



Why do some people have closer friendships than others? The effect of self-esteem on
friendship quality in adolescence.

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Abstract

Why do some people have closer friendships than others and what factors influence this?

Peers have an important influence during adolescence and especially friendship quality can be a protective factor and foster later well-being. Friendship experience differs for girls and boys and girls usually experience higher friendship quality. A positive association has also been found for friendship quality and self-esteem. Especially during adolescence, boys usually have higher self-esteem. For girls the quality of their friendships is also significantly linked to their self-esteem. This study investigates if self-esteem predicts friendship quality in Dutch adolescents over time and if that relationship is moderated by gender in a longitudinal study. 189 Dutch students (11 to 14 years) completed self-report questionnaires four times over two years. Individual differences in self-esteem between persons were a predictor for friendship conflict. Girls had higher self-esteem, as well as higher friendship quality (higher friendship closeness and lower conflict). The effect of changes of self-esteem within the person is higher for girls than for boys.

Effects of self-esteem on friendship quality

Humans are social beings and interpersonal contact is a fundamental human need universal in all of us (Maslow, 1943). Friendships are a very important domain of interpersonal relationships across the lifespan. Friends matter especially for adolescents, who are experiencing a very significant developmental period in their life. Peer influence during this period is very important, as they influence better adjustment and development in adolescence (Waldrup, Malcolm, & Jensen-Campbell, 2008). Yet, friendships differ greatly between persons. Why do some adolescents have better friendships? What factors influence this? During the transition of childhood to adolescence, friends become increasingly more important as adolescents start to separate from their parents and turn to their peers for support (Belsky, 2013; Rubin, Bukowski, & Parker, 2006). Thus, it is undeniable that peers have a prominent influence on adolescents. Friends also increase well-being and help cope with life stressors (Hartup & Stevens, 2004).

However, friendship experiences vary vastly for girls and boys. On the one hand, friendships between girls generally include self-disclosure and discussion. On the other hand, friendships between boys tend to involve shared activities (McNelles & Connolly, 1999). Therefore, girls usually experience greater friendship intimacy during socializing. Boys experience more positive friendship intimacy during physical activities (Zarbatany, McDougall & Hymel, 2000). Furthermore, gender differences in friendship during adolescence can be found in the typical friend group sizes. Previous research has shown that boys are more likely to withdraw in a dyadic interaction, but girls tend to withdraw more in a group interaction (Benenson & Heath, 2006). In accordance to this, boys usually have larger friendship groups centering on an activity and girls focus more on smaller friendship groups based on support (Molloy, Gest, Feinberg & Osgood, 2014; Rose & Rudolph, 2006).

In addition to gender differences in interaction with friends, differences between girls and boys in friendship quality have also been found (Kendrick, Jutengren & Stattin, 2012). Friendship quality in adolescence can be defined as high levels of self-disclosure and intimacy, loyalty, and prosocial behavior; as well as low levels of conflict and rivalry (Berndt & Keefe, 1995; Berndt, 2002). Nevertheless, friendship quality has also been divided into the dimensions of closeness as well as conflict in friendships (Parker, 2014). Hereby, some children report very close friendships that are still high in conflict, but are still satisfied with these friendships. While quality of friendship has been discovered to be stable for both girls and boys, adolescent girls report higher levels of friendship quality (Kingery, Erdley & Marshall, 2011). Furthermore, high-quality individual friendships serve as an important possible protective mechanism for girls more than for boys (Graber, Turner & Madill, 2015). Close and supportive friendships thus help build a constructive coping style that promotes resilience especially for girls.

Previous research has shown that close and supportive friendships also seem to be a protective factor in the changes of self-esteem (Gorrese & Ruggieri, 2013; Way & Greene, 2006). Self-esteem, defined as how positively or negatively the own self is evaluated (Belsky, 2013; Baumeister, 1993,) is positively influenced by good friendship quality (Raboteg-Saric & Sakic, 2013). A study by Kingery and colleagues (2011) even found evidence for friendship quality as a unique predictor for self-esteem. They followed 365 students with a mean age of eleven years as they transitioned and adjusted to middle school. Amongst other variables, self-esteem and friendship quality were measured. Friendship quality was a unique predictor of self-esteem after the transition from elementary to middle school.

Just as in friendship quality, research seems to also suggest some gender differences for self-esteem. . A recent meta-analysis researched gender differences in self-esteem across the lifespan (Zuckerman, Li & Hall, 2016). With a number of over a thousand studies and a

total sample size of over a million participants, it was found that gender differences in self-esteem historically increased until the 1990s, but are nowadays decreasing again as progress is made and more gender equality is reached. Additionally, a small difference between females and males was discovered, with males having slightly higher self-esteem. Zuckerman et al. (2016) also found that gender differences in children's self-esteem are relatively small, but then increase to the highest difference during adolescence, before decreasing once more during adulthood. One proposed explanation for this difference is that during adolescence girls compare themselves to boys and want to reach the same goals, but struggle with this due to cultural norms and expectations. This is supported insofar that studies show no gender differences during adolescence when gender roles are clearly divided and separate, e.g. until the 1970s in the US or in many non-Western countries today.

Due to the existing gender differences in self-esteem as well as friendship quality gender might moderate the relation between friendship quality and self-esteem. This has only been investigated by a study by Thomas and Caubtman (2001) In line with previous research they found that girls reported significantly lower self-esteem than boys. However, girls also rated their friendships stronger than boys and experienced them as more rewarding. Yet, they also experienced their friendships to be more stressful. In this study, the quality of girls' friendships, in this case with different-gender friends, was significantly and positively linked to their self-esteem. This relation was not found for boys. Thus, this study shows important gender differences in how self-esteem influences friendship quality.

As previously described, both friendship quality as well as self-esteem can be important protective factors during adolescence and influence future well-being (Proctor, Linley & Maltby, 2008; Raboteg-Saric & Sakic, 2013). That is why it is important to understand how they develop and why differences exist between girls and boys to facilitate successful development into adulthood. However, there is a gap in literature that investigates

this link. Only one study already investigated the interaction of gender on the relationship between friendship quality and self-esteem (Thomas et al., 2001). This study focused on cross-sectional differences. Thus, previous research has not investigated how gender influences the association between self-esteem and friendship quality over time, so it would be important to look at the relationships longitudinally.

Therefore, this research aims to expand on the previous study by Thomas et al. (2001) by using a European sample of younger adolescents (with the average age of twelve) and doing longitudinal research that measures any changes in friendship quality as well as self-esteem over the course of two years. Moreover, previous research has mostly focused on friendship quality as a predictor of self-esteem. This study attempts to investigate if self-esteem can also be a predictor of friendship quality. Thus, this study intends to investigate if self-esteem predicts friendship quality in Dutch adolescents over time and if that relationship is moderated by gender in a longitudinal study. Hereby, friendship quality will also be split up into the dimensions of closeness and conflict to see if there are differences (Parker, 2014). The first hypothesis is that girls will report lower self-esteem but higher friendship quality over time compared to boys (Thomas et al., 2001). In accordance to previous research, the second hypothesis is that self-esteem is a predictor of friendship quality in adolescents over time. In addition to this, the third hypothesis is that the effect of self-esteem on friendship quality is stronger for girls than for boys (Thomas et al., 2001).

Method

Participants

216 students in their first year of two Dutch high schools participated in the study. Gender was equally distributed (53.7% boys and 46.3% girls) and the majority were Dutch (91.7%) and between the ages of 11 and 14 (with a mean age of 12). 81.5% of the students indicated that they lived with both parents and 92.6% had siblings. Their socioeconomic

background was also diverse and the students were from all educational levels of Dutch high schools. Missing data was deleted which left a final sample of 189 participants.

Procedure

The participants were recruited as part of the Peer Power Project, which investigates the link between negative peer experiences and individual systematic inflammation in adolescence. Participation was on a voluntary basis: The schools were approached and information about the project was provided to the students and their parents, who could then choose to join the study. The retention rate was very high in the Peer Power Project with 90% across all four assessment waves. The study consisted of four longitudinal assessment waves every six months. Each of the four assessment waves every six months followed the same structure. The first assessment was done in the fall of the first year of high school and started with the informed consent of both the students and the parents for all waves. They could decide which parts they wanted to participate in and were able to withdraw their consent at any time and for any reason. Beforehand, the participants were assigned a 4-digit code to ensure their anonymity. Then they completed peer-reports in form of the peer nomination form and self-report questionnaires via an online survey system using laptops of Tilburg University. The questionnaires included measures on peer experiences (e.g. friendship and victimization), interpersonal sensitivity (e.g. rejection sensitivity), inflammation, and additional measures such as personality, self-esteem, and depressive symptoms.

Measures

Friendship quality was measured by the Network of Relationships Inventory, which is a 27-item self-report and is used to measure the friendship quality with the closest friend of the participants (Furman, 1996). It uses a 5-point Likert scale that ranges from 1 'little to none' to 5 'more is not possible'. Friendship quality was divided into the subscales of friendship closeness and friendship conflict (Parker, 2014). Closeness included questions,

such as how often the participant goes to their closest friend for support and how much they trust that friend. Conflict included questions about how often the participant fights with their friend and how often that friend criticizes the participant. For each subscale the mean score was taken at each assessment wave. It is considered a valuable assessment for the similarities and differences in peer friendships (Furman, & Buhrmester, 1985). It also has high validity (Furman, 1996). In this study the Cronbach's Alpha for the entire friendship quality scale of the NRI is .881. The subscale of friendship closeness has a Cronbach's Alpha of .92, while the subscale of friendship conflict has a Cronbach's Alpha of .65.

Self-esteem was measured by the Rosenberg Self-esteem Scale, which is a 10-item scale and is used to measure self-esteem (Rosenberg, 1965). It uses a 4-point Likert scale ranging from 1 'does not fit me at all' to 4 'fits me well' with questions, such as how positively the participant views themselves or their perceived qualities. For each assessment wave the mean score was taken. It is one of the widely used self-report measures of global self-esteem and has high reliability as well as high internal consistency (Gray-Little, Williams & Hancock, 1997). Cronbach's Alpha in this study is .64. This measurement also has high concurrent, predictive, as well as construct validity (Ciarrochi & Bilich, n.d.).

Statistical Analysis

IBM SPSS statistics version 25 was first used for the descriptive statistics, i.e. correlations, mean, range, standard deviation, as well as normality tests and histograms. To test how self-esteem predicts friendship quality and if gender moderates the relationship between friendship quality and self-esteem in a longitudinal study, the statistical software Rstudio 3.5.1 (2018-07-02) was used. The data was restructured in SPSS and self-esteem was split up into a mean score of all four time points and individual change scores per person. Using the Rstudio package 'lme4' and 'lmerTest', an unconditional means model was run and then an unconditional growth model on both friendship closeness and conflict, using time as a

random as well as fixed effect. To test the first two hypotheses a multilevel analysis with a longitudinal 2-level model was used. To test gender differences, first three conditional growth models were run with gender as a predictor; first for self-esteem and then for friendship closeness and conflict. For the hypothesis that self-esteem predicts friendship quality, a conditional growth model was run with self-esteem (both mean scores and change scores) as a predictor for friendship closeness and conflict. Then, another model was run that added gender as a predictor. For the last hypothesis, that there are gender differences in the effect of self-esteem on friendship quality, conditional growth models were run for both friendship closeness and friendship conflict that added an interaction between change and mean scores of self-esteem and gender. To check possible bidirectional effects, another conditional growth model was run with self-esteem as the outcome variable, with the interaction of gender with both change and mean scores of friendship closeness as well as friendship conflict.

Results

Descriptives

Descriptive statistics revealed that self-esteem was negatively skewed and the friendship quality subscale of friendship conflict was positively skewed (see for full descriptives Table 1). Frequency tables in SPSS showed that the mean of friendship conflict over all four waves had a skewness of 1.515. The mean of self-esteem had a skewness of -.684. Thus, to meet the assumption of normal distribution, the scores were log transformed to normalize the data before analysis.

Table 1: Descriptives

| | Female | | | Male | | |
|-----------|--------|---------------|----------------|------|---------------|----------------|
| | n | M (SD) | CI | n | M (SD) | CI |
| Closeness | 86 | 3.85 (.55) | 3.73 – 3.97 | 103 | 3.17 (.54) | 3.06 – 3.27 |
| Conflict | 86 | .08 (.08) | .06 – .10 | 103 | .12 (.08) | .11 – .138 |

| | | | | | | |
|-------------|----|--------------|--------------|-----|--------------|--------------|
| Self-esteem | 87 | .24 (.11) | .22 - .26 | 104 | .21 (.11) | .18 - .27 |
|-------------|----|--------------|--------------|-----|--------------|--------------|

Note: CI = 95% confidence interval

Table 2 shows the correlations relevant for the hypotheses of this study. Self-esteem and friendship quality (closeness and conflict) all correlate significantly with gender. While the friendship quality subscales of closeness and conflict are significant, the correlation is small, which is why both subscales were used to investigate possible differences. Furthermore, self-esteem is also significantly associated with friendship conflict. Hereby, higher self-esteem is linked to higher friendship conflict. However, self-esteem is not significantly related to friendship closeness. The relationship between self-esteem and friendship closeness was still investigated further to check for a possible interaction.

Table 2: Correlations

| | | Gender | Self- esteem | Conflict | Closeness |
|-----------------|---------------------|--------|-----------------|----------|-----------|
| Gender | Pearson Correlation | 1 | .15* | .25** | -.53** |
| | Sig. (2-tailed) | | .04 | .00 | .00 |
| | N | 191 | 191 | 189 | 189 |
| Self- esteem | Pearson Correlation | -.15* | 1 | .21** | -.04 |
| | Sig. (2-tailed) | .04 | | .00 | .62 |
| | N | 191 | 191 | 189 | 189 |
| Conflict | Pearson Correlation | .25** | .21** | 1 | -.18* |
| | Sig. (2-tailed) | .00 | .00 | | .016 |
| | N | 189 | 189 | 189 | 189 |
| Closeness | Pearson Correlation | -.53** | -.04 | -.18* | 1 |
| | Sig. (2-tailed) | .00 | .62 | .02 | |
| | N | 189 | 189 | 189 | 189 |

*. Correlation is significant at the 0.05 level (2-tailed); **. Correlation is significant at the 0.01 level (2-tailed).

Multilevel modelling

Multilevel modeling in R was used to test if self-esteem predicts friendship quality in Dutch adolescents over time and if that relationship is moderated by gender. First an unconditional mean model was run for both subscales of friendship quality. There was a significant effect for closeness, $t(189)=74.31$, $p<.001$. There was also a significant effect for conflict, $t(189)=17.56$, $p<.001$. Thus, next, an unconditional growth model was run. There was a significant effect for closeness, $t(189)=74.80$, $p<.001$. There was also a significant effect for conflict, $t(189)=17.56$, $p<.001$.

To test the first hypothesis, girls have higher friendship quality but lower self-esteem than boys over time, a conditional growth model was used. Gender was recoded beforehand (girls: 0, boys: 1). Boys had lower friendship closeness, $b=-0.68$, $t(189)=-8.60$, $p<.001$. Boys also had higher friendship conflict, $b=.041$, $t(189)=3.57$, $p=.001$. Boys also had lower self-esteem, $b=-.031$, $t(191)=-1.95$, $p=.053$.

To test the hypotheses that self-esteem influences friendship quality over time and that the effect of self-esteem on friendship quality is stronger for girls than for boys, different conditional growth models were run, as described in table 3. The predictors for friendship closeness explained a large proportion of the variance, $R^2=.71$. The predictors for friendship conflict explained more than half of the proportion of the variance, $R^2=.53$. For friendship closeness, the interaction of self-esteem and gender was significant for individual changes over time. Thus, the individual change of self-esteem was a significant predictor for closeness, but that effect was greater for girls than for boys. Less change in self-esteem was linked to higher friendship closeness. The interaction of gender and self-esteem was not significant for friendship conflict. Thus, there was no gender difference for conflict. However, individual differences in self-esteem between persons were significant. High levels of self-esteem were associated with high levels of the friendship conflict.

A last conditional growth model was run with self-esteem as the outcome variable and interactions of gender with friendship closeness and conflict respectively. The predictors for friendship conflict explained more than half of the proportion of the variance, $R^2=.64$. The same results were found as with the above described models: Individual differences in friendship conflict were predictors for self-esteem. The interaction of individual changes in friendship closeness and gender was also significant for self-esteem. Thus, the effect of individual changes in friendship closeness on self-esteem was larger for girls than for boys.

Table 3: Conditional growth model for friendship closeness, conflict, and self-esteem

| | Friendship closeness | | Friendship conflict | | Self-esteem | |
|----------------------|-----------------------------|------------------------------------|-----------------------------|----------------------------|-----------------------------|---------------------------|
| | Estimate (std. error) | CI (29.0 76) | Estimate (std. error) | CI (t- value) | Estimate (std. error) | CI (t- value) |
| Intercept | 4.02 (.14) | 3.75 – 4. 30 (29.0 76) | .03 (.02) | -.01 – .0 7 (1.56) | .29 (.08) | .13 – .45 (3.49) |
| Gender | -.70 (.71) | -1.04 – .34 (- 3.89) | .06 (.03) | .01 – .11 (2.40) | -.02 (.11) | -.23 – .18 (- 0.23) |
| Self-esteem (mean) | -.70 (.52) | -1.70 – .35 (- 1.29) | .21 (.07) | .10 – .35 (2.88) | | |
| Self-esteem (change) | .60 (.29) | .04 – 1.16 (2.10) | -.00 (.05) | -.10 – .10 (-.02) | | |

| | | | | |
|--------------------|-------------|--------------|-------------|-----------------------|
| Self-esteem*Gender | -0.05 (.71) | -1.44 – | -0.06 (.10) | -0.25 – |
| (mean) | | 1.34 (- | | .14 (-.58) |
| | | .08) | | |
| Self-esteem*Gender | -0.88 (.40) | -1.65 – | .01 (.10) | -0.12 – |
| (change) | | -0.10 (- | | .15 (.21) |
| | | 2.21) | | |
| Closeness (mean) | | | | -0.02 (.02) -0.06 – |
| | | | | .02 (- |
| | | | | 1.12) |
| Closeness (change) | | | | .03 (.01) .00 – .05 |
| | | | | (2.03) |
| Conflict (mean) | | | | .47 (.15) .17 – .77 |
| | | | | (3.08) |
| Conflict (change) | | | | .04 (.08) -0.11 – |
| | | | | .19 |
| | | | | (0.53) |
| Closeness*Gender | | | | -0.01 (.03) .06 – .05 |
| (mean) | | | | (-0.21) |
| Closeness*Gender | | | | -0.04 (.02) -0.08 – - |
| (change) | | | | .01 (- |
| | | | | 2.22) |
| Conflict*Gender | | | | -0.20 (.20) -0.60 – |
| (mean) | | | | .19 (- |
| | | | | 1.02) |

| | | |
|-----------------|-------------|--------|
| Conflict*Gender | -0.02 (.10) | -.22 – |
| (change) | | .18 |
| | | (0.21) |

Discussion

The aim of this research was to investigate if self-esteem predicts friendship quality in Dutch adolescents over time and if that relationship is moderated by gender. Three different hypotheses were stated: It was expected that girls have lower self-esteem but higher friendship quality over time compared to boys. Moreover, it was predicted that levels of self-esteem influence friendship quality over time and that the effect of self-esteem on friendship quality is stronger for girls than for boys. In the following section it will be discussed to what extent the findings of this study relate to these hypotheses.

The first hypothesis was that girls have lower self-esteem but higher friendship quality compared to boys over time. This hypothesis was partly confirmed, as girls reported lower conflict in their friendships as well as higher friendship closeness. High levels of closeness and low levels of conflict thus lead to high levels of overall friendship quality (Berndt et al., 1995; Berndt, 2002). However, in contrast to the hypothesis, girls actually had higher self-esteem in this study. This is in contrast with previous research that found that throughout the lifespan boys have slightly higher self-esteem than girls (Zuckerman et al., 2016). Other studies have shown that in childhood and early adolescence girls and boys have similar levels of self-esteem, but then the self-esteem of boys increases more than of the self-esteem of girls (Sánchez-Queija et al., 2017).

One explanation for the finding that boys have lower self-esteem than girls in this study could be that the participants are mostly still in early adolescence (mean age of twelve) and different results might be found if an older sample had been used. Another possibility is

that the findings are merely sample specific and are influenced by other factors that might affect the boys of this particular sample more, e.g. peer victimization. This could also explain why boys report higher conflict in friendships. For friendship closeness, the findings are in line with previous research, as girls are shown to have higher friendship quality than boys (Kingery et al., 2011). One reason why girls experience higher friendship quality might be because they experience higher friendship intimacy during socializing and self-disclosure (Zarbatany et al., 2000). These are aspects of friendship quality as described above.

The last two hypotheses were that self-esteem is a predictor of friendship quality in adolescents over time and that the effect of self-esteem on friendship quality is stronger for girls than for boys. The second hypothesis was supported by the data, as self-esteem predicts both subscales of friendship quality to varying degrees. High levels of self-esteem are associated with high levels of the friendship conflict subscale of friendship quality (e.g. conflict, criticism). Hereby, only individual differences in self-esteem between persons are important and not individual changes over time. The third hypothesis is also confirmed for the closeness subscale of friendship quality (e.g. support, trust): The change of self-esteem over time within persons was a significant predictor for closeness, however that effect was greater for girls than for boys. Less change in self-esteem is hereby associated with higher friendship closeness.

Multiple factors could explain why individual differences in self-esteem and not individual changes are a difference for friendship conflict: On the one hand, while self-esteem often changes in early adolescence, it stabilizes until emerging adulthood (Sánchez-Queija, Oliva, & Parra, 2017; Caspi, Roberts, & Shiner, 2005). Thus, individual differences between teenagers in self-esteem might be more pronounced and long lasting than fluctuations within an adolescent as predictors for friendship conflict. This might also be in line with the finding that less change in self-esteem within the person predicts higher friendship closeness. On the

other hand, the two subscales of friendship quality are quite different: The levels of friendship closeness are normally distributed, i.e. the majority of the adolescents in this sample have similar levels in friendship closeness. Thus, this might be why individual changes in self-esteem are a more important predictor for closeness than individual differences. In contrast to this, only a few adolescents have high levels of friendship conflict, which might make individual differences more important.

Previous research has already found that friendship quality is significantly linked to self-esteem for girls but not for boys (Thomas et al., 2001). This study expanded on this link that changes in self-esteem within the person predict friendship closeness for girls more than for boys. Especially during adolescence, girls focus more on emotional interactions in their friendships, while boys mainly focus on physical activities (McNelles et al., 1999). Furthermore, self-esteem changes across the lifespan of a person: While relatively high in childhood, it decreases in adolescence, before increasing again in adulthood (Robins and Trzesniewski, 2005). During adolescence the self-esteem of girls and boys tends to differ the most compared to any other age group (Zuckerman et al., 2016). All this could explain why the individual development of self-esteem differs for girls and boys in adolescence in how it predicts friendship closeness.

It is important to note that the relationship between self-esteem and friendship quality is likely more complex. In this study self-esteem has been shown to be a predictor for friendship quality, but friendship quality was also a predictor for self-esteem. Thus, effects are likely bidirectional.

These findings indicate self-esteem is one factor of psychosocial functioning that influences friendship quality over time. However, this relationship is very complex: Individual differences between persons in self-esteem influence different aspects of friendship quality (i.e. conflict) than changes over time within persons in self-esteem (i.e. closeness).

This study also shows that it is important to take different experiences of adolescent girls and boys into account. Previous research has shown that friendship quality can be linked to long-term well-being and psychosocial adjustment as well as be a protective factor for adolescents (Graber et al., 2015; Hartup et al., 2004). That is why it is important to further investigate the link of self-esteem on the different aspects of friendship quality over time to find out how to foster and enhance the well-being and development of girls and boys during their adolescence.

Limitations and future directions

There are several limitations in the study. The sample is limited in ethnicity with over 99% participants Dutch. This makes generalizability to other cultures difficult. Since participants had to fill out the same questionnaires several times, their answers could be biased. Furthermore, the questionnaires used in this study were all self-reports, which might limit their accuracy and generalizability. E.g., for friendship quality, each participant rated their own perceptions, but how the friend that was described viewed their friendship, was not considered.

Future research could benefit from using an even larger sample and ethnically diverse group to increase the generalizability of the results. Further studies could also collect data for an even longer time span to compare differences in childhood and adolescence. It would also be interesting to do comparisons across the lifespan. Furthermore, to receive an even more accurate understanding, it could be interesting to also investigate other individual differences, such as personality traits, as well as more details on friendships, such as friendship stress and friendship satisfaction. Another benefit could be good to not only use self-reports, but also peer-reports and parental reports and observations.

This study was an important first step to show how differences within and between adolescents in self-esteem influence different aspects of friendship quality over time and that this varies for girls and boys.

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