

The role of competitive and cooperative norms in the development of deviant evaluations

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Child Development (2018, In Press)

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Abstract

The present study examined how peer group norms influence children's evaluations of deviant ingroup members. Following the manipulation of competitive or cooperative norms, participants (children, $M^{\text{age}} = 8.69$; adolescents, $M^{\text{age}} = 13.81$; adults, $M^{\text{age}} = 20.89$; $n = 263$) evaluated deviant ingroup members from their own and the group's perspective. Children rated cooperative deviancy positively and believed their group would do the same.

Adolescents and adults believed that their group would negatively evaluate cooperative deviancy when their group supported a competitive allocation strategy. Reasoning varied based on norm and participants' agreement with deviancy. Understanding an ingroup may not be favorable towards a cooperative deviant in a competitive context is a developmental challenge requiring the coordination of social and moral norms.

Key words: Moral development, Group norms, Peer evaluation

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The role of competitive and cooperative norms in the development of deviant evaluations

Children, adolescents, and adults take competitive and cooperative norms into consideration when navigating their complex social world, and group norms (i.e., expectations about what group members should do) concerning competition and cooperation are important factors involved in evaluating peers within social groups. Should peers in my group cooperate with others from different groups or should they compete with them? To evaluate this question one must take into account the goals and norms of the group. These questions, moreover, lay the grounds for decisions about who should be included or excluded in intergroup settings. Peer group members who reject their group's norms face the risk of social exclusion by fellow ingroup members. Thus, understanding how children, adolescents, and adults evaluate, and in turn expect their group to evaluate, peers who deviate from competitive and cooperative group norms is important for understanding how individuals navigate the complexities of intergroup contexts throughout the lifespan. The present study provides the first examination of how competitive and cooperative group norms influence the development of ingroup favorability judgments concerning deviant group members in an intergroup resource allocation context.

Research shows that throughout the lifespan individuals typically expect others to work together, and positively evaluate equality as a strategy for the distribution of resources (Fehr, Bernhard, & Rockenbach, 2008; Geraci & Surian, 2011; Rizzo & Killen, 2016; Sloane, Baillargeon, & Premack, 2012). Despite the fact that cooperative strategies are used and evaluated positively in many resource allocation contexts, there are other contexts in which competition exerts an influence on resource allocation and intergroup bias. For example, in early and middle childhood, a competitive context reduces a preference for fair distribution of resources (Shaw, DeScioli, & Olson, 2012) as well as prosocial resource allocation in interpersonal contexts (Pappert, Williams, & Moore, 2017). Individuals may be more likely

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to justify biased intergroup resource allocations by referencing the importance of acquiring additional resources for one's group, particularly in contexts that are perceived to be competitive in nature. In cooperative contexts, however, it may be seen as less permissible to favor one's ingroup, given that the purpose of the event is to work with others from different groups. The influence of such competitive and cooperative norms on the development of evaluations of deviant ingroup members has yet to be examined.

The present work adopts a social reasoning developmental approach (SRD; Rutland & Killen, 2017; Rutland, Killen, & Abrams, 2010) which argues that, with age, moral expectations *and* group processes are considered simultaneously when making social decisions, including resource allocations. This approach builds on Social Domain Theory (SDT; Turiel, 1983) by proposing that children reason about issues within the moral domain (i.e., fairness, justice, rights, and others' welfare) in conjunction with social-conventional domain issues related to ingroup functioning (i.e. "I must make sure my group works well together") and wider group processes (i.e. "I want to be accepted by the groups that I identify with, and I will do what they expect me to do"). Group processes include issues surrounding group identification, group loyalty, and importantly for the present work, peer group norms (McGuire, Manstead, & Rutland, 2017; Rutland & Killen, 2017).

Norms are the regulations that provide behavioral expectations within groups, and play a key role in children's identification and behavior within groups (Hitti, Mulvey, Rutland, Abrams, & Killen, 2014; McGuire, Rutland, & Nesdale, 2015; Nesdale, Durkin, Maass, Kiesner, & Griffiths, 2008). In the present study, we focus on the relative influence of ingroup norms of cooperation and competition. Ingroup norms can be enforced within a variety of domains, including both the moral and social-conventional domains (Rutland et al., 2010). For example, "All group members are expected to share their toys with other people" (moral domain), or, "All members of the soccer team should wear the club t-shirt to practice"

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(social-conventional domain). Although ingroup norms are not only enforced within these domains (e.g., a norm for respecting an individual's autonomy concerning dress in their home life is informed by psychological domain concepts), given the resource allocation focus of the present work, here we manipulate moral domain norms related to group expectations for competition and cooperation.

The present study makes an important novel contribution compared to recent studies of deviancy in intergroup contexts which have manipulated peer group norms (Hitti et al., 2014; Killen et al., 2013; Mulvey et al., 2014). Previous research presented participants with equal or unequal allocation norms based on what their group had done in the past (e.g. in the past, your group has mostly chosen to give \$50 to each group). Here we extend this work by providing participants with a peer group norm in the moral domain regarding cooperation and competition. These norms are provided to participants as direct statements from group members regarding expectations for ingroup members' behavior.

Research examining intergroup attitudes has manipulated ingroup norms dictating how group members are expected to behave in relation to an outgroup (McGuire et al., 2015; Nesdale et al., 2008; Nesdale & Lawson, 2011). For example, in work examining intergroup attitudes, norms of inclusion ("group members should play with, like and include people from other groups") and exclusion ("group members should *not* play with, like or include people from other groups") have previously been manipulated. In the present work, we provide participants with both a norm of cooperation or competition, and a demonstration of how their ingroup plans on allocating resources. This provides a strict test of children's commitment to cooperation in conjunction with their understanding of group processes. This study presents participants with a situation where their ingroup verbalizes a competitive motivation and is shown to allocate resources competitively. In this case, we are interested in whether children will continue to believe their group will positively evaluate a cooperative

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deviant peer, or recognize that their group may in fact evaluate a cooperative act of deviance less positively.

Coordinating Social and Moral Norms

Evaluating deviant ingroup members is a complicated task, requiring the coordination of social group and moral norms (Hitti et al., 2014; Mulvey, Hitti, Rutland, Abrams, & Killen, 2014). By norms we refer to what groups agree upon as part of their organizational identity. It must be clear, however, that when we refer to “moral norms,” for example, we do not mean to imply that moral principles are defined by the group. What we mean is that the group has adopted a moral principle as an explicit part of its identity such as adhering to equality or fairness (“our group distributes resources equally”). This adoption of the norm is distinct from the definitional criteria of the norm. For example, children positively evaluate and include ingroup members who support their group norm to allocate resources equally (Killen et al., 2013; Mulvey et al., 2014; Rizzo, Cooley, Elenbaas, & Killen, 2017).

With age, adolescents develop a more nuanced understanding of group dynamics, which includes an increasing awareness that the importance of achieving a moral action (i.e. equal allocation) becomes relatively more context-specific. This in turn may lead to the rejection of ingroup members who support moral equal allocation norms if the group’s norm is to benefit the ingroup by allocating resources unequally (Killen et al., 2013). Other types of group norms refer to the goals of the group, which can be cooperative or competitive, for example. Groups will reject ingroup members who allocate equally when the goal of the activity is competitive because the agreed upon expectation is that each group should strive to acquire as many resources as they can, such as monetary rewards in a competitive task (Leibbrandt, Gneezy, & List, 2013).

This developmental trend reflects the increasing understanding of group dynamics predicted by the SRD model (Rutland & Killen, 2017; Rutland et al., 2010) as well as the

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coordination of different norms with contextual and moral information (Turiel, 2015). We expect here to see a similar developmental trend in understanding of cooperative and competitive peer group norms with age. Cooperative contexts often rely upon the equal allocation of resources to ensure individuals all have a chance to work together. However, in competitive contexts, it is often more acceptable to allocate resources to benefit one's ingroup in order to advance the social goal of competitive success. We expect to observe a shift from childhood, through adolescence and into adulthood, where more experience of coordinating such contexts involving moral and social information will be associated with more advanced understanding of how groups may evaluate deviancy.

Specifically, the present study builds upon previous developmental intergroup research by examining evaluations of deviant ingroup peers in three novel ways. First, as outlined above, we manipulated ingroup goals of competition and cooperation in the form of a statement from an ingroup member of what other group members ought to do. This was accompanied by a descriptive demonstration of how their group members wanted to allocate a communal resource (money for use in an arts competition). This descriptive component of the normative manipulation draws from work by Killen and colleagues (Killen et al., 2013). Whilst our central normative manipulation, drawing from Nesdale and colleagues' work (McGuire et al., 2015; Nesdale & Dalton, 2011), provides participants with a prescriptive statement, this behavioral demonstration was designed to present participants with a coherent prescriptive-descriptive normative statement. The overall aim of this norm manipulation was to create a realistic representation of how children deliver group norms to one another in order to examine how such norms exert an influence on the process of evaluating peers in conjunction with contextual information.

Second, we examined the relative influence of ingroup norms upon evaluations of deviant ingroup peer behaviors in two goal contexts. Previous work (Hitti et al., 2014; Killen

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et al., 2013; Mulvey et al., 2014) has examined how children evaluate deviant ingroup peers who favor going against moral or conventional norms held either by groups or at a societal level. However, this ingroup deviance has always been in the context of a non-competitive group event (e.g. a group trip to a music show). In contrast, in the present study, we induct participants in to a scenario where their group is due to compete in a forthcoming intergroup art contest with a rival institution (i.e. school or college). This is reflective of the fact that groups often must compete for access to communal resources. Participants were then informed that the winning group would either go on to take part in a charity event (prosocial goal context) or a higher-level contest (group-focused goal context). Under these conditions, evaluating an ingroup member who deviates from a moral norm of cooperation requires advanced coordination of contextual information, as well as social and moral norms.

Recent theoretical work has outlined age-related differences in the ability to coordinate social and moral factors when evaluating moral acts (Turiel, 2015). With age, individuals develop the capability to balance contextual information regarding social and moral norms with intergroup information when evaluating breaches of moral conduct. For example, between 8 and 16-years, hitting another child in self-defense is rated as more or less acceptable based on how vulnerable the target is (Nucci & Turiel, 2009). This reflects greater ambiguity in the judgment of moral actions that takes the context into consideration.

In the present work, participants were required to evaluate an act of deviancy that was either coherent with or counter to a higher-order goal context. We expected the ambiguity in judgment of moral actions based on contextual information to be reflected in evaluations of deviant ingroup members. Specifically, with age, participants were expected to evaluate deviant behavior that contradicted an ingroup norm, *but* was consistent with a prosocial (implying a moral norm) or group-focused (implying a social norm) goal context less negatively. Indicating that a more advanced understanding of the ambiguity of moral

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judgment in conjunction with varying moral and social norms develops between childhood and adolescence (Nucci & Turiel, 2009). As such we expected significant differences between children and adolescents when evaluating deviant targets.

Evaluating Deviancy: A Developmental Process

A third novel component involved the examination of how individuals' evaluations of deviant ingroup peers develop from middle childhood into adolescence and adulthood. Testing this broad developmental range provides a much-needed extension of past research, which has typically focused on individuals' evaluations in relatively narrow age ranges. Yet, cooperation and equal allocation remain important concerns in adulthood (Kahneman et al., 1986). Similarly, adults use cooperative and competitive strategies across different scenarios (Ward, 1995), suggesting that intergroup competition acts as a powerful influence on resource allocation decisions in adulthood (Sidanius, Haley, Molina, & Pratto, 2007). Despite the ongoing importance of these two motivations in adulthood, less is known regarding how adults evaluate deviation from ingroup norms of cooperation and competition across varying goal contexts.

Cooperation and competition are inherently intergroup experiences. Adults generally gain an advanced understanding of group processes through exposure to intergroup situations, and negatively evaluate ingroup members who deviate from ingroup norms (Marques & Paez, 1994; Marques, Yzerbyt, & Leyens, 1988). Adults particularly dislike those who desert from their group in a competitive situation (Travaglino, Abrams, Randsley de Moura, Marques, & Pinto, 2014). However, deviancy is often subtler than complete desertion. For example, merely agreeing with an outgroup norm represents a less severe breach of group loyalty conventions. Further, cooperative and competitive contexts present a unique case where deviancy can either be seen as morally relevant (i.e. cooperative), or as advancing the position of the ingroup (i.e. competitive). Given their advanced abilities in coordinating

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contextual information with moral and social norms, the addition of an adult sample to this work represents a novel opportunity to observe age-related differences in these evaluative judgments across the lifespan.

Children have been shown to prefer a deviant who favors equal allocation, even when their group supports an unequal allocation norm (Killen et al., 2013; Mulvey et al., 2014; Rizzo et al., 2017). Likewise, we expected children to positively evaluate a deviant who sought to cooperate with an outgroup counter to a competitive ingroup norm. Coherently, we expected children to negatively evaluate a deviant who advocated for competition when the ingroup norm was cooperative. Further, we also predicted that children would believe that their *group* would share their own positive evaluation of a cooperative deviant when the ingroup norm was competitive. Given that they are less capable of coordinating group and moral norms in complex, multi-faceted situations (Rutland & Killen, 2017, Turiel, 2015), children were expected to focus on the moral norm of cooperation, rather than taking in to consideration their ingroup's normative preference.

A developmental shift in the ability to coordinate moral and social norms from childhood to adolescence has been documented (Killen et al., 2013; Rutland & Killen, 2017). Alongside this, an increased understanding of the importance of competitive contexts and social norms emerges (Abrams, Van de Vyver, Pelletier, & Cameron, 2015; Turiel, 2015; Zhu, Guan, & Li, 2015). Given this, adolescents and adults were expected to believe that their group would positively evaluate a competitive deviant. Despite the deviant nature of this act, this behavior serves social norms and is coherent with the broader intergroup arts contest. Past research has documented that 13-year-olds hold relatively favorable evaluations of deviants who support norms of unequal allocation (Killen et al., 2013; Mulvey et al., 2014), and we expected to see this extended to support of competitive ingroup norms. Adolescents' and adults' evaluations of a deviant who supported competitive unequal allocation were

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expected to be more positive in the group-focused goal context compared with the prosocial goal context.

However, given the ongoing importance of cooperation and equal allocation in adulthood (Kahneman et al., 1986), adults' individual evaluations of the competitive deviant were expected to be less favorable than their anticipated group evaluation. Adults apply the same advanced understanding of group dynamics seen amongst adolescents (Rutland & Killen, 2017; Rutland et al., 2010) and couple this with their strong personal preference for cooperation. In line with this, we expected adults to personally evaluate a cooperative deviant significantly more positively than adolescents, even though they understand that their fellow group members may not positively evaluate this individual. Adults' positive evaluations of a deviant supporting cooperative equal allocation were expected to be more positive in the prosocial goal context compared with the group-focused goal context.

Social Reasoning Justifications

Finally, we extended our examination of cooperative and competitive norms by analyzing participants' social reasoning justifications for their evaluations of the deviant ingroup members. Justifying evaluative decisions, particularly agreement with deviant behavior, involves the coordination of moral and group dynamic information. Social Domain Theory (SDT) argues that by middle childhood, individuals reason across the moral, social-conventional and psychological domains interchangeably when making moral judgments (Turiel, 1983). Reasoning in the moral domain includes issues related to fairness and equality (i.e. "We don't want this person in our group because they are behaving unfairly"). In the social-conventional domain, children consider issues related to group functioning (i.e. "We want to include this person because they are following the rules of our group"). In the psychological domain children think about issues related to personal autonomy. As the allocation of resources between groups predominantly involves concerns related to group

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norms, loyalty and fairness, it was less likely in the present study that psychological domain issues would be a salient category for participants' justifications.

We expected participants to reference different domains when justifying their evaluations of a deviant target depending on how much they agreed with the behavior of the deviant, along with the type of normative condition. Recent work has demonstrated that when asked to reason about allocation decisions, the way in which resources are allocated plays an important role (Elenbaas et al., 2016; McGuire et al., 2017; Rizzo et al., 2016). Likewise, we expected here that the way in which the deviant wished to allocate resources, and how this fit with the participants' own views, would play an important role in determining reasoning justifications. For example, we expected that participants who agreed with deviant behavior in the competitive condition would be more likely to use moral domain justifications (i.e. references to the unfair nature of ingroup serving allocation) to justify a favorable evaluation of deviancy. By comparison, we expected that participants who agreed with the deviant in the cooperative condition would be more likely to rely upon social-conventional domain justifications (i.e. references to the ingroup benefits of an unequal allocation strategy) to justify their evaluation.

The Present Study

In the present work, we directly manipulated ingroup norms of cooperation and competition across two goal contexts (group-focused and prosocial). Participants were inducted into simulated groups based on institution membership (i.e. school or college), and received a peer group norm in the context of an intergroup arts contest. They were introduced to a deviant member who wished to allocate resources counter to the ingroup norm. Participants evaluated this deviant ingroup member from their own, and their group's perspective. This research aimed to provide the first examination of how cooperative and competitive norms influence the development of deviant evaluation from childhood to

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adolescence and into adulthood across two goal contexts. Developing an understanding of group dynamics and intergroup processes in these contexts is an essential skill required to navigate the complex social situations in which groups must generally behave, and more specifically, allocate communal resources.

Hypotheses

H1. We expected to observe significant differences in children's, adolescents' and adults' individual evaluations of deviancy, varying by ingroup norm condition. Children were expected to positively evaluate a cooperative deviant in the competitive ingroup norm condition. Children were not expected to positively evaluate a competitive deviant who challenges a cooperative ingroup norm. We expected adolescents and adults to positively evaluate a cooperative deviant from their own perspective, especially in the context of a prosocial goal context. We also expected adolescents and adults to positively evaluate a competitive deviant when this was qualified by a group-focused goal context.

H2. We expected to observe significant differences in children's, adolescents' and adults' perceived group evaluations of deviancy, varying by ingroup norm condition. Specifically, children were expected to believe that their group would positively evaluate a cooperative deviant in the competitive ingroup norm condition. However, children were expected to believe that their group would not positively evaluate a competitive deviant in the cooperative ingroup norm condition. Adolescents and adults, by comparison, were expected to believe that their group would negatively evaluate a cooperative deviant who did not support a competitive ingroup norm. Adolescents and adults were expected to believe that their group would more positively evaluate a competitive deviant who went against a cooperative ingroup norm, but only when this was coherent with a group-focused goal context.

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H3. We expected that the link between individual evaluations of deviancy and perceived group evaluations of deviancy would become weaker with age. Younger participants' individual evaluations of the deviant were expected to be more closely related to their perceptions of what the group would think. In contrast, older participants' individual evaluations of the deviant were expected to be less closely related to their perceived group evaluation.

H4. When asked to justify their personal evaluation of the deviant, we expected participants to reference different domains depending on how much they agreed with the behavior of the deviant, and the ingroup norm condition. Specifically, we expected to observe greater references to fairness amongst individuals who disagreed with a competitive deviant in the cooperative ingroup norm condition. Inversely, we expected to see greater references to group functioning amongst individuals who disagreed with a cooperative deviant in the competitive ingroup norm condition.

Method

Participants. Participants ($N = 338$) were recruited from the London metropolitan area in the United Kingdom completed the study, and were comprised of 102 (47 Female, 56 Male) 8- to 11-year-olds ($M_{age} = 8.66$, $SD = 0.50$), 90 (50 Female, 40 Male) 13- to 15-year-olds ($M_{age} = 13.83$, $SD = 0.71$), and 73 (64 Female, 9 Male) Adults ($M_{age} = 20.89$, $SD = 2.83$). 75 participants were excluded from the original sample for failing to accurately answer an ingroup norm manipulation check question (final $n = 263$; see below for details). Power analysis for an ANOVA with 12 groups was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.95, and a medium effect size ($f = .025$) (Faul, Erdfelder, Lang, & Buchner, 2007). Based on these assumptions, the desired sample size was 251 participants.

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Children and adolescents attended schools serving lower to middle-class populations, with an ethnic mix reflecting the population of the metropolitan area in which testing took place. Adult participants attended a university in the same area and participated as part of an undergraduate Psychology module. The sample consisted of approximately 50% White British, 17% South Asian British, 15% Black British, and 12% other Minority Group (including Mixed Race, Chinese British and Eastern European participants).

Design. The study used a 3 (Age: children, adolescents, adults) x 2 (Ingroup norm: competitive, cooperative) x 2 (Goal context: group-focused, prosocial) between-participants design.

Procedure. Participants were asked to imagine that they would be taking part in an inter-institution arts competition between their own, and a local rival institution (i.e., schools or colleges). They were shown an illustration of four individuals (matched for participant gender) representing their own institution for the competition comprised of members of their institution (henceforth, “ingroup”), and a separate illustration of their rival team comprised of members of the rival institution (henceforth, “outgroup”). They were asked to identify an institutional name, color, and logo in order to further emphasize ingroup membership. This method has previously been shown to induce a strong ingroup preference (McGuire et al., 2015; Nesdale & Dalton, 2011; Nesdale, Durkin, Maass, Kiesner, & Griffiths, 2008; Nesdale & Lawson, 2011)

Ingroup Norm. Participants were told that their ingroup had a “secret message” for its members ahead of the competition. This message, accompanied by an illustration of one of their ingroup members, read;

“Hello we’re really happy you’re going to be on our team for this drawing competition. We just have one rule if you’re going to be on our team and that is – (Competitive ingroup norm) ...you should try and make our team win and never help the

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other teams in the competition. Good luck!”

(Cooperative ingroup norm) ... *you should try and make our team win, but also help the other teams in the competition. Good luck!”*

Next participants answered a manipulation check question to ensure that they had paid attention to and understood their ingroup norm: “*Based on what you just read, does your team want to help other teams in the competition?*” (Yes/No).

Participants who failed to accurately understand their ingroup norm were excluded from the final analyses. For example, a participant would be excluded if they said that their ingroup wanted to help other groups in the competition when they had been told their ingroup held a competitive ingroup norm. Those participants who failed the manipulation check ($n = 75$) were split as follows by age (children, $n = 39$; adolescents, $n = 26$; adults, $n = 10$) and ingroup norm (competitive, $n = 26$; cooperative, $n = 49$). A non-significant chi-square test suggested that these exclusions were random as a function of age and ingroup norm, $X^2(2, n = 75) = 3.93, p = .15$. A sample of 263 participants (children, $n = 103$; adolescents, $n = 90$; adults, $n = 70$) was included in the final analyses.

Goal Context. The goal context was established by telling participants that after the first round of the art event, the winning group would go on to take part in a second round. This was either described as a ‘United Kingdom National Art Competition’ (group-focused context) or a ‘United Kingdom Charity Art Event’ (prosocial context). Participants read the following:

“The winning school/college on the day of the City Art Event will then go on to represent your city in the...

(Group-focused context)... *United Kingdom National Art Competition, which is the highest level of art competition in the country that schools/colleges can take part in. This will be a big day where winning schools/colleges from all over the United Kingdom compete to display*

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the best art.”

(Prosocial context)... *United Kingdom Charity Art Event, where paintings and drawings will be sold to raise money so homeless animals are given somewhere to live. This will be a big day where schools/colleges from all over the United Kingdom work together and help raise money for animals in need.”*

Deviant ingroup peer. Participants were informed that the student councils of their institution and the competing institution had raised £100 to distribute between the ingroup and outgroup groups. Both groups would receive basic art supplies. This money was to be used to purchase additional special materials that could help produce better art. They were informed that their group had voted to distribute this money either £50 to both groups (cooperative ingroup norm), or to give £80 to their ingroup and £20 to the outgroup (competitive ingroup norm). The outgroup was always said to have voted in favor of the opposite strategy to the ingroup (e.g., in the cooperative ingroup norm condition, the ingroup supported an allocation of £50:£50, whilst the outgroup supported an allocation of £80:£20 in their own favor).

Participants were then introduced to the deviant ingroup peer. This individual (represented by one of the cartoon figures) disagreed with how the group wanted to distribute the money, arguing for the alternative option that was favored by the outgroup (either 50:50 or 80:20 depending on the ingroup norm condition).

Measures. All measures were completed on Qualtrics, an online survey software tool. Evaluation of the deviant peer was assessed using three questions. First, participants were asked: “*how much do you think your group would like (Deviant name)?*” (Group Evaluation). Following this participants were asked “*how much do you think you would like (Deviant name)?*” (Individual Evaluation). Both responses were recorded on a five-point scale from ‘dislike a lot’ to ‘like a lot’. The individual evaluation question was followed by

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an open-ended “*why?*” (Reasoning Justification) question. In order to assess reasoning, we also included a Deviant Agreement question, which asked participants “*Do you agree with how (Deviant name) wants to share the money?*” (agree/disagree).

Data analytic plan. Group and individual evaluation responses were subjected to 3 (age group: child, adolescent, undergraduate) x 2 (ingroup norm: competitive, cooperative) x 2 (goal context: group-focused, prosocial) univariate ANOVAs. Significant effects were followed up with post-hoc tests with Bonferroni corrections for multiple comparisons applied.

Our sample size did not allow for us to reliably test for gender effects in interaction with age or norm conditions. However, given that gender has not previously been shown to exert an effect on adherence to group norms (McGuire et al., 2015; Nesdale & Dalton, 2011; Nesdale & Lawson, 2011) or evaluation of deviant targets (Killen et al., 2013; Rutland, Hitti, Mulvey, Abrams, & Killen, 2015) we did not expect differences in resource allocation or reasoning based on gender.

Responses to social reasoning justifications were coded using a framework adapted from Social Domain Theory (Turiel, 1983). Responses were assigned to one of five categories: (1) *Fairness*, references to fair sharing and principles of fairness (e.g. “*it’s fair*”), (2) *Equality*, specific references to allocating resources equally between groups (e.g. “*So the supplies are equal*”), (3) *Fair Competition*, references to ensuring the competition is conducted on a level playing field (e.g. “*So every team has a chance to win*”), (4) *Group Functioning*, references to group dynamics, norms or loyalty (e.g. “*because that’s what the rest of the team wanted to do*”), and (5) *Personal Choice*, references to personal autonomy (e.g. “*because each person can make their own mind up*”). Responses that did not fit into one of these five conceptual categories were coded as “other”. Two coders, one of whom was blind to the hypotheses of the study, conducted the coding. Inter-rater reliability procedures

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assessing 25% of the sample of interviews ($n = 80$) indicated good agreement between the two coders, Cohen's $\kappa = .95$.

We hypothesized that whether or not a participant agreed with the target would direct the domain of reasoning in which they justified their evaluation, and as such, this was essential for our analysis. We used the Deviant Agreement question in order to assess this. Fewer than 5% of participants ($n = 11$) used the equality category, and so these participants were omitted from the analyses, along with participants who used the "other" category ($n = 46$). 37 participants did not provide a reasoning justification for their allocation. This left a total sample of 171 participants who provided a reasoning response for analysis. Of these, participants who agreed with the deviant (competitive ingroup norm, $n = 68$; cooperative ingroup norm, $n = 38$) were expected to differ significantly in reasoning style from those who disagreed with the deviant (competitive ingroup norm, $n = 21$; cooperative ingroup norm, $n = 44$). Reasoning responses were analyzed using a multinomial logistic regression model. We modeled the effects of Age Group (Adults, Adolescents, Children), Deviant Agreement (Agree, Disagree), and Ingroup Norm (Competitive, Cooperative) on reasoning style across four conceptual categories

We were also interested in examining the relation between participants' perceived group favorability towards the deviant, and their own individual favorability, along with developmental trends in this relation. The relation between group and individual favorability was tested using the PROCESS Macro tool (Hayes, 2012) to test for moderation. Using bootstrapping, we entered the centered continuous variables for participants' perceived group favorability and age in months, together with their interaction terms hierarchically in order to predict participants' individual favorability.

Results

Individual favorability of deviant. We observed significant main effects of both age group ($F(2, 233) = 8.26, p < .001, \eta^2 = .07$) and ingroup norm ($F(1, 233) = 22.46, p < .001, \eta^2 = .09$). For age, both adults ($M = 3.97, SD = .80$) and adolescents ($M = 3.66, SD = 1.23$) evaluated deviancy more positively than children ($M = 3.23, SD = 1.55, p$'s $< .02$). For ingroup norm, deviancy was rated more positively in the competitive ingroup norm condition ($M = 3.94, SD = 1.33$) than in the cooperative ingroup norm condition ($M = 3.20, SD = 1.14; p < .001$).

These main effects were qualified by a significant interaction between age group and ingroup norm, $F(2, 233) = 3.42, p = .04, \eta^2 = .03$ (see Figure 1). Participants' evaluations of a deviant ingroup target depended both on their age group, and the ingroup norm they were prescribed by their group members. There was no main effect of goal context ($F = .83, p = .36$) nor did it interact with ingroup norm ($F = .62, p = .43$) or age group ($F = .57, p = .57$).

In the cooperative ingroup norm condition (i.e. a competitive deviant), children ($M = 2.55, SD = 1.15$) rated this deviant significantly less positively than both adolescents ($M = 3.47, SD = 1.06; p = .002$) and adults ($M = 3.65, SD = .85; p < .001$). There was no significant difference between the ratings of adolescents and adults ($p = .99$). Children's personal evaluations of the competitive deviant did not differ significantly from the midpoint of the scale ($t(39) = .27, p = .79, \text{Cohen's } d = .04$). Adolescents ($t(37) = 5.67, p < .001, \text{Cohen's } d = .91$) and adults ($t(33) = 7.88, p < .001, \text{Cohen's } d = 1.35$) evaluated this individual significantly above the midpoint of the scale. With age, competitive deviancy was evaluated more positively relative to evaluations of this behavior amongst children.

By comparison, when the ingroup norm was cooperative (i.e. a cooperative deviant), there were no differences between children and adolescents ($p = .99$), children and adults ($p = .22$) and between adolescents and adults ($p = .17$) in terms of how they evaluated deviancy.

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For children ($t(45) = 5.54, p < .001$, Cohen's $d = .82$), adolescents ($t(50) = 6.94, p < .001$, Cohen's $d = .97$) and adults ($t(29) = 18.37, p < .001$, Cohen's $d = 3.33$), individual evaluations of a cooperative deviant differed significantly from the midpoint of the scale. Across the age groups, a cooperative deviant was favorably evaluated from the personal perspective.

Perceived group favorability of deviant.

Whilst there were no significant main effects of age group ($F = 2.12, p = .12$) or ingroup norm ($F = 2.00, p = .16$) on perceived group evaluations, we did observe a significant interaction between age group and ingroup norm, $F(2, 237) = 6.37, p = .002, \eta^2 = .05$ (see Figure 2). Perceived group evaluations of the deviant target were dependent upon the prescribed ingroup norm, and the age of the participant. Here we observed a main effect of goal context ($F(1, 237) = 4.92, p = .03, \eta^2 = .02$) where deviancy in a group focused context ($M = 2.80, SD = 1.22$) was rated more positively than in a prosocial context ($M = 2.51, SD = 1.21$). However, goal context did not interact with ingroup norm ($F = .01, p = .91$) or age group ($F = .90, p = .41$).

There were significant differences between participants of different ages in the cooperative ingroup norm condition (i.e. a competitive deviant). Adults ($M = 3.20, SD = .99$) believed their group would rate deviancy significantly more positively than children did ($M = 2.46, SD = 1.25; p = .02$). There was no significant difference between adults and adolescents perceived group evaluations of a deviant in this condition ($M = 2.66, SD = 1.12, p = .16$). Similarly, there was no significant difference between children and adolescents' perceived group evaluations of deviancy in this condition ($p = .99$). Children ($t(40) = -.18, p = .85$, Cohen's $d = -.03$) and adolescents' ($t(37) = .87, p = .39$, Cohen's $d = .14$) perceived group evaluation of a competitive deviant did not differ significantly from the midpoint of the scale. Adults ($t(34) = 4.16, p < .001$, Cohen's $d = .71$) perceived group evaluations of this

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competitive deviant were significantly above the midpoint of the scale. These results indicate age effects between childhood and adulthood, with individuals moving towards an understanding that an ingroup may actually be less negative towards a deviant who is favoring the ingroup, even when this runs counter to cooperative peer level expectations.

When the ingroup norm was competitive (i.e. a cooperative deviant), there were also significant differences between perceived group evaluations based on age group. Children ($M = 3.02, SD = 1.57$) believed their group would rate deviancy (that is, cooperative behavior) significantly more positively than adolescents ($M = 2.24, SD = .99; p = .004$). There was no significant difference between adults ($M = 2.49, SD = .92$) and children's perceived group evaluations of the deviant in this condition ($p = .15$). Similarly, there was no significant difference between the adolescents and adults perceived group evaluation of the deviant member in the competitive condition ($p = .99$). Children's perceived group evaluation of a cooperative deviant differed significantly from the midpoint of the scale, $t(46) = 2.28, p = .03$, Cohen's $d = .33$. Adolescents' ($t(50) = -1.91, p = .06$, Cohen's $d = -.26$) and adults' ($t(30) = -.09, p = .93$, Cohen's $d = -.01$) perceived group evaluations of the cooperative deviant did not differ significantly from the midpoint of the scale. Whilst children expected their group to positively evaluate a cooperative deviant, adolescents and adults expected this individual to be more neutrally evaluated by the group.

Individual favorability reasoning. We next examined how age group, ingroup norm and agreement with the deviant influenced participants' chosen reasoning justification for their evaluation of the deviant target, using a multinomial logistic regression approach. Addition of the predictors (age group, ingroup norm, deviant agreement) to the model led to a significant improvement in model fit compared with the null model, LR $\chi^2(15, N = 171) = 79.37$, Nagelkerke $R^2 = .41, p < .001$.

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The main effect of Age Group, $\chi^2(6, N = 171) = 33.97, p < .001$ was significant. Specifically, children were more likely than adults to make reference to fairness than group functioning reasoning to justify their evaluation of a deviant, $\beta = -1.67, \chi^2(1) = 9.25, p = .002, \text{Exp}(B) = .19, 95\% \text{ CI } [.06, .55]$. Children justified their evaluations of a deviant with reference to concerns for fairness. For example, one child participant favorably evaluated a cooperative deviant “*because he is fair*”. By comparison, adults discussed the group functioning consequences of including a deviant target. For example, one adult participant negatively evaluated a cooperative deviant by stating “*She obviously cares about the competition but may potentially cause conflict over the money*”.

As well as this main effect, we observed an interaction effect between Ingroup Norm and Deviant Agreement, $\chi^2(9, N = 171) = 33.97, p < .001$. Participants who disagreed with the behavior of a deviant in the competitive ingroup norm condition (i.e. a cooperative deviant) used significantly more group functioning reasoning than fairness reasoning compared with participants who disagreed with a deviant in the cooperative ingroup norm condition (i.e. a competitive deviant), $\beta = 1.31, \chi^2(1) = 3.77, p = .05, \text{Exp}(B) = 3.70, 95\% \text{ CI } [.99, 13.85]$. In this condition, less favorable evaluations of cooperative deviancy were justified with reference to the counter-normative nature of the deviant’s behavior, and the problems this would cause in advancing the relative position of the ingroup. One participant justified a negative evaluation of a cooperative deviant by arguing that “*she’d give away half our precious money!*”

Inversely, within the cooperative ingroup norm condition, participants who disagreed with a competitive deviant used significantly more fairness justifications than participants who agreed with the competitive deviant, $\beta = -1.91, \chi^2(1) = 6.47, p = .01, \text{Exp}(B) = .15, 95\% \text{ CI } [.03, .65]$. Those participants who disagreed with a competitive deviant justified their less positive evaluation of the deviant in reference to the unfair nature of their chosen allocation.

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For example, one participant evaluated the competitive deviant negatively “*because she is not sharing, and being selfish, being unfair.*”

Relation between perceived group and individual favorability.

Finally, we used the PROCESS Macro tool (Hayes, 2012) to test whether age moderates the relation between group and individual favorability. Using bootstrapping, we entered the centred continuous variables for group favorability and age in months, together with their interaction terms hierarchically in order to predict participants’ individual favorability.

This analysis revealed that age was a significant predictor of individual favorability of the deviant ($\beta = 0.01, t = 5.33, p = .001$), $R^2 = .27, F(3, 225) = 22.43, p < .001$ (see Figure 3). In general, older participants were more favorable towards a deviant than younger participants. Similarly, group favorability was a significant predictor of individual favorability ($\beta = 0.31, t = 4.77, p = .001$). Participants who perceived that their ingroup would be more favorable towards a deviant showed higher individual favorability.

These predictive effects were qualified by a significant interaction between age and perceived group favorability ($\beta = -0.01, t = -5.85, p = .001$) on individual favorability. Simple slopes analyses revealed that the relation between individual favorability and group favorability of the deviant was significantly stronger amongst younger participants ($t = 7.60, p = .001$) than older participants ($t = -0.14, p = .89$). This suggests that with age, the relation between adolescents and adults’ perceived group evaluations of the deviant and their individual evaluation becomes significantly weaker.

Discussion

The present study investigated how evaluations of deviant ingroup peers in competitive and cooperative normative contexts change for a sample of children, adolescents and adults. Children expected their group to prefer a cooperative deviant within the group

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relatively more than older participants, even when this was counter to a competitive ingroup norm. In line with research that has shown the importance of cooperation throughout the lifespan, participants of all ages positively evaluated a cooperative ingroup deviant from an individual perspective. In contrast, when the ingroup deviant was competitive, we observed age-related differences in favorability judgments. Adults, compared with children, believed that their group would be relatively more favorable toward this type of deviancy. Further, individual evaluations of a competitive ingroup deviant also became more favorable from childhood, into adolescence and adulthood. In addition, this study showed that, depending on whether they agreed with the deviant peer, participants varied the social reasoning they used to justify their evaluations according to whether the ingroup norm was competitive or cooperative.

These findings address changing conceptions regarding cooperation and competition. Previous work has shown that the acceptability of deviance related to equal and unequal allocations changes from childhood in to adolescence (Killen et al., 2013; Mulvey et al., 2014). This study extends previous findings by examining the relative influence of competitive and cooperative ingroup norms on this evaluation process, from middle childhood to adulthood. Changes between childhood and adolescence help to elucidate an ongoing developmental process. When the ingroup norm was cooperative, participants came to evaluate a competitive deviant more favorably with age. Similarly, with age, there emerged an understanding that when the ingroup norm was competitive, a cooperative deviant may be less favorably evaluated from the perspective of the ingroup. This suggests that older participants have acquired a more advanced understanding of intragroup dynamics, which is required to understand that their group may disagree with cooperation in certain contexts, even when the individual may favorably evaluate this behavior.

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One of the central novel components of this work was the manipulation of an ingroup norm as a direct statement from an ingroup member. In comparable work, ingroup norms have been outlined via examples of past resource allocation behavior (Mulvey et al., 2014). Here, participants received both a statement about whether cooperation or competition was to be expected *and* observed how their fellow ingroup members were going to allocate resources. Despite a unified statement of intent and description of allocation action, children in the competitive ingroup norm condition still believed that their group would favorably evaluate a cooperative deviant. Children's commitment to cooperation is strong enough to supersede this multi-layered norm for competition. When a deviant behaves counter to a cooperative norm, it is conceivable that the ingroup may judge this individual less negatively given the group benefits of their chosen allocation. By comparison, such an argument cannot be made when a cooperative deviant eschews a competitive ingroup norm.

Consistent with past research, children and adolescents positively evaluated a deviant ingroup member who advocated for cooperating with the outgroup through equal allocation, counter to a competitive ingroup norm (Mulvey et al., 2014; Rizzo et al., 2017). A further novel component of the present study was an extension of the age range under examination. As predicted, adults were even more favorable than adolescents towards a cooperative deviant. This fits with research that has demonstrated the ongoing importance of cooperation in to adulthood (Kahneman et al., 1986), as well as the idea that a more advanced coordination of social and moral norms emerges with age (Turiel, 2015). Both adolescents and adults balance the influence of cooperative norms, social norms at the group level, and group loyalty. Adults, unlike adolescents, understand that competitive deviancy is likely to be positively evaluated at the group level due to its coherence with the social norm of advancing the ingroup's position. However, they distance themselves from this with their personal positive evaluation of a cooperative deviant. By comparison, adolescents are primarily

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concerned with the social norm, particularly in the context of an intergroup contest, and do not evaluate cooperative deviancy as positively as did adults.

The analyses revealed a relation between individual and group evaluations for younger, but not older, participants. For younger participants, the more favorable their individual evaluation was, the more favorably they perceived their ingroup's evaluation to be. For older participants however, this link between individual and group evaluations was weaker. This supports the idea that a fundamentally different understanding of intragroup dynamics develops between childhood and young adulthood. Younger individuals make a stronger connection between their own evaluations of a deviant, and those of the group, especially when cooperation and moral norms related to resources are under evaluation. It is well documented that children can separate their own perspective from that of the group in some contexts (Mulvey et al., 2014; Mulvey, Rizzo, & Killen, 2016), but this appears to be particularly challenging when moral domain norms, which are highly valued in childhood, are challenged by competitive ingroup behavior in a highly competitive and complex intergroup setting. With age, individuals increasingly made a distinction between their own attitudes and those of the group when making evaluative judgments of ingroup members. It is this understanding that both competitive and cooperative behaviors can be seen as acceptable from different perspectives, depending on the situational context, which separates older from younger individuals.

In line with predictions drawn from the SRD model (Rutland & Killen, 2017), participants' reasoning justifications for their evaluations of the deviant target involved the coordination of both moral and group functioning concerns. This was specifically related to participants' agreement with the deviant act. Those who disagreed with competitive deviancy referenced the inherently unfair nature of taking more resources for one's ingroup.

Conversely, participants who agreed with such behavior almost exclusively focused on the

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group functioning benefits of access to a greater share of the resources, or the consequences caused by including a cooperative deviant who wanted to give resources away to the outgroup. Evaluation and reasoning are necessarily intertwined processes that inform judgments related to moral action from middle childhood.

It is well established that group and moral concerns are considered simultaneously in reasoning justifications from childhood (Mulvey et al., 2014; Rizzo, Cooley, Elenbaas, & Killen, 2017; Rutland & Killen, 2017). The present results extend this work by emphasizing the importance of context in determining which of these factors takes precedence in a given situation. Group members' justifications for evaluations of deviancy must not only take in to account the inherent morality of the deviant's behavior, but also the contextual bounds in which this takes place. Specifically, in the context of an intergroup arts contest children face complex decisions requiring them to weigh up whether they ought to adhere to generic moral expectations (coherent with a moral norm) or follow competitive cues to advance the relative position of their ingroup (coherent with a social norm). Differential reasoning processes guided the evaluation of a deviant target, a process which itself differed dependent upon participant age. This intertwined relation between reasoning and judgment developing across childhood, predicted by the SRD model, is integral to children's developing moral understanding.

Limitations and Future Directions

Whilst we predicted that adolescents and adults would take the goal context in to consideration when evaluating deviant targets, this was not the case. Instead, ingroup norms were of greater importance in predicting the evaluation of deviancy. It is possible that the evaluation of ingroup members was seen as beyond the influence of the context within which resource allocation takes place. Who is chosen to join a group and how they are expected to

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behave falls under the jurisdiction of group members (Killen & Stangor, 2001), and is not contingent upon the context in which the group finds itself.

Whilst a group member allocating resources equally in line with a prosocial goal context meets broader societal expectations, such deviation in the context of a competitive ingroup norm is a transgression against group expectations. As such, the context in which this transgression happens may be of less importance when participants are asked how their *group* would evaluate such behavior. Future work should seek to elucidate whether there are any breaches of contextual expectations that would be considered reproachable enough to face negative evaluation from group members, even if such behavior was in line with group norms. The two-level nature of the manipulation (an arts contest followed by a prosocial or group-focused activity) was complex. Future work could test participants' evaluations of prosocial and goal-focused situations without the initial contest level for comparisons with the two-level structure of the manipulation for comparisons.

Finally, it is important to note that future work should seek to include more in-depth probes for participants' understanding of normative information at the peer level, and of the goal context. Here, a question probed participants' comprehension of how their group was expected to behave. It would be interesting to probe this deeper understanding and present participants with a more complex manipulation check to gauge what they might expect a group member to do in a hypothetical resource allocation setting. Likewise, a question probing their understanding of what might be deemed acceptable behavior across the competitive and cooperative goal contexts would not only provide a test of the manipulation, but also interesting information regarding children's and adolescents' expectations in such contexts.

Conclusions

The present work extends knowledge regarding children's, adolescents', and adults' understanding of intragroup dynamics in competitive and cooperative contexts. Using a novel cooperative and competitive peer group norm manipulation in the context of intergroup competition we demonstrated a developmental shift from childhood in to adolescence and adulthood in understanding of group and individual perspectives on competitive and cooperative deviancy. When the group holds a cooperative norm, understanding of how competitive deviancy may be evaluated from the perspective of the ingroup changes with age. Older participants appreciate that competitive behavior that benefits the ingroup is less likely to be negatively evaluated. Likewise, with age, participants appreciate that despite the fact that cooperative deviancy meets with moral norms; this behavior is likely to be negatively evaluated by the group due to its violation of expectations for group loyalty *and* social norms. Reasoning data supported these findings by demonstrating a shift between reasoning domains dependent on the ingroup norm and agreement with the deviant.

With age individuals develop a sophisticated understanding of the interactive importance of both social norms (i.e. group loyalty and ingroup prosperity) and moral norms for cooperation on evaluations of deviancy. When these issues conflict, adolescents and adults understand that there may be a difference between their own and the ingroup's evaluation of a group deviant. Appreciating this is essential in order to motivate ingroup cohesion in increasingly complex contexts. By comparison, children remain focused on cooperation even when this may compromise ingroup cohesion. The allocation of resources between groups often involves competition, with debates about who should get what and why. These forms of negotiation often lead to conflict. It is therefore important to understand how deviants who challenge or support biased allocation strategies are evaluated by individuals across a broad age spectrum. The results of the present study suggest that there is an

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important emerging understanding between middle childhood and adolescence, that whilst individuals may not support biased allocation in competitive contexts, groups as a whole often do. Future work, perhaps in the form of interventions, is essential in order to further understand how cooperative deviants can best serve as challengers of unequal allocation in order to maintain both inter-group and intra-group harmony.

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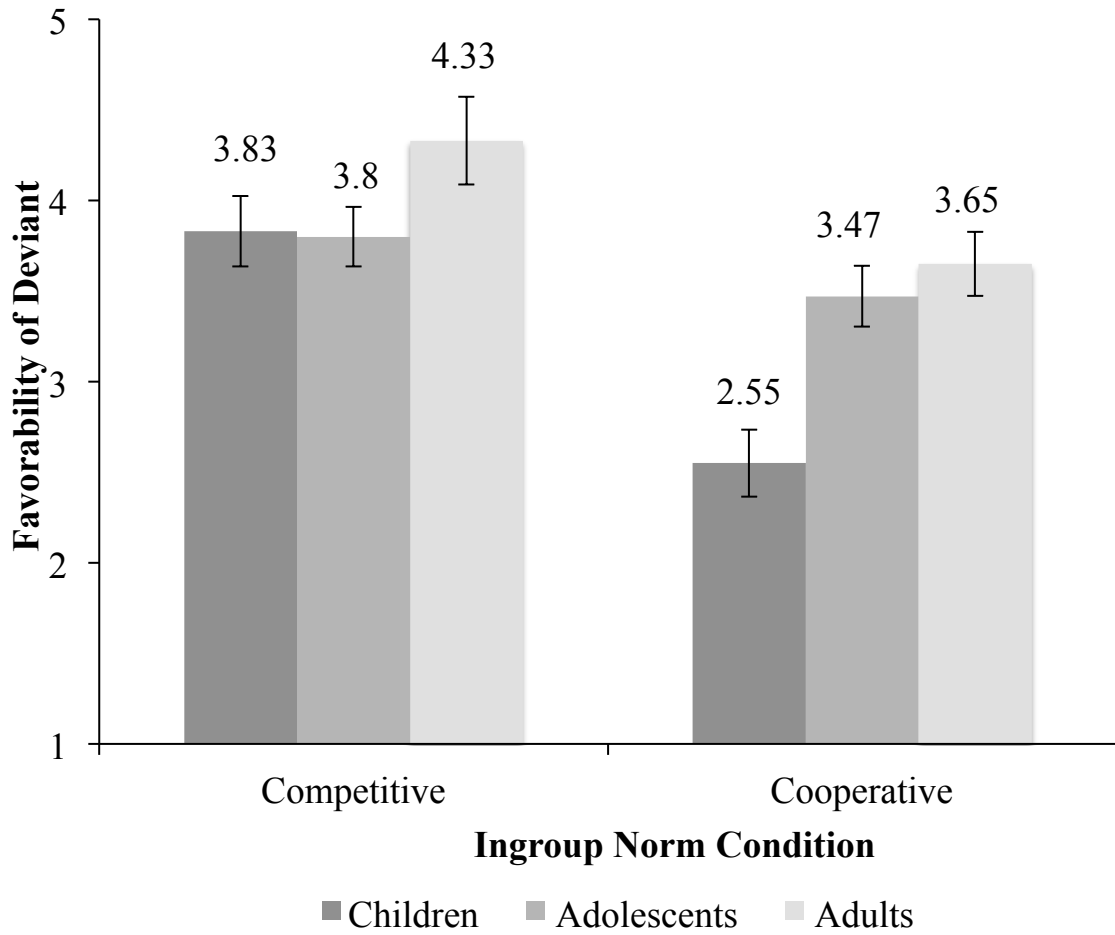


Figure 1: Individual favorability of deviant ingroup member as a function of age group and ingroup norm

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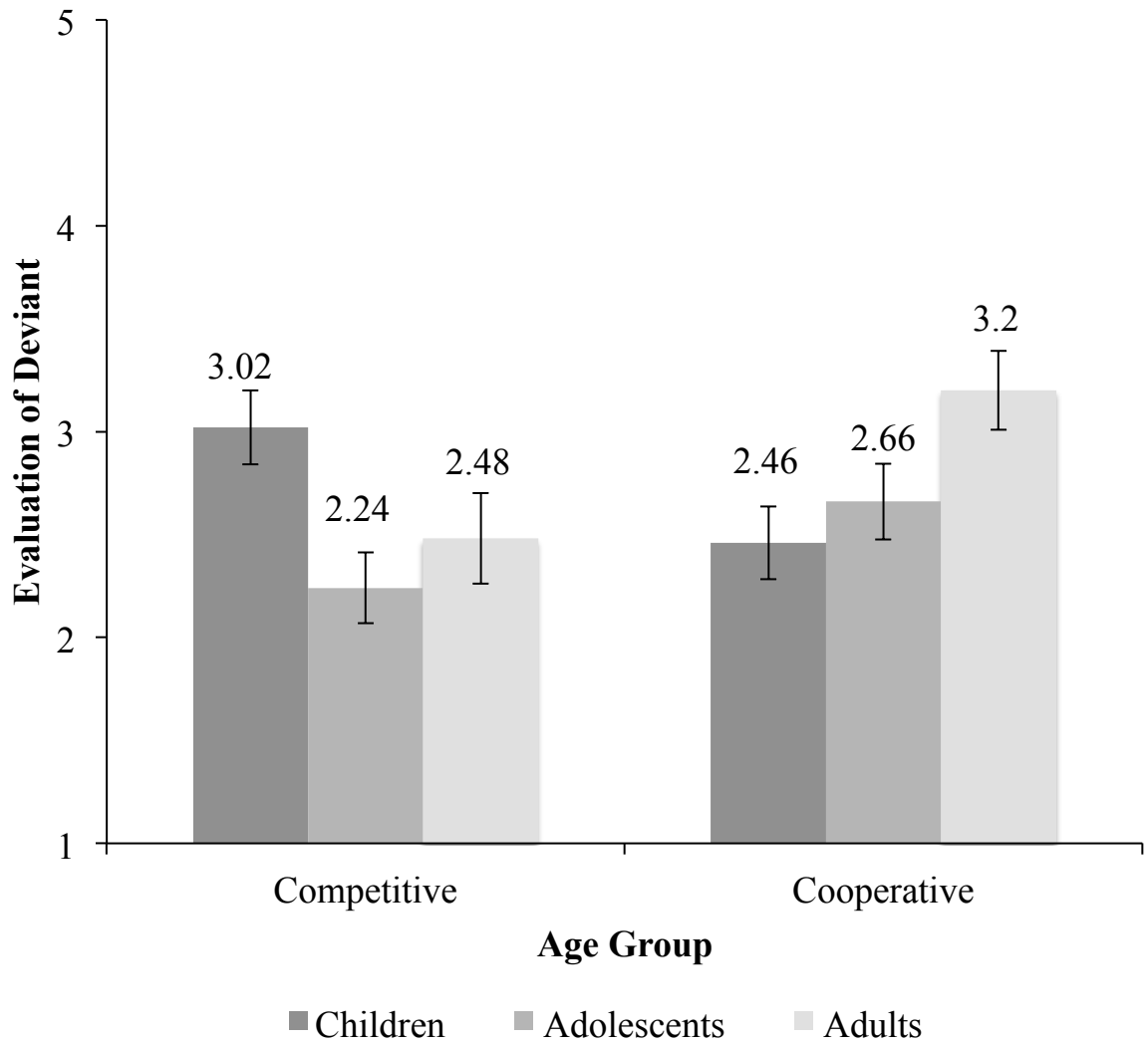


Figure 2: Perceived group favorability of deviant ingroup member as a function of age group and ingroup norm

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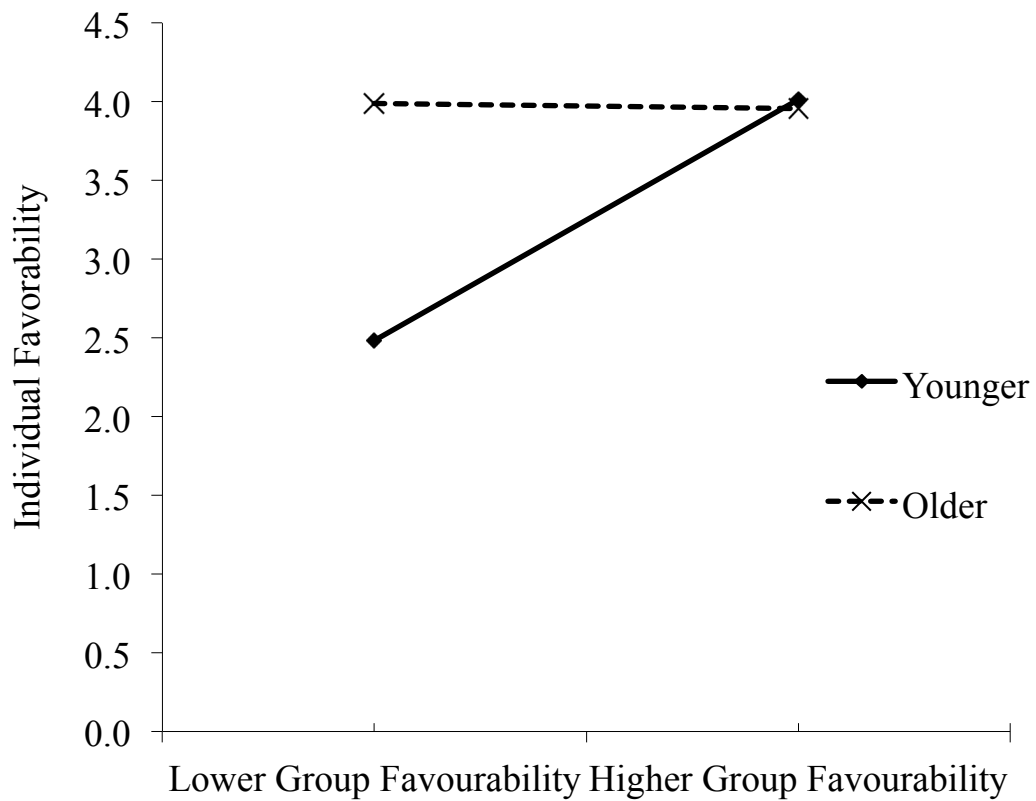


Figure 3: Individual favorability of deviant target among younger and older participants as a function of perceived group favorability. For older and younger participants and higher and lower perceived group favorability scores, we substituted values 1 standard deviation above and below the means, respectively.