EMPIRICAL RESEARCH

Best Friends' Discussions of Social Dilemmas

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Abstract Peer relationships, particularly friendships, have been theorized to contribute to how children and adolescents think about social and moral issues. The current study examined how young adolescent best friends (191 dyads; 53.4 % female) reason together about multifaceted social dilemmas and how their reasoning is related to friendship quality. Mutually-recognized friendship dyads were videotaped discussing dilemmas entailing moral, social-conventional and prudential/pragmatic issues. Both dyad members completed a self-report measure of friendship quality. Dyadic data analyses guided by the Actor-Partner Interdependence Model indicated that adolescent and friend reports of friendship qualities were related to the forms of reasoning used during discussion. Friends who both reported that they could resolve conflicts in a constructive way were more likely to use moral reasoning than friends who reported that their conflict resolution was poor or disagreed on the quality of their conflict resolution. The findings provide evidence for the important role that friendship interaction may play in adolescents' social and moral development.

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Introduction

Peer interactions are important for the acquisition of social and moral understanding because they offer opportunities to engage in discussions and negotiations about important issues with individuals who share an equal status. Although parents may play a significant role in their children's moral development (e.g., Smetana 1999; Walker and Taylor 1991), parent–child interactions differ from peer interactions in that they are more hierarchical than are peer exchanges. Peer exchanges become an important source of social knowledge acquisition, especially by adolescence (Smetana 2006, 2011). Peer interactions involve shared companionship, intimacy, and trust in ways that are not reflective of parent-adolescent exchanges. When youth encounter disagreements with peers, they are also likely to encounter "intrapersonal cognitive conflicts" that help them begin to think about fundamental social concepts in new ways. These interactions are suggested to promote growth in the understanding of the social world and in the development of social skills (Nucci 2001; Piaget 1932; Rubin et al. 2006; Turiel 2006).

Researchers have stressed not only the significance of peer interactions for the development of social understanding, but also the importance of interactions between friends. Inherent to friendships are mutual respect, care, and reciprocity, all of which have been theorized to lead to increased sensitivity to others' needs and welfare (Keller 1984, 2004; Killen and Rutland 2011; Rubin et al. 2008). For example, Sullivan (1953) suggested that friends contribute to each other's moral development; as friends become increasingly aware and

sensitive to each other's needs, a child's moral reasoning, or concerns for issues surrounding justice, fairness, and preventing harm to others, also increases. Although, several studies have demonstrated that perceptions of friendship quality are related to moral reasoning (Gasser and Malti 2012; Malti and Buchmann 2010; Schonert-Reichl 1999), researchers have yet to examine how and whether perceptions of friendship quality from *both* members of a friendship dyad are associated with how an adolescent reasons about multifaceted social dilemmas. Unique to this study was the investigation of whether the perceived friendship quality of *both* dyadic partners was related to their use of reasoning during face-to-face discussions with their best friends.
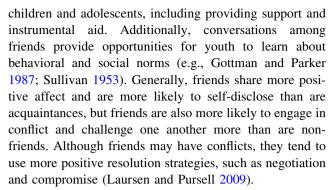
The current study examines how qualities of friendship are related to forms of social reasoning. Drawing from both social domain theory (forms of moral and non-moral reasoning; Smetana 2006) and research and theory on friendships (Rubin et al. 2013), we based this study on the supposition that friendship relationships are associated with how youth think about their social worlds. These theoretical orientations shaped our hypotheses about how friends' perceptions of friendship quality would be related to adolescent moral reasoning.

Social Domain Theory

Social domain theory and research (Smetana 2006) indicates that reasoning about the social world is heterogeneous, with co-occurring moral, social-conventional, and personal concerns, reflecting different domains of reasoning. These domains of knowledge arise from children's social interactions, including experiences with friends, as reflected in empirical studies on children's and adolescents' evaluations of social dilemmas (Smetana 2006). The nature of children's interactions is also important for the development of these different domains of social knowledge. For example, conversations that focus on children's personal choices affect how they think about autonomy (Nucci 2001), whereas conversations about a peer's hurt feelings may contribute to their understanding of morality (Turiel 2006). Researchers in the social domain tradition have found that adolescent friendships and friend groups spend extensive time discussing issues that reflect moral (fairness, rights), social-conventional (traditions, customs, authority), and personal (individual choice, autonomy) issues (Daddis 2008a, b; Killen et al. 2009).

Friendship and Adolescent Reasoning

Friendships comprise close, voluntary, dyadic relationships characterized by mutual affection and the acknowledgement of the relationship's special status (Rubin et al. 2013, 2006). Friendships can serve a variety of functions for children and adolescents, including providing support and instrumental aid. Additionally, conversations among friends provide opportunities for youth to learn about behavioral and social norms (e.g., Gottman and Parker 1987; Sullivan 1953). Generally, friends share more positive affect and are more likely to self-disclose than are acquaintances, but friends are also more likely to engage in conflict and challenge one another more than are non-friends. Although friends may have conflicts, they tend to use more positive resolution strategies, such as negotiation and compromise (Laursen and Pursell 2009).

Some friendships can be characterized as being of better quality than others. To measure this variability, researchers have asked youth to report on the qualities of a specific friendship by rating how much their friend fulfills such needs as validation and instrumental aid. Youth also are asked to rate how much their friendships are characterized by conflict and betrayal and how well they resolve conflicts with each other (Bukowski et al. 1994; Parker and Asher 1993). By using this methodology, it is possible to gather both friends' perceptions of friendship quality.

In the few existing studies on the relationships between friendship quality and social reasoning (Malti and Buchmann 2010; Schonert-Reichl 1999), moral reasoning has been shown to be related to friendship quality. For example, Malti and Buchmann (2010) found that young adults' perceived friendship quality, as operationalized by intimacy and the provision of help, was positively related to their motivations to act morally in response to hypothetical vignettes involving strangers. However, researchers have yet to examine whether the friendships under investigation were recognized mutually by both partners. Given that friendships are dyadic in nature, it is important that the relationship is recognized as such by both of its members (Rubin et al. 2006, 2008). In addition, friends may not always agree in their assessments of the relationship, nor is it the case that both friends offer each other similar levels of social provisions (e.g., Brendgen et al. 2002; Mendelson and Kay 2003). Furthermore, friends' characteristics may relate differentially to their perceptions of the friendship (e.g., Cillessen et al. 2005). Thus, it is important to examine *both* friends' reports of friendship quality, instead of relying only on a single member of the dyad. In the current study, we examined whether adolescents' perceptions of friendship quality were related to how they reasoned about dilemmas; we also examined whether their best friend's perception of friendship quality was related to the adolescent's reasoning about dilemmas.

The Current Study

In this study, adolescents were observed discussing multifaceted dilemmas that reflected a mixture of moral issues,

social rules, and obligations, as well as pragmatic/prudential issues. Multiple forms of reasoning could be employed for each dilemma given their multifaceted dimensions. The sample was drawn from a larger study of young adolescents, targeted because it is during this age period when friendships take on greater significance (Furman and Buhrmester 1992) and increasingly shape youth's understanding of their social worlds (Gottman and Parker 1987; Smetana 2011).

We were particularly interested in three features of friendship quality that we hypothesized to be related to reasoning: validation and caring, conflict and betrayal, and conflict resolution. *Validation and caring* refers to the degree to which the relationship is characterized by caring and support. *Conflict and betrayal* refers to the extent to which the relationship is characterized by arguments, disagreements, annoyance, and mistrust. *Conflict resolution* refers to the degree to which disagreements in the relationship are resolved fairly (Parker and Asher 1993).
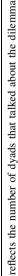
We hypothesized that each of the above features would be related to the number of reasons adolescents generated when justifying their opinions about what to do in the hypothetical dilemmas. We were interested in the number of reasons that adolescents generated during discussions because they are an indication that adolescents were *engaged* in discussing the content of the dilemmas. We also were interested in how friendship features would be related to young adolescents' use of moral, social-conventional, pragmatic and prudential reasoning when deliberating about the hypothetical dilemmas. However, we focused our research hypotheses on moral reasoning because theories of moral development specifically have addressed the relationships between reciprocal peer interactions and the use of moral concepts, such as fairness and justice (e.g., Piaget 1932). As shown in Table 1, the dilemmas involved such issues as whether adolescents would report a shoplifter, cheat on a test, or tell on a friend for doing something potentially dangerous, as well as parent–child issues such as whether it is acceptable for parents to spank their children and monitor television and videogame usage.

Validation and Caring

We examined three hypotheses about how perceptions of validation and caring would be related to reasoning. Based on Sullivan's (1953) suggestion that the increased feelings of caring, inherent to close friendships, would increase youths' sensitivities to ethics of fairness and justice, we hypothesized that perceptions of validation and care would be positively associated with adolescents' use of moral reasoning. We also expected that perceptions of validation and caring within a friendship would be positively related

Table 1 Social dilemmas and descriptive statistics for each form of reasoning for each dilemma

Hypothetical social dilemmas

	If you saw someone shoplifting in a store, should you report them? Why or why not? M (SD) n = 183	If the answers to a test were visible on the teacher's desk, is it OK to look at them? Why or why not? M (SD) n = 186	Should you tell on a friend who has done something wrong or dangerous? Why or why not? M (SD) n = 185	Should kids be able to watch any TV program they want, or play any video game they want? Why or why not? M (SD) n = 187	Should parents be allowed to spank their children? Why or why not? M (SD) n = 186	Should kids of all ages be allowed to go to any movie no matter what rating the movie has? Why or why not? M (SD) n = 183
Moral	.39 (.65)	.21 (.45)	.68 (.77)	.53 (.73)	.72 (.79)	.45 (.65)
Social-conventional	.34 (.54)	.38 (.51)	.27 (.48)	.50 (.69)	.48 (.63)	.64 (.74)
Pragmatic/prudential	.26 (.50)	.47 (.64)	.12 (.35)	.10 (.32)	.10 (.33)	.06 (.25)

n reflects the number of dyads that talked about the dilemma

to the number of reasons that the youths produced during discussions about the hypothetical dilemmas. This hypothesis was based on the notion that perceptions of validation and caring would foster feelings of security and confidence in the sharing of opinions during conversations.

Conflict and Betrayal

We did not have specific hypotheses regarding the relationship between reports of friendship conflict and betrayal and the use of moral reasoning; extant research suggests that it is not conflict alone that is associated with concerns with fairness, but rather, that the manner in which conflicts are resolved is important (Laursen and Pursell 2009; Killen and Rutland 2011). However, we expected that perceptions of conflict and betrayal in the friendship would be related negatively to the number of reasons that adolescents used during discussion. This was because friendships characterized by high levels of conflict and betrayal are unlikely to foster lengthy cooperative discussions in which both partners freely share their opinions.
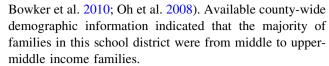
Conflict Resolution

Finally, our hypothesis about how friends' perceptions of conflict resolution were related to moral reasoning was based on Piaget (1932)'s foundational theory as well as by more recent research (Smetana 2011; Turiel 2006). Piaget (1932) suggested that through the process of learning how to resolve conflicts with friends successfully, children become more oriented to issues surrounding justice and fairness. Thus, we hypothesized that perceptions of being able to resolve conflicts with a friend would be related positively to the number of moral reasons that they generated in conversations. We also expected that young adolescents' reports of being able to resolve conflicts with their best friend would be related positively to the number of reasons produced in their conversations because youth may feel more comfortable generating novel ideas, disagreeing, and challenging each other during discussion when they have confidence that they can resolve conflicts when they arise.

Method

Participants

Participants were drawn from a larger normative sample of 1461 sixth graders from three ethnically diverse public middle schools in suburban Washington D.C. The larger study was focused on the role of relationships as youth made transitions from one school level to another (e.g.,

Bowker et al. 2010; Oh et al. 2008). Available county-wide demographic information indicated that the majority of families in this school district were from middle to upper-middle income families.

Given the goals of the larger study, a subsample of friendship dyads was recruited to participate in the laboratory portion of the study based on mutual friendship nominations and peer nominations of aggression and withdrawal. Although participants were recruited in order to have one member of the dyad meet these characteristics, analyses indicated that adolescents who came to the university-based laboratory did not differ from those who did not participate in the laboratory portion on indices of peer-nominated aggressive or withdrawn behavior.[1]

The subsample of 191 friendship dyads (382 adolescents; M age = 11.41 years, SD = .52; 53.4 % female; 49.7 % White, 15.2 % Asian-American, 11.3 % Latino/Hispanic, 10.2 % bi- or multi-racial, 10.2 % African-American, 3.4 % unspecified) was recruited to visit a laboratory on the campus of a large local public university campus to complete activities and additional questionnaires. Dyads comprised both same- and cross-race (69 White/White; 12 Latino/Latino; 10 Asian-American/Asian-American; 8 Black/Black; 92 mixed-race) dyads. This sample was similar in race/ethnicity to that of the larger normative sample described above. On average, dyads reported having been friends for 42.93 months (SD = 28.58). Participants and their families were given $50 for their participation in the laboratory portion of the study.

Procedure

Friendship

During the fall semester, 6th grade participants completed friendship nominations during in-class data collection sessions. Participants were asked to write the names of their "very best friend" and their "second best friend" at their school. Participants could only name same-gender friends in their grade and only mutual (reciprocated) best friendships were subsequently considered. Youth were

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[1] Dyads with one member being either high on withdrawn behavior (top 33 % on withdrawal and bottom 50 % on aggression), high on aggressive behavior (top 33 % on aggression and bottom 50 % on withdrawal), or low on both behaviors (bottom 50 % on withdrawal and aggression) were specifically targeted for participation in the laboratory portion of the study. Analyses indicated that individuals who came to the university-based laboratory did not differ from those who did not participate in the laboratory portion on indices of peer-nominated aggressive [t (1, 1459) = −.64, p = .52] or withdrawn behavior [t (1, 1459) = −1.59, p = .11] nor did the sample's aggressive [t (377) = .49, p = .62] or withdrawn behavior [t (377) = 1.34, p = . 18] significantly differ from zero.

considered "best friends" if they were each other's very best or second best friend choice. The identification of a best friendship is similar to procedures used in other studies focused on best friendships (e.g., Bukowski et al. 1994; Parker and Asher 1993). Although children could nominate any same-gender child in their grade as their best friend, only participating children completed the friendship nominations; therefore, it was impossible to determine whether a friendship was reciprocated when a nonparticipating child was identified as a best friend.

Anxious-Withdrawal

To measure anxious-withdrawal, young adolescents completed the Extended Class Play (ECP; Wojslawowicz et al. 2006) during the fall of the school year. In school-administered sessions, young adolescents were instructed to nominate up to three boys and three girls for each criterion. Anxious withdrawal ($\alpha = .84$) comprised a mean of four items (e.g., "someone who is shy", "a person who hardly ever starts up a conversation", "someone who doesn't talk much or who talks quietly", and "someone who gets nervous about participating in group discussions"). All item scores were standardized within sex, school, and grade to adjust for the number of nominations received and also the number of nominators. Standardized scores were then averaged to create one score for anxious withdrawal. The ECP has been validated in several previous studies (e.g., Bowker et al. 2010; Wojslawowicz et al. 2006).

Aggression

The ECP also was used to assess aggressive behavior via peer nominations. Aggression ($\alpha = .93$) comprised a mean of seven items that assessed physical and relational aggression (e.g., 'hits other kids' and 'spreads rumors'). Similar to above, item scores were standardized within sex, school, and grade to adjust for the number of nominations received and the number of nominators, then scores were averaged to create one score for aggression.

Moral Discussions

Friendship dyads were videotaped (prior to the presentation of questionnaires and interviews) as they participated in a variety of activities, including free-play, a collaborative construction task (origami), a discussion of their relationship history, and the planning of a fun weekend together. Of relevance to the current study, dyads were also videotaped discussing 6 social dilemmas in a room without an adult present. The dilemmas were based on vignettes used in previous studies of adolescent-parent conflict and social reasoning (e.g., Smetana 2011). The dilemmas were

selected on the basis that they were multifaceted and could potentially evoke moral, social-conventional, personal and prudential/pragmatic issues. Multifaceted dilemmas were used because there is evidence that they are discussed more often than dilemmas that are designed to elicit concerns for any single issue alone (Smetana and Asquith 1994). The dilemmas were printed on note cards and presented to adolescents, using the exact wording presented in Table 1.

A research assistant read the following directions "We'd like you to choose one problem at a time to talk about together and to come up with only one answer that you both agree on. Here are six questions. When you finish the first one, go ahead and talk about the next one with each other in whichever order that you want. You will discuss your opinions, what you would do in each situation, and why; and then come to an agreement. So, answer the questions for each problem. Discuss as many problems as you can. You have 10 min, so you can take your time with each question and not rush." The research assistant then left the adolescents alone to discuss the dilemmas. Although participants were given up to 10 min to finish their discussions, some participants did not use the entire time period.

Friendship Quality

As part of a larger battery of questionnaires completed after the videotaped activities, each member of the friendship dyad completed the Friendship Quality Questionnaire (Parker and Asher 1993). With this measure, participants are asked about the features and characteristics of their relationship. Of relevance for this study were the subscales of validation and caring (e.g., "___makes me feel good about my ideas"; "___and I make each other feel important and special"; 10 items; $\alpha = .87$); conflict resolution (e.g., "___and I always make up easily when we have a fight"; "If ___ and I are mad at each other, we always talk about what would help to make us feel better"; 3 items; $\alpha = .63$); and conflict and betrayal (e.g., "___and I bug each other"; "___and I argue a lot"; "___doesn't listen to me"; 7 items; $\alpha = .78$).

Coding of Discussions

Conversations were transcribed before coding. Reasons were coded by two independent observers using a modified version of Killen and Stangor's (2001) taxonomy derived from Social Domain theory (Smetana 2006). Two coders (1 male and 1 female) were trained by a third person who served as the reliability coder (female). The reliability coder helped to develop the coding schemes and is the second author of the paper. Coders were trained until they were reliable with the reliability coder and with each other. To control for observer

drift, bi-weekly reliability checks were conducted with the reliability coder. The reliability coder provided feedback to both coders and discussed questions or disagreements in coding. When there were disagreements, coders discussed them together until a consensus was reached. To calculate reliability, coders rated a randomly selected sample of the transcripts (i.e., 10 dyads, 20 participants, 60 discussions; 12 % of the dyadic data). Coding decisions were based on the verbal conversations of adolescents alone and interviewers were not in the room to probe their responses. Thus, coders had to use the context of the scenario being discussed to make coding decisions.
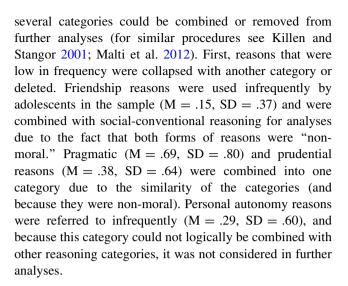
Although they discussed dilemmas with friends, adolescents' reasoning was coded at the individual level, with counts of how many times they mentioned different types of reasons in the context of discussing the social dilemmas. Each time a reason was used it was counted, even if the reason had been previously mentioned by one of the friends. Moral reasons were coded anytime participants referenced preventing harm to others, protecting others' welfare, and preserving fairness and equality ($\kappa = .75$). Social conventional reasons were coded anytime participants referenced rules, traditions, conventions, or authority (including parental expectations; $\kappa = .74$). If adolescents referred to a social rule without further explanation then it was coded as social-conventional. However, if adolescents justified a rule with an explanation, then the explanation was coded instead (e.g., "that's cheating" would be coded as social conventional whereas "that's cheating and it isn't fair to others" would be coded as moral). Reasons that referenced friendship conventions or references to norms surrounding friendships were also coded as a separate category ($\kappa = .73$). Prudential reasons were coded anytime participants referenced the safety, comfort, and health of themselves (see Nucci 2001; $\kappa = .75$), and pragmatic reasons were coded when participants mentioned practical consequences for the self (e.g., lack of time; $\kappa = .70$). Personal autonomy reasons were coded anytime participants referenced individuals making their own decisions (e.g., He should be able to make his own decisions; $\kappa = .90$).

The number of times each adolescent mentioned each type of reason during discussion of all six dilemmas was summed to create a score for each form of reasoning. We also summed all the reasons each adolescent mentioned during discussions to create a score for the total number of reasons.

Results

Data Reduction

Examination of the frequencies with which certain forms of reasoning were used in the discussions revealed that several categories could be combined or removed from further analyses (for similar procedures see Killen and Stangor 2001; Malti et al. 2012). First, reasons that were low in frequency were collapsed with another category or deleted. Friendship reasons were used infrequently by adolescents in the sample (M = .15, SD = .37) and were combined with social-conventional reasoning for analyses due to the fact that both forms of reasons were "non-moral." Pragmatic (M = .69, SD = .80) and prudential reasons (M = .38, SD = .64) were combined into one category due to the similarity of the categories (and because they were non-moral). Personal autonomy reasons were referred to infrequently (M = .29, SD = .60), and because this category could not logically be combined with other reasoning categories, it was not considered in further analyses.

Descriptive Statistics and Preliminary Analyses

Descriptive statistics for each form of reasoning as used in each individual dilemma are displayed in Table 1. Descriptive statistics of adolescent reasoning summed across dilemmas and adolescents' perceptions of friendship quality are displayed in Table 2. To examine the types of reasoning that adolescents' used most frequently in discussion with their friend, a within-subjects ANOVA was conducted comparing the frequency that moral, social conventional/friendship, and pragmatic/prudential concerns were raised. It revealed a significant within person difference, $F (2, 762) = 135.16$, $p < .001$, $\eta^2 = .26$. Post-hoc probing revealed that adolescents more frequently mentioned moral reasons than they did social conventional reasons or pragmatic/prudential reasons. Social

Table 2 Descriptive statistics and correlations of friendship qualities with reasoning

	M (SD) N = 382	Range	ICC N = 191
Friendship quality subscales			
1. Validation and caring	4.15 (.62)	1.50–5.00	.44***
2. Conflict and betrayal	1.63 (.60)	1.00–4.29	.57***
3. Conflict resolution	4.19 (.76)	1.33–5.00	.35**
Reasoning			
4. Moral	2.89[a] (2.17)	0–11	.58***
5. Social conventional/ friendship	2.53[b] (1.79)	0–9	.50***
6. Pragmatic/prudential	1.07[c] (1.08)	0–5	.71***
7. Number of reasons	6.78 (3.41)	0–18	.60***

** $p < .01$; *** $p < .001$. Friendship quality subscales could range from 1 to 5. Types of reasons and the number of reasons are frequency counts. ICC intraclass correlation coefficient. Within constructs, means with different superscripts were significantly different from one another

conventional reasons were also mentioned more often than pragmatic/prudential reasons (Table 2).

Preliminary independent t tests were also conducted to explore whether there were gender differences. Girls mentioned more reasons during discussion (M = 7.48, SD = 3.33) than boys (M = 5.98, SD = 3.34; t = 4.39, p < .001). Girls mentioned more moral (M = 3.35, SD = 2.35 vs. M = 2.37, SD = 1.81; t = 4.55, p < .001) and social-conventional reasons (M = 2.72, SD = 1.72 vs. M = 2.32, SD = 1.85; t = 2.16, p = .03) than did boys. Girls (M = 4.26, SD = .61) also reported more validation and caring in their friendships than boys (M = 4.03, SD = .62, t = 3.59, p < .001). There were no other significant gender differences.

Similarity Amongst Friends

To examine if friends were similar to each other in their use of reasoning, intraclass correlation coefficients (ICCs; see Table 2) were computed. The significance of each ICC was computed with an F test comparing the observed value to 0. ICCs are generally used to describe how units in a group resemble each other or how similar individuals are in their assessments of the same relationship (Kenny et al. 2006). As seen in Table 2, friends' reports of friendship quality were all significantly similar to one another and, in all cases, friends' reasons were highly related to one another.

Dyadic Analyses of Friendship Quality and Reasoning

As friends within dyads were indistinguishable, meaning that there was not a factor that could distinguish between members, the ICCs also provided an estimate of interdependence in the data (Kenny et al. 2006). As all the ICCs were significant, we used dyadic data analyses guided by the Actor-Partner Interdependence Model (APIM; Kenny et al. 2006) for analyses of how friendship qualities were related to reasoning. The model assumes that within dyadic relationships and interactions, people influence each other's thoughts and behaviors. The analytic technique accounts for this interdependence. It also allows for the examination of the associations between both dyad-level characteristics (sex) and both dyad members' characteristics (e.g., both actor and partner reports of friendship quality) with their behaviors (e.g., reasoning). The model estimates two types of effects: the effect of each actor's characteristics on their own reasoning ("actor effect") and the effect of the partner's characteristics on the actor's reasoning ("partner effect"). It also allows for the examination of how partners' characteristics interact in the prediction of actor behavior. APIM analyses were conducted using linear mixed-effects modeling in SPSS using the Compound Symmetry, Correlation Metric function

within the MIXED command. As dyad members were considered indistinguishable, we allowed for a correlation between the error terms of the actors and the partners.

In all of the APIM analyses, sex was controlled because of the aforementioned gender differences. Hypotheses regarding how friendship features and discourse may be related to reasoning differently depending on gender were not generated a priori. However, exploratory analyses examining interactions of sex X actor report of friendship quality, sex X partner report of friendship quality, and sex X actor report of friendship quality X partner report of friendship quality were conducted. Out of a possible 45 different interactions, only 3 interactions were significant and only 1 of these yielded significant simple slopes when probed. With so few interactions being significant and the goal to maintain parsimony, we chose not to include gender interactions in the models.

Further, as some friends reasoned together a great deal and other dyads reasoned together less, the extent to which friends reasoned together during discussions (actor total reasons + partner total reasons; M = 13.56, SD = 5.76) was controlled for in analyses that examined moral, social-conventional, and pragmatic/prudential reasoning. This variable was designated "Total Reasons Given in Dyad" in the tables. Controlling for the number of reasons given by the dyad as a whole enabled us to analyze for dyad-level variability in the amount of reasoning that friends engaged in together while leaving in individual variability in each adolescent's reasoning.

Thus, in each analysis, sex, the total number of reasons given by dyad (except for analyses predicting total reasons), adolescent (actor) report of friendship quality, and friend (partner) report of friendship quality were entered as predictors of reasoning. We also included the interactions of adolescent and friend (actor X partner) reports of friendship quality in the models to examine how perceptions of the friendship may interact in their relation with adolescent reasoning.

Validation and Caring

First, we tested our hypotheses regarding how actor and partner perceptions of validation and caring were related to reasoning. As seen in Table 3, actors' perceptions of validation and caring in their friendship were positively related to the number of reasons that actors mentioned during discussion. Neither actor nor partner reports of validation and caring were related to moral reasoning.

Conflict and Betrayal

Next, we conducted linear mixed effects analyses to address how reports of conflict were related to reasoning

Table 3 Effect estimates of adolescent (actor) and friend (partner) perceived friendship qualities predicting reasoning

Form of Reasoning

Friendship quality subscale	Effects	Number of reasons B	Moral B	Social conventional/ friendship B	Pragmatic/ prudential B
Validation and caring	Sex	−1.25**	−.29	.12	.15
	Total reasons given in dyad	–	.23***	.17***	.10***
	Actor	.60*	.10	−.13	.05
	Partner	.43	−.07	.15	−.12
	Actor X partner	.54	−.01	−.10	.01
Conflict and betrayal	Sex	−1.50***	−.30	.12	.16
	Total reasons given in dyad	–	.23***	.17***	.10***
	Actor	−.40	−.13	.19	.03
	Partner	−.62*	−.18	−.10	.14
	Actor X partner	.53	.19	−.01	−.18
Conflict resolution	Sex	−1.42***	−.27	.09	.16
	Total reasons given in dyad	–	.23***	.17***	.10***
	Actor	.60**	.30*	−.14	.12
	Partner	−.02	−.09	−.08	−.15*
	Actor X partner	.31	.32**	−.22*	−.09

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

about social dilemmas. There were no effects for actors' reports of conflict and betrayal on reasoning, but there was a negative effect for their partners' reports of conflict on the number of reasons that adolescents mentioned in discussions (Table 3). There were no effects of perceived conflict on the forms of reasoning adolescents mentioned during discussion.

Conflict Resolution

Finally, we conducted linear mixed effects analyses to test hypotheses about how perceptions of conflict resolution within a friendship would be related to reasoning about social dilemmas with the friend. As seen in Table 3, adolescents' perceptions of conflict resolution within their friendships were positively related to how many reasons they mentioned during discussion, as well as to how much they mentioned moral reasons. Partner report of conflict resolution was also negatively related to actor's use of pragmatic/prudential reasoning. There were also actor X partner interactions predicting moral reasoning and social conventional reasoning. Interaction probing (Preacher et al. 2006) was conducted using values for partner report of conflict resolution that were 1 SD above and below the mean. Probing revealed that when partners' reports of conflict resolution were low, actors' reports were unrelated to their use of moral reasoning (B = .06, p = .68); when partners' reports of conflict resolution within the friendship

were high, actors' reports were positively associated with the use of moral reasoning (B = .54, p = .01). Additionally, when partners' reports of conflict resolution were low, actors' reports were unrelated to their use of social conventional reasoning (B = .03, p = .80); when partners' reports of conflict resolution within the friendship were high, actors' reports were negatively associated with the use of social conventional reasoning (B = -.31, p = .04).

Discussion

Although friendships have been theorized to affect how youth think about issues concerning justice and fairness (Piaget 1932; Sullivan 1953), little empirical work has examined the features of friendships that are associated the most highly with adolescents' moral reasoning. Drawing on social domain theory (Killen and Rutland 2011; Smetana 2011) as well as theory and research about friendships (Keller 2004; Piaget 1932; Rubin et al. 2013; Sullivan 1953), we examined how features such as validation and caring (Sullivan 1953), conflict, and conflict resolution (Piaget 1932) were related to young adolescents' moral reasoning during conversations with friends. Also innovative, the study focused on adolescents' observed interactions with reciprocally-nominated friends, and used the Actor-Partner Interdependence Model (APIM; Kenny et al. 2006) to account for the interdependence in friends'

reasoning and perceptions of friendship. This technique allowed analyses to explore how young adolescents' and their friends' perceptions of their friendship were related to reasoning.

Initial analyses of friends' conversations revealed that girls reasoned more and engaged in more moral and social conventional reasoning than did boys. The finding that girls mentioned more reasons in discussion may reflect the tendency for girls to engage in more social conversation during friendship interaction (Ladd 1983; Moller et al. 1992) than boys. As girls mentioned more reasons overall, it is not surprising to find gender differences in the total amount of moral and social conventional reasons that were mentioned in discussion. However, the gender differences in reasoning contrast with past meta-analytic reviews which fail to find significant gender differences in moral development (Walker 2006). Therefore, future research of friendship interaction and reasoning should examine if these gender differences replicate.

Initial analyses also demonstrated that friends were similar to each other in their reasoning about the social dilemmas. Similarity in friends' use of reasoning may suggest that friends choose each other because they think about their social worlds in similar ways (e.g., Spencer et al. 2013). Alternatively, and as suggested by Social Domain Theory (Smetana 2006), as friends become close, they may shape each other's way of thinking about social dilemmas (Kandel 1978). It is likely that both of these processes are at work as friendships are formed and then sustained over time.

There were several novel findings in this study that revolved around the question of how adolescents' perceptions of their friendships were related to their social reasoning when discussing multifaceted dilemmas. First, adolescents' perceptions of validation and caring in their friendship were related positively to the number of reasons that they mentioned during face-to-face conversations with friends about social dilemmas but were not related to moral reasoning or any other form of reasoning. These findings suggest that perceptions of care from a friend may be an impetus for self-disclosure, generally increasing how much adolescents share their ideas about social issues. Alternatively, it also may be that the self-disclosure of opinions fosters feelings of security and care. For instance, other self-disclosure processes, such as co-rumination and gossip, have been found to be related to positive perceptions of friendship quality (Banny et al. 2011; McDonald et al. 2007; Rose et al. 2007). This association has been hypothesized to work through increasing feelings of intimacy. Self-disclosure of opinions about social dilemmas may increase feelings of validation as well, especially if friends tend to agree with one another.

It is particularly interesting that we did not find that feelings of care were related to moral reasoning, as was suggested originally by Sullivan (1953). This suggests that being cared for by a friend (or caring for a friend) does not increase general moral reasoning. It may be that mutual caring and validation with a friend is associated with concerns about the well-being of that particular friend. However, this may not generalize to increased concerns about fairness and justice for others.

Second, our results revealed that adolescents' friends' reports of conflict and betrayal were related negatively to the number of reasons adolescents mentioned in discussion, even though adolescents' self-reports were found to be unrelated. Perhaps the friends' assessment of conflict and betrayal may be a more objective indicator of how an adolescent behaves in conflict situations than their own assessment. Thus, a friend who reports that there is a high level of conflict and betrayal in a friendship may be, in part, describing a friendship with an adolescent who does not listen to others' opinions and is quick to dismiss others' ideas. These behaviors may stifle conversations and actually limit the number of reasons that the adolescent can generate. This finding also highlights the importance of considering both adolescents' and their friends' perspectives of the relationship. If we only had considered the adolescents' self-reports of conflict, we would not have found a relationship between reasoning and friendship conflict.

Instead, conflict resolution was associated significantly with moral reasoning, as has been suggested by numerous theorists (Keller 1984; Laursen and Pursell 2009; Killen and Rutland 2011). When adolescents' friends perceived that they could resolve conflicts effectively, adolescents' own perceptions of conflict resolution were related positively to their use of moral reasoning (and negatively related to their use of social conventional reasoning). If adolescents' friends did not perceive that conflicts could be resolved readily, then adolescents' perceptions of conflict resolution were not related to their moral reasoning. These findings suggest that it is more than just perceptions of being able to resolve conflicts with friends that would be associated with moral reasoning. Instead, it seems as if it is a characteristic of friendship partners who both agree that their conflict resolution is effective that is associated with more reasoning regarding fairness and justice (Piaget 1932; Keller et al. 1998).

This finding suggests that it is not singular perceptions of conflict resolution but mutual reconciliation, or the reestablishment of friendship and trust between two parties (Marrow 1999), that is related to moral reasoning. Reconciliation consists of finding a solution to a conflict that satisfies the needs of both parties and demonstrates respect for each other's welfare (Kelman 1999). Thus, inherent to reconciliation is a certain "mutuality" in which both parties are satisfied with the resolution process. In light of the

current findings, it seems as if friends who reconcile conflicts, assuring that both parties are satisfied, are more likely to use more moral reasoning. This is in contrast to adolescents who perceive conflicts to be resolved, when their friend does not. Linking reconciliation to moral reasoning suggests that conflict resolution programs that teach youth how to reconcile with each other, assure mutually beneficial solutions, and re-establish relationships, may also indirectly teach moral reasoning.

Limitations and Future Directions

The current study was guided by theoretical propositions that friendships and interactions within friendships affect how children and adolescents reason about dilemmas. However, it is also important to consider that how youth reason about moral and social issues also may affect the quality of their friendships and the types of interactions they have with friends. For example, instead of friends' abilities to resolve conflicts increasing moral reasoning, as was suggested by Piaget (1932), it is also feasible that youth who are more oriented toward concerns for fairness and justice may be more likely to use constructive conflict resolution skills with their friends. This study's data cannot speak to how these variables are related causally. However, both reasoning about moral issues and conceptualizations of friendship continue to develop through adolescence (Selman 1980; Keller and Wood 1989), as friends become more important to youth (Furman and Buhrmester 1992). Perhaps there are bidirectional influences between friendship quality and moral reasoning. Future research that longitudinally follows how moral reasoning develops alongside changes in friendship quality may shed light on the temporal patterns of these associations.

Adolescents were observed discussing social dilemmas with their best friends without an adult in the room to "probe" their reasoning. These conversations have greater ecological validity than interviews conducted by researchers because they are more likely to represent how youth naturally talk with each other about their dilemmas. However, this methodology also is limited because interviewers could not clarify adolescents' responses as is typically done in studies about reasoning (e.g., Malti et al. 2012). Thus, coding decisions were made based on the conversational context alone and may not fully represent adolescents' reasoning.

Additionally, as interactions were dyadic in nature it was necessary to analyze the data using methodology that considered both actor and partner effects. These analytic procedures yielded interesting patterns regarding how friends' perceptions of the relationship were related to adolescents' reasoning. Although, we did not make a priori hypotheses about how actor and partner effects may be similar or different from one another, our findings provide evidence of the nuanced nature of relationship perceptions and their implications for how individuals understand their relationships and the greater social world. It will be important for future research to replicate these actor and partner effects.

As another important caveat, our findings cannot be generalized outside of a same-sex, best friend relationship context. It is unknown if relationship features would be associated similarly with observed moral reasoning among adolescent peers who were mixed-sex friends or were unreciprocated friends. The same-sex friendship context is likely to be one in which adolescents feel safe, reason more freely and more frequently, and offer a greater number of reasons during discussion. In other relationship contexts adolescents may feel less secure sharing "whatever comes to mind" and may self-censor. Additionally, nonfriends' reasoning is likely to be less similar to each other, greatly changing the dynamics of the interaction. How similarity, alone, affects reasoning amongst individuals is a research question that has yet to be investigated.

Finally, other adolescent characteristics also may affect friendship quality and how it is related to reasoning. Although the sample was ethnically diverse, we were unable to examine whether friendship was differentially related to reasoning based on the race/ethnicity of dyad members because cell sizes were too small to test these relationships. Recent evidence suggests that children with cross-race friendships may be more relationally inclusive than children without cross-race friendships (Kawabata and Crick 2008). Being more relationally inclusive may reflect greater concerns for justice and others' well-being, suggesting that these children may use moral reasoning more frequently as well. This possibility should be examined in future studies.

Conclusions

The dyadic investigation of how friends discuss social dilemmas together yielded a novel and detailed understanding of how friendship features are related to adolescent reasoning about multifaceted social issues. The findings indicate that mutuality in friendships as characterized by effective conflict resolution, not validation and care, is related to the use of moral reasoning. Further, results suggest that promoting positive and constructive ways for friends to resolve conflicts with one another may also increase youth's focus on fairness and justice more generally. Overall, it seems that peer relationships, particularly friendships, may contribute to adolescents' understanding of their social worlds and this dynamic process is best understood through an in-depth examination of the dyadic features of friendships and social relationships.

Author Contributions K.M. conceived of the study, participated in the design, performed the statistical analyses, interpreted findings, and drafted the manuscript; T.M. conceived of the study, participated in the design, led data coding, and helped to draft the manuscript; M.K. participated in the design, interpreted findings, and helped to draft the manuscript; K.R. conceived of the larger study, participated in design and data collection, interpreted findings, and helped to draft the manuscript. All authors read and approved the final manuscript.

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