

BRIEF REPORT

When Dynamic, the Head and Face Alone Can Express Pride

Nicole L. Nelson and James A. Russell
Boston College

Prior research suggested that pride is recognized only when a head and facial expression (e.g., tilted head with a slight smile) is combined with a postural expression (e.g., expanded body and arm gestures). However, these studies used static photographs. In the present research, participants labeled the emotion conveyed by four dynamic cues to pride, presented as video clips: head and face alone, body posture alone, voice alone, and an expression in which head and face, body posture, and voice were presented simultaneously. Participants attributed pride to the head and face alone, even when postural or vocal information was absent. Pride can be conveyed without body posture or voice.

Keywords: pride, emotion, dynamic presentations, posture, body movement, emotion components

Previous research suggested that the expression of pride conveys important social information, allowing individuals to convey social dominance or draw accolades for their achievements (Darwin, 1872/1965; Shariff & Tracy, 2009; Williams & DeSteno, 2008, 2009). Given the importance of interpreting another's expression of pride, determining what components constitute the expression provides important information concerning the ways in which pride is successfully interpreted or conveyed.

Based on an extensive research program, Tracy and Robins (2004b) offered evidence that "both the face and the body are necessary for recognition of a pride expression" (p. 196). The "face" includes a tilting of the head with a small smile. The "body" includes one of two specific arm gestures (the arms above the head or placed on the hips) and an expanded posture. Shown a photograph of the "pride face" alone or a photograph of the "pride body" alone, observers do not agree on what emotion is being expressed (Tracy & Robins, 2004b). Yet, shown a photograph of the two combined, observers agree that they are seeing pride. Recognition of this paired expression has been shown with both free labeling and forced-choice response formats and has been replicated with preschoolers and in both western and nonwestern societies (Tracy & Robins, 2004b, 2007a, 2008b; Tracy, Robins, & Lagattuta, 2005).

The hypothesis that pride can be conveyed only with a combination of a head and facial expression and a body posture with arm gestures

is counterintuitive. The implication is that pride cannot be conveyed in situations in which arm movement is restricted or inappropriate.

Previous research examining the recognition of pride has used static photographs, whereas emotional expressions in daily life are dynamic. It is possible, therefore, that the static stimuli used in these studies did not provide enough information for participants to attribute pride to the head and facial expression alone without the inclusion of the body posture. Dynamic displays have been found to increase recognition of emotional expressions over static displays (Ambadar, Schooler, & Cohn, 2005; Bould, Morris, & Wink, 2008; Wehrle, Kaiser, Schmidt, & Scherer, 2000)—perhaps dynamic stimuli would facilitate the identification of pride from the head and face alone.

In order to determine whether the head and face alone, when presented dynamically, could convey pride, we asked a professional female actor to create an intense, but realistic, display of pride with facial, postural, and vocal cues presented simultaneously. She also created displays of happiness, fear, surprise, disgust, and embarrassment. Her performance was videotaped. We then created clips in which each single cue (head and face, body posture, and voice) was isolated by eliminating all other cues. In a within-subject design, we showed participants all six emotions, each presented in four sets of dynamic video clips: Head and Face-only, Body Posture-only, Voice-only, and the Multicue expression, in which all three cues were presented simultaneously. In 24 trials, participants were asked to label the protagonist's emotion with any label they wanted. We chose this free-labeling format over a forced-choice format in order to examine participants' spontaneous, rather than forced, interpretation of cues.

Method

Participants

Participants were 30 undergraduate college students (6 male, 24 female) between 18 and 20 years of age ($M = 19.05$, $SD = .80$). All participants were fluent in English and participated in this research in exchange for class credit.

This article was published Online First June 27, 2011.

Nicole L. Nelson and James A. Russell, Department of Psychology, Boston College.

The authors thank Thalia Goldstein for her help in constructing the stimuli for this project, Sherri Widen, Amanda Greenwood, Jeehye Choi, and Matthew Williams for their assistance with data collection; Jose-Miguel Fernandez-Dols for his comments on a draft of this article; and Pilar Carrera for her assistance with FACS coding. This research was supported by grant No. 0421702 from the National Science Foundation awarded to James A. Russell.

Correspondence concerning this article should be addressed to Nicole L. Nelson, Department of Psychology, 301 McGuinn Hall, Boston College, 140 Commonwealth Avenue, Chestnut Hill, MA 02467. E-mail: nelsonnf@bc.edu

Materials

The video clips were of an approximate standard length (5 s) and featured a professional female actor who had over 10 years of acting experience in theater and film. The actor said the same neutral sentence in each of the videos: "I felt this feeling before; it was just a few days ago." This neutral sentence was the same in every video clip and was selected because it referred to the emotion experienced by the actor and provided her sufficient time to emote.

The cues to pride the actor performed were modeled after previously suggested information concerning the expression of pride (Darwin, 1872/1965) and expressions used in previous research (Tracy & Robins, 2004b, 2008b). In addition, the actor was asked to generate a vocal expression that conveyed pride, using her extensive expertise, and she relied upon her experience in acting to ensure the entire expression was realistic.

Head and Face-only video clip. The facial expression included a slightly tilted head and a small smile, as described in previous research (e.g., Tracy & Robins, 2004b). The actor moved from a neutral to an emotional expression while speaking (although no sound was presented in the Head and Face-only clip). Only the actor's head and neck were visible.

The facial expression was coded with the Facial Action Coding System (FACS) and was found to contain the same action units (AUs at expression apex: 12 + 25 + 26 + 53) as those found in prior research (AUs 12 + 53: Tracy & Robins, 2008a). The expression used in this study contained additional AUs that referenced the opening of the actress' mouth while she was talking (AUs 25 + 26).¹

Body Posture-only video clip. The expression included the actor's head and body, but her face was obscured with a Gaussian blur throughout the clip. The actor was standing and moved from a neutral to an expanded emotional posture (which she maintained throughout the expression). Two postures have been associated with pride in previous research (arms akimbo and arms raised over the head) (Tracy & Robins, 2004b, 2008b), and the actress displayed both of these postures, first placing her arms akimbo and then raising her arms over her head.

Voice-only video clip. The vocal expression was presented without visual information (i.e., a blank computer screen), and the actor's vocalization varied in intonation and pitch.

Multicue video clip. The actor simultaneously displayed all three emotion cues shown in the previous video clips: facial expression (moving from a neutral face to an emotional face), body (moving from a standing neutral posture to an expanded emotional posture), and vocal characteristics (varying intonation and pitch, but saying the same neutral sentence for each video). The cues in the Multicue clip were identical to the cues used in the other clips.

Manipulation Check

The Head and Face-only, Body Posture-only, and Multicue clips were rated by three independent judges, using a coding scheme developed by Tracy & Robins (2004b, 2007b) to verify the presence of the head, arm, and body components in their hypothesized expression of pride. Head components were "Head tilted back/up" and "Smile." Arm components are: "One or both arms out from body," "One or both arms raised," "One or both hands in fists,"

"Hands on hips," and "Arms crossed." Body components were "Chest expanded" and "Torso pushed out/leaning back." The judges rated each clip for the presence of the components related to that clip (i.e., body and arm cues for the Body posture-only clip) on a 6-point scale ranging from 0 (*not present*) to 5 (*extreme intensity*). Judges agreed on 100% of their ratings of all nine components. They rated as either a 4 or 5 the two Head components, four of the five Arm components (the missing component was arms crossed), and the two body components. These scores far exceeded Tracy and Robins' criterion for the expression of pride.

Procedure

The video clips were presented as four separate blocks of trials (Head and Face-only, Body Posture-only, Voice-only, and Multicue), and within each block, all six emotions were presented. The emotions within each set of video clips were ordered in a Latin square design. Three blocks—Head and Face-only, Body Posture-only, and Voice-only—were presented first in counterbalanced order; then, the Multicue block was presented last. Participants labeled the protagonist's emotion by completing the sentence, "She feels _____" and were asked to "use a single emotion word where possible," but were otherwise free to produce a label of their choice.

Scoring

Participants used 90 different emotion labels across the 24 clips shown. Three independent judges, blind to the stimulus condition, sorted the labels into one of eight categories: *happiness*, *sadness*, *anger*, *fear*, *surprise*, *disgust*, *embarrassment*, and *pride*. Labels placed in the same category by two of the three judges were scored as correct for that category. Labels for which judges could not come to an agreement were categorized as *other*. For the category of pride, four labels were scored as *pride* (*proud*, *accomplished*, *confident*, and *triumphant*) and five labels fell into the *other* category (*defiant*, *assertive*, *strong*, *powerful*, and *aggressive*). All other labels used were categorized into one of the other emotion categories.

Results and Discussion

A majority of participants (mean proportion = .58) ascribed *pride* to the four pride clips. This result was similar to results found with previous research, in which participants freely labeled static pride expressions (Tracy & Robins, 2004b).

Effect of Cue Type

A one-way repeated-measures analysis of variance (ANOVA) showed a main effect of cue type on participant's labeling of the

¹ The Head and Face-only video clip was 5 s long and the FACS coding throughout the video clip is as follows: Time 00:00, AUs = 1 + 2+13 + 25 + 26 + 53; Time 00:01, AUs = 6 + 13 + 25 + 53; Time 00:02, AUs = 12 + 25 + 26 + 53; Time 00:03, AUs = 22 + 25 + 53; Time 00:04, AUs = 12 + 25 + 26 + 53; Time 00:05, AUs = 6 + 13 + 25 + 53. Because the actress was talking through part of the video, several of the cues are related to the movement of her mouth.

pride clips as *pride*, $F(3, 87) = 13.8, p < .001$.² As shown in Figure 1, least significant difference (LSD) post-hoc tests indicated that participants correctly labeled the Head and Face-only (.83) expression significantly more often than the Body Posture-only (.57) and Voice-only (.20) expressions ($p = .01$; $p < .001$, respectively). These results indicate that the Head and Face-only clip was the most powerful single cue to pride. Of particular interest to the present study, participants were not significantly different in their correct labeling of the Head and Face-only and Multicue (.70) expressions ($p = .20$). This result was not due to a ceiling effect, as 95% confidence intervals did not include 1.0. Thus, a large majority of participants found the dynamic expression of the head and face alone to be sufficient for recognizing pride: The postural and vocal information included in the Multicue expression provided no additional advantage.

The effects of cue type on attribution of pride were not dissimilar to the effects seen for other emotions: For all six emotions presented, participants correctly labeled the cues as follows: Head and Face-only (mean proportion = .79); Body Posture-only (.52); Voice-only (.35); and Multicue (.81).

Pride Components Labeled as Anger

Across the four pride clips, 42% of responses were other than "proud." Table 1 shows what other labels were used. For cues in which the face was not visible (Body Posture-only and Voice-only videos), a common theme emerged: Participants often labeled the expression as *anger*. For the Voice-only cue, *anger* was the modal response (.53), and for the Body Posture-only cue, *anger* (.23) was the most common response after *pride*. This pattern was striking, in comparison to the cues in which the face was visible (Head and Face-only and Multicue videos): No participant labeled these clips as *anger*. Pride was modal, but happiness received some votes. Although pride is often considered to be a positive emotion, these results suggest that it is the facial component of this particular

Table 1
Proportion of Labels From Each Category Given for Each Cue Type for Pride

Label used	Cue type				<i>M</i>
	Head and face-only	Body posture-only	Voice-only	Multicue	
Pride	0.83	0.57	0.20	0.70	0.58
Anger	0.00	0.23	0.53	0.00	0.19
Happiness	0.13	0.03	0.17	0.30	0.16
Fear	0.00	0.00	0.07	0.00	0.02
Sadness	0.00	0.03	0.00	0.00	0.01
Other	0.04	0.14	0.03	0.00	0.05
Total	1.00	1.00	1.00	1.00	

Note. $N = 30$. Maximum = 1.00. Mode is given in bold.

pride expression that leads participants to interpret the display as positive: When the facial expression is absent, the postural or the vocal expressions associated with pride are more likely to be interpreted as angry than happy.

Conclusion

Previous research, using static photographs, found that pride was conveyed only when facial and postural expressions were paired, but we found that a dynamic facial expression of pride could be recognized, even when not paired with postural information. One possible interpretation of these discrepant results is that the static presentations of pride used in previous research may not have provided enough information for participants to be able to recognize the facial expression without the additional information of posture—the dynamic facial expression alone provided sufficient information.

Previous research examining the expression of pride (e.g., Tracy & Robins, 2004a) has acknowledged significant concerns about inflated participant agreement resulting from a forced-choice response format (Frank & Stennett, 2001; Russell, 1993). The free-labeling format used in this study allowed participants to supply any label of their choosing: Results were not artificially constrained by forcing participants to choose from a list of words. The high level of agreement among participants is additionally convincing, in that this finding has not been artificially inflated by restricting participants' responses.

The results of this study also indicate that the presence of a facial expression is important for differentiating an expression of pride from one of anger—when the facial expression is not visible, other elements of the expression of pride can convey anger. Given the sometimes aggressive nature of pride, it may be that the expression con-

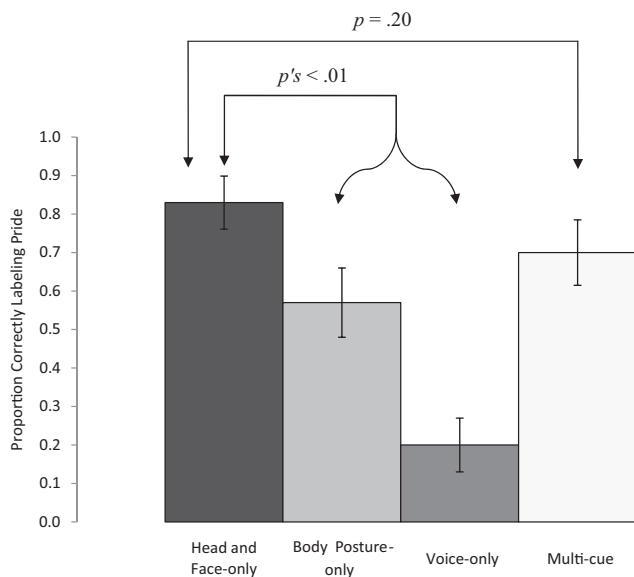


Figure 1. Proportion of participants labeling four different video clips as expressing pride. Error bars represent standard errors.

² As a precautionary measure, we reanalyzed our data and expanded the emotion labels scored as correct for pride to include the five terms that were scored as "other" (*defiant, assertive, strong, powerful, and aggressive*) as well as the four terms used in our original analysis. The findings did not change: The main effect of cue type remained, $F(3, 87) = 14.72, p < .001$, and the Head and Face-only and Multicue videos were not significantly different ($p = .10$). In addition, participants correctly labeled the Head and Face-only expression significantly more often than the Body Posture-only and Voice-only expressions ($p = .04$; $p < .001$, respectively).

tains elements of both pride and anger, with participants relying on the facial expression to make their final determination of the emotion. The idea that the emotion of pride contains elements of anger has been suggested previously (Tracy & Robins, 2007a; Plutchik, 1962), but, to our knowledge, this study is the first to illustrate it empirically.

Others have similarly found vocal expression alone ineffective in conveying pride (e.g., Hawk, van Kleef, Fischer, & van der Schalk, 2009). Still, it may well be that other vocal cues alone can be found that convey pride. For example, research on vocal bursts (e.g., exclamations of “Woo-Hoo” for pride), rather than prosody, found more promising results (Hawk et al., 2009; Sauter, Eisner, Ekman, & Scott, 2010; Sauter & Scott, 2007; Simon-Thomas, Keltner, Sauter, Sinicropi-Yao, & Abramson, 2009).

In this study, as in prior research (Tracy & Robins, 2004b, 2007b), the tilting of the head and the smile were considered to be a single component of the expression (i.e., the “face” or the Head and Face-only clip). However, it is possible that the ways in which pride is expressed can be better understood by considering these two components as separate from each other—the label Head and Face-only clip serves to highlight this distinction. By considering these two components individually in future research, it is possible that a more precise understanding of the components needed to convey pride can be found, perhaps narrowing down the components to fewer than are found even in the Head and Face-only clip.

This study included only one actress, and these results should be replicated with additional actors and additional expressions. Further study will likely uncover more variations associated with the expression of pride. We expect that there are many ways to display pride (particularly when the display is dynamic), and some elements of the expression used may be found to strongly contribute to pride categorization, whereas some elements may be found to vary between pride expressions.

Pride expressions may convey important social information (Tracy & Robins, 2004a, 2004b; 2007a), and as such, these expressions are likely to take place in a variety of situations, including those in which a large postural gesture is inappropriate or impractical. Indeed, neither President Barack Obama nor Supreme Court Justice Elena Kagan, while being sworn in to their currently held positions, displayed the proposed arm gestures previously associated with pride—but, in these moments, both looked supremely proud. Prior research has been interpreted to mean that when an individual does not include postural and arm gestures, pride cannot be conveyed (e.g., Tracy & Robins, 2004a). However, this study has shown that postural cues are not needed for interpreting expressions of pride when the expression is dynamic.

References

- Ambadar, Z., Schooler, J. W., & Cohn, J. F. (2005). Deciphering the enigmatic face: The importance of facial dynamics in interpreting subtle facial expressions. *Psychological Science, 16*, 403–410.
- Bould, E., Morris, N., & Wink, B. (2008). Recognising subtle emotional expressions: The role of facial movements. *Cognition and Emotion, 22*, 1569–1587.
- Darwin, C. (1872/1965). *The expression of the emotions in man and animal*. Chicago: University of Chicago Press.
- Frank, M. G., & Stennett, J. (2001). The forced-choice paradigm and the perception of facial expressions of emotion. *Journal of Personality and Social Psychology, 80*(1), 75–85.
- Hawk, S. T., van Kleef, G. A., Fischer, A. H., & van der Schalk, J. (2009). “Worth a thousand words”: Absolute and relative decoding of nonlinguistic affect vocalizations. *Emotion, 9*, 293–305.
- Plutchik, R. (1962). *The emotions: Facts, theories, and a new model*. New York: Random House.
- Russell, J. A. (1993). Forced-choice response format in the study of facial expression. *Motivation and Emotion, 17*(1), 41–51.
- Sauter, D., Eisner, F., Ekman, P., & Scott, S. K. (2010). Cross-cultural recognition of basic emotions through nonverbal emotional vocalizations. *Proceedings for the National Academy of Science U S A, 107*(6), 2408–2412.
- Sauter, D. A., & Scott, S. K. (2007). More than one kind of happiness: Can we recognize vocal expressions of different positive states? *Motivation and Emotion, 31*, 192–199.
- Shariff, A. F., & Tracy, J. L. (2009). Knowing who’s boss: Implicit perceptions of status from the nonverbal expression of pride. *Emotion, 9*, 631–639.
- Simon-Thomas, E. R., Keltner, D. J., Sauter, D., Sinicropi-Yao, L., & Abramson, A. (2009). The voice conveys specific emotions: Evidence from vocal burst displays. *Emotions, 9*, 838–846.
- Tracy, J. L., & Robins, R. W. (2004a). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry, 15*, 103–125.
- Tracy, J. L., & Robins, R. W. (2004b). Show your pride: Evidence for a discrete emotion expression. *Psychological Science, 15*, 194–197.
- Tracy, J. L., & Robins, R. W. (2007a). The nature of pride. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research*. New York: Guilford Press.
- Tracy, J. L., & Robins, R. W. (2007b). The prototypical pride expression: Development of a nonverbal behavioral coding system. *Emotion, 7*, 789–801.
- Tracy, J. L., & Robins, R. W. (2008a). The automaticity of emotion recognition. *Emotion, 8*, 81–95.
- Tracy, J. L., & Robins, R. W. (2008b). The nonverbal expression of pride: Evidence for cross-cultural recognition. *Journal of Personality and Social Psychology, 94*, 516–530.
- Tracy, J. L., Robins, R. W., & Lagattuta, K. H. (2005). Can children recognize the pride expression? *Emotion, 5*, 251–257.
- Wehrle, T., Kaiser, S., Schmidt, S., & Scherer, K. R. (2000). Studying the dynamics of emotional expression using synthesized facial muscle movements. *Journal of Personality and Social Psychology, 78*(1), 105–119.
- Williams, L. A., & DeSteno, D. (2008). Pride and perseverance: The motivational role of pride. *Journal of Personality and Social Psychology, 94*, 1007–1017.
- Williams, L. A., & DeSteno, D. (2009). Pride: Adaptive social emotion or seventh sin? *Psychological Science, 20*, 284–288.

Received April 5, 2010

Revision received September 27, 2010

Accepted October 25, 2010 ■