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ABSTRACT

Intuitively, it would seem that moral development and aggressive humor address many of the same issues in that both are concerned with judgments about interpersonal conflict and inequality of exchange. This study examined the relation between level of moral development and appreciation of aggressive humor. Community college students (N=190) were assessed for moral development using the Defining Issues Test, a standardization of Kohlberg's formulation. In addition subjects rated 11 insult jokes for funniness and justifiability of aggression. A hierarchical linear model was used to analyze the relation among the variables. Results showed that the relation of justifiability to funniness was moderated by level of moral development. In addition, justifiability related differently to funniness for males and females. Finally, the relation of level of moral development to funniness differed for males and females. The results of this study lend support to the hypothesis that the relation between funniness and justifiability of aggression of insult jokes is dependent upon level of moral development. Appreciation of aggressive humor was more related to justifiability of the aggressive content for high moral development subjects than for low moral development subjects. In addition, justifiability of aggression was a more important consideration in humor appreciation for males than for females. Finally, there were greater differences in appreciation of aggressive humor across levels of moral development for males than for females. (ABL)

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Moral Development and Aggressive Humor

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Moral Development and Appreciation
of Aggressive Humor

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Abstract

This study examined the relation between level of moral development and appreciation of aggressive humor. One hundred ninety community college students were assessed for moral development using the Defining Issues Test (DIT), a standardization of Kohlberg's formulation. In addition, subjects rated eleven insult jokes for funniness and for justifiability of aggression. A hierarchical linear model was used to analyze the relation among the variables. Results showed that the relation of justifiability to funniness was moderated by level of moral development. In addition, justifiability related differently to funniness for males and females. Finally, the relation of level of moral development to funniness differed for males and females. The results were discussed in terms of Kohlberg's structural theory of reasoning about justice.

Moral Development and Appreciation
of Aggressive Humor

Intuitively, it would seem that moral development and aggressive humor address many of the same issues in that both are concerned with judgments about interpersonal conflict and inequality of exchange (Hancks, 1980). While moral development deals with judgments about the fairness of an act, aggressive humor entails judgments about the funniness of an act.

It has been suggested that cognition and social perception underlie both judgments of fairness and judgments of funniness. According to Kohlberg (1976) attainment of certain logical and role-taking stages is a necessary condition for moral development. Kohlberg views social perception or role-taking level as a bridge between cognitive level and moral level. Similarly, McGhee (1974a, 1974b) observes that a sufficient level of cognitive mastery over the content area is needed in order to see a joke as funny. As Levine (1968) points out, "appreciating a joke means that we are able to master the symbolic properties with their multiple figurative and allegorical referents" (p. 2). Furthermore, it has been argued that the respondent's social perception of the protagonists in a hostile joke plays an important role in appreciation of aggressive

humor (e.g., Gutman & Priest, 1969; Zillmann & Bryant, 1974).

Given these common underpinnings, the present study was designed to examine the relation between level of moral development and appreciation of aggressive humor. Kohlberg's (1976) moral development theory served as the framework which guided the investigation, with aggressive humor being defined as humor with hostile intent to ridicule, depreciate, or injure (Hetherington & Wray, 1964, 1966).

A number of researchers have found moral judgments, or notions of justice, to be related to appreciation of aggressive humor. For example, Gutman and Priest (1969) demonstrated that when a socially unacceptable victim received the final hostile punchline, the joke was rated as more humorous since the outcome was consistent with intuitive notions of justice (cf. Heider, 1958). Conversely, when a socially acceptable victim received the hostile punchline, the outcome was perceived as unjust, and the joke was not rated as humorous.

Similarly, Zillmann and Bryant (1974) found that jokes depicting equitable retaliation, relative to the provocation portion of the joke, yielded maximum humor appreciation. In a post hoc interpretation of this finding, Zillmann (1983) argued that the subjects

exercised moral judgments in their reactions to the aggressive jokes. He proposed that a correspondence between deserving and receiving retaliatory treatment "leaves the respondents' sense of justice undisturbed and mirth reactions free to unfold" (p. 95). On the other hand, retaliatory activities that are too severe or too mild, relative to the provocation, seem to perturb intuitive justice and, hence, impair humor appreciation.

Several studies have directly addressed the relation between level of moral development and appreciation of aggressive humor. For the most part this relation has been studied in children, guided by Piaget's (1965) theory of the development of moral judgment in the child. In a series of studies conducted by McGhee (1974b), children were categorized on the basis of Piagetian-type moral judgment stories as functioning at either the heteronomous or autonomous moral level. The results showed that heteronomous children found funnier those stories having highly damaging outcomes, while autonomous children and college students preferred the more damaging stories only when the damage occurred unintentionally. Generalizing across studies, McGhee concluded that "while an increase in naughtiness or moral unacceptability adds to the

perceived humor in morally immature heteronomous children, it detracts from humor appreciation in adults and autonomous children" (p. 524).

Zillmann and Bryant (1975) found that "morally less mature" children expressed greater appreciation for an aggressive fairy tale as the severity of the retaliation increased. For the "morally more mature" children, however, appreciation was at a maximum in the condition of fair, or equitable, retaliation. It seems that a sense of justice mediated enjoyment of the fairy tale for both groups of children. The reactions of the two groups differed, however, because "morally less mature" children and "morally more mature" children hold different notions about justice (McGhee, 1979; Piaget, 1965). Thus, the depicted retaliatory activities were more highly appreciated, the closer they approximated the respondents' moral expectations.

The work of McGhee (1974b) and Zillmann and Bryant (1975) lends credence to the proposition that level of moral development is predictive of developmental changes in children's appreciation of humor based on aggression or damage (Brodzinsky & Rightmyer, 1980). A study by Björkqvist and Lagerspetz (1985) was designed to provide further information about how children experience aggression in TV cartoons. The results indicated that

moral understanding, as assessed by interviews, correlated positively with age, general understanding, and sense of reality, but negatively with aggressive fantasies. In addition, moral judgments of a cartoon character's behavior by the younger children seemed to depend on whether or not they identified with the character, rather than on separate ethical evaluations of the character's actions.

A dissertation by Hancks (1980) pursued the notion that there may be a relation between level of moral development in adults and type of humor appreciated. Moral development scores, obtained from male college students, were related to funniness ratings for two broad categories of humor. Combined data from two studies showed that subjects scoring in the middle range of the moral development score distribution preferred incongruity jokes, while subjects scoring at either end of the distribution preferred superiority/motivational jokes. Although Hancks concluded that Kohlberg's moral development framework (cf. Kohlberg, 1976) enhanced interpretation of the data, she recommended that the broad category of superiority/motivational humor be divided into subcategories, such as justifiable versus unjustifiable insult (cf. Gutman & Priest, 1969), to better understand the relation between level of moral

development in adults and appreciation of humor based on interpersonal conflict. Following from this line of thought, the present study sought to examine how appreciation of aggressive jokes, justifiability of the insults featured in those jokes, and level of moral development were interrelated.

Both theory and previous research in the areas of humor and moral development suggest that a relation between level of moral development and appreciation of aggressive humor may well exist. Furthermore, it has been shown that moral judgments, or notions of justice, are related to appreciation of aggressive humor. Kohlberg (1976) has proposed, however, that individuals at different levels of moral development reason differently about justice. Thus, the present study focused on how notions of justice related to appreciation of aggressive humor as a function of level of moral development. Specifically, the following hypothesis was examined:

The relation between funniness and justifiability of aggression of insult jokes will be dependent upon level of moral development.

It was expected that subjects at higher levels of moral development would rate as most funny jokes featuring insults which they considered to be more justified,

whereas the funniness ratings of subjects at lower levels of moral development would be less sensitive to the justifiability of the insults featured in the jokes.

Methodology

Subjects

A sample of college students was selected from psychology classes at a community college, with a total of 190 students, ranging in age from 18 to 40 years, initially volunteering to be subjects. Responses of eight subjects who were not native speakers of English were deleted from the analyses. Moral development scores of an additional 17 subjects were discarded due to failure to meet the reliability checks on the DIT. In all, there were 180 protocols--53 males and 127 females--used in this study. The actual number of subjects included in the analyses ranged from 158 to 180, however, depending on the particular variables being examined.

Instruments

The Defining Issues Test. The Defining Issues Test (DIT), developed by Rest (1979, 1986), was used as an objective test of moral development. The DIT consists of six moral dilemmas (originally developed by Kohlberg), each followed by a set of 12 statements of the major issues involved. Subjects are asked to rate

how important--on a 5-point scale from "great" importance to "no" importance--each issue is in deciding what ought to be done, and then to rank their choices of the four most important issues. Since each issue statement represents a moral judgment stage, a subject's choices of the most important issues over the six dilemmas are taken as a measure of his or her grasp of different stages of moral reasoning (Rest, 1976).

The major index of the DIT is the P score, which represents the relative importance that a subject gives to "Principled" moral considerations (i.e., Kohlberg's Stages 5 and 6) in making decisions about moral dilemmas. The D score is an overall index of moral judgment development which uses information from all stages rather than from only Stage 5 and 6 items. In addition, two internal reliability indices are used to detect subjects who are responding at random or who do not understand the directions.

Normative data for the DIT scores come from the 1,080 subjects used as a standardization sample. Among demographic variables, education was the most powerful variable associated with DIT scores. In school age samples, age and education were confounded, but in post high school samples, education was far more predictive of DIT scores than chronological age.

As evidence of validity, Rest (1979) reports that the DIT correlates in the .60s and .70s with other measures of moral thinking; that correlations are generally in the .20 to .50 range with measures of IQ, aptitude, and achievement; and that there are no consistent sex differences on the DIT. The internal consistency in various studies gives Cronbach alphas in the high .70s, and test-retest reliabilities are generally in the .70s and .80s over periods ranging from a few weeks to a few months (Rest, 1979).

Humor Questionnaire. Booklets were assembled containing the eleven superiority/motivational jokes included in Hancks' (1980) humor questionnaire. Four judges, selecting from a pool of 50 jokes, categorized these jokes as superiority/motivational, and rated them as more or less funny on a 7-point scale. According to Hancks, some of these jokes featured clever responses to an attempted putdown (retaliation jokes), while other insults were apparently gratuitous (squelch jokes).

The order of presentation of jokes in each booklet was the same as in Hancks' (1980) questionnaire. One joke appeared at the top of each page, with two 10-point rating scales following each joke to measure funniness ("not at all funny" to "very funny") and justifiability

of aggression ("not at all justified" to "very justified").

Procedure

An experimenter distributed packets containing the cover letter, the Demographic Information sheet, the DIT, and the Humor Questionnaire to all subjects during regular class sessions. The cover letter was read aloud to each class by the experimenter. Those choosing to participate responded to the instruments in the order in which they were presented. Each subject was permitted to work at his or her own pace. When the subjects completed all questionnaires, the experimenter collected the packets and thanked the subjects for their cooperation.

Results

Descriptive Statistics

The P and D scores from the DIT, as well as the funniness and justifiability ratings from the Humor Questionnaire, were treated as continuous scores. Their means, standard deviations, and correlations for these four variables are presented in Table 1. For each scale of the Humor Questionnaire, the maximum possible score was 99. In the present study, scores ranged from 1 to 93 on the funniness scale and from 7 to 93 on the justifiability scale. Although there was a considerable

amount of variability in the scores, the results indicate that this sample, on average, found the jokes less than moderately funny and only moderately justified. Nevertheless, there was a strong positive correlation between funniness and justifiability of aggression ($r(179) = .70, p < .05$). As suggested by previous research (e.g., Gutman & Priest, 1969; Zillmann & Bryant, 1974), the subjects preferred jokes featuring insults which they considered to be justified.

Insert Table 1 about here

Comparing moral development scores to the DIT standardization sample, the mean P and D scores were most similar to the Senior High group (31.08 and 19.48, respectively). The standard deviations were also quite similar. The means for both P and D were considerably lower than the College norms (43.19 and 25.41, respectively). Since education has been shown to be a more powerful predictor of DIT scores than chronological age (Rest, 1988), the concentration of community college students at freshman and sophomore levels, compared to the more varied educational levels of samples drawn from four-year colleges, may partially explain these results. Furthermore, Rest (1988) reports that samples from the

Southern U.S. show somewhat lower DIT scores than expected from level of education, possibly reflecting the effects of a conservative intellectual milieu. Finally, the correlation between P and D was significant ($r(161) = .67, p < .05$), but was lower than for the standardization sample ($r = .78$) which was more varied in age and education.

As previous research (e.g., McGhee, 1974b; Zillmann & Bryant, 1975) suggested, P scores and funniness were inversely related ($r(158) = -.16, p < .05$). Although the strength of the correlation was not particularly great, there was a tendency for subjects reasoning at higher levels of moral development to appreciate the insult jokes less than did subjects who reasoned at lower levels.

Demographic variables. The subjects varied in age, marital status, ethnic origin, and religious preference. The majority of the subjects (59.2%) were 18 to 25 years of age. The remaining 40.7% were 26 to 32 years old (18.4%) and 33 to 40 years old (22.3%). Sixty-two percent of the subjects were single, 23.5% were married, and the remaining 14.5% were either separated (1.1%), divorced (6.7%), widowed (1.7%), or cohabitating (5%) at the time of this study.

With regard to ethnic origin, 62.4% were white, 20.8% were black, and 10.1% were Hispanic. Of the remainder, 6.2% were Asian or Pacific Islanders and 0.6% were American Indians or Alaskan Natives. Subjects were also asked to indicate their religious preference, with 33.7% selecting Protestantism, 29.2% Catholicism, 1.1% Judaism, 1.1% Islam, 1.1% Buddhism, 0.6% Eastern Orthodoxy, and 0.6% Hinduism. Of the 58 subjects (32.6%) who selected "Other" as their religious preference, two subjects indicated that they were either "Christian" or "Born-again Christian," while the remainder did not specify their preference.

One-way analyses of variance were computed to determine if demographic characteristics of the sample were associated with Humor Questionnaire and DIT scores. As presented in Table 2, age, marital status, and ethnic origin were significant sources of variation, particularly for DIT scores. These results should be interpreted with caution, however, since separate ANOVAs were computed for each variable (thereby increasing the probability of Type 1 errors) and because of the small number of subjects included in some of the subgroups. The analyses were undertaken in an exploratory manner in order to better understand the nature of the subjects' reactions to the jokes and the moral dilemmas.

Insert Table 2 about here

Sidak t -tests on differences between the means indicated that four associations deserve comment. With respect to age, the 18 to 25 year-olds had significantly lower moral development scores--both P ($F(2,154) = 9.62, p < .05$) and D ($F(2,154) = 11.73, p < .05$)--than did the older age groups. This finding is understandable since DIT scores show upward movement (i.e., increase with age) in longitudinal studies (Rest, 1988).

Married subjects scored significantly higher than single subjects on P ($F(5,151) = 2.50, p < .05$) and D ($F(5,151) = 3.07, p < .05$). These findings, however, may be more a function of age than of marital status per se since the married subjects generally were older than the single subjects (85.7% of married subjects were 26 to 40 years of age, while 82% of single subjects were 18 to 25 years of age). Since educational level, the most powerful predictor of DIT scores (Rest, 1988), was controlled in this study, it is not surprising that age would be strongly associated with scores on a developmental measure such as the DIT. These results provide evidence for the construct validity of the DIT

to the extent that they conform to the predictions of moral development theory.

Reliability

A measure of internal consistency, requiring only a single test administration, was used to estimate the reliability of the funniness and justifiability scales of the Humor Questionnaire. Coefficient alphas, representing lower-bound estimates of reliability, for each of the scales were as follows:

Funniness	.79
Justifiability	.74

Although inter-item correlations are satisfactory, some of the analyses required that the jokes be inspected individually as single-item variables, rather than as overall scales of funniness and justifiability.

Test of Hypothesis

The Unbalanced Repeated Measures Models with Structured Covariance Matrices (5V) program of BMDP (Schluchter, 1990), a repeated measures analysis which allows for differing covariance structures, was used to examine the relation of justifiability to funniness as a function of level of moral development. The eleven funniness ratings and the eleven justifiability ratings were treated as repeated measures. Funniness was the dependent variable, and justifiability served as a

covariate. Moral development scores (P and D) were divided into three categories (low, middle, and high), including approximately 33% of the subjects in each group. The cutoff scores were similar to those which Rest (1988) has recommended for forming groups from DIT scores.

The hypothesis was first tested by using the P score as a measure of moral development, and then, in a separate analysis, by using the D score as a measure of moral development. The initial statistical model included P scores, gender, and justifiability, and the interaction of these terms, regressed on funniness. Gender was included in the model as a plausible moderator variable since previous research (cf. Hancks, 1980) controlled for gender differences in funniness ratings of the jokes by assessing only one gender. The Wald test of significance of fixed effects and covariates was used to determine the goodness-of-fit between the data and the model. The results showed that P scores were significantly related to funniness ($\chi^2(2) = 15.05, p < .05$). More importantly, the interaction of P scores and justifiability on funniness was significant ($\chi^2(2) = 6.15, p < .05$). As hypothesized, the relation of justifiability to funniness depended on level of moral development as measured by P, the major index of

the DIT. That is, the the relation of justifiability to funniness differed for subjects at different levels of moral development.

Although no predictions were made concerning the gender variable, the relation of justifiability to funniness was also moderated by gender ($\chi^2(1) = 4.67, p < .05$). In addition, gender moderated the relation of P scores to funniness ($\chi^2(2) = 9.82, p < .05$). Thus, the relation of justifiability to funniness, as well as the relation of moral development to funniness, differed for males and females. However, the three-way interaction between P scores, gender, and justifiability was not significant.

In order to interpret the significant interactions, the method of maximum likelihood (Jennrich & Schluchter, 1986), which allows estimation of regression and covariance parameters, was used to estimate funniness parameters for the hierarchical linear model which incorporated the P score as a measure of moral development. Table 3 shows the parameter estimates and Z-scores for each term of the hierarchical linear model. The parameter estimates were entered into six separate equations, and a series of expectancy tables were generated showing expected mean funniness for each of the significant interaction terms, in order to examine

consistencies in the relation of justifiability to funniness, and in the relation of moral development to funniness, across subjects.

Insert Table 3 about here

Table 4 shows expected mean funniness ratings at three levels of justifiability (the mean plus or minus one standard deviation), moderated by level of moral development. As can be seen, expected mean funniness increased as justifiability increased across levels of moral development. Furthermore, as level of moral development increased, the degree of relation between funniness and justifiability increased as well. Examination of Figure 1 indicates that funniness ratings for the low moral development group were least sensitive to justifiability of the insults, whereas the funniness ratings for the high moral development group were most sensitive to justifiability. While the middle moral development group had the lowest expected mean funniness ratings across levels of justifiability, the relation of justifiability to funniness for this group was not significantly different from the overall sample. These results support the specific prediction that subjects at higher levels of moral development would rate as most

funny jokes featuring insults which they considered to be more justified, while the funniness ratings of subjects at lower levels of moral development would be less sensitive to justifiability of the insults. As expected, notions of justice were more related to appreciation of the aggressive jokes for high moral development subjects than for low moral development subjects.

Insert Figure 1 and Table 4 about here

As shown in Table 5 and Figure 2, the relation of justifiability to funniness was moderated by gender. That is, justifiability related differently to funniness for males and females. It can be seen that expected mean funniness increased as justifiability increased to a considerably greater degree for males than for females. Thus, justifiability of the insults was a more important consideration in the funniness judgments of males than of females.

Insert Figure 2 and Table 5 about here

Table 6 and Figure 3 show expected mean funniness ratings at three levels of moral development for males

and females. As can be seen, there were greater differences in expected mean funniness ratings across levels of moral development for males than for females. For females, there was very little change in expected mean funniness across levels of moral development. For males, however, the pattern of results was not straightforward. That is, compared to males in the low moral development group, males in the middle group perceived the jokes as relatively unfunny, and males in the high group perceived the jokes as moderately funny. Hancks (1980) also found the jokes to be least preferred by male college students scoring in the middle range of the P score distribution, while other research (e.g., McGhee, 1974b; Zillmann & Bryant, 1975) suggested that subjects at higher levels of moral development would prefer the jokes less than subjects at lower levels of moral development. In the present study, middle and high moral development males were more similar to each other, in terms of expected mean funniness ratings, than either group was to low moral development males. Thus, in general, males in the middle and high moral development groups appreciated the jokes less than those in the low group.

Insert Figure 3 and Table 6 about here

After testing the hypothesis with the P score as a measure of moral development, the hypothesis was tested a second time by using the D score as a measure of moral development. The second statistical model included D scores, gender, and justifiability, and the interaction of these terms, regressed on funniness. The results of the Wald test showed that the relation of justifiability to funniness was moderated by gender ($\chi^2(1) = 5.72, p < .05$), but not by D scores. Thus, the hypothesis was not supported for moral development as measured by the D score. The somewhat positively skewed distribution of D scores for this sample may at least partially account for these results. Furthermore, the D score, being a general index of development, is less sensitive than the P score to the relative importance that subjects give to principled moral considerations. Since it has been shown that subjects use less of the lower stages, and more of the higher stages, of moral reasoning with development (Rest, 1988), the P score, which reflects Stages 5 and 6 reasoning, may be more appropriate than the D score for assessing moral development in adults.

Secondary Analysis

In order to have a clearer understanding of the sources of humor in the aggressive jokes, post hoc analyses were conducted to examine correlations between moral development scores (P and D) and ratings (funniness and justifiability) for each of the eleven jokes. Associations between the demographic variables and the ratings for individual jokes were also examined. Hancks' (1980) classification of the jokes on the basis of theme (kiddie humor, battle of the sexes, religious, and conflict with authority figures), as well as structure (retaliation or squelch), helped to elucidate the data. However, significant findings for individual jokes within each category cannot be generalized to an entire category of humor. Furthermore, these results should be interpreted with caution since numerous statistical tests were conducted.

Previous research (e.g., McGhee, 1974b; Zillmann & Bryant, 1975) suggested that correlations between moral development scores and funniness ratings for the aggressive jokes would be negative. Consistent with this, several small, but significant, inverse associations between moral development and funniness were found. For example, for Joke 2, which featured a bride's retaliation to a putdown by her new husband,

funniness was inversely related to both P scores ($r(158) = -.18, p < .05$) and D scores ($r(158) = -.20, p < .05$). It appears that this exchange of insults between newlyweds detracted from humor appreciation for subjects at higher levels of moral development.

Funniness ratings for two kiddie jokes were also inversely related to moral development scores. For Joke 5, featuring retaliation by a school boy to a putdown by his teacher, and for Joke 10, where one school girl squelches another, funniness correlated negatively with P scores ($r(158) = -.23, p < .05$ and $r(157) = -.22, p < .05$, respectively) and with D scores ($r(158) = -.22, p < .05$ and $r(157) = -.18, p < .05$, respectively). In addition, justifiability ratings for Jokes 5 and 10 correlated negatively with P scores ($r(158) = -.17, p < .05$ and $r(157) = -.17, p < .05$, respectively). Thus, as suggested by previous research (e.g., Gutman & Priest, 1969; Zillmann & Bryant, 1974), the aggressive content of the two kiddie jokes was inconsistent with notions of justice held by more principled subjects, hence, their appreciation of the jokes was impaired.

On the other hand, the justifiability rating for Joke 4, where a rabbi retaliates to a putdown by a priest, related positively to P scores ($r(158) = .19, p < .05$). Apparently, this exchange of insults between

two members of the clergy was consistent with the moral judgments of more principled subjects, although this congruence was not reflected in their appreciation of the jokes' humor.

Several associations between demographic variables and ratings for the jokes can be taken as evidence for the construct validity of the Humor Questionnaire. Significant correlations between gender and funniness, and between gender and justifiability, were in the expected directions. For example, women found less funny than men Joke 9, which deals with football ($r(175) = -.18, p < .05$). In addition, Joke 11, where a husband gratuitously insults his wife, was considered less funny ($r(173) = -.20, p < .05$) and less justified ($r(172) = -.17, p < .05$) by women than by men. As might be expected, Joke 2, where a bride retaliates to a putdown by her new husband, was considered more justified by women than by men ($r(176) = .18, p < .05$).

With regard to the age variable, the significant findings were congruent with expected developmental trends and life experiences. As might be expected, the youngest group of subjects (18 to 25 years) found Joke 10 (kiddie humor) funnier ($F(2,170) = 3.68, p < .05$) than did the oldest group of subjects (33 to 40 years). The youngest group also found Joke 11 (battle of the

sexes) funnier ($F(2,169) = 5.88, p < .05$) and more justified ($F(2,168) = 4.31, p < .05$) than did older subjects (26 to 40 years). Apparently, the older subjects (71.2% of whom were either married or previously married) were offended by this display of disrespect between marriage partners, whereas the younger subjects (85.9% of whom were single) were not. Finally, the oldest group (33 to 40 years) considered Joke 1, where a college student retaliates to a putdown by a professor, more justified ($F(2,172) = 4.71, p < .05$) than did the youngest group (18 to 25 years). Perhaps the older college students, perceiving themselves as more equal in status to their professors than do younger students, considered the professor in the joke to be deserving of the student's retaliation.

For the ethnic origin variable, Hispanics found Joke 11 (battle of the sexes) funnier ($F(4,166) = 3.45, p < .05$) than did subjects who were not of Hispanic origin. This finding may reflect traditional sex-role attitudes characteristic of Hispanic culture.

Discussion

The results of this study lend support to the hypothesis that the relation between funniness and justifiability of aggression of insult jokes is dependent upon level of moral development. Appreciation

of aggressive humor was more related to justifiability of the aggressive content for high moral development subjects than for low moral development subjects. In addition, justifiability of aggression was a more important consideration in humor appreciation for males than for females. Finally, there were greater differences in appreciation of aggressive humor across levels of moral development for males than for females.

Several caveats should be introduced at this point. First, in the present study, there were neither measures nor controls for a number of sample characteristics which have been shown to be related to DIT scores, such as IQ or general cognitive development, socioeconomic status, political ideology, and vocation or academic major (Rest, 1988). Thus, one or more DIT correlates, rather than moral development, may have been responsible for the results. Secondly, a problem inherent to humor research is that funniness ratings of written jokes are limited in their generalizability to the "real-life" appreciation of aggressive humor. Given that humor appreciation was assessed under artificial conditions, threats to the ecological validity of this study should be taken into account when interpreting the results.

Limitations aside, the results of this study can be interpreted in terms of Kohlberg's (1976) theory of

moral judgment development which focuses on structural differences in reasoning about justice. The three major levels of moral development are seen as different types of relations between the self and society's rules and expectations. At the preconventional level, rules and social expectations are something external to the self; at the conventional level, the self is identified with or has internalized the rules and expectations of others, especially those of authorities; and at the principled, or postconventional, level, the self has differentiated from the rules and expectations of others, and values are defined in terms of self-chosen principles.

According to Kohlberg (1976), moral situations represent a conflict of interest, and justice principles (i.e., equality and reciprocity) are concepts for resolving these conflicts. Aggressive jokes, like moral dilemmas, are based on interpersonal conflict and inequality of exchange. Predictions in this study about subjects' reactions to the aggressive jokes were based on structural differences in reasoning about justice. Assuming for the moment that the three categories of moral development scores used in these analyses correspond to Kohlberg's major levels of reasoning about justice principles, the following interpretations are

offered. Presumably, the judgments of subjects in the low moral development group were least controlled by social norms, hence, they were least sensitive to the justifiability of the insults and most able to enjoy the aggressive humor. Subjects in the middle moral development group, on the other hand, were least able to appreciate the aggressive humor because their judgments were most controlled by social norms. However, subjects in the high moral development group, basing their judgments on concepts of equality and reciprocity, were most sensitive to the justifiability of the aggressive content and most capable of appreciating a justifiable putdown.

Kohlberg (1976) has proposed that moral development has a basic cognitive-structural component, thus, a person reveals the same level of moral reasoning when making judgments about various aspects of life. Consistent with this argument, in the present study, judgments about the aggressive jokes and the moral dilemmas reflected similar levels of moral development. Furthermore, subjects in the high moral development group, to a greater extent than subjects in the middle and low moral development groups, appeared to have internalized the justice principles of equality and reciprocity. Principled moral thinking, as expected,

was most evident in judgments about the moral dilemmas, as well as the aggressive jokes, made by subjects in the high moral development group.

Previous investigations did not examine gender differences in the relation between moral development and appreciation of aggressive humor. In the present study, justice was a more important consideration in appreciation of the aggressive jokes for males than for female, and structural differences in reasoning about justice were more apparent in appreciation of aggressive humor for males than for females. These findings suggest that males and females may have based their judgments about the jokes on different understandings of justice. As Gilligan (1982) has suggested, women define morality in terms of care and responsibility in relationships, rather than in terms of rights and rules. Thus, the females' judgments about the jokes may have been more related to a concern for others (e.g., whether someone was hurt by the insult), than to one person's right or privilege to insult another.

The results of this study also lend contemporary support to an earlier body of literature which examined appreciation of aggressive humor. The finding that funniness and justifiability of aggression were strongly correlated lends credence to the notion that a sense of

justice is related to subjects' humor preferences. As previous research (e.g., Gutman & Priest, 1969; Zillmann & Bryant, 1974) suggested, justifiable insult jokes were most appreciated, whereas unjustified insults seemed to impair humor appreciation. Moreover, the present study showed that humor appreciation of high moral development subjects and of male subjects was most sensitive to the justifiability of the insults.

In addition, previous research (e.g., McGhee, 1974b; Zillmann & Bryant, 1975) suggested that subjects at higher levels of moral development would appreciate the insult jokes less than subjects reasoning at lower levels. The finding that funniness was inversely related to moral development supports this proposition. However, more detailed analyses indicated that the expectation of a decrease in appreciation of aggressive humor by subjects at higher levels of moral development was generally supported for males, but not for females. Indeed, appreciation of the aggressive jokes by females showed a slight increase as level of moral development increased.

This study also provided evidence for the construct validity of the DIT. A test of any developmental measure is to show change in the direction of "higher stages" over time. In this cross-sectional study, which

controlled for educational level (the most powerful predictor of DIT scores), age emerged as the strongest demographic correlate of moral development. Since cross-sectional designs do not control for cohort effects, the observed increase in DIT scores with age cannot be attributed to individual ontogenetic change. Nevertheless, the results conformed to the predictions of moral development theory.

Furthermore, the results of this study provided evidence for criterion group validity of the Humor Questionnaire. Expected developmental trends and life experiences were related to subjects' humor preferences. Groups of subjects who should have had different reactions to several jokes, on the basis of theme or structure of the joke, did in fact react differently and in the expected directions.

In conclusion, the present study has implications for how adults reason about situations, both humorous and serious, based on interpersonal conflict and inequality of exchange. Apparently, people use similar conceptual tools to judge what is funny and what is fair. Reactions to the aggressive jokes and the moral dilemmas gave similar characterizations of the reasoning processes by which people arrive at their judgments about funniness and fairness. People differ in their

judgments, however, at least partially because of basic structural differences in reasoning about justice. Thus, the present study provides a better understanding of why certain people appreciate certain jokes when other people do not, and why some considerations are important to appreciation of aggressive humor for some people and irrelevant for others. In short, this study has provided a better understanding of the way in which moral development and appreciation of aggressive humor are related to one another.

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Table 1

Means, Standard Deviations, and Correlations of Humor
and Moral Development Variables

	1	2	3	4	Mean	SD
1. Funniness	1.00				41.16	16.23
2. Justifiability	.70*	1.00			49.12	16.46
3. P Score	-.16*	-.08	1.00		33.09	14.01
4. D Score	-.13	-.01	.67*	1.00	19.05	7.61

* $p < .05$.

Table 2

F-Values associated with Analyses of Variance for
Demographic Variables

	Source of Variation		
	Age F(2,154)	Marital F(5,151)	Ethnic F(3,152)
Funniness	----	2.31*	----
Justifiability	----	2.52*	----
P Score	9.62	2.50	4.59
D Score	11.73	3.07	4.95

Note. Only significant Fs are reported ($p < .05$).

*Degrees of freedom associated with F are 5 and 169.

Table 3

Parameter Estimates for Terms in the Hierarchical Linear Model

Parameter	Estimate	Asymptotic SE	Z-Score	Two-Sided P-Value
Constant	3.45405	0.16640	20.757	0.0000
P1	0.89572	0.23588	3.797	0.0001
P2	-0.52425	0.22368	-2.344	0.0191
Gender1	-0.16768	0.16640	-1.008	0.3136
P1.G1	0.64421	0.23588	2.731	0.0063
P2.G1	-0.57237	0.22368	-2.559	0.0105
P1.G1.J	-0.05816	0.04199	-1.385	0.1661
P2.G1.J	0.03966	0.04216	0.941	0.3468
G1.J	0.06568	0.03039	2.162	0.0306
P1.J	-0.10235	0.04199	-2.437	0.0148
P2.J	0.02750	0.04216	0.652	0.5142
Just	0.17292	0.03039	5.690	0.0000

Note. Trinary coding decomposed each fixed effect part of the model into single degree of freedom regression terms and covariates.

Table 4

Estimated Funniness by Justifiability as a Function of
Moral Development

Level of Moral Development	Level of Justifiability		
	3	5	7
Low	5.24	5.51	5.78
Middle	2.99	3.52	4.05
High	3.78	4.41	5.04

Note. Maximum score for funniness is 9. Level of moral development is based on P scores.

Table 5

Estimated Funniness by Justifiability as a Function of
Gender

Gender	Level of Justifiability		
	3	5	7
Male	2.99	3.52	4.05
Female	3.91	4.07	4.23

Note. Maximum score for funniness is 9.

Table 6

Estimated Funniness by Moral Development as a Function
of Gender

Gender	Level of Moral Development		
	Low	Middle	High
Male	5.51	2.52	4.41
Female	3.90	4.07	4.23

Note. Maximum score for funniness is 9. Level of moral development is based on P scores.

Figure Captions

Figure 1. Expected mean funniness by varying levels of justifiability for subjects at three levels of moral development.

Figure 2. Expected mean funniness by varying levels of justifiability for males and females.

Figure 3. Expected mean funniness by varying levels of moral development for males and females.

