Presidential laugh lines

Candidate display behavior and audience laughter in the 2008 primary debates

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ABSTRACT. **Political humor has long been used by candidates to mobilize supporters by enhancing status or denigrating the opposition. Research concerning laughter provides insight into the building of social bonds; however, little research has focused on the nonverbal cues displayed by the individual making humorous comments. This study first investigates whether there is a relationship between facial display behavior and the presence and strength of laughter. Next, the analysis explores whether specific candidate displays during a humorous comment depend on the target of the comment. This paper analyzes the use of humor by Republican and Democratic candidates during ten 2008 presidential primary debates. Data analyzed here employs laughter as an indicator of a successful humorous comment and documents candidate display behavior in the seconds immediately preceding and during each laughter event. Findings suggest specific facial displays play an important communication role. Different types of smiles, whether felt, false, or fear-based, are related to who laughs as well as how intensely the audience is judged to laugh.**

Key words: Political humor, audience laughter, presidential debates, facial display behavior, felt smiles, false smiles, fear smiles

In the modern era of televised politics, nonverbal communication can impact political preferences and attitudes by bringing the viewer practically face-to-face with the candidates.[1,2,3,4,5] This close-up virtual intimacy leads to a sense of personal interaction though facial displays, body postures and gestures, and vocal characteristics that influence the viewer's emotional response.[5,6,7,8] Thus, politicians who are best able to connect with an audience are more likely to win elections, especially if they are able to inspire positive emotions about themselves while provoking negative feelings towards the opposition.[9,10]

Humor is one persuasive communication technique that may be used to stimulate positive feelings towards the source of the humorous comments through the audience's laughter. A candidate capable of eliciting laughter through a humorous comment, often at the expense of the opposition, has arguably either established a strong affective connection with the viewing audience or has enhanced a preexisting bond.[11] In the case of humorous attacks on opponents, laughter eliciting humor may strengthen mutual bonds while at the same time opening distance between the audience and the targeted opponent, providing that the punchline is appropriately and effectively delivered.[12]

The use of humor by presidential candidates has long been lauded as an effective tool to simultaneously mobilize supporters and alienate the public from competitors. Regardless of their accomplishments, such American presidents as John F. Kennedy and Ronald Reagan have been highly esteemed, some may say mythologized, due to their likeable demeanor and

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distinctive sense of humor. Their wit provided a key stylistic component that contributed greatly to their ability to form a connection with the public. Specifically, these two "charismatic" leaders were able to strengthen the bonds between themselves and their supporters, all the while gaining followers through a "playful" style of humor that contributed to personal legacies that have taken on an enduring quality.

The importance of candidate self-presentation and laughter-eliciting humor has long been apparent in televised political debates. Indeed, presidential debates are high stakes events in which verbal and nonverbal miscues have the potential to obscure successful performances. Such "defining moments" become the most memorable aspect of a candidate's debate performance[13,14] and may change the course of a campaign in a single relatable instant.[15] One such defining moment occurred in 1976 when President Gerald Ford, meeting challenger Jimmy Carter in their second debate, made what appeared to be a forgettable but puzzling comment concerning Eastern European nations, stating "(T)here is no Soviet domination of Eastern Europe and there never will be under a Ford administration." In fact, there was–and Ford's response was a source of extensive media criticism concerning his knowledge of national security issues, which had been seen as one of his strong points. In turn, this led to unfavorable public opinion that contributed to his electoral defeat.

As can be expected, campaigns attempt to insulate their candidate from unscripted, unexpected, and (presumably) unwanted "defining moments" such as the verbal blunder committed by President Ford. They do this by negotiating the format, number and timing of debates.[13,14] This has led to debates being what some refer to as "side-by-side press conferences"[16, 17] in which much control over the substance and style of candidate utterances is exerted.

Regardless of these attempts to manage campaign outcomes, televised debates provide opportunities for candidates to communicate directly with voters. They do so in venues where the camera provides a magnified sense of intimacy where viewers have the illusion of inviting candidates into their home for a discussion over policy and politics.[18,19] Even in lackluster elections without much competition, citizens value debates for their ability to provide information about the candidates. Here, both policy arguments and social cues unmediated by press interpretation or campaign spin may supersede other sources of influence.[17] Candidates are rewarded for engaging in relational communication that focuses on informal and friendly interpersonal eloquence while avoiding the appearance of formality and detachment.[18,20]

As candidates vie for public attention and support in the televised campaign environment, they have an incentive to develop an emotional connection with potential voters. A well-placed quip can solidify a candidate's likability or may even turn a debate (and campaign) around. A classic example is that of President Ronald Reagan responding to concerns over his advanced age and leadership competency that became salient after a faltering performance during his first debate with Minnesota Senator Walter Mondale in early October of 1984. By retorting to a question on this issue by Henry Trewhitt of *The Baltimore Sun* with, "I will not make age an issue of this campaign. I am not going to exploit, for political purposes, my opponent's youth and inexperience," Reagan not only inoculated himself from future age-related concerns by highlighting his cleverness and ability to connect with the audience, but also appeared to put Senator Mondale and the moderator off stride. Here Mondale smiled broadly and Trewhitt commented about Reagan's quip "I'd like to head for the fence and try to catch that one before it goes over."[11] With this defining moment, Reagan was able to reinvigorate his public persona, reenergize his campaign, and recapture the presidency.[14]

That nonverbal presentation can influence whether candidates are perceived as winners or losers has been an intrinsic part of debates,[15, 18] especially with media analyses tending to focus on perceived displays of incivility.[12] For instance, George H.W. Bush was rebuked in the press for looking at his watch during Bill Clinton's response at a town hall debate in Richmond, Virginia on October 15, 1992. Likewise, despite being regarded as the stronger performer in immediate post-debate polls, Al Gore was taken to task by the media for audibly sighing on multiple occasions during his first debate with George W. Bush. This in turn led to public reconsideration of Gore's supposed "win" in that debate.[21] More recently, John McCain was criticized for his impoliteness during the first presidential general election debate of 2008 when he refused to look directly at or respond directly to then-Senator Barack Obama.[22]

Appearing like a leader is often synonymous with appropriate display behavior.[23,24,25,26,27] This in turn is generally related to asserting control through displaying anger/threat towards competitors.[6,28] While displaying anger/threat is the most direct and obvious way to assert control, in highly egalitarian societies such as the United States there is a distinct preference for leaders cooperating with rather than coercing their followers.[29] Such displays as happiness and reassurance are preferred from our political leaders, so much so that viewers' attitudes toward political leaders may be influenced more by facial displays of happiness/reassurance than party identification, issue agreement, or assessment of leadership ability.[8] Therefore, the ability to attack opponents while not appearing rude or impolite may offer a candidate a distinct competitive advantage.[12] Furthermore, the ability to elicit audience support for such attacks through laughter (and applause) signals a candidate's ascendancy by underlining their ability to connect with the audience.[11]

With this in mind, the research reported here examines the use of humor and nonverbal display behavior by presidential candidates during televised political debates. Specifically, we consider how candidates signal the emotional intent of their humor during ten primary debates that took place during the 2008 electoral season by looking at laughter-eliciting comments, audience laughter, and the co-occurrence of nonverbal facial displays. This paper treats facial displays as signaling behavior that communicates social intent, thus providing insight into how humor is cued nonverbally. Of course, humorous comments work in conjunction with facial displays to communicate a candidate's political intent, whether to engender affiliative feelings or assert competitive ascendency, while receiving group support for these actions. In other words, candidates assert dominance not only through successful humorous comments that elicit laughter but also through concomitant facial displays of emotion related to dominance.[6,28,30] Next, this paper considers whether specific facial displays are correlated with who laughs as well as whether there is a relationship between different types of facial displays, namely felt, false and fear-based smiles, and the strength of audience laughter. The analysis concludes by putting these findings in the context of modern campaigns which are increasingly reliant on candidate performance to demonstrate leadership competence.

Nonverbal cues

On their own, humorous comments often lack sufficient context to be accurately interpreted and fully appreciated. The setting and dynamic of the delivery often establishes whether a comment has humorous intent. As noted by Provine,[31] "the playful dynamic of the social setting that includes a multitude of nonverbal and postural cues [is] a more important condition for laughter than a particular verbal message (p. 295)." Therefore, how a comment is delivered, not only verbally and vocalically, but also in terms of facial and body movement, affects whether and to what extent a comment is perceived as humorous, in turn affecting audience laughter and its strength.

The ability to effectively communicate intention using nonverbal facial displays and bodily gestures likely facilitates group cohesion,[32] especially since the ability to signal motivations clearly assists with small group regulation and cohesion.[33,34] As uncovered by Waller, Cray and Burrows,[35] the muscles necessary for the universal facial displays of happiness, sadness, anger, fear and surprise are all present in human faces and occur with minimal asymmetry. Of these five muscles, only two serve distinctly functional roles beyond communication (the muscle around the eyes and mouth), suggesting the face and its muscles have evolved mainly for the purpose of social signaling.

The extensive research concerning facial displays of emotion have established that not only are basic emotional displays universally comprehended, they are also processed automatically,[33] can be picked out from amongst a crowd of faces,[36] and can be identified accurately from distances in excess of 30 meters.[37] Perhaps most pertinently for political candidates, who must communicate not only in the mediated intimacy afforded by television coverage but also must perform to live audiences arrayed at greater perceptual distance, displays of happiness, surprise, and anger (in males) are accurately signaled up to 45 meters, with accurate interpretation extending from 100 to 220 meters.[37] Furthermore, even in situations where subtle facial displays may not be reliably decoded by observers with views that are obstructed or diminished by distance (see Appendix 2), the highly contagious nature of laughter and/or applause by individuals closer to the candidates may serve to heighten group affect.[38]

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Table 1. Criteria for classifying facial expressions.

	Anger/threat	*Fear/submission*	*Happiness/reassurance*	*Sadness/appeasement*
Eyebrows	Lowered	Lowered and furrowed	Quickly raised	Inner corners raised
Eyelids	Open wide	Upper raised/ lower tightened	Open wide, normal, or slightly closed	Lower raised
Eye orientation	Staring	Averted	Focused, then cut	Averted
Mouth corners	Forward or lowered	Pulled back or normal	Pulled back or raised	Lowered
Teeth showing	Lower	Variable or none	Upper or both	Variable or none

From Roger D. Masters, Dennis G. Sullivan, John T. Lanzetta, Gregory J. McHugo, and Basil G. Englis, "Facial Displays and political leadership," *Journal of Biological and Social Structures*, 1986, 9:330. Modified to include the Sadness/Appeasement category. Reprinted with permission from Elsevier. As updated by Roger D. Masters, *Machievelli, Leonardo, and the Science of Power* (South Bend, IN: University of Notre Dame Press, 1996, p. 141).

A candidate's nonverbal delivery style can moderate the impact of humorous comments, making them less literal, direct and aggressive and more playful and humorous.[28,39,40] On the other hand, innocuous comments may take a harsh turn depending on the delivery of the comment and audience (e.g., laughter or no laughter). The same humorous comment made with a felt smile communicating happiness/reassurance, for example, will have a different effect from one made with a "deadpan" or expressionless face, both on the target and the audience.

Ethological research regarding political figures carried out by Roger Masters and colleagues[3,6,41] (hereafter referred to as "the Dartmouth Group")[30] and elaborated upon by Salter,[28] has focused on activity around the eyes and mouth and how display configurations formed by muscle movements reflect emotions and accompanying behavioral intentions (see Table 1). This research considers the role of facial displays in social relationships, suggesting that four functional categories of display behavior regulate status and power. Dominant individuals maintain social order in part by using anger/threat displays, thus asserting their dominance. Affiliative displays of happiness/reassurance are used to form alliances and offer social support. As individuals function in complex social situations within systems that range from strong hierarchy to egalitarianism,[34,42,43] the degree of status and prestige an individual holds within these systems varies with their ability to maintain their dominant position and avoid potentially damaging conflicts. This in turn is premised on an individual's ability to honestly signal agonic intent in competitive situations that are clearly distinct from cooperative signals of happiness/reassurance. On the other hand, fear/submission or sadness/appeasement displays indicate lower levels of, or reduction in, status. To the extent that competitors for leadership positions exhibit these submissive displays, there will be a concomitant weakening of attributions of status and, with it, a reduced likelihood of attaining or maintaining leadership.[25, 44, 45]

Happiness/reassurance

Affiliative signals of happiness/reassurance may be seen as being deployed in egalitarian systems where payoffs depend heavily on collaborative effort. This in turn relies upon the strength of the social bond between individuals. Norms of equality and democratic decision-making may explain why there is a preference for leaders who are adept at displaying happiness/reassurance—so called "happy warriors"[8,25,26]—especially within more egalitarian societies such as the United States.[29, 41, 46] Hence, in the competition for leadership in egalitarian societies, namely during presidential debates, being able to signal that one has egalitarian values through both verbal and nonverbal channels becomes highly important.

Happiness/reassurance displays are crucial for signaling affiliation, attachment, and appeasement.[47, 48] Although the Dartmouth Group relied upon broad facial configurations to determine happiness/reassurance, smiles may be seen as taking a variety of different forms.[49,50] These different types of smiles can be distinguished by various degrees and types of mouth movements[51] or by the coactivation of the orbicularis occuli, a ring of muscles surrounding the eye that produce cheek raise and crow's feet wrinkles when stimulated.[49] The various types of smiles may be posited as having different functions in social interaction depending on the muscles activated.[52,53,54,55] "Felt" smiles, also referred to as true, emotional, amusement, or Duchenne smiles, are believed to represent the spontaneous expression of positive

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emotion and likely are directly related to the "relaxed open mouth displays" seen in non-human primates when they indicate a willingness to engage in hedonic behavior such as play.[43,56] Felt smiles are characterized by involvement of both the zygomatic major muscle, which pulls the lip corners up and back, and by the obicularis oculi, the muscles surrounding the eyes. Research has underscored the social signaling importance of felt smiles due to the relative difficulty in willfully producing this facial display.[49,57] Felt smiles, in other words, are difficult to fake and serve as a robust indicator of emotional state and behavioral intent.

An experiment by Mehu, Grammer and Dunbar[54] found that felt smiles increased in sharing contexts, indicating that this type of smile can be an honest marker of altruistic intent and sociable disposition.[58] The implications of identifying social intent in facial displays by politicians was underscored in unpublished findings by Brown and Moore,[53] who found that in 50 randomly selected media photographs during the 2000 U.S. presidential race between George W. Bush and Al Gore, Bush was presented as producing significantly more genuine smiles, likely leading him to be seen as more trustworthy than Gore.[25,26,59]

That candidates in competitive situations would attempt to pose such felt smiles for social or political benefit is to be expected. However, rather than a genuine sense of happiness/reassurance, what is likely detected by viewers is the projection of a "false" smile. While false smiles involve the zygomatic major muscle employed in felt smiles to pull up the lip corners, the obicularis oculi, the muscles around the eye aperture, are not typically engaged, giving the smile a flat or unconvincing quality.[57,60] In such instances, the appearance of the eyes being slightly closed or the presence of "crow's feet" wrinkles on the outside corners of the eyes does not occur. The difference in signal quality between felt and false smiles in turn leads to significantly less cooperation.[54,58]

The third type of smile explored here is the "fear" smile, which is characterized as the "silent bared teeth display" when it occurs in nonhuman primates.[43,52,56] Although fear smiles likewise do not activate the muscles surrounding the eyes in the same manner of felt smiles, the different appearance of fear and false smiles based upon lip corner pull, with the mouth corners being pulled straight back in fear smiles, suggests different intent. Here, fear smiles appear to serve the submissive purpose of silent bared teeth displays, whereas false smiles are intended to reproduce the sociable intent of real smiles.

Despite the recognition of different smile types outside of political contexts, the extent to which felt, false, and fear smiles occur in competitive contexts such as political debates remains largely undocumented, as do evaluations of their impact on viewers. Additionally, the question remains as to whether these different types of smiles may be seen as gradations in strength of a single smile type, or whether they in fact serve as distinct signals.

Sadness/appeasement

Sadness can be seen as an appeasing behavior that reassures competitors that the individual is incapable of "making a comeback,"[61,62] thus reducing the risk of further attack. This allows the defeated individual to remain in the group and signals the need for social support.[63] Cross-cultural studies of facial displays of sadness indicate they consist of downturned mouth corners, the lower lip being pushed up and out, inner eyebrows raised and forming an inverted "U" shaped furrow at the center of the forehead, and drooping eyelids.[64,65] The relative lack of muscular tension in the face in combination with downcast eyes (at times including tears) restricts vision, signaling a high level of appeasement to potential aggressors and need for assistance to social supporters.[63]

As a result, displays of sadness tend to be seen as inappropriate for political candidates competing for dominance, leading to a loss of electoral support. Edmund Muskie, frontrunner for the 1972 Democratic party presidential nomination, found his campaign derailed after he appeared to cry in response to a newspaper attack on his wife during the New Hampshire primary.[66] On the other hand, Hillary Clinton's "emotional moment" just prior to the 2008 New Hampshire primary, in which she appeared exasperated, briefly vulnerable, and on the verge of tears when asked about difficulties on the campaign trail, helped to humanize her candidacy and was seen as a key component of her surprise win in that state.[26]

Anger/threat

Anger/threat is a relatively unambiguous and readily decoded emotion observed cross-culturally in the

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service of dominance. A major component of the anger/threat display is a fixed stare with brows lowered or raised.[65] The mouth is contracted in anger/threat displays, with the lips either being pressed together when the mouth is shut or "squared" when the mouth is open, revealing the lower teeth.[35,67] However, according to Ekman and Friesen there is a degree of ambiguity in the display of anger unless all three areas, the brows, eyes and mouth, display this configuration. In other words, while the component parts may signal different behavioral intent when considered separately, such as interest when the brows alone are lowered, the anger/threat facial display is the most effective means of communicating agonic intent.[67]

In addition to (and likely because of) communicating threat, aggressive behaviors attract attention. Dominant individuals are more adept at deploying or more likely to engage in aggressive tactics as a means of attaining and maintaining attention, that is, visual prominence within social settings. Once attained, visual dominance is attention-getting in its own right.[65,68,69] A memorable example of how anger/threat displays might gain attention and establish a candidate as a frontrunner was captured on camera during the 1980 Republican New Hampshire primary debate when an angry Ronald Reagan, under the threat of having his microphone cut off, asserted "I'm paying for this microphone Mr. Green" (referring to moderator Jon Breen, the editor of the sponsoring newspaper, the *Nashua Telegraph*) a sound bite that helped boost Reagan's campaign over George H.W. Bush.

Fear/evasion

In facial displays of fear/evasion, the eyelids are configured in a similar manner to that of anger/threat, producing a combination of raised eyebrows and horizontally stretched mouth as the main display characteristics.[67] Whether or not the teeth are displayed when the lips are pulled back appears to vary depending on the context.[70] For instance, the compressed mouth display has been associated with anxiety in interactions with strangers and other unpleasant social exchanges.[71,72,73,74] On the other hand, fear smiles in which the lips are stretched back and the teeth are seen can be regarded as expressing appeasement in response to dominant individuals. In politically competitive situations, fear/evasion displays are unlikely to be seen, especially as they occur typically in response to anger/threat displays by competitors, and would signal candidate weakness through submission.

In competitive contexts such as political debates, the affiliative displays of happiness/reassurance should predominate. Behavior intended to threaten rivals likewise may be expected to occur; however, the facial displays of anger/threat should occur to a much lesser extent, particularly in egalitarian systems that value politeness. This should especially be the case when speakers make humorous comments: when affiliative humor is focused on in-group members, facial displays will tend to indicate happiness/reassurance. However, when the humor is disparaging and used to attack opponents, facial displays in the brows, eyes or mouth ought to indicate anger/threat, or at the very least not indicate affiliative intent.

Submission and appeasement behaviors are not expected to surface much during presidential debates in which high-ranking individuals compete for leadership, as they weaken perceptions of status by conveying an inappropriate nonverbal tone that signals subordinate status.[23,24,44] Fear/evasion reduces prestige when it is perceived in candidates and political leaders.[6] While unlikely to be observed during competitive and often contentious political debates, sadness/appeasement likewise leads to reduced status.[45]

Therefore, our first research expectation is that humorous comments eliciting laughter will be cued by facial display behavior associated with dominance. In particular, components of happiness/reassurance facial displays should predominate when candidates elicit laughter, should occur more often during instances of audience laughter, and should be positively correlated with audience laughter strength.

A key problem to be addressed concerns how the nonverbal cues accompanying humorous comments are communicated and processed. Specifically, signals from the eyes and mouth may be communicated as separate components of the face, or as a configuration of these cues. In the latter case, stereotypical facial displays may be seen as readouts of emotional states. While these expressions may be masked, modified through display rules, or mixed to express more nuanced emotional states,[67] the key starting point is the extent to which visible expressions reflect the core emotional state of the communicator.

On the other hand, facial movements may reflect the mixed behavioral intent of humor, which is often based

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upon the social context where it occurs.[50,75] Because humor is often reflected through incongruous or nonuniform facial displays, where more than one emotion is conveyed, patterns of muscle movement should reflect this incongruity. In such instances, multiple components of a stimulus are appraised, often concurrently, with the resultant facial displays communicating behavioral intent.[76,77] In other words, the influence of nonverbal behavior might occur through viewer processing of separate components of the face, namely the eyes and the mouth as opposed to the fixed configurations suggested by the work of the Dartmouth Group. On the other hand, based upon the Dartmouth Group's research, the assertion may be made that the more display behavior reflects happiness/reassurance, the more likely audience laughter will occur, and this audience laughter will be stronger.

This leads to the final set of research expectations, which are based upon diverse and specific configurations of happiness/reassurance as different types of smiles. While the content analysis-based research carried out here is exploratory in nature, felt smiles are expected to be associated with a higher volume and stronger degree of audience laughter. False smiles may still be correlated with audience laughter, albeit at weaker levels, although these displays can be expected to not have as potent a relationship with laughter strength as felt smiles. Fear smiles, as submissive behavior, likely will not be correlated with audience laughter so much as individual candidate laughter—most likely the target of this appeasement behavior.

Method

A total of ten presidential primary debates from the 2008 electoral season were considered for this study, including the first three from each party early in the primary season, the final debates prior to the New Hampshire primary on January 5, and the Super Tuesday debates on January 30 and 31. The first three presidential debates for each political party provide a baseline for analysis, with both parties having an extensive field of 18 total candidates. On the Republican side, the three early debates took place May 3, May, 15, and June 5, 2007; the three Democratic debates took place April, 26, June, 3, and June 28, 2007. The field of candidates included ten Republican contenders and eight Democratic candidates. The final Democratic and Republican debates considered were those held prior to the New Hampshire primary (January 5, 2008), the first primary of the electoral season, and the debates prior to Super Tuesday (January 30–31), in which the greatest number of primaries for both parties took place (see Appendix 1).

Data collection. Coding these political debates involved four different analyses using an established protocol (see Appendix 2). Coders first identified laughter during the ten debates, specifically when it started and when it ended, and if applause ensued. Here two coders independently ascertained when laughter occurred and whether it derived from a specific candidate or moderator, multiple panelists, or the audience, then reached consensus for a final inventory of laughter events. In total, there were 319 laughter events identified in the ten primary debates. Most (67.7 percent) involved the audience, while 20.4 percent derived from individual candidates. The remaining instances originated from multiple panelists (9.7 percent) or one of the moderators (2.2 percent).

Audience laughter that occurred after humorous comments was rated on a 5-point scale anchored by barely audible (1) for when the coder could barely make out the sound of laughter, followed by slightly audible (2), moderately audible (3), very audible (4), and extremely audible (5) for the increasing sound of laughter intensity coming from the audience. The average rating of audience laughter was just over slightly audible ($M = 2.36$, $SD = 1.57$). Because audio quality, due to acoustics and recording features, influences the interpretation of the strength of audience laughter, we control for the effect of each venue by including an interaction term for political party (Republican and Democratic Party) by individual debate.

Next, the nonverbal cues expressed by the presidential candidates and the moderators were coded. Specifically we considered facial display behavior during the "punch-line," the one-to-three second time period that ranges from immediately after the humorous comment through the initiation of laughter. Coding categories were based upon research carried out by the Dartmouth Group[3,6,41] analyzing the effect of facial displays by political figures to obtain and maintain dominance (see Table 1). However, unlike the Dartmouth Group and others[25,26] who consider facial displays in a more holistic manner, the

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Table 2. Elements of facial displays.

Nonverbal cue	*Movement*	*% Total*
Eyebrows	Lowered & furrowed	10.80%
	Lowered	4.10%
	Normal	48.20%
	Raised	36.90%
Eyelids	Open wide	9.90%
	Normal	51.80%
	Upper raised/lower tight	0.50%
	Slightly closed	32.90%
	Closed	5.10%
Eye Orientation	Staring	34.20%
	Focused then cut	58.60%
	Averted	7.20%
Mouth Corners	Forward	4.50%
	Lowered	0.50%
	Normal	50.90%
	Raised	29.30%
	Pulled back	14.90%
Teeth Showing	None	29.30%
	Lower	16.70%
	Upper	36.90%
	Both	17.10%

display behavior coded here is approached as component units. Specifically, muscle movements of the eyes and mouth were examined due to their theoretical salience as focal points of attention, which during the 1 to 3 seconds of activity provides a high degree of nonverbal information for analysis.[78,79] A total of 223 cases in which all components of the face could be coded provide the basis for analysis.

Facial activity is based upon analysis of both the mouth and the eyes, considering the eyebrows, eyelids and eye orientation (see Table 2). Analysis of the eyebrows considered whether they were lowered and furrowed, lowered, normal or raised. The eyelids were coded on the basis of whether they were open wide, normal, whether the upper lid was raised and lower lid tightened, whether they were slightly closed, or whether they were completely closed. With eye orientation, the eyes were coded for whether they were oriented head-on, staring, focused then averted, or continuously averted.

Coding of the mouth considered whether the speaker's mouth corners were forward, lowered, normal, raised, or pulled back. Coding also examined the visibility of the speaker's teeth, including whether the teeth were showing at all, the lower or upper teeth were showing, or both the upper and lower teeth were showing simultaneously. While the mouth is the most labile aspect of the face, due primarily to talking and chewing, it is key for displaying happiness/reassurance when the mouth corners are raised.[35] Because facial display behavior was coded immediately after a humorous comment and during the onset of laughter, we control for speech potentially influencing the position of the candidate's mouth.

Finally, the different types of smiles are defined by their key characteristics. Felt smiles involve the lip corners being up and back and the candidate's eyelids being slightly closed, reflecting movement of the zygomatic major and obicularis oculi muscles, respectively. False smiles refer to those smiles in which the mouth corners are pulled up, yet the eyes remain normal, closed, or open wide. Fear smiles are those facial displays where the lip corners are pulled straight back. Finally, all other facial displays are defined as non-smiles. See Pictures 1 and 2 of Hillary Clinton and Mike Huckabee for reference.

Intercoder reliability. To ensure the reliability of the measures, each of the ten debates was coded by two independent coders. Data for all variables utilized here were run using Krippendorff's alpha with the variables designated as categorical for analysis. Krippendorff's alpha for the strength of audience laughter was .77, reliable given the subjective nature of judging laughter strength.[80] Measurement reliability for each of the five facial display categories achieved a high level of intercoder agreement, exceeding 90 percent for all three nonverbal categories (Krippendorff's alpha for eyebrow movement, eyelid activity, and eye orientation = .92, .91, and .94, respectively). Measurement agreement concerning lower face variables was also good, with coding for mouth corner movement (Krippendorff's alpha = .86) and teeth showing (Krippendorff's alpha = .92), achieving high levels of intercoder agreement.

Descriptive analysis of facial display behavior

Nonverbal cues expressed in the eyebrows, eyelids and eye orientation of political candidates show that while there was a tendency for the display behavior of the eyes to indicate happiness/reassurance, there was enough variance to suggest differentiation in display behavior (see Table 2). While raised eyebrows in over a third of the cases were seen as indicating happiness/reassurance, the nearly 5 percent of lowered eyebrows

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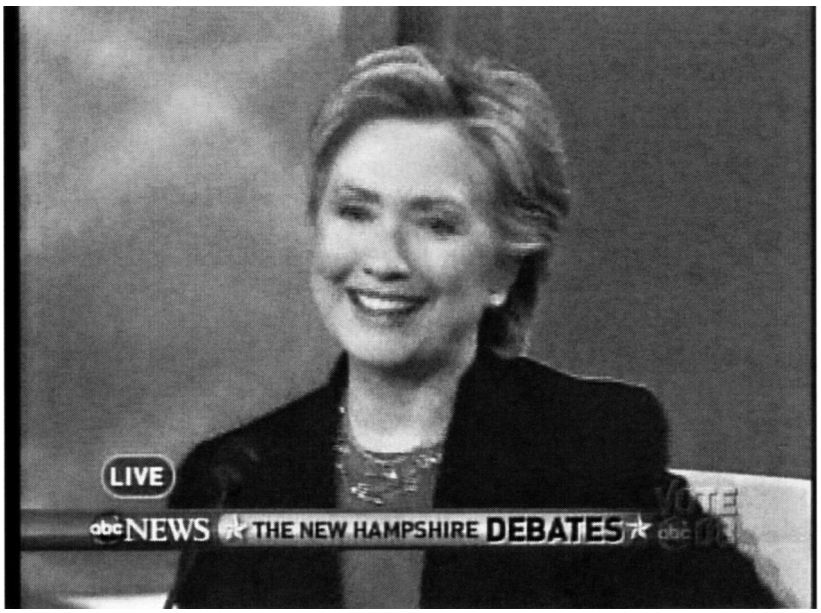
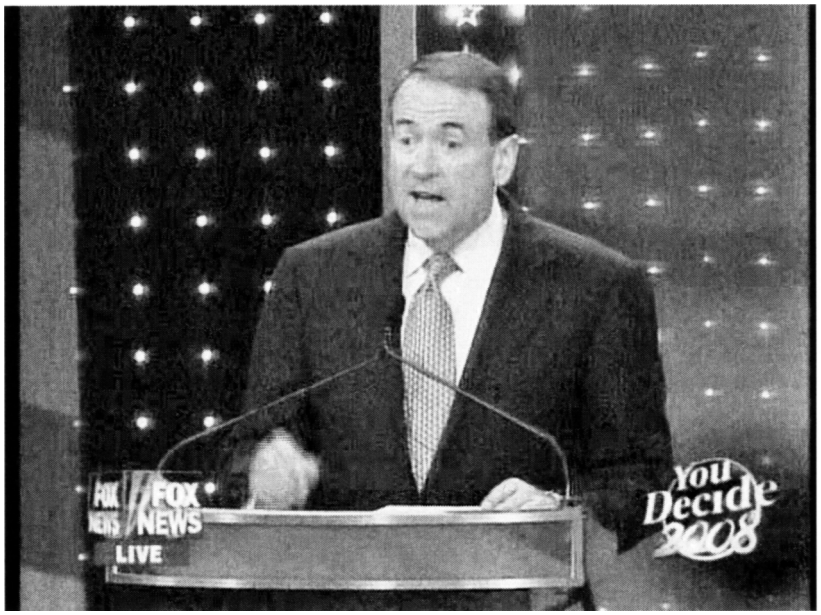


Picture 1. Hillary Clinton responding to claims she wasn't "likeable enough" during a New Hampshire debate with a felt smile and self-deprecatory humor. ("Well, that hurts my feelings. But I'll try to go on.") Coding: eyelids slightly closed, eyebrows normal, eye orientation focused then cut, mouth corners raised, and upper teeth showing.



Picture 2. Mike Huckabee at a Columbia, SC debate wearing a look of surprise. "We've had a Congress that spent money like John Edwards at a beauty shop." Coding: eyelids normal, eyebrows raised, eye orientation staring, mouth corners normal, and both upper and lower teeth showing.

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appears to indicate anger/threat. Perhaps most interestingly, 10 percent of all displays coded featured lowered and furrowed eyebrows indicating fear/evasion. According to the ethological framework reviewed above (see Table 1), lowered and furrowed eyebrows indicate a type of submissive or evasive posture. When combined with other facial display behavior, however, lowered and furrowed eyebrows might instead indicate anger/threat.[67] Given that 85 percent of display behavior in the eyebrows was either neutral or signaled happiness/reassurance, research expectations for this set of variables were met.

The eyelids remain normal in over half of the coded instances, followed by being slightly closed one-third of the time, and open wide in nearly one-tenth of instances, suggesting an overwhelming amount of happiness/reassurance displays by the speakers. Given that the eyelids were closed in just over 5 percent of cases and rarely were seen with the upper eyelid raised and the lower eyelid tight, in a display of fear/submission, the affiliative display of dominance prevails. This, however, may be due to the ambiguity of coding eyelid movement since wide open eyes can indicate surprise or anger, in addition to happiness.

Finally, in the nearly 60 percent of cases in which a humorous comment was made, eye orientation was focused then cut off, suggesting happiness/reassurance display behavior. Humorous comments were accompanied by a fixed stare about a third of the time, signaling an anger/threat display, while candidates averted their eyes only 8 percent of the time, possibly conveying appeasement toward the target of the humor.

Movement in the lower part of the face, namely involving the mouth corners and visibility of the teeth, likewise indicates a tendency towards happiness/reassurance, although to a lesser extent than expected from individuals making humorous comments. Mouth movements were largely neutral over half the time, suggesting that deadpan expressions accompanied humorous comments. In nearly 45 percent of cases, the emotion of happiness or the intent of reassurance was communicated through raised mouth corners, as seen in a relaxed open mouth smile, which occurred nearly a third of the time. The analysis revealed that mouth corners were pulled back in 15 percent of cases, as seen in a silent bared teeth smile. In nearly 5 percent of cases the speaker's mouth corners were either forward or lowered, indicating at least one component of anger/threat display behavior was present.

Variation in teeth displays was more evenly distributed. Indicators of happiness/reassurance, where either the upper teeth or both upper and lower teeth were showing, occurred over half of the time, whereas indicators of anger/threat occurred in nearly 18 percent of cases. Finally, in almost 30 percent of cases, the speaker's teeth were not observed, potentially suggesting the lack of signaling intent.

In summary, we find extensive support for the expectation that happiness/reassurance displays, indicating affiliative and cooperative intent, would predominate during the delivery of humorous comments. However, by considering only behaviors within isolated functional categories, more complex combinations of facial display behaviors that elicit laughter are not considered. Bivariate analysis of how displays cluster and interact, reported below, provide greater insight into how displays cue laughter.

The question remains whether display behavior, alone or in prototypical configurations of dominance (e.g., happiness/reassurance and anger/threat), or submission (e.g., fear/evasion and sadness/appeasement), influences the occurrence and intensity of laughter. Display behavior that correspond with the Dartmouth Group's definition of happiness/reassurance (mouth corners raised or pulled back, variable showing of teeth, eyelids wide open, normal or slightly closed, eyebrows in variable positions, and eye orientation focused then averted) occurred in nearly one-third of cases (29.7 percent). As expected, facial displays consistent with anger/threat were rare, occurring in only four of 223 cases. Likewise, submissive display behavior of fear/evasion and sadness/appeasement as constructed were not evident.

While prototypical configurations, especially happiness/reassurance, can be expected to occur and have an effect on how humorous comments are considered, the Dartmouth Group's framework is overly broad for the present analysis because their operational categories do not distinguish between different smile types. With displays of happiness/reassurance, the starting point is the involvement of the mouth, namely whether the lips are stretched back in a fear smile or whether the corners are pulled up as in the case of a false smile. In felt smiles, involvement of the eyes, with the eyelids slightly closed, in combination with upraised lip corners is expected to add to the power of this display

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behavior, especially when compared with false and fear smiles.

The presence of felt smiles occurred nearly 20 percent of the time, while fear smiles occurred in just over 15 percent of cases. False smiles, by contrast, appeared nearly 10 percent of the time. Since evidence was found for distinctly different smile types occurring during the debates, the analysis next considers their co-occurrence with laughter from other panelists and audience members.

Facial displays and laughter strength. Whether laughter derived from the audience, which would appear to be the goal of candidates wishing to strengthen their bond with supporters, or from debate panel members, was determined. Bivariate tests considering the relationship between display behavior and source of laughter was carried out through Chi-square analysis. Findings concerning happiness/reassurance showed no significant relationship between the display and whether the source of laughter was the audience, an opposing candidate, or the debate panel at large, χ^2 (2, 223) 0.766, $p > .10$, $\phi = 0.059$. Therefore, support for the expectation that the more display behavior resembles happiness/reassurance, the more likely the audience will laugh, was not found.

However, the analysis for different smile types did find a statistically significant relationship. Specifically, the association between candidate smile type and source of laughter was significant, χ^2 (6, 223) 13.296, $p < .05$, $\phi = 0.244$ (see Figure 1). Fear smiles were associated with less audience and, to a limited extent, panel laughter, but were associated with more laughter by individual candidates. On the other hand, felt and false smiles did not appear to be related to who laughs. This suggests that the fear smile, while likely socially beneficial by enhancing the probability of cooperation, is less a happiness/reassurance display than a submissive cue more consistent with appeasement behavior.

The relationship between display behavior and audience laughter was further examined through analysis of variance (ANOVA) with potential differences in the level of laughter during the debates controlled through an interaction variable composed of debate number by political party. This allowed for the effect of differences in the venues to be controlled statistically. The first test considered the influence of happiness/reassurance displays on audience laughter.

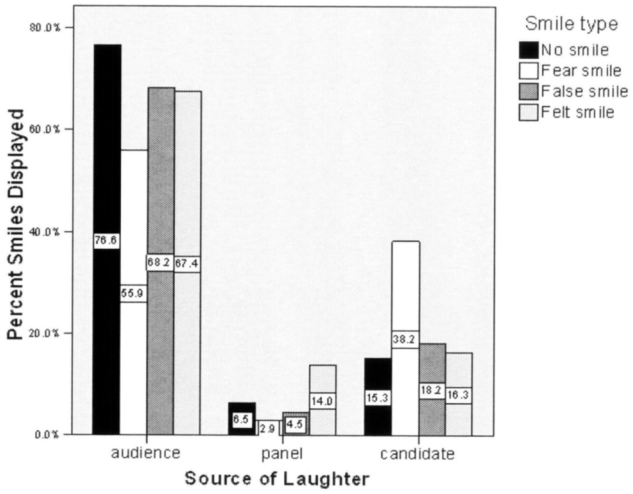

Figure 1. Source of laughter by smile type.

After running the Levene test, which suggested no significant violations of the assumption of homogeneity of variance, F (18, 139) = .534, p = .94, an ANOVA was run. After controlling for the effect of debate location, F (9, 147) = 2.447, $p > .01$, η^2 = .130, the happiness/reassurance configuration was found to be significantly related to the strength of audience laughter, F (2, 14) = 4.457, $p < .05$, η^2 = .030. Analysis of the mean scores suggests laughter was louder during happiness/reassurance displays (M = 2.80) than during other display behavior (M = 2.27).

When happiness/reassurance is decomposed into felt, false, and fear smiles, a more attenuated picture emerges. Prior to analysis, the Levene test suggested no significant violations of the assumption of homogeneity of variance, F (34, 123) = .926, p = .589. After controlling for the effect of debate, F (9, 145) = 2.691, $p > .01$, η^2 = .143, smile type was significantly related to the intensity of audience laughter, F (3, 145) = 3.420, $p < .05$, η^2 = .066. Consideration of mean scores (see Figure 2) showed that laughter was strongest when candidates displayed felt smiles (M = 2.97) and weakest when they exhibited false smiles (M = 2.07). Post hoc analysis of mean scores using pairwise comparisons showed that felt smiles evoked significantly more intense laughter than those displays defined as non-smiling (t = .025) and more intense laughter than false smiles at a level approaching significance (t = .076). Support was thus found for the idea that felt smiles indicative of effective happiness/reassurance displays would be pos-

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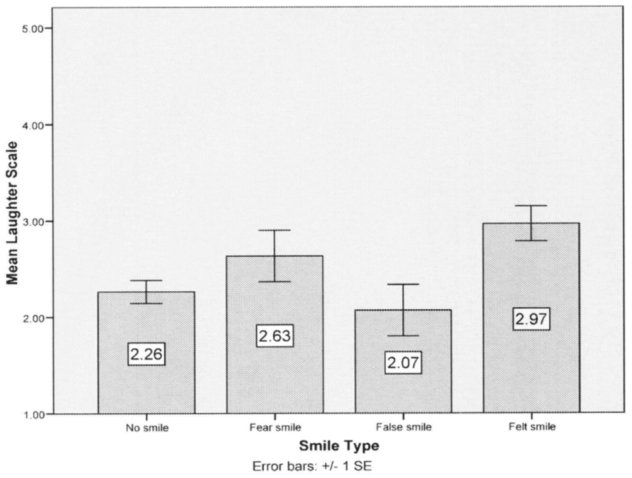

Figure 2. Strength of laughter by smile type.

itively associated with strength of audience laughter. The findings also showed that false smiles were correlated with lower levels of laughter than all other display behavior, including fear smiles.

Discussion

The facial displays by presidential candidates during and immediately after humorous comments arousing laughter tend to represent the happiness/reassurance signaling display identified by the Dartmouth Group. Although there was a good deal of variance in nonverbal facial display behavior evidenced by candidates during these humorous comments, the predominance of felt and false smiles suggests that intent communicated through these facial displays tends to be more affiliative than competitive. Furthermore, in the case of fear smiles, agonic intent may have been mitigated through affiliative expressions.

Although this study isolated different nonverbal elements and smile types, political humor is a complex concept, involving both cognitive and affective incongruity, and requires further scrutiny and detailed assessment. For instance, nonverbal components in facial displays, which were measured categorically in this study, may be considered in graduated levels, as carried out with the Facial Action Coding System (FACS).[67] With increased precision, further research should consider whether audience laughter varies with the intensity of specific display elements, the strength of different facial configurations, or some combination or repertoire of smile types.

Timing can also be considered in a more systematic manner. Whereas this study considered the facial displays of candidates in the 2–3 seconds immediately following the humorous utterance and during the first emanations of laughter, it did not consider whether these expressions were the product of the humorous comments or audience laughter that ensued. In other words, while correlation can be ascertained to a degree in this study, causality remains elusive. Future research may also benefit by utilizing the cognitive appraisal approach of Scherer and colleagues,[76,81] as it may provide even greater insight into the intent of humorous comments by considering how different facial muscular movement, timing, onset, peak, and offset indicate different types of cognitive appraisal.

With humor, both core and complex mental states are encoded in the face, which is then decoded by onlookers. Work by Baron-Cohen and colleagues suggests basic emotions are best read in the entire face. Complex mental states, such as being ashamed, bewildered, reflective or serious, are best read in the eyes, whereas configurations involving the lower face (namely the mouth) do not significantly assist in decoding.[82,83] The results presented here agree with these observations. Facial displays associated with humorous comments, which may be presumed to have a degree of complexity, appear to be primarily encoded in the eyes of the humorous comment maker both as a discrete unit and as an integral element for felt smiles.

That the mouth corners play a role in how laughter is elicited, and who from, provides evidence for distinguishing between different types of smiles.[43,50] Specifically, humor that provokes laughter from specific individuals on the panel tends to co-occur with the humorous comment maker's mouth corners being pulled straight back in fear smiles, as seen in the silent bared teeth displays by non-human primates making attempts at appeasement.[52,84]

The importance of happiness/reassurance display behavior, including specific displays of felt, false, and fearful smiles, can be seen in the relationship between these displays, who laughs and how hard. Specifically, fear smiles are associated with laughter deriving from specific individuals on debate panels, suggesting the speaker is attempting to appease while diminishing the impact of the humorous comment. Felt smiles are

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associated with stronger audience laughter, suggesting there might be an element of emotional contagion deriving from audience response to this type of facial display. False smiles do not have the same effect, nor can they be considered smile gradations; rather, these are distinct facial displays associated with lower levels of audience laughter when compared with felt and fear smiles and other display behavior.

Therefore, it appears that when the audience laughs in response to political humor, there are significant differences in the nonverbal facial displays performed by the candidates making the humorous comments. Given that political debates are a competitive forum in which candidates vie for public attention and support, the nonverbal facial displays that co-occur with humorous comments will reflect the need to communicate intent, whether affiliative or competitive. In a televised electoral setting that emphasizes close-up shots of the speaker, more detailed evaluations may be made by audience members watching television than political events that take place in person, in which case the audience may be arrayed at greater visual distances. Thus, watching campaign events such as debates may lead to more attentive and informed audiences making judgments about the efficacy of humorous attempts as well as other communicative behaviors.

Conclusion

In democratic societies, political competition takes the form of verbal and nonverbal competition, with candidates attempting to gain political control through the use of masterful rhetoric and other persuasive strategies to win votes and elections. Although humor is typically considered light-hearted, it has what may be considered a darker side when it is used to denigrate individuals and groups that are not seen as conforming to social standards. At the same time, by constituting something other than a direct attack on the opposition, humor is not necessarily seen as impolite or rude,[12] especially if it is laughter invoking. Indeed, humorous comments allow criticisms to be voiced in a civil manner[12] while establishing a positive connection with the audience. Humor thus functions as a tool that may be used to strengthen bonds between leaders and followers, albeit at the expense of opposition figures and groups.

Despite the increased scholarly attention paid to political humor,[85,86] the majority of research continues to focus on the verbal element alone. Nonverbal elements of humor that are central to communicating humorous intent and eliciting laughter are all but overlooked, a void the research carried out here has attempted to address. Language-centered analyses of humor lack the necessary depth since without the nonverbal cues detected in the body language and facial displays of the speaker, much of the nuance and comedic aspect of humor is lost. The evidence presented here suggests that humor, with its emphasis on cognitive incongruity, relies on subtle affective cues predominantly perceived in the face.

In the modern media age, in which citizens encounter leaders as if they were present in face-to-face situations, the importance of facial displays for communicating humorous intent is accentuated. Laughing *matters* on the campaign trail, not only for bringing supporters together but also for defining leaders. Charismatic leaders such as John F. Kennedy and Ronald Reagan can build a strong connection with supporters through the positive feelings engendered by laughter. Therefore, the ability of candidates to effectively enhance their status by making humorous comments relies not only on cognitive mastery of political incongruity, but also the ability to punctuate their comments nonverbally, signaling their emotional state and ability to communicate subtleties to a perceptive audience.

Humorous comments made during debates provide defining moments for candidates, especially during primary elections where the field of contenders is rapidly winnowed down, allowing presidential candidates to engage in a kind of relational communication that results in an informal and friendly portrayal.[18] Even in those cases where humor is used to criticize, the relative absence of anger/threat displays found in this study suggests that political debaters act in a polite manner, one befitting a guest of at-home viewers. This intimacy between candidate and viewer, while mediated by television production styles that influence emotional and attitudinal response,[5,26,87] enhances the importance of understanding visual attributes in political choice. While much rhetorically driven analysis has focused on evaluating candidates on the basis of the strongest substantive arguments rather than who best conveys "warmth, humor, and sincerity on television"[16] (p. 49), these attributes are at least as important in the choice of leaders from an evolutionary perspective.[29,88] And while humorous comments may

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be memorized and delivered as rehearsed "one-liners," the ability to successfully deliver such comments nonverbally does not appear to be so easily coached, potentially making them a robust indicator of candidate character.[27]

Note

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Appendix 1

Debate venues

The first Republican presidential debate was held at the Ronald Reagan Presidential Library in Simi Valley, California on May 3, 2007 and ran for 90 minutes, beginning at 8 p.m. (EDT) on both MSNBC and at politico.com. The primary moderator of the debate was Chris Matthews with John Harris and Jim Van de Hei playing a secondary role. The second Republican debate was held on May 15, 2007 in Columbia, South Carolina and was held at the Kroger Center for the Arts on the campus of the University of South Carolina. The debate began at 8 p.m. (EDT) and ran for 90 minutes. It aired on the Fox News Channel with Brit Hume the primary moderator, Chris Wallace and Wendell Goler played supporting roles. The third Republican debate was on June 5, 2007 at Saint Anselm College in Manchester, New Hampshire. The debate aired from 7 p.m. to 9 p.m. (EDT) and could be seen on CNN and the CNN website. The debate was moderated by Wolf Blitzer, with questions coming from Blitzer and various other individuals. All three of these early Republican Party debates were attended by Sam Brownback, Mike Huckabee, Duncan Hunter, Jim Gilmore, Rudy Guiliani, John McCain, Ron Paul, Mitt Romney, Tom Tancredo, and Tommy Thompson.

The first Democratic presidential debate was held at South Carolina State University in Orangeburg, South Carolina. The debate was held on April 26, 2007, making it the first debate for either party, and was aired on MSNBC from 7:00–8:30 (EDT). The debate was moderated by Brian Williams, with questions coming from the general public. The second Democratic debate was held in Manchester, New Hampshire on June 3, 2007 at Saint Anslem College and moderated by Wolf Blitzer. Individuals from *The Union Leader* newspaper also played a lesser role in moderation. The debate aired on CNN from 7 p.m. to 9 p.m. (EDT). The third Democratic debate was held on June 28, 2007 in Washington, DC. The event was organized by PBS and was held at Cramton Auditorium on the campus of Howard University. The debate lasted 90 minutes, beginning at 9 p.m. (EDT), and was moderated by Tavis Smiley. Questions came from various sources including a panel of distinguished individuals. In all three of these early Democratic Party debates, the candidates Hillary Clinton, Joe Biden, Chris Dodd, John Edwards, Mike Gravel, Dennis Kucinich, Barack Obama, and Bill Richardson took part.

The final debates were chosen based upon their proximity in time to two key primaries, the New Hampshire Primary and the Super Tuesday. The New Hampshire primary is the first primary of the electoral season, and as such sets the stage for the "horse-race" that follows by elevating contenders and demoting lesser-known candidates. In recognition of this, ABC hosted a back-to-back primary debate of Republican, then Democratic Party presidential candidates the evening of January 5, 2008. This event was held in Manchester, New Hampshire, was moderated by Charles Gibson, and featured

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a reduced field of candidates, with the Republican field reduced from ten to six candidates: Huckabee, Guiliani, McCain, Paul, Romney, and Fred Thompson. The Democratic Party likewise saw a sharp reduction in the numbers of their candidates, with only front-runners Clinton, Edwards, and Obama participating in the debate.

Super Tuesday involves 24 states and one territory in primaries and caucuses, and as such is considered the most important of electoral dates. Around Super Tuesday CNN hosted Republican and Democratic primary debates on back-to-back nights of January 30th and 31st. The first debate, the Republican debate, was held in Simi Valley, California was moderated by Anderson Cooper, and saw a Republican field reduced to four candidates, Huckabee, McCain, Paul and Romney. The next night, the Democratic Party debate was held in Hollywood, California and was moderated by Wolf Blitzer and saw Hillary Clinton and Barack Obama spar over various issues.

Appendix 2

Nonverbal communication and debate venue

It may be argued that the structure of the room where debates are held, as well as the presence or absence of large screen television monitors in which those present in the audience can obtain a larger than life view of the candidates' facial displays, influences the in-person audience's response, although speakers have the ability to communicate nonverbal cues over great distances. As noted by comic Steve Martin, the first stand-up comedian to embark upon stadium tours of from 20,000–45,000 as a headline act, and who, in an attempt to enhance his ability to communicate humor from a distance, wore his trademark white suit: "I made quick adjustments for the thundering cheers and the increased audience size. I bore down. My physicality intensified and compressed—smaller gestures had greater meaning—and my comedy become more potent as I settled deeper into my own body" (p. 171).[90] In other words, it appears speakers may exert nonverbal influence over an audience through the audience's ability to detect and/or infer visual cues, as well as through the socially contagious nature of laughter.

In the case of audience's ability to visually detect nonverbal cues during the presidential debates, it appears that the rooms used allowed for, at the very least, gross levels of communication. Specifically, while systematic data concerning the physical set up of rooms where the debates were held is scarce, especially in light of different network production arrangements, what information that is available suggests that audience sight lines were preserved and the distance from the stage to the audience member was not considerable. For instance, the St. Anselm College Dana Center, where both New Hampshire primary debates were held, has an estimated distance from the stage to the downstairs wall of 35–40 feet. Furthermore, visual estimates of the auditoriums used at the University of South Carolina (the Koger Center), South Carolina State University, Howard University (Cramton Auditorium), and St. Anselm College (both the Dana Center and Sullivan Arena—where the June debates were held) appeared, upon visual analysis, to be typical teaching auditoriums that seat 300–400 individuals. And while television monitors were used by the Fox Broadcasting team in Columbia, South Carolina (the Koger Center), with two large television monitors on both sides of the candidates, and in the Reagan Library (Simi Valley, California) to assist viewers with obstructed sight lines, monitors devoted to audience usage were not apparent in the other debates. Future research might profitably consider the influence of both venue and monitors on audience response, as well as on candidate performance.

Audible nonverbal cues, in this case laughter, likely were communicated effectively to both the audience at the event, as well as, to a lesser extent those at home watching on television. Specifically, while microphones might not accurately reflect the intensity of the audience's response (due mainly to acoustics), and hence the intensity of response might be misrepresented here, the perception of those viewing the debates at home is the same as the coders. Although it is understood that the laughter coded by the researchers is likely affected by the context of the debate (i.e., formality or informality of the venue) and the sound system used to catch audience response, the laughter coded reliably indicates what is heard by the audience viewing the debates on television, and therefore can be expected to impact their impressions of the candidates (and moderators). Unlike the general election debates, where the audience was advised to not applaud, it was apparent during the primary debates that no such governors of audience response were requested, or the audience did not comply with the debate rules.

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