

Me, Us, and Them: Testing Sociometer Theory in a Socially Diverse Real-Life Context

Anne K. Reitz
Columbia University and Humboldt University Berlin

Frosso Motti-Stefanidi
University of Athens

Jens B. Asendorpf
Humboldt University Berlin

Although numerous studies have emphasized the role evaluations by others play for people's self-esteem, the perspective of others and the social diversity of real-life contexts have largely been ignored. In a large-scale longitudinal study, we examined the link between adolescents' self-esteem and their self- and peer-perceived popularity in socially diverse classrooms. First, we tested the competing directions of effects predicted by sociometer theory (i.e., peer-perceived popularity affects self-esteem, mediated by self-perceived popularity) and the self-broadcasting perspective (i.e., self-esteem affects peer-perceived popularity). Second, we examined differential effects of popularity in the own social group ("us") versus others ("them") by using immigrant status groups (i.e., immigrants versus host-nationals). We examined 1,057 13-year-old students in 3 annual waves. Cross-lagged analyses revealed that popularity among peers of the in-group but not among peers of the out-group prospectively predicted self-esteem, which was mediated by self-perceived popularity. Self-esteem in turn prospectively predicted self- but not peer-perceived popularity. In sum, the findings provide support for sociometer theory and a conscious sociometer mechanism but no support for the self-broadcasting perspective. The findings further demonstrate that the sociometer was more responsive to popularity in immigrant status in- than out-groups. In conclusion, the findings underscore the need to consider the perspective of others and their social group memberships to better understand the complexities of the link between self-esteem and popularity.

Keywords: sociometer theory versus self-broadcasting theory, self-esteem, self-perceived and sociometric peer popularity, longitudinal, in- and outgroup

Self-esteem, defined as an individual's evaluation of his or her personal value, is an exceptionally pervasive and powerful psychological construct. Recent longitudinal studies have demonstrated long-term effects of adolescents' low self-esteem on major life outcomes in adulthood, such as poor mental and physical health and limited economic prospects (Steiger, Allemand, Robins, & Fend, 2014; Trzesniewski et al., 2006). There is thus a great

need to understand the contexts of adolescent's self-esteem development. Sociometer theory (SMT; Leary & Baumeister, 2000), the most pertinent self-esteem theory, proposes that self-esteem reflects a person's relational value, which should increase when one is liked by others. Although SMT research underscores the social nature of self-esteem, most studies relied exclusively on self-reported popularity. The perspective of others and the growing diversity of today's social realities have largely been ignored. Major questions thus remain unanswered: How is our self-esteem related to the extent to which *others* like us versus to which *we think* they do? What is the *directionality* and *mechanism* underlying the link between self-esteem and popularity? And do sociometer effects vary depending on *who* likes us? More specifically, does being liked by *in-group* members matter more than being liked by *out-groups*?

We used a large-scale three-wave study to examine longitudinal links between adolescents' self-esteem and their self- and peer-perceived popularity. To account for the diversity of real-life contexts, we obtained sociometric peer nominations in classrooms with immigrant and host-national students. The aim of the study was twofold: First, we tested opposing predictions about the direction of effects between self-esteem and popularity by SMT (i.e., peer-perceived popularity predicts self-esteem, mediated by self-perceived popularity) and the self-broadcasting perspective (SBP; i.e., self-esteem predicts peer-perceived popularity). Second, we

This article was published Online First November 23, 2015.

Anne K. Reitz, Columbia Aging Center, Columbia University and Department of Psychology, Humboldt University Berlin; Frosso Motti-Stefanidi, Department of Psychology, University of Athens; Jens B. Asendorpf, Department of Psychology, Humboldt University Berlin.

Anne K. Reitz was supported by a fellowship of the International Max Planck Research School on The Life Course and by a Humboldt Post-Doc Scholarship of the Humboldt University of Berlin. The present study is part of the Athena Studies of Resilient Adaptation (ASTRA), a collaborative project focusing on the quality of adaptation of immigrant youth living in Greece. This project is supported by an Excellence grant to Frosso Motti-Stefanidi co-funded by the European Social Fund and Greek National Resources (ESPA-Excellence II).

Correspondence concerning this article should be addressed to Anne K. Reitz, who is now at Columbia Aging Center, Mailman School of Public Health, Columbia University, 722 West 168th Street, Mail code: MSPH 25, New York, NY 10032. E-mail: reitz.anne@gmail.com

examined whether popularity by peers with the same immigrant status (i.e., the in-group) has stronger effects than popularity by peers with the other immigrant status (i.e., the out-group).

Direction of Effects Between Popularity and Self-Esteem

Sociometer Theory

Social scientists have long assumed that a key component of self-esteem lies in the interplay of the individual and its social environment (e.g., James, 1890; Mead, 1934). Leary and colleagues take this argument a step further and provide a theoretical rationale for the function of self-esteem (see Leary, 2005). According to SMT (Leary & Baumeister, 2000), self-esteem serves as a *sociometer*, an internal gauge of others' evaluations of the individual. Due to the importance of social inclusion for survival, humans developed this psychological warning system that monitors and responds to cues that are relevant to the individual's relational value, such as cues that connote liking and disliking. Consequentially, self-esteem should decrease in response to cues of disliking and increase in response to cues of liking.

Current research provides general support for this main tenet of SMT (see Leary, 2003). Yet, there are also a number of major gaps. Most studies used experimental laboratory settings that manipulated social feedback from unknown others (e.g., Buckley, Winkel, & Leary, 2004; Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997). Despite evidence for causality, such laboratory studies provide limited evidence for the external validity of SMT. Another limitation of these studies is that they mostly assessed immediate effects. To date, there are only a few naturalistic longitudinal studies that provide supporting evidence for SMT (Denissen, Penke, Schmitt, & van Aken, 2008; Murray, Griffin, Rose, & Bellavia, 2003; Srivastava & Beer, 2005). These studies however only provided evidence for sociometer effects over one to three weeks. To test whether trait self-esteem indicates people's internalized "relational value in the long run" (Leary & MacDonald, 2003; p. 404), studies need to cover longer intervals. To address these gaps, we examined sociometer effects in adolescents' real-life peer relationships over 1-year intervals.

Another major limitation of previous studies is that most of them relied on self-report measures of popularity. Whereas self-report measures are useful for investigating internal processes, peer nominations provide a more objective view of an individual's popularity, which is why we used both. This allowed us to study a yet unresolved issue, namely the underlying mechanism of the sociometer effect. Leary, Cottrell, and Phillips (2001) suggest that one's perceived relational value is the single mediator of the sociometer effect. Accordingly, the internal awareness of an individual's popularity is the underlying mechanism through which external popularity affects self-esteem.

To date, only one study has tested this mechanism underlying the sociometer effect and it did not find supporting evidence (Srivastava & Beer, 2005). According to the authors, however, this finding should be treated with caution because self-reported popularity ("This person would enjoy being friends with me") was not parallel to peer-reported popularity ("I like this person"); an item such as "This person *likes* me" would have captured the mecha-

nism better. Another limitation was that a one-item social self-evaluation measure was used ("I am a likable person") instead of a validated self-esteem measure. In this study, we therefore tested whether self-reported popularity, measured as "Other kids *like* me", mediated the effect of peer nominations on global self-esteem.

Finally, it is unclear whether acceptance and rejection affect self-esteem to the same degree. Whereas SMT emphasizes the need to prevent rejection, a recent meta-analysis reported more consistent effects for acceptance (Blackhart, Nelson, Knowles, & Baumeister, 2009). As this was based on correlational data, we examine whether the stronger acceptance effects persist over time or whether, for instance, rejection has a delayed onset.

Self-Broadcasting Perspective

Advocates of the self-broadcasting (SBP) perspective claim that SMT neglects the possibility of a complementary reverse effect: that people's self-esteem affects the extent to which others like them (Swann, Chang-Schneider, & McClarty, 2007; Zeigler-Hill, Besser, Myers, Southard, & Malkin, 2013). According to SBP, people express their self-evaluations in their social behavior, which others accept as valid. Increases in self-esteem should thus lead to increases in a person's popularity as judged by others.

The evidence for SBP is mixed and comparing research is complicated by different measures of popularity (i.e., self-report vs. other report) and self-evaluations (i.e., global self-esteem vs. social self-evaluation). Recent longitudinal studies reported effects of self-esteem on self-reported social support (Marshall, Parker, Ciarrochi, & Heaven, 2014) and on self-reported social inclusion (Hutteman, Nestler, Wagner, Egloff, & Back, 2015). Yet, self-reports of peer popularity can be unreliable (Brown & Larson, 2009). Studies using other-reports of popularity are therefore needed to test the claim of SBP that self-esteem affects "how that individual is perceived by the social environment" (Zeigler-Hill et al., 2013; p. 210).

To date, other reports are seldom used, which is why it is unclear whether self-esteem really affects popularity or whether it is just an illusion people have. A review article stated that self-esteem does not have a consistent effect on popularity: people with high self-esteem only claim to be more likable but objective measures do not confirm these beliefs (Baumeister, Campbell, Krueger, & Vohs, 2003). This is in accord with research on positive illusions suggesting that people are generally motivated to confirm and maintain their positive self-evaluations even if they involve blind spots (Swann, 1997). Research has shown that individuals with high self-esteem show a particularly strong self-enhancement bias (i.e., the tendency to see the self in an overly positive way; Sedikides & Gregg, 2008). For instance, individuals with high self-esteem were found to engage in self-serving reflections (Hepper, Gramzow, & Sedikides, 2010) and to show increasing self-enhancement tendencies over time (Dufner, Reitz, & Zander, 2015).

Other people in the social environment, in contrast, are able to accurately judge those individuals based on their day-to-day behavior irrespective of the individuals' self-views (Mehl, Gosling, & Pennebaker, 2006). Hence, self-esteem may affect how much people *think* they are liked, but not how much they are *really* liked. Srivastava and Beer's (2005) study was consistent with this idea:

it provided supporting evidence for SMT but not for SBP, as social self-evaluations did not affect peer-perceived popularity. Yet, replications are needed, as the measures were not sufficiently parallel as mentioned above.

Another line of research by Zeigler-Hill and colleagues (e.g., Zeigler-Hill & Besser, 2014) demonstrated in experimental studies that targets who were thought to have high self-esteem were perceived as more attractive and desirable romantic partners. The authors explain this with an implicit theory that functions similarly to the halo effect for physical attractiveness. As these studies were based on judging videos of strangers instead of judging the targets based on their day-to-day behavior, it is not clear whether this holds true for more naturalistic settings and for an individual's actual self-esteem. In this study, we therefore examine SBP in a naturalistic setting with real-life relationships. To disentangle the mixed evidence, we use other reports along with self-reports of popularity to examine whether self-esteem leads only to *perceiving* to be liked more, but not to *actually* being liked more.

Sociometer Theory in Socially Diverse Contexts

Imagine a host-national boy in a classroom with immigrant and host-national adolescents. Does his popularity in the host-national group affect his self-esteem to the same degree as his popularity in the immigrant group? This question is certainly of practical relevance in terms of the ever-expanding diversity of contemporary societies, but it is also of theoretical relevance for SMT, which may deserve an extension in terms of the groups of people who might potentially influence an individual's sociometer. The second part of this study thus aims to provide a novel integration of SMT with social identity theory to consider that individuals identify with social in-groups in order to boost and maintain their self-esteem.

SMT does not suggest that people seek relational value from everyone they meet (Leary, 2005). As people regard some of their relationships as more valuable than others (see Manis, 1955; Mead, 1934), their desire for relational value should be different for different relationships. People can invest their limited time only in a finite number of relationships, as increasing numbers would hamper the maintenance of existing relationships (Tooby & Cosmides, 1996). Considering how many people we interact with today, we thus need to distinguish between judgments that are important and those that are not. Hence, the sociometer is assumed to take the identity of the evaluator into account (Leary & Baumeister, 2000). From the perspective of SMT it thus makes sense that popularity among one's fellow in-group members contributes to increasing self-esteem over time, whereas popularity among peripheral others, such as out-groups, may have little or no effect on self-esteem.

To date, existing empirical studies on SMT only used homogeneous samples. Whether popularity judgments from immigrant status in-groups are more important for self-esteem than those made by out-groups has not yet been tested and indirect evidence is mixed. One line of research reported immediate emotional reactions to rejection regardless of whether it comes from in- or out-groups. These studies used Cyberball experiments (i.e., a virtual ball-tossing game) and studied groups such as PC versus Mac users (Williams, Cheung, & Choi, 2000) or smokers versus non-smokers (Smith & Williams, 2004). In contrast, another study found that social evaluations had stronger effects on basic social

needs when they were made by racial in-group members rather than racial out-group members (Bernstein, Sacco, Young, Hugenberg, & Cook, 2010). Similarly, a longitudinal study showed that immigrant adolescents' social involvement in their own ethnic culture but not in the host-national culture predicted self-efficacy beliefs (Reitz, Motti-Stefanidi, & Asendorpf, 2014).

This mixed evidence may be due to the different types of group distinctions studied. The degree to which a person (Rosenberg, 1973) or attribute (MacDonald, Saltzman, & Leary, 2003) is considered relevant for the self has been found to moderate the effect of evaluations on self-esteem (see Crocker & Wolfe, 2001). Building on social identity theory (see Tajfel, 1982), intergroup situations may thus only moderate sociometer effects when social categories are meaningful for one's identity (e.g., race), but not when they are irrelevant to people's lives (e.g., computer preferences). This is consistent with experimental research showing that in-group favoritism was more strongly associated with cultural than with trivial groups (Efferson, Lalive, & Fehr, 2008).

Immigrant status groups are meaningful and salient social categories (Deaux, 2006). Immigrant status can divide adolescents in many ways, such as in terms of friendship homophily, social status, and segregated neighborhoods (Titzmann & Silbereisen, 2009; Semyonov & Glikman, 2009). Unlike their host-national peers, immigrant adolescents not only have to face developmental tasks but also acculturative tasks such as navigating two cultures and identities (Fuligni, Witkow, & Garcia, 2005; Reitz et al., 2014). Moreover, discrimination is a salient feature of the experiences of immigrant youth, particularly in diverse schools (Deaux, 2006; Reitz, Asendorpf, & Motti-Stefanidi, 2015), which can trigger an immigrant identity (Craig & Richeson, 2012). As such, similar to race and ethnicity, immigrant status can be regarded as an unchangeable social category (Rangel & Keller, 2011). Immigrant status should thus be considered a group-defining characteristic that may elicit stronger sociometer effects for in- than for out-groups. As ethnic identity is an important component of adolescents' self-concept (Phinney, 1992), popularity by the in-group may be particularly important for self-esteem when adolescents identify with their ethnic group. This aligns with both social identity and developmental approaches that indicate a positive link between ethnic identity and self-esteem (Phinney, Horenczyk, Liebkind, & Vedder, 2001).

The Current Study

The overall goal of the current study was to examine longitudinal links between adolescents' self-esteem, self-perceived popularity, and peer-perceived popularity in diverse classrooms. To this end, this three-wave field study was carried out in classrooms consisting of over 1,000 immigrant and host-national adolescents. We study adolescence, as it is a critical developmental period for self-esteem development: Adolescents aim to find out who they are and how they are perceived by others (Harter, 2012; Steinberg, 2001). Self-esteem undergoes considerable changes in adolescence and the relatively low consistency over time implies that it is quite amenable to social influences (Erol & Orth, 2011; Meier, Orth, Denissen, & Kühnel, 2011). Following the call to account for the developmental contexts for personality development (Hutteman, Hennecke, Orth, Reitz, & Specht, 2014; Roberts & Mroczek, 2008), we studied peers, who constitute the most important context

for adolescent development (Brown & Larson, 2009). Adolescents become highly susceptible to social acceptance by peers, such as classmates, which is considered more critical to self-esteem than the acceptance of close friends and family members (Harter, 2012; Leary & Baumeister, 2000). We thus studied popularity among classmates, which allowed the application of a state-of-the-art measure of adolescents' popularity: a sociometric procedure (Cillessen & Marks, 2011).

The first aim of this study was to test the competing predictions of SMT and SBP, the two core views on the temporal relationship between self-esteem and popularity. Two strengths extend previous research: First, the three-wave 2-year data allowed us to examine the long-term directionality of effects between popularity and self-esteem. Second, the use of self- and peer-reports allowed us to examine whether the mechanism underlying the sociometer effect is conscious and whether self-esteem affects only self- or also peer-perceived popularity. In Hypothesis 1 we expected that peer-perceived popularity prospectively predicts self-esteem via self-perceived popularity as proposed by SMT. In Hypothesis 2 we expected that self-esteem prospectively predicts self-perceived popularity but not peer-perceived popularity.

The second aim was to extend previous research by investigating sociometer effects in a socially diverse context in order to account for the realities of today's increasingly diverse societies. To examine whether the sociometer is more sensitive to popularity by in- than out-groups, the study was carried out at schools with high proportions of immigrant students, which create a highly salient intergroup context for adolescents. Immigrants form the fastest growing segment of youth population in Europe, which is reflected in a growing diversity in schools. Immigrant status is thus considered a relevant social category in Europe that requires attention (American Psychological Association, Presidential Task Force on Immigration, 2012). Considering the recent waves of immigration to Europe, this is now more prevailing than ever. This study was conducted in Athens, Greece, one of Europe's major and most recent countries of immigration (11% are foreign born; Eurostat, 2013). Greece received large immigration flows after its entrance into the Schengen area and the European Union and the collapse of the communist regimes in Eastern Europe. The two largest immigrant groups in Greece at the time of (the) data collection were Albanians and Pontic-Greeks. Pontic-Greeks are Hellenic diaspora migrants who returned to Greece, the country of their ancestors, after centuries of living in the former Soviet Union.

The Greek policies that affect immigrants' integration are rated as less favorable than those in most other European countries (Migrant Integration Policy Index, 2015). This reality shapes the lives of immigrant students of various ethnic backgrounds in a similar way. For instance, Albanian and Pontic-Greek adolescents experience similar levels of personal discrimination (Motti-Stefanidi & Asendorpf, 2012), which is due to discrimination by Greeks but not by fellow immigrants of other ethnicities (Reitz et al., 2015). Furthermore, immigrant status in Greece is a risk factor for school success, conduct, and peer popularity, which is the case for all immigrants (Motti-Stefanidi, Asendorpf, & Masten, 2012). Given that immigrant status is a divisive social category in Greece, it may generate intergroup bias and group identity (Perdue, Dovidio, Gurtman, & Tyler, 1990), and thus, differential sociometer effects. In Hypothesis 3, we therefore predicted that popularity by peers with the same immigrant status has stronger effects on

self-esteem than popularity by peers with a different immigrant status. We expected that ethnic group identification helps to explain this differential effect.

Method

Procedure

Students were recruited from 49 classrooms in 12 public high schools in Athens, Greece, with high and balanced proportions of students with immigrant backgrounds (50%). Data were collected over a 2-year period in three annual waves starting in 2005. At each wave, there were three visits to each school within one week. Trained researchers carried out the data collection in the classrooms and instructed the students to fill in the questionnaires. The procedure was the same across all waves. Students could choose between different language versions of the questionnaires and 90% chose to respond in Greek. Four bilingual speakers translated all questionnaires from Greek into Albanian and Russian and then back into Greek to ensure language equivalence.

Participants

Participants were $N = 1,057$ students (53% boys) in the first year of high school. The mean age at Time 1 (T1) was 12.7 years ($SD = 0.66$, range = 12–17). Students were considered as having an immigrant background, henceforth called immigrant students, if they themselves (i.e., first generation) or at least one parent (i.e., second generation) was born abroad, which together comprised 50% of the sample. The other 50% had native-born Greek parents and were therefore categorized as Greeks (i.e., host-nationals). Of the immigrant students, 59% were first-generation and 41% were second-generation immigrants (first-generation immigrants had spent 65% of their life in Greece). Twenty-six percent of all students were of Albanian origin, 16% were Pontic-Greeks, and 9% had diverse other ethnicities predominantly of Eastern-European origin. Twenty-five percent dropped out after Wave 1, and 15% dropped out after Wave 2. Most dropouts (73% in T1, 60% in Time 2; T2) were due to the dropout of 13 classes as a result of noncooperation of teachers and schools. To account for missing values, we applied the full information maximum likelihood procedure (FIML) that uses all available data to produce more reliable estimates than conventional approaches (Schafer & Graham, 2002).

Measures

Peer-perceived popularity. A sociometric procedure was administered to measure peer-perceived popularity in the classrooms (Coie, Dodge, & Coppotelli, 1982). It is regarded as the gold standard for assessing adolescent popularity (Cillessen & Marks, 2011). All students in each class were asked to write down the names of three classmates who they liked most and three classmates who they liked least (i.e., all classmates participated as both voters and nominees). We subsumed each adolescent's number of "liked most" nominations into an acceptance score and the number of "liked least" nominations into a rejection score. Because composite scores are more powerful than the single scores, we defined social preference scores (i.e., an individual's peer-perceived pop-

ularity or degree of being liked) by taking the difference of rejection and acceptance scores (see Newcomb & Bukowski, 1983). As sociometric nominations are relative to the size of the group in which they are assessed, we standardized raw scores on the classroom size (see Coie et al., 1982). A meta-analytic review found good test-retest reliability for nomination-based social preference scores (i.e., .82) and concluded that they are particularly good for longitudinal studies on adolescents' peer status (Jiang & Cillessen, 2005). The 1-year stabilities in this study ($r = .45/.47$ for social preference) were in line with those in the meta-analysis.

Next, we divided the overall preference score based on the immigrant status (i.e., immigrant vs. Greek) of the voting classmate. More detailed group distinctions could not be formed. Raw scores were again standardized on the size of the immigrant and Greek groups, respectively. Hence, each adolescent received an in-group score of nominations from classmates with the same immigrant status and an out-group score of nominations from classmates with the other immigrant status. As a result, immigrants' in-group score included nominations from all immigrants, whereas their out-group score included nominations from Greeks (and vice versa for Greeks).

Self-perceived popularity. Students were asked to rate their self-perceived degree of popularity on the item "Other kids like me" in order to measure self-perceptions of liking. Responses were measured on a 3-point scale ranging from 0 (*not true*) to 2 (*certainly true*). This item has high face validity to assess how much students think they are liked by others and a similar item was successfully used in previous research (Mayeux & Cillessen, 2008). This measure parallels the peer-perceived popularity measure "Who do you like most/least", which is important to test for a conscious mechanism (see Srivastava & Beer, 2005).

Self-esteem. Global self-esteem was assessed with the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965). The scale demonstrated good reliability and validity for adolescents and different ethnic groups (Robins, Hendin, & Trzesniewski, 2001). Adolescents rated their agreement to items (e.g., "On the whole I am satisfied with myself") on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach's alphas were .77 at T1, .78 at T2, and .85 at Time 3 (T3) and were virtually identical for Greek ($\alpha = .79$) and immigrant students ($\alpha = .75$).

Socioeconomic adversity. Based on earlier indices (Gutman, Sameroff, & Eccles, 2002; Luthar, 1991), we composed a cumulative socioeconomic risk index that has been used elsewhere and is culture-specific for immigrant groups in Greece (e.g., Motti-Stefanidi et al., 2012; Reitz et al., 2015). A composite score of four dichotomized demographic factors was formed (i.e., 1 = *high adversity*, 0 = *low adversity*), which resulted in a scale with a range of 0–4. Single parenthood (i.e., divorced or death of a parent vs. married parents), low occupational status of father and mother, respectively (i.e., unemployed or unskilled worker vs. employed), and high residential density (i.e., a ratio of the family size to the number of rooms above the median) indicated high adversity. For multiple group analyses, respondents were divided into high versus low adversity groups by means of a median split.

Ethnic identity. We used the sense of belonging subscale of the Multigroup Ethnic Identity Measure (Phinney, 1992), which was designed for adolescents and has shown to be applicable across ethnic groups. Adolescents were asked to rate their commitment on 7 items (e.g., "I have a strong sense of belonging to my

ethnic group") on a 4-point scale (1 = *strongly disagree*, to 4 = *strongly agree*). The Cronbach's alphas were .83 at T1, .86 at T2, and .86 at T3 and were virtually identical for Greek ($\alpha = .81$) and immigrant students ($\alpha = .82$).

Analytic Strategy

We conducted structural equation modeling using Mplus 6.1 (Muthén & Muthén, 1998–2010). We used the same methods that were used by Reitz et al. (2015). Our data were hierarchical as students were nested within classrooms. To avoid biased significant tests, we thus controlled for classroom dependency of individual observations. In all models, we used the COMPLEX option of the Mplus software to adjust for standard errors and chi-square fit statistics for the within-class covariances.

We used latent-variable modeling to reduce measurement error at the level of indicators. The self-esteem items were aggregated into two parcels using the item-to-construct balance parceling technique (Little, Cunningham, Shahar, & Widaman, 2002). Individual indicators were allowed to correlate across time to account for effects other than those of the underlying factors (Marsh & Hau, 1996).

To test the hypotheses, we used three-wave cross-lagged panel models to investigate interindividual differences and competing bidirectional effects between constructs across time. This can lend support to a causal claim that is however not conclusive (Selig & Little, 2012). A cross-lagged path represents the prospective effect of one variable on the other after controlling for the temporal stability of the outcome. This allows testing whether, for instance, an individual's rank-order position of popularity is related to the rank-order position of self-esteem one year later, beyond its stability. We specified autoregressive paths between T1 and T2/T3 and between T2 and T3 (Finkel, 1995) as well as correlations between variables within T1 and between residual variances within T2 and T3, respectively, to account for variance due to specific measurement occasions (Cole & Maxwell, 2003). We tested whether constraining the structural parameters to be equal across the time intervals impaired model fit. If not, the constraints were justified and we favored the more parsimonious model. As constraints refer to unstandardized coefficients, betas were not completely identical. We did not include reciprocal paths between in- and out-group popularity (which rendered virtually identical results), as we did not have a priori reasons to include them.

Mediation effects were examined using the Mplus procedure MODEL INDIRECT. Following MacKinnon (2008), we tested longitudinal autoregressive mediation models to examine the temporal sequence of the variables: A residualized outcome at T3 (i.e., controlled for its stability) is predicted via a residualized mediator (i.e., controlled for its stability) at T2 from a predictor at T1. Moderation effects were examined using multiple-group analyses. We tested whether the model fit was improved when cross-lagged parameters were allowed to vary across groups as compared with when they were constrained to be equal (Bollen, 1989).

Model fit was assessed using the chi-square statistic, the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA), which was based on provided guidelines (Hu & Bentler, 1999). Acceptable and excellent fit was indicated by RMSEA values below .08 and .05 and CFI values greater than .90

Table 1
Means and Standard Deviations of Peer-Perceived Acceptance and Rejection, Self-Perceived Popularity, and Self-Esteem

Variable	Time 1			Time 2			Time 3		
	Overall ^a M (SD)	Greeks ^a M (SD)	Immigrants ^a M (SD)	Overall ^a M (SD)	Greeks ^a M (SD)	Immigrants ^a M (SD)	Overall ^a M (SD)	Greeks ^a M (SD)	Immigrants ^a M (SD)
Acceptance	2.77 (1.97)	3.01 (2.07)	2.53 (1.83)	2.88 (2.09)	3.11 (2.12)	2.62 (2.02)	2.88 (1.86)	2.96 (1.94)	2.79 (1.75)
Within in-group ^b	1.82 (1.62)	2.14 (1.69)	1.49 (1.47)	1.91 (1.63)	2.23 (1.71)	1.54 (1.45)	1.89 (1.51)	2.19 (1.62)	1.55 (1.28)
Within out-group ^b	0.96 (1.15)	0.88 (1.09)	1.04 (1.20)	0.97 (1.22)	0.88 (1.13)	1.07 (1.32)	1.00 (1.24)	0.78 (1.05)	1.26 (1.39)
Rejection	2.63 (2.73)	2.31 (2.53)	2.94 (2.88)	2.59 (2.75)	2.46 (2.62)	2.74 (2.89)	2.45 (2.59)	2.47 (2.58)	2.43 (2.60)
Within in-group ^b	1.29 (1.63)	1.34 (1.73)	1.24 (1.52)	1.35 (1.75)	1.43 (1.84)	1.26 (1.65)	1.26 (1.66)	1.47 (1.84)	1.02 (1.39)
Within out-group ^b	1.34 (1.83)	0.97 (1.33)	1.70 (2.15)	1.24 (1.73)	1.03 (1.38)	1.48 (2.04)	1.20 (1.68)	1.01 (1.42)	1.42 (1.92)
Self-esteem	3.84 (0.69)	3.93 (0.68)	3.75 (0.69)	3.93 (0.65)	3.96 (0.65)	3.90 (0.65)	3.92 (0.75)	3.94 (0.73)	3.90 (0.77)
Self-perceived popularity	1.62 (0.57)	1.64 (0.56)	1.60 (0.58)	1.64 (0.57)	1.64 (0.56)	1.64 (0.57)	1.56 (0.62)	1.58 (0.62)	1.55 (0.63)

Note. Acceptance and rejection scores are raw nominations. In-group and out-group scores are based on immigrant status groups. The overall acceptance and rejection scores were somewhat below 3, as some students nominated less than 3 classmates.

^a Nominee population. ^b Voter population.

and .95. The chi-square difference test was used to test for differences in model fit.

Results

Table 1 presents the means and standard deviations of self-esteem, self-perceived popularity, and raw acceptance and rejection scores at all waves. Table 2 shows the correlations between the study variables within and across waves. The average correlation between acceptance and rejection was $r = -.25, p = .000$. Immigrants received significantly more liked least nominations than Greeks both from their in-group, $M_{Im} (SD) = 14.2\% (17.0), M_{Gr} (SD) = 10.9\% (14.2); t_{T1}(1,043) = -3.41, p = .001$, and from their out-group, $M_{Im} (SD) = 15.4\% (17.9), M_{Gr} (SD) = 12.2\% (15.8); t_{T1}(1,027) = -3.01, p = .003$; there were no significant differences in liked most nominations, self-esteem, or self-perceived popularity. Immigrants' sense of belonging to their group was $M = 3.38, SD = .53$, more than 80% rated it 3 or higher, and it was comparable for Albanians ($M = 3.36, SD = .54$) and Pontic-Greeks ($M = 3.33, SD = .51; t(400) = .66, p = .509$). Immigrants came from families with higher levels of socioeconomic adversity than Greeks, $M_{Im} = .24, SD = .68; M_{Gr} = -.24, SD = .63; t(1,053) = -11.76, p = .000$. Albanians and Pontic-Greeks' proficiency in the Greek language, $t(362) = -1.07, p = .31$ and the frequency of using it, $t(368) = -3.0, p = .76$ did not significantly differ.

Before estimating the cross-lagged models, we tested for measurement invariance of the indicators to ensure that observed change is not confounded with changing correspondence of the latent variables and their indicators (Bollen & Curran, 2006). We compared model fits of a measurement model in which the factor loadings of indicators were estimated freely (Model A) to one in which they were restricted to be equal across time (Model B). Comparisons demonstrated good fit for the more constrained model (Model B) that was not worse than for the unconstrained model (Model A). Table 3 shows model fit statistics and comparisons. Hence, the constraints were justified and thus retained in the following analyses. Next, we conducted six steps of data analyses. Figures 1 to 3 depict results of the main models of Steps 1 to 3. In the first three steps, we used cross-lagged models to examine the bivariate relations between (a) self-perceived popularity and self-esteem, (b) peer-perceived popularity and self-esteem, and (c) self-

and peer-perceived popularity. The three steps investigate the direction of effects between popularity and self-esteem (i.e., Aim 1). Additionally, Steps 2 and 3 also test Aim 2, as we separated the two components of peer popularity nominations into popularity among same- versus other-immigrant status groups. In Step 4 we included all three variables under study in a longitudinal mediation model to test for a conscious sociometer mechanism. In Step 5 we conducted post hoc analyses to refine results of Steps 2 and 3 by breaking the popularity nominations down in acceptance and rejection scores. In Step 6 we tested for moderation effects of ethnic identity. Finally, we used multiple-group analyses to test for the robustness of the models across demographic and classroom composition variables.

Step 1: Self-Perceived Popularity and Self-Esteem

We tested for bidirectional effects between self-perceived popularity and self-esteem. To retain the most parsimonious model, we compared a model in which the cross-lagged coefficients between self-esteem and self-perceived popularity were estimated freely (Model 1.1) to one in which they were constrained to be equal across the two time intervals (Model 1.2). As shown in Table

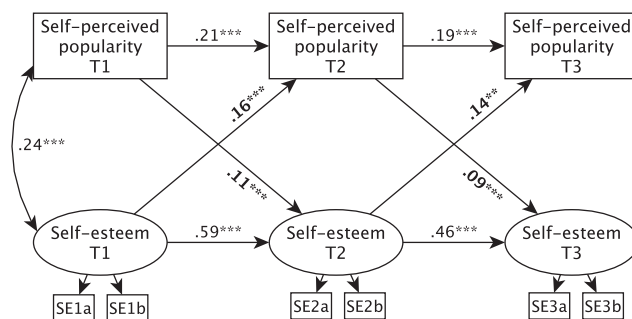


Figure 1. Cross-lagged regression model of the relation between self-perceived popularity and self-esteem (Model 1.2). Values are standardized regression coefficients. Values for significant cross-lagged paths are in bold. Residual correlations and autoregressive paths from Time 1 (T1) to Time 3 (T3) are not shown to improve clarity. T2 = Time 2. *** $p < .01$. ** $p < .001$.

Table 2
Correlations Between Study Variables Within and Across Waves

Variable	Time 1					Time 2					Time 3				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Peer-perceived popularity	—														
2. In-group peer popularity ^a	.82***	—													
3. Out-group peer popularity ^a	.81***	.33**	—												
4. Self-esteem	.11**	.08*	.11**	—											
5. Self-perceived popularity	.17***	.15***	.14***	.22***	—										
6. Peer-perceived popularity	.45***	.38***	.33***	.01	.06	—									
7. In-group peer popularity ^a	.42***	.41***	.26***	.02	.07	.82***	—								
8. Out-group peer popularity ^a	.33**	.22***	.29***	.00	.04	.84***	.37***	—							
9. Self-esteem	.11**	.10**	.08*	.50***	.22***	.02	.01	.03	—						
10. Self-perceived popularity	.17***	.13***	.15***	.14***	.25***	.18***	.21***	.10*	.23***	—					
11. Peer-perceived popularity	.37***	.31***	.27***	-.03	.11*	.49***	.40***	.40***	-.08	.12**	—				
12. In-group peer popularity ^a	.32**	.33***	.17***	-.02	.08	.46***	.47***	.29***	-.06	.09*	.78***	—			
13. Out-group peer popularity ^a	.30***	.20***	.26***	-.02	.09*	.35***	.21***	.37***	-.07	.11**	.84***	.32***	—		
14. Self-esteem	.09*	.05	.09*	.39***	.12**	.04	.05	.02	.53***	.25***	-.02	-.05	.00	—	
15. Self-perceived popularity	.18***	.11**	.06	.16***	.22***	.13**	.14**	.07	.21***	.26***	.13**	.09*	.12**	.28***	—

Note. Stabilities are in italic.

^a Peer-perceived in-group and out-group peer popularity variables are based on immigrant status groups (immigrants vs. Greeks) in each class.

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

3, the longitudinal constraints did not significantly impair model fit; hence, we retained the longitudinal constraints on cross-lagged coefficients for subsequent analyses. Figure 1 presents the estimates for the coefficients. The stability coefficients of self-esteem were moderate and those of self-perceived popularity were small (all $ps < .001$). All cross-lagged coefficients were significant (all $ps < .01$). Hence, self-perceived popularity and self-esteem were reciprocally related.

Step 2: Peer-Perceived Popularity and Self-Esteem

We tested for bidirectional effects between peer-perceived popularity and self-esteem. The cross-lagged model using overall

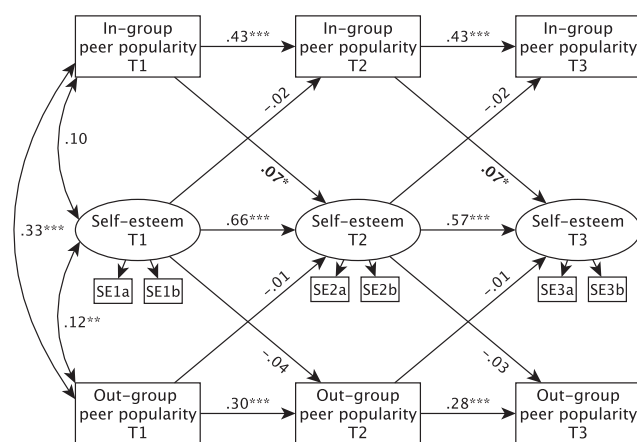


Figure 2. Cross-lagged regression model of the relation between peer-perceived popularity in in- and out-groups and self-esteem (Model 2.3). Values are standardized regression coefficients. Values for significant cross-lagged paths are in bold. Residual correlations and autoregressive paths from Time 1 (T1) to Time 3 (T3) are not shown to improve clarity. T2 = Time 2. * $p < .05$. ** $p < .01$. *** $p < .001$.

peer-perceived popularity in the classroom revealed a significant cross-lagged effect of peer-perceived popularity on self-esteem ($\beta_{T1-T2} = .06, p = .042$; $\beta_{T2-T3} = .05, p = .045$), whereas self-esteem had no effect on peer-perceived popularity (Model 2.1). Second, we estimated the same model with the difference being that overall peer-perceived popularity was separated into the two components in- and out-group popularity. Again, we compared a model with free longitudinal parameters (Model 2.2) to one with longitudinal constraints on the cross-lagged parameters (Model 2.3), which did not significantly impair model fit. Thus, we used the more parsimonious model in all subsequent analyses. As shown in Figure 2, the stability coefficients for in- and out-group popularity were small to moderate and those for self-esteem were moderate (all $ps < .001$). Results showed that popularity among immigrant status in-groups significantly predicted subsequent levels of self-esteem ($ps < .05$), whereas popularity among immigrant status out-groups had no effects. Furthermore, none of the paths from self-esteem to popularity were significant; neither for in- nor for out-groups. Omitting all cross-lagged paths but the one from in-group popularity to self-esteem did not significantly worsen model fit. Hence, peer popularity among the in-group but not among out-groups prospectively predicted self-esteem and self-esteem in turn did not predict peer-perceived popularity.

Step 3: Peer-Perceived Popularity and Self-Perceived Popularity

We tested for bidirectional effects between peer-perceived popularity and self-perceived popularity. The cross-lagged model using overall peer-perceived popularity in the classroom revealed that peer-perceived popularity significantly predicted subsequent self-perceived popularity ($\beta_{T1-T2} = .12, p = .000$; $\beta_{T2-T3} = .11, p = .000$), whereas the reverse paths were not significant (Model 3.1). Second, we again tested for differences between immigrant status in- versus out-group popularity (Model 3.2), and we applied longitudinal constraints on the cross-lagged parameters (Model

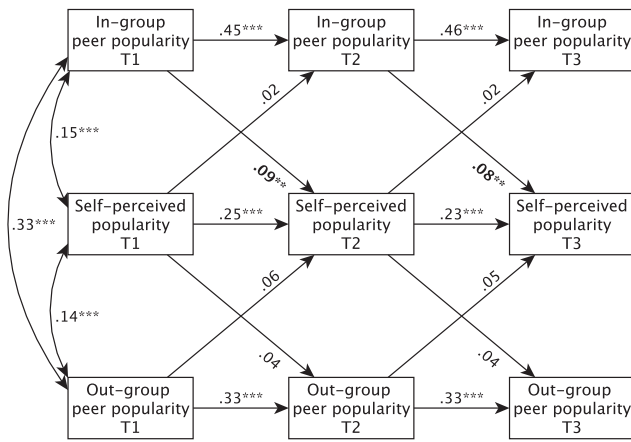


Figure 3. Cross-lagged regression model of the relation between peer-perceived popularity in in- and out-groups and self-perceived popularity (Model 3.3). Values are standardized regression coefficients. Values for significant cross-lagged paths are in bold. Residual correlations and autoregressive paths from Time 1 (T1) to Time 3 (T3) are not shown to improve clarity. T2 = Time 2. ** $p < .01$. *** $p < .001$.

3.3). Because the longitudinal constraints did not impair model fit, we used this more parsimonious model in subsequent analyses. Figure 3 presents the estimates for the coefficients. Again, the stability coefficients of in- and out-group popularity were small to moderate and those of self-perceived popularity were small (all $ps < .001$). The estimates for the cross-lagged paths showed that popularity among immigrant status in-group peers had a positive time-lagged effect on self-perceived popularity ($ps < .01$), whereas popularity among immigrant status out-group peers had no effects. Furthermore, none of the paths from self-perceived popularity to peer-perceived popularity were significant; neither for in-groups nor for out-groups. Omitting all cross-lagged paths but the one from in-group popularity to self-perceived popularity did not significantly worsen model fit. Hence, popularity in the in-group but not the out-group prospectively predicted self-

perceived popularity and self-perceived popularity did not predict peer-perceived popularity.

Step 4: Mediation Analysis

Next, we estimated a longitudinal mediation model in which in-group peer popularity predicted self-esteem via self-perceived popularity. Analyses revealed a significant mediation, $\beta = 0.01$, 95% CI [0.005, 0.016], $p = .008$; $\chi^2(47) = 101.06$, $p = .000$, CFI = 0.973, RMSEA = 0.033. The direct effect of in-group peer popularity on self-esteem became nonsignificant when the indirect effect via self-perceived popularity was included ($\beta_{T1-T2} = .05$, $p = .060$, $\beta_{T2-T3} = .04$, $p = .058$). Hence, self-perceived popularity mediated the prospective effect of in-group peer popularity on self-esteem.

Step 5: Acceptance Versus Rejection

We explored whether the effects of peer-perceived popularity found in Steps 2 and 3 were driven by both acceptance and rejection or whether they were driven by only one of them. Predicting self-esteem, the effect of in-group acceptance was marginally significant ($\beta_{T1-T2} = .05$, $p = .054$; $\beta_{T2-T3} = .04$, $p = .052$), whereas the effect of in-group rejection was not ($\beta_{T1-T2} = -.04$, $p = .248$; $\beta_{T2-T3} = -.03$, $p = .249$; Model 2.4). Predicting self-perceived popularity, the effect of in-group acceptance was significant ($\beta_{T1-T2} = .10$, $p = .000$; $\beta_{T2-T3} = .08$, $p = .000$), whereas the effect of in-group rejection was not (Model 3.4). Concerning out-group popularity, neither acceptance nor rejection predicted any of the two outcomes. The magnitude of the effects of in-group acceptance and those of in-group rejection did not differ considerably and effects were strongest when acceptance and rejection were combined. We thus kept using the overall preference score for the subsequent analyses.

Step 6: Moderation Analysis

We tested in a moderation analysis whether the level of identification with the ethnic group moderated the effect of in-group

Table 3
Model Fit Statistics and Comparisons

Step	Model	χ^2	df	CFI	RMSEA	90% CI	M ^a	$\Delta\chi^2$	Δdf	p
Measurement model	A. Loadings unconstrained	64.88	8							
	B. Loadings constrained	63.64	6				B	1.24	2	
1. Self-Perceived Popularity × Self-Esteem	1.1. Longitudinally unconstrained	56.54	17	.980	.038	[.026, .050]				
	1.2. Longitudinally constrained	57.25	23	.965	.048	[.037, .059]	1.1	.71	6	.999
	2.1. Overall peer popularity	27.65	23	.997	.014	[.000, .030]				
	2.2. In-/out-group, unconstrained	93.97	36	.971	.039	[.029, .049]				
2. Peer-Perceived Popularity × Self-Esteem	2.3. In-/out-group, constrained	101.00	46	.973	.034	[.025, .043]	2.2	7.03	10	.723
	2.4. Acceptance/rejection	292.97	115	.929	.038	[.033, .044]				
	3.1. Overall peer popularity	7.23	7	.999	.006	[.000, .039]				
	3.2. In-/out-group, unconstrained	61.34	13	.906	.059	[.045, .075]				
3. Peer-Perceived × Self-Perceived Popularity	3.3. In-/out-group, constrained	65.97	20	.911	.047	[.034, .059]	3.2	4.63	7	.705
	3.4. Acceptance/rejection	176.60	69	.882	.038	[.031, .045]				

Note. $\Delta\chi^2$ indicates that the more constrained model does not fit worse than the less constrained model. The models depicted in the three figures are in bold. CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval of RMSEA.
^a Indicates the model to which this model is compared.

This document is copyrighted by the American Psychological Association or one of its allied publishers. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

popularity on self-esteem. Using a continuous moderator required the Mplus procedure TYPE = RANDOM for which standardized estimates cannot be obtained. The moderation was marginally significant $B_{T1-T2} = .004, p = .078$ and $B_{T2-T3} = .004, p = .078$. Hence, in-group popularity had a stronger effect on self-esteem when the individual identified more strongly with the own group.

Step 7: Multigroup Analyses

Finally, we used multiple-group models to test whether the models shown in Figures 1 to 3 differed across the values of demographic and classroom composition variables or whether they remained the same. We used the Bonferroni correction to control for multiple testing (i.e., the significance value was adjusted to $p < .008; \alpha = .05/6$). Chi-square difference tests revealed no significant differences for immigrant status (immigrants vs. host-nationals), gender (boys vs. girls), or socioeconomic adversity (high vs. low). Furthermore, effects did neither differ across classrooms in which more versus less than 50% of the students were immigrants nor across classrooms in which students' immigrant status group was the minority versus the majority. Hence, the results of the models presented in the three figures were robust across several demographic and classroom characteristics.

Discussion

To the best of our knowledge, this large-scale three-wave study is the first to examine reciprocal relationships between self-esteem, self-perceived popularity, and peer nominations of popularity in a diverse real-life context. The first aim was to test conflicting predictions of two theoretical perspectives on the direction of effects between self-esteem and popularity. Results provide supporting evidence for SMT: In line with Hypothesis 1, peer-perceived popularity prospectively predicted self-esteem (Step 2), which was mediated by self-perceived popularity (Step 4). There was a slight trend toward stronger effects for acceptance than for rejection, but effects were strongest for the composite score (Step 5). Results do not provide supporting evidence for SBP: In line with Hypothesis 2, self-esteem prospectively predicted self-perceived popularity (Step 1) but not peer-perceived popularity (Step 2).

The second aim was to test whether the sociometer is more sensitive to immigrant status in- than out-groups. Consistent with Hypothesis 3, popularity among peers with the same immigrant status had prospective effects on self-esteem, whereas popularity among peers with the other immigrant status did not (Step 2); this was also found for self-perceived popularity (Step 3). In-group popularity had marginally stronger prospective effects on self-esteem when students identified more strongly with their ethnic group (Step 6).

New Insights and Evidence for Sociometer Theory

In line with other studies (e.g., Denissen et al., 2008), findings are consistent with the main tenet of SMT that being liked leads to higher self-esteem. The present research however makes four major contributions. First, this study is the first to use sociometric classroom nominations to test SMT, which provide not only a highly accurate and objective but also a developmentally sensitive

measure of adolescents' popularity in the real world. This allows the drawing of firmer conclusions about the validity of SMT than possible with self-report measures and artificial contexts. Hence, in line with SMT, results indicate that rank-order changes in an adolescents' relational value as judged by peers in their social reality and as judged by themselves lead to corresponding rank-order changes in their self-esteem.

Second, effects were evident over 1-year intervals, which extends previous research that is restricted to short-term effects. The long-term effects underscore the robustness of sociometer effects and suggest that the sociometer is not only sensitive to sudden, but also to continuing or gradual experiences of social evaluation. This is in line with the notion that trait self-esteem indicates an individual's long-term relational value (Leary & MacDonald, 2003). The results suggest that adolescents have internalized chronic social feedback from their peers, which manifested itself in their trait self-esteem.

Third, the present study provides novel evidence that self-perceived popularity, and hence, being aware of one's relational value, is a necessary link in the causal chain of the sociometer mechanism. The degree to which adolescents are liked by their peers affected their self-perceptions about their popularity, which in turn affected their self-esteem. This longitudinal mediation suggests that internal reflective processes are involved in building up self-esteem. This idea is in line with research suggesting that people have general insight into their reputation (Carlson, Vazire, & Furr, 2011). Our findings expand classical work on SMT that did not make specific predictions about conscious mediation. The use of parallel peer- and self-reported popularity and a large sample also extends the only other study that tested conscious mediation without parallel measures that did not find effects (Srivastava & Beer, 2005). Hence, results suggest that at least a part of the sociometer operates within conscious awareness.

Fourth, findings provided new insights into long-term effects of acceptance and rejection. Sociometer effects were strongest when both were combined in social preference scores. Consistent with cross-sectional research (see Blackhart et al., 2009), there was a slight trend toward stronger effects of acceptance than rejection. These findings challenge the notion of SMT that rejection is most critical for self-esteem (Leary & Baumeister, 2000). Our findings suggest that over the long term, acceptance is at least as important as rejection for the development of self-esteem. This idea aligns with the developmental literature suggesting that both acceptance and rejection matter for adolescents (see Cillessen & Marks, 2011) and that adolescents are, more than any other age group, highly concerned with being accepted (Harter, 2012). Occasional rejection may not have been powerful enough to elicit strong long-term effects, especially considering the possibility that students may have shown defensive reactions in response to rejection, such as dismissing isolated threats or avoiding the rejecting classmates.

No Evidence for the Self-Broadcasting Perspective

The findings suggest that adolescents' self-esteem only affects the extent to which they *think* they are liked, but not how much they are *really* liked by their peers. As SBP proposes that self-esteem impacts individuals' *actual* popularity, the results provide no supporting evidence for SBP (cf. Zeigler-Hill et al., 2013). This is in line with a previous study that found no effects of social

self-evaluation on others' liking (Srivastava & Beer, 2005). Our findings extend this study by showing that not only self-perceived popularity but also global self-esteem has no effect on peer-perceived popularity. This finding confirms that people with high self-esteem only *think* they are liked more, but it does not result in them *really* being liked more (Baumeister et al., 2003).

This finding supports the idea that others are able to competently judge a person independently of the targets' sometimes flawed self-views (see Mehl et al., 2006; Vazire & Carlson, 2011). In real-life relationships, others seem to have collected plentiful cues in the day-to-day behavior of the target based on which they can make informed decisions on whether they like the target or not. Consistently, many person characteristics other than positive self-views were found to influence popularity, such as behavioral characteristics (e.g., prosocial behavior, social competence, low aggression) and similarity (e.g., in terms of socioeconomic status and ethnicity; see Cillessen, Schwartz, & Mayeux, 2011). An exception to the rule that overly positive self-views do not necessarily lead to popularity may be that narcissists were sometimes found to be more popular at first-sight than others (Back, Schmukle, & Egloff, 2010). This effect however wears off after some time when it may even elicit dislike (Paulhus, 1998) and it only holds for narcissists who show assertive but not arrogant behaviors (Küfner, Nestler, & Back, 2013).

It is noteworthy that we found that self-esteem fed back on self-perceived popularity: Adolescents with high self-esteem showed rank-order increases in how much they thought they were liked by their peers. This is not consistent with SMT, which predicts the opposite direction of effects. That self-esteem predicts self-perceived popularity may be driven by people's tendency to confirm their self-views (see Vazire & Carlson, 2011). Self-verification theory (Swann, 1997), which grew out of balance theories (Heider, 1946), proposes that people strive for self-verifying feedback in order to achieve a sense of coherence. Although the findings do not confirm the prediction that adolescents achieve this coherence "externally" in terms of eliciting a certain level of popularity among their peers, they may have achieved it "internally": Adolescents seem to have adjusted their *views* about their popularity to their level of self-esteem. Hence, despite adolescents' general ability to notice how much others like them, they seem to overestimate how much others share their self-views in order to verify these views, even if they are somewhat flawed.

The Sociometer's Sensitivity Toward the Social In-Group

The present study provides the first evidence that being liked by peers with the same immigrant status was more important for adolescents' self-esteem and self-perceived popularity than being liked by peers with the other immigrant status. This finding provides important implications for the validity of SMT: it suggests that the sociometer is more strongly calibrated toward in-groups, at least when the nominator and the target share an important social category. This extends the predictions of SMT. Although SMT assumes that the sociometer takes the identity of the evaluator into account when evaluating social feedback (Leary & Baumeister, 2000), absolute positions about whose feedback matters and whose does not were not taken. The present study highlights the need to

integrate SMT with the intergroup and the social identity literature to understand self-esteem development in today's diverse societies. This is in line with a recent review article that emphasized the need to account not only for dyadic peer relationships but also for the larger peer groups to better understand how peers influence personality development (Reitz, Zimmermann, Hutteman, Specht, & Neyer, 2014). Arguing from an intergroup perspective (see Tajfel, 1982), the findings point to an in-group bias of sociometer effects: Adolescents consider evaluations by peers with the same immigrant status more important for their self-esteem than those with another immigrant status.

The findings provide initial evidence for our proposition that immigrant status is a meaningful social category in the social context examined in this study, because it moderated the sociometer effects. In line with previous research (Reitz et al., 2015; Titzmann & Silbereisen, 2009), the findings highlight the divisiveness of immigrant status groups for adolescents in Europe: Immigrant adolescents had higher levels of socioeconomic adversity and they were less popular than Greek adolescents; also, the vast majority of immigrants reported considerable levels of identification with their heritage culture. These characteristics suggest that immigrant status groups are meaningful for adolescents' self-concept as they generate social identities and an emotional significance is attached to these group memberships (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Tajfel, 1982). This is in line with evidence showing stronger responses to social evaluation by in- than out-groups only for categories that are endowed with evaluative connotations, such as race, but not for less relevant categories, such as computer preferences. Future research is needed to corroborate that immigrant status groups moderate sociometer effects because they are meaningful for adolescents' identity.

The moderation analysis supported this interpretation by showing that the more adolescents identified with their ethnic group, the stronger the effects were of in-group popularity on self-esteem. Although replications are needed, this finding points to social identity as the mechanism underlying the differential in- and out-group effects. This is consistent with previous notions about contingencies of self-worth: Self-esteem rises and falls in response to success in domains on which one has staked self-worth (Crocker & Wolfe, 2001). This is also in line with notions that feedback only affects self-esteem insofar as the person values the evaluator (Leary, 2005; Rosenberg, 1973). Hence, adolescents' self-esteem may only be susceptible to feedback from groups they identify with, and thus on which they have staked their self-worth. As immigrant status is a salient, divisive, and identity-generating group membership in Greece, adolescents in mixed classrooms seem to have staked their self-esteem only on their relational value in their own immigrant status group. Considering that identity formation occurs during adolescence (Erikson, 1968) and that ethnic identity becomes a salient component of the self-concepts of minority adolescents (Phinney, 1992), it is not surprising that adolescents' social identity moderates sociometer effects.

Limitations and Future Directions

A number of study strengths provided new insights into the complex link between self-esteem and popularity. The three-wave cross-lagged and longitudinal mediation analyses allowed testing the temporal relationship between self-esteem and popularity

and the underlying mechanism. The use of self-reports together with the more objective sociometric procedure allowed us to capture the different links between self-esteem and self- versus peer-perceived popularity. Conducting the study in classrooms with immigrants and host-nationals and accounting for their ethnic identity provided a first test of SMT in a socially relevant and diverse real-life context. Finally, the multigroup analyses, the accounting for classroom dependencies, and the use of latent variables underlined the robustness of the findings.

Despite these strengths, some limitations suggest avenues for future research. First, replications are needed to substantiate the sociometer's greater sensitivity to popularity by immigrant status in-groups. The differences were rather small, which is however not surprising considering that (a) the preference ratings were split up into in- and out-group scores (leaving rather small variances for some classrooms) and that (b) the effects were between a self- and a peer-reported variable spanning 1-year intervals. Replications in other countries with different immigration policies and degrees of segregation are warranted to test the generalizability of findings. Second, future research should assess more information about the voters, including ethnicity and their relationship with the nominees (e.g., closeness), to zoom even more into the underlying mechanism of the differential group effects. Although the study provides initial evidence for the role of identity, future research should test directly which specific aspects of social identity (e.g., immigrant status, ethnicity, or both) are relevant, as social identity is multifaceted (see Ashmore et al., 2004). This can also help to disentangle whether effects are due to group identities versus friendship with peers in the same group. Finally, although the fact that self-perceived popularity mediated the sociometer effect points to its validity, future studies should replicate this finding using a multi-item measure. Assessing more aspects about self-perceived popularity than what was captured by "other kids like me" may fully explain the effect of peer-perceived popularity on self-esteem. Self-perceived popularity in the specific groups may also help to account for more variance.

Conclusion

The present large-scale three-wave study provides valuable new insights into the processes between adolescents' self-esteem and their peer popularity. The study contributes an exhaustive test of two major conflicting theoretical views on the direction of effects between self-esteem and popularity. The robust long-term effects of real-life sociometric peer popularity on self-esteem provide new insights into sociometer effects. The longitudinal mediation analyses yield initial evidence for a conscious mechanism, as self-perceptions of popularity mediated sociometer effects. Inconsistent with the SBP, self-esteem affected the extent to which adolescents thought they were liked, but not how much they were really liked.

Furthermore, the sociometer was more susceptible to immigrant status in- than out-groups, particularly when individuals identified strongly with their in-group. This finding demonstrates that the novel integration of the two longstanding theoretical ideas SMT and social identity theory is highly beneficial to understand self-esteem development in diverse contexts. As such, this study underscores Rosenberg's (1973) elaborations on Mead's idea, "We are seeing ourselves as we think others who are important to us and whose opinion we trust see us" (p. 857). We might add that the significance of social feedback

depends on the group membership of the evaluator, if it is psychologically important. In sum, the findings underscore the need for a wide-angle contextual lens: A consideration of the perspectives of both individuals and others as well as the diversity of real-life contexts helps to advance the understanding of the complex relationship between popularity and self-esteem.

References

- American Psychological Association, Presidential Task Force on Immigration. (2012). *Crossroads: The psychology of immigration in the new century*. Retrieved from <http://www.apa.org/topics/immigration/report.aspx>
- Ashmore, R. D., Deaux, K., & McLaughlin-Volpe, T. (2004). An organizing framework for collective identity: Articulation and significance of multidimensionality. *Psychological Bulletin*, *130*, 80–114. <http://dx.doi.org/10.1037/0033-2909.130.1.80>
- Back, M. D., Schmukle, S. C., & Egloff, B. (2010). Why are narcissists so charming at first sight? Decoding the narcissism-popularity link at zero acquaintance. *Journal of Personality and Social Psychology*, *98*, 132–145. <http://dx.doi.org/10.1037/a0016338>
- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, *4*, 1–44. <http://dx.doi.org/10.1111/1529-1006.01431>
- Bernstein, M. J., Sacco, D. F., Young, S. G., Hugenberg, K., & Cook, E. (2010). Being "in" with the in-crowd: The effects of social exclusion and inclusion are enhanced by the perceived essentialism of ingroups and outgroups. *Personality and Social Psychology Bulletin*, *36*, 999–1009. <http://dx.doi.org/10.1177/0146167210376059>
- Blackhart, G. C., Nelson, B. C., Knowles, M. L., & Baumeister, R. F. (2009). Rejection elicits emotional reactions but neither causes immediate distress nor lowers self-esteem: A meta-analytic review of 192 studies on social exclusion. *Personality and Social Psychology Review*, *13*, 269–309. <http://dx.doi.org/10.1177/1088868309346065>
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: Wiley. <http://dx.doi.org/10.1002/9781118619179>
- Bollen, K. A., & Curran, P. J. (2006). *Latent curve models. A structural equation perspective*. Hoboken, NJ: Wiley.
- Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. In R. M. Lerner, & L. Steinberg (Eds.), *The handbook of adolescent psychology: Vol. 2. Contextual influences on adolescent development* (3rd ed., pp. 74–103). Hoboken, NJ: Wiley. <http://dx.doi.org/10.1002/9780470479193.adlpsy002004>
- Buckley, K. E., Winkel, R. E., & Leary, M. R. (2004). Reactions to acceptance and rejection: Effects of level and sequence of relational evaluation. *Journal of Experimental Social Psychology*, *40*, 14–28. [http://dx.doi.org/10.1016/S0022-1031\(03\)00064-7](http://dx.doi.org/10.1016/S0022-1031(03)00064-7)
- Carlson, E. N., Vazire, S., & Furr, R. M. (2011). Meta-insight: Do people really know how others see them? *Journal of Personality and Social Psychology*, *101*, 831–846. <http://dx.doi.org/10.1037/a0024297>
- Cillessen, A. H. N., & Marks, P. E. L. (2011). Conceptualizing and measuring popularity. In A. H. N. Cillessen, D. Schwartz, & L. Mayeux (Eds.), *Popularity in the peer system* (pp. 25–56). New York, NY: Guilford Press.
- Cillessen, A. H. N., Schwartz, D., & Mayeux, L. (2011). *Popularity in the peer system* (pp. 25–56). New York, NY: Guilford Press.
- Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*, *18*, 557–570. <http://dx.doi.org/10.1037/0012-1649.18.4.557>
- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*, 558–577. <http://dx.doi.org/10.1037/0021-843X.112.4.558>

- Craig, M. A., & Richeson, J. A. (2012). Coalition or derogation? How perceived discrimination influences intraminority intergroup relations. *Journal of Personality and Social Psychology, 102*, 759–777. <http://dx.doi.org/10.1037/a0026481>
- Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review, 108*, 593–623.
- Deaux, K. (2006). *To be an immigrant*. New York, NY: Sage.
- Denissen, J. J. A., Penke, L., Schmitt, D. P., & van Aken, M. A. G. (2008). Self-esteem reactions to social interactions: Evidence for sociometer mechanisms across days, people, and nations. *Journal of Personality and Social Psychology, 95*, 181–196. <http://dx.doi.org/10.1037/0022-3514.95.1.181>
- Dufner, M., Reitz, A. K., & Zander, L. (2015). Antecedents, consequences, and mechanisms: On the longitudinal interplay between academic self-enhancement and psychological adjustment. *Journal of Personality, 83*, 511–522. <http://dx.doi.org/10.1111/jopy.12128>
- Efferson, C., Lalive, R., & Fehr, E. (2008, September 26). The coevolution of cultural groups and ingroup favoritism. *Science, 321*, 1844–1849. <http://dx.doi.org/10.1126/science.1155805>
- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.
- Erol, R. Y., & Orth, U. (2011). Self-esteem development from age 14 to 30 years: A longitudinal study. *Journal of Personality and Social Psychology, 101*, 607–619. <http://dx.doi.org/10.1037/a0024299>
- Finkel, S. E. (1995). *Causal analysis with panel data*. Thousand Oaks, CA: Sage. <http://dx.doi.org/10.4135/9781412983594>
- Fulgini, A. J., Witkow, M., & Garcia, C. (2005). Ethnic identity and the academic adjustment of adolescents from Mexican, Chinese, and European backgrounds. *Developmental Psychology, 41*, 799–811. <http://dx.doi.org/10.1037/0012-1649.41.5.799>
- Gutman, L. M., Sameroff, A. J., & Eccles, J. S. (2002). The academic achievement of African American students during early adolescence: An examination of multiple risk, promotive, and protective factors. *American Journal of Community Psychology, 30*, 367–399. <http://dx.doi.org/10.1023/A:1015389103911>
- Harter, S. (2012). *The construction of the self: Developmental and socio-cultural foundations* (2nd ed.). New York, NY: Guilford Press.
- Heider, F. (1946). Attitudes and cognitive organization. *The Journal of Psychology: Interdisciplinary and Applied, 21*, 107–112. <http://dx.doi.org/10.1080/00223980.1946.9917275>
- Hepper, E. G., Gramzow, R. H., & Sedikides, C. (2010). Individual differences in self-enhancement and self-protection strategies: An integrative analysis. *Journal of Personality, 78*, 781–814. <http://dx.doi.org/10.1111/j.1467-6494.2010.00633.x>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55. <http://dx.doi.org/10.1080/1070519909540118>
- Hutteman, R., Hennecke, M., Orth, U., Reitz, A. K., & Specht, J. (2014). Developmental tasks as a framework to study personality development in adulthood and old age. *European Journal of Personality, 28*, 267–278. <http://dx.doi.org/10.1002/per.1959>
- Hutteman, R., Nestler, S., Wagner, J., Egloff, B., & Back, M. D. (2015). Wherever I may roam: Processes of self-esteem development from adolescence to emerging adulthood in the context of international student exchange. *Journal of Personality and Social Psychology, 108*, 767–783.
- James, W. (1890). *The principles of psychology*. New York, NY: Holt. <http://dx.doi.org/10.1037/11059-000>
- Jiang, X. L., & Cillessen, A. H. (2005). Stability of continuous measures of sociometric status: A meta-analysis. *Developmental Review, 25*, 1–25. <http://dx.doi.org/10.1016/j.dr.2004.08.008>
- Küfner, A. C. P., Nestler, S., & Back, M. D. (2013). The two pathways to being an (un-)popular narcissist. *Journal of Personality, 81*, 184–195. <http://dx.doi.org/10.1111/j.1467-6494.2012.00795.x>
- Leary, M. R. (2003). Commentary on self-esteem as an interpersonal monitor: The sociometer hypothesis (1995). *Psychological Inquiry, 14*, 270–274. <http://dx.doi.org/10.1080/1047840X.2003.9682891>
- Leary, M. R. (2005). Interpersonal cognition and the quest for social acceptance: Inside the sociometer. In M. W. Baldwin (Ed.), *Interpersonal cognition* (pp. 85–102). New York, NY: Guilford Press.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 32, pp. 1–62). San Diego, CA: Academic Press.
- Leary, M. R., Cottrell, C. A., & Phillips, M. (2001). Deconfounding the effects of dominance and social acceptance on self-esteem. *Journal of Personality and Social Psychology, 81*, 898–909. <http://dx.doi.org/10.1037/0022-3514.81.5.898>
- Leary, M. R., & MacDonald, G. (2003). Individual differences in self-esteem: A review and theoretical integration. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 401–418). New York, NY: Guilford Press.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9*, 151–173. http://dx.doi.org/10.1207/S15328007SEM0902_1
- Luthar, S. S. (1991). Vulnerability and resilience: A study of high-risk adolescents. *Child Development, 62*, 600–616. <http://dx.doi.org/10.2307/1131134>
- MacDonald, G., Saltzman, J. L., & Leary, M. R. (2003). Social approval and trait self-esteem. *Journal of Research in Personality, 37*, 23–40. [http://dx.doi.org/10.1016/S0092-6566\(02\)00531-7](http://dx.doi.org/10.1016/S0092-6566(02)00531-7)
- MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York, NY: Erlbaum.
- Manis, M. (1955). Social interaction and the self concept. *Journal of Abnormal Psychology, 51*, 362–370. <http://dx.doi.org/10.1037/h0040129>
- Marsh, H. W., & Hau, K. T. (1996). Assessing goodness of fit: Is parsimony always desirable? *Journal of Experimental Education, 64*, 364–390. <http://dx.doi.org/10.1080/00220973.1996.10806604>
- Marshall, S. L., Parker, P. D., Ciarrochi, J., & Heaven, P. C. L. (2014). Is self-esteem a cause or consequence of social support? A 4-year longitudinal study. *Child Development, 85*, 1275–1291. <http://dx.doi.org/10.1111/cdev.12176>
- Mayeux, L., & Cillessen, A. H. N. (2008). It's not just being popular, it's knowing it, too: The role of self-perceptions of status in the associations between peer status and aggression. *Social Development, 17*, 871–888. <http://dx.doi.org/10.1111/j.1467-9507.2008.00474.x>
- Mead, G. H. (1934). *Mind, self, and society*. Chicago, IL: University of Chicago Press.
- Mehl, M. R., Gosling, S. D., & Pennebaker, J. W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology, 90*, 862–877. <http://dx.doi.org/10.1037/0022-3514.90.5.862>
- Meier, L. L., Orth, U., Denissen, J. J., & Kühnel, A. (2011). Age differences in instability, contingency, and level of self-esteem across the life span. *Journal of Research in Personality, 45*, 604–612. <http://dx.doi.org/10.1016/j.jrp.2011.08.008>
- Migrant Integration Policy Index. (2015, January 3). *Greece*. Retrieved from <http://mipex.eu/greece>
- Motti-Stefanidi, F., & Asendorpf, J. B. (2012). Perceived discrimination of immigrant adolescents in Greece: How does group discrimination translate into personal discrimination. *European Psychologist, 17*, 93–104. <http://dx.doi.org/10.1027/1016-9040/a000116>
- Motti-Stefanidi, F., Asendorpf, J. B., & Masten, A. S. (2012). The adaptation and well-being of adolescent immigrants in Greek schools: A multilevel, longitudinal study of risks and resources. *Development*

- and *Psychopathology*, 24, 451–473. <http://dx.doi.org/10.1017/S0954579412000090>
- Murray, S. L., Griffin, D. W., Rose, P., & Bellavia, G. M. (2003). Calibrating the sociometer: The relational contingencies of self-esteem. *Journal of Personality and Social Psychology*, 85, 63–84. <http://dx.doi.org/10.1037/0022-3514.85.1.63>
- Muthén, L. K., & Muthén, B. O. (1998–2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Author.
- Newcomb, A. F., & Bukowski, W. M. (1983). Social impact and social preference as determinants of children's peer group status. *Developmental Psychology*, 19, 856–867. <http://dx.doi.org/10.1037/0012-1649.19.6.856>
- Nezlek, J. B., Kowalski, R. M., Leary, M. R., Blevins, T., & Holgate, S. (1997). Personality moderators of reactions to interpersonal rejection: Depression and trait self-esteem. *Personality and Social Psychology Bulletin*, 23, 1235–1244. <http://dx.doi.org/10.1177/01461672972312001>
- Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology*, 74, 1197–1208. <http://dx.doi.org/10.1037/0022-3514.74.5.1197>
- Perdue, C. W., Dovidio, J. F., Gurtman, M. B., & Tyler, R. B. (1990). Us and them: Social categorization and the process of intergroup bias. *Journal of Personality and Social Psychology*, 59, 475–486. <http://dx.doi.org/10.1037/0022-3514.59.3.475>
- Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, 7, 156–176. <http://dx.doi.org/10.1177/074355489272003>
- Phinney, J. S., Horenczyk, G., Liebkind, K., & Vedder, P. (2001). Ethnic identity, immigration, and well-being: An interactional perspective. *Journal of Social Issues*, 57, 493–510. <http://dx.doi.org/10.1111/0022-4537.00225>
- Rangel, U., & Keller, J. (2011). Essentialism goes social: Belief in social determinism as a component of psychological essentialism. *Journal of Personality and Social Psychology*, 100, 1056–1078. <http://dx.doi.org/10.1037/a0022401>
- Reitz, A. K., Asendorpf, J. B., & Motti-Stefanidi, F. (2015). When do immigrant adolescents feel personally discriminated against? Longitudinal effects of peer preference. *International Journal of Behavioral Development*, 39, 197–209. <http://dx.doi.org/10.1177/0165025414567008>
- Reitz, A. K., Motti-Stefanidi, F., & Asendorpf, J. B. (2014). Mastering developmental transitions in immigrant adolescents: The longitudinal interplay of family functioning, developmental and acculturative tasks. *Developmental Psychology*, 50, 754–765. <http://dx.doi.org/10.1037/a0033889>
- Reitz, A. K., Zimmermann, J., Hutteman, R., Specht, J., & Neyer, F. J. (2014). How peers make a difference: The role of peer groups and peer relationships in personality development. *European Journal of Personality*, 28, 279–288. <http://dx.doi.org/10.1002/per.1965>
- Roberts, B. W., & Mroczek, D. (2008). Personality trait change in adulthood. *Current Directions in Psychological Science*, 17, 31–35. <http://dx.doi.org/10.1111/j.1467-8721.2008.00543.x>
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 27, 151–161. <http://dx.doi.org/10.1177/0146167201272002>
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rosenberg, M. (1973). Which significant others? *American Behavioral Scientist*, 16, 829–860. <http://dx.doi.org/10.1177/000276427301600603>
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147–177. <http://dx.doi.org/10.1037/1082-989X.7.2.147>
- Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science*, 3, 102–116. <http://dx.doi.org/10.1111/j.1745-6916.2008.00068.x>
- Selig, J. P., & Little, T. D. (2012). Autoregressive and cross-lagged panel analysis for longitudinal data. In B. Laursen, T. D. Little, & N. Card (Eds.), *Handbook of developmental research methods* (pp. 265–278). New York, NY: Guilford Press.
- Semyonov, M., & Glikman, A. (2009). Ethnic residential segregation, social contacts, and anti-minority attitudes in European societies. *European Sociological Review*, 25, 693–708. <http://dx.doi.org/10.1093/esrf/jcn075>
- Smith, A., & Williams, K. D. (2004). R u there? Ostracism by cell phone text messages. *Group Dynamics: Theory, Research, and Practice*, 8, 291–301. <http://dx.doi.org/10.1037/1089-2699.8.4.291>
- Srivastava, S., & Beer, J. S. (2005). How self-evaluations relate to being liked by others: Integrating sociometer and attachment perspectives. *Journal of Personality and Social Psychology*, 89, 966–977.
- Steiger, A. E., Allemand, M., Robins, R. W., & Fend, H. A. (2014). Low and decreasing self-esteem during adolescence predict adult depression two decades later. *Journal of Personality and Social Psychology*, 106, 325–338. <http://dx.doi.org/10.1037/a0035133>
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, 52, 83–110.
- Swann, W. B. (1997). The trouble with change: Self-verification and allegiance to the self. *Psychological Science*, 8, 177–180. <http://dx.doi.org/10.1111/j.1467-9280.1997.tb00407.x>
- Swann, W. B., Jr., Chang-Schneider, C., & McClarty, K. L. (2007). Do people's self-views matter? Self-concept and self-esteem in everyday life. *American Psychologist*, 62, 84–94. <http://dx.doi.org/10.1037/0003-066X.62.2.84>
- Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, 33, 1–39. <http://dx.doi.org/10.1146/annurev.ps.33.020182.000245>
- Titzmann, P. F., & Silbereisen, R. K. (2009). Friendship homophily among ethnic German immigrants: A longitudinal comparison between recent and more experienced immigrant adolescents. *Journal of Family Psychology*, 23, 301–310. <http://dx.doi.org/10.1037/a0015493>
- Tooby, J., & Cosmides, L. (1996). Friendship and the banker's paradox: Other pathways to the evolution of adaptations for altruism. *Proceedings of the British Academy*, 88, 119–143.
- Trzesniewski, K. H., Donnellan, M. B., Moffitt, T. E., Robins, R. W., Poulton, R., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology*, 42, 381–390.
- Vazire, S., & Carlson, E. N. (2011). Others sometimes know us better than we know ourselves. *Current Directions in Psychological Science*, 20, 104–108. <http://dx.doi.org/10.1177/0963721411402478>
- Williams, K. D., Cheung, C. K., & Choi, W. (2000). Cyberostracism: Effects of being ignored over the Internet. *Journal of Personality and Social Psychology*, 79, 748–762. <http://dx.doi.org/10.1037/0022-3514.79.5.748>
- Zeigler-Hill, V., & Besser, A. (2014). Self-esteem and evaluations of targets with ostensibly different levels of self-worth. *Self and Identity*, 13, 146–161. <http://dx.doi.org/10.1080/15298868.2013.770194>
- Zeigler-Hill, V., Besser, A., Myers, E. M., Southard, A. C., & Malkin, M. L. (2013). The status-signaling property of self-esteem: The role of self-reported self-esteem and perceived self-esteem in personality judgments. *Journal of Personality*, 81, 209–220. <http://dx.doi.org/10.1111/j.1467-6494.2012.00790.x>

Received January 5, 2015

Revision received September 19, 2015

Accepted October 5, 2015 ■