.

Unfortunately, the social world is always unpredictable and varied because everyone is unique in his or her presentation of self or communication style. This causes AS people feel frustrated and confused, as they are rigid and consistent to apply learned socially appropriate behaviors without flexibility.

A study conducted by the National Autistic Society of Great Britain (Bernard, Harvey, Potter, & Prior, 2001) on the adult outcomes of individuals with AS, showed that, 37% of adults with AS reported no participation at all in social activities, while 50% reported going

out no more than one or two times per month. Another study by Green et al. (2000) also found out that, when adolescents with AS were compared with another group with severe conduct disorders, matched on age and IQ, children with AS were significantly more socially impaired, accompanied by high levels of anxiety, obsessive disorders, depression, and suicidal ideation.

From the above studies, we can see the difficulties in social life of people with AS, and these results further provoke concerns that many children with AS are without social competence when moving into adolescence and young adulthood. Gutstein & Whitney (2002) commented the people with AS, “despite varied and intensive intervention efforts, fail to attain social competence”. As having good social life is one of the basic components of a person’s well-being, the deficits may cause people with AS more vulnerability than ordinary people in many aspects of life. Although we do not expect their social impairment would be “recover” one day, social skills training programs are useful for them, at least to improve their impairment to some extent, helping them adapt better.

#### *Asperger Syndrome and Self-esteem*

As Dalgas-Pelish (2006) said, developing a strong sense of self-esteem is so critical during childhood, because it can be the protective factor against family stresses, social pressures, and deviant behaviors at earlier stages of life. Self-esteem is so important that it also related to many aspects of a person, e.g. academic achievements, social relationships,

and mental health (e.g. Daane, 2003; Shirk, Burwell, & Harter, 2003). Higher self-esteem is one of the protective factors from developing mental illnesses. This ensures that children with are having sense of security, identity, belongingness, life purpose, and personal competence into the school environment (Dalgas-Pelish, 2006). On the contrary, having low self-esteem would bring undesirable impact to the person. Coopersmith (1967) concluded that people with low self-esteem, would be feeling sense of inferiority, comparatively poorer than others, they do not find themselves worthy, and unable to generate inner resources for betterment of any kind.

Because of the lack of social competence in people with AS, sometimes when they make social contacts with other people, they may overreact or produce socially inappropriate responses, which drive other people reject them. People with AS may recognize the rejection or difficulty but they lack the insight to understand it or to change their behavior.

Myles & Adreon (2001) said that, although people with AS are well-known for their lack of social awareness, they are aware enough to the sense that they are different from their peers.

Thus we may realize that it is common that they may have self-esteem problems and self-concept difficulties. The social failures may lead to anxiety, frustration, or tantrums, which would further affect their self-concept.

### *Focus on the Tasks*

Having the sense of humor or the ability to appreciate humor, to certain extent, play as

one of the important components of successful interpersonal relationships. Especially in children social development, humorous exchanges are vital and valuable, as it encourages playfulness (Bruner & Sherwood, 1976). Children with a positive sense of humor are much more able to form alliances with other children (Gest et al. 2001). Humor can have a strong impact on the various types of social relationships evident during middle childhood. It is one of the essential social skills that affect the child's status within the social group (Bergen, 1998; Gest et al. 2001; McGhee, 1974; Warnars-Kleverlann et al. 1996). Current results were controversial, people generally believe that people with AS are in lack of sense of humor. This study investigates if AS children really perform poorer than their typical developing peers, at the same time their sense of humor to be related to their social competence, and also predicting their self-esteem.

#### Hypotheses

1. Typically developing children is hypothesized to have higher humor appreciation than children with AS.
2. Typically developing children have higher self-esteem than children with AS.
3. Better social competence is hypothesized to be observed among typically developing children than children with AS.
4. The better the ability to comprehend humorous materials, the better social competence.

5. The better ability to comprehend humorous materials, the higher the self-esteem.
6. There is positive correlation between self-esteem and social competence.

## **Method**

### Participants

The present research is focused on children aged 8-12. For the Asperger group, they must have been diagnosed with Asperger syndrome (AS) by either clinical psychologists or medical doctors.

For the AS group, participants are recruited from The Boys' and Girls' Clubs Association of Hong Kong (BGCA) head office. Potential participants are screened out by BGCA staff, whom the family has a child with AS. By sending out information about the research, interested parents signed the consent form back to researcher personally; they could choose either participate in form of home visit or in City University of Hong Kong. Researcher contacted the parent correspondingly and to make appointment with them for parent to fill in the questionnaire and interviewing the child individually.

Typical developing children were recruited in the St. James Settlement Kathleen McDouall Child Care Centre. Interested parents signed the consent form, researcher then came to the centre to interview the children individually, and parent questionnaires were passed to parents through the centre person-in-charge.

In both typical and Asperger group, there were 10 boys and 1 girl, totally 11 participants.

The mean age for typical group and the Asperger group were 10.00 ( $SD = 1.18$ ) and 10.55 ( $SD = 1.57$ ) respectively. There was a significant correlation between age of participants and the number of correct responses in humor appreciation tasks ( $r = .492, p < .05$ ). This may indicate that age may also predict children's ability to comprehend humorous materials.

### Materials

#### Verbal Fluency

Several test, e.g. Delis-Kaplan Executive Function System (Delis et al., 2001), and Controlled Oral Word Association Test (Benton et al., 1994) used the test of verbal fluency to evaluate the cognitive functioning and mental flexibility of participants. Hence, if the two groups do not differ in their verbal fluency, they are having comparable level of cognitive functioning, and able to comprehend the tasks for this present study. This variable also serves as a matching variable for both Asperger group and typical group, although they may be with different level of IQ.

These tasks contain semantic tasks. Each participant was asked to name as many as "animals" and "food" they can think of, and also "as many as things they could find in supermarket", in 60 seconds time for each task (e.g. Hurks et al., 2004; Mitrushina et al., 1999; Riva et al., 2000, Tombaugh et al., 1999).

Their scores are number of words they can produce within the time limit, minus categorical repetitions (e.g. pig and slim pig) and errors.

### Humor Appreciation

In measuring the ability of comprehension of humorous materials of participants, 23 cartoon comic stories with captions were either copied or adapted from two famous local comics “Old Master Q (老夫子)” by Wong Chak (王澤), “Chao Yat Comics (草日漫畫)” by Chao Yat (草日); and also from Chinese version of “Garfield (加菲貓)” by Jim Davis. The questions are written in Chinese. Four ending choices for each task are either copied or created. The ending choices are divided into four categories: Relevant-humorous (RH), Irrelevant-humorous (IH), Relevant-non-humorous (RN), and Irrelevant-non-humorous (IN). The relatedness means the ending choices are with some pictorial cues that are correspond to the comic stories. Each ending was categorized by researcher. One other undergraduate, who is blind to this research, was invited to categorize the four endings of each question independently. The inter-rater agreement percentage was 88.04% ( $SD = 23.68\%$ ).

Those stimuli were then piloted with 30 undergraduate students from different disciplines in City University of Hong Kong. Participants in the pilot study were instructed to choose one most funniest and relevant ending for each question. Each question has only one correct answer (RH option). Participant who is able to choose the RH option makes a correct response, and choosing IH, RN, and IN options mean errors. Each RH option scores 1 point, and IH / RN / IN options score zero. The error rate would be used to measure how able the participant was in comprehending the humorous materials. Questions that over one-third

(>33.3%) of students failed to choose the RH option were excluded. Individual feedbacks were also taken into consideration (e.g. endings were re-created if feedback was received for not funny enough). Eventually, 16 stories were modified and remained.

### Self-esteem

Rosenberg's (1965) Self-esteem scale would be used for the assessment. This scale contains 10 items that can be used to assess global self-esteem. Cronbach alpha (English version) of the scale was .78.

Cheng & Hamid (1995) suggested that, the translated Chinese version of Rosenberg Self-esteem scale would cause loss of actual meaning due to syntax errors. They revalidated the scale in local population and proposed that, one out of ten items, i.e. "I wish I could have more respect for myself", should be discarded. Thus this study uses the nine items Chinese version of Rosenberg self-esteem scale.

Respondents rated the items on a 5-point scale, from 1 = totally Agree to 5 = totally disagree. Lower scores indicate higher global self-esteem.

### Social Competence

The Social Competence scale (SC), which is the subscale from the Home & Community Social Behavior Scales (HCSBS) were used. The SC contains two subscales of social competence: peer relations (PR), 15 items, ("behavioral characteristics important in making friends, being a positive and constructive member of a peer group, and being well-liked by



other children or youth”), and self-management/compliance (SMC), 17 items, (“behaviors and characteristics that are important in responding to the social expectation of parents, teachers, and other influential adults”). The HCSBS is used for identification and classification, intervention planning, monitoring intervention progress, evaluating intervention outcomes, and conducting basic behavioral research.

The SC consists of 32 items, using a Likert-type 5-point rating from 1 = “Never” to 5 = “Frequent”, with which behavior was observed by parent or primary caregiver during the past 3 months. The higher scores indicated greater social competence. The cronbach alpha of SC ranges from .82-.84.

There is no Chinese version of the HCSBS, back-translation procedures was used to produce a Chinese version of the scale.

### Procedures

Each child was interviewed by researcher individually about their verbal fluency, ability of humor appreciation, and self-esteem. Verbal fluency tasks were given to them prior to any questionnaires to be filled out.

For the humor appreciation tasks, the procedures for children to do these tasks were basically the same as the pilot study. Children were instructed to choose one most funniest and relevant ending for each question. Throughout the tasks, researcher will read through the comic stories for them because it is to secure the interviewee understands each question and

has not skipped doing any of them. Afterwards, children chose by themselves. Later, researcher went through the self-esteem items for them too.

One of the parent / primary caregiver of the child provided ratings on social competence of the child, and provided a short description on child's daily behavioral functioning and performance in school or with peers.

### Data Analysis

Power analysis indicates that the statistical power for involving a medium effect size in the sample size is very small. Although setting  $\alpha = .20$  does not raise the level of power beyond .05 (see Cohen, 1988), I adopted  $\alpha = .20$  in the present study.

To check the distributions of the data, whether they were spread out from the mean, skewness and Kurtosis had been computed. They were all within acceptable levels.

## **Results**

An independent sample t-test was conducted to see if typically developing children and children with AS differ in their verbal fluency. If they differ, their ability to comprehend humorous materials might be impaired as such. The test was introduced into the experimental process. The typically developing group named on average 15.76 (SD = 3.46) vocabulary in 60 seconds time, and the AS group named 16.97 (SD = 3.52) (Table 1). Their error rate was almost zero. Among all children, only 2 from the typical developing group named 1 object incorrectly. There was no significant difference in the verbal fluency score of the two groups,

$t(20) = -.815, p > .05$ .

To show whether children with AS and their typically developing peers differ in their ability to comprehend and appreciate humorous materials, and also their social competence and self-esteem level, independent sample t-tests were conducted. Referring to Table 1, for humor appreciation tasks, children with AS were not less able to comprehend humorous comic stories, i.e. the number of correct responses in the tasks was not significantly less than typical group. Out of 16 humor appreciation tasks, AS children on average made 8.82 correct answers (55.13%), whereas typical developing children scored 9.23 (57.69%), in which the figure was just slightly higher. The two groups only differed in the category “irrelevant-non-humorous” of humor appreciation. Children with AS tended to interpret comic story endings under this category as the funniest and coherence were with the tasks. The two groups did not significantly differ their self-report self-esteem, while the AS group, by parent ratings, scored significantly less in their social competence level in terms of peer relations and self-management/compliance than the typical group. Among all significant differences, indicated by the Cohen’s *d*, effect sizes were all over .8, which were considered as large.

In order to examine if humor appreciation ability predict social competence of children, I computed Pearson’s correlations between the number of correct humor tasks responses and their social competence (peer relations and self-management/compliance respectively). The

number of incorrect humor tasks was not included because as the total number of humor tasks response equals the number of correct and incorrect responses, the correlations would be simply mirror image of the existing one. The computation also applied to social competence and self-esteem. To see if the correlations were significant between the two groups, I used the Fisher's Z transformational of *rs*. Table 2 summarized the statistics. For the typical group, there was no significant correlation between variables, except the one of self-management and self-esteem. Humor appreciation plays a more important role for children with AS that it correlates with their peer relations and self-management/compliance significantly.

Particularly the correlations of humor appreciation and peer relations, the two groups showed significantly differed, as indicated by the Fisher's Z transformation of *rs*.

For the predictability of children's social competence and self-esteem, it was less predictive for the typical group, while the overall pattern of correlations were pronounced in children with AS. What's more, by the Fisher's Z transformation, the correlation of peer relations scores and self-esteem showed significant difference between the two groups.

### **Discussion**

The present study examined the ability of humor appreciation would affect the self-esteem and social competence (peer relations and self-management/compliance) in a sample of children, aged 8-12, matched on age and gender, with and without Asperger syndrome. Results showed that in humor appreciation tasks, children with AS interpreted

comic endings which were irrelevant and non-humorous as the funniest and humorous. They were also less competent socially in terms of peer relations and self-management/compliance. The ability of comprehending humorous materials was also more predictive in children with AS their competence in building and maintaining peer relations.

Parents of each AS participant rated their children poorer in their peer relations and self-management/compliance than those without AS. The result is in line with literature that children with AS were relatively impaired in social skills. For instance, they are in lack of desires to share their experiences and may not put much concern on building peer relationships as much as normal ones (Gutstein & Whitney, 2002; Hobson, 1993; Mundy et al., 1993). Besides, typically developing individuals may find the social interaction styles of children with AS are clumsy and strange (e.g. Asperger, 1944; Frith, 1991; McLaughlin-Cheng, 1998; Myles & Adreon, 2001). If so, when children with AS want to express their wants and intentions, they may voice out in an inappropriate way. This also apply to occasion when they want to reject what they do not like, they may lose temper, or reply impolitely. Therefore, other people perceive them odd, and parents rated children with AS lower in compliance ratings.

Friendships are important for school age children. Diamond (2002) suggested that, social impairment of AS children, e.g. deficits in attending to other's facial expressions and other social stimuli, hindered them from experiencing people in their surroundings as being

important. The social competence of a child affects their quality of friendships, in which they would be rejected, isolated, do not have happy past times with peers, and feeling less secure because they do not obtain support from social circles. Lee & Odom (1996) found that, if children with autistic spectrum disorders have more opportunities for social interaction with typically developing peers, they would display fewer stereotypic behaviors. Supported by Roeyers (1996), if given regular opportunities to interact with typically developing peers, autistic children made significant improvements in social skills (especially the frequency of social initiations) when compared to other autistics children without the exposure and opportunities. Therefore, having good peer relations is helpful for children with AS. Strengthening their social competence and social understanding are critical for AS people. In sum, AS people could gain more satisfaction from their social lives.

The finding that social competence was generally more predictive for the self-esteem of participants with AS than typically developing ones, indicates that social deficits of children with AS plays a role in their self-esteem development. The typical group did not show such result as those children were not socially impaired. Hence, children with AS with their less satisfied social lives become barrier for them to develop strong sense of self. From this point, we see the importance of developing healthy peer relations for a child because throughout their school lives, interacting with peers is inevitable. Once again, positive and desirable peer relationships are beneficial to children, especially children with AS.

Children with AS are traditionally regarded as lacking in sense of humor (e.g. Asperger, 1944; and Frith, 1991; Wing, 1996). However, the present study did not find significant impairment in the ability to appreciate humorous comic stories in children with AS when they were compared to their peers without AS. Although on the whole, the two groups were not differed in their ability to appreciate and comprehend humorous materials, as notes in the above paragraphs, the humor appreciation ability did affect AS children their social competence, including peer relations and self-management/compliance, which in turn bringing influences to their self-esteem development.

The only area where a significant difference found was concerning a higher tendency for AS children to choose irrelevant and non-humorous comic stories endings as the one which they thought were the most humorous. This suggested that children with AS perceived something which was plain as humorous. For the other comic story ending categories, i.e. relevant and humorous (correct), irrelevant but humorous (incorrect), and relevant and non-humorous (incorrect), no significant different were found. This finding was consistent with the study by Emerich et al. (2003). They pinpointed that their AS participants did not make significantly more errors in humor comprehension tasks when compared with typically developing ones. Nonetheless, they tended to choose straightforward endings for cartoon comics, regardless they were given the instruction to pick up the funniest endings.

To explain why children with AS did not show overall humor appreciation deficits, it

may be because most of the participants reported they were having the habit of reading comic stories, and the comics chosen here were local and famous, participants may have read them before. Even participants did not read the comics before, as Emerich et al. (2003) suggested, comics were less abstract, and children with AS, who were not cognitively impaired, were able to comprehend them to a certain extent, by picking up any cues from the comics, in order to find out the most appropriate endings. Nevertheless, the more prevalent tendency for children with AS to pick up irrelevant and non-humorous endings as most humorous, this may be the point that they are actually qualitatively different from their typically developing peers in cognitions. Ozonoff & Miller (1996) claimed this as the impairment of cognitive flexibility of children with AS. This tendency may affect children with AS that they would make more misinterpretations in social situations (e.g. telling others something they find funny but are actually dull, and in turn other children may perceive them as odd, therefore less willing to play with them, and consequently, AS children's self-esteem is affected).

Once again, though the humor appreciation ability of children with AS did not show great deficits, having sense of humor does positively correlated to the peer relations and self-management/compliance of them, which in turn affecting their level of self-esteem. Researchers (Bergen, 1998; Gest et al. 2001; McGhee, 1974; Warnars-Kleverlann et al. 1996) also agreed that sense of humor is one of the essential social competencies which could facilitate the child's status in the social environment. Thus helping children with AS building



their positive sense of humor is meaningful for them for betterment of their social lives.

### **Limitation**

The sample size for the AS and typical group were small ( $n = 11$  for each group). Within this small sample size, variations were observed though. For example, some AS children were reported aggressive whilst others were mild-tempered. Some like to read comics very much whereas some just read occasionally. Hence, generalization is limited, nonetheless, the present study showed how important the role of having sense of humor in the lives of children with AS.

Second, in this study, parents were the only source of information for the social competence of the children, the ratings may not be so accurate then if teachers of the participants were also rating. Researchers reported that there may be discrepancies between ratings on the child by parents and teachers (Voelker et al., 1997), Hundert et al. (1997) claimed that the discrepancy may be due to the child's level of developmental disabilities. This reflected the different behaviors performed by the child in different contexts. Moreover, Bank et al. (1993) argued that parents and teachers focus on different aspects of the child's when examining them. For instance, parents focus on the obedience and self-management abilities, whereas teachers emphasize more on the child's peers relationship and academic achievement. Although there observations suggested that parents are biased reporters, the use of multiple informants would enhance the thoroughness and validity of the data.

To evaluate the level of self-esteem, in accordance to Kazdin (1990), McFarlane et al. (1995); and Overholster et al. (1995), even if children have difficulties with their peer relationships, in which this point is particularly true and a prevalent problem for children with AS, may not necessarily relevant to their level of self-esteem or they way they perceive themselves in various situations. It could be further explained by the social impairment of children with AS, in the sense that they do not recognize their social deficits, thus they are still having comparable self-esteem as typically developing ones, for example they thought that they have things to be proud of and are as good as others.

Another point to consider is the meta-cognitive skills pinpointed by Slife, Weiss, & Bell (1985). They claimed that children with disabilities, such as learning disabilities or AS, because of their poor cognitive processing skills, they did not rate themselves as poor, or having lower self-esteem. Dyson (2003) gave another explanation that this is a kind of self-protectiveness. They have more positive self-ratings were regarded as an act to protect their ego. As children with AS are aware their differences of them with other typical developing ones, when they rate for themselves by self-report, they tended to make it more positive or over-estimate than what they actually are, because they want to be as good as the typical developing ones, or want to show researchers that they are good enough.

### **Future Research**

As Klein & Kuiper (2006) proposed, different humor styles that the children

communicate with could facilitate or destroy the development and maintenance of many types of peer relationships, including acceptance or bullying. For example, self-enhancing (serves to buffer and protect the self, but not at the expense of others), and affiliative humor styles (enhances interpersonal and social relationships) belong to positive or adaptive aspects of humor. Applying these humor styles help children to cope problems and minimize the unfavorable emotions, reducing interpersonal tensions, while also help them maintaining a realistic life perspective. On the other hand, self-defeating (hiding negative feelings, avoiding contribution to problem-solving), and aggressive humor styles (teasing, making ridicule, sarcasm on others) would bring undesired results to the children. Their study implied that only addressing children with AS are in lack of sense of humor is not enough. To well-define which type of humor styles the child is using is helpful to analyze behaviors of children with AS. Because if a child is having high scores in negative humor styles, and researcher falsely claimed the child is humorous therefore socially competent, this is absurd. The truth may be the other way round that, the negative humor styles of the child leads them having bad social experiences with peers.

Moreover, in order to find out clearer picture of the performance of appreciating humorous materials by children with AS, if possible, comic stories and also jokes should be used at the same time. This can prevent children to guess the correct answers by tracing back the pictorial cues from the comics, because jokes are always presented in sentence form, and

participant should understand the underlying meanings of the words in order to discover the sense of humor inside.

In addition, as the present study shows that the humor appreciation ability of children with AS predicts the peer relations of them in a relatively strong sense, it is worthy to separate peer relations as an independent domain from the broadly define term social competence for further studies. It is believed that more specific research variables could yield more fine-tuned results, which leads to better implications.

### **Conclusion**

The present study studies the relationships between the ability to comprehend and appreciate humor, social competence, and self-esteem with typically developing children and children with AS. Although results did not show significant impairment of humor appreciation on children with AS as compared with their typically developing peers, As children tended to interpret comic story endings which were supposed to be irrelevant and non-humorous as humorous. Moreover, the humor appreciation ability for AS children predicts relatively strong on their social competencies of peer relations and self-management/compliance. In turn, these two qualities predict their self-esteem too. The findings here are contributive because they tell people that the ability to comprehend humor is important for children with AS because this ability may lead them better social competence and higher self-esteem.

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**Appendix A**

Table 1

*Descriptive and Independent t statistics on the whole and for the two groups*

	All	Typical	AS	<i>t</i> (df)	Sig. (1-tailed)	Cohen's <i>d</i>	Skewness		Kurtosis	
	Mean (SD)	Mean (SD)	Mean (SD)				Statistics	SE	Statistics	SE
Humor-RH	9.23 (2.93)	9.64 (2.66)	8.82 (3.25)	.65 (20)	.263	.276	-.046	.491	-.888	.953
Humor-IH	2.23 (1.38)	2.45 (1.04)	2.00 (1.67)	.77 (20)	.227	.326	-.089	.491	-.585	.953
Humor-RN	2.95 (1.81)	2.82 (1.99)	3.09 (1.70)	-.35 (20)	.367	-.147	.549	.491	-.262	.953
Humor-IN	1.59 (1.22)	1.09 (.70)	2.09 (1.45)	-2.06 (20)	<b>.029</b>	-.880	.545	.491	-.461	.953
Self-esteem	32.68 (6.12)	33.18 (4.88)	32.18 (7.37)	.38 (20)	.356	.160	-.681	.491	-.396	.953
SC-PR	46.29 (7.60)	49.90 (8.09)	43.00 (5.62)	2.29 (19)	<b>.017</b>	.991	.976	.491	.807	.972
SC-SMC	56.71 (9.35)	61.70 (7.10)	52.18 (9.06)	2.66 (19)	<b>.008</b>	1.169	.043	.491	.096	.972

*p* < .20

Humor-RH = Relevant-humorous choices

Humor-IH = Irrelevant-humorous choices

Humor-RN = Relevant-non-humorous choices

Humor-IN = Irrelevant-non-humorous choices

SC-PR = Peer Relation sub-scale

SC-SMC = Self-management/Compliance sub-scale

Table 2

*Pearson Correlations between Humorous Material Appreciation Ability and Self-esteem*

Variable Pairs	Typical		AS		Fisher's Z	
	Correlations		Correlations		transformational of $r_s$	
	$r$	Sig.(1-tailed)	$r$	Sig.(1-tailed)	$z$	$p$ (1-tailed)
Humor---SC-PR	.192	.298	.613	<b>.022</b>	-1.003	<b>.158</b>
Humor---SC-SMC	.177	.313	.300	<b>.185</b>	-.252	.400
Humor---SE	-.072	.417	.269	.212	-.672	.251
SC-PR---SE	.062	.432	.504	<b>.057</b>	-.952	<b>.171</b>
SC-SMC---SE	.303	<b>.197</b>	.272	.209	-.065	.474

 $p < .20$ 

Humor = Humorous Material Appreciation Score

SE = Self-esteem

SC-PR = Peer Relation sub-scale

SC-SMC = Self-management/Compliance sub-scale

## Appendix B

### 香港城市大學心理學系 問卷調查 (兒童部份-節錄)

姓名: \_\_\_\_\_

年齡: \_\_\_\_\_

性別: \_\_\_\_\_

年級: \_\_\_\_\_

#### 第一部分

於 60 秒內, 可以舉出 (答案不能重複):

1. 所有想得出來的動物

**正確** 地舉出\_\_\_\_\_種**不同** 的動物;

**錯誤** 的答案有\_\_\_\_\_個。

2. 所有想得出來的食物

**正確** 地舉出\_\_\_\_\_種**不同** 的食物;

**錯誤** 的答案有\_\_\_\_\_個。

3. 在超級市場裡可以找到的東西

**正確** 地舉出\_\_\_\_\_種**不同** 的東西;

**錯誤** 的答案有\_\_\_\_\_個。

## 第二部分

下列句子是對人的描寫。請你想想每句句子與你的相似/吻合程度，並在每一句子旁邊圈出你認為最適合的答案：

極之像我	1	2	3	4	5	極之不像我
------	---	---	---	---	---	-------

	極					極
	之					之
	像					不
	我					像
						我
1. 我認為自己是個有價值的人，至少基本上是與別人相等的。	1	2	3	4	5	
2. 我覺得我有很多優點。	1	2	3	4	5	
3. 總括來說，我覺得我是一個失敗者。	1	2	3	4	5	
4. 我做事的能力和大部份人一樣好。	1	2	3	4	5	
5. 我覺得自己沒有什麼值得驕傲。	1	2	3	4	5	
6. 我對於自己是抱著肯定的態度。	1	2	3	4	5	
7. 總括而言，我對自己感到滿意。	1	2	3	4	5	
8. 有些時候，我確實覺得自己很無用。	1	2	3	4	5	
9. 有些時候，我認為自己是一無是處。	1	2	3	4	5	

## Appendix C

### 問卷調查 (家長部分)

填寫問卷途中如遇上任何疑問，可隨時向調查員發問，以確保你清楚了解以下各部份的指示及每題的意思。

#### 兒童背景資料

兒童姓名：\_\_\_\_\_ 姓別：男／女  
 出生日期：\_\_\_\_\_（年／月／日） 年齡：\_\_\_\_\_  
 學校名稱：\_\_\_\_\_ 年級：\_\_\_\_\_  
 您與兒童的關係：父／母  
 填寫日期：\_\_\_\_\_（年／月／日）

## 第一部分

#### 填寫問卷指引

請參考下列指引，根據你的子／女過去三個月的行為選出最適合的答案。

從不	如兒童沒有該項行為或你沒有觀察到的話，請圈出「1」以表示「從不」。
經常	如兒童經常有該項行為的話，請圈出「5」以表示「經常」。
有時	如兒童該項行為是介乎「從不」和「經常」之間的話，請決定該行為有多常出現並圈出「2」、「3」或「4」（表示「有時」）。分數及所代表的頻密程度如下：

從不		有時		經常
1	2	3	4	5

請完成所有項目，請清楚地圈出一個答案。如果你有其他關於這名兒童的補充資料，請在問卷尾頁中的空位填寫。

	從 不	1	2	3	4	5	有 時	經 常
1. 與同輩合作	1	2	3	4	5			
2. 適當地在各種活動與活動間過渡／轉換	1	2	3	4	5			
3. 在不用提點的情況下完成家務／煩瑣的工作	1	2	3	4	5			
4. 同輩有需要時會幫助他們	1	2	3	4	5			
5. 能融入家庭／小組活動	1	2	3	4	5			
6. 明白同輩的難處和需要	1	2	3	4	5			
7. 遇到問題時能保持冷靜	1	2	3	4	5			
8. 聆聽及達到家長／監護人的指示	1	2	3	4	5			
9. 邀請同輩參加活動	1	2	3	4	5			
10. 適當地提出問題以令指示更明確	1	2	3	4	5			
11. 擁有令同輩羨慕的技能／能力	1	2	3	4	5			
12. 接納同輩	1	2	3	4	5			
13. 獨立地完成家務／煩瑣的工作或其他交予他的工作	1	2	3	4	5			
14. 準時地完成家務／煩瑣的工作或其他交予他的工作	1	2	3	4	5			
15. 適當地對同輩作出讓步	1	2	3	4	5			
16. 跟從家庭或社區的規則	1	2	3	4	5			
17. 在學校，行為表現適當	1	2	3	4	5			
18. 適當地尋求他人協助	1	2	3	4	5			
19. 與很多不同的同輩接觸	1	2	3	4	5			
20. 對於他的能力而言，他辦事的質素是可接受的	1	2	3	4	5			
21. 擅於帶起／加入同輩之間的談話	1	2	3	4	5			
22. 對他人的感受敏感	1	2	3	4	5			
23. 被家長／監護人糾正時作出適當的回應	1	2	3	4	5			
24. 憤怒時能控制情緒	1	2	3	4	5			
25. 適當地加入同輩進行中的活動	1	2	3	4	5			
26. 有好的領導才能	1	2	3	4	5			

	從 不	1	2	3	4	5	有 時	經 常
27. 在不同的場下調整，並作出適當的行為	1	2	3	4	5			
28. 發現及讚賞他人的成就	1	2	3	4	5			
29. 需要時，他會適當地變得決斷	1	2	3	4	5			
30. 受到同輩邀請加入活動	1	2	3	4	5			
31. 有自制能力	1	2	3	4	5			
32. 受同輩景仰／尊重	1	2	3	4	5			

### 其他資料

1. 據你的觀察，描述你與你的子／女相處時的情況。

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2. 請在以下的空位填寫你認為有助了解你的子／女社交行為的相關資料。

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問卷完畢  
非常感謝你的合作！



## Appendix D

# 研究計劃參與同意書

### 研究計劃主題

亞氏保加兒童在理解圖文、創意、社交能力與兒童心理成長的發展。

### 研究計劃指導教授

鄭相德博士，香港城市大學應用社會科學系副教授

### 研究計劃負責學生

1. 梁珈瑋，香港城市大學心理學系三年級學生
2. 楊舜汶，香港城市大學心理學系三年級學生

### 研究目的

研究計劃將訪問在香港居住的 **8 至 12 歲** 亞氏保加症兒童，透過訪問，研究其心理成長的重要因素，並將所得結果作出分析及深入探討。

研究所得之數據及資料只會作為學術上之用途，且希望研究所得能夠加強香港社會對亞氏保加症的認識。

### 研究步驟

當您與您的子／女同意參與此研究計劃後，請填寫家庭背景資料，及簽署研究計劃參與同意書。

研究員將會與您的孩子進行大約 60 分鐘有關他們對個人及成長的意見訪問。同時您亦需要為子／女填寫一份有關他們在家居內及外之行爲問卷，問題內容無對錯之分，且資料將絕對保密。

### 參與研究之風險

本研究全無涉及任何可能危害參與者生理與心理健康狀態之內容，參與本研究對於兒童將不造成任何風險。

### 參與研究之獲益

您將獲得您的子／女在本參與本研究所得出之數據結果——心理發展、自我觀及行爲等各方面的資料。

### 個案資料之保密

本研究所得的有關參加者個人身分、家庭，以及任何個人資料，都將會謹慎處理，並嚴格保密。倘若本研究結果於日後公開發表討論時，所有資料將以代號，數字，或統計結果呈現。

### 中途退出研究之權利

本研究計劃之相關資訊，若有任何調整變動，您將被立即完整地告知。於研究進行中，您可以完全自主地考慮與決定您與子／女是否願意繼續參與本研究。您擁有於任何時候、中途退出研究之權利。

如對本研究計劃尚有疑問與意見，可於任何時間聯絡本研究計劃之負責學生梁珈瑋 (96778029) 或楊舜汶 (98404213)。

若您同意與您的子女參與本研究，請於下方適當地方簽名。

### 同意書

請於適用之空格 (□) 內填上“✓”

我已經讀畢，並清楚明白此研究計劃參與同意書所有內容。

兒童姓名： \_\_\_\_\_

家長／監護人簽署： \_\_\_\_\_

與兒童之關係： \_\_\_\_\_

日期： \_\_\_\_\_