

Motivational Distortion Scales for the Children's Personality Questionnaire

GARY L. CANIVEZ
KAREN K. PRICHARD

Motivational distortion scales (Fake Bad and Fake Good) were developed and cross-validated for the Children's Personality Questionnaire (CPQ) (Porter & Cattell, 1975). Results indicated that all CPQ primary factors, except Factors F and I, were substantially affected by the different instructional conditions.

One problem that seems to be an inherent characteristic of questionnaire or self-report personality inventories is their susceptibility to distortion by participants' desiring to respond in a socially desirable or undesirable manner. Experimental research has demonstrated that certain response sets (i.e., faking good or bad) can produce results significantly different from the standard administration condition (Braun & LaFaro, 1968, 1969; Castelli-Sawicki, Wallbrown, & Blixt, 1983; Farley & Goh, 1976; Frederiksen, 1965; Green, 1951; Meredith, 1968; Radcliffe, 1966; Wesman, 1952; Wiggins, 1966; Winder, O'Dell, & Karson, 1975). Although the experimental research has dealt mostly with adults, the increased use of children's self-report questionnaires raises the issue of whether or not children can fake their responses.

Porter and Cattell (1979) stated that motivational distortion is a "psychometric 'way of life' in questionnaires" and that the items of the Children's Personality Questionnaire (CPQ) "were constructed

to be as 'neutral' as possible with regard to social desirability" (p. 12). Other strategies used in the construction of the CPQ to decrease the potential effects of motivational distortion included balancing the number of agreement and disagreement item responses that contribute to each factor and selecting items with low face validity that accurately measure the appropriate trait (Porter & Cattell, 1979). The susceptibility of the 16PF to the influence of both "fake good" and "fake bad" response sets has been demonstrated (Braun & LaFaro, 1968, 1969; Krug, 1978; Meredith, 1968; Radcliffe, 1966; Winder et al., 1975) and has led to the development and norming of scales that "detect" faking in good and bad directions on the 16PF (Krug, 1978; Winder et al., 1975) and on the High School Personality Questionnaire (HSPQ) (Castelli-Sawicki et al., 1983).

One reason that motivational distortion scales for the CPQ may not have seemed relevant is a belief that "in his [a child's] lack of sophistication, he may not know how to make himself look 'good'" (Porter & Cattell, 1979, p. 12). Porter and Cattell believed that children do not attempt to distort their responses on such questionnaires. Whether or not children can distort their responses in a socially desirable "fake good" or undesirable "fake bad"

Gary L. Canivez is a school psychologist with the Deer Valley Unified School District, Phoenix, Arizona. Karen K. Prichard is an associate professor in the Department of Educational Psychology at Southern Illinois University, Carbondale.

manner on the CPQ is an empirical question that deserves careful consideration in light of the effects of motivational distortions on the 16PF by adults and on the HSPQ by adolescents. There appeared to be no studies available investigating whether children have the ability to distort their CPQ responses based on different response sets (e.g., "fake good" and "fake bad"). This study was conducted to determine if children could distort their CPQ responses. If so, then it might be possible to develop scales that detect such motivational distortions and examine what effects distortion might have on the 14 CPQ primary factors and four second-order factors.

METHOD

Participants

A total of 58 (28 girls, 30 boys) 12-year-old seventh and eighth grade students from a single school in a small suburban mid-west community volunteered (with written parental consent) to participate in this study.

Instrument

The Children's Personality Questionnaire (CPQ) (Porter & Cattell, 1975) is a general assessment of 14 distinct, bipolar personality dimensions and four second-order factors for children between the ages of 8 and 12 (Porter & Cattell, 1979). It uses a forced-choice response format except on intelligence items in which a third option is available.

Procedure

All participants were given two administrations of the CPQ Form A during a single, individual session. The first 22 participants (15 girls, 7 boys) who returned parental permission forms (Group 1) were asked to respond to both the CPQ Fake Bad (FB) and Fake Good (FG) instructions in order to select items for the FB and FG

scales. The order of administration (FB/FG) was reversed for half the participants to counterbalance potential order effects. In the FB condition, the children were asked to imagine an activity that they wanted to avoid and then to disclose what they had imagined to determine if they were following directions. They were then told that the researcher wanted them to respond to the CPQ in a way that would assure them of avoiding the activity imagined—that is, to answer the questions so that they would look like the "worst kid in the world" (FB instructions). In the FG condition, the children were asked to imagine that there was something they really wanted to do (e.g., go to a special camp, join a special club). Following these instructions, they were asked to disclose what they were imagining to determine if they were following the instructions. They were told that the researcher wanted them to respond to the CPQ in a way that would assure them of achieving the imagined activity—that is, to answer the questions so that they would look like the "best kid in the world" (FG instructions). In both conditions, participants were told that there were methods available to detect faking, therefore they had to try to conceal their intent.

Criteria used to select FB and FG scale items were obtained from the Winder et al. (1975) study and were also used by Castelli-Sawicki et al. (1983) in developing motivational distortion scales for the HSPQ. These criteria stated that (a) more than 50% of the participants in the faked condition must have answered the item in the same direction and (b) twice as many responses in the faked condition must be in that faked direction than in a standard CPQ administration. The standard administration condition from the 36 participants in Group 2 served as the standard comparison group.

Group 2 was composed of the remaining 36 participants (13 girls, 23 boys) who

served to cross-validate the FB and FG motivational distortion scales created from the first group's responses. Of the 36 children in Group 2, 16 received the FB and standard instructions while the other 20 received the FG and standard instructions. The order of administration (fake/standard) was reversed for half the participants to counterbalance potential order effects.

Scores on the FB and FG scales were obtained by awarding one point for each item endorsed in the "faking" direction and adding the total number of FB and FG scale items endorsed. The FB scale ranged from 0–13 raw score points and the FG scale ranged from 0–5 raw score points. CPQ factor raw scores, sten score conversions, and second-order factor scores were obtained through computer scoring. Combined norms for girls and boys on Form A contained in the CPQ handbook (Porter & Cattell, 1979) were used to convert factor raw scores to standard (sten) scores. Second-order factor scores (Extraversion, Anxiety, Tough Poise, Independence) were calculated using equations provided in the CPQ handbook.

RESULTS

Frequency tables were constructed for each CPQ item for FB ($n=22$) and FG ($n=22$) conditions from the first group and standard administrations ($n=36$) from the second group to select items based on the Winder et al. (1975) criteria. The 13 items of the FB scale and five items of the FG scale that satisfied the selection criteria are presented in Table 1.

Dependent *t*-tests were conducted to test the differences between the standard and faked conditions on the FB and FG motivational distortion scales. Results for the FB scale indicated that participants from Group 2 ($n=16$) responding to the FB instructions ($M=8.75$; $SD=2.30$) obtained significantly higher scores on the

FB scale than under the standard instructions ($M=2.38$; $SD=2.09$; $t(15)=7.96$; $p<.0005$). Results for the FG scale indicated that participants in Group 2 ($n=20$) responding to the FG instructions ($M=2.35$; $SD=1.18$) also obtained significantly higher scores on the FG scale than under the standard instructions ($M=.70$; $SD=.92$; $t(19)=4.92$; $p<.0005$). A cutting score of six on the FB scale would have correctly identified 94% of the participants in the FB condition as "faking" while incorrectly identifying 6% of the participants in the standard condition as "faking." On the FG Scale, a cutting score of three would have correctly identified 55% of the participants in the FG condition as "faking" while incorrectly identifying 8% of the participants in the standard condition as "faking."

One-way (test instructions) analyses of variance (ANOVAs) were conducted on the 14 sten score totals, 14 raw score totals, 2 motivational distortion scale totals, and 4 second-order factor scores. The alpha level used to determine statistical significance was adjusted using the Bonferroni correction ($\alpha=p/k$ where k =the number of significance tests) to control the Type I error rate (Pohlmann, 1979) because 34 multiple *F* tests among partially uncorrelated dependent variables were conducted. The significance level was adjusted to .0015 (.05/34). Each significant effect ($p<.0015$) was further subjected to Scheffe's post hoc procedure to determine where significant differences occurred.

Factor raw score means were analyzed because there is less measurement error and more variability among raw scores. Results of the ANOVAs and Scheffe's analyses were identical for both raw scores and sten scores with the exception of factor E. In the sten score analysis, all three means were significantly ($\alpha=.05$) different on factor E; in the raw score analysis, only the mean for the FB group differed from the means of the other two groups.

TABLE 1
Motivational Distortion Scale Items

Fake Bad Scale Items			Fake Good Scale Items		
Item	Direction of Scoring	CPQ Scale	Item	Direction of Scoring	CPQ Scale
23	2	B	19	1	B
27	2	B	28	2	D
40	2	H	44*	1	H
56	2	O	52*	2	O
7*	1	A	64*	2	O
12*	1	D			
15*	2	B			
19*	1	B			
29*	2	E			
47*	2	G			
56*	2	O			
57*	2	I			
60*	2	O			

*Items from CPQ, Form A, Part Two.

Because the results were comparable, only the raw score results are presented in Table 2. R^2 s are reported as effect size estimates because significance is so affected by sample size. An R^2 equals the

sum-of-squares explained by experimental condition divided by the sum-of-squares total.

Participants in the FB condition obtained significantly lower scores on factor

TABLE 2
Means and F Ratios from One-Way ANOVA's of CPQ Raw Scores

Factor	Test Instructions			F (df=2,69)	R ²
	Fake Bad (n=16)	Fake Good (n=20)	Standard (n=36)		
A—Reserved vs. Warmhearted	2.13 _a	8.30 _b	6.50 _c	53.96**	0.61
B—Dull vs. Bright	3.50 _a	7.25 _b	7.64 _b	20.28**	0.37
C—Emotional vs. Calm	2.56 _a	8.55 _b	5.61 _c	23.72**	0.41
D—Undemonstrative vs. Excitable	7.44 _a	2.80 _b	5.03 _c	15.45**	0.31
E—Obedient vs. Assertive	8.00 _a	2.75 _b	4.25 _c	27.72**	0.45
F—Sober vs. Enthusiastic	6.31 _a	5.75 _{ab}	4.56 _b	4.64*	0.12
G—Expedient vs. Conscientious	1.81 _a	7.15 _b	5.19 _c	19.12**	0.36
H—Shy vs. Adventurous	2.56 _a	7.35 _b	4.58 _c	26.46**	0.43
I—Tough-Minded vs. Tender-Minded	4.25 _a	4.75 _a	4.06 _a	0.33	0.01
J—Zestful vs. Reflective	6.81 _a	2.35 _b	4.81 _c	28.57**	0.45
N—Forthright vs. Astute	7.88 _a	2.65 _b	4.81 _c	26.22**	0.43
O—Self-Assured vs. Apprehensive	6.88 _a	1.95 _b	3.92 _c	43.06**	0.56
Q ₃ —Impulsive vs. Controlled	2.38 _a	8.10 _b	5.89 _c	41.97**	0.55
Q ₄ —Relaxed vs. Tense	8.44 _a	1.40 _b	5.28 _c	45.97**	0.57
Fake Bad	8.75 _a	1.80 _b	2.31 _b	74.68**	0.68
Fake Good	1.69 _{ab}	2.35 _a	0.94 _b	12.20**	0.26

* $p < .01$.

** $p < .0001$.

Note. Means with different subscripts differ significantly at $p < .05$.

B than participants in the FG and standard conditions. On factors A, C, G, H, and Q₃, participants responding to the FB instructions obtained significantly lower factor scores (raw and sten) than when responding to the standard instructions, which in turn produced significantly lower scores than when participants responded to the FG instructions. On factors D, J, N, O, and Q₄, the direction of differences was reversed. Thus, on factors A, C, D, G, H, J, N, O, Q₃, and Q₄, participants in the FB and participants in the FG conditions obtained highly divergent scores with the standard instruction scores falling somewhere between and within the average range.

On the FB scale, participants in the FB condition obtained significantly higher scores than in the standard condition and FG condition. As also indicated in Table 2, the only statistically significant difference found on the FG scale was that participants in the FG condition obtained significantly higher scores than in the standard condition.

Mean sten scores for each factor were rounded to the nearest sten for each of the three testing conditions and plotted in Figure 1 to illustrate the average profile generated by the different instructional conditions. The divergent results between the FB and FG conditions are clearly illustrated. It is also interesting to note that the mean scores of the standard instruction condition were mostly within the average range. This suggests that the sample was reasonably representative of the norming group.

Results of the ANOVAs and Scheffe's analyses for the CPQ second-order factors (Extraversion, Anxiety, Tough Poise, and Independence) are presented in Table 3. On both Anxiety and Independence, participants responding to the FB instructions obtained significantly higher scores than with the standard instructions, which in turn yielded significantly higher scores

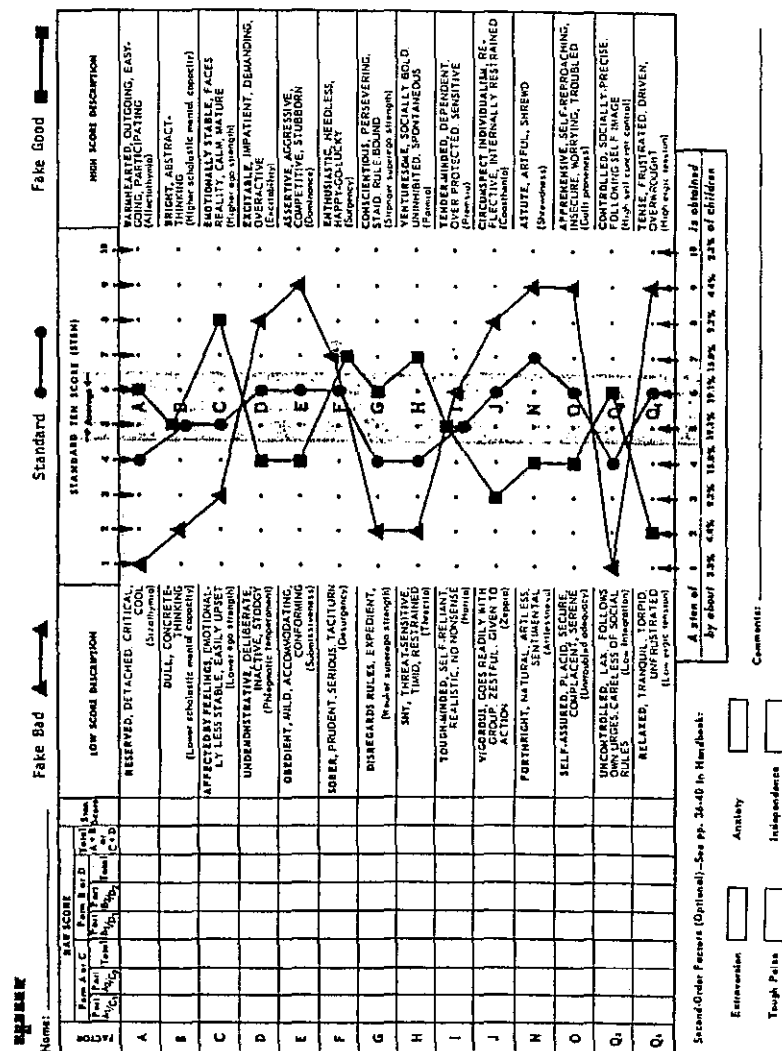
than when participants responded to the FG instructions. Participants responding to the FB instructions also obtained higher scores on the Tough Poise factor than under the standard and FG instructions.

DISCUSSION

Examination of the mean primary factor scores indicated that responses to the FB instructions seemed to result in participants making themselves "look" aloof, less intelligent, less emotionally stable, and more impatient, aggressive, disregarding of rules, shy, critical of others, shrewd, insecure, careless of social rules, and tense. Participants in the FG condition seemingly responded in ways that made themselves "look" warm hearted, emotionally stable, deliberate, obedient, conscientious, socially outgoing, uncritical, sentimental, confident, controlled, and relaxed. These adjectives, obtained from the CPQ handbook (Porter & Cattell, 1979), seem to describe the socially desirable and undesirable traits one might expect in attempts to make oneself look good or bad. It is interesting to note that with respect to factor B (intelligence), participants in the FG condition were unable to make themselves look "more" intelligent—an important and not unexpected outcome.

Results for the second-order factors indicated that participants in the FB condition made themselves look more anxious, dominant, and independent while participants in the FG condition seemed to make themselves look less anxious and more emotional. These characteristics, particularly anxiety, also seem to have some socially desirable and undesirable connotations.

The data suggest that children are sophisticated enough to respond to the CPQ in a socially desirable (FG) and socially undesirable (FB) way when asked to do



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TABLE 3
Means and F Ratios from One-Way ANOVA's of CPQ Second Order Factor Sten Scores

Factor	Test Instructions			F (df=2,69)	R ²
	Fake Bad (n=16)	Fake Good (n=20)	Standard (n=36)		
Extraversion	5.36 _{ab}	5.93 _a	5.27 _b	4.88*	0.12
Anxiety	7.96 _a	4.33 _b	6.05 _c	50.48***	0.59
Tough Poise	6.68 _a	5.51 _b	5.91 _b	7.76**	0.18
Independence	6.84 _a	4.36 _b	5.42 _c	33.73***	0.49

*p < .01.

**p < .001.

***p < .0001.

Note. Means with different subscripts differ significantly at p < .05.

so. "Sophistication," however, also implies enough wisdom or worldliness to understand that there is something to be gained or avoided by faking on a self-report questionnaire. Thus, it is both a matter of understanding how to respond to make oneself look good or bad, as well as recognizing that it might be to one's benefit to do so. This research addresses the former. Whether or not children are sophisticated enough to identify the conditions in which it would be desirable to distort responses requires further investigation.

Although the motivational distortion scales (FG and FB) seem to have some discriminatory power, their cautious application generally, and for the FG scale specifically, must be underscored. The potential of either scale for identifying students as "faking" when they were not (false positives) was relatively small for both scales. For the FG scale, however, only 55% of those in the FG condition were correctly identified as faking good. A potential explanation for the greater number of items that satisfied the selection criteria in the FB condition may be that children are more adept at making themselves look bad than they are at making themselves look good. An alternative explanation for the greater number of FB items might be that CPQ items are not as

low in face validity as the authors suggested. That is, the items themselves may be written in such a way that it is easier for children to distort in negative as compared to positive directions.

The motivational distortion scales presented here should be viewed as useful primarily for research purposes and not as a way to evaluate response sets. The degree to which the findings from this study can be generalized needs more research. In addition to the small sample size, the students in this study represent the upper age limit of the CPQ. Whether or not children at the other age levels (8-11 year olds) can also distort their responses is an additional area that must be investigated.

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