ORIGINAL ARTICLE

Is There a Visual Dominance in Political Communication? How Verbal, Visual, and Vocal Communication Shape Viewers' Impressions of Political Candidates

Friederike Nagel[1], Marcus Maurer[2], & Carsten Reinemann[3]

1 Institut fuer Publizistik, Johannes Gutenberg-Universitaet, Mainz, Germany
2 Institut fuer Kommunikationswissenschaft, Friedrich-Schiller-Universitaet, Jena, Germany
3 Institut fuer Kommunikationswissenschaft und Medienforschung, Ludwig-Maximilians-Universitaet, Muenchen, Germany

On the basis of a televised debate in the 2005 German national election, this study compares the influence of verbal, visual, and vocal communication on viewers' immediate impressions of political candidates by using an innovative research design. A second-by-second content analysis of 17 verbal, visual, and vocal message elements is combined with a second-by-second analysis of viewers' immediate impressions using continuous response measurement (CRM). Findings show that viewers' immediate impressions are mainly influenced by verbal communication, especially the issues discussed and the argumentative structure used. In contrast to that, the effect of nonverbal communication is far smaller. The causes and implications of these findings are discussed.

Politicians, consultants, and journalists share the assumption that it is mainly the nonverbal elements of communication that influence audiences' perceptions of political leaders. This notion was driven by John F. Kennedy's debate victory over a pale and unshaved Richard Nixon in 1960 and by Mehrabian and Ferris' (1967) often-cited rule that 55% of impression formation is based on visual cues, 38% on vocal cues, and only 7% on the verbally transmitted content of a message. On the other hand, the number of empirical studies investigating the role of nonverbal communication in impression formation during the last decades is very small. Consequently, there is not much empirical evidence for a visual dominance in political communication. Therefore, the aim of this study is to investigate the role of verbal, visual, and vocal communication in the process of political impression formation. First, a model of factors influencing viewers' impressions of political candidates is developed. Second,

this model is tested in the context of the televised debate in the 2005 German national election with an innovative research design.

Impact of verbal, visual, and vocal communication on impression formation

Generally, audiovisual messages combine a verbal, a visual, and a vocal *channel of communication*. In each channel various individual *message elements* are conveyed. Hence, we can assume that a channel of communication shapes impressions in case it conveys message elements that shape impressions. Theories from political science, communication science, psychology, and linguistics suggest that three categories of message elements influence voters' impressions of political candidates: verbal, vocal, and visual.

Verbal communication

The *issues* speakers talk about represent one basic category in the analysis of the persuasive impact. Issue ownership theory suggests a close link between political parties and certain issues (Petrocik, Benoit, & Hansen, 2004). Therefore, issues can be viewed as shortcuts used by the audience for evaluating a candidate. On the one hand, candidates might leave better impressions when talking about issues owned by their parties. On the other hand, and more simple, candidates might leave better impressions just because they talk about issues on which they agree with the majority of their audience. Moreover, it might be important which concrete *subjects* the candidates address when they talk about a certain issue, that is, their personal experience with it or respective policy plans.

A second category of verbal communication is argumentative strategy. Its elements are *object* and *tone*, which in their combination constitute different types of political statements. Usually, office-holders prefer *acclaims* (i.e., speaking positively about oneself) over *attacks* (i.e., speaking negatively about the opponent), whereas challengers attack more frequently (Benoit, 2007). Regarding the effect of tone, the negativity effect proposes that negative information is weighted disproportionately high when compared to equidistantly valenced positive information (Kellermann, 1989). This suggests that attacks should be especially successful. However, empirical studies show that attacks polarize the audience and, therefore, do not necessarily lead to better impressions on the aggregate level (Reinemann & Maurer, 2005). In addition, the *context* of acclaims and attacks might make a difference. Here, studies have shown that announcing own plans, in general, may be more effective than calling for the action of others (Reinemann & Maurer, 2005).

A final category is the use of rhetoric. The use of *evidence* (numbers, historical facts, etc.) has been found to persuade the audience by highlighting the speaker's credibility (Reinard, 1988). However, too frequent use of evidence might lead to negative perceptions of the speaker because he is perceived as a "small minded technocrat" (Levasseur & Dean, 1996, p. 138). Also *emotional appeals* have been shown to enhance the persuasive power of a message. This holds true for negative emotions like fear as well as for positive emotions like pride (Nabi, 2002). Another

rhetorical strategy is the use of *commonplaces*. Politicians speaking vaguely about their own plans generate almost unanimous support as the recipients usually assimilate vague positions to their own opinions (Williams, 1980; Reinemann & Maurer, 2005). Finally, on the level of language construction various classical *rhetorical elements* can exert an influence on the audience, mainly by enhancing the perceptions of a speaker's competence. This has been shown, for example, for rhetorical questions (Zillmann, 1972), parallelisms (Hosman, 2002), and metaphors (Sopory & Dillard, 2002).

On the basis of these considerations, we hypothesize that viewers' impressions of political candidates are positively affected when they talk about issues linked to their party (H1); by talking about own plans (H2); by attacks on the opponent (H3); by the use of evidence (H4); emotional appeals (H5); commonplaces (H6); and rhetorical elements like metaphors, rhetorical questions, and parallelisms (H7).

Visual communication

Out of the several forms of dynamic elements of visual communication gaze, smile, and gestures seem to be especially important in impression formation and persuasion. *Gaze* can be regarded as supporting persuasion because it communicates empathy, closeness, or trustworthiness (Burgoon, Dunbar, & Segrin, 2002). However, gaze can also communicate dominance (Thayer, 1969) and therefore reduce perceived sympathy. *Smiles* are generally regarded as positive. They convey sympathy and trust and smiling speakers are often even perceived as persuasive (Imada & Hakel, 1977). *Gestures* communicate self-assurance and dominance (Burgoon et al., 2002). Generally, speakers that use gestures are perceived as more persuasive (Mehrabian & Williams, 1969). We hypothesize that viewers' impressions of political candidates are positively affected by direct gaze (H8), smile (H9), and gestures (H10).

Vocal communication

Finally, vocal communication can stimulate attributions or associations among listeners (Areni & Sparks, 2005). *Pitch* indicates whether a voice is perceived as high or low. Voices with low pitches are often perceived as more credible (Gélinas-Chebat & Chebat, 1992; Gregory & Gallagher, 2002). *Intensity* describes the speaker's volume. A calm conversation usually occurs on a sound level around 60 decibel (db); loud calling 75 db. Studies show that both high and low intensity can increase persuasiveness (Gélinas-Chebat & Chebat, 1992; Gélinas-Chebat, Chebat, & Vaninsky, 1996). A final factor is s*peech rate*. Generally, a speech rate slightly above the average (4.4–5.9 syllables per second) leads to more favorable impressions—especially regarding trustworthiness and competence (Apple, Streeter, & Krauss, 1979). We therefore hypothesize that viewers' impressions of political candidates are positively affected by lower pitches (H11), higher volume (H12), and a faster speech rate (H13).

Comparing the impact of verbal, visual, and vocal communication

Thus far, we discussed which *message elements* might affect viewers' impressions of political candidates. Another important question regards the importance of

the different *communication channels*. Theories from at least three fields of research suggest that visual communication may be most important: First, according to the findings of neuroscience, the brain perceives, stores, and processes verbal and visual information mainly on distinct routes and with distinct mechanisms. When a visual and an auditory stimulus occur at the same time, the visual elements dominate perception (Van Damme, Crombez, & Spence, 2009). Visual information is processed much quicker than verbal: While it takes about half a second (500 milliseconds) to translate sensing (hearing, smelling, touch) into conscious awareness of these stimuli (Libet, 1991), faces are identified as faces after 47 milliseconds (Grabe & Bucy, 2009, p. 13) and known faces are recognized after 170 milliseconds (Fiske & Taylor, 2008, p. 72). This high-speed information processing can be explained with the processing route visual information takes: It is sent directly from the thalamus to the amygdala, the originator of affective reactions, without passing through consciousness (Barry, 2005).

Second, Paivio's Dual Coding Theory (DCT) is often cited to support the prepotency of visuals. The DCT explains why visual information is generally better remembered and retrieved than verbal. According to the theory, visual information is stored in two systems—the visual system and the verbal system—whereas verbal information is stored in the verbal system only (Paivio, 2007). Nevertheless, DCT cannot serve to explain the impact of visual information in political candidates' public speeches because it explains processing and retrieval of verbal and visual information with *congruent* semantic content only. However, in political speeches this assumption does not apply because usually there is no semantic connection between what is seen (speakers) and what is heard (statements).

Third, according to Dual-Process-Models of information processing the relative importance of the various types of cues depends on the conditions under which recipients receive messages. For example, the Elaboration Likelihood Model (ELM) assumes that recipients use different routes of information processing. Recipients who are highly involved with the issues discussed use systematic information processing. It is analytic, exhaustive, requires much processing capacity and often relies on the verbal semantic content of a message. Recipients with low involvement rather use heuristic information processing. It relies on schemes, rules (heuristics), cues, and inferences, requires less processing capacity and relies on nonverbal (visual) elements to a greater extent. This suggests that verbal information will be more important under high-involvement conditions, whereas visual information will be more important in low-involvement situations (Petty, Cacioppo, & Schumann, 1983).

Three experimental research designs have been used in order to compare the relative impact of verbal and nonverbal communication in impression formation. In the first type, a group of viewers are shown a short silent video clip of a politician's speech (video-only version). Afterward, viewers are asked to indicate their impressions of the candidate. The fact that viewers form impressions only on the basis of short bits of visual information, then, is regarded as an indication of strong effects of visual communication (Frey, 1999). Studies of the second type compare the impressions of subjects exposed to a politician's public speech in an audiovisual

versus an audio-only version. In this case, differences in impressions can clearly be traced back to the lack of visual signals. Such differences have been found in several studies on televised debates and political talk-shows, for example, in the United States (McKinnon, Tedesco, & Kaid, 1993; Druckman, 2003) and Germany (Holtz-Bacha, Roessler, & Lessinger, 2005; Haumer & Donsbach, 2009). While both types of studies give a clear hint that visual information is important, they do not tell whether it is dominant when verbal and visual information is presented simultaneously.

Therefore, studies of the third type compare the impressions of subjects exposed to a politician's public speech in an audiovisual versus an audio-only versus a video-only version. These studies provide useful information about the relative effects of verbal and visual communication by comparing the differences arising from the lack of verbal versus visual signals compared to the full audiovisual version. Investigating a Dole versus Mondale debate with such a design, Krauss, Apple, Morency, Wenzel, and Winton (1981) found that semantic content was more important than visual information. In their study on a Reagan versus Mondale debate, Patterson, Churchill, Burger, and Powell (1992) came to the same conclusion for Mondale but not for Reagan. In contrast, in a study by Sullivan and Masters (1988) mainly visual elements caused opinion changes about politicians. Finally, in a recent study on a German regional televised debate using continuous response measurement (CRM), Maurer (2009) found that viewer's impressions were guided by visual information only in the first 30 seconds. Later, there was a clear dominance of verbal information.

All in all, several theoretical approaches suggest that impression formation is often dominated by visual communication. However, empirical research does not yield a clear picture. This discrepancy may be caused by two shortcomings of experimental research designs. First, they separate verbal and visual communication in an artificial way. For example, respondents watching an audio-only version of a politician's speech may also perceive the verbal content differently when compared to respondents watching an audiovisual version. Second, the impact of vocal communication can hardly be separated from the impact of semantic content except by using an artificial content-filtered speech version. As a result, the relative impact of vocal communication remains unclear. Consequently, we pose the following research question (RQ1): Which channel of audio-visual messages (verbal, visual, or vocal) affects viewers' impressions of political candidates most?

Method

Generally, this study aims at analyzing the relative impact of different message elements and communication channels on viewers' impressions of political candidates in a natural setting. Therefore, a new and innovative research design is applied. It combines a second-by-second content analysis of the televised debate in the 2005 German National Election with a second-by-second CRM-analysis. The 2005 televised debate between Gerhard Schroeder (Social Democratic Party, incumbent) and Angela Merkel (Christian Democratic Party, challenger) was broadcast on 4th September

(2 weeks before the election) by the four major German TV channels. While there was no studio audience, about 21 million (more than a fourth of the German population) watched the debate on television. Four journalists alternately asked questions to the candidates. Discussions between candidates were not allowed. Candidates were standing behind small desks. The debate was clearly dominated by one camera perspective: In about 80% of the debate time only the speaking candidate was visible. Extreme close-ups were not allowed. Due to the length of the format (about 90 minutes) we expected a variety of message elements to appear in sufficient frequency to analyze their impact statistically.

Design and procedures

Viewers' immediate impressions during the debate were measured using CRM analysis. The relevance of debate viewers' immediate impressions has been proven in several studies showing that these reactions strongly influence postdebate opinions (Reinemann & Maurer, 2005). For the CRM study, 72 participants were recruited using newspaper articles in the local press. Subjects were offered 25 EUR for their participation. As more subjects applied than seats were available, they were selected using quota sampling (political predispositions, educational levels, gender, and age). On the day of the debate, subjects were introduced into the operating of the CRM handhelds and practiced their usage with a politically neutral program. They received an oral and a written instruction asking them to continuously give their impressions of the debate that might be caused by verbal, visual, or vocal message elements. The handheld's scale ranged from "1" to "7," with "4" indicating the neutral middle. Sliding the control dial towards "1" indicated a good impression of Schroeder or a bad impression of Merkel. The more a respondent shifted the slide control towards "1," the stronger was his/her good impression of Schroeder/bad impression of Merkel. Vice versa, sliding the control dial towards "7" indicated a good impression of Merkel or a bad impression of Schroeder (for a validation of these measures see Maier, Maurer, Reinemann, & Faas, 2007). During the debate a computer collected the handhelds' data in every second (5.600 data points).

Debate content was analyzed using a second-by-second quantitative content analysis. The analysis included 17 verbal, visual, and vocal message elements: the issue a candidate was speaking about, the subject, the object of reference, the tone, the context, the use of evidence, emotional appeals, commonplaces, metaphors, rhetorical questions and parallelisms (*verbal communication*), direction of gaze, smile, gestures (*visual communication*), intensity, pitch, and speech rate (*vocal communication*). In addition, the candidate speaking and the candidate visible were coded. Most verbal and visual message elements were coded on a nominal scale and, for further analysis, transformed into 50 dummy variables. In each case, the coding of a message element started in the first second the appearance of the message element became obvious. For example, in a statement like "We have to reduce unemployment" the issue *employment market* was coded beginning with the word "unemployment" and retained until the speaker switched to another issue. Argumentative strategies (acclaims, attacks, and

their opposites) were later modeled as interactions between objects of reference and tone. The analysis was done by five trained coders using a time-coded video version of the debate. Intercoder reliability (Krippendorff's α for nominal variables) ranged between .77 (tone) and .98 (speaker). Two elements of vocal communication (pitch and intensity) were collected computer-aided using the phonetics-program PRAAT. This software determines the relevant values for each hundredth of a second. A third element, speech rate, was coded manually based on the timecode and the transcript of the debate (syllables per second). As both analyses produce enormous amounts of data which have to be aggregated manually, vocal communication was analyzed in approximately 25% of the debate (1,253 seconds) only. To make sure all message elements appear, we chose parts of the debate with a high density of message elements.

Statistical analysis

Studies combining content analysis and CRM in order to uncover debate effects usually use a quite simple research design: In the first step, CRM is analyzed with respect to most striking parts of the debate (peaks). In the second step, only the message elements used during peaks are under examination. When certain message elements regularly appear during peaks, it is assumed that the peaks are caused by those message elements (e.g., Reinemann & Maurer, 2005). This approach may be misleading because those message elements may appear to the same extent during ordinary parts of the debate not under examination. Therefore, in this study a new kind of statistical analysis is used for the first time in order to combine content analysis and CRM data in a more sophisticated way. The dependent variable of the analysis is the average immediate impression of the 72 viewers during each second of the debate. Independent variables are the 17 verbal, visual, and vocal message elements coded in content analysis and later recoded into 50 dummy variables. Consequently, the data at hand is a set of time series. Therefore, two transformations were inevitable in order to prepare for analyzing the impact of the debate. First, we had to take into account the possibility that reactions of viewers' as measured by CRM could be delayed in comparison to our stimulus. Such delays could be caused, for example, by time-lags between impression formation and manual operations of the handheld device or by technical features of the CRM system. As this issue has not yet been addressed by communication scholars (but see Schubert, 2004 for latencies in emotional reactions to music), we tried to identify the lag empirically. Therefore, we lagged the responses to every one of the 50 independent variables in various intervals from 1 to 25 seconds and determined the correlations (η^2) between the dependent and the independent variables. All in all, correlations were strongest for the 4-second interval. This held true for verbal as well as visual and vocal message elements. We cross-checked this finding with a qualitative analysis of those parts of the debate with the strongest changes in viewers' impressions. In fact, the analysis showed that something remarkable happened on the screen in most cases 4 to 5 seconds prior to significant reactions of viewers. Therefore, we lagged the mean impressions with 4 seconds in comparison to the content data.

The second issue is the autoregression of sequential values in time series data. Autoregression means that a value in the time series is highly correlated with the previous value. Usually, time series data are ARIMA-transformed and all systematic internal dependencies removed. Once this is done, mainly changes from one value to another (δ-values) are left over. While this is appropriate when data has been collected on a weekly or daily basis, we believe that viewers' impressions measured in one second result from message features of more than one previous second. In order to avoid the ARIMA-transformation and correct for autoregression, we created weighted rolling sums as independent variables. These sums do not represent message elements of just 1 second but the total amount of elements in several consecutive seconds. In order to find out the best fitting interval, we calculated time series analyses for the 50 independent variables in various intervals from 2 to 10 seconds. In this case, the interval with the strongest interdependence was the 3-second interval. As in the case of time lags, no systematic differences between verbal, visual, and vocal message elements occurred. We cross-checked this finding with viewers' average dialing frequency which was slightly above 3 seconds when excluding the parts of the debate in which only journalists spoke. Finally, we assumed that a message element's impact in the first and the last second of the 3-second interval might be slightly lower. This assumption theoretically conforms to a combined puls/block model in time series analysis (Box, Jenkins, & Reinsel, 2008, p. 453). Consequently, the first and last second were weighted with .5. Therefore, we multiplied each second's value with the second's weight (.5 in t_{-2}, 1 in t_{-1} and .5 in t_0) and summed up the results. The first 2 seconds of each turn were excluded from the analysis to avoid overlaps of effects caused by the creation of the weighted rolling sums.

Then, we calculated multiple OLS regressions between the weighted rolling sums of debate content (independent variables) and the immediate average impressions of all viewers (dependent variable). The regressions were calculated for both candidates separately. In order to secure the correct attribution of effects to candidates, we analyzed only intervals in which only the speaking candidate was visible (Schroeder: $n = 1,799$ seconds; Merkel: $n = 1,769$ seconds). First, the relative impact of the individual message elements was determined. As all elements were measured on the same scale, standardization was not mandatory. Second, we analyzed the relative impact of each communication channel by entering them blockwise into the regression model. The more additional variance a block explains (adjusted R^2), the higher its importance for viewers' immediate impressions.

As the analysis of vocal communication is based on a smaller part of the debate, not all message elements were present in the smaller section. Therefore, we decided to conduct the analysis for the "entire" debate first using verbal and visual communication only. Based on the smaller part of the debate we then conducted the same analysis including the vocal features. As the results for verbal and visual communication are similar in both analyses but not all message elements are covered in the smaller sample, we report the additional results for vocal communication here only.

Results

Message elements in the debate
Verbal communication
Schroeder talked most about taxes and duties (15%), foreign affairs (12%), and social policy (11%); Merkel covered mainly taxes and duties (15%), employment market (12%), and foreign affairs (9%). Main subjects discussed were the candidates' political programs. Remarkably, the candidates switched roles in the debate: Merkel, formally in the challenger's role, spent much more time talking about her own camp (36% of her speaking time) and less about the government (13%). Schroeder used only 24% of his time to talk about himself and his party and nearly as much time to talk about the political opponent (19%). Both candidates preferred negative (26%) compared to positive (19%) tone. Combining tone and reference object, Merkel used acclaims in 20% and attacks in 12% of her speaking time, while Schroeder used acclaims in 11% and attacks in 8%. The candidates' use of rhetorical means differed, too: Schroeder used more evidence (17 vs. 11%) and classical rhetorical elements (10 vs. 6%) than Merkel. Moreover, he used more positive emotional appeals than Merkel (10 vs. 5%). Besides that, Merkel was vague more often than Schroeder and used considerably more commonplaces (19 vs. 8%). Both candidates used negative emotional appeals in 12% of their speaking time.

Visual communication
Merkel used more direct gazes than Schroeder (8 vs. 4% of the visual presence time) while Schroeder used more gestures (45 vs. 30%); nevertheless the quality of gestures was structurally comparable (3/5 closed, 2/5 open). Both candidates did not try to win the audience through extensive smiling: Merkel smiled in 7% of the seconds, Schroeder in 5%.

Vocal communication
In the subset of the debate analyzed, Schroeder's voice ranged around 115 Hertz. Merkel spoke with a mean frequency of 219 Hz—slightly lower than female voices usually are. Intensity was comparable for both candidates (Merkel: 65.5 db; Schroeder 63.7 db) and ranged slightly above the intensity of a usual conversation. Schroeder talked at a rate of 4.7 syllables per second, Merkel slightly faster (5.4 syllables per second).

Impact of individual message elements
As explained, the impact of each message element on viewers' impressions of the candidates was analyzed using OLS-regressions. For Schroeder, the (hypothetical) baseline impression (all message effects occur in their base-variation) was favorable (constant: 3.62). The baseline impression for Merkel was slightly below the neutral middle (3.99). By using the various message elements, candidates could either improve or alloy these impressions. In this case, the unstandardized *b* coefficients can simply be interpreted as differences in means.[1]

Impressions of both candidates were mainly shaped by talking about certain policy issues. Schroeder was perceived most positively when he spoke about "other policy issues," especially when criticizing U.S. President Bush's crisis-management after hurricane Katrina (.37), discussing future coalitions (.23), and the economy (.13). Merkel was most successful when she spoke about completely different issues: energy and environmental policy (.29), family and gender policy (.28), national debt (.26), taxes and duties, and foreign affairs policy (both .22). Compared to this, addressing different subjects did not have such a strong impact. For incumbent Schroeder both talking about his own personality and about the current state on certain policy fields had a negative impact—while for Merkel talking about both led to positive reactions.

Statements with a negative tone improved impressions of Schroeder only slightly (.06). An ambivalent tone deteriorated the impression of both candidates (Schroeder −.04; Merkel −.09) and positive statements showed no effect on either candidate. Although candidates had switched roles in the debate, viewers' preferred argumentation schemes which were congruent with the traditional roles: Ratings were most favorable when officeholder Schroeder acclaimed his achievements (.08) and challenger Merkel attacked the government (.13). When she used acclaim strategies, impressions were predominantly negative (−.06). Commonplaces improved audience's impression of Merkel (.05), while worsening impressions of Schroeder (−.07). Both candidates impressed the audience positively when they used positive emotional appeals (Schroeder .11; Merkel .08) while negative appeals had no effect. Using evidence was successful only for Schroeder (.08) and harmed Merkel (−.07).

In contrast to the verbal elements, visual elements had only small effects on viewer's impressions. For Schroeder, minimal positive effects occurred with indirect gazes (.02); direct gazes were neither positive nor negative. Slightly negative impressions of Schroeder occurred with gazes to the conversational partner (−.06) and inward gestures (−.04). Merkel's visual behavior was much more successful: She improved impressions through direct gazes (.12) and gazes to the conversational partner (.05). Indirect gazes (−.03) and outward gestures (−.04) had a minimal negative effect while smiles showed no consistent effect for both candidates.

As described, the analysis of vocal communication is based on only a subset of the debate. Therefore, the results cannot be directly compared to the above-mentioned.[2] Most vocal features did not show significant effects. Neither intensity nor speech rate influenced viewers' impressions of the candidates. Only Merkel's pitch had a significant effect: When Merkel spoke with a higher frequency, her impression improved. Potentially, due to her low mean frequency of 219 Hz, even speaking at a higher frequency did not sound shrill but nicely and helped Merkel to improve her impression (Table 1).

Relative impact of verbal, visual, and vocal communication
Even in a natural setting, when numerous message elements appear simultaneously verbal, visual, and vocal elements seem to have an impact on viewers' impressions of candidates. But which of the three channels has the strongest impact? In order to

Table 1 Impact of Message Elements on Viewers' Impressions of the Candidates

		Schroeder	Merkel
		b	*b*
	Constant	3.62	3.99
Issue	Foreign affairs	−0.03	0.22***
	Social/welfare/health policy	−0.01	0.05*
	Family and women's policy	0.01	0.28***
	Energy and environment	0.07***	0.29***
	Economy	0.13***	0.03
	Science and research policy	0.09***	0.04
	National debt	0.07**	0.26***
	Future coalitions	0.23***	0.05
	Taxes and duties policy	0.04	0.22***
	Employment market	0.05*	0.14***
	Other policy issues	0.37***	0.05
	No policy issue	0.03	0.10***
Subject	Personality	−0.10***	0.11***
	Issue competence	−0.06*	0
	Political program	−0.10***	0.04
	State of a political area	−0.10***	0.06*
	Others	−0.10***	−0.04
Object	Government	−0.07***	0.01
	Opposition	−0.02	0.02
	Population	−0.01	−0.02
	State of a political area	−0.09***	0.10***
	Other reference object	−0.02	0.06
Tone	Positive tone	0.02	−0.01
	Negative tone	0.06***	0.01
	Ambivalent tone	−0.04*	−0.09***
Context	Announcement of action: Concrete	0.03	0.03
	Announcement: General goal	−0.02	0.08***
	Announcement: Commonplace	−0.19***	0
	Call for action	0.12***	0.19*
	Review of track record	−0.03*	−0.01
Object × Tone	Positive × government	0.08***	0.01
	Negative × government	0.04	0.13***
	Positive × opposition	0.11	−0.06*
	Negative × opposition	0.03	−0.02
Rhetorics	Evidence	0.08***	−0.07***
	Negative emotional appeal	−0.01	−0.03
	Positive emotional appeal	0.11***	0.08***
	Classical rhetorical element	−0.01	−0.06***
	Commonplace	−0.07***	0.05***

Table 1 Continued

		Schroeder	Merkel
		b	*b*
Gaze	Slight gaze at camera/audience	0.02[*]	−0.03[***]
	Direct gaze at camera/audience	0.02	0.12[***]
	Gaze at host/opponent	−0.06[***]	0.05[***]
Smile	Slight smile	−0.02	−0.01
	Strong smile	−0.02	0.02
Gestures	Outward gestures	0	−0.04[**]
	Inward gestures	−0.04[***]	0.02
	Incl. vocal communication	*B*	*B*
Vocal	Intensity (db)	0.06	−0.05
	Pitch (Hz)	0.08	0.33[***]
	Speech rate	0.02	0.04

Regression I (excluding vocal communication): Schroeder: $R^2_{adj} = 34.8$; $df = 50$; $F = 2.22$***; Merkel: $R^2_{adj} = 31.3$; $df = 50$; $F = 17.08$***; sample: seconds in which only Schroeder resp. only Merkel spoke and was visible (Schroeder $n = 1799$; Merkel $n = 1769$). Coefficients for Schroeder multiplied with −1. **Regression II** (including vocal communication): Schroeder: n.s.; Merkel: $R^2_{adj} = 55.7$; $df = 50$; $F = 14.33$***; sample: seconds selected for analysis of vocal communication, in which only Schroeder resp. Merkel spoke and was visible (Schroeder $n = 378$; Merkel $n = 532$). Only coefficients for vocal communication reported; regression was calculated for all variables; ***$p \leq .001$; **$p \leq .01$; *$p \leq .05$.

investigate that, we grouped the message elements into the above-mentioned three communicative channels. In order to compare the effects of the three channels, we calculated hierarchical regressions and compared the changes in explained variance, which are caused by adding a channel to the model. In a first step, the verbal and the visual channel are under examination. In a second step, based on the smaller subset of the debate, vocal communication is included.

In our first model, verbal communication is included first. For Schroeder, verbal communication accounted for 33.5% of the variance in this case (adjusted R^2), while visual communication explained only another 1.3%. About the same structure was found for Merkel showing a slightly lower impact of the verbal and a slightly higher impact of the visual channel. To ensure that the high importance of verbal communication was not caused by entering it first into the regression, we also tested the model in reversed order. Even in this sequence, visual communication only explains 1.8% of the variance in viewer's impressions of Schroeder. Again, the results for Merkel are quite similar. The results for vocal communication are, again, based on the smaller subset of our data. Vocal communication explains almost no additional variance in the case of Schroeder but an additional 8.3% of the overall explained variance of 55.7% for Merkel. The higher amount of overall explained variance can be attributed to the smaller subset of the debate. Extrapolating this finding to the

Table 2 Impact of Communication Channels on Viewers' Impressions of the Candidates

R^2_{adj} in %	Schroeder		Merkel	
	R^2_{adj}	R^2_{adj} Change	R^2_{adj}	R^2_{adj} Change
Regression I				
Verbal communication	33.5		28.5	
+ Visual communication	34.8	1.3	31.3	2.8
Regression II				
+ Vocal communication	n.a.	(0.1)	n.a.	(4.7)

Regression I: sample: seconds in which only Schroeder resp. only Merkel spoke and was visible (Schroeder $n = 1799$; Merkel $n = 1769$). **Regression II**: sample: seconds selected for analysis of vocal communication, in which only Merkel spoke and was visible ($n = 532$); change in R^2_{adj} originally 8.3% (*F* change 31.29), here extrapolated on base 31.3% explained variance; no significant effects for Schroeder.
***$p < .001$.

overall explained variance of 31.3% for Merkel,[3] we can assume that vocal elements account for approximately 4.7% of variance in the entire debate (Table 2).[4]

Discussion

This study investigated the relevance of verbal, visual, and vocal communication in shaping television viewers' impressions of political candidates by using a unique and innovative research design. By combining a quantitative content analysis of the televised debate in the 2005 German National Election and a CRM analysis of the immediate impressions of 72 debate viewers, the impact of 17 single message elements in their natural co-occurrence could be specified. Moreover, the impact of verbal, visual, and vocal communication could be compared.

Looking at the effects of individual message elements, our study confirms results from experimental research in several fields of social science: First, we find a strong connection between choosing certain issues to speak about and creating a positive impression (H1). This effect was highly *party-specific*. While this seems to support issue ownership theory, a closer look shows that it was not always the issues traditionally "owned" by a candidate that left the best impression. Second, we find effects of argumentative structures which were highly *role-specific*. Both candidates received the best evaluations when they argued according to their actual roles (Schroeder/incumbent: acclaim; Merkel/challenger: attacks) (H2–H3). Moreover, challenger Merkel succeeded when talking about the state of the country, while the opposite held true for incumbent Schroeder. This finding should be typical for elections in which most voters are not satisfied with the state of the country. Third, we found effects of certain rhetorical strategies. Some of them held true for both candidates. This was especially the case for positive emotional appeals (H5). Others turned out to be *candidate-specific*. While the use of evidence had positive effects in the

case of Schroeder but negative in the case of Merkel (H4), the use of commonplaces had just the opposite effects (H6). Obviously, also the personality of a candidate influences the effects of certain message elements. Fourth, we found effects of visual communication. Especially gazing directly into the camera improved impressions of Merkel while it had no effect on impressions of Schroeder (H8). Finally, we also found effects of a vocal message element. Merkel left a more positive impression when she spoke with a higher frequency (H11). On the other hand, several message elements which had been shown to be influential in experimental research do not show effects in our study—maybe because they are overshadowed by other factors or simply used too seldom to have an effect.

Indeed, the most striking finding of our study is that for both of the candidates, verbal message elements had by far the strongest impact on viewers' impressions. In the case of Merkel, even vocal communication was more important than visuals. While this finding contradicts the assumption of many practitioners in the field of political communication, it is in line with the findings of most experimental studies using a three-group design (audiovisual vs. video-only vs. audio-only version) in order to compare the effects of verbal and visual communication.

How can this verbal dominance be explained? First of all, for most viewers watching a televised debate rather is a high involvement situation. In Germany, there was only one debate watched by millions of potential voters that do not follow political media coverage on a regular basis. Therefore, many listened carefully to candidates' statements in order to get helpful information for their voting decisions. This also held true for most participants of our study. Following the dual-process models of communication, high involvement leads viewers to focus on verbal communication elements. Additionally, one could argue that the high-involvement situation has also been created by our study design. Because people had been introduced to watch the debate and had to indicate their impressions by using the dials they might have been even more involved. Moreover, CRM is a kind of continuous survey and, therefore, may be subject to social desirability effects. Following that argument, respondents might have concentrated on verbal message elements because they wanted to look like rational voters who base their impressions on verbal information. While debate viewing generally may lead to a higher involvement, we do not think that our design caused additional effects: Compared to other kinds of surveys CRM is a rather unconscious method producing spontaneous reactions instead of reflected answers. Moreover, experimental research shows that respondents using CRM dials do not clearly differ in their reactions compared to respondents watching the same program without using CRM dials (Reinemann & Maurer, 2009).

Second, the marginal role of visual communication might be due to the fact that visual behavior was not completely visible. Because there were no close-ups, viewers could not see candidates' facial expressions in detail. Due to the camera angles used even their gestures were partly invisible. This, of course, holds true for many politicians' appearances in television. Third, we might have failed to include all elements of visual communication relevant for impression formation. Although we

think that we included the most relevant *dynamic* elements, we are aware of the fact that we did not include *static* elements, especially physical attractiveness. Therefore, it is possible that the general appearance of a candidate influences the baseline impressions, an effect that we are not able to show because of the dynamic focus of our research design. Taken together, we might underestimate the effects of visual communication in this study. But given the clear dominance of verbal communication apparent here, we do not think that we have to revise our argumentation in general.

Finally, an important issue is whether these findings can be generalized. The first question is whether they can be generalized to other German debates. We believe that this is the case. For both candidates we found comparable results for the importance of the channels—although their behaviors differed quantitatively. Universal and role-specific effects described above will likely be found in other debates, too. The second question is whether these findings can be generalized to debates in other countries. Thus far, we cannot be sure about this, because visual communication may be of different importance in different cultures. Therefore, we think more comparative studies on these effects are needed. The final question is whether these findings can be generalized to other debate formats and other formats than debates. This is the most crucial question, because when debate formats are more flexible, structural findings might change, too. Discussions with more participants or different camera perspectives might enlarge the spectrum of verbal and visible message elements. And when candidates appear only briefly in TV news, visual information might be of greater importance, because viewers may not be able to understand the verbal message immediately and, therefore, rely on easily understandable visual message elements. Consequently, it is rather unlikely that the importance of the verbal, visual, and vocal channel of communication is identical across different media formats and situations.

Taken together, there still are many open questions. They concern, for example, the role of respondent characteristics for the relative impact of the three communication channels and methodological issues like the specification of time lags and spans in the statistical analyses. However, we believe that the research design we introduced here offers great opportunities for future studies in media effects research.

Notes

1 Coefficients for Schroeder are reported with reverse leading signs.
2 Overall the regressions of verbal and visual communication with either the entire debate or the subset revealed comparable *b*s. Therefore, we decided to report only the additional *b*s (standardized) for vocal communication.
3 Rule of proportion: $8.3/55.7 = 14.9\%$; 14.9% of $31.3 = 4.7$.
4 As it is well known that partisanship influences the perception of political candidates (e.g., Reinemann & Maurer, 2005), we also calculated models for supporters of both candidates and undecided voters separately. We found that in all subgroups verbal communication has by far the strongest influence on viewers' perceptions. More in detail, we found only one remarkable difference: For viewers supporting one of the candidates, visual

communication is slightly more important for the perception of the opposing candidate than for the perception of the own candidate. For undecided voters, visual communication plays a smaller role than for the supporters of both candidates. Taken together, these results suggest that while partisanship clearly influences the direction of candidate perception it does not seem to influence the criteria of candidate perception.

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