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The Emotional Origins of a Social Learning Bias: Does the Pride Expression Cue Copying?

Jason P. Martens[1] and Jessica L. Tracy[1]

Abstract

Humans learn, in large part, by copying knowledgeable others. However, because others can be deceitful or lack competence, indiscriminate copying would be maladaptive. How then do individuals determine which social group members have knowledge that should be copied? We argue that the pride nonverbal expression may signal expertise, and thus bias learning such that proud others are more likely to be copied. In two studies, financially motivated participants answered a difficult trivia question after viewing a photograph (Study 1A) or a video (Study 2) of an emotion-displaying confederate answering the same question. Pride-displaying confederates were copied significantly more frequently than those displaying other expressions, suggesting that pride expressions bias social learning. Study 1B demonstrated that this effect was restricted to participants who were financially motivated to acquire knowledge. These findings indicate that pride displays are functional for observers and may play a critical role in social learning.

Keywords

decision making, emotion, evolution, motivation and performance, nonverbal behavior

Humans learn, in large part, by copying others. However, given that others can be deceitful, incompetent, or lack knowledge, indiscriminate copying would be maladaptive. Indeed, from early childhood, humans are systematically selective copiers, acquiring a vast array of essential skills by copying conspecifics they know to be more knowledgeable than themselves (Bloom, 2000; Einav & Robinson, 2011). Evolutionary accounts of cultural learning suggest that this tendency to copy knowledgeable others should result from innate information-acquisition biases (e.g., Boyd & Richerson, 1985; Henrich & Gil-White, 2001), but it is not clear precisely how these biases work. That is, how do people quickly determine which social group members have skills or knowledge that merit copying? We argue that the pride nonverbal expression provides an answer.

The Emotional Signal of Expertise

A growing body of evidence suggests that the pride nonverbal expression is a human universal. Pride is reliably recognized by young children and adults across cultures, including those from highly isolated, traditional small-scale societies (Tracy & Robins, 2008; Tracy, Robins, & Lagattuta, 2005; Tracy, Shariff, Zhao, & Henrich, in press). The expression is also spontaneously displayed in response to the pride-eliciting situation of success by young children and adults across cultures, including the congenitally blind who could not have learned to display pride through visual modeling (Lewis, Allesandri, & Sullivan, 1992; Stipek, Recchia, & McClintic, 1992; Tracy & Matsumoto, 2008). Together, these findings suggest that displaying pride may be an innate behavioral response to success.

If this account is correct, then pride displays may be an adaptation. Indeed, growing evidence suggests that pride displays function to communicate an individual's deservedness of high status—a message that bestows numerous adaptive benefits to expressers, including greater access to wealth, resources, and potential mates (Cowlishaw & Dunbar, 1991; Hill, 1984). Individuals intuitively associate pride displays with high status, and observers viewing the expression implicitly and automatically perceive it as conveying high status (Shariff & Tracy, 2009; Shariff, Tracy, & Markusoff, in press; Tiedens, 2001; Williams & DeSteno, 2009). In research providing the strongest evidence thus far that pride displays *universally* communicate increased status, Fijians living in traditional small-scale societies were found to implicitly and

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automatically associate observed pride displays with high-status concepts, despite their culture's explicit prohibition of overt status displays (Tracy et al., in press)—suggesting that the pride expression is a cross-cultural status signal.

From an evolutionary perspective, there are clear reasons why responding to success or other prestige-enhancing events (including the demonstration of one's own knowledge) by displaying a nonverbal expression that reliably signals high status would be adaptive, as research has found that those who can effectively communicate that they deserve higher prestige (i.e., admiration for skills or competencies; Henrich & Gil-White, 2001) tend to acquire greater influence over others (Cheng, Tracy, Foulsham, Kingstone, & Henrich, in press). Social influence is strongly linked to enhanced fitness, because more influential group members tend to be granted greater access to a range of valued resources (e.g., mates, food, coalitional support) and to be deferred to in group decisions by lower status individuals (Cowlishaw & Dunbar, 1991; Hill, 1984). Thus, those who *display* pride in situations where prestige may be earned are likely to reap status-related benefits, given that the expression has been shown to effectively and automatically communicate high status concepts (including prestige) to others.

In addition, those who reliably and automatically *recognize* the pride expression in others may acquire certain adaptive advantages. If selectively shown by successful or knowledgeable individuals (i.e., those deserving prestige), the pride display might function to inform onlookers which group members have skills that should be copied, and consequently influence social learning (see Martens, Tracy, & Shariff, 2012). By deferring to prestigious models (i.e., those who display pride), lower status individuals may gain access to learning opportunities from those group members who have superior skills and knowledge.

Several lines of work provide preliminary support for this account of pride displays impact on social learning. First, individuals tend to be more persuaded by arguments made by experts than those made by nonexperts (holding argument content constant), suggesting that people are biased to learn from those who have expertise (e.g., Biswas, Biswas, & Das, 2006; Hovland, Janis, & Kelley, 1953; Maddux & Rogers, 1980). People are also more likely to copy individuals who have had prior successes, compared to unsuccessful others (Morgan, Rendell, Ehn, Hoppitt, & Laland, 2011). This tendency seems to emerge early in development; children as young as 4 years old preferentially seek information from previously accurate puppets who demonstrate their knowledge unaided, compared to puppets who need others' help (Einav & Robinson, 2011). Furthermore, in a study that hints at the nonverbal cues which may signal expertise, Birch Akmal and Frampton (2009) found that 2- to 3-year-old children prefer to learn from adults who seem confident compared to those who seem uncertain. In this study, the confident adult's nonverbal behavior was consistent with the pride expression (e.g., upright posture), but these adults were simply instructed to act "knowledgeable," making it unclear which specific behaviors were causally related to children's responses. It is also unclear whether results were influenced more by the confident model or the uncertain model, as no control was included.

The Present Research

We tested whether adults use the pride expression to determine which group members should be copied, in situations where others' knowledge is sought (i.e., where social learning is necessary), but no other information about others' expertise is available. In two studies, participants were asked to answer a difficult trivia question after viewing a person whom they believed to be a member of their social group answer it. We predicted that participants would selectively copy the answers of social-group members who displayed pride.

Study 1A

Method

Participants and Procedure

Four hundred twenty-three undergraduates (63% female) were approached individually on a large university campus and asked to answer a trivia question while viewing a photo of another person doing the same. They were told to imagine that the other person was another participant. To motivate participants to seek correct answers, they were told that correct responses would earn entries into a $50 draw. Previous research has shown that providing incentives for accurate responses increases participants' efforts to seek out correct answers (e.g., Baron, Vancello, & Brunsman, 1996).

Stimuli

Participants viewed a photo of a Caucasian male or female target (gender was varied randomly; no participant- or target-gender effects emerged), taken from the previously validated UC Davis Set of Emotion Expressions (Tracy, Robins, & Schriber, 2009). Participants were randomly assigned to view a target displaying pride ($n = 104$), shame ($n = 107$), happiness ($n = 104$), or neutral ($n = 108$). These comparisons were included to test whether pride displays promote greater copying than displays that signal low status (shame), are irrelevant to status (neutral), and share variance with pride in positive valence (happiness).

Participants viewed the photo printed on an 8×11" piece of paper. Directly below the photo was a trivia question, varied between participants (no effect of question emerged): "What is the smallest bird in the world?," with response options: "A. *Patagona gigas*, B. *Mellisuga helenae*, C. *Serinus canaria*, D. *Melopstittacus undulatus*, or E. *Agapornis*" (correct answer B); or "Which number is the closest to the actual value of Pi, π?," with response options: "A. 3.141592652, B. 3.141592635, C. 3.141592654, D. 3.141592665, or E. 3.141592721" (correct answer C). For the first question,

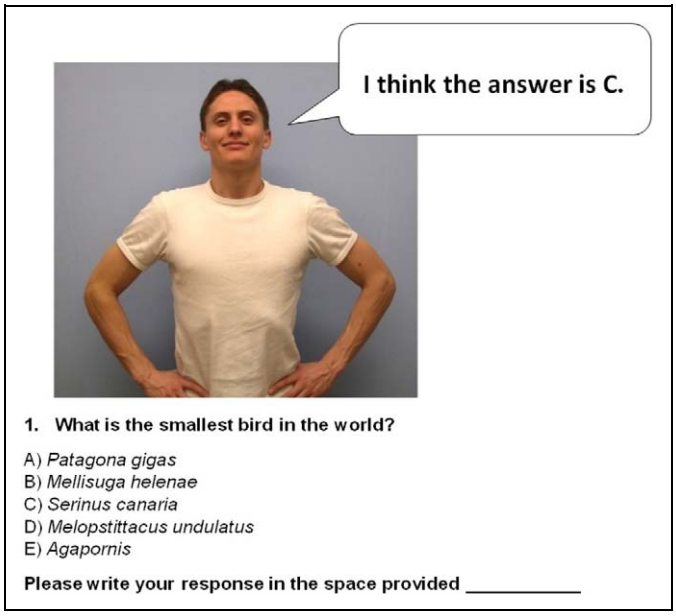

Figure 1. An example of the pride-condition stimuli used in Study 1.

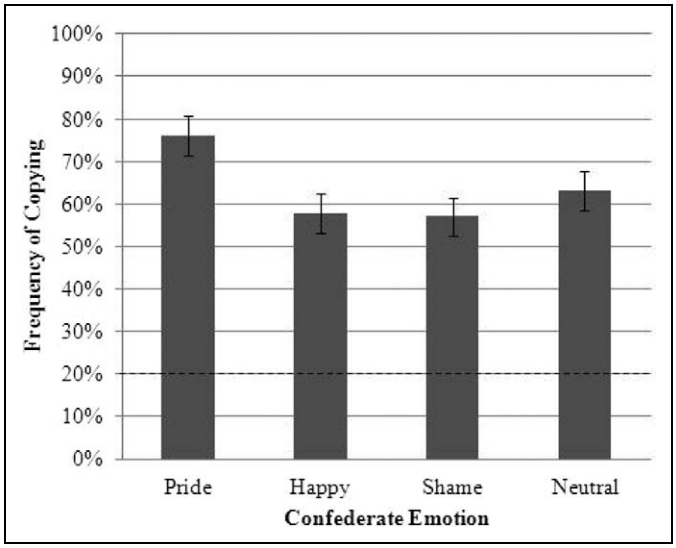

Figure 2. Effect of others' emotion displays on the tendency to copy their responses to a difficult trivia question when incentivized, Study 1A. *Note.* Differences between pride and all other emotion conditions were significant, *p*s < .05; no other significant differences emerged. The dotted line represents chance responding (20%); that is, the proportion of participants who would demonstrate copying if they were responding randomly.

photographed targets indicated (via a caption) that their response was C; for the second question, targets responded B (see Figure 1 for an example). By having targets always answer incorrectly, we ensured that any copying that occurred would be driven entirely by emotion displays and not by participants' prior knowledge about the correct answer.

Results and Discussion

Based on a one-way analysis of variance (ANOVA), the emotion-expression manipulation significantly affected copying frequency, $F(3,419) = 3.53$, $\chi^2(3) = 10.42$, *p*s < .05, such that pride-displaying targets were copied most frequently, significantly more than neutral, $t(210) = 2.06$, $d = .28$, $\chi^2(1) = 4.21$; happy, $t(206) = 2.84$, $d = .40$, $\chi^2(1) = 7.83$; and shame-displaying targets, $t(209) = 2.96$, $d = .41$, $\chi^2(1) = 8.49$; all *p*s < .05 (see Figure 2). Of note, we conducted both *t* tests and χ^2 tests to compare copying frequencies between conditions, given the nonparametric dependent variable. Both are reported, and in all cases results held across both tests. None of the other frequencies differed significantly from each other. Based on binomial tests, in all conditions targets were copied significantly more frequently than chance (set at 20% based on the number of response options), *p*s < .05. Thus, participants were more likely to copy the target's response than guess randomly, regardless of emotion, but they showed a bias toward copying targets who displayed pride.

These results suggest that when individuals are faced with a situation where they are motivated to attain knowledge, they tend to preferentially use the knowledge displayed by social group members who show pride, more so than those who display other emotions or no emotion. However, it is possible that the copying behaviors found here were due to participants seeking to conform to a social norm or to an individual displaying an expression that conveys dominance or power over others, rather than seeking to acquire valuable knowledge. In other words, because pride displays communicate both prestige (i.e., knowledge, respect) and dominance (power based on threat and intimidation; Henrich & Gil-White, 2001; Shariff & Tracy, 2009), observers might have copied pride-displaying targets out of a desire to conform to normative standards or to a powerful and intimidating individual, rather than out of a desire to learn from a knowledgeable group member. To test this possibility, we conducted Study 1B, which was a direct replication of Study 1A in every way except that participants were *not* provided with an incentive for correct responses. Our assumption was that if participants were not incentivized to answer the trivia question correctly, yet still copied the answers of pride displayers, it would indicate that copying was motivated by a desire to conform to a norm or to a dominant individual, which should not need any financial incentive. In fact, prior studies have shown that the provision of an incentive decreases the motivation to conform to (inaccurate) normative standards; when incentivized for correct responses, participants are more likely to seek out correct answers and less likely to try to "fit in" with other group members or behave in a normative manner (Baron, et al., 1996). Similarly, evolutionary modeling has shown that social learning requires incentives; individuals will not copy others in order to acquire information unless they expect to be rewarded for the information obtained (Henrich & Henrich, 2007). Thus, if participants in Study 1B demonstrate a pride-copying bias even when not incentivized, it would suggest that the results of Study 1A are due to a

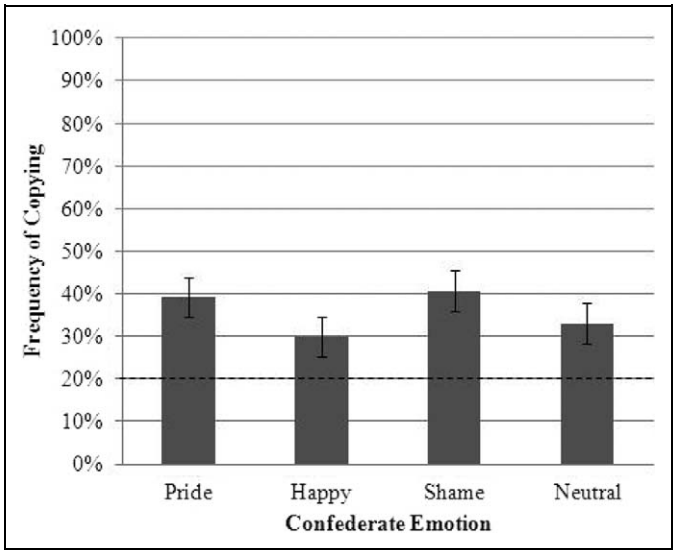

Figure 3. Effect of others' emotion displays on the tendency to copy their responses to a difficult trivia question when participants were not incentivized, Study 1B. *Note*. No significant differences emerged between emotion conditions. The dotted line represents chance responding (20%); that is, the proportion of participants who would demonstrate copying if they were responding randomly.

desire to conform to the pride-displaying target, and not to a knowledge-seeking motivation—that is, that participants copied the pride-displaying target for normative reasons, or out of fear, rather than informational reasons.

Study 1B

Method

Four hundred eighteen undergraduates (71% female) followed the same procedures as in Study 1A, except that they were not offered a financial reward for correct responses.

Results and Discussion

Based on a one-way ANOVA, the emotion-expression manipulation did not affect copying frequency, $F(3,414) = 1.18$, $p = .32$, $\chi^2(3) = 3.55$, $p = .31$. Indeed, as can be seen from Figure 3, there was little difference in copying rates between the expression conditions, and, overall, participants were substantially less likely to copy targets regardless of the expression they showed ($M = 36\%$) compared to in Study 1A (overall $M = 63\%$), $F(1,839) = 69.79$, $\chi^2(1) = 64.58$, $ps < .05$ (although, even here, participants in all conditions tended to copy targets significantly more frequently than chance, based on binomial tests, $ps < .05$). Perhaps most important, there was also a significant difference between studies in copying rates within the pride-expression condition, $F(1,209) = 33.38$, $\chi^2(1) = 29.06$, $p < .05$, with only 39% of participants copying pride-displayers when they were not incentivized, compared to 76% when they were, in Study 1A.

Thus, although we cannot draw any strong conclusions from the absence of a significant effect of emotion expression on copying in Study 1B, when viewed in tandem with the results of Study 1A (which had equal power to test the same hypothesis), these results indicate an important boundary condition on the pride-display copying bias. Specifically, this bias seems to occur only when participants are given an external incentive to attain knowledge, suggesting that the tendency to copy pride displayers is driven by social learning motives—a desire to seek correct information—and not by other conformity motives, such as a desire to behave in a way that is consistent with a social norm or with a more powerful group member.

However, the artificiality of Studies 1A and 1B (in both, participants were told to imagine that a photographed person was another participant) is a limitation of both these studies. Furthermore, though the use of still photos allowed us to completely control emotion expressions, it may have further reduced ecological validity, as in everyday social interactions expressions tend to unfold dynamically over time, and are accompanied by corresponding movements and vocal tone. Study 2 addressed these issues by exposing participants to videos of confederates dynamically displaying emotion expressions while responding to trivia questions.

Study 2

Method

Participants and Procedure

Two hundred undergraduates (75% female) participated individually in a study that, they were told, would examine people's judgments while distracted. Thus, they were asked to complete two tasks simultaneously: (a) watch a video of a participant from a different study (actually a confederate) answering a trivia question, in order to make subsequent judgments about him or her and (b) answer the same trivia question immediately after watching the video. Given the results of Study 1B, participants were incentivized to answer correctly; they were told that correct responses would earn an entry into a $50 draw. Participants then watched the video, responded to the trivia question, and then finally completed a questionnaire.

Participants were required to answer the trivia question within 2 s of videos ending (i.e., immediately after confederates responded to the question), to prevent conscious deliberation that might override any emotion-based bias, given prior research suggesting that pride displays are largely *implicit* status signals (Shariff & Tracy, 2009; Shariff, et al., in press). Participants were again randomly assigned to a pride, shame, neutral, or happiness condition, which determined the expression shown by confederates in the videos.

After the study, participants were probed for prior knowledge and suspicion, which determined whether they were included in analyses. All participants who reported recognizing

the confederate ($n = 9$) or knowing the answer to the trivia question ($n = 15$) were removed. Next, because the manipulation relied on deception (i.e., participants needed to believe that confederates were in fact other participants), and any level of suspicion could influence responses (Ferguson & Bargh, 2004), we used a funnel debriefing method to remove participants who demonstrated any hint of suspicion (Bargh & Chartrand, 2000). Specifically, participants were first asked if they ''noticed anything suspicious about the study,'' and were removed if they responded in the affirmative ($n = 58$). Next they were asked if they noticed anything suspicious about ''the experimenter;'' an additional nine participants responded yes and were removed. Third, they were asked if they noticed ''anything suspicious about the task;'' 13 participants did and were removed at this stage. Finally, they were asked if they noticed anything suspicious about ''the other participant in the video;'' 27 additional participants were removed. Although this resulted in a large number of exclusions due to suspicion, the fact that many of these individuals were appropriately suspicious (e.g., of the *other participant in the video*) in ways that would affect results, but only revealed this to be the case after thorough probing, demonstrates the importance of using a funnel debriefing method. After these exclusions, we retained a final sample of $N = 69$ (78% female); the proportion of participants removed due to suspicion did not significantly differ between emotion conditions, $\chi^2(3) = .70$, $p = .87$.[1]

Stimuli

Participants viewed a video of a same-sex confederate (no gender effects emerged) answering, aloud, a trivia question that was read by an off-screen experimenter (see http://ubc-emotionlab.ca/pridelearningbias for examples of videos used). Both confederates were Caucasians in their early 20s. The trivia question was: ''Which of the rivers below is the longest?'' followed by response options: ''A. Mackenzie, B. Lena, C. Niger, D. Ob, or E. Congo'' (correct answer D). Confederates answered C. Throughout the videos, pride-displaying confederates expanded their chests, held their heads up slightly, smiled slightly, held one or both arms akimbo with hands on hips, and stood up straight (Tracy et al., 2009). Shame-displaying confederates slumped their shoulders, lowered their heads, did not smile, and kept hands at their sides (Keltner, 1995; Tracy, et al. 2009). Neutral-displaying confederates stood in a relaxed posture without raising or lowering their heads or smiling. Happy-displaying confederates smiled and generally behaved ''happily.'' The second author, who has received training in the Facial Action Coding System (Ekman & Friesen, 1978), verified that all expressions correctly conveyed intended emotions.

Measures

Copying behavior. Copying was assessed on the basis of whether participants selected the same answer to the trivia question as confederates.

Manipulation check. Participants rated the extent to which confederates displayed pride (assessed with the 14-item Authentic and Hubristic Pride scales; Tracy & Robins, 2007b; αs = .77 and .87, respectively), ''happy'' and ''shameful.''

Results and Discussion

Manipulation Check

Pride-displaying confederates were judged as showing significantly greater authentic and hubristic pride (Ms = 5.72 and 4.72, respectively) than happy-, shame-, and neutral-displaying confederates (authentic pride Ms = 4.32, 1.75, and 3.97; $t(31) = 2.98$, $t\,(32) = 13.31$, $t\,(30) = 4.21$, respectively; hubristic pride Ms = 1.69, 1.11, and 2.11; $t(31) = 7.30$, $t(32) = 11.41$, and $t(30) = 5.33$, respectively), ps < .05. Similarly, shame-displaying confederates were judged to show significantly more shame ($M = 3.16$) than happy-, proud-, and neutral-displaying confederates (Ms = 1.06, 1.60, and 1.41; $t(35) = 4.35$, $t(32) = 2.50$, and $t(34) = 3.40$, respectively), ps < .05; and happy-displaying confederates were judged to show significantly more happiness ($M = 5.50$) than shame- and neutral-displaying confederates (Ms = 1.37 and 3.47; $t(35) = 11.91$ and $t(33) = 4.42$), ps < .05. Pride-displaying confederates did not differ significantly from happy confederates in perceived happiness ($M = 4.93$), $t(31) = 1.08$, *ns*, likely due to the presence of a smile in the pride expression. Importantly, this confusion should work against hypotheses by reducing the magnitude of any difference between the pride and happy conditions.

Does the Pride Expression Promote Copying?

We again conducted a one-way ANOVA to test the effect of emotion expression on copying behavior (and also replicated all analyses using nonparametric statistics). Replicating Study 1A, emotion expression significantly affected copying frequency, $F(3,65) = 3.91$, $\chi^2(3) = 10.55$, ps < .05, such that pride-displaying confederates were copied most frequently, more than happy, $t(31) = 1.82$, $d = .65$, $\chi^2(1) = 3.18$, $p < .05$ (one-tailed)[2]; neutral, $t(30) = 3.21$, $d = 1.17$, $\chi^2(1) = 8.19$; and shame-displaying confederates, $t(32) = 3.12$, $d = 1.10$, $\chi^2(1) = 7.89$, all ps < .05 (see Figure 4). None of the other frequencies differed significantly from each other. Based on binomial tests, only pride- and happy-displaying confederates were copied significantly more frequently than would be expected by chance (20%), ps < .05. These results are consistent with the findings of Study 1A and suggest that, when motivated to acquire knowledge from others, individuals are biased toward copying those who display pride.

General Discussion

The present research suggests that the pride expression functions to direct social learning. When individuals are financially motivated to acquire information, they show a

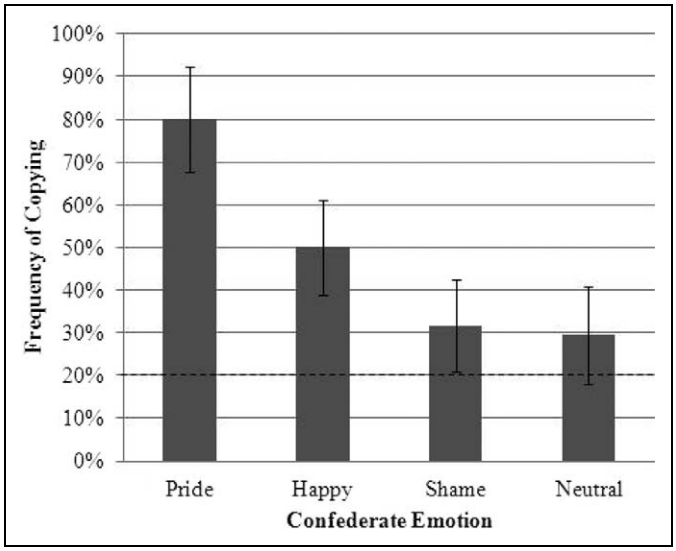

Figure 4. Effect of others' dynamic emotion displays on participants' tendency to copy their responses to a difficult trivia question when incentivized, Study 2. *Note*. Differences between pride and all other emotion conditions were significant, *p*s < .05 (one-tailed for the difference between pride and happy); no other significant differences emerged. The dotted line represents chance responding (20%); that is, the proportion of participants who would demonstrate copying if they were responding randomly.

moderate-to-strong bias toward learning from others who display pride, rather than others who display no emotion, shame, or happiness. This finding emerged via a behavioral measure—whether participants copied a social model's response to a difficult question—across two studies using different methods. The absence of an effect of pride displays on copying when participants were not financially motivated, in Study 1B, indicates that the effect is likely driven by a motivation to acquire cultural knowledge from an expert group member, and not by a motivation to conform to normative standards or to the expectations of a dominant group member. However, it is also possible that the incentive provided in Studies 1A and 2 simply encouraged participants to focus more on the task, making this an important area for future research. More broadly, this finding confirms prior research illustrating the importance of using an incentive to motivate participants in research on social learning (see also Baron et al., 1996). Though consistent with prior research suggesting that the pride expression is automatically and cross-culturally recognized and perceived as conveying high status (Shariff & Tracy, 2009; Tracy & Robins, 2008; Tracy et al., in press), the present results add to this work by demonstrating that the expression's status signal is not only reliably perceived but also *used* by observers to facilitate important behavioral decisions.

However, one important question raised by these findings is whether honest and false signals of pride would both lead to copying. In the present research, pride displays were not, in fact, reliable signals of a target's knowledge (all expressers answered the trivia question incorrectly), but targets displayed the expression that has been found, across cultures, to be reliably associated with pride and to automatically signal high status, so it is likely that participants perceived it as an honest signal, at least in terms of the target's intent (i.e., he or she might not know the answer, but honestly believes he or she does). However, if this sort of false signaling actually occurred frequently over evolutionary history, the signal would lose its meaning, so it is likely that, on average across human history, the pride displays examined here have been (and are) shown honestly. Given that those who can effectively fake the display could experience adaptive benefits, the display's veracity may have been maintained through the development and invocation, across many cultures, of social norms that punish individuals who appear overly arrogant by virtue of displaying pride falsely (see Martens et al., 2012; Tracy et al., in press). While preliminary evidence supporting this account suggests that potentially faked pride displays lead to reduced liking of displayers (Tracy et al., in press), this question remains an important direction for future research.

One limitation of the current studies is that the precise mechanism underlying the effect found here is not clear. Our assumption is that because observers perceived pride displays as indicative of authentic pride, the pride associated with feelings of accomplishment, self-confidence, and success,[3] they automatically inferred that pride-displaying targets were prestigious individuals who had valuable knowledge worthy of copying; this assumption is based on prior research suggesting that authentic pride is associated with the attainment of prestige (Cheng, Tracy, & Henrich, 2010). However, the pride displays examined here were also identified (based on the manipulation check) as hubristic pride, the more arrogant and conceited version of pride (Tracy & Robins, 2007), which is associated with the attainment of dominance rather than prestige (Cheng et al., 2010). It is thus possible that participants copied pride-displaying targets out of a (presumably implicit) desire to copy dominant individuals, to avoid evoking their wrath by failing to conform to their behavioral standards. That said, the results of Study 1B, showing that pride copying does not occur if participants are not incentivized, argues against this account, because no incentive should be needed to motivate conformity to a threatening group member. Furthermore, prior research suggests that copying another's behaviors when tangible rewards are at stake is indicative of social learning and not normative conformity (Henrich & Henrich, 2007). Nonetheless, future studies should probe this issue by manipulating contextual information surrounding pride-displaying targets to communicate whether displayers are in fact conveying authentic or hubristic pride, and thus deserve prestige or dominance (see, e.g., Tracy & Prehn, 2012). Based on the present findings, and prior research on the distinction between prestige and dominance, we would expect copying to emerge only when prestige inferences are possible.

In conclusion, these findings suggest that pride displays play an important role in cultural knowledge transmission—the process through which individuals learn their culture's accumulated knowledge about how best to survive and reproduce in their environment. Indeed, pride displays may account for the

finding that infants aged 9–13 months can effectively infer status from the relative size of a character, using perceived largeness to cue higher rank (Thomsen, Frankenhuis, Ingold-Smith, & Carey, 2011). Given that two of the necessary components of the pride expression are expanded posture and outstretched arms (Tracy & Robins, 2007a)—both of which make targets appear larger—babies' use of size in this manner may indicate an early-developing predisposition to attune to pride displays as status indicators and, thus, learning opportunities. Together with the present results, these findings suggest that if pride behavioral responses to success are an adaptation, they may have evolved to facilitate both expressers' status attainment and observers' social learning. More broadly, the present findings indicate that pride displays may be an important source of information in everyday social interactions, used by individuals seeking knowledge to guide their learning behaviors.

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Notes

1. Although a large proportion of participants were removed due to suspicion, this was expected given the complexity of the task and the use of videotaped, rather than live, confederates. Including suspicious participants in the results revealed a similar pattern to that reported in text, with pride leading to most copying, followed by happy, neutral, and shame, but these differences did not reach significance, due to the fact that, although there was no overall effect of suspicion on copying, $r = .03$, there was a marginal negative effect within the pride condition only, $r = -.27$, $p = .07$, suggesting that the more suspicious participants were, the less likely they were to copy proud confederates. This may be due to a tendency to distrust individuals who show pride without evidence of a success, among observers who are using more deliberative processing (which would also make them more suspicious). Importantly, this marginal correlation implies that, because suspicion would reduce the size of predicted effects, findings supporting our hypotheses that emerged in the retained sample would underestimate the true effect size if retained participants were suspicious but did not report it. For a full report of all results, including participants who demonstrated suspicion, see Online Supplemental Material found at http://spps.sagepub.com/supplemental.
2. This difference was significant based on a one-tailed test, which was appropriate given our unidirectional hypothesis and the replication of a finding from Study 1.
3. These are three of the items on the Authentic Pride scale (Tracy & Robins, 2007b).

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