Social Status, and Public Goods Game: Measuring Adolescents' Public and Private Conformity Based on Confederate's Status and Decision

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Abstract:

Peer influence is one of the controversial matters since adolescents are more likely to be susceptible to it during this developmental period. We examined how adolescents are influenced by the prosocial and antisocial decisions of peers with different knowledge-based statuses (high and low) in

public and private contexts, as well as to assess whether personality and gender play a role. 132 boys, and 139 girls ($M = 17$, $SD = 1.495$) were randomly assigned to one of the four conditions of a 2x2 combination of the confederate's decision and status factors. Each adolescent filled out the NEO_FFI personality scale and then participated in a two-part experiment with seven virtual confederates. In the first part, to manipulate the knowledge-based social status, participants completed the Quantitative Estimation task. Then, adolescents participated in a modified Public Goods Game to measure conformity towards high and low-status decisions in public and private contexts. Results indicated that adolescents tended to conform more to high-status peers rather than low-status ones, particularly in prosocial decisions over antisocial decisions. Interestingly, girls showed more conformity to low-status peers in public prosocial decisions, while boys tended to conform to high-status peers and internalize the influence privately. High-status individuals were influential in getting adolescents to internalize antisocial behavior, even without public acknowledgment. Personality traits such as Agreeableness and Extraversion also played a role in conforming behaviors. Overall, the findings suggest that leveraging the influence of high-status peers could help in promoting prosocial behavior and discouraging free-riding among adolescents in social decision-making contexts.

Keywords: Public conformity, Private conformity, Prosocial decision-making, Antisocial decision-making, Peer status, Adolescence

Introduction:

As social entities, our responses to external events are profoundly influenced by those in our social circles. Interactions we with others yield a significant influence over our choices, particularly within the realm of social contexts. However, individuals often underestimate the profound impact these interactions on shaping their thoughts and behaviors in terms of social conformity (Asch, 1951; Deutsch & Gerard, 1955). Social conformity is defined as the adoption of behaviors or beliefs to align with the established norms or information of a group or individual (Asch, 1951; Cialdini & Goldstein, 2004; Song et al., 2012; Mahmoodi et al., 2022). Social conformity plays a pivotal role in maintaining harmony with accepted social norms (Asch, 1951; Butler & McManus, 2014), avoiding rejection (Cialdini & Trost, 1998; Renström et al., 2018), and receiving approval from others (Abrams et al., 1990; Deutsch & Gerard, 1955; Cialdini & Goldstein, 2004). While, extensive research has highlighted the profound impact of social

conformity on various aspects of human decision-making, ranging from individual choices like product selection (Aral & Walker, 2011; Kang et al., 2019), to broader social decisions such as those about environmental protection (Ruan et al., 2022), the dynamics of prosocial and antisocial conformity within group setting remain relatively unexplored.

Prosocial decisions are characterized by actions aimed at benefitting others at the expense of oneself, exemplified by acts of cooperation, assistance, and altruism (Nook et al., 2016; Foulkes et al., 2018). Conversely, antisocial decisions involve choices that harm or disregard others' benefits often driven by selfishness and deception (Iñiguez et al., 2014; Cho & Chung, 2012). Such decisions can lead to the exhaustion of communal resources (Hardin, 1968), and lower life satisfaction for the decision-makers themselves (Krekels & Pandelaere, 2015). However, despite their significance, prosocial and antisocial conformity dynamics within the group setting remain relatively unexplored (Panizza et al., 2021; Nook et al., 2016; Batson, 2011; Van Hoorn et al., 2014).

Individuals' conformity levels vary significantly depending on the status of those they interact with. Research consistently demonstrates that individuals tend to conform more when interacting with individuals of higher status compared to those of lower status (Shi & Xie, 2011; Cohen & Prinstein, 2006; Anderson et al., 2015). Social conformity to high-status

others not only reduces the likelihood of rejection (Gommans et al.,2017), but also fosters increased approval, and strengthens social bonds (Cohen & Prinstein, 2006). However, the determinants of status within a group are multifaceted, and it remains unclear whether all factors lead to higher conformity. Knowledge as a valuable acquired ability, holds potential as a significant contributor to status dynamics. Interactions with knowledgeable individuals can provide access to resources and guidance, facilitating more informed and successful decision-making (Bunderson, 2003; Kurschilgen & Marcin, 2019). However, despite its potential impact, previous studies have largely overlooked the influence of knowledge as a source of status on prosocial and antisocial conformity, a gap that this study aims to address.

Previous studies on prosocial and antisocial conformity often overlooked its dual nature, encompassing both public and private forms. Public conformity occurs when individuals align with a person or group norm for the sake of congruency without genuinely holding those beliefs (Deutsch & Gerard, 1955; Sowden et al., 2018; Abrams et al., 1990). Conversely, private conformity entails adopting others' beliefs even when they are not present or not aware of the individual's beliefs, mainly driven by the perception of correctness or ambiguity (Sherif, 1936; Abrams et al., 1990; Deutsch & Gerard, 1955; Sowden et al., 2018). This duality raises questions about the interplay between knowledge-based status and both

prosocial and antisocial conformity. Does knowledge-based status predominantly influence public conformity, where individuals conform outwardly to maintain social congruence or does it shape private conformity, where internal alignment with others' beliefs occurs regardless of social context?

Age represents a critical determinant shaping the dynamics of social conformity, with adolescence standing out as a particularly susceptible stage marked by profound biological and developmental changes. Adolescents, in particular, are known for their heightened susceptibility to external influences, often exhibiting contradictory responses due to the myriad changes occurring during this phase. (Foulkes et al., 2018; Christie & Viner, 2005). While adolescents are commonly perceived as highly influenced by their peers (Meehan et al., 2022; Schriber & Guyer, 2016; Cohen & Prinstein, 2006; Helms et al., 2014; Brechwald & Prinstein, 2011; Juvonen & Ho, 2008; Prinstein et al., 2011; Choukas-Bradley et al., 2015; Chierchia et al., 2020; Molleman et al., 2022), their reactions to peer social hierarchy and status can vary significantly, influenced by factors such as the nature of observed behaviors (i.e., prosocial or antisocial behaviors), gender, and individual personality traits.

For instance, studies have revealed nuanced patterns in gender-specific conformity behaviors among adolescents. While some evidence

suggests that girls tend to conform to both high and low-status individuals in terms of prosocial behavior (Choukas-Bradley et al., 2015), conflicting findings indicate that girls may avoid interactions with high-status peers due to their sense of resentment, as high-status individuals are perceived as likely to reject peers of lower status (Eder, 1985). There has also been some evidence reporting that girls exhibit a propensity to conform to average-status peers (Lansu & Karremans, 2015). Conversely, research suggests that boys tend to conform more to high-status peers across both antisocial and prosocial behaviors (Choukas-Bradley et al., 2015; Cohen & Prinstein, 2006) and may even avoid behaving similarly to low-status peers to assert their independence (Cohen & Prinstein., 2006). Despite these observations, conflicting findings persist regarding adolescents' conformity to high versus low-status peers, irrespective of gender (Gommans et al., 2017). Personality factors emerge as potential explanatory carriable for these discrepancies. Wijenayake et al. (2020) showed that individuals with higher scores in Neuroticism and Conscientiousness are more prone to conformity. On the other hand, DeYoung et al. (2002) have reported that agreeableness, emotional stability, and conscientiousness are positively related to conformity, while extraversion and openness, are linked to non-conformity. These characteristics can significantly influence individuals' attitudes toward managing behavioral differences in social contexts, shaping their inclination to either conform and avoid challenges or express themselves

and assert independence rather than simply following others. Consequently, individuals of different genders and personality types may exhibit varying patterns of conformity to highly knowledgeable peers in both prosocial and antisocial scenarios, with potential differences emerging in both public and private conformity. Thus, it is crucial to investigate how peers of varying status influence different forms of conformity in both prosocial and antisocial contexts across different genders and personality types.

In the present study, we aimed to investigate how knowledge-based social status affects public and private conformity to prosocial and antisocial decision-making among adolescents. Additionally, we sought to explore the role of gender and personality traits in this effect. To this purpose, we designed a study comprising a knowledge-based contest followed by a modified public goods game (Holt & Laury, 1997; Meehan et al., 2022). The knowledge-based contest was used to manipulate the knowledge-based status of the participants, as well as their confederates. Next, during the PGG they were presented with another participant's donation, allowing us to examine the influence of others' behavior on the participant. Participants were asked to announce their donations publicly and privately, allowing us to assess both public and private conformity. The study employed a between-subject design, manipulating the confederate's knowledge-based status (high and low) and decision (prosocial and

antisocial). Additionally, we considered the gender composition of the group, which could be either all girls or all boys, and participants' personality traits, assessed using the NEO-FFI (Costa & McCrae, 1992) questionnaire (see Figure 1A). While we had complete control over the first three factors (status, confederate decision, and social context) gender and personality were incidentally determined through the random process of participant recruitment. We formulated four main predictions for this study. First, we predicted that participants would conform more to those with higher knowledge-based status, particularly when the confederate engages in prosocial behavior. However, we had no specific hypothesis regarding the effect of confederate's antisocial behavior on conformity. Second, we hypothesized that participants' public and private conformity would differ, with private conformity expected to be higher than public conformity for antisocial conditions. Third, we expected gender differences in conformity, with girls hypothesized to conform less to individuals of higher status. Finally, based on previous studies that suggested higher scores in Extraversion and Openness personality domains to be associated with showing less conformity due to their inclination towards creativity and advocacy of new ideas (Deyoung et al., 2002; Oyibo & Vassileva, 2019), we sought to explore the personality correlates of conformity among adolescents.

Method:

Participants

Participants were recruited through a multifaceted approach, leveraging advertisements on social media platforms (e.g., Instagram, WhatsApp, and Telegram), outreach in elementary and high schools in Tehran and Karaj, and in-person advertisements. Those who indicated interest received a detailed video outlining the experiment's nature and tasks. Out of the 463 initial volunteers, 360 took part in the experiment. However, 89 individuals were excluded for various reasons such as being unresponsive during the task and not adhering to time limits (65 participants), missing data (eight participants), providing incorrect answers to attention check questions (12 participants), or expressing reservations about playing against computers instead of real opponents (four participants; see the manipulation of status section). Ultimately, data from 271 adolescents comprising 132 boys, and 139 girls, within the age range of 13 to 20 years ($M = 17.000$, $SD = 1.495$) were analyzed. Irrespective of their performance in the PGG task, all participants received $5 discount coupons as compensation. Both participants and their parents provided

informed consent electronically. The study was approved by the ethical committee of Shahid Beheshti University (IR.SBU.REC.1400.053).

Measures

NEO Five-Factor Inventory

Originally developed by Costa and McCrae (1992), the NEO-Five-Factor Inventory (NEO-FFI) is a short form of NEO PI-R, consisting of 60 items evenly distributed among five personality domains of Neuroticism, Extraversion, Openness to experiences, Agreeableness, and Conscientiousness. Items are responded to on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The validated Farsi version of NEO-FFI used in this study (Garusi, 1998) is shown to provide good reliability with Cronbach's alpha of .83, .75, .80, .79, and .79 for Neuroticism, Extraversion, Openness to experience, Agreeableness, and Conscientiousness, respectively.

Manipulation of Social Status

An estimation task was used to manipulate participants' perceived hierarchy based on general knowledge. similar to previous studies manipulating social hierarchy, participants were informed that they would compete against seven others in answering eight estimation questions, with

responses evaluated based on both accuracy and speed (Mehta et al., 2008; Zink et al., 2008). To ensure challenging yet feasible questions, participants were presented with queries where finding the exact answer was improbable but reasonable estimations were possible (Lorenz et al., 2011; Mavrodiev et al., 2012). For instance, participants were asked to estimate the number of pens needed to cover the length of a passenger train wagon, assuming an infinite supply of pens with standard length. Each question was answered on a slider ranging from 0 to 1000, with participants given 30 seconds to respond. After each question feedback was provided regarding the participants ranking (Figure 1B). Subsequently, participants were asked two questions: 1) who ranked first? and 2) who ranked last? The idea behind using these questions was twofold. First, it was used as an attention check. Second, to draw participants' attention to the repetition of two virtual confederates who ranked first and last 75% of the time during the eight rounds. Additionally, participants found themselves ranked third and fifth three times each, as well as second and fourth once, maintaining an intermediate rank throughout. Following the eight rounds, participants were presented with the final ranking based on total points, where they were consistently ranked fourth. This ranking system was utilized a means to represent each participant's social status based on general knowledge.

Modified Public Goods Game

Participants engaged in a modified repeated public goods game (PGG) with feedback provided on each round. They were informed that they would play 10 rounds of PGG with the same individuals as in the preceding estimation task (Figure 1C). As in the original version of PGG, participants were endowed with a fixed amount of money on each round (50 tokens) and tasked with allocating those tokens between themselves and the public pot. They were also informed that the total amount contributed to the public pot would be tripled, and redistributed among participants. However, some modifications were also made. Participants were instructed to choose two numbers from a set of 11 options ranging from 0 to 50 (0, 5, 10, 15, …, 50) in each round. First, they had to determine how much they wanted to donate (private donation), and then irrespective of how much they had donated they had to report a number to others as their donation (Public declaration of donation). They were free to choose two completely different numbers (e.g., donating nothing and reporting that they have donated 50 [private donation = 0; public declaration of donation = 50] or donating 50 and reporting that they have donated nothing [private donation = 50; public declaration of donation = 0] or donating 50 and reporting that they have donated 50 [private donation = 50; public declaration of donation = 50]). participants were assured that their private donation would remain confidential and other participants would be blind to that. However, at the

end of each round, one participant would be selected randomly, and his/her public declaration of donation would be shown to others.

Based on the between-subject design of the study, each participant was assigned to one of the four different conditions of the game, namely prosocial-1, prosocial-8, antisocial-1, and antisocial-8 (where prosocial/antisocial refers to the confederate's decision that was selected to be presented publicly to others, and 1/8 refers to the rank of the two specific confederates in estimation task that represent high and low knowledge-based status). The public declaration of donation of a confederate was manipulated based on the condition and was shown to the participants at the end of the first round. Those in the prosocial-1 condition received feedback indicating that the high-status confederate had declared to donate 50, whereas those in the antisocial-1 condition were informed that the high-status confederate had declared to donate zero. On the other hand, those in prosocial-8 and antisocial-8 conditions received feedback reflecting that the low-status confederate had declared to donate 50 or zero respectively (see Figure 1C).

This setup was designed to determine the extent to which participants' donations were influenced by and aligned with the public choices of the confederates, contingent upon their status and decision. Since the feedback on public declaration of donation was provided after each round,

participants' private and public declaration of donation in the first round were independent of the feedback, and thus were used as the baseline measurement of how much they are inclined to cooperate. However, their donations in the second round were considered to be biased by the feedback they received. Hence, we used the following formula to calculate the degree of conformity based on private and public declarations of donation separately:

In the numerator there is, where , and represent donations of the second, and first round of the task respectively. This is divided by in the denominator, where stands for the confederate’s public declaration of donation, and , again, stands for the first round of donation.

Procedure

Upon recruitment, participants were provided with a four-minute video outlining basic instructions for the task and a link to the NEO-FFI questionnaire, which they were requested to fill out before the scheduled experiment time. Moreover, since the study was conducted online, participants were prompted to provide necessary information such as their date of birth, gender, name, and email address for registration on the experimental platform. Participants were informed that experimental

sessions would be held in groups of eight, and they would engage in a simultaneous online quantitative estimation task alongside seven same-gender peers. In reality, however, they played against computerized agents (confederates). Upon accessing the site, each participant was tasked with selecting a letter from the remaining four out of eight letters within 60 seconds, which would serve as their identifier throughout the experiment. Subsequently, they waited for the arrival of other participants for 10 seconds before receiving task instructions. Following this, participants engaged in a half-hour experiment that comprised two parts.

In the first part, the estimation task was conducted to manipulate social status and hierarchy based on general knowledge, priming participants for the subsequent phase. In the second part of the task, the participants engaged in a modified public goods game (PGG) based on their ranking from the knowledge estimation task, divided into four different conditions: prosocial-1, prosocial-8, antisocial-1, and antisocial-8. Each condition exposed participants to specific public declarations of donation from confederates, reflecting different social dynamics. Prosocial-1 exposed participants to the public declaration of the high-status confederate’s donation. Prosocial-8 exposed participants to the public declaration of the low-status confederate’s donation. Antisocial-1 exposed participants to the antisocial public declaration of the high-status confederate’s donation.

Antisocial-8, which exposed participants to the antisocial public declaration of the low-status confederate's donation. Following completion of the task, participants filled out a three-item questionnaire regarding their perceptions based on the final ranking. Analysis of this data is beyond the scope of this study and it will be used for another study.

Statistical Analysis

First, one sample t-test was used to investigate whether participants' decisions were influenced by the knowledge-based status of the confederate (conformity in each condition vs zero). To examine the effect of the confederate's status (high and low) and participant's gender on both private and public conformity in prosocial and antisocial conditions, four separate two-way analyses of variance (Status × Gender) were conducted. Independent sample t-test was also used as the post-hoc analysis. Moreover, the Pearson correlation was used to assess the relationship between personality variables and public and private conformity.

Results:

Effects of Confederate's Knowledge-Based Status, Condition (Prosocial/Antisocial), and Context (Public/Private) on Conformity

A three-way ANOVA was conducted to examine the impact of the confederate's knowledge-based status (high and low), condition (prosocial and antisocial), and context (public and private) on conformity. Our results indicated a significant main effect of the confederate's status, $F(1, 236) = 5.600$, $p = .019$, $\eta_p^2 = .023$. Post-hoc analysis revealed that conformity towards a high-status confederate (M = .161, SD = .627) was significantly higher than towards a low-status confederate (M = .028, SD = .675). Additionally, there was a significant interaction between condition (prosocial/antisocial) and context (public and private), [$F(1, 236) = 5.659$, $p = .018$, $\eta_p^2 = .023$]. To further explore this interaction, a post-hoc comparison using a Bonferroni correction was conducted. It was revealed that antisocial private conformity was significantly higher than antisocial public conformity ($t = 2.225$, $p = .027$), whereas prosocial public conformity was significantly higher than antisocial public conformity, ($t = 2.725$, $p = .007$; see Figure 2). No other main or interaction effect was significant (All $ps > .05$; see Figure 2). Thus, we continued our analyses concerning our hypothesis on the moderating effect of gender and evaluated the effect of status and gender on conformity in different conditions.

Effects of Confederate's Knowledge-Based Status and Gender on Public/Private Conformity

A two-way ANOVA was conducted to assess the effects of the confederate's knowledge-based status (high and. low) and participant's gender (girls or boys) on public or private conformity based on the confederate's decision (prosocial/antisocial) through the PGG task.

Investigating public conformity in prosocial conditions, neither the main participant's gender nor the confederate's status was significant. However, we found a significant interaction between the confederate's status, and the participant's gender [$F(1,135) = 4.726$, $p = .031$, $\eta_p^2 = .035$]. To further explore this interaction, a post-hoc analysis was conducted (see Figure 3A). It was found that there was a significant difference in the effect of participants' gender and the confederate's status in the prosocial condition ($F(1, 66) = .011$, $p = .023$). Boys showed higher public conformity to the high-status confederate ($M_{prosocial\text{-}1} = .279$, $SD_{prosocial\text{-}1} = .387$) compared to the low-status confederate ($M_{prosocial\text{-}8} = .051$, $SD_{prosocial\text{-}8} = .421$). However, this difference was not observed in girls.

Furthermore, concerning private conformity within prosocial conditions, no significant effect was found for participant's gender, confederate's status, or their interaction (see Figure 3B).

Similarly, concerning public conformity within antisocial conditions, no significant effect was found for participant's gender, confederate's status, or the interaction of factors (see Figure 4A).

Finally, we found a significant effect of confederate's status [$F(1,105) = 3.996$, $p = .048$, $\eta_p^2 = .038$] on private conformity in antisocial condition, while the main effect of participant's gender and the interaction were not significant. In order to further investigate the main effect, a post-hoc analysis was conducted (see Figure 4B). Private conformity in both girls ($M_{antisocial\text{-}1} = .379$, $SD_{antisocial\text{-}1} = .629$; $M_{antisocial\text{-}8} = -.080$, $SD_{antisocial\text{-}8} = 1.269$) and boys ($M_{antisocial\text{-}1} = .249$, SD prosocial-1 = 1.031; M antisocial-8 = -.049, $SD_{antisocial\text{-}8} = .907$) was higher in the antisocial-1 condition compared to the antisocial-8 condition.

Correlation Between Personality Domains and Public/Private Conformity

Correlations between domains of the NEO-FFI personality scale and public/private conformity were assessed. Across the four task conditions, private conformity within the prosocial-1 condition was positively correlated with Agreeableness ($r = .362^{**}$, $p = .002$). Conversely, public conformity within the antisocial-1 condition was negatively correlated with the Extraversion (r=-.266*, $p = .035$). No other significant correlation was found

between personality domains of NEO-FFI and different forms of conformity; all *p*-values were greater than .07 for the rest of the results.

Discussion:

This study examined the social influence of knowledge-based high and low-social status on adolescents' public and private conformity towards prosocial and antisocial decisions using an experimental paradigm. The study also investigated the role of gender and personality traits in adolescents' social conformity. The findings suggest that through all the different factors (exposure to different knowledge-based statuses, conditions, and contexts), the confederate's status could significantly affect conformity regardless of gender. Adolescents tend to conform more to high-status peers compared to low-status ones which is compatible with the previous studies revealed that individuals find the high-status peer as a better guide and an admirable person to pursue (Bunderson, 2003; Deutsch & Gerard, 1955; Kurschilgen et al., 2018; Kumru & Vesterlund, 2008; Bekkers & Wiepking, 2010). Additionally, during adolescence, individuals strive to reform their identity, making their self-image more significant (Felson, 1985; Helms et al., 2014). At this stage, conformity to the decisions of high-status peers becomes more important as adolescents seek to create a favorable identity that mirrors those peers (Gibbons et al., 2002).

Alternatively, it is important to note that conformity in public and private contexts undergoes significant changes, especially through different conditions. We found that adolescents are more inclined to publicly conform to prosocial decisions than to publicly conform to antisocial ones which is consistent with previous research indicating that people tend to behave more prosocial when they know they are being observed by others (Andreoni & Petrie, 2004; Yoeli et al., 2013; Raihani & Power, 2021). Adolescents who publicly conform to prosocial decisions serve both individual and group goals. When their public decisions are observed by others, being prosocial helps to build a positive reputation, and decisions can shape their peers' judgment of them (Raihani & Power, 2021; Bereczkei et al., 2007). This, in turn, might lead others to behave similarly, ultimately promoting the common good. On the other hand, when adolescents refuse to publicly conform to antisocial decisions, they demonstrate their trustworthiness and show that they are cooperative.

Not following the antisocial decision and showing neglect toward such peers and their decisions can be used as a means to punish free-rider peers (Fehr & Schurtenberger, 2018). Moreover, this can alert others about such unacceptable behavior, which can decrease participants' payoff. Another aspect of exposure to peer's antisocial decision is that adolescents feel threatened when they see a peer making such an antisocial decision, even

though it could be visible to others. This behavior could be a clear signal that the antisocial decision might be repeated in private situations, leading to real harm to the overall public good and might spread through the group (Raihani & Hart, 2010). Therefore, despite the tendency for adolescents to not follow the antisocial decision in public, and to be deemed good or reputable, it is important to consider that individuals are also concerned about their own gain (Semmann et al., 2004; Raihani & Power, 2021). As a result, individuals may privately choose to conform to antisocial decisions to hinder the potential harm. They may do so because their decision is no longer observable, and they are not concerned about tarnishing their character (Semmann et al., 2004).

By examining the impact of the confederate's status and gender on different forms of conformity, the result shows that through prosocial decisions, compared to girls, boys are more likely to be influenced by peers with a high level of knowledge in both public and private contexts. This result is compatible with previous research indicating that high-status boys have a greater impact on peers' prosocial behavior (Choukas-Bradley et al., 2015). The greater influence of knowledge-based high-status confederate on boys could be due to the reason that boys tend to admire the decisions of peers with high status and try to strengthen their bond with such peers (Brechwald & Prinstein, 2011; Cialdini and Goldstein, 2004). Therefore, by

conforming to high-status peer's decision, which is the optimal strategy for the group, boys can enhance their self-esteem (Field et al., 2023) and establish affiliation by adopting behaviors that align with the values of high-status peers (Field et al., 2023; Gerrard et al., 2002; Juvonen & Ho, 2008; Juvonen & Murdock, 1995).

Further, we found contrary to boys, girls displayed more public conformity and cooperation with low-status rather than high-status peer in prosocial decisions as they probably felt less competition (Fiske et al., 2018). In general, girls mostly avoid competition, especially with same-gender peers, and their focus is to reduce the inequality produced by hierarchical systems based on competition (Croson & Gneezy, 2009; Lee, 2016), even by simply declaring it. Additionally, girls may conform publicly, but not privately to low-status peer, trying to convey a sense of friendship, although it is against their internal beliefs (Hochschild, 1979; Rosenberg & Simmons, 1975). This suggests that girls may have a lower desire than boys to attain high status, by conforming to such peers. High-status girls are not that much liked by other girls due to their perceived arrogance, which results in resentment towards them (Arch, 1993; Eder, 1985; Eder & Nenga, 2003). In addition, girls are shown to be very sensitive about the social context, cues, and emotions they experience, which can result in unpredictable reactions compared to boys (Croson & Gneezy, 2009;

Espinosa & Kovárik, 2015). Therefore, an alternative explanation for their inclination toward low-status peer in a public context could be their desire to stand against their high-status peer. The latter result may also be explained by applying the same concept in a reversed direction to adolescent boys who conform to high-status peers through prosocial decisions and wish to differentiate themselves from low-status ones and create an identity that opposes them (Cohen & Prinstein, 2006). It is probably more important for girls to demonstrate their positive connection with low-status peers due to relationship-oriented motives instead of impressing or valuing high-status peers by conforming to them publicly through prosocial decisions. On the other hand, it is common for adolescent girls to react toward a high-status peer by engaging in relational aggression, which is mostly girls' approach to meanly manipulate the social network or status of a specific peer to induce a negative emotion. This behavior has been observed both in person (Archer & Coyne, 2005; Bjorkqvist et al., 1992) and in cyberspace (Wright, 2017).

Concerning antisocial decisions, on the other hand, confederates with higher knowledge influenced adolescents to internalize related beliefs and encouraged them to conform to unfair donations more than low-status peers in private. This result is compatible with the previous studies that showed antisocial behavior of high-status adolescents compared to low-status ones

has a greater influence on their peers in the context of aggressive and health-risk behavior (Cohen & Prinstein, 2006 ; Juvonen & Ho, 2008; Prinstein et al., 2011). However, in contrast to a previous study by Cohen & Prinstein (2006), which found that adolescents conformed to antisocial decisions in both private and public settings, in our research, the impact of high-status influence was only seen in private contexts. It should be noted that in the study by Cohen & Prinstein (2006), exclusionary behavior towards peers was classified as antisocial behavior, and the public display of such behavior could be utilized to maintain the group's cohesiveness by excluding individuals perceived as dissimilar. However, in the current study, keeping money from others as a public display of antisocial behavior would go against serving the common good. Additionally, conforming to non-cooperating behavior upheld by high-status peer would not help the participants gain credit, as an antisocial decision is not widely accepted or commendable (Meehan et al., 2022). Therefore, even if adolescents were inclined towards making antisocial decisions in line with high-status peers, they refrained from demonstrating such behavior in public.

Based on our findings, there is a correlation between different forms of conformity with high-status peers and personality domains, regardless of gender. We observed that adolescents with higher scores in Agreeableness tend to show more conformity through prosocial decisions in private,

whereas public non-conformity towards antisocial decisions is related to Extraversion. These results are consistent with the categorization introduced in the previous study (DeYoung et al., 2002), where Agreeableness was identified as one of the factors that encourage conformity and aligns with the definition of being compassionate, empathic, and cooperative. On the other hand, Extraversion falls under the category that may result in non-conformity, enabling individuals to express their opinions freely.

Regarding the present project, certain limitations need to be taken into account. First, due to the online nature of the task, it was difficult to control the participants' environment while they were performing the task. It is worthwhile to consider similar designs in laboratory and in person, as this could enhance the experience and facilitate better communication among the participants. Second, the study only compared adolescents' public and private conformity with individuals of the same gender. It would be beneficial to examine how mixed-gender peers may affect the results, as this could provide valuable insights into the dynamics of the group. Third, this study used the perceived high, and low status regarding knowledge, which can respectively, trigger feelings of competition or empathy among participants. It would be helpful to measure and control any negative or positive emotions toward the first and last-ranked person to ensure

impartiality. At last, assessing participants' conformity toward other statuses may be advantageous in order to determine the degree of conformity shown by participants toward for example individuals who have a status close to them.

Conclusion:

In general, this research suggests that, in a group of adolescents, regardless of gender, individuals with high knowledge-based status can influence peers to show more conformity than low-status individuals. However, exposure to prosocial and antisocial decisions may result in different reactions. In general, adolescents tend to display more conformity in prosocial conditions than in antisocial ones, especially when they are being observed, in order to reveal their cooperative and collectivist nature. Moreover, public conformity towards an antisocial decision is not acceptable, but it can lead adolescents to internalize these decisions through private conditions as others’ antisocial decisions could be perceived as a threat.

When considering gender differences, there was a meaningful gender difference in reacting to high-status prosocial decisions, especially in the public context, where girls were found to be less influenced by the prosocial decisions of high-status compared to low-status peers. Since in competitive

settings, specific individuals may receive more attention due to their desirable features, such as knowledge, girls tend to show less conformity towards them. In contrast, it appears that boys benefit from competitive contexts that maximize their motivation to impress their highly knowledgeable peers and internalize their admired behaviors. On the other hand, high-status individuals who exhibit antisocial behavior (keeping the money instead of contributing to the public pot), were effective at motivating adolescents to make free-riding decisions, even if they were not declaring publicly regardless of gender. Our findings show that knowledge-focused contexts can result in the emergence of high-status peers who can promote antisocial or prosocial behavior, including cooperating and non-cooperating decisions among their peers. As such, schools have the potential to educate or take advantage of these high-knowledge peers to encourage the consideration of public goods or discourage free-riding.

Data availability: Data that support the findings of this study are available from the corresponding author, upon reasonable request.

Author Contributions: NS: Data collection, Investigation, Analysis, Visualization, Writing - Original Draft; SG: Conceptualization, Methodology, Analysis,

Supervision, Writing - Review & Editing; KB: Conceptualization, Methodology, Supervision, Project administration, Writing - Review & Editing

Conflict of Interest: none

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References

Abrams, D., Wetherell, M., Cochrane, S., Hogg, M. A., & Turner, J. C. (1990). Knowing what to think by knowing who you are: Self-categorization and the nature of norm formation, conformity and group polarization. *British Journal of Social Psychology*, *29*(2), 97-119. https://doi.org/10.1111/j.2044-8309.1990.tb00892.x

Anderson, C., Hildreth, J. A., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin*, *141*(3), 574-601. https://doi.org/10.1037/a0038781

Andreoni, J., & Petrie, R. (2004). Public goods experiments without confidentiality: A glimpse into fund-raising. *Journal of Public Economics*, *88*(7-8), 1605-1623. https://doi.org/10.1016/s0047-2727(03)00040-9

Aral, S., & Walker, D. (2011). Creating social contagion through viral product design: A randomized trial of peer influence in networks. *Management Science*, *57*(9), 1623-1639. https://doi.org/10.1287/mnsc.1110.1421

Arch, E. C. (1993). Risk-taking: A motivational basis for sex differences. *Psychological Reports*, *73*(1), 3-11. https://doi.org/10.2466/pr0.1993.73.1.3

Archer, J., & Coyne, S. M. (2005). An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review*, *9*(3), 212-230. https://doi.org/10.1207/s15327957pspr0903_2

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgment. In H. Guetzkow (Ed.), *Groups, leadership and men* (pp. 177–190). Pittsburgh, PA: Carnegie Press.

Bekkers, R., & Wiepking, P. (2010). A literature review of empirical studies of philanthropy. *Nonprofit and Voluntary Sector Quarterly*, *40*(5), 924-973. https://doi.org/10.1177/0899764010380927

Bereczkei, T., Birkas, B., & Kerekes, Z. (2007). Public charity offer as a proximate factor of evolved reputation-building strategy: An experimental analysis of a real-life situation. *Evolution and Human Behavior*, *28*(4), 277-284. https://doi.org/10.1016/j.evolhumbehav.2007.04.002

Björkqvist, K., Lagerspetz, K. M., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? developmental trends in regard to direct and indirect aggression. *Aggressive Behavior*, *18*(2), 117-127. https://doi.org/10.1002/1098-2337(1992)18:2<117::aid-ab2480180205>3.0.co;2-3

Brechwald, W. A., & Prinstein, M. J. (2011). Beyond Homophily: A decade of advances in understanding peer influence processes. *Journal of*

Research on Adolescence, *21*(1), 166-179. https://doi.org/10.1111/j.1532-7795.2010.00721.x

Bunderson, J. S. (2003). undefined. *Administrative Science Quarterly*, *48*(4), 557-591. https://doi.org/10.2307/3556637

Butler, Gillian, and Freda McManus, *Psychology: A Very Short Introduction*, 2nd edn, Very Short Introductions (Oxford, 2014; online edn, Oxford Academic, 23 Jan. 2014). https://doi.org/10.1093/actrade/9780199670420.001.0001

C Daniel Batson. (2011). *Altruism in humans*. Oxford University Press.

Chierchia, G., Piera Pi-Sunyer, B., & Blakemore, S. (2020). undefined. *Psychological Science*, *31*(12), 1585-1601. https://doi.org/10.1177/0956797620957625

Cho, Y., & Chung, O. (2011). A mediated moderation model of Conformative peer bullying. *Journal of Child and Family Studies*, *21*(3), 520-529. https://doi.org/10.1007/s10826-011-9538-0

Choukas-Bradley, S., Giletta, M., Cohen, G. L., & Prinstein, M. J. (2015). Peer influence, peer status, and prosocial behavior: An experimental investigation of peer socialization of adolescents' intentions to

volunteer. *Journal of Youth and Adolescence*, *44*(12), 2197-2210. https://doi.org/10.1007/s10964-015-0373-2

Christie, D., & Viner, R. (2005). *Adolescent development*. *BMJ*, *330*(7486), 301-304.

Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity and compliance. APA PsycNet. Psycnet.apa.org. https://psycnet.apa.org/record/1998-07091-021

Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, *55*(1), 591-621. https://doi.org/10.1146/annurev.psych.55.090902.142015

Cohen, G. L., & Prinstein, M. J. (2006). Peer contagion of aggression and health risk behavior among adolescent males: An experimental investigation of effects on public conduct and private attitudes. *Child Development*, *77*(4), 967-983. https://doi.org/10.1111/j.1467-8624.2006.00913.x

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO personality inventory. *Psychological Assessment*, *4*(1), 5-13. https://doi.org/10.1037//1040-3590.4.1.5

Croson, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, *47*(2), 448-474. https://doi.org/10.1257/jel.47.2.448

Crutchfield, R. S. (1955). Conformity and character. *American Psychologist*, *10*(5), 191–198. https://doi.org/10.1037/h0040237

Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social influences upon individual judgment. *The Journal of Abnormal and Social Psychology*, *51*(3), 629-636. https://doi.org/10.1037/h0046408

DeYoung, C. G., Peterson, J. B., & Higgins, D. M. (2002). Higher-order factors of the Big Five predict conformity: Are there neuroses of health? *Personality and Individual Differences*, *33*(4), 533-552. https://doi.org/10.1016/s0191-8869(01)00171-4

Eder, D. (1985). The cycle of popularity: Interpersonal relations among female adolescents. *Sociology of Education*, *58*(3), 154. https://doi.org/10.2307/2112416

Eder, D., & Nenga, S. K. (2003). Socialization in adolescence. *Handbook of Social Psychology*, 157-182. https://doi.org/10.1007/0-387-36921-x_7

Fehr, E., & Schurtenberger, I. (2018). Normative foundations of human cooperation. *Nature Human Behaviour*, *2*(7), 458-468. https://doi.org/10.1038/s41562-018-0385-5

Felson, R. B. (1985). Reflected appraisal and the development of self. *Social Psychology Quarterly*, *48*(1), 71. https://doi.org/10.2307/3033783

Field, N. H., Choukas-Bradley, S., Giletta, M., Telzer, E. H., Cohen, G. L., & Prinstein, M. J. (2023). Why adolescents conform to high-status peers: Associations among conformity, identity alignment, and self-esteem. *Child Development*, *95*(3), 879-894. https://doi.org/10.1111/cdev.14038

Fiske, S. T., Cuddy, A. J., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878-902. https://doi.org/10.1037//0022-3514.82.6.878

Foulkes, L., Leung, J. T., Fuhrmann, D., Knoll, L. J., & Blakemore, S. (2018). Age differences in the prosocial influence effect. *Developmental Science*, *21*(6). https://doi.org/10.1111/desc.12666

Garusi, M. (1998). Normalization and validation of NEO-FFI in Iranian university students (Doctoral dissertation, Ph. D dissertation. Tarbiyat Modarres University).

Gerrard, M., Gibbons, F. X., Reis-Bergan, M., Trudeau, L., Vande, L. S., & Buunk, B. P. (2002). Inhibitory effects of drinker and nondrinker prototypes on adolescent alcohol consumption. *Health Psychology, 21(6), 601*. https://doi.org/10.1037//0278-6133.21.6.601

Gommans, R., Sandstrom, M. J., Stevens, G. W., Ter Bogt, T. F., & Cillessen, A. H. (2017). Popularity, likeability, and peer conformity: Four field experiments. *Journal of Experimental Social Psychology*, *73*, 279-289. https://doi.org/10.1016/j.jesp.2017.10.001

Hardin, G. (1968). The Tragedy of the Commons: The population problem has no technical solution; it requires a fundamental extension in morality. *Science*, *162*(3859), 1243–1248.

Helms, S. W., Choukas-Bradley, S., Widman, L., Giletta, M., Cohen, G. L., & Prinstein, M. J. (2014). Adolescents misperceive and are influenced by high-status peers' health risk, deviant, and adaptive behavior. *Developmental Psychology*, *50*(12), 2697-2714. https://doi.org/10.1037/a0038178

Hochschild, A. R. (1979). Emotion work, feeling rules, and social structure. *American Journal of Sociology*, *85*(3), 551-575. https://doi.org/10.1086/227049

Holt, C. A., & Laury, S. K. (1997). Classroom Games: Voluntary Provision of a Public Good. *Journal of Economic Perspectives*, *11*(4), 209–215. https://doi.org/10.1257/jep.11.4.209

Iñiguez, G., Govezensky, T., Dunbar, R., Kaski, K., & Barrio, R. A. (2014). undefined. *Proceedings of the Royal Society B: Biological Sciences*, *281*(1790). https://doi.org/10.1098/rspb.2014.1195

Juvonen, J., & Ho, A. Y. (2008). Social Motives Underlying Antisocial Behavior Across Middle School Grades. *Journal of Youth and Adolescence*, *37*(6), 747–756. https://doi.org/10.1007/s10964-008-9272-0

Juvonen, J., & Murdock, T. B. (1995). Grade-level differences in the social value of effort: Implications for self-presentation tactics of early adolescents. *Child Development*, *66*(6), 1694. https://doi.org/10.2307/1131904

Kang, I., Cui, H., & Son, J. (2019). Conformity Consumption Behavior and FoMO. *Sustainability*, *11*(17), 4734. https://doi.org/10.3390/su11174734

Krekels, G., & Pandelaere, M. (2015). Dispositional greed. *Personality and Individual Differences*, *74*, 225–230. https://doi.org/10.1016/j.paid.2014.10.036

Kumru, C. S., & Vesterlund, L. (2008). The effect of status on voluntary contribution. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1117403

Kurschilgen, M., & Marcin, I. (2019). Communication is more than information sharing: The role of status-relevant knowledge. *Games and Economic Behavior*, *113*, 651-672. https://doi.org/10.1016/j.geb.2018.11.007

Lansu, T. A., Cillessen, A. H., & Karremans, J. C. (2015). The effects of social status and self-esteem on imitation and choice of a popular peer. *Journal of Relationships Research*, *6*. https://doi.org/10.1017/jrr.2015.11

Lee, S. Y., Kesebir, S., & Pillutla, M. M. (2016). Gender differences in response to competition with same-gender coworkers: A relational

perspective. *Journal of Personality and Social Psychology*, *110*(6), 869-886. https://doi.org/10.1037/pspi0000051

Lorenz, J., Rauhut, H., Schweitzer, F., & Helbing, D. (2011). How social influence can undermine the wisdom of crowd effect. *Proceedings of the National Academy of Sciences*, *108*(22), 9020-9025. https://doi.org/10.1073/pnas.1008636108

Mahmoodi, A., Nili, H., Bang, D., Mehring, C., & Bahrami, B. (2022). Distinct neurocomputational mechanisms support informational and socially normative conformity. *PLOS Biology*, *20*(3), e3001565. https://doi.org/10.1371/journal.pbio.3001565

Mavrodiev, P., Tessone, C. J., & Schweitzer, F. (2012). Effects of Social Influence on the Wisdom of Crowds. *ArXiv (Cornell University)*. https://doi.org/10.48550/arxiv.1204.3463

Meehan, Z. M., Hubbard, J. A., Moore, C. C., & Mlawer, F. (2022). undefined. *Development and Psychopathology*, *36*(1), 69-81. https://doi.org/10.1017/s0954579422000967

Mehta, P. H., Jones, A. C., & Josephs, R. A. (2008). The social endocrinology of dominance: Basal testosterone predicts cortisol changes and behavior following victory and defeat. *Journal of Personality and*

Social Psychology, *94*(6), 1078-1093. https://doi.org/10.1037/0022-3514.94.6.1078

Molleman, L., Ciranka, S., & Van den Bos, W. (2022). Social influence in adolescence as a double-edged sword. *Proceedings of the Royal Society B: Biological Sciences*, *289*(1977). https://doi.org/10.1098/rspb.2022.0045

Nook, E. C., Ong, D. C., Morelli, S. A., Mitchell, J. P., & Zaki, J. (2016). Prosocial conformity. *Personality and Social Psychology Bulletin*, *42*(8), 1045-1062. https://doi.org/10.1177/0146167216649932

Oyibo, K., & Vassileva, J. (2019). The relationship between personality traits and susceptibility to social influence. *Computers in Human Behavior*, *98*, 174-188. https://doi.org/10.1016/j.chb.2019.01.032

Panizza, F., Vostroknutov, A., & Coricelli, G. (2021). How conformity can lead to polarised social behaviour. *PLOS Computational Biology*, *17*(10), e1009530. https://doi.org/10.1371/journal.pcbi.1009530

Prinstein, M. J., Brechwald, W. A., & Cohen, G. L. (2011). Susceptibility to peer influence: Using a performance-based measure to identify

adolescent males at heightened risk for deviant peer socialization. *Developmental Psychology*, *47*(4), 1167-1172. https://doi.org/10.1037/a0023274

Raihani, N. J., & Hart, T. (2010). Free-riders promote free-riding in a real-world setting. *Oikos*, *119*(9), 1391-1393. https://doi.org/10.1111/j.1600-0706.2010.18279.x

Raihani, N. J., & Power, E. A. (2021). No good deed goes unpunished: The social costs of prosocial behaviour. *Evolutionary Human Sciences*, *3*. https://doi.org/10.1017/ehs.2021.35

Renström, E. A., Bäck, H., & Knapton, H. M. (2018). Conforming to collective action: The impact of rejection, personality and norms on participation in protest activity. *Social Psychological Bulletin*, *13*(4). https://doi.org/10.32872/spb.v13i4.26427

Rosenberg, F. R., & Simmons, R. G. (1975). Sex differences in the self-concept in adolescence. *Sex Roles*, *1*(2), 147–159. https://doi.org/10.1007/bf00288008

Ruan, W. J., Wong, I. A., & Lan, J. (2022). Uniting ecological belief and social conformity in green events. *Journal of Hospitality and Tourism Management*, *53*, 61-69. https://doi.org/10.1016/j.jhtm.2022.09.001

Schriber, R. A., & Guyer, A. E. (2016). Adolescent neurobiological susceptibility to social context. *Developmental Cognitive Neuroscience*, *19*, 1-18. https://doi.org/10.1016/j.dcn.2015.12.009

Semmann, D., Krambeck, H., & Milinski, M. (2004). Strategic investment in reputation. *Behavioral Ecology and Sociobiology*, *56*(3). https://doi.org/10.1007/s00265-004-0782-9

Sherif, M. (1936). The psychology of social norms. New York: Harper & Row.

Shi, B., & Xie, H. (2011). Socialization of physical and social aggression in early adolescents' peer groups: High-status peers, individual status, and gender. *Social Development*, *21*(1), 170-194. https://doi.org/10.1111/j.1467-9507.2011.00621.x

Song, G., Ma, Q., Wu, F., & Li, L. (2012). The psychological explanation of conformity. *Social Behavior and Personality: an international journal*, *40*(8), 1365-1372. https://doi.org/10.2224/sbp.2012.40.8.1365

Sowden, S., Koletsi, S., Lymberopoulos, E., Militaru, E., Catmur, C., & Bird, G. (2018). undefined. *Consciousness and Cognition*, *65*, 359-367. https://doi.org/10.1016/j.concog.2018.08.009

spinosa, M. P., & Kovárik, J. (2015). Prosocial behavior and gender. *Frontiers in Behavioral Neuroscience*, *9*. https://doi.org/10.3389/fnbeh.2015.00088

Van Hoorn, J., Van Dijk, E., Meuwese, R., Rieffe, C., & Crone, E. A. (2014). Peer influence on prosocial behavior in adolescence. *Journal of Research on Adolescence*, *26*(1), 90-100. https://doi.org/10.1111/jora.12173

Wijenayake, S., Van Berkel, N., Kostakos, V., & Goncalves, J. (2020). Impact of contextual and personal determinants on online social conformity. *Computers in Human Behavior*, *108*, 106302. https://doi.org/10.1016/j.chb.2020.106302

Williams, K. D., Cheung, C. K., & Choi, W. (2000). Cyberostracism: Effects of being ignored over the internet. *Journal of Personality and Social Psychology*, *79*(5), 748-762. https://doi.org/10.1037//0022-3514.79.5.748

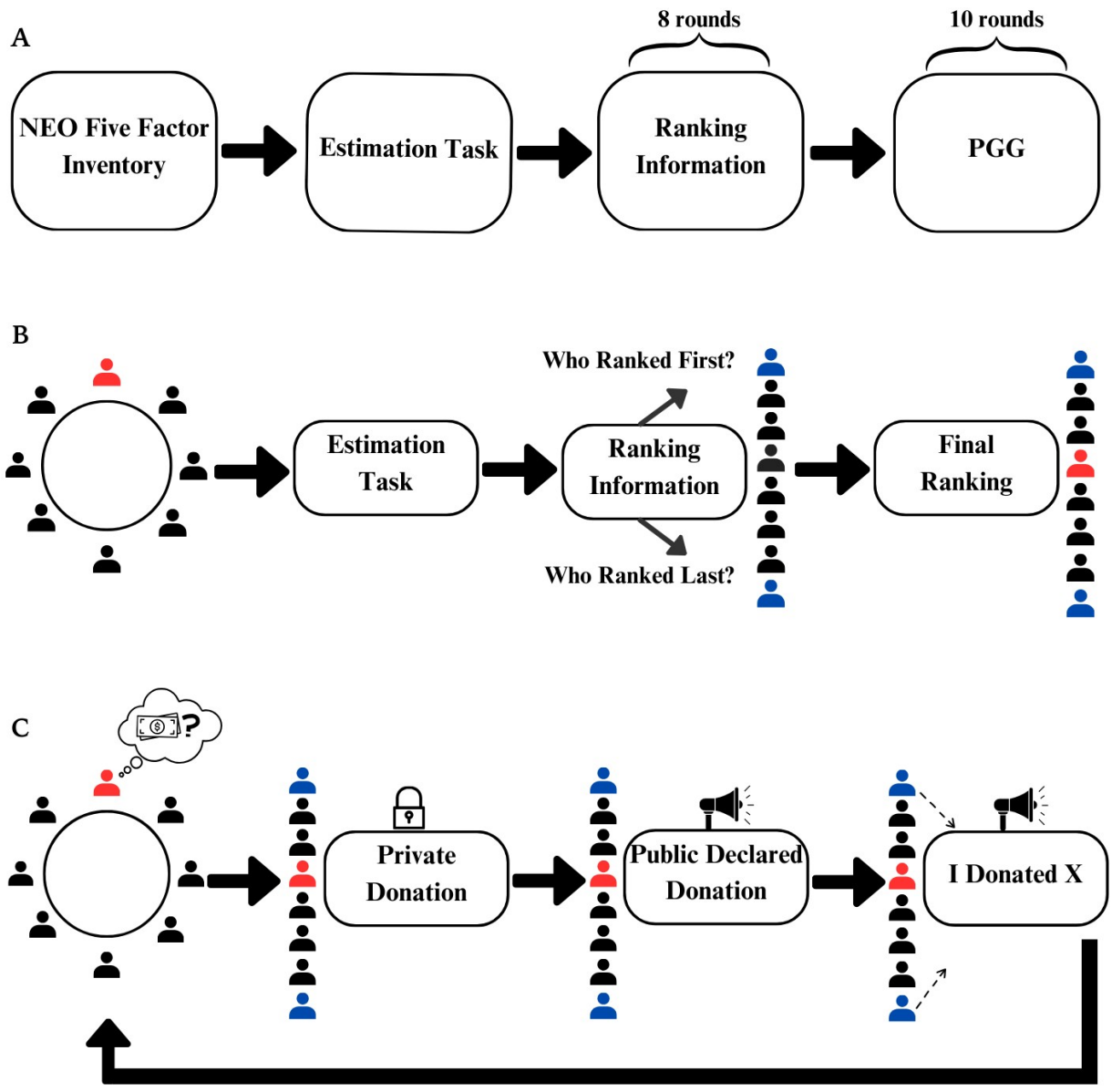
Wright, M. F. (2017). The role of technologies, behaviors, gender, and gender stereotype traits in adolescents' cyber aggression. *Journal of Interpersonal Violence*, *35*(7-8), 1719-1738. https://doi.org/10.1177/0886260517696858

Yoeli, E., Hoffman, M., Rand, D. G., & Nowak, M. A. (2013). Powering up with indirect reciprocity in a large-scale field experiment. *Proceedings of the National Academy of Sciences*, *110*(supplement_2), 10424-10429. https://doi.org/10.1073/pnas.1301210110

Zink, C. F., Tong, Y., Chen, Q., Bassett, D. S., Stein, J. L., & Meyer-Lindenberg, A. (2008). Know your place: Neural processing of social hierarchy in humans. *Neuron*, *58*(2), 273-283. https://doi.org/10.1016/j.neuron.2008.01.025

Figure 1

Experimental Procedure

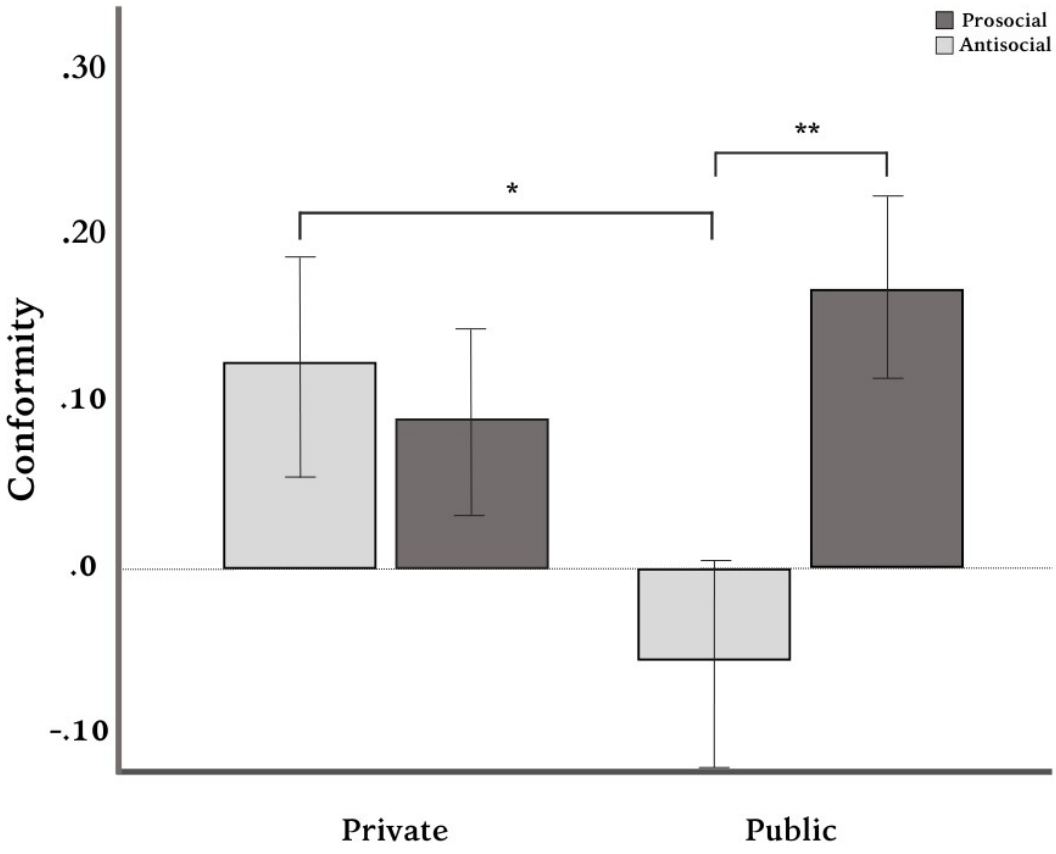


(A) Schematic diagram of the procedure. The procedure began with filling out the NEO-FFI questionnaire, followed by a quantitative estimation task, ranking participants based on their scores, and finally, playing a modified Public Goods Game**. (B)** Schematic diagram of the quantitative estimation task. Participants were asked to answer eight general knowledge questions that required a quantitative estimation. After each question, participants were asked to report who was ranked first and last in terms of being knowledgeable by the ranking displayed to them in each round. This step aimed to make sure that the participant's attention was drawn to the fact that two of the confederates (in

blue) were consistently more likely to be ranked first and last. After eight rounds, they were presented with a final ranking based on total points, representing each player's status. Here the designated participant is indicated in red, who always ranked fourth in the final ranking **(C)** Schematic diagram of the modified PGG task. In this part, participants were asked to choose the amount of money they wished to donate using their tokens ranging from 0 to 50. Here the designated participant is indicated in red. Participants made their choices in two different contexts (public and private) in each round. In the first round, participants were asked to donate as much as they wished, which was kept private, and then they would choose a public declaration of donation. Next, due to the between-subject design of conditions, participants would see a public declaration of donation made by a high or low-status confederate (in blue). In prosocial-1, the high-status confederate declared to donate 50, while in antisocial-1, he/she declared to donate zero. In prosocial-8 and antisocial-8, the low-status confederate declared to donate 50 or zero, respectively. By displaying the confederate's public declaration of donation, participants could decide how much to report as their private donation and public declaration of donation in the second round (each of the participants' choices was made after the displayed public declaration of donation of specific confederate except the first public and private choices, which were served as the baseline, and participants decided without any additional information from others).

Figure 2

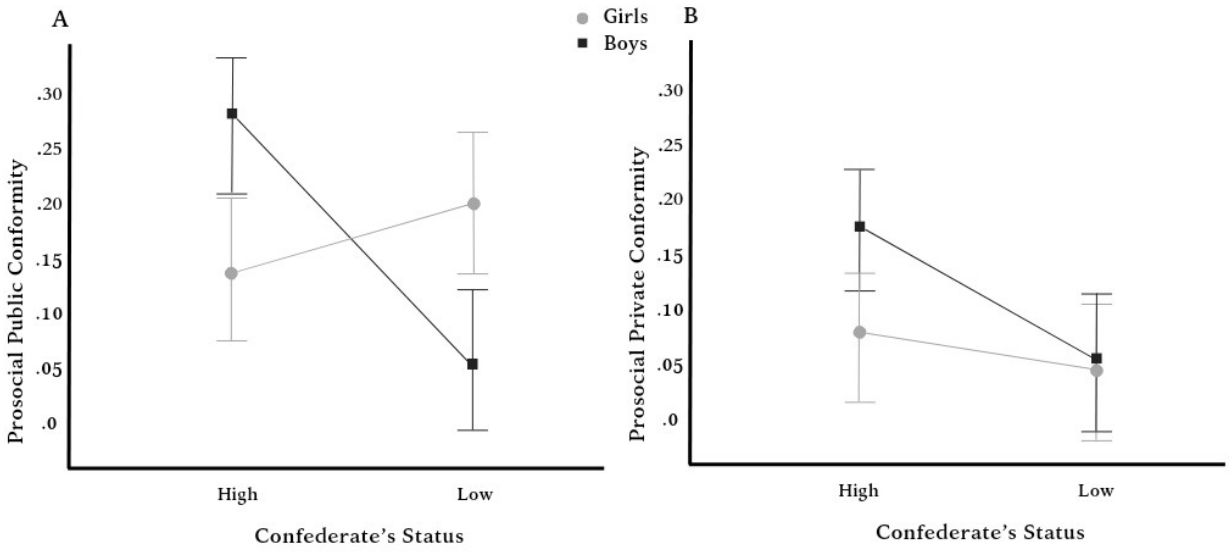
Interaction of Context by Condition



Bar graph illustrating the conformity in different contexts (public/private) across prosocial/antisocial conditions. *, and ** Indicate significance at $p < .05$, and $p < .01$ respectively. Error bars represent the standard error of the mean (SE).

Figure 3

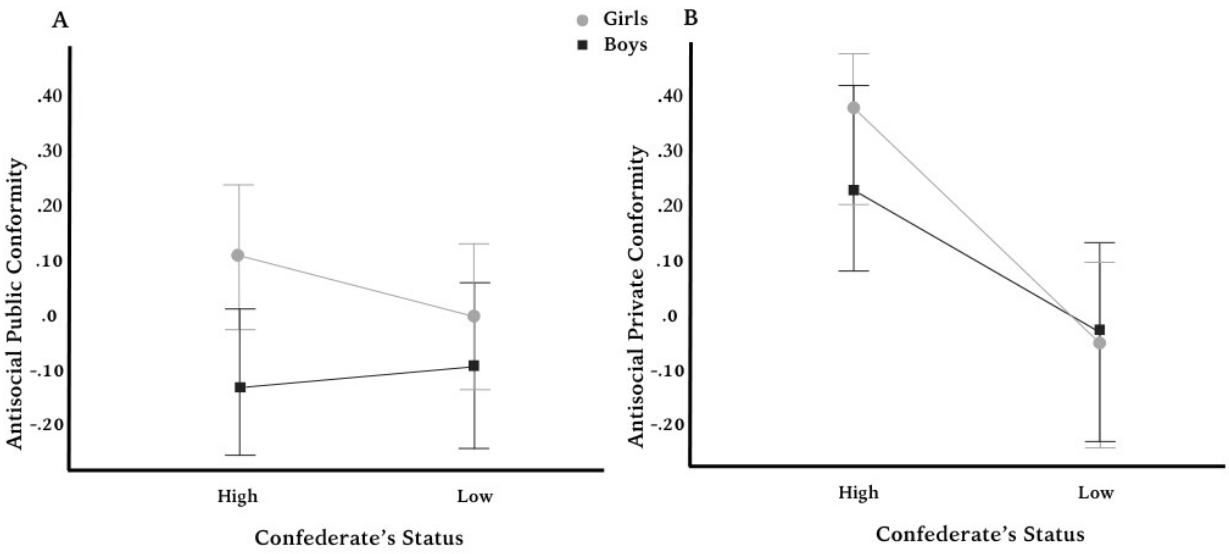
Interaction of Confederate's Status by Gender in Prosocial Decisions



Prosocial conformity changes through different social contexts. Error bars represent the standard error of the mean (SE). **(A)** the degree to which participants conform to a specific confederate's status (high and low) based on the condition (prosocial-1 and prosocial-8) through public and **(B)** private social contexts.

Figure 4

Interaction of Confederate's Status by Gender in Antisocial Decisions



Antisocial conformity changes through different social contexts. Error bars represent the standard error of the mean (SE). **(A)** the degree to which participants conform to a specific confederate's status (high and low) based on the condition (antisocial-1 and antisocial-8) through public and **(B)** private social contexts.