The Achievement Pride Scales (APS)

Vanessa L. Buechner, Reinhard Pekrun, and Stephanie Lichtenfeld

Ludwig-Maximilians-Universität München (LMU Munich), Germany

Abstract: A growing body of research focuses on the self-conscious achievement emotion pride. However, studies investigating the relations of different types of achievement pride with individual antecedents, such as frames of reference, achievement goals, and achievement values, are largely lacking. This work describes a theoretical model designed to extend and clarify the study of achievement pride and introduces the Achievement Pride Scales (APS), which assess two types of pride, namely self-based pride and social comparison-based pride. The results document the reliability and internal validity of the scales. External validity is demonstrated in terms of relations with students' frames of reference, achievement goals, and values. More specifically, whereas self-based pride was positively related to individual frames of reference and individual achievement values, social comparison-based pride was positively related to social frames of reference, performance-approach goals, and social achievement values. Implications for future research on achievement pride are discussed.

Keywords: pride, achievement emotion, frames of reference, achievement goals, achievement values

Pride is a commonly experienced emotion in the achievement context (Goetz, Frenzel, Stoeger, & Hall, 2010) and is important for achievement motivation and performance. In the 1930s, Murray (1938) established the concept of the need for achievement (nAch), an approach-oriented achievement motive that involves anticipating pride upon succeeding (e.g., Atkinson, 1957) and thus orients individuals to desirable possibilities such as success and positive self-evaluation. Pride activates, directs, and motivates efforts toward achieving goals and accordingly plays a crucial motivational role in achievement settings. The present work describes a conceptual model that refers to two different types of pride: self-based pride and social comparison-based pride, as well as their antecedents in real-world contexts, and it features the construction of two scales measuring these types of pride.

The achievement context, in which competence-related activities or outcomes are evaluated, is one important type of setting for emotions to occur (Pekrun, Goetz, Titz, & Perry, 2002). According to Pekrun's control-value theory of achievement emotions, perceived control over actions and outcomes in an achievement situation and the perceived value of these actions and outcomes instigate emotions in this setting (Pekrun, 2006; Pekrun & Perry, 2014; Pekrun & Stephens, 2010). One prominent emotion in the achievement context is pride (Goetz et al., 2010; Ingleton, 1999). Pride involves specific self-evaluative processes and cognitions and is elicited when attention is focused on the self, the individual appraises an event as relevant

to and congruent with their identity goals, and the cause of the event is attributed to internal factors (Graham & Weiner, 1986; Lazarus, 1991; Weiner, 1985). As such, pride is defined as a retrospective, positive outcome emotion that originates from attributing valued success to internal causes (Pekrun, 2006; Weiner, 1985). Accordingly, internal causal attributions, perceived control, and perceived value of an achievement outcome appear to be positive predictors of pride (Goetz et al., 2010; Weiner, 1985). Specifically, pride can be instigated by success perceived as being due to internal, controllable, and variable causes (e.g., effort) as well as by success due to internal, uncontrollable, and stable causes (e.g., ability; Tracy & Robins, 2007a, 2007b).

Theoretical Framework

Concepts of Self-Based and Social Comparison-Based Pride

We propose to differentiate between two types of pride that are important in the achievement context, namely self-based pride and social comparison-based pride. Self-based pride is an emotional response to intrapersonal improvement in performance over time. That is, self-based pride refers to success in terms of doing well relative to how one has done in the past. Social comparison-based pride is an emotional response to successfully outperforming

others. As such, social comparison-based pride refers to success in terms of doing well relative to others.

Differentiating between self-based and social comparison-based pride is important, as these two types of pride can have different effects on subsequent cognition, emotion, motivation, and action. Self-based pride, for example, should lead to achievement strivings toward the attainment of self-improvement and mastery, and can be expected to generally promote energization and invigoration (Elliot, Murayama, & Pekrun, 2011; Oettingen et al., 2009). By contrast, social comparison-based pride should facilitate competitive achievement strivings and may strengthen competition-related emotions such as contempt for those who achieve less. Furthermore, the two types of pride could have differential benefits for different types of individuals. Self-based pride may be especially important for promoting motivation in disadvantaged students who are unable to outperform others but can nevertheless improve their individual performance over time. Alternatively, gifted students may well benefit from social comparison pride in doing better than others. As a consequence, studies dealing with pride in the achievement context should take the distinction between self-based and social comparison-based pride into account and explore their underlying antecedents. This work examines the role of three critically important groups of antecedents, namely, frames of reference, achievement goals, and achievement values.

Antecedents of Self-Based and Social Comparison-Based Pride

Frames of Reference

As mentioned above, internal causal attributions, perceived control, and perceived value of an achievement outcome (i.e., success) appear to be general antecedents of achievement pride. However, what are the specific antecedents of the two types of pride defined above, self-based and social comparison-based pride? Research suggests that students use individual or social frames of reference for judging their success, in terms of comparing their current performance with either their past performance or other students' performance (Albert, 1977; Festinger, 1954; Marsh, 1986; Rheinberg, 1980; Suls, 1986; Wilson & Ross, 2000). We propose that individual and social frames of reference are important antecedents of self-based and social comparison-based pride, respectively. More precisely, self-based pride is presumed to derive from the evaluation of one's own competence relative to individual frames of

reference, whereas social comparison-based pride is likely to derive from the evaluation of one's own competence relative to social frames of reference.

Achievement Goals

Achievement goal theorists define goals as "cognitive representations of a future object that the organism is committed to approach or avoid" (Elliot & Fryer, 2008, p. 244) and as the reason for a competence-relevant activity (Maehr, 1989; Nicholls, 1984). According to Schöne, Dickhäuser, Spinath, and Stiensmeier-Pelster (2004), along with Wilson and Ross (2000), individuals pursuing mastery-approach goals (i.e., goals to develop competence and master tasks) prefer using individual-temporal frames of reference to evaluate their performance, whereas individuals pursuing performance-approach goals (i.e., goals to demonstrate ability and outperform others) evaluate their performance with respect to social frames of reference.[1]

It is important to note that frames of reference are the standards based on which students evaluate their performance, whereas achievement goals represent the motivation that students need to attain these standards. As such, frames of reference and achievement goals are different constructs. Empirical studies have found positive correlations between mastery-approach and performance-approach goals and pride (Pekrun, Elliot, & Maier, 2006, 2009). Since mastery-approach goals direct attention toward the development and enhancement of competence, whereas performance-approach goals lead individuals to focus on outperforming others, we expect that these goal orientations are antecedents of individual-related self-based pride and social-related social comparison-based pride, respectively. More precisely, self-based pride is assumed to result from mastery-approach goals, whereas social comparison-based pride should derive from performance-approach goals.

Achievement Values

Along with perceived control and internal attributions of success, the perceived value of success has been shown to be an important antecedent of pride and to influence the intensity of this emotion (Goetz et al., 2010; Weiner, 1985). As individuals can distinguish between the importance of individually versus socially referenced achievement, they are assumed to differ with regard to individual achievement values (i.e., importance to improve oneself) and social achievement values (i.e., importance to outperform others). In summary, we expect that self-based pride is linked to appraisals of individual achievement value,

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[1] Recently, Elliot, Murayama, and Pekrun (2011) separated the mastery component into a task-based and a self-based goal component, rendering a 3 × 2 achievement goal model. However, the present work focuses on the 2 × 2 achievement goal model (Elliot & Murayama, 2008; see more details in the discussion section).

whereas social comparison-based pride is expected to be linked to appraisals of social achievement value.

Measures of Pride in Achievement Settings

In addition to providing a conceptual model of self-based and social comparison-based pride, this research aims to construct scales measuring these types of pride. Although a number of pride measures have been developed, they do not distinguish between individual-related and social-related pride, and most of them do not apply to the achievement context.

Some existing measures of pride focus on pride as a global, domain-general construct, whereas others measure pride in a more domain-specific way. Scales measuring pride in a general way include the 10-item Need Achievement Pride Scale (NAPS; Metzler, 2007), the Self-Assurance subscale of the Positive and Negative Affect Schedule – Expanded Form (Watson & Clark, 1994), the Alpha and Beta Pride subscales of the Test of Self-Conscious Affect (Tangney, Dearing, Wagner, & Gramzow, 2000), and the state and trait version of the Two-Facet Measure of Pride (Tracy & Robins, 2007a). However, these scales represent global pride scales that assess pride in a context-unspecific way and are not constructed for achievement contexts. By contrast, the Achievement Emotions Questionnaire (AEQ; Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2011; Pekrun, Goetz, Titz, & Perry, 2002) was designed to assess students' achievement emotions, including pride during class, while studying, and when taking tests and examinations. However, even though this questionnaire targets pride in the achievement context, it measures pride as a global construct and does not differentiate between achievement-relevant subtypes of pride. In the research presented herein, we developed the Achievement Pride Scales (APS) which consider the distinction between self-based pride and social comparison-based pride.

Aims and Hypotheses of the Present Research

The present research aims to develop two brief, internally consistent scales measuring self-based and social comparison-based pride (Achievement Pride Scales, APS), and to validate these scales by examining their relations with frames of reference, achievement goals, and achievement values. Specifically, we hypothesize that self-based pride is positively related to individual frames of reference, mastery-approach goals, and individual achievement values, and unrelated to social frames of reference,

performance-approach goals, and social achievement values. Conversely, we predict that social comparison-based pride is positively related to social frames of reference, performance-approach goals, and social achievement values, and unrelated to individual frames of reference, mastery-approach goals, and individual achievement values. As previous research has found gender and age differences for achievement emotions (Frenzel, Pekrun, & Goetz, 2007; Grossman & Wood, 1993), we also included gender and age in the analysis.

We conducted three studies to examine the measurement properties of the APS and to explore the two types of achievement pride and their antecedents. In Study 1, we used a sample of university students and confirmatory factor analysis (CFA) to determine if the APS fits a two-factor model that differentiates between self-based and social comparison-based pride. In Study 2, we investigated the relations of these types of pride with students' frames of reference, achievement goals, and achievement values. Finally, Study 3 sought to investigate whether the results can be generalized to elementary school children.

Study 1

Study 1 served to develop the APS. A pilot study was conducted prior to the research reported herein. The aim of the pilot study was to devise items to form brief, but reliable and valid indices for each of the two types of pride. Attending to convergent (i.e., high factor loadings on the relevant scale) as well as divergent item validity (i.e., low factor loadings on the other scale), five items were chosen to represent each type of pride (see Appendix for the items). The results of the pilot study indicated that the two pride scales represent empirically separable and internally consistent constructs. Study 1 used the two scales to examine the means and intercorrelations among the pride scales and to validate the independence of the two constructs by examining the fit of the hypothesized two-factor model differentiating between self-based and social comparison-based pride and comparing it to that of an alternative single-factor model.

Method

Participants and Procedure

A total of $N = 270$ (188 females, $M_{age} = 23.56$ years, $SD = 3.63$) undergraduates at a German university participated in the study. Participants were recruited online via short advertisements including a link to an online questionnaire. They were informed that the study would take

Measures	M	SD	Cronbach's α	1	2	3	4
1. SBP	3.36	1.21	.89	–			
2. SCP	2.89	1.24	.92	.50**	–		
3. Gender[a]				−.04	.01	–	
4. Age	23.56	3.63		−.07	−.23**	.08	–

Notes. SBP = self-based pride; SCP = social comparison-based pride; [a]Gender was coded 1 = *female* and 2 = *male.* **$p < .001$ (two-tailed).

approximately 5 min, and as an incentive they were told that a coupon for €20 for a well-known Internet shopping site would be raffled off among those students who completed the questionnaire. Students were asked to answer the APS and questions about their demographic background.

Achievement Pride Scales (APS)

Self-based and social comparison-based pride were assessed with the Achievement Pride Scales. Participants were informed that they would be shown statements that represent general, typical emotional experiences they may face when attending university. For each item, they indicated how strongly they generally experience each of the two types of achievement pride while studying: (a) self-based pride (five items; e.g., "I am proud when I can answer more questions correctly than before"; α = .89) and (b) social comparison-based pride (five items; e.g., "I am proud when I can answer more questions correctly than other students"; α = .92). Participants responded to each item on a 1 (= *little pride*) to 6 (= *extreme pride*) scale.

Results and Discussion

Preliminary Analysis

The descriptive statistics, reliabilities, and intercorrelations among the study variables are presented in Table 1. The reliabilities document the internal consistency of the two scales. The correlation between the two scales was moderate, indicating that the two pride scales represent empirically separable constructs. Social comparison-based pride was found to be negatively correlated with age, suggesting that older students experience less social comparison-based pride.

Confirmatory Factor Analysis (CFA)

In this and the following studies, all factor analyses were conducted using *Mplus* Version 6 (Muthen & Muthen, 2004). CFAs were used to examine the fit of the hypothesized dichotomous pride model, in which self-based and social comparison-based pride items were used as indicators of two latent factors, and the alternative single pride model, in which all of the items loaded on a single

latent factor. The analyses used maximum-likelihood estimation with robust standard errors (MLR), which is robust to non-normality of the observed variables. The variance of each latent factor was fixed to one to identify the model (Bollen, 1989). Following Hoyle and Panter (1995), we used several indices to evaluate the fit of the models, including the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). For comparing nested models (i.e., the dichotomous and the single-factor model) using the MLR estimator, we applied the Satorra-Bentler scaled chi-square difference test including scaling corrections for nestedness (Bryant & Satorra, 2012; Satorra, 2000). In addition, the Akaike information criterion (AIC; Akaike, 1973) and the sample-size corrected Bayesian information criterion (BIC; Schwarz, 1978) were used (with lower values indicating a better fit).

As displayed in Table 2, results clearly supported the dichotomous pride model. The Satorra-Bentler scaled chi-square difference test (SB χ^2) showed that the dichotomous pride model provided a far better fit to the data than the single pride model, SB $\chi^2(1) = 174.60$, $p < .001$. In addition, AIC and BIC were considerably lower for the dichotomous than for the single pride model, which also suggests that the dichotomous pride model is preferable to the single pride model.

In sum, the findings of Study 1 provide support for the distinction of self-based and social comparison-based pride and indicate that the two pride scales show internal consistency.

Study 2

In Study 2, our aim was to replicate the Study 1 findings and to additionally investigate the relations between the APS and the hypothesized antecedents of achievement pride. We focused on three important groups of antecedent variables, namely frames of reference, achievement goals, and achievement values. Again, we examined the means and intercorrelations among the two pride variables and sought to validate their independence using CFA.

Method

Participants and Procedure

A total of $N = 298$ (200 females, $M_{age} = 22.35$ years, $SD = 3.74$) undergraduates at a German university participated in this study. The procedure was the same as in Study 1, with the exception that participants additionally

Table 2. Comparison of two-factor and one-factor model (Studies 1–3)

Model	χ^2 (N = 270)	df	CFI	TLI	RMSEA	SRMR	AIC	BIC
Study 1								
Dichotomous pride model	43.762	34	.992	.989	.033	.026	7,891.583	7,904.843
Single pride model	393.476	35	.700	.614	.195	.145	8,377.418	8,390.251
Study 2								
Dichotomous pride model	52.029	34	.988	.984	.042	.033	8,562.798	8,579.096
Single pride model	478.847	35	.709	.626	.206	.145	9,183.948	9,199.720
Study 3								
Dichotomous pride model	51.550	33	.961	.947	.077	.042	2,776.519	2,757.212
Single pride model	168.694	34	.720	.630	.204	.194	2,952.047	2,933.343

Notes. CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation; AIC = Akaike information criterion; BIC = sample-size corrected Bayesian information criterion.

had to respond to questions about their frames of reference, achievement goals, and achievement values.

Measures
Achievement Pride
The same Achievement Pride Scales as used in Study 1 were employed to assess self-based pride (α = .90) and social comparison-based pride (α = .93).

Frames of Reference
Dickhäuser and Rheinberg's (2003) Frame of Reference Scale was used to assess each of the two frames of reference: (a) individual frames of reference (four items; e.g., "A good performance is a result that is better than previous results"; α = .81) and (b) social frames of reference (four items; e.g., "A good performance is a result that is above average compared to my fellow students"; α = .75). Participants indicated the extent to which they thought each item was true for them on a scale from 1 (= *not at all true*) to 5 (= *very true*).

Achievement Goals
Elliot and Murayama's (2008) Achievement Goal Questionnaire-Revised (AGQ-R) was used to assess each of the two achievement approach goals as defined in the 2 × 2 achievement goal framework (Elliot & McGregor, 2001): (a) mastery-approach goals (three items; e.g., "My aim is to completely master the material presented in this class"; α = .69) and (b) performance-approach goals (three items; e.g., "My aim is to perform well relative to other students"; α = .89). Participants indicated the extent to which they thought each item was true for them on a scale from 1 (= *not at all true*) to 5 (= *very true*).

Achievement Value
One item from Frenzel, Pekrun, and Goetz's (2007) Achievement Value Scales was used to assess each of the two achievement values: (a) individual achievement value (i.e., "It is very important for me to receive better results

than before") and (b) social achievement value (i.e., "It is very important for me to receive better results than other students"). Participants indicated the extent to which they thought each item was true for them on a scale from 1 (= *not at all true*) to 5 (= *very true*).

Results and Discussion

Preliminary Analyses
The descriptive statistics, reliabilities, and intercorrelations among the study variables are presented in Table 3. The results confirm that the two pride scales show internal consistency. The correlation between the two pride scales was moderate, again indicating that the two scales represent empirically distinct constructs.

Confirmatory Factor Analysis
Confirmatory factor analyses (CFAs) were used to examine the fit of the hypothesized dichotomous and the alternative single pride model. As displayed in Table 2, results again supported the dichotomous pride model. The Satorra-Bentler scaled chi-square difference test showed that the dichotomous pride model provided a far better fit to the data than the single pride model, SB $\chi^2(1)$ = 176.71, p < .001. In addition, AIC and BIC were lower for the dichotomous than for the single pride model, which also suggests that the dichotomous pride model is preferable to the single pride model.

Overall, the CFAs and reliability analyses clearly confirmed that the two pride scales represent empirically separable and internally consistent variables.

Relations With Frames of Reference, Achievement Goals, and Achievement Values
We applied structural equation modeling with latent variables to examine the link of the pride scales with their proposed antecedents. More precisely, based on our theoretical framework described earlier, individual and social

Table 3. Descriptive statistics, reliabilities, factor loadings, and intercorrelations among the study variables (Study 2)

	M	SD	Cronbach's α	Factor loadings range	1	2	3	4	5	6	7	8	9	10
1. SBP	3.44	1.25	.90	.69–.91	–									
2. SCP	2.80	1.30	.93	.72–.92	.53**	–								
3. IND	3.56	0.83	.81	.65–.82	.26**	−.07	–							
4. SOC	2.82	0.86	.75	.49–.75	.08	.36**	−.10	–						
5. MAP	3.88	0.81	.69	.45–.83	.13*	−.02	.19**	−.02	–					
6. PAP	3.04	1.01	.89	.85–.86	.17**	.55**	−.12*	.53**	.04	–				
7. IND_VAL	3.66	0.99			.35**	.11	.34	.01	.30**	.06	–			
8. SOC_VAL	2.90	1.11			.16**	.58**	−.19**	.57**	.00	.74**	.18**	–		
9. Gender[a]					−.08	−.04	−.05	.12*	−.03	.01	−.05	.08	–	
10. Age	22.35	3.74			−.06	−.13*	.06	−.17**	−.02	−.15**	−.00	−.09	−.01	–

Notes. SBP = self-based pride; SCP = social comparison-based pride; IND = individual frame of reference; SOC = social frame of reference; MAP = mastery-approach goals; PAP = performance-approach goals; IND_VAL = individual achievement value; SOC_VAL = social achievement value. [a]Gender was coded 1 = *female* and 2 = *male*. *p* < .05. **p* < .001 (all two-tailed).
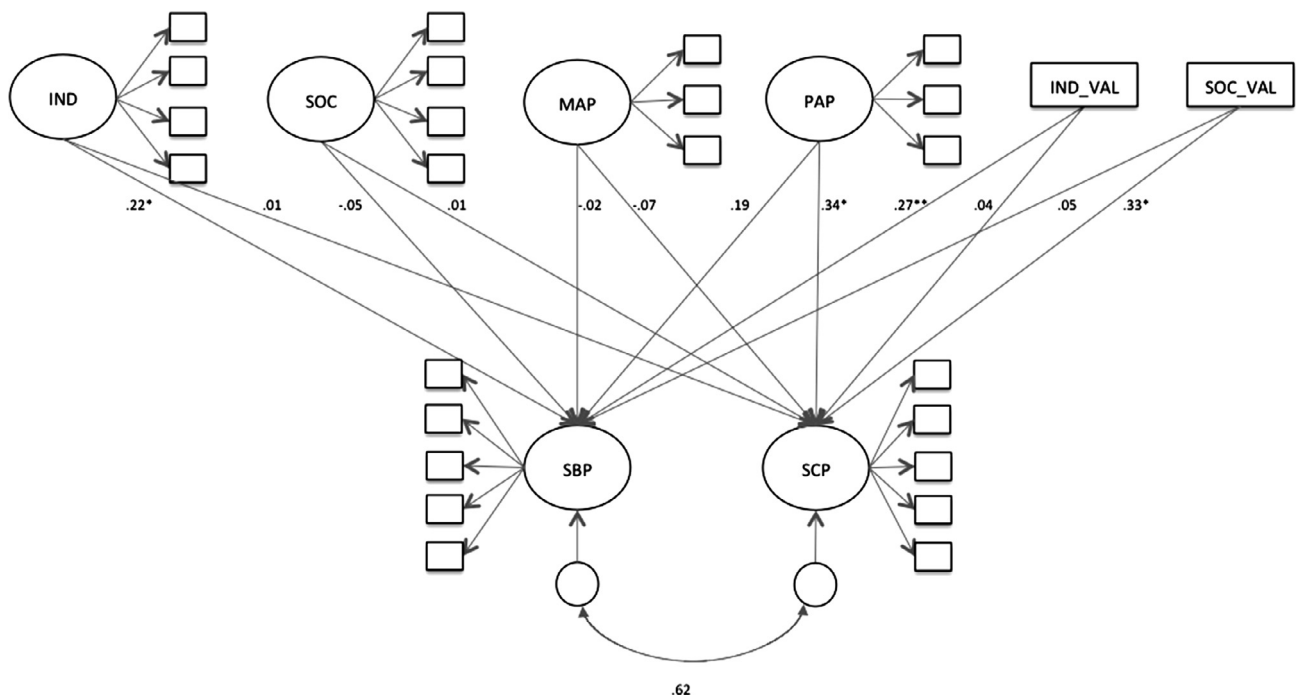
Figure 1. Structural equation modeling (Study 2). SBP = self-based pride; SCP = social comparison-based pride; IND = individual frame of reference; SOC = social frame of reference; MAP = mastery-approach goals; PAP = performance-approach goals; IND_VAL = individual achievement value; SOC_VAL = social achievement value. Correlations between the predictors and path coefficients for the covariates (age, gender) are not displayed. *p* < .05. **p* < .001.

frames of reference, mastery and performance-approach goals, as well as individual and social achievement values were modeled as jointly influencing self-based pride and social comparison-based pride. We expected that individual frames of reference, mastery-approach goals, and individual achievement values would relate to self-based pride, whereas social frames of reference, performance-approach goals, and social achievement values would relate to social comparison-based pride. We controlled for gender and age within this analysis. The model showed a good fit to the data, $\chi^2(309) = 438.943$, $p < .01$, CFI = .967, TLI = .959,

RMSEA = .038, SRMR = .047 (Figure 1; see Table 3 for factor loadings for this model). In line with the study hypotheses, individual frames of reference ($\beta = .22$, $p < .01$) and individual achievement values ($\beta = .27$, $p < .001$) were positively related to self-based pride. However, mastery-approach goals ($\beta = −.02$, $p > .10$) were not positively linked to self-based pride. Furthermore, as expected, social frames of reference ($\beta = −.05$, $p > .10$), performance-approach goals ($\beta = .19$, $p > .10$), and social achievement values ($\beta = .05$, $p > .10$) were unrelated to self-based pride. In line with the hypotheses, performance-approach goals ($\beta = .34$,

$p < .01$) and social achievement values ($\beta = .33$, $p < .01$) were positively related to social comparison-based pride. However, social frames of reference ($\beta = .01$, $p > .10$) were not positively linked to social comparison-based pride. Individual frames of reference ($\beta = .01$, $p > .10$), mastery-approach goals ($\beta = -.07$, $p > .10$), and individual achievement values ($\beta = .04$, $p > .10$) were unrelated to social comparison-based pride.

In sum, the results of Study 2 confirmed most of our predictions. Specifically, in line with our hypotheses, individual frames of reference and individual achievement values were positively related to self-based pride, whereas performance-approach goals and social achievement values were positively linked to social comparison-based pride. In addition, social comparison-based pride again was found to be negatively correlated with age, suggesting that older university students experience less social comparison-based pride.

Study 3

In Study 3, our aim was to replicate the findings of Studies 1 and 2 with younger students (8–10 years old) and to investigate whether children of this age are already able to distinguish between different types of pride. As in Studies 1 and 2, we examined the means and intercorrelations among the two pride variables and sought to validate their independence using CFA. Concerning the hypothesized antecedents, we only investigated the relation between achievement pride and frames of references (but not achievement goals and values) due to time constraints on the assessment. Further, achievement goals and achievement values require elaborate cognitive evaluations of what is important and relevant in achievement settings, and children in this age group may not be aware of the subtle distinctions implied by these constructs. Again, we hypothesized that self-based pride is positively related to individual frames of reference and that social comparison-based pride is positively related to self-based pride.

Method

Participants and Procedure
A total of $N = 95$ (49 females, $M_{age} = 9.20$ years, $SD = .54$) primary school students from a German elementary school participated in the study. Students' achievement pride and frames of reference were assessed. At the end of the questionnaire, students responded to several demographic questions.

Measures
Achievement Pride
The APS, slightly adapted to meet the cognitive and language ability levels of elementary school students, were used to assess self-based and social comparison-based pride. Participants were informed that they would be shown statements that represent general, typical emotional experiences they may face when attending school. For each item, they indicated how strongly they generally experience each of the two types of achievement pride while learning: (a) self-based pride (five items; e.g., "I am proud when I can answer more questions correctly than before"; $\alpha = .88$) and (b) social comparison-based pride (five items; e.g., "I am proud when I can answer more questions correctly than my classmates"; $\alpha = .95$). The children responded to each item on a 1 (= *little pride*) to 6 (= *extreme pride*) scale.

Frames of Reference
Schöne et al.'s (2004) Frame of Reference Scale,[2] that has been developed for this age group, was used to assess each of the two frames of reference: (a) individual frames of reference (two items; e.g., "A good performance is when solving more problems correctly than previously."; $\alpha = .41$) and (b) social frames of reference (three items; e.g., "A good performance is when you have more items correct than the others"; $\alpha = .89$). The children indicated the extent to which they thought each item was true for them on a scale from 1 (= *not at all true*) to 5 (= *very true*).

Results and Discussion

Preliminary Analyses
The descriptive statistics, reliabilities, and intercorrelations among the study variables are presented in Table 4. The results confirm that the two pride scales show internal consistency for this age group as well. The correlation between the two scales was moderate, again indicating that the two pride scales represent empirically distinct constructs.

Confirmatory Factor Analysis
Confirmatory factor analyses (CFAs) were used to examine the fit of the hypothesized dichotomous and the alternative single pride model. The results again strongly supported the dichotomous pride model (see Table 2). The Satorra-Bentler scaled chi-square difference test showed that the dichotomous pride model provided a far better fit to the data than the single pride model, SB χ^2 (1) = 14.90, $p < .001$. In addition, AIC and BIC were lower for the dichotomous than for the single pride model, which also

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[2] The 3-item individual frames of reference scale were reduced to two items as item 1 ("A good performance is a performance that is better than previous performance") did not meet the language ability levels of elementary school students.

Table 4. Descriptive statistics, reliabilities, factor loadings, and intercorrelations among the study variables (Study 3)

Measures	M	SD	Cronbach's α	Factor loadings range	1	2	3	4	5	6
1. SBP	5.26	1.03	.88	.57−.89	−					
2. SCP	3.68	1.77	.95	.86−.96	.31**	−				
3. IND	4.55	0.57	.41	.49−.53	.40**	−.04	−			
4. SOC	3.17	1.43	.89	.75−.92	.09	.60**	.06	−		
5. Gender[a]					−.02	−.03	−.15	−.01		
6. Age	9.20	0.54			.02	.07	−.01	−.04	−.15	−

Notes. SBP = self-based pride; SCP = social comparison-based pride; IND = individual frame of reference; SOC = social frame of reference. [a]Gender was coded 1 = *female* and 2 = *male*. *p < .05. **p < .001.

suggests that the dichotomous pride model is preferable to the single pride model.[3]

Overall, the CFAs and reliability data clearly indicate that the two pride scales represent empirically separable and internally consistent variables for this age group as well.

Relation With Frames of Reference

Again, we applied structural equation modeling with latent variables to examine the links between the pride scales with their proposed antecedents while controlling for gender and age. More specifically, we explored the relations of individual and social frames of reference with self-based pride and social comparison-based pride. We expected that individual frames of reference are linked to self-based pride and that social frames of reference are linked to social comparison-based pride. The model showed a good fit to the data, $\chi^2(83)$ = 133.683, p = .03, CFI = .963, TLI = .953, RMSEA = .054, SRMR = .050 (Figure 2, and see Table 4 for factor loadings for this model). As expected, individual reference norms were positively related to self-based pride (β = .59, p < .05) but not social comparison-based pride (β = −.14, p > .10). By contrast, social reference norms were positively linked to social comparison-based pride (β = .67, p < .01) but not self-based pride (β = .06, p > .10).

Taken together, the results of Study 3 replicated the findings from Studies 1 and 2 with a sample of young children. Specifically, CFAs corroborated the proposed structure of the APS for this age group, showing that children of this age already distinguish between different types of pride. Moreover, in line with Study 2, individual frames of reference were positively related to self-based pride, whereas social frames of reference were positively linked to social comparison-based pride. These findings further support the external validity of the instrument and indicate that even young children are able to provide valid reports of their pride experiences.

General Discussion

The present research comprised three studies designed to validate the Achievement Pride Scales (APS) and to test the hypothesized dichotomous pride model that refers to self-based and social comparison-based pride and their antecedents. The data from all three studies provided clear support for the reliability, internal validity, and external validity of the scales and for the hypothesized dichotomous pride model.

As for the hypothesized antecedents of achievement pride, individuals differ in terms of performance evaluations relative to an individual or a social standard, mastery or performance goal orientations, and underlying individual or social achievement values. Each of these constructs is assumed to influence the type of pride experienced and hence is worthy of empirical consideration. Consistent with findings from prior research (Schöne et al., 2004; Wilson & Ross, 2000), the results showed significant relations between frames of reference and achievement goals (Study 2, Table 3). This research expands upon these findings by additionally including achievement values and examining the relations of all three constructs with specific types of pride. More specifically, individual frames of reference and individual achievement values appeared to be positively linked to self-based pride, whereas performance-approach goals and social achievement values were positively linked to social comparison-based pride. In addition, social frames of reference were positively related to social comparison-based pride in Study 3.

The present research has the important advantage that it included both university undergraduates and younger students in different evaluative environments. Suls (1986) and Suls and Mullen (1982, 1984) as well as Ruble, Boggiano, Feldman, and Loebl (1980) claimed that temporal comparisons are prevalent in young children (at least until age 7 or 8 years) and adults over 65 years, when developmental change is rapid. Also, Nicholls (1990) showed

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[3] The uniquenesses of items 1 and 3 in the self-based pride scale were allowed to correlate. This correlation is based on the fact that both items include the terms "better" and "before" and appear to be very similar.
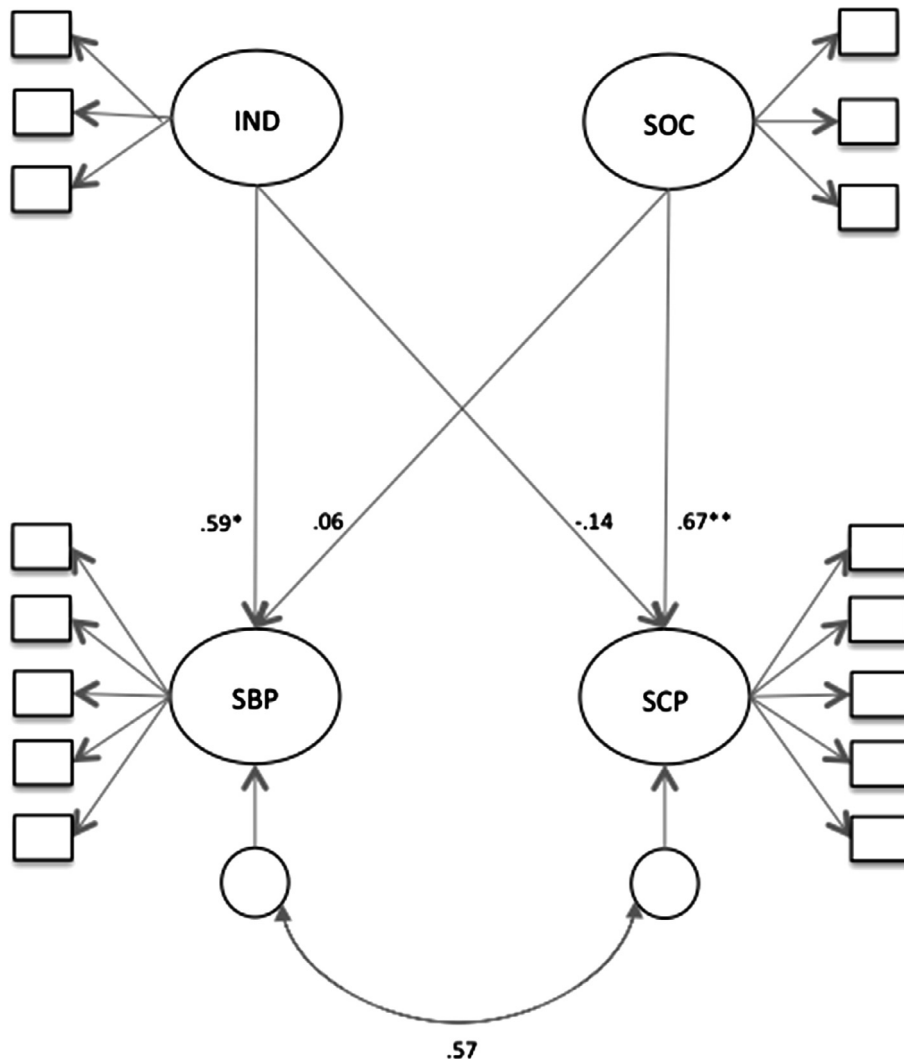
Figure 2. Structural equation modeling (Study 3). SBP = self-based pride; SCP = social comparison-based pride; IND = individual frame of reference; SOC = social frame of reference. Correlations between the predictors and path coefficients for the covariates (age, gender) are not displayed. *p < .05. **p < .01.

that young children predominantly pursue mastery goals rather than performance goals, because the development of one's own abilities may be more relevant at this age than one's normative standing. As self-based pride also relates to one's own development, it could be expected that this type of pride is prominent in younger students. In line with this assumption, the data confirmed that primary school students indeed reported more self-based than social comparison-based pride.

Notably, with regard to motivational engagement in an academically competitive environment (i.e., university), outperforming others may be a commonly endorsed type of goal. As social comparison-based pride derives from performance-approach goals, it could be expected that social comparison-based pride prevails in older students. However, our data showed that university students also reported more self-based than social comparison-based pride. Furthermore, for this age group, social comparison-based pride was negatively related to age, indicating that older

students in university settings experience lower levels of social comparison-based pride. As this is an unexpected result, it is important that further studies replicate this finding before drawing conclusions.

Limitations and Directions for Future Research

Several limitations should be considered when interpreting the present work. We have proceeded under the assumption that the relationships observed were causal in nature. However, due to the correlational design of the present studies (i.e., the variables were assessed at one point in time only), it is not possible to infer conclusions regarding causality. Longitudinal research with repeated assessments is needed to draw such conclusions. More specifically, achievement pride and antecedents such as students' frames of reference, achievement goals, and achievement

values would need to be assessed at several points in time in order to examine the reciprocal links between these variables.

As the present work was conducted within an academic context, the extent to which the findings can be generalized to other contexts, such as organizational settings or sports, remains open to question. Also, previous research has highlighted the importance of domain specificity (i.e., academic domains such as mathematics and language) for tests of the links between constructs (Goetz, Frenzel, Pekrun, Hall, & Lüdtke, 2007). As such, an important avenue for future research is to examine the dichotomous pride model within specific domains.

Furthermore, to make claims about cross-cultural generalizability, it is necessary to extend the research beyond Western to Eastern cultures that can foster different motivational tendencies (Elliot, Chirkov, Sheldon, & Kim, 2001; Maehr & Nicholls, 1980) and self-construals (Neumann, Steinhäuser, & Roeder, 2009), and can differ in terms of the adequacy of pride experiences and self-reports about pride (e.g., Eid & Diener, 2001; Mesquita & Polanco, 2009).

Finally, as the data were collected by self-report measures, no objective assessments of participants' achievement pride and its antecedents were available to validate their responses. To address this limitation, future studies would benefit from including behavioral (e.g., Butler, 1993, 1999) or implicit measures of these variables that are less subject to self-report biases. Experimental studies could meet this objective by manipulating the two types of pride. In addition, as many factors besides emotions can exert an important influence on achievement-relevant processes and outcomes (see Dweck, 1999), it is important to acquire a more precise understanding of how the two types of achievement pride function in concert with other achievement-relevant variables. Related to this, future studies should explore the effect of the two types of pride on outcomes, such as cognition, motivation, and attention.

Implications for Educational Practice

By referring to the antecedents of achievement pride, the present findings make the applied utility of the dichotomous achievement pride model salient. More specifically, the focus on frames of reference, achievement goals, and values as antecedents of pride in this model maps nicely onto different types of competence assessment as used by teachers, that is, use of individual versus social comparison standards to evaluate achievement. Specifically, the findings suggest that teachers could influence the elicitation of one of the two types of pride in their students by using individual versus social comparison standards.

As disadvantaged students often fail in terms of social comparison-based performance but still can improve their individual performance over time, only self-based pride is expected to be aroused in these students and can help to enhance their motivation. By contrast, for gifted students who perform well anyway, social comparison-based pride should have an additional beneficial effect. Considering the two different types of pride would thus help to understand why pride is elicited in one but not another person within the same situation. In addition, as focusing on an intrapersonal standard facilitates energization and invigoration (Elliot et al., 2011; Oettingen et al., 2009), self-based pride could also predict energy. As such, further research on achievement pride should consider the distinction between self-based and social comparison-based pride to further enrich our knowledge about affective processes in achievement settings.

In closing, it is important to highlight that achievement settings are complex and that self-based and social comparison-based pride are just two of several types of operative variables to be considered. It is our hope that the dichotomous framework established here will serve as a useful theoretical and empirical tool in future research on achievement-related pride.

Acknowledgments

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Vanessa L. Buechner

Department of Psychology
University of Munich
Leopoldstr. 13
80802 Munich
Germany
Tel. +49 89 2180-6376
Fax +49 89 2180 99-5214
E-mail vanessa.buechner@psy.lmu.de

Appendix

Achievement Pride Scales

Self-Based Pride

I am proud when . . .

- . . . I achieve better results than before
- . . . I have made progress over time
- . . . I receive better grades than before
- . . . I am better in exams than I was before in comparable exams
- . . . I can answer more questions correctly than before.

Social Comparison-Based Pride

I am proud when . . .

- . . . I am better than other students
- . . . I achieve better results than other students
- . . . I can handle the learning matter better than other students
- . . . I can answer more questions correctly than other students
- . . . I am better in exams than other students.