DEVELOPMENT OF THE PARENT ADULT RELATIONSHIP QUESTIONNAIRE (PARQ)*

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ABSTRACT

Relationships between adults and parents are characterized by positive and negative qualities. Existing measures of relationship qualities and ambivalence often rely on items that are unbalanced in number of positive and negative items, emotional tone, or missing negative items completely. Three studies established validity (construct, convergent, discriminant) and reliability (internal consistency, test-retest) for the Parent Adult Relationship Quality (PARQ) scale. Study 1 found high internal consistency and test-retest correlations among undergraduates. Study 2 found associations with measures of positive relationship quality and high test-retest correlations using a sample of parents. Study 3 established convergent and discriminant validity with other measures of relationship quality, including an observational measure. The PARQ is a succinct measure that captures positive and negative aspects of support and interactions in relationships between adults and their parents.

*This study was supported by grant R01AG17916 "Problems Between Parents and Offspring in Adulthood" and R01 AG027769, "The Psychology of Intergenerational Transfers" from the National Institute of Aging.

The parent-child tie is both a source of support and a source of irritation across the lifespan. Moreover, qualities of relationships with parents and adult offspring have been linked to well-being (Fingerman, Pitzer, Lefkowitz, Birditt, & Mroczek, 2008; Lowenstein, 2007; Ward, 2008). Yet, it remains unclear whether it is positive qualities, negative qualities, or a mixture of sentiments that account for these associations. Because the study of parent-adult child relationships is multi-faceted, it is important to provide: (a) a measure that is brief in length; (b) assesses positive and negative facets of this relationship with regard to balance in the tone of the questions; and (c) includes items that are applicable to all parent-adult child relationships, regardless of distance. Such a measure would serve to complement the study and measurement of other aspects of the parent-adult child relationship.

Early research regarding parent-adult child relationships involved the intergenerational solidarity perspective, which provides evidence of cohesion in parent-adult child relationships (Bengtson & Schrader, 1982). Over the past decade, however, the field turned to the intergenerational ambivalence model (Lowenstein, 2007; Luescher & Pillemer, 1998; Pillemer & Sutor, 2002). This model is conceived of as: (a) feeling mixed or torn in the relationship; or (b) experiencing both positive and negative sentiments toward a parent or grown child (Luescher & Pillemer, 1998; Priester & Petty, 2001). The latter definition, the social psychological perspective, has received the majority of research attention (Fingerman, Chen, Hay, Cichy, & Lefkowitz, 2006; Fingerman et al., 2008; Peters, Hooker, & Zvonkovic, 2006; Willson, Shuey, & Elder, 2003). This model, however, is also hampered by measurement issues. Despite strong research interest in this topic, there is a lack of adequate measurement for the construct. Therefore, the Parent Adult Relationship Quality (PARQ) scale was designed to be a useful measure of positive and negative relationship qualities for researchers who are seeking to enhance and broaden understanding of intergenerational relationships, ambivalence, and well-being. This measure is an emotionally balanced, concise (in terms of number of items), and useful measurement tool for parent-adult child ties across varying geographic differences.

EXTANT MEASURES OF RELATIONSHIPS BETWEEN ADULTS AND PARENTS

Several measures have been designed to assess intergenerational relationships, and PARQ adds to this group by filling gaps left by current assessments. A succinct measure that makes the use of emotionally balanced items would allow direct comparisons of positive and negative feelings in the tie, without having to attribute possible differences to intensity of the items (e.g., being very angry vs. being satisfied). Furthermore, it is important that the measure takes into consideration that nearly half of adults reside more than 50 miles from their parents (Greenwell & Bengtson, 1997; Lin & Rogerson, 1995). Despite geographic

separation from parents, offspring who reside at a distance from parents typically report positive and negative relationship qualities comparable to qualities reported by more proximate offspring (Fingerman, Hay, Cichy, Tang, Chen, & Lefkowitz, 2003; Lawton, Silverstein, & Bengtson, 1994).

Measures of Parent/Child Ties

Over time, assessments of parent-adult child ties have varied in content and structure. While many types of assessments may be useful, researchers who wish to measure multiple aspects of the parent-adult child tie may seek a measure of relationship qualities specific to this tie. Therefore, measures tapping solely positive aspects of parent-adult child relationships (e.g., Positive Affect Index; Bengtson & Schrader, 1982), or feelings of secure attachment bonds attachment with older parents (e.g., Adult Attachment Scale; Cicirelli, 1995), may fall short in assessing the breadth of relationship qualities in this tie.

Meanwhile, measures that do include both positive and negative items either are not balanced or are too concise to capture a broader range of positive and negative qualities. A few existing scales are balanced in number of positive and negative items, but not tone. For example, Fingerman and colleagues (2006) and Umberson (1992) used an existing balanced measure from the American Changing Lives Survey, which included two positive items ("How much does he/she make you feel loved and cared for" and "How much does he/she understand you?") and two negative items ("How much does he/she criticize you" and "How much does he/she make demands on you?"). The measure is limited because it captures only four aspects of the relationship. Moreover, the negative items in this measure also seem more intense in tone than the positive ones. Furthermore, Bengtson and colleagues also introduced a measure of solidarity-conflict in adult intergenerational relationships (Giarrusso, Silverstein, Gans, & Bengtson, 2005). While this measure includes four items to examine affectual solidarity (general closeness, communication, camaraderie, understanding in the relationship), and four items to assess conflict (general conflict, tension, and disagreements; criticism; arguments; demands in the relationship), the items do not mirror one another. Likewise, Willson et al. (2003) used six items measuring positive and negative feelings that were balanced in number, but not in tone.

Social Network Measure

In 2005, Newsom and colleagues developed one of the only measures of positive and negative social exchanges that included parallel and balanced items for both positive and negative behaviors (Newsom, Rook, Nishishiba, Sorkin, & Mahan, 2005). Although some of these questions could be applied to assessment of parent-adult child relationships, most of these items do not apply to adults and their parents who reside at a distance (e.g., "Include you in things that they were doing," or "Provide you with good company or companionship"). Moreover,

the complete measure is 24 questions in length (12 positive and 12 negative), thus not providing a succinct measurement of positive and negative relationship qualities. A brief and emotionally balanced assessment specific to this relationship would enhance understanding of affection, conflict, and ambivalence between adults and their parents.

PARENT AND ADULT RELATIONSHIP QUESTIONNAIRE (PARQ) DEVELOPMENT

The following studies assess the Parent and Adult Relationship Questionnaire (PARQ) as a concise and emotionally balanced instrument of positive and negative qualities in the parent-adult child tie, regardless of the geographical distance between parents and children. The literature regarding adults and parents uses the term “relationship quality” broadly in reference to either positive and negative feelings (Lefkowitz & Fingerman, 2003), supportive behaviors or demands (Umberson, 1989, 1992), manifestations of respect or affection (Bengtson & Schrader, 1982), and/or interpersonal problems (Birditt, Miller, Fingerman, & Lefkowitz, 2009). Likewise, we use a broad definition of “quality” here.

To determine whether the new measure adequately captures positive and negative qualities, convergent and discriminant validity should be evident (Campbell & Fiske, 1959). An appropriate assessment of positive and negative relationship qualities should be associated with existing measures of relationship quality and not associated with constructs conceptually distinct from relationship qualities. We expected that the PARQ would be associated with other measures of positive relationship qualities (Bengtson & Schrader, 1982; Cicirelli, 1991, 1993; Koropecj-Cox, 2002; Sweet, Bumpass, & Call, 1988), and of positive and negative qualities in this tie (ACL; Fingerman et al., 2006; Umberson, 1992; Willson et al., 2003). We also expected the PARQ would not be associated with conceptually dissimilar measures of other aspects of the parent-child tie, such as filial anxiety (offspring’s worries about parents’ future care needs; Cicirelli, 1988) or frequency of face-to-face contact. We also considered several other important aspects of measurement development. Namely, it is important that such a measure assess qualities of the tie in the absence of face-to-face contact. We developed the PARQ with relevant items for adults and parents regardless of geographic distance between the parties.

We also sought to develop a measure that is appropriate for survey research. Survey researchers have become increasingly interested in measures that can be administered via a variety of methodologies (e.g., paper, telephone, and internet; Boyer, Olson, Calantone, & Jackson, 2002; Herzog & Rodgers, 1988; Knapp & Kirk, 2003). We administered the PARQ through multiple approaches to ensure that reliability and validity of the PARQ was comparable across methods.

Finally, we developed the PARQ to be applicable to men and women, and considered gender differences in offspring's relationships with parents. Mothers typically have more frequent contact (Lawton et al., 1994; Rossi & Rossi, 1990) and more emotionally intense relationships with offspring than fathers (Fingerman, 2001; Martini, Grusec, & Bernardini, 2001; Willson et al., 2003).

Development of the PARQ was through items cultivated by Newsom, Morgan, Nishishiba, and Rook (2000) to assess positive and negative social exchanges with network members. Newsom et al. (2000) started with an initial pool of 80 items and culled 40 items deemed most fruitful in the first phases of their measurement development (Newsom, Nishishiba, Morgan, & Rook, 2003). Newsom et al. (2005) then went on to develop a 24-item measure regarding rewarding social exchanges from this pool of 40 items. We compiled the eight PARQ items from Newsom et al.'s (2003) 40 items but did not use the same items as the measure applicable to the broader social network (Newsom et al., 2005; see Appendix, Table A1). The eight items in the PARQ were derived from the 40 items generated in the process of development and only two items were similar to those used in Newsom et al.'s (2005) final social network measure.

The following studies establish reliability and validity for the PARQ using multiple methods. Study 1 examined the PARQ in a sample of college students to assess construct validity, internal consistency, and test-retest reliability. Study 2 examined the PARQ among mothers and fathers of grown offspring to assess construct validity, internal consistency, test-retest reliability, and convergent validity. Study 3 examined convergent and discriminant validity between the PARQ and: (a) other measures of relationship quality; (b) a measure of a distinct construct; and (c) observed behaviors of parents' and offsprings' positive and negative interactions based on video taped conversations.

STUDY 1: TEST-RETEST AND INTER-ITEM RELIABILITY IN AN COLLEGE STUDENT SAMPLE

Methods

Study 1 had three aims. First, we examined construct validity in a sample of young adults through: (a) exploratory and confirmatory factor analyses and (b) internal consistency, α . Next, we determined reliability using test-retest methods. Finally, given that relationship qualities with mother and with father may differ, we assessed reliability for mothers and fathers separately.

Participants

Participants included 228 female and 108 male undergraduate students ($N = 336$) enrolled in a variety of courses. Participants were aged 18 to 23 ($M = 20.17$, $SD = 1.24$). The majority of the sample was White (88%), while other

ethnicities included African American (5%), Hispanic (4%), and Asian or Pacific Islander (3%).

Procedures

Participants were recruited from five undergraduate classes which offered the PARQ as an option to participate in research. All undergraduate students were volunteers. In some classes, participation in research was a class requirement and completing the PARQ was one option to fulfill the requirement. In other classes, students received extra credit for participation in research. Other research using college student samples have used similar methods of recruitment (e.g., Coles, Cook, & Blake, 2007; Falkenbach, Poythress, & Creevy, 2008).

To establish test-retest reliability, participants completed the measure twice, approximately 4 weeks apart. Students completing the PARQ at both time points received class credit. We randomized whether participants answered questions about their mother or father first. All participants included in this study answered on both their mother and father. The completion rate at Time 2 was 68% of the Time 1 sample. Although completion rates were relatively low, other studies that have used college student samples have the same issue (e.g., Cranford, McCabe, Boyd, Slayden, Reed, Ketchie, et al., 2008; Hingson, Zha, & Weitzman, 2009).

Measures

PARQ

Participants completed the four positive and four negative quality items regarding their mother and father. The PARQ items are measured on a 5-point Likert scale, where 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, and 5 = *always*. Items included in the PARQ are given in the Appendix, Table A1. The means and standard deviations of the PARQ items can be found in the Appendix, Table A2.

Background and Contact

At the end of each questionnaire, participants provided information about their age (in years), gender (male or female), and ethnicity (1 = *African American or Black*; 2 = *Hispanic*; 3 = *White*; 4 = *Asian or Pacific Islander*; 5 = *Other*).

Results

We first conducted a series of exploratory and confirmatory factor analyses to determine which items best represented the two-factor construct of relationship qualities. We began by conducting a principal components factor analysis (PCA) with varimax rotation of the eight PARQ items (Birditt, Fingerman, Lefkowitz, & Kamp-Dush, 2008; Bryant, 2000) and constrained the solution to two factors. Items were considered as a part of a factor if it had loadings of .30

on their respective factors and lower loadings on the other (Borjesson, Aarons, & Dunn, 2003; Stoppelbein, Greening, Jordan, Elkin, Moll, & Pullen, 2005). Indeed, we found that the four positive and four negative items loaded .30 or higher on each of their respective subscales, with each component (or subscale) having eigenvalues of 1.0 or higher (see Table 1).

Table 1 also shows instances where items loaded highly on both scales. For instance, “supportive of decisions” loaded highly on the “negative” factor and “insensitivity or unsympathetically” loaded highly on the “positive” factor. This could have happened for a couple of reasons, including the fact that these items were strongly correlated with the items from the opposite factor and also with their respective factors. Furthermore, the extraction and rotation method we employed assumes correlation among factors (oblique rotation) and the variables (PCA). Indeed, these are situations that may generate the cross-loading of certain items on the factors. Examination of the factor loadings from *confirmatory* factor analysis, however, revealed that these items did not load as highly on the opposite factors as PCA suggested. For example, for offspring reporting on mothers, “Supportive of decisions” loaded $-.32$ on the negative factor and

Table 1. Exploratory Factor Analyses of the Eight PARQ Items
($N = 336$): Study 1 Factor Loadings

	Positive	Negative	Decision
Offspring about mother			
Warm or affectionate	.79	-.23	Positive
Thoughtful or considerate	.87	-.22	Positive
Favors or other little things	.75	-.15	Positive
Supportive of decisions	.42	-.62	Positive
Angry or hostile	-.21	.72	Negative
Insensitivity or unsympathetically	-.42	.64	Negative
Made demands for favors	-.18	.61	Negative
Questioned or doubted	-.01	.83	Negative
Offspring about father			
Warm or affectionate	.85	-.20	Positive
Thoughtful or considerate	.88	-.26	Positive
Favors or other little things	.85	-.11	Positive
Supportive of decisions	.70	-.35	Positive
Angry or hostile	-.20	.79	Negative
Insensitivity or unsympathetically	-.52	.65	Negative
Made demands for favors	-.05	.77	Negative
Questioned or doubted	-.32	.70	Negative

“Insensitivity” loaded $-.22$ on the positive factor. For offspring reporting on fathers, “Supportive of decisions” loaded $-.22$ on the negative factor and “Insensitivity” loaded $-.27$ on the positive factor.

There has been some disagreement in the literature on how to handle items that load onto multiple factors (Pett, Lackey, & Sullivan, 2003). However, Pett and colleagues suggest placing the item with the factor that it is most closely related to conceptually. Even though these items load on both factors, we show below that the internal consistencies for both subscales are more than adequate, indicating that the subscales hold together. Therefore, we placed the items with the factor that made the most theoretical sense. This factor structure held for reports on mothers and fathers and at Time 1 and Time 2.

Next, we conducted confirmatory factor analyses using AMOS version 7 (Table 2, Study 1). We used the Chi-square statistic, CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), GFI (Goodness-of-Fit Index), and RMSEA (Root Mean Squared Error of Approximation) to determine model adequacy. Acceptable-to-good fit for the CFI, TLI, and GFI are represented by coefficients between $.90$ and $.95$, whereas good fit for the RMSEA is between $.05$ to $.08$ (Birditt et al., 2008; Browne & Cudeck, 1993; Bryant & Yarnold, 1995). The two-factor model had a good fit for offspring about mothers ($\chi^2 (n = 18) = 60.14$, $p < .01$, TLI = $.93$, CFI = $.95$, GFI = $.96$, RMSEA = $.08$) and for fathers ($\chi^2 (n = 18) = 60.95$, $p < .001$, TLI = $.95$, CFI = $.97$, GFI = $.96$, RMSEA = $.08$). See Table 2 for information on the loadings.

Both scales also had high internal consistency. The positive scale alphas for mothers and fathers were: $\alpha = .79$ and $\alpha = .88$ at Time 1 and $.83$ and $.91$ at Time 2, respectively. Negative scale alphas for mothers and fathers were $\alpha = .72$ and $\alpha = .78$ at Time 1 and $.79$ and $.80$ at Time 2, respectively. Correlations between the subscales were $r(336) = -.57$, $p < .001$ for mothers and $r(336) = -.58$, $p < .001$ for fathers at Time 1.

Finally, we examined test-retest correlations. The scales had high test-retest reliability; $r(336) = .77$ for positive scale responses about mothers and $r(335) = .85$ for responses about fathers; $r(336) = .73$ and $r(335) = .80$ for negative scale responses about mothers and fathers, respectively.

Discussion

This study shows that the PARQ involves two distinct subscales with high internal consistency. Test-retest reliability also demonstrated stability in responses over time. However, Study 1 relied on an undergraduate student sample. Given the widespread use of college student samples in research on adult relationships, it is important to demonstrate the PARQ’s measurement features in this population of offspring. The PARQ, however, is intended for use with a wider population including older offspring, non-college students, and parents.

Table 2. Unstandardized Loadings (Standard Errors) and Standardized Loadings for Two-Factor Confirmatory Model of the PARQ Scale for Studies 1 through 3

	Study 1			Study 1			Study 2			Study 3		
	Offspring about mother			Offspring about father			Unstan- dardized			Unstan- dardized		
	Unstan- dardized	Stan- dardized		Unstan- dardized	Stan- dardized		Unstan- dardized	Stan- dardized		Unstan- dardized	Stan- dardized	
Positive												
Warm or affectionate	1.15 (.11)	.76		1.37 (.10)	.83		1.25 (.15)	.64		1.24 (.10)	.70	
Thoughtful or considerate	1.25 (.12)	.86		1.42 (.10)	.93		1.55 (.16)	.91		1.36 (.10)	.81	
Favors or other little things	0.99 (.11)	.62		1.31 (.10)	.78		1.27 (.15)	.69		0.96 (.08)	.61	
Supportive of decisions	1.00 (—)	.58		1.00 (—)	.69		1.00 (—)	.59		1.00 (—)	.58	
Negative												
Angry or hostile	1.29 (.16)	.71		1.15 (.11)	.71		1.06 (.13)	.68		1.04 (.09)	.69	
Insensitivity or unsympathetically	1.43 (.18)	.79		1.60 (.14)	.88		1.16 (.13)	.76		1.22 (.10)	.78	
Demands for favors	1.16 (.18)	.49		0.86 (.11)	.48		1.19 (.17)	.55		0.76 (.09)	.42	
Questioned or doubted decisions	1.00 (—)	.49		1.00 (—)	.62		1.00 (—)	.64		1.00 (—)	.61	

STUDY 2: CONSTRUCT VALIDITY AND TEST-RETEST RELIABILITY IN A PARENT SAMPLE

Study 2 had four aims. First, we examined construct validity by considering the factor structure, internal consistency, and the convergent and discriminant validity of the measure in a sample of parents. Convergent validity was examined with widely used measures of parent/offspring relationship quality (Cicirelli, 1991, 1993; Sweet et al., 1988; Umberson, 1992) and discriminant validity with a measure of contact frequency (both in person and through phone and e-mail). Second, we examined potential measurement mode effects by administering the items in different formats (e.g., paper and pencil, internet). Third, test-retest reliability was assessed through a subsample of parents who completed questionnaires approximately 6 weeks apart.

Methods

Participants

Included in this study were 153 mothers and 101 fathers ($N = 254$). Participants were aged 41 to 88 ($M = 55.48$, $SD = 8.34$); mothers and fathers did not differ by age. These parents reported on 141 adult daughters and 113 adult sons at Time 1, who ranged in age from 18 to 57 ($M = 28.21$, $SD = 8.41$). This sample was 98% White.

A subset of parents completed the survey at Time 2 to establish test-retest reliability. This subsample included 79 mothers and 50 fathers reporting on 67 adult daughters and 62 adult sons ($n = 129$). We examined possible differences between the subset of participants who completed the survey only at Time 1 ($n = 125$) and the subset of participants who completed the survey at Times 1 and 2 with regard to age, gender, race/ethnicity, education, marital status, physical health, child's gender, and child's age. Independent *t*-tests revealed no significant differences between participants on these background characteristics. The completion rate at Time 2 was 51%.

Procedures

Recruitment of participants took place through convenience sampling including word-of-mouth via faculty, staff, and undergraduates who asked parents of adult children to participate. Study criteria required participants to have at least one adult child age 18 and older. Participants had the option of completing the survey via the internet or by paper and pencil. The sample included 148 parents who completed the web survey and 106 parents who completed the paper survey. At Time 2, 67 completed the web survey and 62 completed the paper survey. To establish test-retest reliability, a subsample of parents completed questionnaires approximately 6 weeks apart.

Measures

PARQ—Participants completed the four positive and four negative quality items regarding a son or daughter. To randomize selection of child selected for assessment, parents who had more than one child selected the child whose name started with a letter closest to the beginning of the alphabet. We used this selection criterion over other possibilities (e.g., having parents choose their oldest/youngest child, the one with the earliest/latest birthday), as there may be implications with choosing their focal child in other ways (e.g., they might give more to their parents or receive more from their parents, etc.). The random selection criterion used in this study has the potential to enrich the sample with answers on a broader spectrum of adult children. Please see Study 1 for a description of the PARQ scale.

Adult Attachment Scale (AAS)—Participants answered three items that assess feelings of comfort/security and distress over separation in the parent-child tie from the AAS, rated 1 (*not at all, disagree completely*) to 7 (*definitely true, agree completely*; Cicirelli, 1991, 1993). An example item included, “Being with my child makes me feel very happy,” $\alpha = .65$.

Social support/relationship strains—Participants answered four items reflecting positive and negative aspects of relationships from the American’s Changing Lives survey (ACL; Fingerman et al., 2006; Umberson, 1992; Willson et al., 2003) that have been widely used in relationships between adults and their parents, rated 1 (*not at all*) to 5 (*very much*). Example items included, “How much does your (mother/father/child) make you feel loved and cared for?” and “How much does your child criticize you?” Internal consistency was comparable to that presented in other research (Fingerman et al., 2006), $\alpha = .80$ for positive items and $\alpha = .62$ for negative items.

Overall relationship quality—Participants provided a global rating of the parent-adult child relationship (“How would you rate the overall quality of your relationship with your child at present?”) from the National Survey of Families and Households (NSFH; Koropecj-Cox, 2002; Sweet et al., 1988), rated from 1 (*poor*) to 5 (*excellent*).

Background information and contact—Participants provided information about their age, gender, and ethnicity, as well as their child’s age and gender and rated how often they see their child in person from 1 (*Less often than one to five months*) to 6 (*Once a week or more often*) and how often they communicate with their child via phone or e-mail, rated 1 (*Less often than once a month*) to 7 (*Every day*).

Results

Internal Consistency, Test-Retest Reliability and Convergent Validity

We verified that the PARQ consisted of two subscales among a sample of parents. We confirmed the factor structure with a confirmatory factor analysis, using the sample from Time 1 (Table 2, Study 2). The two-factor model provided an excellent fit ($\chi^2 (n = 18) = 30.33, p < .001$, TLI = .97, CFI = .98, GFI = .97, RMSEA = .08; see Table 2).

At Time 1, internal consistency was high for mothers ($\alpha = .74$ positive, .72, negative scale) and for fathers ($\alpha = .82$ positive, .78, negative scale). Examination of the PARQ by each mode of measurement revealed equally high internal consistency, $\alpha = .77$ (positive) and .70 (negative) for the web survey and $\alpha = .81$ for both positive and negative scales for the paper and pencil survey. We also found comparable internal consistency at Time 2, separately by subscale, parental gender, and survey format ($\alpha = .71$ to .84). The correlation between subscales was $r(254) = -.46, p < .001$.

Next, we considered convergent validity by examining correlations between the PARQ subscales and other measures of relationship quality obtained at Time 1, separately by mother and father (see Table 3). To establish convergent and discriminant validity, we used a correlation cut-off of .15. That is, any correlation equal to .15 or above shows convergence, while correlations lower than .15 shows divergence. Although there are no established criteria for convergent and divergent validity, many other studies have used a cutoff of $r = .15$ (see Hendrick & Hendrick, 2006; Kring, Smith, & Neale, 1994; Kubany, Leisen, Kaplan, & Kelly, 2000). For both mothers and fathers, the PARQ positive and negative scales were positively and negatively correlated with the appropriate measures in anticipated directions (Table 3). These findings held when we examined convergent validity separately among those who took the web survey and the paper survey. Also, as expected, we did not find significant associations between frequency of contact and each subscale of the PARQ in Study 2.

Finally, we performed correlations between the Time 1 and Time 2 PARQ scales to assess test-retest reliability. Test-retest reliability was high for the full sample ($r(129) = .76$ positive and $r(129) = .80$ negative). All correlations were above .73 for mothers and fathers separately. We also assessed test-retest reliability for individuals who took the paper and pencil version and those who took the web version separately and all correlations were above .72.

Discussion

The results of Study 2 further established validity and reliability among a sample of parents of grown children. With regard to validity, the PARQ subscales converged with other measures of positive and negative behaviors in the expected directions. We also found high test-retest reliability. A particular strength of Study

Table 3. Convergent Validity of the PARQ Scale
(*N* = 254): Study 2

Measure	PARQ Positive Subscale	PARQ Negative Subscale
Mothers		
Adult Attachment Scale	.26***	-.16**
Americans Changing Lives positive quality scale	.69***	-.32***
Americans Changing Lives negative quality scale	-.35***	.71***
Global relationship quality	.65***	-.24***
Fathers		
Adult Attachment Scale	.46***	-.36**
Americans Changing Lives positive quality scale	.79***	-.56***
Americans Changing Lives negative quality scale	-.35***	.77***
Global relationship quality	.73***	-.54***

p* < .05. *p* < .01. ****p* < .001.

2 was the ability to look at different survey formats. Indeed, properties of the PARQ were consistent in both web-based and paper and pencil formats for mothers and fathers.

Limitations of this study involve the sample being almost exclusively White. Additionally, participants chose their preference for web and paper surveys. Reliability might be lower if participants were randomly assigned to format. Also, convenience and word-of-mouth sampling present possible biases: a less representative sample of the population and a limited generalizability of the results. Another limitation of Study 2 is that the measures used to validate the PARQ were all self-report and, therefore, validation did not include observational measures of relationship quality. Study 3 addresses these concerns.

STUDY 3: CONSTRUCT VALIDITY IN A SAMPLE OF ADULTS AND THEIR PARENTS

The aims of Study 3 were twofold. First, we assessed construct validity of the PARQ by considering the factor structure, internal consistency, and convergent and discriminant validity in a distinct sample including parents and their grown children. Convergent validity was assessed through association with extant self-report measures of relationship quality, while discriminant validity was assessed through non-association with unrelated features of the relationship (e.g., filial anxiety). Second, we also compared responses on the PARQ to observations of

positive and negative behaviors. Observed conversations coded by trained raters provide an outside perspective on the relationship, thus lending a stronger argument for instrument validity.

Methods

Participants

Data were from the Adult Family Study, a study of 213 families with adults aged 22 to 49 ($M = 34.97$, $SD = 7.28$), their mother (mean age = 61.26, $SD = 8.79$) and father (mean age = 63.00, $SD = 9.27$) conducted in the greater Philadelphia area ($N = 639$). Study 3 includes a subset of those participants (158 families; $n = 474$) who completed telephone interviews, face-to-face videotaped interviews, and self-report questionnaires. This subset did not differ from the larger sample and was collected at the same time as the rest of the data from the Adult Family Study (see Fingerman et al., 2006, for details). Both parents and the grown child completed the face-to-face videotaped interviews, allowing examination of convergent validity with observational measures of positive and negative emotional behaviors. Approximately one-third of the sample was African American, while the remaining two-thirds was European American.

Procedure

Parents and adult offspring each completed a 1-hour telephone interview. Computer Assisted Telephone Interview (CATI) software permitted random order of administration of sections pertaining to mother and to father across offspring interviews. Offspring then participated in a face-to-face interview with their mother and father separately. Each parent-child dyad participated in videotaped conversations and then independently completed questionnaires.

Face-to-face videotaped interviews took place in either the parent's or offspring's home. Offspring participated in two videotaped interviews, one with their mother and one with their father. The participants were videotaped while discussing three topics: (a) what they enjoy about each other; (b) what worries them about each other; and (c) what bothers them about each other. The "enjoy" conversation always occurred first as a warm-up task. The order of the worry and problem conversations was counterbalanced. Only behaviors from the problem conversations were used in this study because prior research has used similar conversations to assess positive and negative relationship qualities between adults and their parents (e.g., Flannery, Montemayor, & Eberly, 1994). The interviewers provided instructions for each conversation and then left the room to allow dyads to freely discuss topics. The conversation lasted 8 minutes.

Measures

PARQ—Participants completed the four positive and four negative items. Please see Study 1 for a description of the PARQ scale.

Bengtson Positive Affect Index (PAI)—Parents rated five items reflecting positive aspects of the parent-child relationship from the larger PAI (Bengtson & Schrader, 1982). An example item included, “How much respect do you feel that your father/mother/child has toward you?,” $\alpha = .85$ consistent with prior studies using the PAI (Fincham, Beach, Arias, & Brody, 1998).

Positive and negative emotions—Participants indicated how often they experienced 14 emotions in their relationship with their mother/father/offspring in the past 12 months, from 1 (*never*) to 5 (*always*). Positive emotions included: proud, relaxed, interested, happy, delighted, and pleased. Negative items included: guilty, worried, jealous, irritated, disgusted, angry, disappointed, and embarrassed. These emotions were derived from scales assessing positive and negative emotions (Izard, Libero, Putnam, & Haynes, 1993; Watson, Clark, & Tellegen, 1988), $\alpha = .87$ for the positive emotion subscale and $\alpha = .78$ for the negative emotion subscale.

Social support/relationship strain—As in Study 2, participants completed the same four items from the American’s Changing Lives survey (ACL; Fingerman et al., 2006; Umberson, 1992; Willson et al., 2003), $\alpha = .69$ for positive items and $\alpha = .60$ for negative items.

Filial anxiety—Participants completed 13 items from Cicirelli’s (1988) filial anxiety measure, rated 1 (*strongly disagree*) to 5 (*strongly agree*). Example items include, “I feel uneasy about being away from my parents for too long now that they are getting older” and “I keep in close touch with my parents to be sure nothing is wrong,” $\alpha = .81$.

Observational data—Eleven independent raters coded the videotaped conversations of relationship problems for positive and negative emotional behaviors based on a coding scheme developed for the Adult Family Study (Lefkowitz, Cichy, Hay, Espinosa-Hernandez, & Fingerman, 2008). The codes were derived from self-report and observational measures used in previous studies (e.g., Izard et al., 1993; Lefkowitz & Fingerman, 2003). Positive behaviors were assessed with six items (i.e., encouraging, humorous, supportive, involved, enthusiastic, and happy), while negative behaviors were assessed with three items (i.e., critical, annoyed, and judgmental). Coders rated the parent and offspring separately during different coding sessions. They watched the entire conversation and considered all aspects (i.e., verbal and nonverbal) when rating each behavior on a 5-point scale ranging from 1 (*not at all*) to 5 (*a great deal*). Because at least two raters coded each videotape, reliability was based on the entire sample and reported as the mean intra-class correlation across all possible coder pairs. The intra-class

correlations ranged from .94 to .97 for positive and .94 to .96 for negative codes. Reliability coefficients for the scales of combined codes were $\alpha = .76$ for the positive scale and $\alpha = .82$ for the negative scale.

Background information and contact—Participants provided information about their age, gender, and ethnicity. Participants also rated often how they see each other in person from 1 (*Less than once a year*) to 8 (*Once a week or more often*) and how often they communicate with each other via phone, e-mail, or other forms of contact rated 1 (*Twice a year or less often*) to 8 (*Every day*).

Results and Discussion

The first step involved verifying that the PARQ consisted of two subscales. We confirmed the factor structure with a confirmatory factor analysis. The two-factor model provided an excellent fit ($\chi^2 (n = 19) = 103.94, p < .001$, TLI = .88, CFI = .93, RMSEA = .08; see (Table 2, Study 3). The correlation between the positive and negative scales was $r(629) = -.36, p < .001$.

The next step involved assessing convergent validity by examining associations between the PARQ and the Bengtson PAI, positive and negative emotional experience scales, positive and negative subscales from the American's Changing Lives, and observed positive and negative behavior subscales. We tested discriminant validity by examining associations between the PARQ and a measure of filial anxiety.

Bivariate associations are found in Table 4. As in Study 2, for parents and offspring, both positive and negative dimensions of the PARQ showed convergence with conceptually similar measures. The two subscales were associated in anticipated directions with comparable positive or negative subscales in the literature. Likewise, the PARQ was associated with a measure of observed behavior. Although the correlations between the PARQ and the measure of observed behaviors were not high, correlations suggest that the PARQ, as a self-report measure, is tapping qualities that are evident in actual conversations as noted by outside raters.

With regard to divergent validity, both PARQ subscales diverged with the measure of filial anxiety, as expected. In sum, the PARQ showed adequate convergent validity with extant self-report measures and observed behaviors, as well as divergence from a conceptually dissimilar instrument.

We also conducted additional analyses to determine whether the PARQ has the ability to work as a measure of ambivalence. As in prior studies of inter-generation ambivalence (Birditt et al., 2009; Fingerman et al., 2006, 2008), we calculated ambivalence scores using Griffin's Similarity and Intensity of Components Formula (Thompson, Zanna, & Griffin, 1995). We found that higher levels of ambivalence scores were correlated with higher levels of depression ($r(627) = .20, p < .001$), lower levels of life satisfaction ($r(629) = -.27, p < .001$), and higher levels of neuroticism ($r(632) = .21, p < .001$).

Table 4. Convergent and Discriminant Validity of the PARQ Scale for Parents and Offspring ($N = 474$): Study 3

Measure	PARQ Positive Subscale	PARQ Negative Subscale
PARENTS		
<i>Convergent Measures</i>		
Americans Changing Lives negative quality scale	-.27***	.47***
Americans Changing Lives positive quality scale	.51***	-.34***
Positive emotional experiences	.56***	-.51***
Negative emotional experiences	-.40***	.63***
Bengtson Positive Affect Index	.51***	-.41***
<i>Observed behaviors</i>		
Observed positive behaviors	.16***	-.05
Observed negative behaviors	-.12***	.28***
<i>Divergent Measures</i>		
Filial anxiety	—	—
OFFSPRING		
<i>Convergent Measures</i>		
Americans Changing Lives negative quality scale	-.19***	.62***
Americans Changing Lives positive quality scale	.69***	-.37***
Positive emotional experiences	.73***	-.45***
Negative emotional experiences	-.35***	.63***
Bengtson Positive Affect Index	.61***	-.50***
<i>Observed behaviors</i>		
Observed positive behaviors	.26***	-.16**
Observed negative behaviors	-.15*	.29***
<i>Divergent Measures</i>		
Filial anxiety	-.13*	.11*

* $p < .05$. ** $p < .01$. *** $p < .001$.

GENERAL DISCUSSION

Overall, these studies empirically validated a concise and emotionally balanced measure of positive and negative relationship qualities applicable to adults and their parents regardless of geographic distance. High construct validity (i.e., factor structure, internal consistency, and convergent and discriminant validity) and test-retest reliability were characteristic of the PARQ. Consistent with other measures of relationship qualities in close relationships (e.g., Newsom et al., 2005), alpha coefficients were at acceptable levels across samples. We also found test-retest reliability using different assessment formats (e.g., paper and pencil; telephone; web-based surveys; Miller, Neal, Roberts, Baer, Cressler, Metrik, et al., 2002). Moreover, self-ratings on this measure were consistent with observed behaviors in conversations between adults and their parents. The positive and negative relationship components of this measure may have broader implications for measurement of intergenerational ambivalence.

Ambivalence, Solidarity, and Parent-Adult Child Relationships

The PARQ was developed to complement the study of parent-adult child relationships. Indeed, the contribution of the PARQ to the pool of existing measures is important to consider. Research on intergenerational solidarity and ambivalence already provides perspectives on positive and negative relationship qualities between adults and their parents (Bengtson, Giarrusso, Marby, & Silverstein, 2002; Fingerman et al., 2006, 2008; Willson et al., 2003). Yet measures of affectual solidarity and ambivalence fall short of providing either concise or emotionally balanced measures. Although Newsom and colleagues (2005) have a measure that taps positive and negative relationship qualities in the social network, it was not specifically developed to assess the parent/child tie. Furthermore, some items included in the Newsom et al. (2005) measure are not appropriate for parents and adult children who live at a distance.

Analyses in Study 3 suggest that the PARQ may be a good measure of intergenerational ambivalence. We found that higher levels of ambivalence were associated with higher levels of depression and neuroticism and lower levels of life satisfaction, consistent with other studies of ambivalence (Fingerman et al., 2008; Uchino, Holt-Lunstad, Smith, & Bloor, 2004). Therefore, the PARQ may be a good measure to use to understand more about ambivalent feelings and psychological well-being (Finch, Okun, Pool, & Ruehlman, 1999; Newsom et al., 2005; Rook, 1998, 2001, 2003).

Furthermore, use of the PARQ may also serve to enhance Solidarity Theory. Regarding solidarity theory, a major criticism is that it focuses solely on the positive aspects of relationships. Therefore, the PARQ could provide a stronger measure of solidarity by including negative items, in addition to items assessing

conflict (e.g., doubting a decision; Clarke, Preston, Raskin, & Bengtson, 1999; Fingerman, 1996).

As expected, the PARQ was associated with self-reported and observed measures of relationship quality. Associations between the PARQ and self-reported measures of relationship quality suggest that the underlying constructs of the PARQ include positive and negative qualities. Most importantly, however, associations with observed behaviors demonstrate that the PARQ may pick up on actual interactions between adults and parents that also can be seen by trained raters. Because observations of behaviors are time consuming and costly, the PARQ represents a concise and low-cost means of assessing these qualities of the relationship. To the best of our knowledge, no other measure of positive and negative qualities in the parent-adult child tie has been validated using observed behaviors.

Further, associations were not evident between frequency of contact and the two subscales of the PARQ, suggesting that the measure taps aspects of relationship quality distinct from amount of contact. Prior studies suggest that offspring may retain strong emotional bonds with their parents, despite geographic separation and absence of frequent face-to-face contact (Fingerman et al., 2006; Rossi & Rossi, 1990), and that negative qualities also are evident among offspring who reside at a distance from parents (Fingerman et al., 2003). The PARQ successfully assesses these qualities for both proximate and distant offspring.

Limitations

The three studies have limitations, however. Studies 1 and 2 were primarily limited to White participants. Further, although the sample in Study 3 was one-third Black, we only assessed construct validity with this sample. Future studies will need to determine whether the PARQ is a stable measure of relationship qualities in more diverse samples. Second, the PARQ is a self-report assessment, which can elicit (or are susceptible to) socially desirable responding (Birditt et al., 2008). We addressed this problem to some extent in Study 3 by finding associations between the PARQ and observed behaviors between adults and their parents. Finally, the mean scores on the PARQ negative scales were low, suggesting that individuals did not experience many negative feelings for parents or offspring. (Fingerman, 2001; Fingerman et al., 2006; Lefkowitz & Fingerman, 2003; Willson et al., 2003).

Overall, the PARQ is an important addition to the assessment of positive and negative qualities in the parent-adult child tie. Findings suggest that the PARQ is a stable and balanced measure of relationship quality over time among adults and their parents. This measure assesses positive and negative relationship qualities among adults and their parents in a concise and emotionally balanced manner, above and beyond what other assessments of relationship qualities and ambivalence can provide.

APPENDIX
Table A1. PARQ Items

PARQ Positive Subscale	PARQ Negative Subscale
How often has your (mother/father/child) acted warm or affectionate toward you?	How often has your (mother/father/child) acted angry or hostile toward you?
How often has your (mother/father/child) acted thoughtful or considerate toward you?	How often has your (mother/father/child) acted insensitively or unsympathetically toward you?
How often has your (mother/father/child) done favors or other little things for you?	How often has your (mother/father/child) made demands for favors or other little things from you?
How often has your (mother/father/child) been supportive of the decisions you've made?	How often has your (mother/father/child) questioned or doubted your decisions?

Table A2. Means and Standard Deviations of the PARQ Items and Subscales

Item	Study 1 Offspring about mother		Study 1 Offspring about father		Study 2		Study 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive								
Warm or affectionate	4.41	.66	3.65	1.00	4.11	.84	4.00	1.01
Thoughtful or considerate	4.43	.64	3.90	.92	4.07	.72	4.18	.86
Favors or other little things	4.35	.70	3.69	1.02	3.44	.78	3.98	.84
Supportive of decisions	4.22	.75	3.98	.88	3.96	.73	4.11	.90
Negative								
Angry or hostile	2.31	.70	2.44	.83	2.01	.69	1.62	.71
Insensitivity or unsympathetically	2.04	.69	2.42	.93	2.02	.67	1.67	.74
Demands for favors	2.59	.91	2.43	.91	2.19	.95	1.85	.85
Questioned or doubted decisions	2.32	.79	2.32	.84	2.12	.70	1.94	.77
Subscales								
Positive	4.35	.54	3.80	.82	3.89	.60	4.07	.70
Negative	2.31	.57	2.40	.68	2.09	.57	1.82	.65

ACKNOWLEDGMENTS

The authors would like to thank Dr. Jason Newsom and Drs. Nishishiba, Morgan, and Rook for generously granting us permission to further develop the PARQ using their initial items. We are grateful to Drs. Erina MacGeorge, Charles Calahan, Shawn Whiteman, Sara Kubik, as well as Amber Seidel for assistance in collecting data. We also thank Drs. Kira Birditt and Jori Sechrist for thoroughly reading a draft of this article. Finally, we thank Laura Miller and Shelley Hosterman, as well as Drs. Kelly Cichy and Elizabeth Hay for assistance with all aspects of the AFS study.

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