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Popularity, likeability, and peer conformity: Four field experiments

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ABSTRACT

Adolescents tend to alter their attitudes and behaviors to match those of others; a peer influence process named peer conformity. This study investigated to what extent peer conformity depended on the status (popularity and likeability) of the influencer and the influencee. The study consisted of two phases. In Phase 1, 810 12- to 15-year-old adolescents participated in an experiment to measure peer conformity to one of four hypothetical peer groups designed to vary in levels of popularity and likeability. In Phase 2, a subsample of 269 12- to 13-year-old adolescents participated in three additional experiments in which peer conformity to actual classmates was measured. Results showed that participants were more likely to conform to high status peers than to low status peers, that influencer's level of popularity was stronger associated with peer conformity than their likeability, and that influencee's status (either popularity or likeability) played a lesser role in these effects than initially expected. Further, peer status as a mechanism of peer influence did not operate in the same way for boys and girls. Conclusions from the experiments regarding the degree and direction of peer conformity were discussed.

1. Introduction

Adolescents shape each other's attitudes and behaviors through peer influence processes (Cialdini & Goldstein, 2004; Prinstein & Dodge, 2008; Sandstrom, 2011). One powerful mechanism through which peer influence works is *conformity*. Conformity means changing one's attitude or behavior to match that of others because of social pressure (either explicit or implicit; Cialdini, 2009; Cialdini & Goldstein, 2004).

Often what motivates conformity is the urge to obtain social approval from or affiliation with others (Cialdini & Goldstein, 2004). One way to do so is to conform to the majority attitude or behavior in the group, or to conform to specific others whose approval is sought. A classic example of such *normative influence* is Asch's (1956) study in which participants tended to conform to the obvious false judgements of the other group members (who were all confederates) in judging which lines matched in length. Another motive to conform is known as *informational influence* (Cialdini & Goldstein, 2004) which involves people's desire to be right, and to behave and respond correctly. Under circumstances in which people are confused about the correct response, they tend to seek out (social) cues for how to respond. If there is a certain degree of consensus in group members' responses or if specific others are perceived to be more competent or knowledgeable in the task at hand, more social conformity will occur. One characteristic that is likely to grant normative or information influence to a person is one's status in the group.

Previous research has shown that adolescents are often more swayed by peers who are high in status than by peers who are low in status (e.g., Cohen & Prinstein, 2006; Harvey & Rutherford, 1960; Juvonen & Ho, 2008; Sandstrom, 2011; Sandstrom & Romano, 2007). In other words, high status adolescents wield more social influence and power (social dominance) than low status peers do, perhaps because high status adolescents are those whose social approval is sought or who are perceived to be more competent or knowledgeable. For example, Cohen and Prinstein (2006) found that adolescent boys conformed to the apparent deviant and antisocial attitudes and behaviors of high status peers. In contrast, if participants were led to believe that the same deviant and antisocial attitudes and behaviors were endorsed by low status peers, they did not conform but instead adopted attitudes with an opposite valence. Juvonen and Ho (2008) reported similar results. Middle school students who considered aggressive behavior to be associated with high status displayed increased antisocial behavior in follow-up periods. Thus, high status appears to be a powerful mechanism of peer influence among adolescents.

Why do high status peers elicit conformity? There are several ways in which doing so may yield intra- and interpersonal benefits. First, conforming to someone who is high in status is often regarded as an

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effective way to gain approval and elevate one's own status (Adler & Adler, 1998; Dijkstra et al., 2010; Eder, 1985). Second, conforming to high status peers may allow adolescents to affiliate more closely with them, thereby decreasing their chances of exclusion from the peer group (Dijkstra et al., 2010). Third, conforming to high status peers may enhance self-esteem and allow adolescents to maintain a positive sense of belonging (Brechwald & Prinstein, 2011; Cialdini & Goldstein, 2004).

Given all the ways in which conforming to high status peers may accrue social benefits, it may emerge as a particularly adaptive and appealing strategy for lower status peers who wish to enhance their social standing. In fact, several studies have provided empirical support for the notion that lower status peers are especially vulnerable to the influence of their higher status counterparts. For instance, converging research has demonstrated that adolescents who are rejected by their peers are more susceptible to peer influence than accepted adolescents (Dishion, Piehler, & Myers, 2008; Dishion & Tipsord, 2011; Snyder et al., 2010). Harvey and Rutherford (1960) showed that children who rated themselves as low in popularity were significantly more likely to conform to the influence of a high status peer. Prinstein, Boergers, and Spirito (2001) found that adolescents were more susceptible to peer influence when they reported to feel unaccepted by their peers. Further, Lakin, Chartrand, and Arkin (2008) showed that participants who were in the exclusion condition in a Cyberball experiment were more likely to conform to other participants who were in the inclusion condition than to other excluded participants. Other research has shown that among adolescents who affiliate with deviant peers, those who view themselves as low in social acceptance are significantly more likely to engage in deviant behavior themselves (Dishion, Patterson, Stoolmiller, & Skinner, 1991). To summarize, evidence suggests that peer rejection (e.g., low acceptance or feelings of social dissatisfaction) predicts adolescents' conformity to the (deviant) behaviors of important peers.

1.1. Two types of status

In the adolescent peer group, two types of status are generally distinguished, *popularity* and *likeability* (e.g., Lease, Musgrove, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998; Sandstrom & Cillessen, 2006). Likeability reflects acceptance and preference; popularity reflects visibility and power. Despite some conceptual similarities, these two forms of high status reflect distinct constructs with unique behavioral correlates (Asher & McDonald, 2009; Mayeux, Houser, & Dyches, 2011; Sandstrom & Cillessen, 2006).

With respect to peer influence, the direction and degree of peer conformity may be affected by the *type* of status wielded by both the source (influencer) and the target (influencee) in a given interaction (Hartup, 2005). Sandstrom (2011) suggested that popularity may have a stronger association with peer influence than likeability. This is supported by research showing that popularity is strongly associated with indices of social influence such as dominance, network centrality, and prestige (e.g., LaFontana & Cillessen, 2002; Lease, Musgrove, et al., 2002; Lease, Kennedy, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998). Moreover, associations of likeability with other indices of social influence, such as admiration, leadership, and social control, typical become weaker when the effect of popularity is statistically controlled. Further, previous research has shown that many of the behaviors relevant for peer influence (e.g., aggressive and health-risk behaviors) are strongly associated with popularity and less with likeability among peers (e.g., Cillessen & Mayeux, 2004; Mayeux, Sandstrom, & Cillessen, 2008).

1.2. Status of the influencer

In spite of the evidence that popularity and likeability are related differently with peer influence, few studies have examined the interplay of influencer popularity and likeability on peer influence (e.g., Lansu, Cillessen, & Karremans, 2015; Sandstrom & Romano, 2007). Furthermore, there is also some evidence to suggest that it is not popularity per se that wields the most social influence. For example, Sandstrom and Romano (2007) found that adolescents conformed more to a popular peer only if the scenario involved a public decision and if the popular peer was also well-liked. Lansu et al. (2015) even found a negative association between conformity and popularity; late adolescent girls conformed less to a popular peer than to an average status peer in an imitation task in the lab, which made be due to girls' feelings of resentment towards popular peers (Eder, 1985). In this task, participants were asked to estimate the number of dots on a computer screen while primed by an unfamiliar peer's estimate who was either popular or average. Thus, it is not always only the influencer's popularity that solicits conformity among adolescents. These studies suggest a more complex picture of the effects of influencer status.

1.3. Status of the influencee

In addition to the status of the influencer (i.e., whether this person is popular or likeable), conformity may also be affected by the popularity or likeability of the influencee (Hartup, 2005). If conforming to higher status peers is a way to elevate one's own status, a low status person is likely to conform more strongly than a high status person. Compared to popular or well-liked participants, low popular or disliked participants may be more susceptible to the influence of popular or well-liked peers. Although on the influencer side, there is evidence to suggest that popularity may wield stronger influence than likeability, on the influencee side susceptibility to peer influence may be invariant to type of status; either low in popularity or low in likeability may raise one's susceptibility to peer influence. This is supported by empirical research showing that at the lower end on the status continuum, no distinction is made between adolescents low in popularity and those low in likeability (van den Berg, Burk, & Cillessen, 2015).

Research on how the status of the influencee affects peer influence processes is scarce, however. Although there are studies to suggest this pattern of results (e.g., Dishion et al., 2008; Dishion & Tipsord, 2011; Snyder et al., 2010), this does not mean that high status participants are unaffected by the influence of their peers. Popular or well-liked adolescents may also be susceptible to the influence of other high status peers in order to maintain their status (Haynie, 2001; Sandstrom, 2011). However, given that these adolescents are already high in status which is likely to grant them certain privileges (e.g., power, social control, ability to set the norm), not conforming is likely to come at a lower cost for them than for lower status individuals.

1.4. Gender

There are notable gender differences in peer relationships and peer interactions (see Rose & Rudolph, 2006; Rose & Smith, 2009). Therefore, the effects of status on conformity also may differ by gender. However, we could argue in both directions in terms of who is likely to show the strongest conformity effects, girls or boys. On the one hand, girls are more focused on positive interactions and connection-oriented goals and more concerned about social approval, abandonment, and peer evaluation than boys. This might suggest stronger effects of influencer and influencee popularity for girls than for boys. On the other hand, boys are more focused on status, dominance, and agentic goals than girls, and girls often resent other popular girls (Eder, 1985). These phenomena might imply that the effects of influencer and influence popularity are stronger for boys than for girls.

The empirical evidence on gender differences in peer conformity is limited. Only a few studies directly have examined gender differences in peer conformity. These studies typically evidenced stronger conformity effects for boys with regard to antisocial behaviors (Iwamoto & Smiler, 2013; Santor, Messervey, & Kusumaker, 2000) and no significant gender differences with regard to neutral or prosocial

behaviors (Allen, Porter, & McFarland, 2006; Choukas-Bradley, Giletta, Cohen, & Prinstein, 2015; Santor et al., 2000). These gender differences in peer conformity may to some extent be due to a higher prevalence of antisocial behaviors among boys than girls. In contrast, investigating relational aggression or weight-related behaviors may solicit more conformity by girls who engage in these behaviors more than boys do. In other words, gender differences in conformity may depend on the behaviors being measured. In summary, some of these studies suggest that the results for girls are not conclusive and that further investigation on this topic is warranted (e.g., Choukas-Bradley et al., 2015).

Furthermore, little is known about gender differences in the roles of and interaction between influencer and influencee popularity in peer conformity. Only two studies examined the effect of influencer popularity on conformity among girls. One of these studies showed less conformity among girls to a popular peer than to an average status peer (Lansu et al., 2015), while the other study showed more conformity (Rancourt, Choukas-Bradley, Cohen, & Prinstein, 2014). Thus, findings are inconclusive and the issue of gender differences in the effects of status on conformity also deserves further investigation.

1.5. Current study

Based on these previous considerations, this study had three goals. The first goal was to examine to what extent peer conformity depended on the status of the peer, operationalized as popularity and likeability. Given that popularity is strongly associated with indices of social influence (e.g., LaFontana & Cillessen, 2002; Lease, Musgrove, et al., 2002; Lease, Kennedy, et al., 2002; Parkhurst & Hopmeyer, 1998) and that popular adolescents are likely to elicit more normative influence in group settings than their age mates (Sandstrom, 2011), and consistent with an extensive literature on this topic (e.g., Brechwald & Prinstein, 2011), we hypothesized that participants' popularity wields more influence than their likeability, although there is also some contradictory evidence (e.g., Lansu et al., 2015; Sandstrom & Romano, 2007). We expected that all participants would conform more to a highly popular peer than to a well-liked peer.

The second goal was to examine whether these effects of influencer status are moderated by influencee status. Given evidence to suggest that adolescents with a low inclusionary status (e.g., unpopular, disliked, or excluded adolescents) are more susceptibility to peer influence (e.g., Dishion et al., 2008; Lakin et al., 2008; Snyder et al., 2010), we hypothesized that peer conformity effects would depend on participants' own status (either popularity or likeability); we expected that unpopular or disliked participants would conform more than popular or well-liked participants.

The third goal was to examine whether the effects of influencer and influencee status would further vary as a function of gender. Given that we studied neutral behaviors, that normative influence (i.e., people's desire to be liked or at least, not to appear foolish; Cialdini & Goldstein, 2004) is an important motive to conform, and taking into account gender differences in peer relationships and peer interaction (such as girls' stronger focus on connection-oriented goals and social approval; see Rose & Rudolph, 2006; Rose & Smith, 2009), we expected stronger peer conformity effects for girls than for boys.

1.6. Methodological contributions

The three goals of this study were examined in four experiments conducted with youths at their school. In three of the four experiments, actual classmates whose status had been measured previously in a sociometric assessment were presented as influencers (instead of unknown confederates or hypothetical peers). We expected that the use of real classmates would provide a high level of ecological validity because participants knew them well and could visualize actual consequences of conforming or not conforming to them.

In order for peer influence to work at its “best,” not conforming to a high status peer should impose a risk of peer rejection to the influencee. Yet, many studies have used hypothetical vignettes to examine peer influence (e.g., Berndt, 1979; Sandstrom, 2011; Steinberg & Silverberg, 1986). Even if participants vicariously might fear social reprisal with hypothetical vignettes, peer rejection is never a real outcome in such cases. To obtain a better sense of what happens in real life rather, the current experiments were conducted in the classroom with real peers as influencers. We examined the effects of influencers' actual status, as well as the relative differences in actual status between influencers and influencees within the context of their school. Although not made explicit, we anticipated that under these conditions adolescents may have believed that their responses were visible to peers which would impose a more realistic risk of rejection or disapproval if one would not conform to the influences that would be the case when using hypothetical vignettes.

In addition to being ecologically valid, the current study design also contributed to construct validity. Prior research on social influence often has focused on whether adolescents would engage in risk behaviors in response to peer modeling or persuasion (e.g., Brechwald & Prinstein, 2011; Cohen & Prinstein, 2006; Gardner & Steinberg, 2005). Understanding peer influence on such behaviors is very important. However, such risky behaviors are themselves correlated with status which confounds the study design. That is, examining peer influence on behaviors that are themselves related to status makes it difficult to distinguish the effects of the attractiveness of the influencer and the attractiveness of the behaviors. Furthermore, adolescents may endorse more risky behaviors because – as they mature – they are more willing to engage in such behaviors in general, rather than because they are susceptible to the negative influence of peers. To investigate the effects of the influencer without the effects of behaviors, we studied peer influence on neutral behaviors that were not themselves (strongly) related to status.

2. Method

2.1. Participants

Participants were students from one secondary school in The Netherlands. The study consisted of two phases. At T1, 810 12-to-15 year-old adolescents (M_{age} = 13.77; SD = 0.96; 50.4% boys) from 32 classrooms (Grades 7–9) participated. At T2, we asked only Grade 7 students to participate again, resulting in a subsample of 269 12-to-13 year-old adolescents (M_{age} = 12.74; SD = 0.44; 43.5% boys) from 10 classrooms. Asking all students to participate again would put too much burden on the curriculum for Grades 8 and 9 students. Therefore, Grades 8 and 9 students were not asked to participate at T2. Most participants were native and Dutch-speaking (94.3%).

2.2. Measures

At both times, participants completed a computerized questionnaire (InQuisit, 2010) during a 45- to 60-minute classroom session. The measures described below were part of a larger set of measures including peer nominations and other measures to assess the psychological and social wellbeing of each participant (e.g., involvement in bullying, loneliness, self-esteem). With regard to the experiments, all manipulations and exclusions are disclosed in this article.

2.2.1. Peer nominations

At T1, participants were asked to nominate classmates for various questions. Unlimited same- and other-sex nominations were allowed, with a minimum of one, but no self-nominations. For each question, the number of nominations received was counted and standardized to z-scores within the classroom to control for classroom size (Cillessen, 2009; Coie, Dodge, & Coppotelli, 1982).

Four peer nominations measured peer status: “Who do you like most?” (LM), “Who do you like least?” (LL), “Who is most popular?”

(MP), and "Who is least popular?" (LP). A score for *likeability* was computed by taking the difference between the standardized LM and LL nominations received, and again standardizing the resulting scores within classrooms. Similarly, a score for *popularity* was computed by taking the difference between the standardized MP and LP nominations received, and again standardizing the resulting scores within classrooms (see Cillessen, 2009). Likeability and popularity were moderately correlated ($r = 0.41$, $p < .001$).

2.3. Experiment 1[1]

The computerized assessment also included an opinion and knowledge quiz with 30 questions about topics relevant for adolescents. The goal of Experiment 1 was to assess whether influencer status affects peer conformity. The experiment had a between-subjects design. Participants were randomly assigned to one of four conditions. The conditions differed in the reference group that was presented to the participants. The reference group consisted of hypothetical same-age peers, supposedly from a different school, who varied in popularity and likeability. The four conditions were: popular/liked, popular/not liked, not popular/liked, and not popular/not liked. At the start of the opinion and knowledge quiz, a header (e.g., "Popular and liked") and a short description (e.g., "These students are popular in their class and liked by their classmates") of the reference group was shown on the screen. The descriptions were gender neutral. Participants were instructed to read and remember the description. There were no significant differences between the four conditions in participants' age, gender, own popularity, or own likeability.

Opinion and knowledge questions were presented in separate blocks in random order. The first block contained 15 trials with opinion questions presented in random order (one question per trial) to which participants responded on a 10-point scale (1 = *strongly disagree*, 10 = *strongly agree*; e.g., "To fight with friends is worse than to fight with your brother or sister"). The second block contained 15 trials with knowledge questions again presented in random order (one question per trial) to which participants responded by entering a percentage from 1 to 100 (e.g., "What percentage of adolescents is happy and satisfied with their life?").

For trials 6 to 15, the apparent average answer by the members of their assigned reference group was displayed on screen, supposedly to help them in answering these questions. The answers provided were determined by the researchers using various sources of information (e.g., research, popular youth media) and met two criteria. First, the answers that were provided deviated in the opposite direction from what would be expected (e.g., according to the reference group only 33% of adolescents were happy and satisfied with their lives while in reality a large majority of youth is). Second, they were plausible (e.g., not too extreme) ranging from 1 to 9 for the opinion questions and from 29 to 81 for the knowledge questions. The answers provided were identical between the four conditions.

For trials 1 to 5, no answers were provided so that these trials yielded uninfluenced answers. The average answer of all participants (n = 243–313) to each question in trials 1 to 5 served as the baseline norm score for that question. Given that questions were presented to participants in random order, this provided for the calculation of an uninfluenced norm score for all 15 opinion and 15 knowledge questions. A *proportional deviation score* was calculated using the relative distance between the participant's score and the reference group's score versus the relative distance between the participant's score and the uninfluenced norm score as a measure of peer conformity (see Table 1). A score of zero would indicate that the participant's score equaled the uninfluenced norm score, while a score of 1 would indicate that the participant's score equaled the reference group's score. Thus, a higher positive score for a question indicated more conformity in the direction of the reference group's score (and away from the norm score). Two opinion questions were excluded from these calculations because for these questions the reference group scores did not differ significantly from the norm scores meaning that the reference group scores failed the manipulation check of deviating from the norm scores. Thus, they could not be used to test peer influence. For the other opinion questions, the absolute difference between the reference group score and the average norm score ranged from 2.14 to 6.61 (M = 4.38). For the knowledge questions, the absolute difference ranged from 11.70 to 53.99 (M = 35.97).

2.4. Experiments 2–4[2]

At T2, approximately two months after T1, participants completed three additional experiments in a 45- to 60-minute classroom session. In each experiment, participants were given two answers that presumably came from two randomly selected same-sex classmates. In reality, these classmates were selected based on their actual classroom status assessed at T1: one high popular/average liked (HP) classmate ($z_{popularity} > 1$; $-0.5 < z_{likeability} < 0.5$) and one well-liked/average popular (WL) classmate ($z_{likeability} > 1$; $-0.5 < z_{popularity} < 0.5$).[3] To make it plausible to participants that they saw the target classmates' answers, participants were led to believe that all laptops were connected via a wireless network. To support this scenario, a fake network connection and authentication screen appeared prior to Experiment 2.

Although participants were told that the answers were provided by known classmates, they were actually manipulated by the experimenters following a similar procedure as with Experiment 1 and were equal for all participants. The answers provided were displayed on the screen along with the target classmate's first name. To make the experimental manipulation plausible, no extreme (very high/very low) or implausible (e.g., obviously incorrect) answers were provided. In addition, answers were counterbalanced between the two target peers, so that both alternated equally in providing the highest or lowest answers.

2.4.1. Experiment 2: opinion and knowledge quiz

The same opinion and knowledge quiz described above was completed by participants at T2. The answers that were provided at T2 by both target classmates were centered at the uninfluenced norm scores that were derived from participants' answers at T1. The reason for this was to ensure that the answers provided by both target classmates would be plausible enough (i.e., surrounding the norm). For the opinion questions, the absolute difference between the answers by the two target classmates varied slightly (between 3 and 5) to limit the possibility that participants would detect a pattern. For example, for one opinion question the apparent answers were 9 and 4 for respectively the HP classmate and the WL classmate, with an uninfluenced norm score of 6.5 ($\Delta = \pm 2.5$); for another opinion question the apparent answers were respectively 5 and 8, with an uninfluenced norm score of 6.5 ($\Delta = \pm 1.5$). For the knowledge question, the absolute difference was always 25. The goal of Experiment 2 was to determine if adolescents' answers would be closer to the HP classmate or the WL classmate. A similar *proportional deviation score* was calculated for Experiment 2 as for Experiment 1 (see Table 1). A higher positive score indicated more conformity to the HP classmate (and away from the uninfluenced norm score); a lower negative score indicated more conformity to the WL classmate (and away from the uninfluenced norm score).

[1] Full materials and further details about the design of the experiments are available online as Open Materials.

[2] Full materials and further details about the design of the experiments are available online as Open Materials.

[3] Participants selected as target classmates (four in each class; 20 boys and 20 girls; n = 40) were removed from all analyses (n = 269 → n = 229). In order for them to still participate in the experiments, the same answers but with the first names of two other, randomly selected, same-sex classmates were presented to them.

Table 1
Operational definitions of peer conformity by phase and experiment.

Phase	Experiment	Score	Formula[a]	Y	Z[b]
T1	Quiz	Prop. deviation score	(X − Y) / (Z − Y)	Norm score[c]	Reference group
T2	Quiz	Prop. deviation score	(X − Y) / (Z − Y)	Average presumed answer of both classmates	High popular peer
	Video clips	Prop. deviation score	(X − Y) / (Z − Y)	Average presumed answer of both classmates	High popular peer
	Dots	Prop. deviation score	(X − Y) / (Z − Y)	Actual number of dots	High popular peer

[a] X indicates the answer provided by the participant.
[b] Z indicates who presumably provided the answer that was presented to the participant (target influencer).
[c] Quiz norm scores were assessed at T1 by having participants answer five randomly selected questions without any answers provided to them.

2.4.2. Experiment 3: video clips

In Experiment 3, participants reviewed and rated 15 video clips as funny ("How funny do you think the video was?") and liked ("How much did you like the video?") on a 10-point scale (1 = not at all, 10 = very much). Video clips were 12 Dutch and 3 US TV commercials that lasted between 29 and 74 s, presented to participants in random order.

As with Experiment 2, participants were given the apparent answers of two actual same-sex classmates (HP and WL). The answers were randomly chosen by the researchers and ranged from 2 to 9. The absolute difference between the answers of the two target classmates varied between 2 and 5. No answers were provided for the first video clip students saw in order to make the cover story credible (i.e., participants had to rate at least one clip before their answers could be disseminated to their classmates). The participant's funny and liking ratings for this "uninfluenced" video clip were excluded from the conformity score calculations. The goal and the operational definition of peer conformity were the same for Experiment 3 as for Experiment 2 (see Table 1).

2.4.3. Experiment 4: dots

Experiment 4 was a number estimation task. Participants were asked to estimate the number of dots in a series of dot patterns. They were instructed to type in an answer between 1 and 1000. The actual number of dots in the stimuli ranged from 19 to 226. There were two blocks of 10 randomly ordered stimuli, each presented on the screen for 5 s, after which the estimation was made. Block 1 was completed at the beginning of the classroom session, Block 2 at the end.

As in Experiments 2 and 3, the apparent answers of the two known classmates (HP and WL) were shown in Block 2. No answers were provided in Block 1. In each trial, the apparent answers of the target classmates were centered on the actual number of dots and – to avoid detection of a pattern – varied for each stimulus (plus or minus 3 to 26). Again, a *proportional deviation score* was calculated using participants' answers provided in Block 2 and the actual number of dots (see Table 1). A proportional deviation score of zero indicated no conformity in either direction (i.e., the participant's answer equaled the actual number of dots). A positive proportional deviation that differed significantly from zero indicated conformity to the HP peer and away from the actual number of dots. A negative proportional deviation that differed significantly from zero indicated conformity to the WL peer and away from the actual number of dots.

2.5. Manipulation check (T2)

There were three checks of the manipulations at T2. First, to assess any differences between the experimentally scripted answers of the two target peers, paired-samples *t*-tests were run. There were no significant differences in the answers of the two targets for all three experiments (all $ps > .981$), meaning that conformity could not be attributed to systematic differences between the experimentally scripted answers of both target classmates.

Second, the popularity and likeability scores of the 40 target classmates used at T2 were compared. Eight targets (four same-sex pairs in four classes; six boys and two girls) did not meet the criteria: high on one status ($z_{status} > 1$), average on the other status ($-0.5 < z_{status} < 0.5$). This was due to the fact that no better alternative target existed for these classrooms and gender. Participants who saw the apparent answers of these eight invalid targets ($n = 37$) were removed from the analyses ($n = 229 \rightarrow n = 192$). Paired-samples *t*-tests showed that the differences in popularity and likeability between the 16 remaining HP classmates ($M_{popularity} = 1.56$, $SD_{popularity} = 0.40$; $M_{likeability} = -0.02$, $SD_{likeability} = 0.47$) and the 16 remaining WL classmates ($M_{popularity} = 0.12$, $SD_{popularity} = 0.54$; $M_{likeability} = 1.19$, $SD_{likeability} = 0.28$) were significant ($\Delta M_{popularity} = 1.45$, $t(15) = 8.61$, $p < .001$, Cohen's $d = 3.15$; $\Delta M_{likeability} = 1.21$, $t(15) = 7.12$, $p < .001$, Cohen's $d = 3.21$). Thus, as intended, HP and WL target classmates differed significantly in popularity and likeability from each other.

Third, at the end of the classroom session at T2, participants were asked to indicate what they thought the purpose of each task was. Seventeen participants (8.9%) may have had some awareness of the experimental manipulations. Their answers included phrases and words suggesting: "change after manipulation," "peer influence," or "the audacity to come up with deviating answers." These participants were removed from the analyses, resulting in a final sample at T2 of 175 participants ($n = 192 \rightarrow n = 175$).

2.6. Procedure

Students participated in two classroom sessions in November (T1) and February (T2). The study was conducted in compliance with university's code of conduct for scientific research, and was approved by the university's scientific review board and the director of the research institute. Passive consent procedures requested by the school administrators were followed. At T1, 4.6% of the students ($n = 39$) who initially qualified for participation did not participate due to lack of parental consent, lack of adolescent assent, or absenteeism during data collection. At T2, 2.9% of the students ($n = 8$) did not participate.

All data were collected on 10″ laptops in a classroom at school. Students sat in a test arrangement at their assigned desk, with adequate space between each desk and privacy screens placed on both sides of each laptop. During each classroom session, three researchers were present to answer questions and to make sure instructions were followed.

At the beginning of each classroom session, students were informed of the study and received instructions during a short instruction period. At T1, students were told that the goal of the study was to understand adolescents' peer relationships at school. The confidentiality and privacy of their answers were discussed. At T2, students were told that the goal of the tasks was to know which stimuli would be most adequate for upcoming research projects with same-age adolescents. They were told that the answers from peers provided to them were extraneous and merely there to offer additional information and to help them to complete the tasks. They were instructed that they could opt to answer the question in any manner they chose.

At the end of each classroom session at both T1 and T2, students received a small gift (pen, photo clip, keychain light). At T2,

Table 2
Peer conformity by condition and gender in Experiment 1.

Gender	DV	Condition	*n*	Peer conformity			
				M	*SD*	*SE*	*95% CI*
Boys	Quiz knowledge	PL	117	0.216	0.278	0.025	$0.166–0.265_a$
		UL	100	0.155	0.276	0.027	$0.102–0.208_a$
		PD	98	0.198	0.265	0.027	$0.144–0.252_a$
		UD	94	0.128	0.260	0.028	$0.073–0.183_b$
	Quiz opinion	PL	117	0.216	0.375	0.031	$0.155–0.276_a$
		UL	100	0.119	0.328	0.033	$0.054–0.185_b$
		PD	98	0.189	0.390	0.034	$0.122–0.255_a$
		UD	94	0.089	0.361	0.034	$0.022–0.157_b$
Girls	Quiz knowledge	PL	100	0.393	0.282	0.027	$0.339–0.446_a$
		UL	98	0.281	0.243	0.027	$0.227–0.335_b$
		PD	98	0.236	0.278	0.027	$0.182–0.290_c$
		UD	103	0.246	0.289	0.027	$0.193–0.298_d$
	Quiz opinion	PL	100	0.385	0.294	0.033	$0.320–0.451_a$
		UL	98	0.326	0.306	0.034	$0.260–0.392_a$
		PD	98	0.269	0.306	0.034	$0.202–0.335_b$
		UD	104	0.244	0.295	0.033	$0.179–0.308_b$

Note. All means were significantly different from zero. For each DV, means that do not share a subscript differed significantly from each other in a one-way ANOVA ($p < .05$). PL = Popular-Liked ($n = 217$); UL = Unpopular-Liked ($n = 198$); PD = Popular-Disliked ($n = 196$); UD = Unpopular-Disliked ($n = 198$).

participants were debriefed twice. First, directly after the classroom session at T2, students were told that due to an apparent network issue, they might not have seen the correct answers from their peers for all questions. This was done so that participants did not leave the study believing that the target classmates had provided those particular answers. Students were reassured however that, despite the network issue, their own answers were stored correctly. Second, after all classroom sessions were completed at T2, all classrooms were debriefed by one of the researchers. The researcher explained that the answers provided were in fact made up by the researchers and that their laptops were not connected to each other. They were also told that the actual goal of the study was to understand whether adolescents would use answers provided by peers as anchors in coming up with their own answers.

3. Results

3.1. Experiment 1: opinion and knowledge quiz (T1)

Table 2 shows the peer conformity scores for Experiment 1. Since the scores on the quiz opinion questions and the quiz knowledge questions were significantly correlated ($r = 0.391$, $p < .001$), a 2 (Gender) × 4 (Reference Group) MANOVA was performed with the proportional deviation scores for the quiz opinion questions and the quiz knowledge questions as dependent variables. Using Pillai's trace, there was a significant multivariate main effect of gender ($V = 0.067$, $F(2, 799) = 28.54$, $p < .001$, partial $\eta^2 = 0.067$) and a significant multivariate main effect of reference group ($V = 0.036$, $F(6, 1600) = 4.90$, $p < .001$, partial $\eta^2 = 0.018$) on the scores for the quiz opinion and knowledge questions. The multivariate interaction between gender and reference group was not significant, $F(6, 1600) = 1.50$, $p = .18$.

3.1.1. Opinion questions

Univariate results also showed a significant main effect of gender for the opinion questions, $F(1, 800) = 41.14$, $p < .001$, partial $\eta^2 = 0.049$. As expected, girls ($M = 0.31$, $SD = 0.31$) displayed more peer conformity than boys ($M = 0.16$, $SD = 0.37$). There was also a significant univariate main effect of reference group, $F(3, 800) = 5.93$, $p < .01$, partial $\eta^2 = 0.022$. A Scheffé post-hoc analysis indicated a significant difference between the Popular-Liked (PL) condition and Unpopular-Disliked (UD) condition ($\Delta M = 0.128$, $SE = 0.033$, $p < .01$). As expected, the PL group yielded the highest degree of conformity, while the UD group yielded the lowest. Similar to the multivariate tests, there was no significant univariate interaction between gender and reference group for the quiz opinion questions. Additional pairwise comparisons by gender also showed that there was a significant difference between the Popular-Liked (PL) group and the Popular-Disliked (PD) group for girls ($\Delta M = 0.117$, $SE = 0.047$, $p < .05$), but not for boys. Girls conformed significantly more to the PL group than to the PD group. For boys, there were also significant differences between the Popular-Disliked (PD) group and the Unpopular-Disliked (UD) group ($\Delta M = 0.099$, $SE = 0.048$, $p < .05$), and between the PL group and the Unpopular-Liked (UL) group ($\Delta M = 0.096$, $SE = 0.045$, $p < .05$). Boys conformed significantly more to the PL and PD groups than to the UL and UD groups. This supports our hypothesis, at least for boys, that influencers' popularity would wield more influence than their likeability.

Additional analyses including participant status (popularity or likeability) in two separate 2 (Gender) × 4 (Reference Group) × 3 (Participant Status; low, average, high) MANOVAs revealed no significant main effect of participant status on peer conformity for the opinion questions, which contradicts our hypothesis.

3.1.2. Knowledge questions

For the knowledge questions, there also was a significant univariate main effect of gender, $F(1, 800) = 35.74$, $p < .001$, partial $\eta^2 = 0.043$. As expected, girls ($M = 0.29$, $SD = 0.28$) conformed more than boys ($M = 0.18$, $SD = 0.27$). There was also a significant univariate main effect of reference group, $F(3, 800) = 7.22$, $p < .001$, partial $\eta^2 = 0.026$. Scheffé post-hoc comparisons indicated that participants conformed more to the PL group than to the other three groups (UL: $\Delta M = 0.080$, $SE = 0.027$, $p < .05$; PD: $\Delta M = 0.080$, $SE = 0.027$, $p < .05$; UD: $\Delta M = 0.108$, $SE = 0.027$, $p < .01$). As expected, participants conformed least to the UD group. Again, similar to the multivariate tests, there was no significant interaction between gender and reference group for the quiz knowledge questions. Pairwise comparisons by gender comparing all groups showed that only the difference between the PL and UD groups was significant for boys ($\Delta M = 0.088$, $SE = 0.038$, $p < .05$), while for girls the differences between the PL and the other three groups were all significant (UL: $\Delta M = 0.112$, $SE = 0.039$, $p < .01$; PD: $\Delta M = 0.157$, $SE = 0.039$, $p < .001$; UD: $\Delta M = 0.147$, $SE = 0.038$, $p < .001$). Girls conformed significantly more to the PL group than to the other three groups, while boys only conformed significantly more to the PL group than to the UD group.

Additional analyses including participant status (popularity or likeability) in two separate 2 (Gender) × 4 (Reference Group) × 3 (Participant Status; low, average, high) MANOVAs revealed one significant main effect of participant popularity on peer conformity for the knowledge questions, $F(2, 784) = 3.61$, $p < .05$, partial $\eta^2 = 0.009$. Scheffé post-hoc comparisons showed that low popular participants ($M = 0.264$, $SD = 0.28$) and average popular participants ($M = 0.242$, $SD = 0.28$) showed significantly higher peer conformity than high popular participants ($M = 0.16$, $SD = 0.27$; resp. $\Delta M = 0.104$, $SE = 0.034$, $p < .05$ and $\Delta M = 0.082$, $SE = 0.026$, $p < .01$). This supports our hypothesis that participants' susceptibility to peer influence would depend on their own popularity (i.e., lower popular participants would conform more than higher popular participants), but contradicts our hypothesis that participants' own likeability would also matter.

3.2. Experiment 2: opinion and knowledge quiz (T2)

Table 3 shows the peer conformity scores for Experiment 2. One-sample *t*-tests were conducted to test for peer conformity effects (i.e., whether the means were significantly different from zero). A significant positive peer conformity score indicated conformity to the HP peer (high popular/average liked); a significant negative conformity score

Table 3
Peer conformity in experiments 2–4 in the total sample and by gender.

Sample	Experiment	*n*	Peer conformity				*t*[a]
			M	*SD*	*SE*	*95% CI*	
Boys	Quiz: knowledge	65	0.007	0.268	0.033	− 0.062–0.073	0.197
	Quiz: opinion	66	0.036	0.295	0.037	− 0.046–0.102	0.989
	Video clips: funny	66	− 0.062	0.261	0.032	− 0.132 to − 0.003	− 1.906
	Video clips: liked	66	0.059	0.348	0.043	− 0.031–0.139	1.361
	Dots	65	0.090	0.489	0.061	− 0.046–0.189	1.487
Girls	Quiz: knowledge	108	0.047	0.323	0.031	− 0.015–0.108	1.514
	Quiz: opinion	109	− 0.004	0.292	0.028	− 0.070–0.041	− 0.145
	Video clips: funny	109	0.034	0.297	0.029	− 0.037–0.077	1.171
	Video clips: liked	109	0.082	0.319	0.031	0.014–0.138	2.677**
	Dots	108	0.112	0.525	0.051	− 0.001–0.203	2.214*
Total	Quiz: knowledge	173	0.032	0.303	0.023	− 0.015–0.077	1.381
	Quiz: opinion	175	0.011	0.293	0.022	− 0.043–0.046	0.499
	Video clips: funny	175	− 0.003	0.287	0.022	− 0.056–0.030	− 0.109
	Video clips: liked	175	0.073	0.330	0.025	0.018–0.118	2.928**
	Dots	173	0.104	0.511	0.039	0.013–0.166	2.672**

* $p < .05$.
** $p < .01$.
[a] *t*-Value for the comparison of the group mean to zero.

indicated conformity to the WL peer (well-liked/average popular).

To test for participant status effects on conformity in Experiment 2, two separate hierarchical regression models were run (i.e., one for the quiz opinion questions and one for the quiz knowledge questions), because scores on the quiz opinion questions and the quiz knowledge questions were not significantly correlated in Experiment 2 ($r = 0.108$, $p = .16$). Each regression model included five steps. In Step 1, popularity and likeability of the HP and the WL peers were added to control for variability in status of the target peers across classrooms. In Step 2, participant gender was added to control for gender differences in the dependent variable. In Step 3, participant popularity and likeability were entered. In Step 4, the two-way interactions of gender with participant status (Gender × Participant Popularity, Gender × Participant Likeability) and between the two types of status (Participant Popularity × Participant Likeability) were entered. In Step 5, the three-way interaction was entered (Gender × Participant Popularity × Participant Likeability). Significant interactions were followed by post-hoc tests according to the procedures of Aiken and West (1991). Preliminary analyses showed that all required assumptions for hierarchical regression analyses were met.[4]

3.2.1. Opinion questions

For the opinion questions, one-sample *t*-tests showed no significant peer conformity effects for both boys and girls at T2. Furthermore, regression analysis revealed that participant popularity and likeability did not predict conformity. This contradicts our hypothesis that conformity would depend on a participant's popularity and on her or his likeability. Finally, although initially not a goal of this study and added only as control variable, there was a significant negative effect of the WL peer's preference on conformity ($\beta = -0.218$, $t(170) = -2.11$, $p < .05$). Thus, lower preference of the WL peer resulted in more conformity to the HP peer ($R^2 = 0.05$).

3.2.2. Knowledge questions

For the knowledge questions, again one-sample *t*-tests did not show significant peer conformity effects for both boys and girls at T2. In addition, no significant main or interaction effects were found for participant's popularity or likeability. Participant's conformity thus did not vary as a function of their status. Similarly as with the opinion questions, this contradicts our hypothesis for both popularity and likeability. Finally, although initially not a goal of this study and added only as a control variable, there was a significant positive effect of the HP peer's popularity ($\beta = 0.182$, $t(168) = 2.21$, $p < .05$). A higher popularity of the HP peer led to more conformity to the HP peer ($R^2 = 0.06$).

3.3. Experiment 3: video clips (T2)

Table 3 includes the conformity scores for Experiment 3. One-sample *t*-tests were run to assess whether conformity scores differed significantly from zero. Next, a hierarchical regression analysis was run to test for participant status effects on peer conformity. The same procedure was used as for Experiment 2.

3.3.1. Funny rating

One-sample *t*-tests showed no significant peer conformity effect for the funny question for both boys and girls. Contrary to our hypothesis, the regression analysis revealed no significant negative main effect of participant popularity. However, also contrary to our predictions - a significant positive main effect of participant likeability and a significant participant popularity by participant likeability interaction was found (see Table 4). Simple slope analysis showed that, for popular participants, conformity to the HP peer significantly increased as participant likeability also increased (simple slope = 0.12, $t(173) = 4.16$, $p < .001$; see Fig. 1). For unpopular participants, the simple slope of participant likeability was not significant.

Finally, although merely added to control for target classmate's status, peer conformity was negatively predicted by the WL classmate's popularity for the funny question ($\beta = -0.293$, $t(170) = -3.71$, $p < .01$, $R^2 = 0.10$). Thus, the less popular the WL classmate was, the less they conformed to her/him and the more they conformed to the HP classmate.

3.3.2. Liking rating

One-sample *t*-tests showed that for the liking question ("How much did you like the video clip?"), conformity to the HP peer did reach significance for girls, but not for boys. This is in line with our predictions that girls would show larger conformity effects than boys. Girls conformed significantly more to the HP peer than to the WL peer. Contrary to the funny rating, no significant main or interaction effects of participant popularity or likeability were found. Participant's degree of conformity did not vary as a function of their status. This contradicts our hypothesis for both popularity and likeability that less popular or less liked participants would show higher peer conformity effects than

[4] Detailed information available from the first author.

Table 4
Predicting Peer conformity from gender and participant status in Experiment 3.

	Experiment 3: video clips funny ratings			
	β_{entry}	β_{final}	ΔR^2	R^2
Step 1			0.103*	0.103**
HP classmate popularity	0.082	0.038		
HP classmate likeability	0.145	0.128		
WL classmate popularity	− 0.293**	− 0.277**		
WL classmate likeability	0.052	0.063		
Step 2			0.007	0.110**
Gender (girls = 0, boys = 1)	− 0.118	0.105		
Step 3			0.008	0.119**
Participant popularity	0.009	0.167		
Participant likeability	0.087	0.267		
Step 4			0.057*	0.176**
Gender × participant popularity	− 0.106	− 0.118		
Gender × participant likeability	− 0.134	− 0.148		
Participant popularity × participant likeability	0.250**	0.286*		
Step 5			0.001	0.177**
Gender × Participant popularity × Participant likeability	− 0.047	− 0.047		

* $p < .05$.
** $p < .01$.

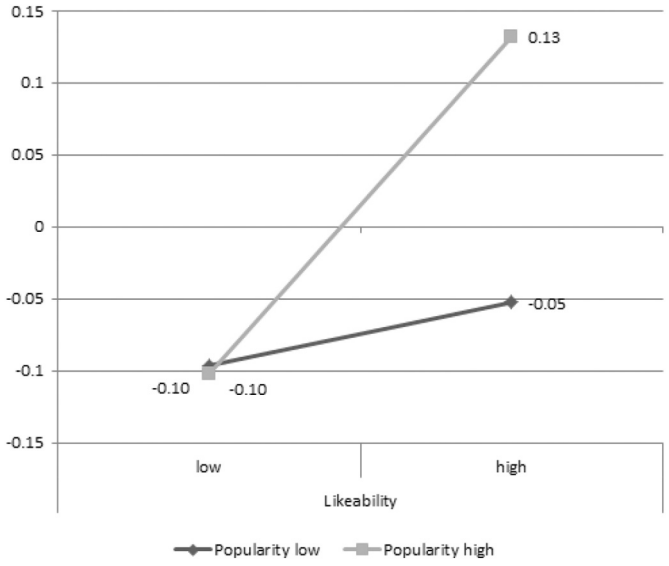

Fig. 1. Interaction of participant popularity by participant likeability on peer conformity in Experiment 3 Video clips funny ratings. Low and high popularity and likeability were defined as $M \pm 1$ *SD* (Aiken & West, 1991).

more popular or more liked participants.

Finally, again, peer conformity was negatively predicted by the WL classmate's popularity ($\beta = -0.246$, $t(170) = -3.04$, $p < .01$, $R^2 = 0.06$). Thus, also for the liking question, the less popular the WL classmate was, the less they conformed to her/him and the more they conformed to the HP classmate.

3.4. Experiment 4: dots (T2)

According to the means in Table 3, Experiment 4 yielded the highest degree of peer conformity for both boys and girls of all three experiments at T2. However, as with Experiment 3, one-sample *t*-tests showed that conformity was significant only for girls. Again, girls conformed significantly more to the HP classmate than to the WL classmate. Although we expected a significant effect for boys as well, this supports our predictions that girls would show larger conformity effects than boys.

Table 5
Predicting peer conformity from gender and participant status in Experiment 4.

	Experiment 4: dots guesses			
	β_{entry}	β_{final}	ΔR^2	R^2
Step 1			0.066*	0.066*
HP classmate popularity	0.237**	0.303**		
HP classmate likeability	− 0.162	− 0.097		
WL classmate popularity	− 0.036	− 0.026		
WL classmate likeability	0.098	0.163		
Step 2			0.010	0.076*
Gender (girls = 0, boys = 1)	0.138	0.175†		
Step 3			0.007	0.083*
Participant popularity	0.070	− 0.099		
Participant likeability	− 0.104	0.062		
Step 4			0.042†	0.125*
Gender × participant popularity	0.255*	0.219†		
Gender × participant likeability	− 0.234*	− 0.273*		
Participant popularity × participant likeability	− 0.119	− 0.017		
Step 5			0.016	0.132*
Gender × Participant popularity × Participant likeability	− 0.132	− 0.132		

† < .10.
* $p < .05$.
** $p < .01$.

In the hierarchical regressions, there were no significant main effects for participant popularity or likeability (Table 5). This contradicts our hypothesis for both popularity and likeability. However, there was a significant gender by participant likeability interaction. Simple slope analysis indicated that less liked boys conformed significantly more to the HP peer than more liked boys did (simple slope = − 0.21, $t(171) = -8.39$, $p < .001$; Fig. 2). For girls, the simple slope of participant likeability was not significant.

Finally, as with the knowledge quiz, there was a positive effect of the HP peer's popularity on conformity ($\beta = 0.237$, $t(168) = 2.90$, $p < .01$, $R^2 = 0.07$). More popularity of the HP peer led to more conformity to her/him.

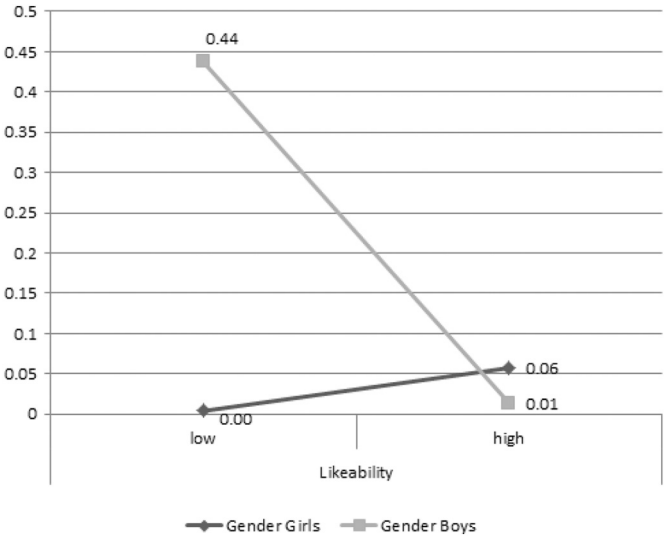

Fig. 2. Interaction of participant gender × participant likeability on peer conformity in Experiment 4. Low and high likeability were defined as $M \pm 1$ *SD* (Aiken & West, 1991).

4. Discussion

The first goal of this study was to investigate to what extent peer conformity depended on the status of the influencer and the influencee. It was hypothesized that popular peers would wield more influence than well-liked peers. The second goal was to investigate whether the degree of peer conformity was moderated by influencee status. It was expected that adolescents' peer conformity would depend on their own popularity (but not likeability). Finally, the third goal of this study was to investigate whether peer conformity effects varied by gender. Stronger peer conformity effects were expected for girls than for boys.

4.1. Conformity to hypothetical peers in Experiment 1

Experiment 1 showed that participants conformed more to the high status reference groups than to the low status reference groups. These findings are consistent with previous research and theories on peer influence and peer status (e.g., Brown, Bakken, Ameringer, & Mahon, 2008; Cohen & Prinstein, 2006; Sandstrom, 2011; Sandstrom & Romano, 2007). High status youths wield more influence and power (dominance) than low status youths. Boys and girls both conformed, but – as expected – girls more than boys. In addition, for knowledge questions, low and average popular adolescents conformed more than highly popular adolescents. This confirms our hypothesis that unpopular youths are more susceptible to peer influence than popular youths.

As expected, type of status also mattered. For girls, the likeability of popular peers mattered in terms of girls' level of conformity, while boys conformed more to popular peers irrespective of their likeability. For boys, this is in line with previous research suggesting that popularity is associated more strongly with dominance, power, and influence than likeability (e.g., Lease, Musgrove, et al., 2002; Parkhurst & Hopmeyer, 1998). For girls, the reason why the likeability of popular peers affected their conformity may lie in the fact that girls' peer relationships and interactions are focused more on community and social approval than boys' (see Rose & Rudolph, 2006; Rose & Smith, 2009). First, evidence suggests that girls may perceive popularity as more negative than boys (e.g., Eder, 1985; Rose, Glick, & Smith, 2011). Girls' may come to resent popular peers if they perceive them as engaging in increasingly elitist behavior. Together with other differences in peer relationships between boys and girls, such as girls' stronger focus on connection-oriented goals, higher self-disclosure in relationships, and greater orientation towards interpersonal concerns (Eagly, 1987), relationships with popular peers may be particularly fraught. These complexities may make girls more attuned to the likeability of popular peers.

4.2. Conformity to actual peers in experiments 2, 3, and 4

The results of Experiments 2 to 4 were notably different from those of Experiment 1. In general, average conformity was lower in Experiments 2 to 4 (T2) than in Experiment 1 (T1). For the video clip liking questions in Experiment 3 and the dots guesses in Experiment 4, there was significant conformity to the high popular/average liked (HP) classmate for girls, but not for boys. Thus, as in Experiment 1, girls conformed more than boys. This can be explained again by gender differences in peer relations, especially girls' stronger focus on positive interaction and connection-oriented goals (Eagly, 1987; Rose & Rudolph, 2006). There was no peer conformity for boys in Experiments 2 to 4, nor for girls in Experiment 2 and for the video clip funny rating in Experiment 3.

This lack of conformity effects in Experiments 2 to 4 at T2 may be due to some limitations of these experiments. First, the sample at T2 was smaller than the sample at T1, resulting in less power to detect significant effects. A post hoc power analysis revealed that on the basis of the mean and the average effect size by gender observed in Experiments 2–4 (Mean Cohen's $d = 0.182$ for girls, Mean Cohen's $d = 0.178$ for boys; excluding the quiz knowledge questions for boys and the quiz opinion questions for girls), an n of approximately 240 girls and 250 boys would be needed to obtain statistical power at the recommended 0.80 level (Cohen, 1988). However, on the basis of the lowest effect size by gender, an n of approximately 600 girls and 530 boys would be needed. Thus, the sample at T2 was too small to detect these small effects.

Second, for ethical reasons, the status characteristics of the target influencers at T2 (actual classmates) were less extreme than those of the hypothetical peers at T1 (high/average vs. high/low, respectively). Third, the status of the target influencers was made explicit in Experiment 1, but was left implicit (inferred only by the name of the classmate) in Experiments 2–4. Because of this, we expected smaller effect sizes and thus harder to detect effects at T2. Fourth, the dots guesses in Experiment 4 elicited the strongest conformity effect to the HP classmate, which is likely indicative of a stronger informational influence motive to conform (i.e., people's desire to be right) rather than a normative influence motive (i.e., people's desire to obtain social approval; Cialdini & Goldstein, 2004). Subsequently, we could argue that our experimental manipulations perhaps were not strong enough to impose a realistic risk of rejection or disapproval to invoke a normative influence motive, resulting in a general lack of conformity effects in Experiments 2 and 3.

Fifth and finally, although it was a key methodological contribution of this study to examine peer influence on neutral, status-unrelated behaviors, it may be that our experiments, specifically the knowledge and opinion questions in Experiment 2, were not relevant enough for adolescents' daily lives to solicit peer conformity. Perhaps using questions more related to adolescents interests and activities would have resulted in larger conformity effects. Similarly, the content of the experiments may have been too trivial and/or too status-unrelated to invoke a normative or an informational influence resulting in peer conformity. Including behaviors more relevant for adolescents' popularity and likeability might have resulted in larger effects.

In addition to these experimental limitations, participants knew the classmates who were the target influencers at T2. Therefore, other dyadic characteristics between participants and target classmates (e.g., mutual liking, friendships) may have influenced the results of Experiments 2 to 4 in a way that was not possible in Experiment 1 (Brechwald & Prinstein, 2011; Bukowski, Velasquez, & Brendgen, 2008). Furthermore, though participants may have believed that their responses were visible to peers imposing a real risk of rejection or disapproval if not conforming to the high status peer, in all four experiments it was not explicitly the case that participants' responses were subject to the judgments of others. That is, participants were not explicitly led to believe that their responses were public. Previous research has shown that participants who expected their responses to be reviewed by their peers or their parents conformed more than participants in an anonymous, private condition (Cohen & Prinstein, 2006; Sandstrom & Romano, 2007). If participants felt their answers were private, the motivation to either impress others or avoid ridicule by responding to items in particular ways may have been minimized, reducing the need for conformity. Thus, all four experiments may have underestimated peer conformity a bit in comparison to real life situations where one's judgements are often exposed.

4.3. Effect of influencee status in experiments 2, 3, and 4

Several effects of status on conformity were found. But it is noteworthy that there was no main effect of participants' popularity on conformity. Thus, contrary to expectations, participants' conformity did not depend on their popularity in Experiments 2, 3, or 4. The low conformity rates in these experiments may indicate that the experimental manipulations were not strong enough to reliably elicit a conformity response which subsequently may have obscured any effect of influencee popularity. However, it could also be that susceptibility to peer influence is not determined by popularity alone; other individual, relational, and contextual moderators,

uncorrelated to one's popularity status, may play an important role as well (Sandstrom, 2011). Moreover, as previously explained, dyadic characteristics between participants and target classmates (e.g., mutual liking, friendships) may have weakened the effect of participants' popularity on their degree of peer conformity (Brechwald & Prinstein, 2011; Bukowski, Velasquez, & Brendgen, 2008).

On the contrary, participants' likeability did play a role in the degree of conformity to the high popular/average liked (HP) peer. However, the results were not consistent across the experiments. In the opinion and knowledge quiz and in the video clip liking ratings, no main or interaction effects of participants' likeability were found. In the video clip funny ratings, popular participants conformed more when their likeability also increased, while in the dots experiment, less liked boys conformed more than more liked boys.

Although the three-way interaction of gender with participants' popularity and likeability was not significant in the video clip funny ratings, likely due to power issues, a closer look at the differences between both experiments suggests that the higher conformity of popular-liked participants was primarily the case for girls (e.g., conformity was significantly higher for popular-liked girls than for popular-liked boys). Indeed, running the hierarchical regression separately by gender showed a significant participant popularity by participant likeability interaction only for girls.

These findings again can be explained by gender differences in peer relations (see Rose & Rudolph, 2006) and girls' different appraisals of and perspectives on popularity (e.g., Eder, 1985; Lease, Kennedy, et al., 2002; Rose et al., 2011). Furthermore, popularity is a heterogeneous construct and a distinction is usually made between “popular and likeable” (models) and “popular but not necessarily liked” (toughs; de Bruyn & Cillessen, 2006; Cillessen, 2011; Rodkin, Farmer, Pearl, & Van Acker, 2000). Given the distinct behavior profiles of both subgroups, it is not surprising that susceptibility to peer influence appears to be highest in the “popular and likeable” group. The possible consequences of not conforming may be more apparent for popular-liked participants (e.g., becoming disliked) than the possible consequences of conforming or not conforming for popular-disliked participants (e.g., becoming liked or losing popularity). It may also be that popular-disliked participants are not so much aware of or attuned to the possible negative consequences of not conforming (i.e., one is already popular, feeling invulnerable or untouchable). Hence, it is not surprising that larger conformity scores for popular-liked than for popular-disliked participants were found, particularly for girls.

In summary, the results suggest – similar as with influencer likeability for girls in Experiment 1 – that influencee likeability may play a role in peer conformity for both boys and girls. The results, however, should be interpreted with caution given the inconsistencies and the lack of significant effects across experiments.

4.4. Limitations and directions for future research

This study is one of the first to examine the combined effects of influencer and influencee characteristics on experimentally induced conformity. Among its strengths are the use of real classmates as influencers and the fact that conformity was measured for neutral, status-unrelated behaviors using experiments conducted at school.

There were also study limitations and related directions for future research. First, future research should include additional social constructs (e.g., dyadic interactions, mutual liking, friendship between influencer and influencee), to further analyze whether effects found in Experiments 2, 3, and 4 are strengthened or weakened by such factors. Further, an important direction for future research is to systematically vary experimental characteristics, to investigate more precisely and explain in more detail how and why effects differed across experiments. Possibly, in the current study, differences emerged due to differences in the type of questions asked (e.g., Experiments 2 and 3 were more subjective than Experiment 4), but future research should investigate this in greater detail.

Second, it is important to replicate experiments with actual classmates as influencers (as in Experiments 2 to 4) using a larger sample, as some effects did not reach significance. Most likely this is due to sample size, especially for boys. It is reasonable to assume that effect sizes are small to moderate, especially when more subjective experiments (e.g., Experiments 2 and 3) are used in which other personal, social, or experimental characteristics – other than peer influence – may affect the outcome. A larger sample is required to detect these effects. Furthermore, future research should investigate whether effects could be amplified by altering the experimental manipulations in such a way that participants are more primed with the status-related characteristics of the target classmates, for example by asking participants to explicitly think about their classmates' status. It is possible that conformity was attenuated because merely seeing the first name of a classmate on a computer screen does not automatically prime the sorts of status-related characteristics that are primed in real interactions.

Third, due to ethical considerations and the way experiments were set up (e.g., no extreme status manipulations in Experiments 2 to 4), it was not possible to investigate the effect of the relative difference in status between the influencer and the influencee. But, given the significant effects of both influencer and influencee status in some of the experiments, peer conformity may vary by the relative difference between influencer and influencee status: The greater the difference to the advantage of the influencer, the more the influencee is likely to conform. This possibility deserves further empirical study.

Fourth and finally, the current study should be replicated with different samples, to address the generalizability of our findings to other age groups, grade levels, school systems, or cultures. Generalization of our results is limited as the sample consisted of primarily native Dutch-speaking secondary school students of one school, all following a similar level of education. Results will be different for younger children, for children coming from other backgrounds (e.g., SES, ethnicity, culture), or for students in other school systems or at a higher or lower level of education.

5. Conclusion

In general, although not all findings were significant, it seems that adolescents, especially boys, are more attuned to the popularity of peers than to their likeability in peer influence processes. That is, 12-to-15 year-old adolescents tend to conform more to popular peers than to well-liked peers. As expected and similar to previous research, popularity was more strongly associated with conformity than likeability. This was substantiated in our study by the effects of influencer popularity on conformity. And even among the popular influencers, those with higher levels of popularity elicited higher levels of conformity.

For girls and only in Experiment 1, in addition to the popularity of the influencer, also the likeability of the influencer positively affected their conformity. Overall, girls displayed more peer conformity than boys across all experiments. As indicated, such gender differences in peer conformity may be explained by research on gender differences in peer relationships and interactions, such as girls' stronger focus on connection-oriented goals and higher aspirations to become popular (Eagly, 1987; Eder, 1985; Rose & Rudolph, 2006). Thus, although effects vary by gender, both the type and level of status of the influencer affect adolescent peer.

Contrary to what was expected, conformity did not depend on participants' popularity or participants´ likeability consistently across experiments, although results do suggest that both the type and level of status of the influencee are not completely unrelated to their level of conformity (i.e., influencee's popularity for the knowledge questions in Experiment 1, influencee's likeability for the funny ratings in Experiment 3 and for boys in Experiment 4). A challenging but exciting task for future research is to further investigate how the complex interplay of gender, influencer status, and influencee status affects conformity in child and adolescent peer groups.

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