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Friendship Standards: The Dimensions of Ideal Expectations

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## Abstract

This multi-study investigation identified and confirmed the factor structure of ideal friendship standards. Study 1 ( $N = 307$ ) conducted an exploratory factor analysis on 30 existing subscales of friendship expectations. Study 2 ( $N = 401$ ) reduced 181 items from past subscales and single-item measures of friendship expectations to 51 items measuring six factors. Study 3 ( $N = 668$ ) used an international internet sample to conduct a confirmatory factor analysis on the six factor model. Samples from Study 2 and 3 were combined and factorial invariance was demonstrated by sample, by participant sex, and by age. The six factors of expectations (i.e., symmetrical reciprocity, agency, enjoyment, instrumental aid, similarity, and communion) constitute the ideal standards of friendship.

(116 words)

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## Friendship Standards: The Dimensions of Ideal Expectations

In forming and maintaining friendships, individuals develop expectations about how friends ought to be and ought to behave (La Gaipa, 1987; Wiseman, 1986). Friendship expectations are defined as cognitive conceptualizations about attributes individuals would like their friends to possess and behaviors individuals would like their friends to enact (Hall, 2011). Collectively, these expectations create a standard against which current and new friendships are judged (Fehr, 1996; Hall, Larson, & Watts, 2011). While meeting or exceeding friendship expectations is a strong predictor of friendship satisfaction (Hall et al., 2011), violations of friendship norms (Felmlee, 1999) and rules (Argyle & Henderson, 1984) can diminish the quality of friendship and may endanger its continuance (Clark & Ayers, 1993).

Within the domain of ideal friendship standards, there are many particular friendship expectations. In a recent meta-analysis, Hall (2011) identified 37 studies of friendship expectations, wherein participants described or evaluated the qualities and behaviors of an ideal friend. In these studies, the possible dimensions of expectations varied: some studies have suggested as few as two (Zarbartany, Conley & Pepper, 2004) and others in excess of 20 dimensions (Bigelow, 1977; La Gaipa, 1977). Although most studies of friendship expectations have explored the relational and socio-emotional qualities of friendships (e.g., Bigelow & La Gaipa, 1980), recent research has also examined fitness and resource-based aspects of friendships, such as friends' attractiveness, personal wealth, and business connections (e.g., Lusk, MacDonald, & Newman, 1998; Vigil, 2007). Although recent factors of expectations have been derived from Argyle and Henderson's (1984) friendship rules (see Fuhrman, Flannagan, & Matamoros, 2009), the primary dimensions of friendship have not undergone extensive factor analytic procedures since the work of La Gaipa (1987). In addition, past inventories of friendship

expectations (e.g., La Gaipa, 1987) and recent factor analyses (e.g., Fuhrman et al., 2009) do not include fitness and resource-related items.

To address these challenges, the present investigation has two broad aims: to identify the factor structure of friendship standards overall and to identify reliable items to measure each latent factor. In a series of three studies, past measurements of friendship expectations will be consolidated to develop a smaller, yet comprehensive inventory of friendship expectations. Exploratory factor analysis (EFA) will be used to identify the factor structure of 30 existing subscales (Study 1) and of 181 items from those subscales (Study 2). Study 2 will also reduce the number of items to measure the identified latent factors. Study 3 will use confirmatory factor analysis (CFA) will confirm the overall factor structure of friendship expectations and will perform tests of invariance by age, sex, and sample.

### **Standards and Expectations**

Friendship expectations are cultivated through experiences with past and present friends, which creates a cycle that modifies and reinforces individuals' expectations (Elkins & Peterson, 1993; Wiseman, 1986). Similarly, cognitive representations of friendship can be understood as a series of if-then contingencies (e.g., "If I need help, my friend will provide it"), wherein the clearest and best examples of friendship develop into friend prototypes (Fehr, 2004). These "built up expectations" become unspoken cognitive constructs of the ideal friend -- a friend that individuals may never have but nonetheless desire and prefer (Wiseman, 1986, p. 196). As Hall et al. (2011) suggest, the inclusive set of all friendship expectations can be understood as individuals' ideal standards of friendship.

Friendship expectations influence all stages of friendship, from formation (La Gaipa, 1987) and maintenance (Oswald, Clark, & Kelly, 2004), to dissolution (Clark & Ayers, 1993).

This influence continues throughout the life course. Children who are more capable of meeting the expectations of their peers are more likely to be identified and included in peer groups by other children (Bigelow & La Gaipa, 1980; La Gaipa, 1987). Similarly, Hall et al. (2011) report that the degree to which friends meet expectations on a daily level is an excellent predictor of friendship satisfaction for young adults. Expectations of support from friends are also highly valued by older adults (Weiss & Lowenthal, 1975), and play an important role in successful aging (Mancini & Simon, 1984). Given their centrality throughout life and to all stages of friendship, ideal standards of friendship can be understood to represent the structure of mutual dependence and reciprocity that constitutes friendship itself (Hartup & Stevens, 1997; Wright, 2006). That is, friendship standards define the essence of friendship (Hall, 2011; Hartup & Stevens, 1997).

Although past research has established the importance of friendship standards in explaining relational outcomes, a lack of consistent measurement hinders dialogue between researchers and prevents application of contemporary theoretical models. In applying the Ideal Standards Model (ISM) (Fletcher, Simpson, Thomas, & Giles, 1999) to friendship, Hall et al. (2011) turned to relational maintenance measures to conceptualize friendship standards. However, the authors note that this was an imperfect application of the ISM because the ideal dimensions of friendship had yet to be identified through factor analytic procedures. Furthermore, emergent interest in applying evolutionary theory to friendship (e.g., Vigil, 2007) has underscored the need for good measurement. Although there are a wide variety of desired qualities in friends, there is no clear picture of the latent structure of the standards of friendship overall. A new measure of friendship standards that both incorporates fitness and resource-related items and past measures of expectations (e.g., La Gaipa, 1987) will allow for new

applications of the ISM and evolutionary theory, while maintaining continuity with past friendship expectation research.

There is a long history of studying expectations for same-sex friendships (e.g., Bigelow & La Gaipa, 1980; Wright, 1988). Same-sex friendships are an important source of intimacy for children (La Gaipa, 1987), young-adults (Fehr, 2004), and adults (Sapadin, 1988). As a consequence, the most commonly used measures of friendship expectations (e.g., La Gaipa, 1977) were created for same-sex friendships. Hall's (2011) meta-analysis identified 37 studies that reported sex differences in the expectations of same-sex friends. In another prominent meta-analysis on distinctions between friends and non-friends, Newcomb and Bagwell (1995) found so few studies that explored cross-sex friendships that it could not be treated as a moderating variable. As such, the present study will follow in this established line of research and focus on the measurement of same-sex friendship expectations.

### **Past Measures of Expectations**

Three inventories of friendship expectations are commonly used: La Gaipa (1977), Argyle and Henderson (1984), and Furman and Bierman (1984). La Gaipa (1987) discusses the series of studies he undertook in creating the Friendship Expectancy Inventory, which consists of seven factors (i.e., help, empathic understanding, self disclosure, genuineness, ego reinforcement, similarity, strength of character), including between 35 to 43 items, and the Children's Friendship Expectancy Inventory, which includes four factors and 28 items. According to Hall (2011), these two inventories were directly used or were the basis of author-derived friendship expectations in 12 studies. Similar to La Gaipa (1977), Argyle and Henderson (1984) identified a set of friendship rules that were evaluated for importance in same-sex friendships. Argyle and Henderson (1984) offered a list of 43 friendship single-item rules,

defined as “shared beliefs among members of a group or sub-culture that some behavior should or should not be preformed” (p. 211). There have been several attempts to identify a factor structure inherent to Argyle and Henderson’s (1984) friendship rules, but past factor structures were inconsistent. Bank (1994) identified closeness norms and assertiveness norms, Verkuyten and Masson (1996) identified rules of exchange, intimacy coordination, relations, and trust and confidence, and Fuhrman et al. (2009) identified rules of emotional closeness, social companionship, and relational positivity. Finally, Furman and Bierman’s (1984) ten friendship expectations distinguish between disposition qualities of friends (e.g., common interests, acceptance, dependability) and behavioral qualities of a friendship (e.g., helping, sharing activities, liking). Several researchers on children’s friendship (e.g., Broderick & Beltz, 1996; Ray & Cohen, 1996) have utilized these expectation categories in content analyses.

Research focusing on benefits of friendship related to material resources, social connections, and resource allocation has introduced new domains of friendship expectations. These studies often compare and contrast ideal expectations for one type of relationship (e.g., romantic partnership) with other types of relationships (e.g., best friend) (Cann, 2004; Lusk et al., 1998; Sprecher & Regan, 2002). There are several potential desired qualities of friends advanced in these studies. For example, Vigil (2007) includes intelligence, financial resources, and athletic ability in his measure of personal capacity. Including popularity is not without precedent in early research on children’s (Bigelow, 1977) and adolescents’ expectations (Gonzales, Moreno, & Schneider, 2004). However, because friendship is typically understood in terms of closeness and companionship, this contemporary set of expectations is not represented in any of the three most commonly used inventories. Two conclusions can be drawn from past instruments to measure expectations. First, there are broad and varying sets of characteristics and

qualities of friendship, which creates substantial overlap in the measure of expectations but a lack of consistency between studies. Second, to identify the overall latent factor structure of friendship standards requires both theoretical guidance and empirical evidence. The present study will identify the latent structure of friendship standards and will use past research and theory on friendship to frame the identification of standards.

### **Dimensions of Expectations**

In consultation with past friendship literature and evolutionary accounts of friendship, Hall (2011) proposed a four-dimensional model of friendship expectations: symmetrical reciprocity, communion, solidarity, and agency. These four dimensions were used to categorize existing measures of friendship expectations in past research for the purposes of his meta-analysis of sex differences. The first dimension used Hartup and Stevens's (1997) term, symmetrical reciprocity to describe loyalty, mutual regard or authenticity, trustworthiness, and support in friendship. Wright (2006) suggests that the essence of friendship can be distinguished by "the degree that each partner in a friendship considers the other unfeigned and genuine . . . [and] familiarity, trust, and personalized interest, and concern" are present (p. 50). The importance of symmetrical reciprocity to friendship is reinforced by research that has demonstrated that loyalty, trust, and support are ranked as the most important characteristics of friendship (Sapadin, 1988; Weiss & Lowenthal, 1975), are the most prototypical behaviors in producing intimacy (Fehr, 2004), and can distinguish a close friendship from an acquaintance (Newcomb & Bagwell, 1995).

Consistent with Bakan's (1966) original conceptualization of communion, friendship expectations of communion include emotional availability and self-disclosure given and received (Hall, 2011). Intimacy, emotional disclosure, and empathic understanding are conceptually



related, and often highly correlated with one another in research on friendship (Hussong, 2004; Laurenceau, Rivera, Schaffer, & Pietromonaco, 2004). In addition, self-disclosure is an important and critical part of developing intimacy in friendship (Fehr, 2004).

Thirdly, solidarity expectations are expectations of sharing mutual activities (Wright, 2006), being invited to share common activities (Bigelow & La Gaipa, 1980), and friendship inclusion maintenance (Oswald et al., 2004). In Hall's (2011) meta-analysis, expectations of attitude, disposition, and activity similarity were all categorized as solidarity expectations. The assumption that expectations of similarity and expectations of enjoyment constituted a single dimension was made because La Gaipa's (1987) commonly used measure of similarity included an item measuring the enjoyment of time spent together. In deference to La Gaipa's past work on expectations, the concept of solidarity incorporated shared activities, enjoyment, and similarity.

Finally, as Bakan (1966) argued, agency manifests itself in seeing friends as means to ends or objects from which resources can be obtained. Hall (2011) defined agency expectations as those wherein friends are "regarded as objects from which benefits can be gained" (p. 727). Expectations of agency in friendship pertain to what a friend can do, has access to, and is able to offer to his/her friends. Although Hall (2011) proposed these four dimensions based on theory and consultation with past research, the factor structure was not tested empirically. To confirm the existence of these proposed dimensions, the following research question is proffered:

RQ1: Will the factor structure of ideal friendship expectations support the existence of symmetrical reciprocity, communion, solidarity, and agency as latent factors?

### **Additional Dimensions of Expectations**

As Hall (2011) pointed out, there are other valued expectations that have been neglected in the preponderance of past research on friendship. Most importantly, having fun and possessing

a sense of humor and a good personality are valued qualities in friends (Fehr, 1996). Enjoyment of friends is a component of the classical Aristotelian model of friendship (Bukowski, Nappi, & Hoza, 1987). Enjoyment is also a necessary criterion of companionate love, which is most commonly experienced with friends (Hegi & Bergner, 2010). Nonetheless, the most common past friendship expectation inventories (i.e., Argyle & Henderson, 1984; Furman & Bierman, 1984; La Gaipa, 1987) do not include measures of fun and a sense of humor. However, both Sprecher and Regan (2002) and Vigil (2007) included sense of humor and possessing an exciting personality as desirable qualities in a best friend. Therefore, it is expected that in addition to the four dimensions of friendship proposed by Hall (2011) it is expected that enjoyment will constitute a unique factor of friendship expectations. This leads to the second research question:

RQ2: Will friendship enjoyment be a unique latent factor of friendship expectations?

There are also additional friendship expectations proposed in past research. Cheng, Bond, and Chan (1995) suggest that ideal best friends can be evaluated on dimensions of personality, including extraversion and openness, and Lusk et al. (1998) recommend the inclusion of conscientiousness as a friendship expectation. Furthermore, Basu and Mukhopadhyay (1984), Lusk et al. (1998), Sprecher and Regan (2002), and Vigil (2007) suggest that prudence, intelligence, academic success, and creativity should be considered friendship expectations. Factor analytic procedures allow for the exploration of an overall latent factor structure as well as the emergence of new factors. With the inclusion of a large number of expectation sub-factors and items, it is likely that other factors that are not predicted will emerge. Therefore, the final research question explores the existence of emergent factors:

RQ3: Will other emergent latent factors of friendship expectations be identified when incorporating all prior measures of expectations, including personality dimensions, education, creativity, and intelligence?

### **Study 1**

The aim of the Study 1 was to determine the overall factor structure of existing subscales used in friendship expectation research. Floyd and Widaman (1995) suggest that factor analysis can explore the relationships “among measured variables, either items or subscales, to identify a set of more general latent variables” (p. 286). When measured together, subscales are assumed to be the underlying indicators of the general latent factor. For example, La Gaipa’s (1987) friendship expectation instrument for adult respondents, measures seven sub-factors that constitute friendship expectations generally. Following in this tradition, Study 1 will identify the general latent structure of friendship expectations among all known subscales, which will provide the first response to RQ1. Subsequently, Study 2 will identify the factor structure of all items from existing sub-scales and single item measures. This goal of Study 2 is to reduce the number of items to reduce redundancy, and address RQs. Study 3 will use confirmatory factor analysis (CFA) on a community sample to provide further evidence of the latent factor structure of friendship standards as a whole.

### **Method**

*Participants and procedures.* Participants were 307 undergraduate students recruited from introductory communication courses at a large Midwestern university. Participants were given the choice of completing an online survey about friendship or other research studies in return for partial course credit (less than .5% of total grade). This survey took approximately 30 minutes to complete. Participants were 63% female ( $n = 192$ ), which was similar to the sex ratio

of communication majors. Participants represented several race/ethnicities: 79% White, 7% Asian American, 7% African American, 3% Latino, and 4% mixed race, which approximates the racial and ethnic composition of the university as a whole. Participants were a mean of 19.7 years of age ( $SD = 2.85$ ,  $mdn = 20$ , range 18-53).

### **Measures.**

One-hundred and thirty-three items measuring 24 unique sub-scales of friendship expectations were taken from existing measures of friendship expectations (see Table 1). Additionally, three measures of personality were used: a 7-item openness scale and a 6-item extraversion scale (John, Naumann, & Soto, 2008), and the 7-item conscientiousness scale used in Lusk et al. (1998). Several studies of friendship expectations did not provide all items (e.g., Sprecher & Regan, 2002), therefore three scales were created: a 2-item exciting personality (“Has an exciting personality”, “Has an outgoing personality”), a 2-item competitiveness (“Is someone I can compete against”, “Is a competitive person”), and a 2-item business connections scale (“Has business connections”, “His/her family has good connections in business”). The addition of personality and 2-item measures resulted 30 sub-scales of friendship expectations included in Study 1. Participants rated the importance of 144 items in an ideal same-sex friendship on an 8-point scale (1 = Not at all important, 8 = Absolutely Essential).

### **Results and Discussion**

Each of the constructs for existing sub-scales demonstrated adequate reliability and were combined into 30 composite scores (see Table 1 for sub-scale means and reliabilities). Composite subscales were then analyzed using exploratory factor analysis (EFA) in SPSS. The goal of this EFA was to determine the factor structure of overall friendship standards using existing friendship expectation subscales. This process identified the major latent factors that

underlie the various batteries of expectations, which is an appropriate use of EFA (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Promax rotation (i.e., oblique) and principle axis factoring were used because latent expectation factors were likely to correlate (Fabrigar et al., 1999; Russell, 2002). Less than 1% of all responses were missing. Missing responses were treated with pairwise deletion for all EFAs.

The Kaiser-Meyer-Olkin measure of sampling adequacy indicated that the sample size was sufficient for EFA procedures,  $KMO = .96$ , which is considered superb (Field, 2009). Bartlett's test of sphericity  $\chi^2 (496) = 13,255.50, p < .001$ , indicates that the correlation matrix was significantly different from the identity matrix, which suggests that the sample size was sufficient for EFA.

The EFA results for the 30 composite subscales demonstrated that a two-factor model captured 69.09% of the variance in ideal friendship expectations (see Table 1 for factor loadings). The first factor (eigenvalue = 14.77) included most of the socio-emotional aspects of friendship measured on existing subscales, including support, self-disclosure, empathetic understanding, and intimacy. The second factor (eigenvalue = 5.27) encompassed the agency aspects measured in past subscales, including wealth, status, physical attractiveness, and social connections. No other factor had an eigenvalue exceeding 1.0. Several concepts, including Zabatany et al.'s (2004) concept of agency, Oswald et al.'s (2004) measure of interaction maintenance, extraversion (John et al., 2008), and La Gaipa's (1979) measures of strength of character and friendship similarity cross-loaded on both factors, but did not constitute a unique factors individually or collectively. In response to RQ1, results support the existence of at least two primary dimensions of friendship expectations: socio-emotional (i.e., symmetrical reciprocity, communion) and resource-attractiveness (i.e., wealth, fitness).

*Table 1: Study 1 Exploratory Factor Analysis Loadings, Sub-scale Origins, Reliabilities, Means, and SD (N = 307)*

Subscale Name	Source	No. of Items	Scale Reliability	Scale Mean	Scale SD	Factor One Loading	Factor Two Loading
Support Maintenance	Oswald et al. (2004)	8	0.90	6.04	1.15	<b>0.91</b>	0.23
Help	La Gaipa (1977)	8	0.85	6.04	0.94	<b>0.91</b>	0.27
Openness Maintenance	Oswald et al. (2004)	6	0.81	5.84	1.08	<b>0.91</b>	0.35
Empathic Understanding	La Gaipa (1977)	5	0.73	6.01	0.99	<b>0.90</b>	0.30
Loyalty	Bank (1994)	5	0.78	6.22	0.87	<b>0.86</b>	0.31
Intimacy	Lusk et al. (1998)	4	0.83	5.71	1.15	<b>0.85</b>	0.35
Self Disclosure	La Gaipa (1977)	5	0.91	6.09	1.28	<b>0.83</b>	0.15
Positivity Maintenance	Oswald et al. (2004)	5	0.77	5.81	1.00	<b>0.83</b>	0.44
Communion	Zarbatany et al. (2004)	4	0.77	6.32	1.06	<b>0.83</b>	0.24
Genuineness	La Gaipa (1977)	8	0.86	5.62	0.96	<b>0.82</b>	0.05
Ego Reinforcement	La Gaipa (1977)	5	0.78	5.68	1.09	<b>0.81</b>	0.43
Reciprocity	Hartmann (1991)	6	0.83	5.71	1.03	<b>0.81</b>	0.42
Good personality	Vigil (2007)	5	0.88	6.23	0.88	<b>0.78</b>	0.28
Agency	Bank (1994)	5	0.69	5.96	1.07	<b>0.74</b>	0.16
Exciting personality	Sprecher & Regan (2002)	2	.71*	6.63	1.03	<b>0.53</b>	0.10
Personal capacity	Vigil (2007)	7	0.85	4.23	1.03	0.36	<b>0.94</b>
Business Connections	New	2	.51*	3.89	1.21	0.17	<b>0.88</b>
Resources	Sprecher & Regan (2002)	2	.81*	4.33	1.31	0.40	<b>0.84</b>
Athletic Ability	Lusk et al. (1998)	6	0.84	3.42	1.67	0.09	<b>0.82</b>
Academic success	Lusk et al. (1998)	5	0.70	3.79	1.45	0.24	<b>0.81</b>
Physical Attractiveness	Lusk et al. (1998)	5	0.81	3.52	1.76	0.21	<b>0.80</b>
Open to new experience	John et al. (2008)	7	0.87	4.44	1.23	0.41	<b>0.72</b>
Competitiveness	New	2	.74*	4.18	1.74	0.17	<b>0.66</b>
Agency	Zarbatany et al. (2004)	9	0.85	4.94	1.16	0.62	0.72
Similarity	La Gaipa (1977)	7	0.88	5.75	1.12	0.68	0.48
Interaction Maintenance	Oswald et al. (2004)	6	0.78	5.38	1.02	0.76	0.58
Conscientiousness	Lusk et al. (1998)	11	0.86	5.59	1.34	0.74	0.58
Extraversion	John et al. (2008)	6	0.85	5.56	1.34	0.51	0.50
Strength of Character	La Gaipa (1977)	5	0.73	5.62	1.03	0.72	0.48

Note: \* Pearson's  $r$  reported for 2 item measures

## Study 2

The purpose of Study 2 was threefold: (i) to perform an analysis of the individual items measuring all prior friendship expectations, rather than the composite subscales, (ii) to reduce the number of items to measure each factor, and (iii) to confirm the existence of the dimensions of friendship expectations as proposed in RQs.

### Method

*Participants.* Participants were 401 undergraduate students recruited from introductory communication courses at a large Midwestern university. Participants could complete an online survey about friendship or participate in other research studies for partial course credit. This survey took approximately 40 minutes to complete. Participants were 59% female ( $n = 237$ ), which was similar to the sex ratio of communication majors. Participants represented several race/ethnicities: 83% White, 6% Asian American, 3% African American, 2% Latino, and 6% mixed race, which approximates the racial and ethnic composition of the university as a whole. Participants were a mean age of 19.7 years ( $SD = 2.03$ ,  $mdn = 19$ , range 18-33).

The sample size for Study 2 met recommendations provided by Fabrigar et al. (1999) for EFAs with unknown inter-item correlations. Smaller sample sizes (i.e.,  $< 200$ ) are adequate when item commonalities are expected to be high. Given that most items in this EFA were created to measure similar expectations factors, commonalities were likely to be moderate to high. The Kaiser-Meyer-Olkin measure of sampling adequacy indicated that the sample size was sufficient,  $KMO = .92$ , which is considered superb (Field, 2009). Bartlett's test of sphericity  $\chi^2 (3081) = 14,447.45$ ,  $p < .001$ , indicates that the correlation matrix is significantly different from the identity matrix, which suggests that the sample size was sufficient for EFA procedures.

## **Measures**

Study 2 included all items used to measure the subscales from Study 1. The goal of Study 2 was to be inclusive and exhaustive in evaluating items, so items from poorly fitting subscales of Study 1 were retained. This allowed for the possibility that an individual subscale item could load on a predicted or on an emergent factor, even if the entire subscale failed to adequately load. Study 1 was an exploration of the general latent factors underlying the known expectations subscales. Because the single-item measures from past studies are not considered subscales of expectations, they were not included in Study 1. Therefore, study 2 included single-item measures from past studies (i.e., Argyle & Henderson, 1984; Basu, & Mukhopadhyay, 1986; Furman & Bierman, 1984) that were not included in Study 1. In addition, ten items reflecting the conceptual definitions of the five predicted factors (i.e., symmetrical reciprocity, communion, solidarity, agency, and enjoyment) were included in the survey. These items included measures of symmetrical reciprocity (e.g., “Will always be fair in our friendship”), communion (e.g., “Someone I could feel really close to”), solidarity (e.g., “Likes to spend time with me one-on-one”), agency (e.g., “Comes from a wealthy background”), and enjoyment (e.g., “Fun to be around”). Combination of non-redundant single-item measures with the items in Study 1 brought the total items analyzed in Study 2 to 181. Participants rated the importance of each quality in a same-sex friendship on an 8-point scale (1 = Not at all important, 8 = Absolutely Essential).

## **Results and Discussion**

*Item Reduction Procedure.* Study 2 sought to confirm the factor structure of Study 1, reduce the number of items, and include single-item measures. EFA is appropriately used to reduce the number of items and identify major factors (Fabrigar et al., 1999; Floyd & Widaman, 1995). Less than 1% of all responses were missing, missing responses were treated with pairwise



deletion for all EFAs. Promax rotation (i.e., oblique) and principle axis factoring were used for all EFAs in Study 2 because factors were expected to correlate (Russell, 2002).

When the goal is item reduction, retaining factors with eigenvalues  $< 1.0$  “is probably not optimal” because that criterion greatly overestimates the number of dimensions to retain (Floyd & Widaman, 1995, p. 291). Retaining factors with eigenvalues  $< 1.0$  is not always the best rule of thumb for factor extraction. To identify items to be dropped using a stricter criterion, the first EFA of all 181 items identified ten factors with eigenvalues over 2.0. When factors are expected to have moderate communalities, items with loadings greater than .40 according to the pattern matrix are considered meaningful (Floyd & Widaman, 1995). Items with loadings less than .40 on any one of the first ten factors were dropped. Fifty-two items meeting these conditions for exclusion were dropped. In addition, factors 11 and 12 were deleted entirely: John et al.’s (2008) openness measure and Lusk et al.’s (1998) measure of conscientiousness. According to the EFA conducted in Study 1, these two measures cross-loaded on both the socio-emotional and resource-attractiveness dimensions, and according to Study 2 these measures failed to load on any of the first ten factors. This suggests that personality characteristics (e.g., openness, conscientiousness) are independent constructs and do not meaningfully or uniquely represent the major latent constructs underlying ideal friendship expectations.

When the goal is item reduction, it is appropriate to delete items and repeat EFA procedures (Floyd & Widaman, 1995). A second EFA was conducted with the remaining 114 items. Items were deleted using the same criteria as above. Eight factors with eigenvalues over 2.0 were identified, and 27 items loading weakly ( $< .40$ ) on these factors were eliminated. In addition, factor 9 (8 items; eigenvalue = 1.65) was eliminated. This factor included several items

from Basu and Mukhopadhyay (1986) measuring friends' value-related attributes (e.g., being forward thinking, possessing prudence, and having progressive values).

A third and final EFA was conducted on remaining 79 items. At this point of item reduction, a scree plot was used to determine the optimal number of factors (Fabrigar et al., 1999; Floyd & Widaman, 1995). The goal of the scree plot is to identify the factors above the point inflection to determine the optimal number of factors (Floyd & Widaman, 1995; Russell, 2002). The scree plot offered evidence for 6 factors above the 'elbow.' Eigenvalues for the first six highest loading factors were 22.50, 11.56, 3.14, 2.35, 1.92, and 1.91 respectively. Six factors explained 59% of the variance in friendship expectations. The seventh factor had an eigenvalue 1.30, and the remaining factors leveled off from that point. Twenty items that did not load on any of the six major factors ( $< .40$ ) were dropped. Finally, eight items were dropped due to substantial cross-loadings among the six factors (Russell, 2002). After item reduction procedures were completed, 51 items measuring six factors remained. The final number of items was above the recommend minimum level of four per factor, and the entire measure of friendship standards was not too long so as to be considered burdensome (Fabrigar et al. 1999; Russell, 2002).

In response to RQ1, the EFAs conducted in Study 2 supported the existence of three of the four factors proposed by Hall (2011): 10-item symmetrical reciprocity (i.e., loyalty, positive regard, understanding), 12-item agency (i.e., wealth, job connections, attractiveness, fitness), and 7-item communion (i.e., share secrets, disclose private information). The EFAs suggested that the concept of solidarity, which included both enjoyment and similarity, was not uniform. Instead, in support of RQ2, a 9-item enjoyment factor was found (i.e., humor, good personality, enjoyable interaction). In response to RQ3, two emergent factors were also found: 7-item instrumental aid (i.e., assistance, help, granting favors), and 6-item similarity (i.e., attitudes,

opinions, interests). In response to RQ3, personality does not appear to constitute a unique dimension of friendship expectations. See Table 2 for all 51 items and item origins.

### **Study 3**

The purpose of Study 3 was to confirm the existence of the six factor structure identified in Study 2 by performing a CFA with a non-university sample. The results of the CFA provides further evidence to support the above conclusions regarding the latent factor structure of ideal friendship standards.

#### **Method**

*Participants.* Participants were recruited through a survey link associated with a university press release regarding a publication conducted by the lead author of the present investigation. The press release included a website link offering more information about the study about which the press release was written. On this website, a second link to an online survey was available for individuals who wished to participate in “a new study on relationships.” The university’s Institutional Review Board approved these procedures. After being consented, participants completed measures including an evaluation of their ideal same-sex friend, as well as other measures unrelated to the present investigation and reported elsewhere. The entire survey took approximately 50 minutes to complete, but the expectation section took less than 15 minutes to complete. Participants rated the importance of each of 51 expectations of a same-sex friendship on an 8-point scale (1 = Not at all important, 8 = Absolutely Essential).

Six-hundred and sixty-eight participants completed the 51 friendship expectation items. Participants were a mean of 33.3 years of age ( $SD = 12.68$ ,  $mdn = 29$ , range 17-77). Participants reporting sex were 68.7% female. A substantial number of participants did not report sex ( $n = 147$ ) because demographic questions were at the end of the survey, while expectation measures

Table 2: Study 3 Final Items, Item Origins, CFA Standardized Loadings and SE (N = 668)

Item	Item Origin	CFA Loading	Standard Error	R-square
<b>Symmetrical Reciprocity</b>				
Supports me when I am going through a difficult time	Oswald - Support Maintenance	1.01	0.04	0.59
Will cheer me up when I am sad	Zarbatany - Support	0.96	0.05	0.52
Really listens to what I have to say	La Gaipa - Empathic Understanding	0.81	0.04	0.51
Someone who gives advice honestly when I ask them for it	Oswald - Openness Maintenance	0.62	0.05	0.50
Stands by me through anything	La Gaipa - Help	0.86	0.04	0.46
Thinks my ideas are important and worthwhile	La Gaipa - Ego reinforcement	0.85	0.05	0.39
When others criticize me, stands up for me	Bank - Closeness norms	0.89	0.05	0.37
Someone who helps keep my spirits up when things are not going my way	La Gaipa - Help	0.94	0.04	0.32
Tells me the truth even if it is painful	New	0.56	0.05	0.21
Will always be fair in our friendship	New	0.54	0.05	0.19
<b>Agency</b>				
His/her family has good connections in business	New	1.22	0.04	0.74
Has high earning potential	Vigil- Financial	1.31	0.05	0.64
His/her parents are successful	New	1.15	0.05	0.63
Has business connections	New	1.23	0.05	0.63
Has money	Vigil- Financial	1.19	0.05	0.57
Comes from a wealthy background	New	1.00	0.05	0.56
Is physically attractive	Lusk - Physical attractiveness	1.22	0.06	0.43
Is physically fit	Lusk - Physical attractiveness	1.12	0.07	0.41
Is athletic	Lusk - Athletic ability	1.10	0.07	0.38
Has an attractive appearance	Sprecher & Regan - Physical	1.16	0.05	0.38
Has social connections	Vigil - Connections	1.10	0.07	0.37
Is not physically handicapped	Lusk - Disability	1.09	0.07	0.31
<b>Similarity</b>				
Shares common interests and beliefs	Furman - Behavioral Similarity	1.11	0.06	0.64
We share similar views about things that really matter in life	La Gaipa - Similarity	1.04	0.06	0.52
We have many common interests	La Gaipa - Similarity	0.91	0.05	0.52
We have similar attitudes and opinions	La Gaipa - Similarity	1.06	0.06	0.51
Possesses similar personality traits and characteristics	La Gaipa - Similarity	0.97	0.06	0.40
Our personalities are compatible	La Gaipa - Similarity	0.71	0.05	0.30

Table 2 (con.)

Item	Item Origin	CFA Loading	Standard Error	R-square
<b>Enjoyment</b>				
Fun to be around	New	0.75	0.04	0.53
Someone easy to spend time with	New	0.78	0.04	0.50
Is an enjoyable person to be around	Bank - Closeness norms	0.74	0.04	0.50
Can make me laugh	Oswald - Positivity Maintenance	0.82	0.04	0.47
Has a good personality	Sprecher & Regan - Personality	0.68	0.04	0.41
We could spend an enjoyable social evening together	La Gaipa - Similarity	0.73	0.04	0.40
Has a sense of humor	Sprecher & Regan - Humor	0.66	0.04	0.36
Wants to get together just to hang out	Oswald - Interaction Maintenance	0.82	0.05	0.34
Has an exciting personality	Sprecher & Regan - Personality	0.70	0.07	0.23
<b>Instrumental Aid</b>				
Goes out of his/her way to help me	Bank - Closeness Norms	1.10	0.06	0.53
Makes sacrifices for me	Oswald - Support Maintenance	1.17	0.06	0.48
Does favors for me	Zarbatany - Instrumental Aid	1.11	0.06	0.44
Does things for me willingly and doesn't expect anything in return	La Gaipa - Help	1.06	0.07	0.42
Gives help readily; I don't have to ask for it	La Gaipa - Help	0.88	0.06	0.42
Helps me complete jobs and tasks	Oswald - Interaction Maintenance	0.94	0.06	0.33
Feels a sense of duty and obligation to me	Bank - Closeness Norms	0.89	0.07	0.23
<b>Communion</b>				
Someone with whom I feel free to express my most inner private feelings	La Gaipa - Self disclosure	1.37	0.03	0.79
Be the kind of person I can share my private thoughts with	Oswald - Openness Maintenance	1.23	0.03	0.78
Be someone with whom I can share secrets	Furman - Behavioral Intimacy	1.32	0.03	0.75
Could talk to this person about intimate family problems	La Gaipa - Self disclosure	1.34	0.03	0.71
Could talk to this person about my personal problems	La Gaipa - Self disclosure	1.11	0.03	0.67
Could disclose to him/her things that I am ashamed of	La Gaipa - Self disclosure	1.25	0.04	0.59
Could reveal my most secret hopes and ambitions	La Gaipa - Self disclosure	1.01	0.05	0.30

were at the beginning. Although 81% were from the United States, participants hailed from several countries: 5% Canada, 2% Denmark, 2% UK and Ireland, and 2% Singapore. Participants were from 48 states, with California ( $n = 47$ ), Illinois ( $n = 38$ ), New York ( $n = 36$ ), and Texas ( $n = 26$ ) most frequently identified. Participants from the U.S. were asked to identify their race/ethnicity: 79.7% White, 8.2% African American, 6.5% Asian American, 4.5% Latino, and 1.1% Native American, and 1.5% mixed race. Participants were highly educated; the median highest level of education on an ordinal scale was a 4-year degree and 26.1% had a graduate degree, however 36.4% had either not attended or not completed college.

## **Results and Discussion**

*Confirmatory Factor Analysis.* CFA procedures are best reserved for testing a factor model rather than shortening and refining a list of items (Levine, 2005; Russell, 2002). Using EFA on one sample and following with a CFA with another sample, particularly from a distinct population, is recommended practice (Fabrigar et al., 1999; Floyd & Widaman, 1995). Using Mplus 6.0 statistical software (Muthen & Muthen, 2007), a CFA was conducted to test the global fit of the model as well as the loadings and cross-loadings of items. Less than 2% of all responses were missing. Missing responses were treated with multiple imputation during CFA procedures. The six factor model identified in the EFA from Study 2 was tested. Each of the 51 items loaded on its respective latent factor as predicted by the EFA. Items were not allowed to cross-load on multiple factors. The six latent factors were allowed to co-vary and measurement error was initially assumed to be uncorrelated between items (Byrne, 2011). Modification indices were requested and examined to determine if any items loaded on multiple factors and if residual variance was highly correlated. Modification indices for the second factor, agency, identified four items which shared a large amount of residual variance in pairs. Two pairs of items

appeared to measure the same concept within agency expectations (i.e., “Is physically attractive” and “Has an attractive appearance”; “Has money” and “Comes from a wealthy background”). Identifying pairs of shared residual variance is typical within factors (Floyd & Widaman, 1995). Given the conceptual overlap, it was justified to allow the residual variances of these two pairs of items to covary (Byrne, 2011). The modification indices did not show any cross-factor item loadings that would substantially improve model fit.

All items significantly loaded on their respective latent factors, with  $t$  values exceeding 11.00. The six factor model was a good fit to the data: RMSEA = .055 (95% confidence interval of .051 to .057, CFI = .90) (Byrne, 2011; Fabrigar et al., 1999). The  $\chi^2$  value was 3,869.08 with 1,209 degrees of freedom, which was significant. When testing factor structure with larger samples, it is valuable to calculate the  $\chi^2/df$  ratio, which was 3.20. This is considerably lower than the 5.0 ratio recommended for large samples (Byrne, 2011). Standardized factor loadings, standard errors, and  $R^2$  estimates for all items are provided on Table 2.

The predicted six factor solution was compared against three alternative, nested models, which is a practice best suited for CFA (Fabrigar et al., 1999; Floyd & Widaman, 1995). The first model explored the possibility of a two-factor solution, guided by the subscale EFA of Study 1. Agency (e.g., resource-attractiveness) was specified as the first factor, and all other items were combined on a second factor. Goodness-of-fit statistics demonstrated that this model was a worse fit to the data than the 6 factor solution (RMSEA = .091, 95% confidence interval .088 to .094, CFI = .71). In addition, the  $\chi^2/df$  ratio (3666.11/1033) was 3.55, also demonstrating a worse fit. To answer RQ1, the second comparison model was created to best represent the four factor model proposed by Hall (2011). This model combined enjoyment and similarity into a measure of solidarity. For sake of a nested comparison, instrumental aid was combined with

symmetrical reciprocity. This model showed a worse fit to the data (RMSEA = .079, 95% confidence interval .076 to .082, CFI = .78). The third alternative model was created based on the empirical evidence. Specifically, the strong correlations between symmetrical reciprocity, communion, and enjoyment ( $M_r = .60$ ) suggested a single factor. For this alternative model, all items for those dimensions were combined into a single factor, while agency, similarity, and instrumental aid were estimated as separate factors for a nested comparison. Although superior to the 2 factor solution and the Hall (2011) proposal, goodness-of-fit statistics demonstrated that this four factor model was also a worse fit to the data compared to the 6 factor solution (RMSEA = .072, 95% confidence interval .068 to .075, CFI = .82). In addition, the  $\chi^2/df$  ratio (3642.48/1028) was 3.54, demonstrating a worse fit than a six factor model. It is notable that for all three alternative models, the RMSEA values were outside the 95% confidence interval of the six factor model. In sum, alternative factor structures were inferior to the six factor model.

### **Tests of Factorial Invariance**

Once the factor structure is confirmed, tests of invariance (TOI) are recommended (Cheung & Rensvold, 2002; Floyd & Widaman, 1995; Levine, 2005). These tests indicate whether the measurement properties (i.e., factor structure and variance-covariance patterns) of the identified latent factor structure differ between samples. Configural invariance demonstrates similar factors measured by the same items, while metric invariance is established when factor loadings are held constant (Cheung & Rensvold, 2002). A strong test of invariance occurs when all factor loadings and intercepts are set to be invariant across groups and model fit is unchanged when goodness-of-fit indices are compared (Cheung & Rensvold, 2002; Floyd & Widaman, 1995). Tests of invariance should look for changes in RMSEA ( $\Delta < .02$ ) and CFI and TLI ( $\Delta < .01$ ) -- criteria set forth by Cheung and Rensvold (2002). Tests of invariance are particularly



important when sample characteristics could impact the variables of interest. The first TOI compared the university and the Internet sample (i.e., Studies 2 and 3). In comparing these samples, it establishes that different sample characteristics (i.e., geographic location, nationality) and modes of recruitment did not influence factorial structure. Furthermore, individuals' age and biological sex influence friendship expectations (Hall, 2011; Weiss & Lowenthal, 1975). Therefore, the present study undertook two additional TOI: male v. female and younger (i.e., 18-21 yrs.) v. older (i.e., 22-77 yrs.) participants. If invariance is established in all three cases, then the six factor model represents a good measure of friendship expectations for both university and community samples, males and females, and young adult and older adult participants (Cheung & Rensvold, 2002; Levine, 2005).

To begin, Study 2 and Study 3 samples were combined into a single data file. The Study 1 sample was not included in TOI analyses because some of the final expectations items were not included in Study 1. The first TOI was undertaken to compare factorial invariance between the university sample and the Internet sample using MPLUS 6.0 (Muthen & Muthen, 2007). The strong TOI demonstrated similar model fit when all 51 factor loadings and intercepts were constrained to be equivalent for participants in Study 2 and Study 3 ( $\Delta RMSEA = .001$ ,  $\Delta CFI = .002$ ,  $\Delta TLI = .005$ ). The small changes in goodness-of-fit indices demonstrate factorial invariance between samples (Cheung & Rensvold, 2002). The second TOI was undertaken to compare invariance between males ( $n = 318$ ) and females ( $n = 604$ ). The strong TOI demonstrated similar model fit when all 51 factor loadings and intercepts were constrained to be equivalent ( $\Delta RMSEA = .000$ ,  $\Delta CFI = .002$ ,  $\Delta TLI = .001$ ). This suggests factorial invariance for males and females. The third TOI compared respondents between the ages of 18 and 21 ( $n = 412$ ) to respondents between 22 and 77 years of age ( $n = 485$ ). The strong TOI demonstrated

similar model fit when all 51 factor loadings and intercepts were constrained to be equivalent ( $\Delta\text{RMSEA} = .000$ ,  $\Delta\text{CFI} = .002$ ,  $\Delta\text{TLI} = .001$ ). This establishes factorial invariance for younger and older participants. These three TOI successfully demonstrated that the six factor model provides good measurement of friendship standards for different groups of participants. Furthermore, goodness-of-fit statistics are sensitive to sample size (Floyd & Widaman, 1995). The internet sample ( $N = 668$ ) was 67% larger than the university sample ( $N = 401$ ) and there were nearly twice as many female than male participants. Despite these sample size differences, the small changes in goodness-of-fit provide further support for the claim of invariance.

### **Sex Differences**

Sex differences were tested in the combined sample and compared to the meta-analytic results of Hall (2011). Comparing a new measure against the results of prior investigations, particularly meta-analyses, helps to establish the construct validity of new latent factor models (Floyd & Widaman, 1995). Table 3 reports sex differences for the six expectation factors. In line with Hall's meta-analyses, females were more likely than males to have higher expectations of symmetrical reciprocity (i.e., loyalty, trust, commitment) and communion (i.e., intimacy, self-disclosure), yet effect sizes were slightly larger than those estimated by Hall. However, these effect sizes were in line with the moderating effect of age for communion and overall expectations found by Hall (2011). Specifically, differences in expectations between older females and males are likely to be greater than differences between girls and boys. In accord with Hall (2011), results indicate that males were more likely to have higher expectations of agency (i.e., wealth, fitness, connections) than females, although the effect sizes of the present investigation were slightly smaller than those estimated in Hall. Females had higher expectations of enjoyment and similarity, yet these concepts were not investigated in Hall's (2011) meta-

analyses. Finally, the results of the present investigation suggest that males and female expect similar levels of instrumental aid from friends. Table 3 provides factor means, standard deviations, reliabilities, and correlation matrices by sex of participant.

### General Discussion

The goal of the present investigation was to examine the latent factor structure of ideal friendship standards. The results of this multi-study investigation suggest that a six factor model of friendship standards shows the best fit to the data. In response to RQ1, three of the four factors identified in Hall (2011) were supported: symmetric reciprocity, agency, and communion. In response to RQ2, the existence of a friendship enjoyment expectation was supported. RQ3 queried whether additional expectations of friendship would emerge from the data. The present investigation suggests that similarity and instrumental aid are additional friendship expectations, but personality and intelligence failed to constitute unique dimensions of friendship expectations. Below these six factors will be discussed in relation to past measures of expectations.

*Table 3: Factor Means, SD, Sex Differences, Factor Reliabilities, and Correlation Matrices by Sex (N = 1069)*

	Males		Females		<i>d</i>	1	2	3	4	5	6
	Mean	SD	Mean	SD							
1. Symmetrical Reciprocity	5.91	1.00	6.52	0.85	0.58	<b>0.89</b>	.15*	.35**	.59**	.41**	.65**
2. Agency	3.01	1.50	2.82	1.30	-0.10	-0.09	<b>0.92</b>	0.13	.78**	.55**	.34**
3. Enjoyment	6.24	0.90	6.69	0.81	0.48	.47**	0.07	<b>0.87</b>	.46**	.45**	.38**
4. Instrumental Aid	4.84	1.22	4.85	1.10	0.00	.51**	.71**	.40**	<b>0.86</b>	.61**	.83**
5. Similarity	5.48	1.19	5.81	1.02	0.25	.45**	.38**	.50**	.68**	<b>0.82</b>	.54**
6. Communion	5.53	1.43	6.53	1.06	0.64	.71**	-0.11	.61**	.70**	.61**	<b>0.89</b>

*Note: Expectations measured on an 8 point scale; positive *d* values indicate higher expectations for females; males' correlations above the diagonal; reliabilities on the diagonal; \*  $p < .01$ , \*\*  $p < .001$*

### Comparison with Past Expectation Measures

La Gaipa's (1987) Friendship Expectancy Inventory has seven subscales for adults and four subscales for child participants. The present investigation offers clear support for two of the

original subscales with little amendment: similarity and self-disclosure. There is one exception to this confirmation. Although La Gaipa (1987) considered “spending an enjoyable evening together” to be a measure of similarity, it lacks statistical support and face validity to combine expectations of enjoyment with expectations of similarity. The present research suggests that enjoyment and similarity are unique dimensions of friendship expectations. Therefore, similarity is a unique and valid measure of friendship expectations, echoing the value placed on similarity in past research (Furman & Bierman, 1984; Lusk et al., 1998; Sprecher & Regan, 2002).

La Gaipa’s (1987) self-disclosure subscale retained nearly all of the original items and incorporated two items from other subscales. The importance of communion expectations was reaffirmed in Hall’s (2011) recent meta-analysis wherein more studies ( $k = 31$ ) measured expectations of communion than any other dimension. Additionally, Furman and Bierman (1984) identify behavioral intimacy as a unique expectation in friendship, and Fehr (2004) suggests self-disclosure and emotional support are prototypical of intimacy in friendship.

Several items from La Gaipa’s (1987) other sub-scales contributed to the symmetrical reciprocity and instrumental aid expectation factors. In fact, the present factor analyses suggest that the widely discussed concept of friendship support should be bifurcated into two separate concepts: support in terms of loyalty and availability and support in terms of assistance and aid. Johnson (1997) and Mancini and Simon (1984) make similar distinctions in contrasting expectations of instrumental support from emotional support in friendship at all ages. However, the symmetrical reciprocity factor included more than merely support offered by friends; the final ten items measuring symmetrical reciprocity reflect positive regard, commitment, and loyalty. This factor included items from La Gaipa’s (1987) positive regard and understanding subscales. This is consistent with Bigelow and La Gaipa’s (1980) argument that loyalty in

friendship implies admiration and genuine acceptance. Overall, this measure appears to capture the deep structures of friendship discussed by Hartup and Stevens (1997) and the unfeigned, genuine regard identified by Wright (2006).

By contrast, participants in the present study placed less value on expectations of instrumental aid ( $M = 4.85$ ,  $SD = 1.14$ ) in comparison to symmetrical reciprocity ( $M = 6.34$ ,  $SD = .95$ ). Bukowski et al. (1987) argues that in the Aristotelian concept of friendship, loyalty is of greater value than utility. Expectations of instrumental aid are behaviorally enacted when friends offer help without being asked, give favors, and help to complete tasks. These concepts were present in Argyle and Henderson's (1984) rules of friendship and in Bank's (1994) norms of closeness. The factor analyses of the present investigation suggest that instrumental aid constitutes a unique and valued expectation in friendship.

The concept of agency was also supported in the present investigation. Several recent investigations have suggested that physical attractiveness, wealth, and physical fitness are important concepts in evaluating the ideal dimensions of personal relationships (e.g., Cann, 2004; Lusk et al., 1998; Sprecher & Regan, 2002). Both EFAs and CFAs conducted in the present investigation strongly recommend the inclusion of all of these concepts into a single factor of friendship expectations. Although seemingly distinct, it is theoretically consistent with Bakan (1966) that evaluations of a friend for what benefits they offer constitute a uniform construct. Furthermore, the combination of these expected qualities is empirically consistent with Lusk et al. (1998), who found that attractiveness, wealth, and athleticism were united in one concept of an ideal friend. It is also notable that none of the items measuring agency came from established, long-standing scales of expectations. Although interest in evaluating agency

expectations are emergent and not part of the friendship expectation research tradition, agency expectations merit inclusion in future research.

Finally, the expectation of friendship enjoyment demonstrated a unique factor structure. This measure reflects the high value that friends place on having fun (Fehr, 1996), sharing in enjoyment (Hegi & Bergner, 2010), and the value of a sense of humor (Vigil, 2007). This measure appears to reflect both positivity maintenance and interaction maintenance behaviors (Oswald et al., 2004) and other measures of social companionship (Fuhrman et al., 2009). This factor is much more akin to Hall's (2011) concept of solidarity, which focused on pleasant friendship interaction and the resulting feelings of inclusion, which is also an essential component of Aristotelian friendship (Bukowski et al., 1987).

To summarize, the present investigation provided a response to each of the three research questions. RQ1 sought to affirm the four dimensions of friendship expectation identified by Hall (2011): symmetrical reciprocity, agency, communion, and solidarity. Results supported the factorial structures of the first three and included items reflecting the definitions provided by Hall. However, solidarity expectations appeared to be represented by two separate expectation factors: similarity and enjoyment. Guided by La Gaipa's (1987) inclusion of similarity and enjoyable interactions in the same factor, Hall proposed that solidarity expectations included both concepts. The present factor analyses recommended separation. RQ2 queried whether enjoyment expectations would constitute a single factor, and the results of this investigation suggest that it does. RQ3 sought to identify emergent factors as well as to address whether personality characteristics and intelligence were unique dimensions of friendship expectations. Results suggest that although instrumental aid is a unique dimension of friendship expectations, the personality characteristics explored here (i.e., openness, conscientiousness, extraversion)

dropped out of early. Furthermore, intelligence, creativity, and education did not appear to constitute a unique factor or load on agency or any other latent factor.

The six factor friendship expectation sub-scales are valid and reliable indicators of how a person cognitively conceives of the ideal friend, and demonstrate construct validity by showing similar sex differences as reported in a recent meta-analysis (i.e., Hall, 2011). The invariance analyses demonstrated that these items can be used to measure the same underlying latent constructs for both males and females, young and older adults, and university and community populations. When measured using the proposed 51-item scale, these qualities and behaviors constitute ideal friendship standards. This new measure can be used in future investigations of friendship using evolutionary and social-cognitive models, and can help bring past research on friendship in concert with contemporary research.

### **Limitations and Directions for Future Research**

Like all factor analytical procedures, this six factor model excludes many possible ways of measuring friendship expectations. This investigation was undertaken to consolidate research on friendship standards to aid future research. However, there are at least 130 items used to measure friendship expectations in the past that were not included in the final inventory. Many of these items were redundant, cross-loaded heavily, were relatively peripheral to friendship expectations, or measured some other concept entirely (i.e., personality).

The present study is limited in that it explored only same-sex interactions. Past work on cross-sex friendships suggests that same-sex friendships have different levels of expectations than cross-sex friendships (Felmlee, 1999; Fuhrman et al., 2009). The present six factor model could be used in future work to test predictable differences in cross-sex expectations (Bleske & Buss, 2000). However, it is necessary to confirm invariance in the measurement of friendship

standards between same and cross-sex friends. The lack of child and adolescent participants limits the application of this measure of expectations. Although much research has focused on children's expectations (e.g., Furman & Bierman, 1984; La Gaipa, 1977), the present investigation should not be used in its current form to measure friendship expectations for children. Although it is possible that the six factor measure would be appropriate for adolescents or children, whether or not it would stand up to tests of invariance as well as more basic tests of readability or interpretation remains an empirical question. Future work could attempt to consolidate and improve measurement of friendship expectations for children using the present study as a guide.



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