

Brief Report

Development of a Measure of Humour Appreciation

Maria P. Y. Chik¹
Department of Education Studies
Hong Kong Baptist University

C. S. Benjamin Leung
Institute of Human Development & Counselling
Faculty of Education, Monash University

Geoffrey N. Molloy
Institute of Human Development & Counselling
Faculty of Education, Monash University

ABSTRACT

The procedure for the development of a measure of humour appreciation among a convenience sample of 53 primary school children attending a one-week summer program held in Hong Kong is described. Two sets of visual stimuli depicting pictures of local celebrities portrayed either veridically (congruously) or incongruously were established from a pool of 30 pictorial items. The pictures were ranked for their humour properties yielding a 16-item test battery. Analyses of children's responses clearly indicated that incongruous pictures were rated as significantly funnier than congruous pictures.

INTRODUCTION

Although the nature and functions of humour have long fascinated scholars from various disciplines including education, philosophy, sociology and psychology (Nilsen, 1993), its definition is still being debated among researchers (Babad, 1974; Cattell & Luborsky, 1947; Martin & Lefcourt, 1984; Ruch, 1998). One of the main reasons for this state of affairs is the fact that conceptions of the nature and functions of humour vary between 'experts' and change over time (Chik, 2001; Ruch, 1998). Typically, researchers define humour operationally in terms of quantitatively derived measures and this article outlines the steps in developing a measure of humour appreciation for primary school-aged children.

¹ Contact details
Maria P. Y. Chik, PhD
Department of Education Studies
Hong Kong Baptist University
Kowloon Tong, Kowloon
Hong Kong SAR
pychik@hkbu.edu.hk
Telephone: 852+ 3411 7213
Facsimile: 852+ 3411 7894

METHOD

Participants

A sample of 53 Chinese children in Hong Kong ranging in age from 9 to 15 years ($M = 10.45$; $SD = 1.26$) participated in the study. The children were enrolled in a one-week summer program with activities and excursions that aimed to facilitate the development of creativity, environmental awareness, self-confidence and social skills. The children were from local schools classified as representing middle to low socioeconomic status (SES). Before the children joined the program, ethical approval was obtained from Hong Kong Baptist and Monash Universities, respectively, along with consent of the parents of participating children.

Materials and Measures Reverse

The apparatus and materials used in this study consisted of 16 laminated pictures (see below for the description of their development), a roster sheet of participants, two types of response sheets (for self-report and independently observed behavioural responses) and a video camera.

Since visual incongruity has been shown to be an effective means to measure humour appreciation in school children (Masten, 1986; McGhee, 1971), a set of pictures bearing congruous or incongruous images of local Hong Kong celebrities were used as the eliciting stimuli. The purpose of the study was the development and testing of a pool of 30 pictures that portrayed simple visual congruities or incongruities. For example, one of the incongruous pictures portrayed a person appearing much heavier in body weight (incongruous) than his or her appearance suggested in the veridical picture (congruous). Other incongruous pictures portrayed a person appearing either as a member of the opposite gender or dressed in a rabbit costume.

Pictures of these celebrities were used as eliciting stimuli. To control for familiarity, 20 children were randomly chosen and asked to recall the names of these celebrities. Only those celebrities who were identified by all children (i.e. known to all children) were retained. Next, another random sample ($n = 20$) was used to find out the degree the celebrity was liked or disliked on a five-point rating scale. By controlling for the effect of popularity on children's humour appreciation, the four celebrities (2 males and 2 females) who were perceived by children to be neutral in popularity were selected for inclusion. Lastly, the image of each celebrity was modified to yield three variants or incongruities, namely weight, dressing and gender. In addition to the three incongruous images, the veridical (congruous) image of each celebrity was also included. Altogether, sixteen pictures (four pictures for each celebrity) were used as the humour stimuli.

Each of the 16 pictures was laminated and numbered. They were hooked together by a ring to ensure manageable presentation; the order of which was randomized for each participant by drawing the 16 numbers (of the pictures) randomly from a bag. A response sheet to record children's self-reported or subjective funniness ratings to each of the pictures was provided for each participant. The degree of funniness was assessed on a four-point scale (ranging from not all funny to very funny). The four-point scale was used to eliminate neutral or 'fence-sitting' ratings by the participants. A non-obtrusive video camera was used to discreetly record the facial expressions of each participant while he or she viewed the pictures in a room alone. A coding form to record the intensity of smiles and laughter expressed by the participants was provided for each of the two independent observers. The intensity of smiles and laughter was assessed on a five-point rating scale: 0 = no or negative response; 1 = slight smile; 2 = half-open smile; 3 = full-open smile; and 4 = laughter. The observers were university students who had been briefed on the coding and rating criteria of the behavioural responses. Each judge continuously monitored the videotaped behavioural responses of the participants independently. Only the highest response expressed by the child in the 30-second presentation of each picture was used as the score for the behavioural rating of the picture.

Procedures

Both congruous and incongruous pictures were randomly presented to each participant with the instructions (given in the Cantonese dialect):

One by one, you will go to another room to see some pictures by yourself. There is one picture on each card (a sample card is shown for illustration). You first take card 1, look at the picture and then indicate your feeling about the picture by

checking the appropriate space on the response sheet. You can only put one check for each picture. After the check is made, you turn away Card 1 and then pick Card 2. Once again, you look at the picture and indicate your feeling about the picture on the response sheet. After you have worked through all the pictures, you can leave the room.

(translated from the original Chinese version)

The participants were seated in a position to ensure that their facial expressions could be recorded by the video camera. Then, the participant rated the pictures alone to eliminate the effects of social facilitation or social desirability on humour appreciation (Chapman, Smith, & Foot, 1980). The whole procedure took less than five minutes.

RESULTS

Inter-rater Reliability

Since the participants' behavioural responses to the pictures were videotaped for the two judges to rate independently, two sets of behavioural ratings for each participant were produced. These two sets of scores were examined to determine the degree to which the raters agreed with each other in their evaluation of the participants' behavioural responses to the pictures. Since each of the 53 participants had responded to 16 pictures, there were altogether 848 observations for comparison. The inter-rater agreement calculated by the formula $[\text{agreements} / (\text{agreements} + \text{disagreements}) \times 100]$ was 82%.

Internal Consistency Reliability

With respect to the overall internal consistency of the pictorial stimuli (see Table 1), Cronbach's alphas were similar and psychometrically acceptable for both the subjective ratings ($\alpha = .87$) and the behavioural ratings ($\alpha = .84$). When incongruity was considered in the analysis, the Cronbach alpha reliability coefficients of the subjective and behavioural scores were .92 and .86 respectively for incongruous pictures. The corresponding values for congruous pictures were .70 and .43. In sum, the overall internal consistency values for the pictorial stimuli is high in both the subjective and behavioural ratings. Although the alpha value for the incongruous pictorial stimuli was high, the internal consistency of the congruous pictorial stimuli was relatively lower in both the subjective and behavioural ratings of the pictorial stimuli.

Table 1: Internal Consistency of the Humour Appreciation Measure

Conditions	Measures	
	Subjective ratings	Behavioural ratings
Composite ($N = 53$)	.87	.84
Congruity	.70	.43
Incongruity	.92	.86

Factor Analyses

To examine the construct validity of the pictorial stimuli in the humour appreciation measure, Principal Components' analyses were undertaken to tap the two proposed conditions (congruity and incongruity) of humour appreciation. With respect to the subjective ratings of picture appreciation, the analysis revealed the two anticipated orthogonal factors, namely congruity and incongruity, with eigenvalues greater than one, accounting for 57.16% of the total variance (see Table 2). Factor I (incongruity) and Factor II (congruity) explained 42.48% and 14.68% of the variance respectively.

Table 2: Factor Loadings of Two Factor Solution for the Subjective Ratings of Humour Appreciation Measure

Factor/Pictorial Stimulus	Factor	
	I	II
Incongruity		
Incongruous Gender to Male 1	.90	
Incongruous Gender to Male 2	.85	
Incongruous Gender to Female 1	.84	
Incongruous Gender to Female 2	.83	
Incongruous Dressing to Female 2	.82	
Incongruous Weight to Female 1	.78	
Incongruous Dressing to Female 1	.74	
Incongruous Dressing to Male 1	.71	
Incongruous Weight to Female 2	.62	
Incongruous Dressing to Male 2	.60	
Incongruous Weight to Male 1	.54	
Incongruous Weight to Male 2	.51	
Congruity		
Original Photo of Female 1		.81
Original Photo of Female 2		.70
Original Photo of Male 2		.68
Original Photo of Male 1		.64
Eigenvalue	6.80	2.35
Variance explained (%)	42.48	14.68

Consistent with the pattern in the subjective ratings, scores of the behavioural ratings of picture appreciation (see Table 3) also revealed two orthogonal factors (congruity and incongruity). The two factors accounted for 42.72% of the total variance. Factor I (incongruity) and Factor II (congruity) explained 31.58% and 11.14% of the variance respectively.

When children's funniness ratings of pictures were correlated (2-tailed) with their mirth expression as rated by independent observers, a significant correlation was found between their subjective ratings and the ratings of independent observers ($r = .27, p < .05$). When children's subjective ratings of congruous and incongruous pictures were compared by one-tailed paired t-test (see Table 4), the mean score of the incongruous pictures ($M = 2.84, SD = .72$) was significantly higher than that of the congruous pictures ($M = 2.43, SD = .56$), $t(52) = 3.11, p < .01$. Likewise, when children's behavioral ratings of congruous and incongruous pictures were compared by one-tailed paired t-test (see Table 4), the mean score of the incongruous pictures ($M = .85, SD = .85$) was also significantly higher than that of the congruous pictures ($M = .25, SD = .47$), $t(52) = 5.39, p < .001$. In sum, incongruous pictures were rated as funnier than congruous pictures regardless of methods of measurement.

SUMMARY AND DISCUSSION

The purpose of this study was to develop a set of suitable congruous and incongruous pictures as a measure of humour appreciation in Chinese (Cantonese-speaking) primary school children. An experiment was conducted to examine the effects of these pictures upon children's humour appreciation. Humour appreciation scores were derived from children's subjective ratings (funniness ratings) as well

Table 3: Factor Loadings of Two Factor Solution for the Behavioural Ratings of Humour Appreciation Measure

Factor/Pictorial Stimulus	Factor	
	I	II
Incongruity		
Incongruous Dressing to Male 1	.82	
Incongruous Weight to Male 1	.77	
Incongruous Dressing to Male 2	.73	
Incongruous Gender to Male 2	.67	.30
Incongruous Gender to Male 1	.66	-.53
Incongruous Gender to Female 2	.66	
Incongruous Dressing to Female 1	.61	.21
Incongruous Weight to Female 1	.56	
Incongruous Gender to Female 1	.55	-.21
Incongruous Weight to Male 2	.49	
Incongruous Dressing to Female 2	.48	-.61
Incongruous Weight to Female 2	.39	-.51
Congruity		
Original Photo of Female 1	.41	.59
Original Photo of Male 1		.42
Original Photo of Female 2		.25
Original Photo of Male 2	.38	.24
Eigenvalue	5.05	1.78
Variance explained (%)	31.58	11.14

Table 4: Comparison of Means of Humour Appreciation Scores

	<i>M</i>	<i>SD</i>	<i>t</i> ^a
Subjective ratings	(N = 53)		
			-3.11 **
Congruity	2.43	.56	
Incongruity	2.84	.72	
Behavioral ratings	(N = 53)		
			-5.39 ***
Congruity	.25	.47	
Incongruity	.85	.85	

p* < .05. *p* < .01. ****p* < .001.^a = One-tailed comparisons

as their behavioural responses (mirth expression) as rated by independent judges. From this procedure, the resultant 16 pictorial stimuli were shown to be appropriate.

The findings of this study are consistent with those reported by others (Masten, 1989; Shultz, 1972). Specifically, children rated incongruous pictures to be significantly funnier than congruous pictures and this relation was substantiated by independent judges (behavioural ratings). The materials developed and validated in this study have been used with a larger and more representative sample. We hope to present these results in the near future.

REFERENCES

- Babad, E. Y. (1974). A multi-method approach to the assessment of humor: A critical look at humor tests. *Journal of Personality*, 42(4), 618-631.
- Cattell, R. B., & Luborsky, L. B. (1947). Personality factors in response to humor. *Journal of Abnormal & Social Psychology*, 42, 402-421.
- Chapman, A. J., Smith, J. R., & Foot, H. C. (1980). Humour, laughter, and social interaction. In P. E. McGhee & A. J. Chapman (Eds.), *Children's humour*. Chichester ; New York: J. Wiley.
- Chik, P. Y. M. (2001). *Some correlates of children's humor*. Unpublished doctoral dissertation, Monash University, Clayton, Victoria, Australia.
- Martin, R. A., & Lefcourt, H. M. (1984). Situational Humor Response Questionnaire: Quantitative measure of sense of humor. *Journal of Personality & Social Psychology*, 47(1), 145-155.
- Masten, A. S. (1986). Humor and competence in school-aged children. *Child Development*, 57(2), 461-473.
- Masten, A. S. (1989). Humor appreciation in children: Individual differences and response sets. *Humor: International Journal of Humor Research*, 2(4), 365-384.
- McGhee, P. E. (1971). Cognitive development and children's comprehension of humor. *Child Development*, 42(1), 123-138.
- Nilsen, D. L. F. (1993). *Humor scholarship: A Research Bibliography*. Westport: Greenwood Press.
- Ruch, W. (1998). Foreword and overview: Sense of humor: A new look at an old concept. In W. Ruch (Ed.), *Humor research: 3. The sense of humor: Explorations of a personality characteristic* (pp. 3-14). Berlin, Germany: Walter de Gruyter & Co.
- Shultz, T. R. (1972). The role of incongruity and resolution in children's appreciation of cartoon humor. *Journal of Experimental Child Psychology*, 13(3), 456-477.

BIOGRAPHICAL NOTES

Maria P. Y. Chik, PhD, is an Assistant Professor at Hong Kong Baptist University. She received her Ph.D. from Monash University, Australia. She supervises and teaches psychology and teacher-education subjects in the undergraduate and postgraduate levels. Her research interests include children's sense of humour, adaptation, psychosocial well-being and parent-teacher education.

C.S. Benjamin Leung is a Ph.D. scholarship research student at Monash University, Australia. He completed his undergraduate study from Hong Kong (BA in History) and graduate studies from USA (MA in TESL; MA in Communication). He is currently researching the relationship between humour appreciation, sense of humour, personality, and psychological well-being.

Geoffrey N. Molloy, RFD, PhD, MAPS, is a registered psychologist and teacher. He graduated from The Universities of Melbourne and Alberta and has published more than 70 refereed scholarly papers in international journals. He has held full-time academic appointments in Canada, Asia and The University of Melbourne (Academic Fellow, Psychology).