



Discrepancies in parental and self-appraisals of prosocial characteristics predict emotional problems in adolescents

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Objectives. Parental appraisals of an adolescent may have an effect upon the adolescent's well-being and likelihood of emotional problems. However, the impact of these parental appraisals is likely to be partly determined by the young person's self-appraisal. It was predicted that a discrepancy in self- and parent appraisals of positive, prosocial qualities would be associated with an increased risk of emotional problems.

Design. The study employed a cross-sectional design within a large sample of adolescent and caregiver dyads ($N = 3,976$, aged 11–17 years), drawn from the 'Mental health of children and young people in Great Britain, 2004' survey.

Method. Two separate measures of prosociality were used to ensure that effects were not specific to one measure. The analysis explored the discrepancy in parent and self-ratings on these measures via interactions within a logistic regression framework. Potential confounds, including gender, parental mental health, conduct and hyperkinetic problems were controlled for in the analysis.

Results. The logistic regression analyses demonstrated significant interactions between self- and parent ratings of prosocial qualities in predicting the odds of emotional disorder (i.e., depression and anxiety). This effect occurred across both measures of prosocial qualities whilst controlling for confounds. The pattern of the interactions suggested that low parental appraisals had a more detrimental effect on well-being when self-appraisals were highly positive.

Conclusions. The results suggest that moderately high self-appraised positive traits may carry a cost of leaving young people more vulnerable to discrepant, negative parental appraisals. This has important implications for the meaning attributed to self-appraised positive traits in clinical contexts.

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Practitioner points

- Clinicians should be aware that the association between parental perceptions of a child's prosociality and emotional disorder may be influenced by the adolescents' self-perceptions.
- Clinicians should therefore endeavour to assess both parental and adolescent appraisals.
- Discrepancies may be clinically meaningful, in terms of the risk of emotional problems, rather than simply being a nuisance.
- This study is cross-sectional, so although discrepancies may be linked to risk of emotional problems, the direction of this effect requires elucidation.
- The current study only focusses on the parent-adolescent dynamic and so may not extend to discrepancy effects in other areas of positive functioning or in other relational contexts.

There is evidence that the way young people are perceived and appraised by significant others can shape their emotional well-being (Jacquez, Cole, & Searle, 2004; Thomaes *et al.*, 2010). The perceptions of parents, representing key attachment figures in a young person's life, are likely to be particularly influential (Rutter, 1995). It is likely that the impact of parental appraisals will partly depend on a young person's existing self-concept. The way in which self-appraisals and parental appraisals diverge from one another may be an important determinant of emotional disorder (i.e., anxiety, depression). Research supports the clinical significance of parent-child discrepancies, demonstrating that discrepancies in ratings of psychopathology are common and predict subsequent adjustment difficulties (Ferdinand, van der Ende, & Verhulst, 2004; Los Reyes & Kazdin, 2005), whereas greater agreement over treatment goals predicts greater engagement in therapy (Brookman-Frazee, Haine, Gabayan, & Garland, 2008), and disagreement in perceived relationship quality predicts subsequent internalizing problems (Pelton & Forehand, 2001). The current study explores whether such discrepancies in an area of positive functioning, prosociality, also has meaningful consequences for a young person's well-being.

Adolescence (defined here as 11–17 years) is characterized by developments in self-concept and an increasing cognisance of how you are perceived by others (Harter, 1999). Emotional problems also often have their onset in adolescence, indicating this may be a time of vulnerability for some young people (Zahn-Waxler, Shirtcliff, & Marceau, 2008). Adolescents may therefore be especially sensitive to their parent's perceptions of them. Parent's appraisals of their children may be communicated to these young people in the form of evaluative feedback and behaviour that can subsequently contribute to emotional problems (Jacquez *et al.*, 2004). It is possible that parents' appraisals of their child are most deleterious when they are substantively discrepant with the young person's own view of him or herself.

The idea that emotional problems can develop from exposure to information that is discrepant or in conflict with aspects of an individual's self-concept is implicit in multiple models of psychopathology (Higginson, Mansell, & Wood, 2011), including psychodynamic (Hobson, 1985; Messer, 2001), cybernetic (Mansell, 2005), and cognitive models (Higgins, 1987). Self-discrepancy theory, for example, indicates that discrepancies in mental representations of the self may contribute to negative affective states (Higgins, 1987). This may include discrepancies between representations from 'personal' and 'other' standpoints (i.e., the individual's view of themselves vs. the internalized sense of how others view them). Such discrepancies may also challenge a young person's sense of authenticity, a factor that is important to well-being (Wood, Linley, Maltby, Baliousis, &

Joseph, 2008). A bias towards self-enhancement may reflect a defensive mechanism, but may ultimately lead to psychological problems (Baumeister, Campbell, Krueger, & Vohs, 2003; Colvin, Block, & Funder, 1995).

One domain where discrepant parent–child appraisals may emerge and impact upon emotional well-being is prosociality (e.g., Caprara, Steca, Zelli, & Capanna, 2005; Hay, 1994; Weir & Duveen, 1981). In this study we employ a broad definition of prosociality, reflecting a general positive orientation to one’s social context. This may include interpersonal acts involving caring for, assisting or supporting others (Caprara *et al.*, 2005; Weir & Duveen, 1981), affiliative and cooperative social behaviours (Greener, 2000; Scourfield, John, Martin, & McGuffin, 2004), and behaviours indicating compliance with social expectations (Chen, Li, Li, Li, & Liu, 2000; Wentzel, Filisetti, & Looney, 2007). As prosocial acts are socially defined and valued (Eisenberg & Mussen, 1989; Hay, 1994) they represent a domain where young people are likely to be evaluated. Discrepancies in appraisals of prosociality would therefore be expected. Moreover, the social value placed upon prosocial behaviours may mean that the perception of these qualities constitutes an important facet of a young person’s self-concept. Indeed, there is evidence that during infancy prosociality can be reflected upon, and becomes linked into a moral-evaluative framework, with behaviours labelled as ‘naughty’ or ‘good’ (Hay & Cook, 2010). Evidence also supports the notion that prosocial acts are guided by a desire to adhere to societal norms, personal standards, and maintain self-worth (Batson, 1998). There is evidence in children and adolescents that greater prosociality is related to improved psychological health, including a lower likelihood of psychiatric diagnoses and lower levels of internalizing disorders (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Goodman, 2001; Wentzel *et al.*, 2007; Zimmer-Gembeck, Hunter, & Pronk, 2007).

We explore the parent–child discrepancy by looking at the interaction between self- and parental appraisals. Parental appraisals may contribute to emotional problems when they are discrepantly lower than self-appraisals, thus representing a source of threat to self-concept, which may be difficult to assimilate. It could be said that such young people are more at risk of their personal inadequacies becoming exposed (Kim & Chiu, 2011). Evolutionary models of depression suggest that it is the inability to accept and adapt to failure that creates problems (Sloman, 2008; Taylor, Gooding, Wood, & Tarrier, 2011). Hence, even where parental appraisals of prosociality are low but consistent with self-appraisals they may be less threatening and more readily assimilated. Such a young person may be able to move on to and achieve alternative social goals and derive their self-worth from these areas instead (e.g., the non-cooperative, unhelpful child who nonetheless excels academically). There is evidence that a propensity to overestimate personal positive qualities relative to others’ ratings is associated with poor adjustment (e.g., ego-resiliency, depression, self-esteem) in undergraduate samples (Colvin *et al.*, 1995; Kim & Chiu, 2011; Kurt & Paulhus, 2008). A recent review also highlights the tendency for children with Hyperkinetic disorders to generate self-appraisals of their competencies that exceed those appraisals made by others (Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007).

An alternative hypothesis is that low self-appraisals and high parental appraisals represent the situation most likely to produce emotional disorder. The competency-based model of depression suggests that depression emerges from low self-appraisals of competence, and a tendency to underestimate ones competence may be signalled by this form of discrepancy (Cole, Martin, & Powers, 1997; Hoffman, Cole, Martin, Tram, & Seroczynski, 2000). However, the competency-based model seems to imply that it would

be the absolute level of an adolescents self-appraised prosociality that counts (i.e., a main effect of low self-appraisals on adjustment), rather than the discrepancy, *per se*. Otherwise, following the logic that it is the discrepancy in appraisals that counts leads to the strange conclusion that a parent who agrees with the young person's low self-appraised competence would be more adaptive than a parent making more positive evaluations. Research in pre-adolescent children suggests that a tendency for individuals to underestimate their competence, compared with others' ratings, predicts the development of depressive symptoms (Cole, Martin, Peeke, Seroczynski, & Hoffman, 1998; Hoffman *et al.*, 2000). However, these studies estimate the discrepancy based on a residual difference rather than an interaction, which can obscure interpretation (see below).

The majority of previous research has explored discrepancy effects using a collection of methods that rely on forming a new variable representing the discrepancy, for example, based on the simple or residual difference in raters' scores (see review by Los Reyes & Kazdin, 2004). This approach has been criticized as the new variable is a linear product of its underlying components (the self- and informant ratings) and it is impossible to separate out the effect of the discrepancy from the effect of its constituent parts, making interpretation difficult (Los Reyes & Kazdin, 2004; Owens *et al.*, 2007; Zuckerman, Gagne, Nafshi, Knee, & Kieffer, 2002; Zuckerman & Knee, 1996). Laird and Weims (2011) have outlined these difficulties more recently. Exploring the discrepancy as an interaction effect that has been recommended as a more informative and conceptually sound alternative (Zuckerman *et al.*, 2002).

The aim of this study was to explore the effect of discrepancies between self-rated and parent-rated prosocial traits on the likelihood of receiving a diagnosis of an emotional disorder (i.e., ICD-10 diagnoses of depression or anxiety disorders) in adolescents. We obtained the data for this study from an existing large data set produced by the 'Mental health of children and young people in Great Britain, 2004' survey (Green, McGinnity, Meltzer, Ford, & Goodman, 2005). We used two separate measures of prosociality, (1) the prosocial subscale of the Strengths and Difficulties Questionnaire (Goodman, 2001), and (2) a personal strengths assessment developed for the survey (Green *et al.*, 2005). The former provides a specific measure of prosocial behaviour. The latter provides a more general measure of positive prosocial functioning, which reflects various prosocial traits including supportive and affiliative behaviours alongside compliance with social expectations (e.g., working hard at school). By including both measures the sensitivity of findings to a particular definition of prosociality could be explored.

We controlled for four main confounds in our analyses. First, we controlled for gender, as both prosocial behaviour and rates of psychopathology vary between males and females (Hay, 1994; Zahn-Waxler *et al.*, 2008). Second, parental mental health was adjusted for, as this may differentially impact on child and parent ratings of prosocial qualities and produce discrepant ratings in other areas (Hay & Pawlby, 2003; Los Reyes & Kazdin, 2005). Third and fourth, we controlled for comorbid conduct disorders and hyperkinetic disorders as these different diagnoses are known to occur co-morbidly with emotional difficulties in young people (Essex *et al.*, 2006; Owens *et al.*, 2007; Zahn-Waxler *et al.*, 2008), and have been linked to discrepant parent-child ratings of social behaviour (Owens *et al.*, 2007).

It was hypothesized that:

- (1). There would be a significant interaction effect between parent-rated and self-rated prosociality in predicting emotional problems.
- (2). The interaction effect would be such that parent's ratings of their child's prosociality would have a stronger association with the likelihood of emotional problems when adolescents rate themselves highly on these traits, compared with adolescents who make lower self-ratings.

Method

Participants

The data used in this study came from the 'Mental health of children and young people in Great Britain, 2004' survey (Office of National Statistics, Social, & Vital Statistics Division, 2004). This was a national survey investigating the mental health of children and adolescents in England, Scotland, and Wales, looking at prevalence and risk factors (Green *et al.*, 2005). A previous, related survey was conducted in 1999. The survey involved a combination of face-to-face interviews and self-completed questionnaires with the parent (including non-biological parents or caregivers) and child. A parent was chosen to complete the survey based on availability and appropriateness (e.g., in some cases one parent had insufficient English to complete the survey). Further information on the survey aims and sampling procedure can be obtained from the technical report (Green *et al.*, 2005).

The 1999 survey data were not included in this study as it did not sample young people aged over 15 and did not include some measures featured in the 2004 survey. In the 2004 survey, of those initially sampled, $n = 7,977$ participants feature in the final data set (Green *et al.*, 2005). Additional exclusion criteria were applied: (1) Participants aged under 11 years did not have the opportunity to provide self-report data and were, therefore, excluded, (2) We excluded a subset of individuals completing non-English versions of study questionnaires because the meaning of items may vary in subtle ways across languages and this could impact on the nature of the effects identified. This resulted in a final sample of $n = 3,976$, aged 11–17 years. Sample characteristics are reported in Table 1.

Measures

Emotional and behavioural problem

Emotional (depression and anxiety), conduct, and hyperkinetic disorders were diagnosed using the Development and Well-Being Assessment (DAWBA; Goodman, Ford, Richards, Gatward, & Meltzer, 2000). This measure combines structured interview (e.g., 'How often does his/her fear of social situations result in him/her becoming upset like this?') with open-ended questions (e.g., 'What else has s/he worried about?') across multiple informants (parent, child, teacher) to identify psychological problems in children and adolescents. The scale was developed to be administered by lay interviewers. Clinical raters, assisted by computer, then review the information and apply ICD-10 diagnoses for a range of non-psychotic emotional and behavioural problems, including depressive, anxiety, and conduct disorders. Diagnoses obtained via DAWBA are not mutually exclusive, allowing for comorbidity. This measure has been shown to effectively discriminate between community and a mixed clinical sample, recruited from child and adolescent mental health clinics in the United Kingdom, (specificity = 89%; sensitivity = 92%; Goodman *et al.*, 2000).

Table 1. Sample characteristics

| Sample characteristic | Statistics |
|-------------------------------------|--------------------------------|
| Adolescent characteristics | |
| Age | $M = 13.43$ years, $SD = 1.69$ |
| Gender | $n = 1,913$, 48.10% |
| Ethnicity | |
| White | $n = 3,538$, 88.98% |
| Black African | $n = 37$, 0.93% |
| Black Caribbean | $n = 38$, 0.96% |
| Indian | $n = 91$, 2.29% |
| Pakistani | $n = 81$, 2.04% |
| Bangladeshi | $n = 15$, 0.38% |
| Mixed | $n = 101$, 2.54% |
| Other | $n = 73$, 1.84% |
| Parent characteristics | |
| Age | $M = 41.48$ years, $SD = 5.80$ |
| Gender | $n = 3723$, 93.64% |
| Median gross personal annual income | £10,000–£10,999 |

Note. This is similar to the ethnic composition of the United Kingdom obtained in recent census data (Owen, 2006).

Prosociality

Prosocial characteristics were assessed using the prosocial subscale of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001). This is a widely used questionnaire assessing a range of problems and positive behaviours in children and adolescents. The presence of both a self-report (for adolescents aged 11 years and over) and parent-rated versions, with equivalent item content, allowed the comparison of these ratings. The prosocial subscale consists of five items concerning sharing, kindness, and volunteering. Parents and young people are asked to rate each item (e.g., 'I try to be nice to other people. I care about their feelings') on a scale from 0 ('Not true') to 2 ('Certainly true') for the past 6 months. Scores are summed to produce a total score. The structure of this subscale has been supported by factor analysis and is related to the prevalence of psychiatric diagnosis (Goodman, 2001). Internal reliability in the current sample was $\alpha = .66$ and $\alpha = .69$, for the self-report and parent versions of the subscale, respectively.

A second, more general measure of positive prosocial functioning was provided by a separate, 'personal strengths' assessment (Green *et al.*, 2005). Parent- and self-rated versions of this assessment vary in item content although with substantial overlap. This measure captures a broader definition of prosociality than the SDQ, including items capturing aspects of prosociality such as helping and assisting (e.g., 'Generous', 'Helpful at home') that also feature in the SDQ, but also covers aspects of prosociality such as affiliative and cooperative behaviours (e.g., 'Affectionate', 'Polite') and compliance with social expectations regarding behaviour (e.g., 'Honest', 'Reliable and responsible') and engagement in activities (e.g., 'Good at school work', 'good at art'). Parents and young people are asked to rate the applicability of a series of descriptors on a scale from 0 ('no') to 2 ('a lot'). There are 24 items for parents and 19 for young people. Scores are summed to produce a total score. This scale was correlated with the SDQ prosocial subscale with a large effect size (within-rater

correlations between, $r = .53$, and, $r = .62$, for self- and parent rating, respectively; Cohen, 1988) supporting the concurrent validity of this measure. Internal reliability in the current sample was $\alpha = .76$ and $\alpha = .85$, for the young person and parent versions of the scale, respectively.

Parent mental health

Parental mental health was assessed with the 12-item General Health Questionnaire (GHQ-12; Goldberg & Williams, 1988). This is a widely used questionnaire that assesses the severity of anxious and depressive symptoms over the past week. Items (e.g., 'have you recently felt constantly under strain') are rated on a 4-point scale, although the specific label assigned to each point varies across items (e.g., 1 = 'not at all' or 'more so than usual'). Responses are assigned a score of 1 if symptoms have been more of a problem than usual, and 0 if not, and are summed to produce a total score. The GHQ-12 has been shown to be effective in predicting clinical caseness across multiple international sites (overall specificity = 83.4; overall sensitivity = 76.3; Goldberg *et al.*, 1997). Internal reliability in the current sample was $\alpha = .88$.

Statistical analysis

All analyses were conducted using SPSS version 16 (SPSS Inc., Chicago, IL, USA). We tested for the hypothesis that the interaction between parent- and self-rated prosociality would predict the probability of emotional disorder using logistic regression. The outcome variable was the presence (1 = present) or absence of an emotional disorder (i.e., meeting criteria for any depressive or anxiety disorder as determined by the DAWBA). We conducted two sets of regressions using either the SDQ prosocial subscales or the personal strengths variables as predictors. In all cases control variables, namely young person's gender, parental mental health, conduct disorder, and hyperkinetic disorder diagnosis were included in the initial step to control for these variables. Dichotomous variables were dummy coded. For gender, 1 = male, whereas for conduct disorder diagnosis and hyperkinetic disorder diagnosis, 1 = present. In the second step, parent-rated prosociality and self-rated prosociality were entered. The interaction term between the parent- and self-rated prosocial variables was then entered in the third step (Aiken & West, 1991). All continuous variables were mean centred prior to inclusion in the model to limit multicollinearity (Aiken & West, 1991). Where the third step makes a significant contribution to the predictive power of the model, as assessed via the change in log-likelihood, this indicates that there is a significant interaction between parent- and self-rated prosociality in predicting the probability of emotional disorder.

Significant interaction effects were plotted graphically to explore the effect using estimated values derived from the MODPROBE script (Haynes & Matthes, 2009) for SPSS. We also used the MODPROBE script to conduct a simple slopes analysis for significant interaction effects. This analysis explores the significance of the relation between parental appraisals and outcome at moderately high ($M + 1 SD$), medium (M), and moderately low levels ($M - 1 SD$) of self-appraisals. We have not adjusted the data with sample weights as our focus was upon the relation between variables, and sample weights were not a function of the dependent variable (Winship & Radbill, 1994).

Results

Missing data

The largest proportion of missing data occurred for the young person completed SDQ prosocial score (15.6%) and personal strengths score (17.3%). Missing data for other variables were minimal (<3% of total data for that variable in all cases). Little's MCAR test was significant, $\chi^2(233) = 439.66, p < .01$, indicating that missing data were not missing completely at random (MCAR). Subsequent χ^2 tests suggested that children with emotional disorders had higher rates of missing data for both prosocial variables ($p < .05$). This suggests that data may be missing at random (MAR) where missingness may be dependent on other observed variables in the data set (Schafer & Graham, 2002).

Following the recommendations of Schafer and Graham (2002), we used the Maximum Likelihood-based Expectation-Maximisation (EM) algorithm to impute the missing data prior to analyses. This was achieved via the EM algorithm available in SPSS 16.0. Prior to the imputation we applied square root transformations (reflecting the variable before and afterwards to maintain direction) to the prosocial variables to reduce negative skew, and a logarithmic transformation to the parental mental health variable to reduce positive skew. The EM approach is robust to departures from its assumptions and functions better in larger samples (Schafer & Graham, 2002), increasing confidence in its use for this study.

Sample characteristics

Table 2 displays descriptive statistics and correlations for continuous variables included in the analysis. All correlations were significant ($p < .05$), as would be expected due to the large sample size. However, parental mental health showed only marginal correlations with other variables (between $r = -.06$, and, $r = -.17$). Parental and self-ratings of prosociality were correlated with a moderate effect size ($r = .37$, and, $r = .46$; Cohen, 1988), suggesting that there was a substantive amount of unique variability in these ratings. Of the sample, 11.19% ($n = 445$) met criteria for psychiatric diagnoses. Of these, 5.00% ($n = 199$) received a diagnosis (ICD-10) of an emotional disorder. In addition, 6.14% ($n = 244$) were classified as having a conduct disorder (18.03%, $n = 44$, comorbid with an emotional disorder) and 1.31% ($n = 52$) were classified as having a hyperkinetic disorder (11.54%, $n = 6$, comorbid with an emotional disorder).

Table 2. Descriptive statistics and correlations for variables included in the analysis

| | Raw | | Adjusted ^a | | 2 | 3 | 4 | 5 |
|-------------------------------------|-------|------|-----------------------|------|------|------|------|------|
| | Mean | SD | Mean | SD | | | | |
| 1. Parental mental health (GHQ-12) | 1.74 | 2.74 | 0.65 | 0.78 | -.06 | -.08 | -.10 | -.17 |
| 2. Self-rated SDQ prosocial scale | 7.94 | 1.67 | 2.47 | 0.45 | | .55 | .37 | .36 |
| 3. Self-rated personal strengths | 27.15 | 4.93 | 3.86 | 0.70 | | | .34 | .46 |
| 4. Parent-rated SDQ prosocial scale | 8.79 | 1.58 | 2.91 | 0.47 | | | | .60 |
| 5. Parent-rated personal strengths | 38.76 | 6.40 | 4.94 | 0.96 | | | | |

Note. All correlations significant, $p < .05$, correlations based on adjusted and centred variables. GHQ-12, General health Questionnaire-12; SDQ, Strengths and Difficulties Questionnaire.

^aAdjusted variables follow transformations and data imputation.

Predicting the probability of emotional disorder

Two logistic regressions were conducted to predict the probability of emotional disorder. In the first, the interaction in SDQ prosocial scores was explored. In the second, the interaction in personal strengths scores was explored. The results of both analyses, with odds ratios and associated 95% confidence intervals, are reported in Table 3. For both analyses, in the second step greater odds of emotional problems were associated with female gender, greater parental mental health problems, conduct disorder diagnosis, and lower parent-rated prosociality. These effects were qualified by significant interaction effects in the third step of the model.

The interaction effects are displayed graphically in Figure 1. With the SDQ prosocial scale, when self-rated characteristics were moderately high (1 *SD* above the mean), the relation between parent-rated prosociality and the odds of emotional problems was strongest, $B = -.80, p < .01$. However, when self-rated characteristics were medium (mean), the relation was weaker, $B = -.48, p < .01$. When self-rated characteristics were moderately low (1 *SD* below the mean), there was no significant relation between parent-rated prosociality and the odds of emotional problems, $B = -.16, p = .40$.

A similar pattern was observed with the personal strengths scale. When self-rated characteristics were moderately high (1 *SD* above the mean), the relation between parent-rated prosociality and the odds of emotional problems was strongest, $B = -1.04,$

Table 3. Results of logistic regressions predicting the odds of emotional disorder with either SDQ or personal strength prosocial variables

| Step | Variable | SDQ prosocial variables | | | | Personal strengths variables | | | |
|------|-----------------------------------------------|-------------------------|-------|-----------|-------|------------------------------|-------|-----------|-------|
| | | χ^2 | OR | OR 95% CI | | χ^2 | OR | OR 95% CI | |
| | | | | Lower | Upper | | | Lower | Upper |
| 1 | Child gender | 136.12* | 0.59* | 0.43 | 0.79 | | | | |
| | Parental mental health | | 2.00* | 1.69 | 2.37 | | | | |
| | Conduct disorder | | 3.93* | 2.64 | 5.85 | | | | |
| | Hyperkinetic disorder | | 0.91 | 0.35 | 2.33 | | | | |
| 2 | Child gender | 141.38* | 0.58* | 0.42 | 0.79 | 196.41* | 0.50* | 0.37 | 0.68 |
| | Parental mental health | | 1.99* | 1.68 | 2.36 | | 1.83* | 1.54 | 2.18 |
| | Conduct disorder | | 3.36* | 2.19 | 5.14 | | 1.76* | 1.12 | 2.76 |
| | Hyperkinetic disorder | | 0.85 | 0.33 | 2.18 | | 0.71 | 0.27 | 1.86 |
| | Parent-rated prosocial | | 0.69* | 0.50 | 0.95 | | 0.55* | 0.46 | 0.65 |
| | Self-rated prosocial | | 1.11 | 0.77 | 1.60 | | 0.92 | 0.72 | 1.18 |
| 3 | Child gender | 146.99* | 0.57* | 0.42 | 0.77 | 211.11* | 0.47* | 0.35 | 0.64 |
| | Parental mental health | | 1.99* | 1.68 | 2.36 | | 1.83* | 1.54 | 2.18 |
| | Conduct disorder | | 3.46* | 2.26 | 5.29 | | 1.92* | 1.23 | 2.99 |
| | Hyperkinetic disorder | | 0.92 | 0.36 | 2.38 | | 0.76 | 0.30 | 1.98 |
| | Parent-rated prosocial | | 0.62* | 0.45 | 0.85 | | 0.48* | 0.39 | 0.58 |
| | Self-rated prosocial | | 1.01 | 0.69 | 1.45 | | 0.75* | 0.57 | 0.99 |
| | Self-rated \times parent-rated prosocial | | 0.49* | 0.27 | 0.89 | | 0.66* | 0.53 | 0.83 |

Note. Odds ratios (OR) indicate the change in the odds of having an emotional problem for each unit increase in the predictor; 1.5 therefore indicates a 50% increase in the odds of emotional problems for each unit increase in predictor. CI, confidence intervals; SDQ, Strengths and Difficulties Questionnaire. * $p < .05$.

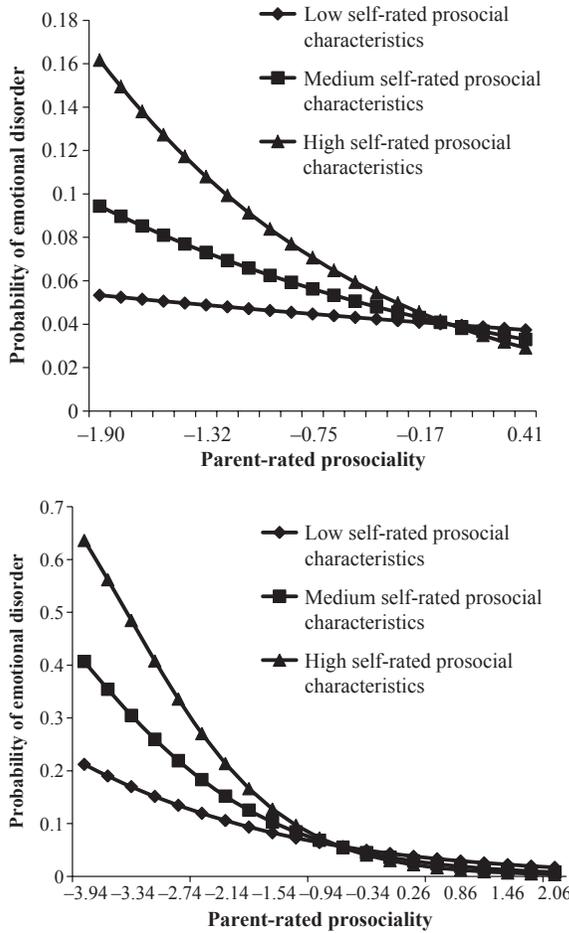


Figure 1. Graphs displaying the association between parent-rated prosociality and probability of emotional disorder at moderately low ($M - 1\text{ SD}$), medium (M), and moderately high ($M + 1\text{ SD}$) levels of self-rated prosociality. The upper graph is with the SDQ prosocial scale and the lower graph is with the personal strengths scale.

$p < .01$. However, when self-rated characteristics were medium (mean), the relation became weaker, $B = -.75, p < .01$. When self-rated characteristics were moderately low (1 SD below the mean), the relation between parent-rated prosociality and the odds of emotional problems was weaker still, $B = -.46, p < .01$. Consequently, parent ratings of prosociality had a stronger relation with emotional disorder in young people who self-reported moderately high levels of these characteristics, compared with those who self-rated moderately low levels.

A secondary analysis was undertaken to determine if any of the above findings were moderated by gender. The logistic regression analyses were repeated with additional two-way interaction effects between prosociality (self or parent rated) and gender, and a three-way interaction term between self-rated prosociality, parent-rated prosociality, and gender, included in the model. None of these additional two-way or three-way interaction effects was significant, indicating that findings did not vary across gender.

Discussion

This study is the first we are aware of that explores whether parent–adolescent discrepancies in a core area of positive functioning, prosociality, predicted the likelihood of having a diagnosed emotional disorders (i.e., ICD-10 diagnoses of depression or anxiety disorders) in adolescents. Self- and parent-rated prosocial traits interacted to significantly predict emotional problems, supporting the first hypothesis. The interaction effect indicated that parental appraisals had a stronger relation with the likelihood of emotional problems when this occurred in the context of moderately high self-appraisals, supporting hypothesis two. This means that the young people most at risk of emotional disorder were those who rated themselves highly on the prosocial variables, but whose parents rated them as having few such qualities. These effects occurred across two different measures of prosocial characteristics, and whilst controlling for gender, parental mental health, conduct and hyperkinetic disorders.

The results of this study are consistent with past research demonstrating that a similar pattern of discrepancy in self- and other appraisals contributes to psychological dysfunction (Colvin *et al.*, 1995; Kurt & Paulhus, 2008). However, other research conflicts with this study by suggesting that it is the tendency to underestimate personal positive qualities relative to significant others' perceptions that contribute to problems like depression (Cole *et al.*, 1998; Hoffman *et al.*, 2000). These studies employed the residual difference method of calculating discrepancy effects which may confound discrepancy and absolute effects. These studies were also undertaken in pre-adolescent children. It could be hypothesized that discrepant, high self-appraisals only become a psychological burden in older children or adolescents as greater demands are placed upon them to maintain a coherent and authentic self-concept.

Examining the main effects of self- and parental appraisals, it may seem counterintuitive that parental perceptions appear to be more relevant to adolescent adjustment than their own perceptions of prosocial behaviour. However, considering the importance of other's evaluations to personal well-being (Thomaes *et al.*, 2010), particularly parents' views, as main attachment figures, and the nature of prosociality as an observable and socially defined construct, it is perhaps not so surprising that parental appraisals have a greater influence upon adjustment than self-appraisals. It may also appear counterintuitive that the risk of emotional disorder was not greatest for young people making low self-appraisals alongside congruently low parental appraisals. However, this is consistent with our hypothesis that it is the threat associated with conflicting parental information that leads to difficulties. Congruent, low parent–child appraisals of prosociality may be a sign that the young person is able to accept and assimilate these parental representations, and may thus move on to alternative social goals (e.g., Sloman, 2008; Taylor *et al.*, 2011).

Discrepant situations may involve young people who are unable to accept and adapt to this discrepant information, perhaps due to inflexible and excessive internalized rules regarding expected behaviour. An example of the formation of this discrepant dyad would be in the context of parents who fail to attend to a child's attempts at prosociality, due to an excessively corrective focus on what the child does not achieve, and yet advocate high and inflexible standards of behaviour (including prosociality) which the child internalizes as inflexible personal rules. Parenting styles that are authoritarian (Carr, 2006) or controlling but unresponsive (Chorpita & Barlow, 1998) may be liable to produce similar scenarios. The resulting discrepancy in appraisals may be experienced as an intrusive awareness (Stiles *et al.*, 1990) which may be linked to a sense of helplessness regarding evaluation by others (Chorpita & Barlow, 1998), conflict (Higginson *et al.*, 2011),

entrapment (Taylor *et al.*, 2011), and inauthenticity (Wood *et al.*, 2008), factors key in the formation of emotional disorder. Conflictual parental information may also take on a hostile and aversive quality, similar to that described in the expressed emotion literature, where such interactions predict the risk of relapse (Butzlaff & Hooley, 1998).

The emergence of a discrepant dynamic may have its routes in infancy, being traced back to parents initial responses to emerging prosociality, such as attempts to engage others in play or demonstrating an interest when other's appear hurt. Some parents may be disposed to misinterpret this behaviour (e.g., viewing it as manipulative or a sign of vulnerability) or simply fail to attend to these acts as a consequence of their own beliefs and fears relating to prosociality (e.g., the expectation that others will respond negatively to prosocial acts).

Although the current study focusses on prosociality specifically, it remains unclear if the observed effect is reflective of more general discrepancies in the appraisal of the general competence or likeability of the young person. Similar results were observed across a specific measure of prosocial behaviour and a more general assessment of positive prosocial functioning, raising the possibility that these findings may extend to perceptions positive social functioning in general.

Several limitations require consideration. The study was cross-sectional, so that the direction of identified effects cannot be inferred. Consequently, the possibility that emotional problems are a cause, rather than a consequence of discrepant appraisals in the parent-child dyad cannot be ruled out. Nonetheless, the clinical significance of understanding the correlates of such parent-child discrepancies remains, irrespective of the direction of the effect. Prospective research would be beneficial in further exploring the direction of these effects. Past discrepancy research has attempted to compare self-perceptions against an 'objective' criterion (e.g., Hoffman *et al.*, 2000; Kurt & Paulhus, 2008). In contrast, the current study compared two subjective perspectives (parent and child), viewing any discrepancy as a characteristic of that particular interpersonal relationship. Although this approach makes it impossible to link the discrepancy to biases in any one individual (e.g., parent or adolescent), it has clinical utility as clinicians may often only have access to the views of the young person and parent. Understanding the clinical correlates of discrepancies in these perspectives is therefore valuable. The current study did not explore the extent to which these appraisals were communicated to the young people (e.g., in the form of feedback or criticism). This study also relied on predominantly female caregiver appraisals (94%) so that results may not generalize to male caregivers. Further research is clearly needed to extend on the current study and clarify these issues.

The results of this study carry implications for clinical practice. Within the context of a clinical assessment, self-appraisals of prosociality might traditionally be viewed as a strength or resilience factor (Tedeschi & Kilmer, 2005). However, the current study indicates that when these self-appraisals co-occur in combination with discrepant parental appraisals, this may be indicative of emotional difficulties. Consequently, the present results indicate that further investigation of such discrepant situations is warranted. Such information may be helpful in the development of clinical formulation, particular where systemic factors are being considered. With regards to treatment, if emotional problems are linked to an underlying perceptual discrepancy in the parent-child relationship regarding youth prosocial qualities, specific interventions focussed on increasing congruence in this relationship may be beneficial. It may be that a systemic approach to intervention, which aims to create an awareness of the discrepancy and collaboratively encourage greater congruence in the parent-child dyad, may be more

effective than work focussed on adjusting the views of any one individual (e.g., parent or child). For example, narrative and solution-focussed interventions involve an exploration of the relational dynamic and discrepant perspectives, with a view to rescripting dominant maladaptive themes and issues (e.g., Cottrell & Boston, 2002).

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References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, London: Sage.
- Bandura, A., Pastorelli, C., Barbaranelli, C., & Caprara, G. V. (1999). Self-efficacy pathways to childhood depression. *Journal of Personality and Social Psychology*, *26*, 258–269. doi:10.1037/0022-3514.76.2.258
- Batson, C. D. (1998). Altruism and prosocial behavior. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology, Volume 2* (4th ed., pp. 282–316). Boston: McGraw-Hill.
- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, *4*, 1–44. doi:10.1111/1529-1006.01431
- Brookman-Frazee, L., Haine, R. A., Gabayan, E. N., & Garland, A. F. (2008). Predicting frequency of treatment visits in community-based youth psychotherapy. *Psychological Services*, *5*, 126–138. doi:10.1037/1541-1559.5.2.126
- Butzlaff, R. L., & Hooley, J. M. (1998). Expressed emotion and psychiatric relapse: A Meta-analysis. *Archives of General Psychiatry*, *55*, 547–552. doi:10.1001/archpsyc.55.6.547
- Caprara, G. V., Steca, P., Zelli, A., & Capanna, C. (2005). A new scale for measuring adult's prosocialness. *European Journal of Psychological Assessment*, *21*, 77–89. doi:10.1027/1015-5759.21.2.77
- Carr, A. (2006). *The handbook of child and adolescent clinical psychology: A contextual approach*. (2nd ed.) Hove, East Sussex: Routledge.
- Chen, X., Li, D., Li, Z., Li, B., & Liu, M. (2000). Sociable and prosocial dimensions of social competence in Chinese children: Common and unique contributions to social, academic, and psychological adjustment. *Developmental Psychology*, *36*, 302–314. doi:10.1037//0012-1649.36.3.302
- Chorpita, B. F., & Barlow, D. H. (1998). The development of anxiety: The role of control in the early environment. *Psychological Bulletin*, *124*, 3–21. doi:10.1037/0033-2909.124.1.3
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. Hillsdale, NJ: Erlbaum.
- Cole, D. A., Martin, J. M., Peeke, L., Seroczynski, A. D., & Hoffman, K. B. (1998). Are cognitive errors of underestimation predictive or reflective of depressive symptoms in children: A longitudinal study. *Journal of Abnormal Psychology*, *107*, 481–496. doi:10.1037/0021-843X.107.3.481
- Cole, D. A., Martin, J. M., & Powers, B. (1997). A competency-based model of child depression: A longitudinal study of peer, teacher, and self-evaluations. *Psychiatry: Interpersonal and Biological Processes*, *38*, 505–514. doi:10.1111/j.1469-7610.1997.tb01537.x

- Colvin, C. R., Block, J., & Funder, D. C. (1995). Overly positive self-evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology*, *68*, 1152–1162. Retrieved from: <http://www.sciencedirect.com/science/article/pii/S0022351402011263>
- Cottrell, D., & Boston, P. (2002). Practitioner review: The effectiveness of systemic family therapy for children and adolescents. *Journal of Child Psychology and Psychiatry*, *43*, 573–586. doi:10.1111/1469-7610.00047
- Eisenberg, N., & Mussen, P. (1989). *The roots of prosocial behavior in children*. Cambridge, UK: Cambridge University Press.
- Essex, M. J., Kraemer, H. C., Armstrong, J. M., Boyce, T., Goldsmith, H. H., Klein, M. H., . . . Kupfer, D. J. (2006). Exploring risk factors for the emergence of children's mental health problems. *Archives of General Psychiatry*, *63*, 1246–1256. Retrieved from: <http://archpsyc.ama-assn.org/cgi/content/full/63/11/1246>
- Ferdinand, R. F., van der Ende, J., & Verhulst, F. C. (2004). Parent-adolescent disagreement regarding psychopathology in adolescents from the general population as a risk factor for adverse outcome. *Journal of Abnormal Psychology*, *113*, 198–206. doi:10.1037/0021-843X.113.2.198
- Goldberg, D. P., Gater, R., Sartorius, N., Ustun, T. B., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, *27*, 191–197. Retrieved from: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=25271>
- Goldberg, D., & Williams, P. (1988). *A User's Guide to the GHQ*. Windsor: NFER-Nelson.
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*, 1337–1345. doi:10.1097/00004583-200111000-00015
- Goodman, R., Ford, T., Richards, H., Gatward, R., & Meltzer, H. (2000). The development and well-being assessment: Description and initial validation of an integrated assessment of child and adolescent psychopathology. *Journal of Child Psychology & Psychiatry*, *41*, 645–655. Retrieved from: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=55631>
- Green, H., McGinnity, A., Meltzer, H., Ford, T., & Goodman, R. (2005). *Mental health of children and young people in Great Britain, 2004*. London: The Stationary Office.
- Greener, S. H. (2000). Peer assessment of children's prosocial behaviour. *Journal of Moral Education*, *29*, 47–60. doi:10.1080/030572400102925
- Harter, S. (1999). *The construction of the self: A developmental perspective*. New York: Guilford.
- Hay, D. F. (1994). Prosocial development. *Journal of Child Psychology and Psychiatry*, *35*, 29–71. doi:10.1111/j.1469-7610.1994.tb01132.x
- Hay, D. F., & Cook, K. V. (2010). The transformation of Prosocial behaviour from infancy to childhood. In C. A. Brownell & C. B. Kopps (Eds.), *Socioemotional development in the toddler years: Transitions and transformations* (pp. 100–132). New York: Guilford.
- Hay, D. F., & Pawlby, S. (2003). Prosocial development in relation to children's and mother's psychological problems. *Child Development*, *74*, 1314–1327. doi:10.1111/1467-8624.00609
- Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods*, *41*, 924–936. doi:10.3758/BRM.41.3.924
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, *94*, 319–340. doi:10.1037/0033-295X.94.3.319
- Higginson, S., Mansell, W., & Wood, A. M. (2011). An integrative mechanistic account of psychological distress, therapeutic change and recovery: The Perceptual Control Theory approach. *Clinical Psychology Review*, *31*, 249–259. doi:10.1016/j.cpr.2010.01.005
- Hobson, R. F. (1985). *Forms of feeling: The heart of psychotherapy*. London: Routledge.
- Hoffman, K. B., Cole, D. A., Martin, J. M., Tram, J., & Seroczynski, A. D. (2000). Are the discrepancies between self and others' appraisals of competence predictive or reflective of depressive

- symptoms in children and adolescents: A longitudinal study, part II. *Journal of Abnormal Psychology*, *109*, 651–662. doi:10.1037/0021-843X.109.4.651
- Jacquez, F., Cole, D. A., & Searle, B. (2004). Self-perceived competence as a mediator between maternal feedback and depressive symptoms in adolescents. *Journal of Abnormal Child Psychology*, *32*, 355–367. doi:10.1023/B:JACP.0000030290.68929.ef
- Kim, Y.-H., & Chiu, C.-Y. (2011). Emotional costs of inaccurate self-assessments: Both self-effacement and self-enhancement can lead to dejection. *Emotion*, *11*, 1096–1104. doi:10.1037/a0025478
- Kurt, A., & Paulhus, D. L. (2008). Moderators of the adaptiveness of self-enhancement: Operationalization, motivational domain, adjustment facet, and evaluator. *Journal of Research in Personality*, *42*, 839–853. doi:10.1016/j.jrp.2007.11.005
- Laird, R. D., & Weims, C. F. (2011). The equivalence of regression models using difference scores and models using separate scores for each informant: Implications for the study of informant discrepancies. *Psychological Assessment*, *23*, 388–397. doi:10.1037/a0021926
- Los Reyes, A. D., & Kazdin, A. E. (2004). Measuring informant discrepancies in clinical child research. *Psychological Assessment*, *16*, 330–334. doi:10.1037/1040-3590.16.3.330
- Los Reyes, A. D., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin*, *131*, 483–509. doi:10.1037/0033-2909.131.4.483
- Mansell, W. (2005). Control theory and psychopathology: An integrative approach. *Psychology and Psychotherapy: Theory, Research and Practice*, *78*, 141–178. doi:10.1348/147608304X21400
- Messer, S. B. (2001). What makes brief psychodynamic therapy time efficient? *Clinical Psychology: Science & Practice*, *8*, 5–22. doi:10.1093/clipsy.8.1.5
- Office of National Statistics, Social and Vital Statistics Division (2004). *Mental health of children and young people in Great Britain, 2004*. Colchester, Essex: UK Data Archive.
- Owen, D. (2006). *Profile of black and minority ethnic groups in the UK. Background paper presented at the ESRC Seminar Series 'Understanding and tackling ethnic inequalities in health: Migration, transnational links and life-course influences on health*. Retrieved from: http://www2.warwick.ac.uk/fac/cross_fac/healthatwarwick/publications/occasional/ethnic_profile.pdf
- Owens, J. S., Goldfine, M. E., Evangelista, N. M., Hoza, B., & Kaiser, N. M. (2007). A critical review of self-perceptions and the positive illusory bias in children with ADHD. *Clinical Child and Family Psychology Review*, *10*, 335–351. doi:10.1007/s10567-007-0027-3
- Pelton, J., & Forehand, R. (2001). Discrepancy between mother and child perceptions of their relationship: I. Consequences for adolescents considered within the context of parental divorce. *Journal of Family Violence*, *16*, 1–15. Retrieved from: <http://www.springerlink.com/index/PQ3715205145W761.pdf>
- Rutter, M. (1995). Clinical implications of attachment concepts: Retrospect and prospect. *Journal of Child Psychology & Psychiatry*, *36*, 549–571. doi:10.1111/j.1469-7610.1995.tb02314.x
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, *7*, 147–177. doi:10.1037//1082-989X.7.2.147
- Scourfield, J., John, B., Martin, N., & McGuffin, P. (2004). The development of prosocial behaviour in children and adolescents: A twin study. *Journal of Child Psychology and Psychiatry*, *45*, 927–935. doi:10.1111/j.1469-7610.2004.t01-1-00286.x
- Sloman, L. (2008). A new comprehensive evolutionary model of depression and anxiety. *Journal of Affective Disorders*, *106*, 219–228. doi:10.1016/j.jad.2007.07.008
- Stiles, W. B., Elliott, R., Llewelyn, S. P., Firth-Cozens, J. A., Margison, F. R., Shapiro, D. A., & Hardy, G. (1990). Assimilation of problematic experiences by clients in psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, *27*, 411–420. doi:10.1037/0033-3204.27.3.411
- Taylor, P. J., Gooding, P., Wood, A. M., & Tarrrier, N. (2011). The role of defeat and entrapment in depression, anxiety, and suicide. *Psychological Bulletin*, *137*, 391–420. doi:10.1037/a0022935

- Tedeschi, R. G., & Kilmer, R. P. (2005). Assessing strengths, resilience and growth to guide clinical interventions. *Professional Psychology: Research and Practice*, *36*, 230–237. doi:10.1037/0735-7028.36.3.230
- Thomae, S., Reijntjes, A., de Casto, B. O., Bushman, B. J., Poorthuis, A., & Telch, M. J. (2010). I like me if you like me: On the interpersonal modulation and regulation of preadolescents' state self-esteem. *Child Development*, *81*, 811–825. doi:10.1111/j.1467-8624.2010.01435.x
- Weir, K., & Duveen, G. (1981). Further development and validation of the prosocial behavior questionnaire for use by teachers. *Journal of Child Psychology and Psychiatry*, *22*, 357–374. doi:10.1111/j.1469-7610.1981.tb00561.x
- Wentzel, K. R., Filisetti, L., & Looney, L. (2007). Adolescent prosocial behaviour: The role of self-processes and contextual cues. *Child Development*, *78*, 895–910. doi:10.1111/j.1467-8624.2007.01039.x
- Winship, C., & Radbill, L. (1994). Sampling weights and regression analysis. *Sociological Methods & Research*, *23*, 230–257. doi:10.1177/0049124194023002004
- Wood, A. M., Linley, P. A., Maltby, J., Baliouis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization, and the development of the authenticity scale. *Journal of Counselling Psychology*, *55*, 385–399. doi:10.1037/0022-0167.55.3.385
- Zahn-Waxler, C., Shirtcliff, E. A., & Marceau, K. (2008). Disorders of childhood and adolescence: Gender and psychopathology. *Annual Review of Clinical Psychology*, *4*, 275–303. doi:10.1146/annurev.clinpsy.3.022806.091358
- Zimmer-Gembeck, M. J., Hunter, T. A., & Pronk, R. (2007). A model of behaviors, peer relations and depression: Perceived social acceptance as a mediator and the divergence of perceptions. *Journal of Social and Clinical Psychology*, *26*, 273–302. doi:10.1521/jscp.2007.26(3), pp. 273
- Zuckerman, M., Gagne, M., Nafshi, I., Knee, C. R., & Kieffer, S. C. (2002). Testing discrepancy effects: A critique, a suggestion, and an illustration. *Behavior Research Methods, Instruments, & Computers*, *34*, 291–303. doi:10.3758/BF03195457
- Zuckerman, M., & Knee, C. R. (1996). The relation between overly positive self-evaluation and adjustment: A comment on Colvin, Block, and Funder (1995). *Journal of Personality & Social Psychology*, *70*, 1250–1251. doi:10.1037/0022-3514.70.6.1250

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