

ASSESSING THE CUTENESS OF CHILDREN: SIGNIFICANT FACTORS AND GENDER DIFFERENCES

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A newly developed questionnaire revealed that there are four factors in adults' perception of children's cuteness: childlike behavior, children's imitation of adults, adults' protective feeling toward children, and children's physical attributes. Eighty-four childless undergraduates and 72 adults with at least one child watched a film of a five-year-old boy and girl dressed either in boyish clothes or girlish, and then assessed their cuteness using the questionnaire. The results showed that participants rated equally their feeling of children's cuteness regardless of having or not having their own children. Among the four factors of cuteness, childlike behavior seemed to operate most strongly.

Keywords: assessment of cuteness, factors of cuteness, Japanese children, five-year-olds

In social psychology, many studies have been done on the effect of children's physical attractiveness on adults. There seems to be a certain supported tendency

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for adults to evaluate attractive children more favorably than unattractive children. Clifford and Walster (1973) asked male and female teachers to make several predictions about a child after viewing the child's progress report with an attached photograph of an attractive or an unattractive child. They gave higher ratings on ability measures to more attractive children than to less attractive ones. Felson (1980) found that teachers attributed more intelligence to physically attractive children. Adams and Cohen (1975, 1976) and Adams (1978) also showed that teachers expected physically attractive children to be more academically successful and socially responsive. Further, attractive children were less likely to receive punishment for incorrect responses on learning tasks than were unattractive ones (Dion, 1972, 1974). Conversely, physically unattractive children were predicted to have the possibility of placement in special classes for educable mentally retarded students, lower levels of functioning, future difficulties in peer relationships, and future academic difficulty (Ross & Salvia, 1975). In addition to different expectations from adults between attractive and unattractive children, there are sex differences in adults' expectations or treatment of children. Kehle, Bramble, and Mason (1974) revealed that attractive female students were rated higher on the quality of their essays than were unattractive females, while just the reverse was true for teachers' ratings for males. Sadker and Sadker (1972) indicated that elementary school boys received more active attention from their teachers, in the form of disapproval and general interaction, than did girls. It was also suggested that boys are consistently given lower grades than are girls (McCandless, 1970; Maccoby, 1966) and that teachers were more critical and negative towards boys (Brophy & Good, 1970; Sears & Feldman, 1966).

If physical attractiveness was the only factor in child-adult relationships, unattractive children (especially unattractive boys) would suffer discriminatory treatment from adults. In regard to this, Adams and Lavoie (1975) suggested that when another factor was added to adults' evaluation criteria for children, the additional factor was more influential than physical attractiveness. For example, Leinbach and Fagot (1991) concluded that when the relationship between adults and children was close, the children's physical attractiveness had no influence. When adults interact with children, it is not only on the level of evaluation. Rather, since adults have the duty of child rearing, they feel emotions toward children. For example, Klaus and Kennell (1976/1982) suggested the existence of bonding. Klaus and Kennell defined *bonding* as *a specific and enduring emotional tie that a parent forms with his or her newborn infant*. In addition, Bowlby (1969) investigated the existence of attachment in the mother-infant and parent-infant relationship. According to Bowlby, *attachment* refers to *the emotional bond that an infant forms with its primary caregiver*. Many factors affect attachment behavior. Children's cuteness can be theorized to be one of

them. It is also suggested that adults develop a special feeling for children when they have their own.

Being perceived as cute can help elicit adult attention and caretaking behavior (Hildebrandt & Fitzgerald, 1978, 1981, 1983; Robson & Moss, 1970). Children's body proportions, facial features and facial expressions were found to be factors of perceived cuteness. Concerning children's body proportions, Alley (1983) found that age-related changes in body shape could alter perceived cuteness, and the body proportions typical of 2- to 12-year-olds were the cutest. Related to the children's facial features, Lorenz (1943) showed that infants whose appearance was more babyish (high forehead, large eyes, large cheeks, small nose, mouth, and ears) received more positive assessments of cuteness from adults. Concerning children's facial expressions, Power, Hildebrandt, and Fitzgerald (1982) found that smiling infants were perceived as more cute than crying infants. However, only physical characteristics have been dealt with in studies about children's cuteness. Koyama and Mori (2002) pointed out that there might be another factor in children's perceived cuteness and that, in spite of whether or not they have children, adults instinctively have a certain tendency toward protecting children which is evoked by children's fragility. Furthermore, Koyama and Mori predicted that adults perceived such feeling as part of children's cuteness.

In this investigation, it was hypothesized that (1) there were other factors in children's cuteness, in addition to physical or facial attractiveness, especially the feeling of protecting children which was evoked by children's fragility, (2) there was sex difference in types of children's cuteness, and (3) there was a difference in perceived cuteness among adults with, and without, children.

To test these hypotheses, a questionnaire study was performed, first to identify various aspects of children's cuteness and, second, to classify them using a factor analysis. After having developed the child cuteness questionnaire, a five-year-old boy and girl were assessed for their cuteness by two groups of adults, college students who have no children of their own and young adults who have children of similar ages to investigate any sex differences and the effect of having one's own children in eliciting feelings of cuteness.

METHOD

QUESTIONNAIRE DEVELOPMENT

Enumeration of cuteness feelings Thirty-eight adults and college students, other than the participants of the following assessment experiment, were asked to describe situations that had evoked in them feelings of cuteness from 3- to 6-year-old children. One hundred and forty-eight episodes were mentioned. Similar episodes were combined to yield 43 items to be used in the following factor analytic study.

Factor analysis One hundred and seven college students were asked to rate the 43 items on a 5-point scale (4: *very cute* to 0: *not cute*) with their own image of a typical child in mind. The data obtained from this rating were subjected to a factor analysis. Four factors were extracted, and the results were rotated using an orthogonal varimax procedure. Eigenvalues of these four factors were 15.922, 2.745, 2.307, and 1.931, and they accounted for the variance, 37.0%, 6.4%, 5.2%, and 4.4%, respectively, or 53.0% in total. Twenty-nine items, whose factor loadings were more than .40, were extracted for the following four factors: childlike behavior in general (CB), physical cuteness (PC), children's behavior in pretending to be adults (CBP), and adults' protective feeling for children (PF).

TABLE 1

REPRESENTATIVE QUESTION ITEMS FOR MEASURING THE FOUR ASPECTS OF CHILDREN'S CUTENESS

Childlike Behavior in General: CB

- 3. The child is cute when he/she is surprised innocently.
- 14. The child is cute when he/she looks into my eyes with a mischievous smile.
- 26. The child is cute when he/she hides himself/herself in shame.
- 29. The child is cute when he/she toddles.

Physical Cuteness: PC

- 4. The child is cute because his/her body is soft.
- 13. The child is cute because his/her skin is tender and smooth.
- 16. The child is cute because his/her bottom is round and small.
- 25. The child is cute because he/she smells sweet.

Children's Behavior in Pretending to Be Adults: CBP

- 1. The child is cute when he/she shares his/her favorite things.
- 12. The child is cute when he/she challenges an adult's task.
- 15. The child is cute when he/she is pretending to be a TV hero/heroine.
- 22. The child is cute when he/she tries to imitate an adult's behavior.

Adults' Protective Feeling for Children: PF

- 7. The child is cute when he/she clings to me on stairs.
 - 9. The child is cute when he/she shows fear in his/her face.
 - 23. The child is cute when he/she is about to cry.
 - 24. The child is cute because he/she is innocent.
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The first factor (CB) concerns children's behavior in general, such as the way they laugh, move, or sleep. This factor includes 8 items such as "When a child approaches me with a smile, I feel he or she is cute." The second factor (PC) concerns the physical characteristics of children such as small face or body parts. There are 8 items for this factor. An example of these items is "A child's small butt is cute." The third factor (CBP) concerns the fact that children cannot do certain things by themselves at their age, but they pretend to do them like an adult. This factor consists of 6 items. One example of such items is "When

a child tries to imitate what adults do, I feel he or she is cute.” The last factor (PF) concerns adults’ protective attitude toward children, which is evoked by children’s fragility. There are 7 items in this factor, and an example of them is “When a child holds my hand while we climb up the stairs, I feel he or she is cute.”

Finally, 29 items comprising four different factors were extracted for the children’s cuteness questionnaire. Representative question items for measuring the four aspects of children’s cuteness are listed in Table 1.

CUTENESS ASSESSMENT EXPERIMENT

Participants Eighty-four childless college students and 72 young adults who have at least one preschool-age child participated in this experiment. The average age of the college students was 21.2 years. The average age of the young adults was 37.7 years. The average age of their children was 2.1 years.

Film Colored digitally recorded films of a five-year-old boy and girl were used for participants to assess how cute the boy and the girl were. There were two sets of films; one set featured a five-year-old boy, and the other featured a five-year-old girl. Each set had four types depending on the clothing and performances of the children.

Each child was dressed both as a boy and as a girl. When dressed as a girl, a hair wig was used. For pretending a boy, a baseball cap was used (See Figure 1). When the children were dressed as the opposite sex, it was intended to make participants recognize them as persons of the opposite sex and to reduce the influence of the child’s own physical attractiveness. Each of the children wearing appropriate types of clothing played baseball and house. The aim of having films in which they played both baseball and house was to reduce the possibility of stereotyping in the participants’ rating, through showing both gender-typical kinds of play. Both children appeared to be doing only what they wanted to do in each scene of those films. In this way, eight different types of films were prepared.

Those films were first taken by a digital video camera (JVC GR-DVA33K), transmitted into a personal computer (iMac), and then converted into QuickTime movies of about one minute in length using digital editing software (Adobe Premiere). The films were played on a 13-inch CRT monitor as a QuickTime movie. Several cuts from the films are shown in Figure 1.

PROCEDURE

Participants were assigned to 4 groups at random. The first group (Bb-Gg) watched the films: BbB/BbH and GgB/GgH (“BbB” stands for “Boy in boyish clothes playing Baseball, and “GgH” stands for “Girl in girlish clothes playing House”). The second group (Bg-Gg) watched the BgB/BgH and GgB/GgH films, the third group (Bb-Gb), BbB/BbH and GbB/GbH films, and the fourth group

(Bg-Gb), BgB/BgH and GbB/GbH. Presentation order was counterbalanced. They watched the films individually or in small groups.

Participants assessed the children's cuteness just after watching each film using the questionnaire sheet consisting of 29 rating scales for measuring four aspects of children's cuteness. The same questionnaire was used twice, one for a boy and one for a girl, by each participant.

RESULTS

Each participant watched two films, one with a boy (in boyish clothes or in girlish clothes) and one with a girl (in boyish clothes or in girlish clothes), and rated their cuteness on 29 items using a 5-point rating scale (4: *very cute* to 0: *not cute*). Their rated scores were averaged for each of the four cuteness factors. As for the statistical analyses of sex differences, combined scores were calculated by subtracting the girl's scores from the corresponding boy's scores. The new combined scores directly mean "the boy's cuteness dominance" in each of the four cuteness factors. Namely, if the score is positive, the participant evaluated the boy as being more cute than the girl irrespective of their clothing. On the contrary, the negative scores mean the girl evoked a stronger feeling of cuteness. Table 2 shows means and *SDs* of the cuteness scores on each Cuteness Scale for the different film type groupings.

First of all, a 2 (Participant Type: with or without children) \times 4 (Film Type: Bb-Gg, Bg-Gg, Bb-Gb, and Bg-Gb) \times 4 (Cuteness Type: PC, BC, BCP, and PF) mixed model design analyses of variance (ANOVA) was conducted to evaluate the differences in the perception of cuteness in each film type between adults with and without children. Since the numbers of adults with and without children among the participants were not equal, an unweighted-mean ANOVA was used.



Figure 1: Cuts from colored films presented to participants; Left panel: a cut from BgB film, a boy in girlish clothes with hair wig playing baseball, Right panel: a cut from GbH film, a girl in boyish clothes with a baseball cap playing house.

TABLE 2
PARTICIPANTS' MS AND SDs OF EACH CUTENESS SCALE ON EVERY FILM TYPE (N=156)

Participant Type	Cuteness Type a)									Film Type b)												
	Bb-Gg			B-g-Gg			Bb-Gb			B-g-Gb			Bb-Gb			B-g-Gb						
	CB	PC	CBP	PF	CB	PC	CBP	PF	CB	PC	CBP	PF	CB	PC	CBP	PF	CB	PC	CBP	PF		
Without Children	Mean	0.43	-0.57	1.19	-0.24	-0.76	-1.14	-1.00	-0.43	1.33	1.52	0.14	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	-0.10	-0.05
	SD	3.44	3.16	3.76	1.48	4.84	4.19	4.06	3.92	2.90	3.46	3.09	2.24	4.26	4.10	2.58	4.26	4.10	2.58	2.30		
With Children	Mean	-1.44	-1.11	1.22	0.88	-0.50	-1.67	0.06	-0.94	-1.28	-1.56	-1.06	-1.17	0.89	1.50	0.61	0.89	1.50	0.61	1.78		
	SD	2.11	4.90	1.93	3.68	2.61	3.50	3.60	4.56	3.44	3.92	2.17	.50	2.69	3.76	3.22	2.69	3.76	3.22	3.29		

a) CB: Childlike Behavior, PC: Physical Cuteness, CBP: Children's Behavior in Pretending, and PF: Protective Feeling.
 b) Bb: Boy in boyish clothes, Gg: Girl in girlish clothes, Bg: Boy in girlish clothes, and Gb: Girl in boyish clothes.

TABLE 3
MEANS OF PARTICIPANTS TYPE AND FILM TYPE

Film Type	Participant Type		<i>F</i>
	Without Children	With Children	
Bb-Gg	0.20	-0.11	0.56
Bg-Gg	-0.83	-0.76	0.02
Bb-Gb	0.94	-1.26	28.10**
Bg-Gb	0.35	1.94	4.17*

** $p < 0.01$, * $p < 0.05$

The Participant Type \times Film Type \times Cuteness Type interaction was not significant. The Participant Type \times Film Type interaction was close to the significant level ($F_{(3, 148)} = 2.19$, $.05 < p < .10$). When the simple main effect of Participant Type was examined, Bb-Gb and Bg-Gb were significant (Bb-Gb: $F_{(1, 148)} = 28.10$, $p < .01$, Bg-Gb: $F_{(1, 148)} = 4.17$, $p < .05$). As summarized in Table 3, the scores for Bb-Gb and Bg-Gb were significantly different between adults with children and without children. The adults without children rated the boy in boyish clothes (Bb) as cuter than the girl in boyish clothes (Gb), whereas the adults with children rated them oppositely. As for the difference between Bg and Gb, both adult groups rated the boy model as being more cute than the girl model, but those with children found the boy much more cute.

The results listed in Table 3 also show that the adult participants without children rated the girl model as much more cute than the boy model when both were dressed in girlish clothes, ($F_{(3, 148)} = 6.29$, $p < .01$, Bg-Gg < the others), while the adults with children rated the boy model in girlish clothes as significantly more cute than the girl model in boyish clothes ($F_{(3, 148)} = 13.10$, $p < .01$, Bg-Gb > the others).

The Film Type \times Cuteness Type interaction approached significance ($F_{(9, 444)} = 2.04$, $.05 < p < .10$). When the simple main effect of Film Type was examined, PC and CBP were either significant or close to the significant level (PC: $F_{(3, 148)} = 2.94$, $p < .05$, CBP: $F_{(3, 148)} = 2.31$, $.05 < p < .10$). The result of multiple comparisons by LSD showed that the girl's physical cuteness was rated generally higher than the boy's except in the Bg-Gb film condition, and the boy's pretending to do adult behaviors was rated significantly higher than the girl's counterpart in the Bb-Gg condition (MSe = 15.98, $p < .05$). (See Table 4).

The Participants Type \times Cuteness Type interaction was also close to the significant level ($F_{(3, 444)} = 2.26$, $.05 < p < .10$). The simple main effect of Cuteness Type among adults with children was significant ($F_{(3, 444)} = 2.63$, $p < .05$). The result of multiple comparisons by LSD showed that adults with children rated the girl as more cute than the boy in terms of her physical cuteness and her childlike

TABLE 4
MEANS OF FILM TYPE AND CUTENESS TYPE

Cuteness Type	Film Type				<i>F</i>
	Bb-Gg	Bg-Gg	Bb-Gb	Bg-Gb	
CB	-0.51	-0.63	0.03	0.83	1.37
PC	-0.84	-1.40	-0.02	1.13	2.94*
CBP	1.21	-0.47	-0.46	0.26	2.31+
PF	0.33	-0.69	-0.20	0.87	1.59

* $p < .05$ + $.05 < p < .10$

TABLE 5
MEANS OF PARTICIPANTS TYPE AND CUTENESS TYPE

Participant Type	Cuteness Type				<i>F</i>
	CB	PC	CBP	PF	
Without Children	0.44	0.14	0.06	0.01	<i>ns</i>
With Children	-0.58	-0.71	0.21	0.14	3.26

$p < 0.05$

TABLE 6
MS AND SDs OF CUTENESS RATINGS AND CUTENESS TYPE

Cuteness Type	Models		<i>F</i>
	Gg	Bb	
CB	3.42 (0.51)	3.37 (0.56)	0.68
PC	2.44 (0.89)	2.07 (0.82)	6.44*
CBP	2.98 (0.64)	3.35 (0.63)	4.63*
PF	2.71 (0.71)	2.72 (0.81)	0.01

* $p < 0.05$

behavior, whereas the boy was ranked as rather more cute than the girl in the other two aspects, CBP and PF. ($MSe = 6.70$, $p < .05$). (Cf. Table 5).

As the simple main effect of Cuteness Type for participants in the Bb-Gg group was significant, an additional 2 (Sex: B and G) \times 4 (Cuteness Type: PC, BC, CBP and PF) was performed. ANOVA was conducted using raw rating scores to examine directly the sex differences in the four different aspects of cuteness. A significant interaction was found ($F_{(3, 114)} = 5.50$, $p < .01$). As for the physical cuteness the model girl was rated as notably more cute than her counterpart ($F_{(1, 38)} = 6.44$, $p < .05$), while she was rated significantly lower for the factor of pretending behavior ($F_{(1, 38)} = 4.63$, $p < .05$). (See Table 6).

DISCUSSION

It was hypothesized that (1) there would be other factors in children's cuteness, in addition to physical or facial attractiveness, such as the feeling of protecting children, which should be evoked by children's fragility, that (2) children's cuteness types would have sex differences, and that (3) adults with children would perceive children's cuteness differently from those without children. Our experimental results supported these hypotheses. First, as the factor analysis revealed in the questionnaire development study, there were four aspects of children's cuteness. Of these four, childlike behavior was found to be working most strongly in adults' perception of children's cuteness regardless of whether or not they have their own children. As for the second hypothesis, sex differences in children's cuteness were found. For example, the girl tended to be perceived as more cute in physical appeal, and the boy tended to evidence cuteness by pretending to be an adult. Thirdly, having one's own children or not was found to be crucial in some aspects of the cuteness ratings, for instance in the following result: adults with children assessed the boy's cuteness based more on a protective feeling for children and on the children's imitating adult behavior, whereas they felt the girl's cuteness was based on her physical characteristics.

Regarding the first hypothesis, one possible reason why our participants judged the children's cuteness rather differently from those in former studies is that the present study used movie films of children instead of photographs of children, as previous studies had often used. Movement, though it is very important in assessment of children's cuteness, was eliminated in former studies perhaps for technical reasons. Digital recording equipment such as digital video cameras, and personal computers with digital editing software have made the preparation of moving presentation materials much easier than before. The finding of the present study that childlike behavior evokes the perception of cuteness most strongly could perhaps have been substantiated in the previous studies if the children's movement had been presented.

The result that physical cuteness was evaluated more for girls can be explained in terms of the "cute is female" stereotype (Maurer & Maurer, 1988). The items of physical cuteness were related to physical attractiveness. Therefore, we can regard physical cuteness as a part of physical attractiveness. Rubin, Provenzano, and Luria (1974) found that parents were more likely to apply the term "beautiful" to a newborn female than to a newborn male. McKelvie (1993) also found that the most favorable attributes are applied to those perceived to be female. The same effect was found in this study.

As to the effect of having their own children on the judgment of children's cuteness, the experimental result showed that the adults with children tended to judge the boy's cuteness based on their protective feeling for children.

Biologically, the immune system of a newborn male is inferior to that of a newborn female (Weksler, 1990). When adults have a child, a protective feeling toward children is evoked, and it operates especially for boys in addition to the duty of child rearing. That phenomenon seems to persist when newborn males grow into infants.

Although the former literature focused on children's physical cuteness, the present study revealed that children's cuteness is composed of four different factors; a) childlike behavior, b) the child's behavior in pretending to be an adult, c) the adults' protective feeling toward children, and d) physical cuteness. It was also discovered that childlike behavior evokes the feeling of cuteness most strongly in adults when they assess children's cuteness. A child's behavior in pretending to be adult appeared to be a more important criterion for the assessment of a boy's cuteness, and this is a new finding in this study. Physical cuteness appeared to be a more important criterion for the judgment of a girl's cuteness. Moreover, the adults' protective feeling for children appeared to be a more important criterion for the judgment of a boy's cuteness. This is also a new finding in this study.

Because unattractive children, especially unattractive boys, have been evaluated poorly in their social and academic abilities in previous studies, it might be that physical appearance or attractiveness is dominant in our initial interaction with children. When there are other aspects of children's cuteness, they have a stronger influence on adults' perception of the cuteness of children. However, physical attractiveness still has a strong influence on perceived cuteness for girls. On the other hand, a boy's behavior in pretending to be adult has an influence on adults' perception of cuteness. Moreover, adults with children have a protective feeling for children, especially for boys.

It should be mentioned that only a single pair consisting of one boy and one girl was used as models in the present study. Therefore, the results may be too dependent on the idiosyncrasy of the model children. Further studies with a variety of children as models are certainly needed to ameliorate the idiosyncratic factors and strengthen the present findings by replicating similar results with different child models.

It should also be noted that the present study was performed in Japan using Japanese participants and models. Whether or not the present results could be applied equally to those in other cultural backgrounds is an open question. Although Kitayama and his colleagues have accumulated a considerable amount of research on the cultural differences between East and West (Kitayama & Markus, 1994; Kitayama, Markus, & Kurokawa, 2000; Kitayama & Miyamoto, 2000), little has been discovered about whether the assessment of children's cuteness is relatively similar across cultures or not. An exhaustive database search (Koyama & Mori, 2002) failed to find any cross-cultural comparisons

concerning children's cuteness. To answer this question, it is necessary to replicate similar research in a variety of cultures. It should be pointed out that future studies should use movies instead of still photographs because the movement of children is a crucial factor for assessment of their cuteness.

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