

CONFIRMATORY AND EXPLORATORY FACTOR ANALYSES OF THE PARENTAL  
AUTHORITY QUESTIONNAIRE

By

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To my husband, family, and friends

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Abstract of Thesis Presented to the Graduate School  
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Numerous researchers have conducted studies of the relationship of parenting styles to students' academic achievement and psychological well-being. However, findings are inconsistent due at least in part to use of different measures. Only a few studies have been conducted on the psychometric characteristics of these instruments, which raises questions about the reliability and validity of the data obtained with these measures. The purpose of this study was to use confirmatory factor analysis (CFA) to determine whether the widely recognized three-factor model of authoritarian, authoritative, and permissive parenting styles was validated in a sample of 331 college students' responses to the mother's form and 328 responses to the father's form of the Parental Authority Questionnaire (PAQ), a 30-item self-report questionnaire consisting of a mother's and father's form designed by Buri (1991) to measure children's perceptions of the three parenting styles originally proposed by Baumrind (1971). Results of the CFA indicated that the three-factor model of parenting did not fit the data from these college students for either the mother's or father's form. Seven exploratory factor analyses (EFA), ranging from one factor to seven, were then performed to determine the number of factors needed to fit the data. Results of the EFAs suggested

that the three-factor model of authoritarian, authoritative, and permissive parenting styles provided the best interpretation of the data. Recommendations for creating more discriminating items on the basis of the item loadings on the three factors include omitting or revising item 24 on the mother's form and items 8, 14, and 24 on the father's form.

## CHAPTER 1 PARENTING STYLES

### **Statement of the Problem**

The effective socialization of children is a key concern for parents and society. In keeping with this concern, the role of parenting in children's development has been a popular topic of research. One of the most widely studied constructs in this literature is parenting style. Baumrind (1967) identified three styles of parenting; authoritarian, permissive, and authoritative. The authoritarian style of parenting is highly demanding. Children are held to high standards, and rules are made that must be followed for fear of punishment. The permissive style is highly responsive to children's needs but does not place demands on children for achieving high standards. The authoritative style is highly demanding and highly responsive to children's needs. High expectations are set for children's behavior in a warm and responsive context. Although Baumrind's conception of the three parenting styles is conceptually compelling, inconsistencies in the research literature raise questions about whether the measures used to assess parenting style are adequate. One of the most widely used measures of parenting style is Buri's (1991) Parental Authority Questionnaire (PAQ). The purpose of this study was to determine whether a confirmatory factor analysis of college students' scores on the PAQ would yield the three factors of authoritative, authoritarian, and permissive parenting that the PAQ was designed to measure. In this chapter, I describe the construction of the PAQ and previous research on its psychometric characteristics, and I review research that highlights the need for a measure that can be useful in resolving important psychological issues regarding the role of parenting style in children's development.

## **The Parental Authority Questionnaire (PAQ)**

**Description of the PAQ.** The PAQ is a 30-item self-report questionnaire designed to measure children's perceptions of their parents' use of the authoritarian, authoritative, and permissive parenting styles proposed by Baumrind (1971). Buri (1991) initially included 48 items in the questionnaire, and, after individuals considered expert in the field reviewed the measure for appropriateness, he shortened the questionnaire to 30 items, with each scale consisting of 10 items. Responses are on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Participants are instructed to respond to the items first as descriptions of their mother and then as descriptions of their father. Sample items from the measure are "As I was growing up my mother seldom gave me expectations and guidelines for my behavior (permissive style), "As I was growing up my mother did not allow me to question any decisions she made" (authoritarian style), and "As I was growing up I knew what my mother expected of me in my family, but I also felt free to discuss those expectations with my mother when I felt that they were unreasonable" (authoritative style).

### **Factor Analytic Studies of the PAQ**

Several researchers have conducted factor analyses of students' responses to the PAQ. Their findings suggest that characteristics of the sample may be related to the adequacy of the measure. In the following section, I describe the factors that have been identified in these analyses of the students' responses to the items on the PAQ.

**Parenting styles and mental health of Palestinian-Arab adolescents in Israel (Dwairy, 2004).** Dwairy conducted exploratory factor analyses to determine whether the authoritarian, authoritative, and permissive parenting styles for mothers and fathers Buri (1991) intended to measure with the PAQ were validated in a sample of 431

Palestinian-Arab adolescents from six schools (three urban and three rural). Dwairy presented a table showing the factor loadings for the three-factor model. Factor 1 (Authoritative Parenting) consisted of 10 items with factor loadings ranging from .47 to .73. Factor 2 (Authoritarian Parenting) consisted of 10 items with factor loadings ranging from .40 to .66. Factor 3 (Permissive Parenting) consisted of 10 items with factor loadings ranging from .31 to .58. However, item 3 on Buri's authoritarian scale cross-loaded on Authoritarian and Permissive Parenting (loadings were -.35 and .51 respectively). Items 1 and 9 on Buri's permissive scale also cross-loaded on Authoritarian and Permissive Parenting (.32 and .51 respectively for item 1 and .58 and .31 for respectively for item 9). Dwairy gave no explanation as to the significance of these three items having cross-loadings nor did she address what she did about those items. Further factor analyses of the PAQ in other samples is needed to determine if these items have similar cross-loadings in those samples. Dwairy reported that she conducted confirmatory factor analyses to verify the three-factor model in her sample, but she did not include the results of those analyses in the article.

**Parenting style of Mexican, Mexican-American, and Caucasian-Non Hispanic Families: Social context and cultural influences (Varela et al., 2004).** The authors conducted a confirmatory factor analysis of the responses of 150 children, ages 10 to 14, and their parents ( $N = 450$ ) to the PAQ to determine whether Buri's three-factor model fit the data. They found that when the items on the permissive scale of the PAQ were removed, fit increased to NNFI = 1.00 for the Mexican descent (MD) group (made up of Mexican Immigrants and Mexican American participants combined) and NNFI = .99 for the full sample, .98 for the Mexican group, and .97 for the Caucasian group.

With the permissive scale items in the analysis, the fit indices ranged from only .70 to .88. The correlations between the Authoritative and Authoritarian scales were -.48, -.16, and -.33 for the Mexican, MD, and CNH samples, respectively. The authors used only the Authoritative and Authoritarian scales of the PAQ in further analyses. However, the small size of the ethnic subgroups and the combining of the mothers' and fathers' responses with their children raise questions about whether the need to omit the permissive scale was the result of the unique characteristics of their sample.

**Hong Kong teacher education students' goal orientations and their relationship to perceived parenting styles (Chan & Chan, 2007).** In this study, the authors were interested in the relationship between students' perceptions of their parents' style of parenting and students' goal orientation. The authors performed a confirmatory factor analysis of the responses of 285 teacher education students from the University of Hong Kong to the PAQ. The goodness of fit indices were as follows: CFI = .95, GFI = .87, Adjusted goodness of fit index, or AGFI = .83, RMSEA = .08, and RMR = .07). The authors concluded that the three-factor model was confirmed, consisting of Authoritarian (Cronbach's alpha = .84), Permissive (Cronbach's alpha = .86), and Authoritative (Cronbach's alpha = .72) Parenting Styles.

### **Purpose of the Study**

Buri (1991) created the PAQ to assess parental styles of authority from the perspective of their children. The goal of this study was to determine whether the parenting styles that Buri proposed to measure with the PAQ were verified in confirmatory factor analyses of college students' responses to the items on the PAQ. I tested the fit of the three-factor model of authoritative, permissive, and authoritarian parenting styles to data provided by over 300 University of Florida college students. The

confirmatory factor analyses of their responses to the PAQ (Buri, 1991) were conducted to enhance understanding of the adequacy of the PAQ as a measure of Baumrind's (1971) three parenting styles.

## **Significance of the Study**

### **Theoretical Significance**

The Parental Authority Questionnaire (PAQ) is used to assess the extent that students perceive that their parents use the authoritarian, authoritative, and permissive styles of parenting. This study provides researchers and educators a better understanding of the adequacy of the PAQ. Next, I provide an example of theoretical issues that could be clarified with a more adequate measure of the PAQ. Specifically, I illustrate an unresolved question regarding the relationship between parenting style and self-esteem.

Most of the studies of the relationship between parenting style and emotional well-being using the PAQ focus on children's self-esteem (Buri, 1989; Buri, Louiselle, Misukanis, & Mueller, 1988; Milevsky, Schlechter, Netter, & Keehn, 2007). For example, in a study of 230 college students enrolled in an introductory psychology course, Buri et al. (1988) conducted a study to clarify the relationship between parenting style and children's self-esteem and found modest relationships. Student participants responded twice to the PAQ, once with their perceptions of their mother's parenting behavior and then with their perception of their father's parenting behavior. The students also responded to the Tennessee Self-Concept (TSC) scale (Fitts, 1965), a 100-item scale that measures global self-esteem. Findings revealed modest relationships. Mothers' authoritarian parenting was negatively related to students' self-esteem ( $r = -.26, p < .01$ ), whereas mothers' authoritative parenting was positively related to students' self-

esteem ( $r = .41, p < .01$ ). Similarly, fathers' authoritarian parenting was negatively related to self-esteem ( $r = -.18, p < .01$ ), and fathers' authoritative parenting was positively related to self-esteem ( $r = .38, p < .01$ ). The researchers also found gender differences. For girls, mothers authoritarian parenting was negatively related to self-esteem ( $r = -.29, p = .01$ ). Mothers' and fathers' authoritative parenting was positively related to self-esteem ( $r = .42, p < .01$  and  $r = .50, p = .01$  respectively). In contrast, for boys the relationships between parenting style and self-esteem were lower (although they were in the same direction as for girls); mother's authoritarian parenting and self-esteem were negatively correlated ( $r = -.21, p = .05$ ). For mothers' and fathers' authoritative parenting and self-esteem, the correlations between style and boys' self-esteem were significant but lower than for girls,  $.36 (p < .01)$  and  $.19 (p < .05)$  respectively. They found that 89% of students with both an authoritative mother and an authoritative father had high self-esteem, and they concluded that the authoritative style "is far more beneficial for the development of self-esteem than is authoritarianism" (p. 281). In contrast, 84% of students in their study with both an authoritarian mother and an authoritarian father had low self-esteem. However, the authors' conclusion that the authoritative parenting style is better than the authoritarian parenting style is not warranted because their findings are based upon correlational research. They are unable to make causal claims based on the data they have collected.

Buri (1989) used the PAQ to investigate differences between students' and parents' appraisals of parenting style and to provide further information regarding the extent that parenting style related to self-esteem. Buri asked the students to complete the TSC, the Parental Nurture Scale (PNS), and the PAQ. The PNS and the PAQ

were reworded for use with the students' parents and mailed to parents for their perceptions of their nurturance and parenting styles. Buri hypothesized that mother and father nurturance and authoritativeness would be positively related to students' self-esteem and that the authoritarian style of parenting would be negatively related to students' self-esteem. He also predicted that student assessments of their parents' behaviors would be more strongly related to their self-esteem than parents' appraisals of their own behavior. The results supported his hypotheses. Mothers' and fathers' nurturance was positively related to students' self-esteem ( $r = .54$ ,  $p < .01$  for both mothers and fathers), and the authoritarian style was negatively related to students' self-esteem ( $r = -.30$ ,  $p < .01$  for mothers and  $r = -.22$ ,  $p < .03$  for fathers). He also found that students' reports of their parents' behaviors were significantly related to their self-esteem (mothers' authoritarianism,  $r = -.30$ ,  $p < .01$ ; mothers' authoritativeness,  $r = .46$ ,  $p < .01$ ; fathers' authoritarianism  $r = -.22$ ,  $p < .01$ ; fathers' authoritativeness  $r = .41$ ,  $p < .01$ ). The only parenting styles that were significantly related to self-esteem were mothers' perception of their own authoritativeness ( $r = .18$ ,  $p < .05$ ) and fathers' perception of their own authoritativeness ( $r = .23$ ,  $p < .05$ ). Buri also reported that the relationship of parenting behavior to self-esteem may be moderated by parental nurturance. That is, when he controlled for parental nurturance, parenting style accounted for only 4% of the variance in scores on the self-esteem measure, compared to nurturance, which accounted for 40.59% of the variance.

This study was designed to provide researchers with a better understanding of PAQ. Investigated here was whether college students' scores on the PAQ are likely to provide valid information on the authoritarian, authoritative, and permissive styles of

parenting. The goal was to help researchers improve their investigations of the important parenting issues raised in the studies reviewed here.

### **Practical Significance**

The factor analytic work conducted on college students' responses to the PAQ in this study also has implications for educational practice. Considerable research has linked parenting style to academic achievement and adolescent behavior, and many researchers believe that the authoritative style of parenting is the most appropriate parenting style for fostering students' academic achievement and social-emotional well-being. Some studies, however, have suggested that other styles of parenting may be more appropriate for children in some ethnic and socioeconomic groups (e.g., Chao, 1994, 2001; Garcia & Gracia, 2009; Julian, McKenry, & McKelvey, 1994; Taylor, Hinton, & Wilson, 1995). Researchers need a measure of parenting styles that yields reliable and valid scores of parenting style to investigate these important relationships. The factor analyses conducted in this study will give researchers a better understanding of the factors assessed by the PAQ in a sample of college students.

### **Summary**

Parenting styles are believed to be important influences on children's cognitive and socioemotional development. However, the research on the topic is controversial due at least in part to the use of different questionnaires to measure parenting styles. Several researchers have conducted confirmatory and exploratory factor analyses of students' responses to the items in the PAQ raising questions about the adequacy of scores on the PAQ as a measure of the three-factor model of authoritarian, authoritative, and permissive parenting styles. To address these questions, I conducted a confirmatory factor analysis to determine whether the factors identified by Buri (1991)

were validated in a sample of college students at a large state university. Some issues to be resolved in future research with the PAQ are the relationships between parenting styles and students' self-esteem. Studies by Buri (Buri et al., 1988; Buri, 1989) were conducted to provide clarification regarding the conflicting research on the question of whether parenting style is related to self-esteem. More research is needed, however, on numerous important questions including (a) why students' perceptions of their parents' style were more strongly related to their self-esteem than their parents' perceptions of their own parenting style and (b) given the decline in variance accounted for by parenting style when nurturance was in the model, might other variables also reduce the amount of variance that parenting style accounts for in self-esteem scores and other important student outcomes, such as academic achievement and emotional and social well-being.

## CHAPTER 2 METHOD

### **Participants**

The data for this study were taken from an existing dataset of 413 respondents from the University of Florida (Ribadeneira, 2006). The participants were recruited from a participant pool of students in the Department of Educational Psychology. Students were also recruited from undergraduate courses in the Departments of Romance Languages and Literature, and Health and Human Performance for a study of predictors of career decision self-efficacy (Ribadeneira, 2006). A subset of 331 students completed the mother's form of the PAQ, and a subset of 328 students completed the father's form. The gender and ethnic composition in the sample were as follows: 232 female (81.98%), 51 male (18.02%); 194 were Caucasian (68.55%), 49 Hispanic (17.31%), 12 Asian (4.24%), 18 African American (6.36%), and 10 did not identify their ethnicity (3.53%). Student classifications were as follows: (a) sophomore (118 students, 41.70%), (b) juniors (82 students, 28.90%), (c) seniors (44 students, 15.50%), and (d) freshman (37 students, 13.10%). A final category, other, for students who did not identify with the previously mentioned classifications, was also included in the study (2 students, 0.71%). Ages of participants ranged from 17 to 32. This information was obtained from Ribadeneira (2006).

### **Measure**

#### **The PAQ**

The measure of interest was the PAQ (Buri, 1991). Students responded to 30 questions regarding their mothers' parenting style and then the same 30 questions regarding their fathers' use of authority. Response options on the items ranged from 1

(*strongly disagree*) to 5 (*strongly agree*). See Table 2-1 for the 10 items proposed to load on the three scales Buri created to measure authoritarian, authoritative, and permissive parenting styles.

### **Reliability and Validity**

**Reliability.** Buri (1991) administered the PAQ to 62 college students in an introductory psychology class at the beginning of the term and, 2 weeks later, to 61 of those students. He reported test-retest reliabilities for the 2-week interval of scores on the subscales as follows: .81 for mother's permissiveness, .86 for mother's authoritarianism, .78 for mother's authoritativeness, .77 for father's permissiveness, .85 for father's authoritarianism, and .92 for father's authoritativeness. Then, for the scores of 185 students (95 women, 90 men) from an introductory psychology course, Buri reported internal consistency coefficients of .75 for mothers' permissiveness, .85 for mother's authoritarianism, .82 for mother's authoritativeness, .74 for father's authoritativeness, .87 for father's authoritarianism and .85 for father's authoritativeness.

**Discriminant validity.** To examine the discriminant validity of the scores on the PAQ, Buri (1991) administered the questionnaire to 127 college students in an introductory psychology course and found that students' perception of their mother's authoritarianism was negatively correlated with mother's permissiveness ( $r = -.38, p < .01$ ) and mother's authoritativeness ( $r = -.48, p < .01$ ), as one would expect, but the values of the correlations were surprisingly modest especially for the relationship between the authoritarian and permissive styles, which from a conceptual perspective are considered opposites. Similar to the correlations for the mother's form, students' perceptions of fathers' authoritarianism was negatively correlated with fathers' permissiveness ( $r = -.50, p < .01$ ) and fathers' authoritativeness ( $r = -.52, p < .01$ ).

Neither mother's nor father's permissiveness was significantly related to their authoritativeness.

**Criterion-related validity.** To examine criterion-related validity, the students' scores on the Parental Nurture Scale (Buri, Misukanis, & Mueller, 1988) were correlated with their PAQ subscale scores. Buri hypothesized that if the scores on the PAQ are a valid measure of Baumrind's parenting styles, then (a) the students' perceptions of the parents' authoritarian parenting would be inversely related to their perceptions of their parents' nurturance, (b) authoritative parenting would be positively related to nurturance, and (c) permissive parenting would not be related to nurturance. His hypotheses were supported. He found that perceptions of authoritative parenting were positively related to their perceptions' of parental nurturance (for mothers,  $r = .56$ ,  $p < .01$  and, for fathers,  $r = .68$ ,  $p < .01$ ). Also, authoritarian parenting was negatively related to parental nurturance ( $r = -.36$ ,  $p < .01$  for mothers and  $r = -.53$ ,  $p < .01$  for fathers), and permissive parenting was not related to nurturance ( $r = .04$ ,  $p > .10$  for mothers and  $r = .13$ ,  $p < .10$  for fathers), supporting his hypotheses.

**Social desirability.** Buri also (1991) examined whether students' responses to the parenting scales might be affected by the social desirability bias. Buri recruited 69 students from an introductory psychology course to complete the PAQ and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964). He found no significant correlations and concluded that students' scores on the PAQ were not affected by the social desirability bias; however correlations ranged from .01 for fathers' authoritarianism to .23 for mothers' permissiveness. Some of these correlations might

have reached significance with a larger sample. Buri did not investigate other possible response biases that might have accounted for variance in participants' response.

### **Procedures**

All participants signed consent forms. The participants completed the PAQ twice, once to describe their mother's parental authority style and a second time to describe their father's. The questionnaire was taken home and when completed was returned to the principal investigator, Ms. Ribadeneira.

### **Assessing Model Fit**

Two confirmatory factor analyses of the three-factor models of the parenting styles, one for mother's parenting styles and the second for father's style, were conducted using the Mplus 6.0 (Muthén & Muthén, 1998-2010) and the weighted least squares estimator (WLSMV). I hypothesized that the three-factor model would fit the data from the college students. Goodness of fit of the three-factor model was assessed according to the following standards: a non-significant chi-square, CFI and TLI values greater than .95, RMSEA less than .05, and SRMR less than .08 (Hu & Bentler, 1999).

Table 2-1. The three scales of the PAQ

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Authoritarian

2. Even if her children didn't agree with her, my mother felt that it was for our own good if we were forced to conform to what she thought was right.
3. Whenever my mother told me to do something as I was growing up, she expected me to do it immediately without asking any questions.
7. As I was growing up my mother did not allow me to question any decision she had made.
9. My mother has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.
12. My mother felt that wise parents should teach their children early just who is boss in the family.
16. As I was growing up my mother would get very upset if I tried to disagree with her.
18. As I was growing up my mother let me know what behavior she expected of me, and if I didn't meet those expectations, she punished me.
25. My mother has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do what they are supposed to as they are growing up.
26. As I was growing up my mother often told me exactly what she wanted me to do and how she expected me to do it.
29. As I was growing up I knew what my mother expected of me in the family and she insisted that I conform to those expectations simply out of respect for her authority.

Authoritative

4. As I was growing up, once family policy had been established, my mother discussed the reasoning behind the policy with the children in the family.
  5. My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.
  8. As I was growing up my mother directed the activities and decisions of the children in the family through reasoning and discipline.
  11. As I was growing up I knew what my mother expected of me in my family, but I also felt free to discuss those expectations with my mother when I felt that they were unreasonable.
  15. As the children in my family were growing up, my mother consistently gave us direction and guidance in rational and objective ways.
  20. As I was growing up my mother took the children's opinions into consideration when making family decisions, but she would not decide for something simply because the children wanted it.
  22. My mother had clear standards of behavior for the children in our home as I was growing up, but she was willing to adjust those standards to the needs of each of the individual children in the family.
-

## Table 2-1. continued

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23. My mother gave me direction for my behavior and activities as I was growing up and she expected me to follow her direction, but she was always willing to listen to my concerns and to discuss that direction with me.

27. As I was growing up my mother gave me clear direction for my behaviors and activities, but she was also understanding when I disagreed with her.

30. As I was growing up, if my mother made a decision in the family that hurt me, she was willing to discuss that decision with me and to admit it if she had made a mistake.

### Permissive

1. While I was growing up my mother felt that in a well-run home the children should have their way in the family as often as the parents do.

6. My mother has always felt that what her children need is to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.

10. As I was growing up my mother did *not* feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.

13. As I was growing up, my mother seldom gave me expectations and guidelines for my behavior.

14. Most of the time as I was growing up my mother did what the children in the family wanted when making family decisions.

17. My mother feels that most problems in society would be solved if parents would *not* restrict their children's activities, decisions, and desires as they are growing up.

19. As I was growing up my mother allowed me to decide most things for myself without a lot of direction from her.

21. My mother did not view herself as responsible for directing and guiding my behavior as I was growing up.

24. As I was growing up my mother allowed me to form my own point of view on family matters and she generally allowed me to decide for myself what I was going to do.

28. As I was growing up my mother did not direct the behaviors, activities, and desires of the children in the family.

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*Note.* The same questions were asked about father's parenting style. Items are organized by subscales from the *Journal of Personality Assessment* published by the Society for Personality Assessment, Copyright 1991, reproduced with permission of Taylor & Francis Informa UK, LTD - JOURNALS in the format Dissertation via Copyright Clearance Center.

## CHAPTER 3 RESULTS

### Introduction

Buri (1991) designed the PAQ to assess children's perceptions of their parents' use of the authoritarian, permissive, and authoritative parenting styles proposed by Baumrind (1971). Baumrind described the authoritarian style as strict and highly controlling, the permissive style as high in responsiveness to children, but low in demands, and the authoritative style as high in responsiveness and high in demands on children. On the PAQ, Buri (1991) measured these styles with 10 items for each style. In this study confirmatory factor analyses were conducted to determine whether the three-factor model provided good fit to the data from the responses of the college student participants to Buri's PAQ, for the mother's and father's versions of the scale.

### Statistical Analyses

#### Confirmatory Factor Analyses (CFA)

Confirmatory analyses were performed on the participants' responses to the items on each of the two forms (mother's and father's) of the PAQ from data obtained from Ribadeniera (2006). I used weighted least squares means and variance adjusted estimation procedure (WLSMV) to test the fit of Baumrind's (1971) three-factor model of parenting styles to the data. The factor loadings for the three-factor model for mothers are presented in Table 3-1 and in Table 3-2 for fathers. Only items with factor loadings equal to or greater than .30 were included in the factors.

#### Model fit

**Mothers and Fathers.** The fit indices for the participants' responses to PAQ items referring to mothers were as follows: CFI = .78, TLI = .76, RMSEA = .08, SRMR = .11

and  $\chi^2 (402) = 1154.65 (p < .01)$ ). These indices were all indicative of poor model fit. The fit indices for the three-factor model of fathers' parenting styles were as follows: CFI = .78, TLI = .77, RMSEA = .08, SRMR = .13 and  $\chi^2 (402) = 1187.82 (p < .01)$ . Similar to the results for the mothers, the fit indices for the three-factor model for fathers also indicated poor model fit.

### **Summary of CFA**

The CFAs of the three-factor model for mothers' and fathers' parenting styles indicated that the three-factor model was not a good fit to the data for either mothers or fathers. The TLI, CFI, RMSEA, and SRMR indices indicated poor model fit. Next, I conducted exploratory factor analyses of several models using the PAQ data from Ribadeneira's (2006) respondents to determine the number of factors that best fit the data.

### **Exploratory Factor Analyses (EFA)**

#### **Data analyses**

Seven EFA models of parenting style were tested using Mplus 6.0 (Muthén & Muthén, 1998-2010). The models were estimated using WLSMV, the same estimation procedure used in the CFA of the three-factor model. I began with the one-factor model and estimated seven models with the intention to estimate additional models if none of these models provided an adequate fit. No restrictions were placed on the factors. The analyses defaulted to GEOMIN as its oblique rotation operation, which allowed the factors to be correlated. Factor loadings smaller than .30 in absolute value were not considered salient and, therefore, were not used as a basis for interpreting factors.

## Comparisons of alternative models

For the models of mother's parenting styles, comparison of the fit indices indicated the fit of the models improved slightly with the addition of each new factor (see Table 3-3); however interpretability decreased as more than three factors were added to the model. Similarly, for fathers, comparison of the fit indices indicated little improvement beyond three factors (see Table 3-4). Also, interpretability of the factors decreased as more than three factors were added to the model for the mother's and father's form.

**Mothers' three-factor model of parenting styles.** The factor loadings for the mother's three-factor model are presented in Table 3-5. Twelve items had salient loadings on the first factor referred to here as *Mother's Authoritarian Parenting*. Of these 12 items, 10 had been on Buri's authoritarian parenting scale. These items had loadings that ranged from .54 to .76, with a median of .66. Fourteen items had salient loadings on the second factor referred to here as *Mother's Authoritative Parenting*; 10 of the items were on Buri's authoritative parenting scale, with loadings that ranged from .35 to .78 and a median of .64. Eleven items had salient loadings on the third factor, *Mother's Permissive Parenting*. Ten of the items had been on Buri's permissive parenting scale and had loadings that ranged from .31 to .66, with a median of .51. These results indicate better measurement of Mother's Authoritarian Parenting and Mother's Authoritative Parenting than of Mother's Permissive Parenting.

A total of seven items had cross loadings on two items; none had cross loading on three items. Of the items intended to measure authoritarian parenting, only item 7 cross-loaded. Of the items intended to measure authoritative parenting, items 5 and 8

cross-loaded. Item 7 (“As I was growing up my mother did not allow me to question any decision she had made.”) had loadings of .58 on Mother’s Authoritarian Parenting and -.33 on Mother’s Authoritative Parenting. Item 5 (“My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.”) had loadings of -.30 on Mother’s Authoritarian Parenting and .62 on Mother’s Authoritative Parenting. This pattern of negative and positive loadings is consistent with the conception of the two parenting styles, specifically that authoritarian parents will not allow much less encourage children to question their decisions, whereas authoritative parents do encourage such interactions. The fact that items 5 and 7 do not load on Mother’s Permissive Parenting also seems consistent with a parenting style for which parental decision making and rules about children are largely irrelevant. Item 8 (“As I was growing up my mother directed the activities and decisions of the children in the family through reasoning and discipline.”) had loadings of .35 on Mother’s Authoritative Parenting and -.46 on Mother’s Permissive Parenting. Thus its largest loading was not on the factor it was intended to measure. Nevertheless, the pattern of positive and negative loadings is consistent with the conception of the two parenting styles. The remaining four items were intended to measure permissive parenting. Only item 10 (“As I was growing up my mother did not feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.”) cross loaded on Mother’s Authoritarian Parenting and Mother’s Permissive Parenting, with loadings of -.30 and .31, respectively. The pattern of loadings is again consistent with the conception of the two parenting styles. Items 21, 24, and 28 had salient loadings on Mother’s Authoritative Parenting and Mother’s Permissive Parenting. Item

24 (“As I was growing up my mother allowed me to form my own point of view on family matters and she generally allowed me to decide for myself what I was going to do.”) had positive loadings on Mother’s Authoritative Parenting (.45) and on Mother’s Permissive Parenting (.61). It is not clear whether item 24 is a description of authoritative or permissive parenting and this may account for the pattern of results. It is interesting that item 24 did not load negatively on Mother’s Authoritarian Parenting because one might expect children of authoritarian parenting not to endorse this item. Items 21 and 28 had positive loadings on Mother’s Permissive Parenting and negative loadings on Mother’s Authoritative Parenting. For item 21 (“My mother did not view herself as responsible for directing and guiding my behavior as I was growing up.”), the loadings were .44 and -.47 respectively and for item 28 (“As I was growing up my mother did not direct the behaviors, activities, and desires of the children in the family.”) the loadings were .55 and -.35. The pattern of loadings is consistent with the conception of permissive and authoritative parenting, but again it is interesting that the items did not load negatively on Mother’s Authoritarian Parenting.

**Fathers’ three-factor model of parenting style.** The factor loadings for the father’s three-factor model are presented in Table 3-6. Eleven items had salient loadings on the first factor referred to here as *Father’s Authoritarian Parenting*. Of these 11 items, 10 had been on Buri’s authoritarian parenting scale. These items had loadings that ranged from .45 to .85, with a median of .68. Eighteen items had salient loadings on the second factor referred to here as *Father’s Authoritative Parenting*; 10 of the items were on Buri’s authoritative parenting scale, with loadings that ranged from .31 to .82 and a median of .66. Nine items had salient loadings on the third factor, *Father’s*

*Permissive Parenting*. Item 1 did not load on the Permissive factor as it was proposed to in the Buri scale. The items had loadings that ranged from .43 to .65, with a median of .57. These results also indicate better measurement of Father's Authoritarian Parenting and Father's Authoritative Parenting than of Father's Permissive Parenting (similar to mother's parenting scales).

A total of 8 items had cross loadings on two items; none had cross loading on three items. Of the items intended to measure authoritarian parenting, three items cross-loaded (7, 8, and 16). Of the items intended to measure authoritative parenting, eight items cross-loaded (7, 8, 13, 14, 16, 21, 24, and 28). Item 7 ("As I was growing up my father did not allow me to question any decision he had made.") and item 16 ("As I was growing up my father would get very upset if I tried to disagree with him") loaded on Father's Authoritarian Parenting (.68 and .45, respectively) and on Father's Authoritative Parenting (-.33 and -.32, respectively). Item 21 cross-loaded on Father's Permissive Parenting with a factor loading of .65 and a negative loading of -.36 on Father's Authoritative Parenting, reflecting the negative relationship of the two items with regard to the issue of the father's responsibility for guiding his child's behavior. Item 28 cross-loaded on Father's Authoritative Parenting with a factor loading of -.33 and a factor loading of .60 on Father's Permissive Parenting, reflecting the negative relationship of the two items regarding the father's responsibility for directing his children's activities. Two items, 14 ("Most of the time as I was growing up my father did what the children in the family wanted when making family decisions") and 24 ("As I was growing up my father allowed me to form my own point of view on family matters and he generally allowed me to decide for myself what I was going to do") cross-loaded on Father's

Authoritative Parenting (.31 and .45, respectively) and Father's Permissive Parenting (.43 and .46, respectively). The positive loadings suggest that these items fail to adequately discriminate between Father's Authoritative Parenting and Father's Permissive Parenting and therefore should be revised to better discriminate between the factors and therefore should be revised or omitted from the measure. Items 13, 21, and 28 concern setting guidelines for behavior. Items 14 and 24 concern granting autonomy to the child in how the family spent their time. Item 8 ("As I was growing up my father directed the activities and decisions of the children in the family through reasoning and discipline.") had loadings of .46 on Father's Authoritarian Parenting and .45 on Father's Authoritative Parenting. Thus its largest positive loading was not on the factor it was intended to measure. No items cross-loaded on father's authoritarian or permissive parenting. However, five items cross-loaded on the permissive and authoritative factors (as discussed above, items 13, 14, 21, 24, and 28), which is again consistent with the conception of the two parenting styles.

**Analysis of correlation tables.** Correlation tables for the three-factor models of parenting style for mother and fathers are presented in Tables 3-7 and 3-8, respectively. For both mother's and father's three-factor models, Authoritarian Parenting and Permissive Parenting were significantly negatively correlated. The higher students score on Authoritarian Parenting, the lower their score is likely to be on Permissive Parenting. However, one might wonder why the correlation is not higher in that the conception of those two styles are in opposition and the items seem to reflect that difference. Consider, for example, item 2 that loads on Authoritarian Parenting for both parents: "Even if the children didn't agree with her, my mother felt that it was for our own good if

we were forced to conform to what she thought was right,” and item 19 on Permissive Parenting: “As I was growing up my father allowed me to decide most things for myself without a lot of direction from him.”

The strength of the negative relationship appeared also to be related to whether the question required participants to think about their parents’ observable behaviors or make an inference about their parent’s authority. For example, for mothers, item 1—a permissive item (“While I was growing up my mother felt that in a well-run home the children should have their way in the family as often as the parents do”) and item 2—an authoritarian item (“Even if her children didn’t agree with her, my mother felt it was for our own good if we were forced to conform to what she thought was right”) had a -.21 relationship, while items 5—an authoritative item (“My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable”) and 7—an authoritarian item (“As I was growing up my mother did not allow me to question any decision she had made”) had a -.50 relationship. For fathers item 1 (“While I was growing up my father felt that in a well-run home the children should have their way in the family as often as the parents do”) and 2 (“Even if his children didn’t agree with him, my father felt it was for our own good if we were forced to conform to what she thought was right”) have only a -.19 correlation. By contrast, items 7—an authoritarian item (“As I was growing up my father did not allow me to question any decision he had made”) and 27—an authoritative item (“As I was growing up my father gave me clear direction for my behaviors and activities, but he was also understanding when I disagreed with him”), which concern observable behaviors, have a -.36 correlation coefficients. Thus there is not a tendency for the items associated with

inferring how the parent 'felt' to be seen as polar opposites. Questions that require participants to make inference about parents' beliefs about parenting behavior should be separated from those that require participants to report on parenting behavior in analyses to determine whether items pairs that assess behavior have consistently higher negative correlations.

### **Summary of EFA**

Of the seven models, the three-factor model of parenting styles provided the most interpretable results for both the mother's and father's forms of the PAQ. For mothers' parenting style, the three-factor model had adequate fit, although three items on Mother's Permissive Parenting had loadings ranging from .31 to .35. Item 24 positively cross-loaded on two factors in the model, suggesting that the item does not clearly discriminate between the two factors and should be omitted or revised to better reflect differences in the two parenting styles.

For father's parenting style, the three-factor model also had good fit. The father's three-factor model included two items (8, and 24) that positively cross-loaded on two factors, indicating that the items did not clearly discriminate between the two factors and should be omitted or revised to better differentiate between the two factors.

In conclusion, exploratory factor analyses of seven models, ranging from one factor to seven, showed that the fit of the data to the models increased slightly with the addition of each factor beyond three; however the interpretation of these factors is unclear. On the basis of Baumrind's original conception of the three types of parenting styles, the 3-factors are labeled Authoritarian, Authoritative, and Permissive Parenting. From the factor loadings table (Table 3-5 for mother's form) the items that had a salient loading on each factor and did not have a salient loading on a second factor are (a)

Mother's Authoritarian Parenting: items 2, 3, 9, 12, 16, 18, 25, 26, and 29; (b) Mother's Authoritative Parenting: items 4, 11, 15, 20, 22, 23, 27, and 30; (c) Mother's Permissive Parenting: items 1, 6, 13, 14, 17, 19, and 28. From the factor loadings for father's form (Table 3-6) the items loading on each factor are (a) Father's Authoritarian Parenting: items 2, 3, 9, 12, 18, 25, 26, and 29; (b) Father's Authoritative Parenting: items 1, 4, 5, 7, 8, 11, 13, 14, 15, 16, 20, 21, 22, 23, 24, 27, 28, and 30; and (c) Father's Permissive Parenting: items 6, 10, 13, 14, 17, 19, 21, 24, and 28. Buri's placements of items on the subscales of his instrument are consistent with the loadings in the 3-factor EFA model for mothers and fathers. In addition, most of the cross loadings are consistent with the theory underlying the development of the instrument.

Table 3-1. CFA factor loading matrix for PAQ—Mother’s form

Item	Factor Loadings for Mothers				
	1	2	3	<i>M</i>	<i>SD</i>
<b>Authoritarian</b>					
2. Even if her children didn’t agree with her, my mother felt that it was for our own good if we were forced to conform to what she thought was right.	.81 (.07)	—	—	2.79	1.26
3. Whenever my mother told me to do something as I was growing up, she expected me to do it immediately without asking any questions.	.76 (.06)	—	—	3.32	1.18
7. As I was growing up my mother did not allow me to question any decision she had made.	.66 (.06)	—	—	2.30	1.09
9. My mother has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.	.87 (.07)	—	—	2.66	1.27
12. My mother felt that wise parents should teach their children early just who is boss in the family.	.73 (.06)	—	—	2.98	1.14
16. As I was growing up my mother would get very upset if I tried to disagree with her.	.61 (.06)	—	—	2.65	1.11
18. As I was growing up my mother let me know what behavior she expected of me, and if I didn’t meet those expectations, she punished me.	.68 (.07)	—	—	3.12	1.21
25. My mother has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don’t do what they are supposed to as they are growing up.	.74 (.06)	—	—	2.89	1.15
26. As I was growing up my mother often told me exactly what she wanted me to do and how she expected me to do it.	.68 (.06)	—	—	2.97	1.14
29. As I was growing up I knew what my mother expected of me in the family and she insisted that I conform to those expectations simply out of respect for her authority.	.82 (.06)	—	—	2.89	1.21
<b>Authoritative</b>					
4. As I was growing up, once family policy had been established, my mother discussed the reasoning behind the policy with the children in the family.	—	.72 (.06)	—	3.53	1.08
5. My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.	—	.73 (.06)	—	3.41	1.12
8. As I was growing up my mother directed the activities and decisions of the children in the family through reasoning and discipline.	—	.30 (.06)	—	3.53	1.03
11. As I was growing up I knew what my mother expected of me in my family, but I also felt free to discuss those expectations with my mother when I felt that they were unreasonable.	—	.81 (.05)	—	3.83	1.09
15. As the children in my family were growing up, my mother consistently gave us direction and guidance in rational and objective ways.	—	.61 (.05)	—	3.94	0.90

Table 3-1. continued

Item	Factor Loadings for Mothers				
	1	2	3	<i>M</i>	<i>SD</i>
20. As I was growing up my mother took the children's opinions into consideration when making family decisions, but she would not decide for something simply because the children wanted it.	—	.60 (.06)	—	3.75	1.06
22. My mother had clear standards of behavior for the children in our home as I was growing up, but she was willing to adjust those standards to the needs of each of the individual children in the family.	—	.66 (.05)	—	3.64	1.05
23. My mother gave me direction for my behavior and activities as I was growing up and she expected me to follow her direction, but she was always willing to listen to my concerns and to discuss that direction with me.	—	.77 (.05)	—	3.87	1.01
27. As I was growing up my mother gave me clear direction for my behaviors and activities, but she was also understanding when I disagreed with her.	—	.63 (.05)	—	3.54	0.96
30. As I was growing up, if my mother made a decision in the family that hurt me, she was willing to discuss that decision with me and to admit it if she had made a mistake.	—	.75 (.05)	—	3.68	1.08
Permissive					
1. While I was growing up my mother felt that in a well-run home the children should have their way in the family as often as the parents do.	—	—	.53 (.07)	2.56	1.19
6. My mother has always felt that what her children need is to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.	—	—	.76 (.07)	2.50	1.14
10. As I was growing up my mother did not feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.	—	—	.51 (.07)	2.21	1.11
13. As I was growing up, my mother seldom gave me expectations and guidelines for my behavior.	—	—	.46 (.07)	1.97	1.06
14. Most of the time as I was growing up my mother did what the children in the family wanted when making family decisions.	—	—	.44 (.07)	2.69	1.08
17. My mother feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	—	—	.35 (.07)	2.45	1.05
19. As I was growing up my mother allowed me to decide most things for myself without a lot of direction from her.	—	—	.62 (.07)	2.92	1.11
21. My mother did not view herself as responsible for directing and guiding my behavior as I was growing up.	—	—	.37 (.07)	1.90	1.06
24. As I was growing up my mother allowed me to form my own point of view on family matters and she generally allowed me to decide for myself what I was going to do.	—	—	.52 (.07)	3.28	1.10
28. As I was growing up my mother did not direct the behaviors, activities, and desires of the children in the family.	—	—	.49 (.06)	2.19	0.98

Note. Values in parenthesis are standard errors.

Table 3-2. CFA factor loading matrix for PAQ—Father’s form

Item	Factor Loadings for Fathers				
	1	2	3	<i>M</i>	<i>SD</i>
<b>Authoritarian</b>					
2. Even if his children didn’t agree with him, my father felt that it was for our own good if we were forced to conform to what he thought was right.	.79 (.07)	—	—	3.08	1.26
3. Whenever my father told me to do something as I was growing up, he expected me to do it immediately without asking any questions.	.73 (.06)	—	—	3.43	1.19
7. As I was growing up my father did not allow me to question any decision he had made.	.82 (.06)	—	—	2.41	1.17
9. My father has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.	.88 (.06)	—	—	2.69	1.22
12. My father felt that wise parents should teach their children early just who is boss in the family.	.83 (.06)	—	—	3.00	1.13
16. As I was growing up my father would get very upset if I tried to disagree with him.	.67 (.06)	—	—	2.76	1.19
18. As I was growing up my father let me know what behavior he expected of me, and if I didn’t meet those expectations, he punished me.	.74 (.07)	—	—	3.18	1.23
25. My father has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don’t do what they are supposed to as they are growing up.	.71 (.06)	—	—	3.10	1.14
26. As I was growing up my father often told me exactly what he wanted me to do and how he expected me to do it.	.73 (.06)	—	—	2.89	1.14
29. As I was growing up I knew what my father expected of me in the family and he insisted that I conform to those expectations simply out of respect for her authority.	.77 (.06)	—	—	2.93	1.21
<b>Authoritative</b>					
4. As I was growing up, once family policy had been established, my father discussed the reasoning behind the policy with the children in the family.	—	.73 (.06)	—	3.10	1.19
5. My father has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.	—	.81 (.06)	—	3.00	1.23
8. As I was growing up my father directed the activities and decisions of the children in the family through reasoning and discipline.	—	.33 (.06)	—	3.15	1.09
11. As I was growing up I knew what my father expected of me in my family, but I also felt free to discuss those expectations with my father when I felt that they were unreasonable.	—	.91 (.06)	—	3.56	1.20
15. As the children in my family were growing up, my father consistently gave us direction and guidance in rational and objective ways.	—	.83 (.05)	—	3.62	1.11
20. As I was growing up my father took the children’s opinions into consideration when making family decisions, but he would not decide for something simply because the children wanted it.	—	.70 (.06)	—	3.65	1.10
22. My father had clear standards of behavior for the children in our home as I was growing up, but he was willing to adjust those standards to the needs of each of the individual children in the family.	—	.66 (.06)	—	3.34	1.13

Table 3-2. continued

Item	Factor Loadings for Fathers				
	1	2	3	<i>M</i>	<i>SD</i>
23. My father gave me direction for my behavior and activities as I was growing up and he expected me to follow his direction, but he was always willing to listen to my concerns and to discuss that direction with me.	—	.84 (.06)	—	3.52	1.17
27. As I was growing up my father gave me clear direction for my behaviors and activities, but he was also understanding when I disagreed with him.	—	.79 (.05)	—	3.27	1.07
30. As I was growing up, if my father made a decision in the family that hurt me, he was willing to discuss that decision with me and to admit it if he had made a mistake.	—	.81 (.06)	—	3.29	1.21
Permissive					
1. While I was growing up my father felt that in a well-run home the children should have their way in the family as often as the parents do.	—	—	.15 (.07)	2.27	1.14
6. My father has always felt that what his children need is to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.	—	—	.47 (.07)	1.18	1.18
10. As I was growing up my father did not feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.	—	—	.47 (.06)	1.91	0.95
13. As I was growing up, my father seldom gave me expectations and guidelines for my behavior.	—	—	.67 (.06)	2.09	1.11
14. Most of the time as I was growing up my father did what the children in the family wanted when making family decisions.	—	—	.32 (.06)	2.70	1.03
17. My father feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	—	—	.31 (.07)	2.39	1.04
19. As I was growing up my father allowed me to decide most things for myself without a lot of direction from him.	—	—	.54 (.06)	2.92	1.06
21. My father did not view himself as responsible for directing and guiding my behavior as I was growing up.	—	—	.77 (.06)	2.15	1.13
24. As I was growing up my father allowed me to form my own point of view on family matters and he generally allowed me to decide for myself what I was going to do.	—	—	.29 (.07)	3.07	1.09
28. As I was growing up my father did not direct the behaviors, activities, and desires of the children in the family.	—	—	.78 (.06)	2.43	1.12

Note. Values in parenthesis are standard errors.

Table 3-3. Goodness of fit indices for models—Mother's form

# of Factors	$\chi^2$	df (p)	CFI	TLI	SRMR	RMSEA
1	3501.44	405 (.00)	.48	.44	.17	.15
2	1019.30	376 (.00)	.89	.88	.06	.07
3	634.86	348 (.00)	.95	.94	.04	.05
4	544.13	321 (.00)	.96	.95	.04	.05
5	462.06	295 (.00)	.97	.96	.03	.04
6	409.21	270 (.00)	.98	.96	.03	.04
7	359.77	246 (.00)	.98	.97	.03	.04

Note. CFI = Comparative Fit Index; TLI = Tucker Lewis Index; SRMR = Standard Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.

Table 3-4. Goodness of fit indices for models—Father's form

# of factors	$\chi^2$	df (p)	CFI	TLI	SRMR	RMSEA
1	3712.33	405 (.00)	.47	.43	.18	.16
2	921.48	376 (.00)	.91	.90	.06	.07
3	571.54	348 (.00)	.96	.96	.04	.04
4	489.97	321 (.00)	.97	.96	.03	.04
5	415.73	295 (.00)	.98	.97	.03	.04
6	367.33	270 (.00)	.98	.98	.03	.03
7	319.83	246 (.01)	.99	.99	.02	.03

Note. CFI = Comparative Fit Index; TLI = Tucker Lewis Index; SRMR = Standard Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.

Table 3-5. EFA factor loadings for the three-factor model of parenting styles mother's form

Item	Geomin Factor Loading for Mothers		
	AR 1	AT 2	P 3
1. While I was growing up my mother felt that in a well-run home the children should have their way in the family as often as the parents do.	-.22 (.06)	.13 (.07)	.33* (.06)
2. Even if her children didn't agree with her, my mother felt that it was for our own good if we were forced to conform to what she thought was right.	.70* (.04)	.06 (.07)	-.04 (.06)
3. Whenever my mother told me to do something as I was growing up, she expected me to do it immediately without asking any questions.	.76* (.04)	.11 (.08)	.04 (.06)
4. As I was growing up, once family policy had been established, my mother discussed the reasoning behind the policy with the children in the family.	-.10 (.05)	.64* (.03)	-.01 (.04)
5. My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.	-.30** (.05)	.62* (.04)	.14 (.06)
6. My mother has always felt that what her children need is to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.	-.19 (.06)	.03 (.07)	.59* (.05)
7. As I was growing up my mother did not allow me to question any decision she had made.	.58* (.04)	-.34** (.06)	-.01 (.02)
8. As I was growing up my mother directed the activities and decisions of the children in the family through reasoning and discipline.	.13 (.06)	.35* (.08)	-.46** (.06)
9. My mother has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.	.67* (.05)	-.13 (.06)	-.04 (.06)
10. As I was growing up my mother did not feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.	-.30** (.06)	-.15 (.06)	.31* (.06)
11. As I was growing up I knew what my mother expected of me in my family, but I also felt free to discuss those expectations with my mother when I felt that they were unreasonable.	-.13 (.05)	.78* (.03)	.12 (.07)
12. My mother felt that wise parents should teach their children early just who is boss in the family.	.68* (.05)	-.04 (.07)	.05 (.07)
13. As I was growing up, my mother seldom gave me expectations and guidelines for my behavior.	.12 (.06)	-.26 (.10)	.60* (.06)
14. Most of the time as I was growing up my mother did what the children in the family wanted when making family decisions.	.05 (.06)	.17 (.08)	.47* (.05)
15. As the children in my family were growing up, my mother consistently gave us direction and guidance in rational and objective ways.	.00 (.03)	.74* (.05)	-.21 (.06)
16. As I was growing up my mother would get very upset if I tried to disagree with her.	.59* (.05)	-.23 (.07)	.12 (.05)
17. My mother feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	.01 (.06)	-.06 (.07)	.35* (.06)

Table 3-5. continued

Item	Geomin Factor Loading for Mothers		
	AR 1	AT 2	P 3
18. As I was growing up my mother let me know what behavior she expected of me, and if I didn't meet those expectations, she punished me.	.59* (.05)	.17 (.06)	-.17 (.06)
19. As I was growing up my mother allowed me to decide most things for myself without a lot of direction from her.	.01 (.05)	.14 (.09)	.66* (.04)
20. As I was growing up my mother took the children's opinions into consideration when making family decisions, but she would not decide for something simply because the children wanted it.	-.03 (.05)	.61* (.05)	-.13 (.07)
21. My mother did not view herself as responsible for directing and guiding my behavior as I was growing up.	-.01 (.04)	-.47** (.07)	.44* (.07)
22. My mother had clear standards of behavior for the children in our home as I was growing up, but she was willing to adjust those standards to the needs of each of the individual children in the family.	-.09 (.05)	.66* (.04)	.03 (.06)
23. My mother gave me direction for my behavior and activities as I was growing up and she expected me to follow her direction, but she was always willing to listen to my concerns and to discuss that direction with me.	.01 (.05)	.83* (.03)	-.09 (.06)
24. As I was growing up my mother allowed me to form my own point of view on family matters and she generally allowed me to decide for myself what I was going to do.	.01 (.02)	.45** (.09)	.61* (.04)
25. My mother has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do what they are supposed to as they are growing up.	.64* (.04)	-.03 (.05)	-.10 (.06)
26. As I was growing up my mother often told me exactly what she wanted me to do and how she expected me to do it.	.54* (.05)	.03 (.04)	-.19 (.06)
27. As I was growing up my mother gave me clear direction for my behaviors and activities, but she was also understanding when I disagreed with her.	-.23 (.05)	.61* (.04)	.00 (.03)
28. As I was growing up my mother did not direct the behaviors, activities, and desires of the children in the family.	-.06 (.06)	-.35** (.09)	.55* (.06)
29. As I was growing up I knew what my mother expected of me in the family and she insisted that I conform to those expectations simply out of respect for her authority.	.70* (.04)	-.05 (.07)	.01 (.05)
30. As I was growing up, if my mother made a decision in the family that hurt me, she was willing to discuss that decision with me and to admit it if she had made a mistake.	-.23 (.05)	.63* (.04)	-.07 (.06)

Note. Factors: AR = Authoritarian, AT = Authoritative, P = Permissive. \* indicates items with factor loadings  $\geq .30$ . \*\* indicates items loading on more than one factor.

Table 3-6. EFA factor loadings for the three-factor model of parenting styles father's form

Item	Geomin Factor Loading for Fathers		
	AR 1	AT 2	P 3
1. While I was growing up my father felt that in a well-run home the children should have their way in the family as often as the parents do.	-.21 (.08)	.33* (.05)	.17 (.08)
2. Even if his children didn't agree with him, my father felt that it was for our own good if we were forced to conform to what he thought was right.	.64* (.06)	.00 (.04)	-.02 (.07)
3. Whenever my father told me to do something as I was growing up, he expected me to do it immediately without asking any questions.	.72* (.05)	.11 (.05)	.05 (.06)
4. As I was growing up, once family policy had been established, my father discussed the reasoning behind the policy with the children in the family.	-.05 (.06)	.67* (.04)	.05 (.09)
5. My father has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.	-.22 (.05)	.66* (.04)	.15 (.09)
6. My father has always felt that what his children need is to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.	.00 (.05)	.28 (.07)	.57* (.06)
7. As I was growing up my father did not allow me to question any decision he had made.	.68* (.05)	-.33** (.04)	.05 (.07)
8. As I was growing up my father directed the activities and decisions of the children in the family through reasoning and discipline.	.46* (.07)	.45** (.05)	-.11 (.09)
9. My father has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.	.85* (.05)	-.02 (.04)	.15 (.07)
10. As I was growing up my father did not feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.	.08 (.08)	-.01 (.04)	.64* (.07)
11. As I was growing up I knew what my father expected of me in my family, but I also felt free to discuss those expectations with my father when I felt that they were unreasonable.	.00 (.04)	.82* (.03)	.17 (.10)
12. My father felt that wise parents should teach their children early just who is boss in the family.	.74* (.06)	.00 (.03)	-.06 (.07)
13. As I was growing up, my father seldom gave me expectations and guidelines for my behavior	.08 (.09)	-.30** (.09)	.63* (.08)
14. Most of the time as I was growing up my father did what the children in the family wanted when making family decisions.	-.02 (.07)	.31** (.06)	.43* (.07)
15. As the children in my family were growing up, my father consistently gave us direction and guidance in rational and objective ways.	.04 (.05)	.79* (.04)	-.12 (.10)
16. As I was growing up my father would get very upset if I tried to disagree with him.	.45* (.07)	-.32** (.05)	-.06 (.08)
17. My father feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	.10 (.07)	.16 (.07)	.50* (.07)
18. As I was growing up my father let me know what behavior he expected of me, and if I didn't meet those expectations, he punished me.	.69* (.06)	.23 (.05)	-.07 (.08)
19. As I was growing up my father allowed me to decide most things for myself without a lot of direction from him.	-.01 (.07)	.06 (.08)	.57* (.07)

Table 3-6. continued

Item	Geomin Factor Loading for Fathers		
	AR 1	AT 2	P 3
20. As I was growing up my father took the children's opinions into consideration when making family decisions, but she would not decide for something simply because the children wanted it.	-.08 (.06)	.64* (.04)	-.06 (.09)
21. My father did not view himself as responsible for directing and guiding my behavior as I was growing up.	-.03 (.06)	-.36** (.08)	.65* (.07)
22. My father had clear standards of behavior for the children in our home as I was growing up, but he was willing to adjust those standards to the needs of each of the individual children in the family.	-.07 (.07)	.59* (.04)	-.08 (.09)
23. My father gave me direction for my behavior and activities as I was growing up and he expected me to follow his direction, but he was always willing to listen to my concerns and to discuss that direction with me.	-.02 (.04)	.76* (.03)	-.13 (.100)
24. As I was growing up my father allowed me to form my own point of view on family matters and he generally allowed me to decide for myself what I was going to do.	-.01 (.05)	.45** (.06)	.46* (.07)
25. My father has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do what they are supposed to as they are growing up.	.60* (.06)	.00 (.03)	-.10 (.06)
26. As I was growing up my father often told me exactly what she wanted me to do and how he expected me to do it.	.75* (.04)	.20 (.05)	-.01 (.02)
27. As I was growing up my father gave me clear direction for my behaviors and activities, but he was also understanding when I disagreed with him.	.09 (.06)	.79* (.03)	.17 (.10)
28. As I was growing up my father did not direct the behaviors, activities, and desires of the children in the family.	-.07 (.07)	-.33** (.07)	.60* (.07)
29. As I was growing up I knew what my father expected of me in the family and he insisted that I conform to those expectations simply out of respect for his authority.	.66* (.05)	-.07 (.04)	.01 (.05)
30. As I was growing up, if my father made a decision in the family that hurt me, he was willing to discuss that decision with me and to admit it if he had made a mistake.	-.11 (.06)	.67* (.04)	.01 (.04)

Note. Factors: AR = Authoritarian, AT = Authoritative, P = Permissive. \* indicates items with factor loadings  $\geq .30$ . \*\* indicates items loading on more than one factor.

Table 3-7. Geomin factor correlations for mother's three parenting factors

Factor	1	2	3
1. Authoritarian	1.00	—	—
2. Authoritative	-.20	1.00	—
3. Permissive	-.41*	-.08	1.00

Note. N = 331 for mother's form and 328 for father's form.

\* $p < .01$ .

Table 3-8. Geomin factor correlations for father's three parenting factors

Factor	1	2	3
1. Authoritarian	1.00	—	—
2. Authoritative	-.23	1.00	—
3. Permissive	-.57*	-.12	1.00

Note. N = 331 for mother's form and 328 for father's form.

\* $p < .01$ .

## CHAPTER 4 DISCUSSION AND CONCLUSIONS

### **Discussion**

This study consisted of confirmatory and exploratory factor analyses of the responses of 331 college students to the mother's form of the PAQ and 328 college students' responses to the father's form of the PAQ. I hypothesized that the confirmatory factor analyses would support the 3-factor model Baumrind (1971) proposed and Buri (1991) used to create the PAQ, a 30-item, self-report measure with three subscales designed to assess parents' authoritarian, authoritative, and permissive parenting styles. The confirmatory factor analysis showed that the three-factor model did not provide adequate fit to the data for either the mother's or father's form of the PAQ. From exploratory factor analyses of models ranging from one to seven factors I concluded that although the fit of the mother's and father's models to the data increased slightly for factors four through seven, the three-factor model had the most clearly interpretable factors for both mothers and fathers. In this chapter I discuss implications of the results of these analyses and limitations and recommendations of this study for future research.

**Inconsistent findings of confirmatory and exploratory factor analyses.** As described in chapter 1 of this thesis, Dwairy (2004) concluded from her confirmatory factor analysis of 431 Palestinian-Arab participants' responses to the PAQ that the three-factor model of parenting styles fit her data. Similarly, Chan and Chan (2007) concluded that the three-factor model was confirmed in their confirmatory factor analysis of the responses of 285 teacher education students from the University of Hong Kong to the PAQ. In contrast, from confirmatory analyses of the responses of a

diverse sample of 150 Hispanic and Caucasian children Varela et al. (2004) concluded that a two-factor model with the items from the permissive scale removed provided a better fit to their data. The conflicting results in these three studies raise the question of why the confirmatory factor analyses of the three-factor model of parenting for mother's and father's in this study showed that that the model did not fit the data for either the mother's or father's form of the PAQ. Possible explanations differences in the samples, including ethnic and age differences. Dwairy's sample consisted of 431 Palestinian Arab adolescents, and the sample of Varela et al. consisted of 450 Hispanic and Caucasian children, ages 10 to 14, and their parents. The results of their confirmatory factor analysis of ethnic subgroups are questionable given the small size of their samples. To examine these possibilities, researchers should conduct confirmatory factor analyses with data from other samples in which the items identified in this study as not discriminating between factors are revised or omitted.

Although the three-factor model of parenting styles did not fit the college students' data on the PAQ items using confirmatory factor analyses of the students' perceptions of their mothers' and father's parenting styles, I concluded from seven exploratory factor analyses ranging from one factor to seven factors that the three-factor model yielded the most interpretable factors. However, three items did not adequately discriminate between the factors of Authoritative and Permissive Parenting. On the mother's form, one item (Item 24—As I was growing up my mother allowed me to form my own point of view on family matters and she generally allowed me to decide for myself what I was going to do) did not discriminate adequately between Mother's Authoritative Parenting (factor loading of .45) and Mother's Permissive Parenting (factor loading of .61). On the

father's form, one item (item 8—As I was growing up my father directed the activities and decisions of the children in the family through reasoning and discipline) did not adequately discriminate between the Father's Authoritarian Parenting (factor loading of .46) and Father's Authoritative Parenting (factor loading of .45). Two items did not adequately discriminate between Father's Authoritative Parenting and Permissive Parenting: item 14, Most of the time as I was growing up my father did what the children in the family wanted when making family decisions with factor loadings of .31 on Authoritative Parenting and .43 on Permissive Parenting; and item 24, As I was growing up my father allowed me to form my own point of view on family matters and he generally allowed me to decide for myself what I was going to do, with loadings of .45 on Authoritative Parenting and .46 on Permissive Parenting. These items (24 on the mother's form and 8, 14, and 24 on the father's form) need to be omitted or revised to allow better discrimination between factors. The results of the exploratory factor analyses suggest that removing items from the factors may provide a more adequate measure of parenting style.

### **Limitations**

This study had several limitations. First, the majority of participants in the dataset were White and female. Previous research suggests that males and females perceive and report parenting styles differently. Therefore including data from both males and females in a single factor analysis of parenting style can be misleading. In future studies, separate factor analyses should be conducted for each gender to assess these differences. Differences in perception may also occur on the basis of race. Consequently, future factor analyses should examine whether participants' responses to the items on the PAQ load differently for different genders and ethnicities.

Second, in this study adult children provided self-reports of their perceptions of their parents' style of authority, which required them to recall experiences from their childhood. These adult children's recall and overall impressions of their childhood may have biased their responses to the items on the PAQ. Third, the format of the PAQ, a Likert scale in which respondents indicate the extent to which their parents used authoritarian, authoritative, and permissive styles, allows respondents to indicate that their parents use more than one of the styles. Analyses that fail to take into account that respondents may perceive their parents as using more than one style consistently may lead to oversimplifications of parents' use of authority.

**Recommendations.** Considerable research suggests that parenting style is related to important future behavior and outcomes. For example, Rothrauff, Cooney, and An (2009), in a sample of 2, 232 adults age 40 and over, found that participants' perceptions of their parents' style of parenting was related to their psychological well-being in later life. The adults who remembered their parents being authoritarian or uninvolved reported lower scores on a psychological well-being scale and reported more depressive symptoms later in life. Also, adults who remembered having uninvolved parents were more likely to abuse substances. Similarly, Baldwin, McIntyre, and Hardaway (2007) found that 63 college students who perceived their parents as authoritative had higher levels of optimism than students who reported having authoritarian parents. Although these are correlational studies and causal relationships cannot be assumed, these studies suggest that examination of these relationships with structural equation modeling might provide support for a causal relationship between parenting style in childhood and psychological well-being in later life. In light of the need

to conduct further research on issues such as the relationship of parenting styles to important future outcomes, I recommend continued research on the improvement of the PAQ as a measure of the authoritarian, authoritative, and permissive parenting styles.

The factor analyses conducted in this study suggest the following recommendations.

1. Items 24 on the mother's form and items 8, 14, and 24 on the father's form need to be omitted or revised to increase the discriminant validity of participants' responses to the items on the PAQ.
2. Research is needed to determine why the negative correlations between the factors of authoritarian and permissive parenting on the mother's and father's forms are only moderate, when conceptually these parenting styles are quite different from each other.
3. Because the factor loadings of respondents' scores on the PAQ may vary by gender and ethnicity, factor analytic research should be conducted to assess this possibility by examining the factor loadings of students' responses to the PAQ for samples that are limited to one gender and one ethnicity.
4. Researchers should explore ways to study the implications of the possibility that parents use more than one consistent style of parenting to deal with the differing situations that arise during socialization of their children.

### **Conclusions**

The purpose of this study was to determine whether the three-factor model on which the PAQ was based was verified in a dataset of undergraduate college students from the University of Florida. Confirmatory factor analyses of participants' responses to the mother's and father's forms of the PAQ indicated that the three-factor model of authoritarian, authoritative, and permissive parenting styles Buri (1991) intended to measure with the PAQ did not have adequate fit to the data. However, results of seven exploratory factor analyses with factors ranging from one to seven suggested that increasing the number of factors beyond three did not yield interpretable factors. The elimination of item 24 on the mother's form and items 8, 14, and 24 on the father's form may result in a three-factor model that provides a better fit to the data in future samples,

which should be limited to one gender and ethnicity to eliminate the possibility that differences in gender and ethnicity will influence the results of the factor analyses.

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## BIOGRAPHICAL SKETCH

Michelle Toston Hill was born in 1983 in Tallahassee, Florida. She moved with her family to Jacksonville, Florida, where she was raised most of her life, attending local magnet schools. Her father, Carl Toston Sr., was a social worker with Children and Families Services and her mother, Vivian Toston, was an assistant manager at Scotty's Hardware store. In 1998, she was accepted into the International Baccalaureate program at Stanton College Preparatory School in Jacksonville Florida. She graduated with college credit, the International Baccalaureate diploma, and a high school diploma in 2002.

Michelle attended Florida State University in Tallahassee, Florida, as an undergraduate and earned the Bachelor of Science degree in psychology in 2005. While at Florida State, Michelle was an undergraduate research assistant and teaching assistant for the general psychology course offered to undergraduates. Her interests in teaching at the university/college level led her to pursue the doctorate degree in educational psychology.

In the summer of 2005, she was invited to participate in a program for minority students, hosted by the Board of Education at the University of Florida in Gainesville, Florida, which introduces students to and prepares students for Graduate School. She was also offered a Presidential Fellowship from the College of Education at the University of Florida, a fellowship that afforded her the opportunity to teach undergraduate courses at the university.

During her graduate research career at the University, Michelle presented at several conferences, including The Closing of the Achievement Gap through Partnerships Conference, the 18<sup>th</sup> Annual National Youth at Risk Conference, the

American Institute of Higher Education's 5<sup>th</sup> International Conference, and the University of Florida Graduate Student Council Interdisciplinary Conference.

Michelle's research interests include investigating factors that may influence students' academic achievement (i.e., parenting styles, teaching styles, peer behaviors). She is also interested in studying the benefits of using authoritative teaching practices to increase student academic achievement and reduce the achievement gap.

In 2006, she married her high school sweetheart, Reverend Titus Wayne Hill II. They currently reside in Jacksonville, Florida, where together they raise their two dogs, Lana and Miles. Michelle received her Master of Arts in Education degree in educational psychology in the summer of 2011. She plans to continue her education at the University of Florida and receive her Doctorate degree in educational psychology.