BODY LANGUAGE OF WORLD LEADERS

Martha Davis, New York State Psychiatric Institute
Psychology Department, P.O. 80
722 W. 168th Street, N.Y., N.Y. 10032
212-874-2848

Dianne Dulicia, Kinecom Associates, Fairfax Sta., VA.

Dean Hadiks, The Methodist Hospital, Brooklyn, N.Y.

Miriam Roskin Berger, New York University, N.Y., N.Y.

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PREFACE

We will give primacy today to visual illustration of our research because motion pictures explain it so much better than words. This paper supplements the symposium videotape to answer specific questions regarding the theoretical assumptions, methodology, and assessments that inform our work. We are very interested in continuing the symposium discussion by answering inquiries and comments sent to the address above.

What do the positions, gestures, gaze behavior, facial expression, and mannerisms of a political leader convey? Conventional wisdom assumes politicians' words obscure and evade, while their bodies tell the "truth." Image management experts suggest it is easy to read the body language of the presidential candidates. Researchers know better. Nonverbal communication is a complex and difficult subject to study empirically (Davis & Skupien, 1982; LaFrance & Mayo, 1978; Scherer & Ekman, 1982).

What we do--microanalyses of nonverbal behavior--is part of an old tradition within the behavioral sciences. It shares kinship with field observations of bodily expression that began with Darwin (1965); film study of young children exemplified by Gesell and Halverson (1942); detailed observations of public behavior most memorably documented by Goffman (1974); and microanalyses of conversational behavior starting with the pioneering work of Chapelle (1940). Our work is most directly related to three projects: Allport and Vernon's (1933) assessment of individual consistency in body movement style; Efron's (1941) masterpiece on cultural differences in movement style; and Scheflen's (1973) seminal work on the regularities of nonverbal behavior in therapy interactions. What our work shares with that of Efron, Scheflen, and Allport and Vernon is reliance on a) careful movement description and rigorous operational definitions, b) multivariable analysis of motion throughout the whole body, c) film, video or electronic recordings of movement as a data base, d) pattern analysis that synthesizes many details of nonverbal behavior into sequences, and e) microanalysis of actual cases as the primary source of discovery. We also endorse reliance on trained observers. Examination of impressions or ratings by "naive," untrained observers is better suited for research on social perception and impression formation, and not analysis of body language per se.

Each of the following cases illustrates a methodological solution to a difficult question. As much as we have tried over the years, we cannot adequately examine these questions by relying on group comparative methods or dimensional ratings of groups of subjects. One must do the microanalysis of an individual first to identify the patterns, then track them through observation of groups to survey their occurrence and variation. If groups of subjects are rated along a series of nonverbal dimensions--no matter how powerfully assisted by
computers—the type of subtle patterning we will illustrate is not efficiently identified. In the words of Allport and Vernon, "the method of the case study discloses patterns of consistency completely lost to sight in all correlational studies." (1933, p.134) Anthropologist Efron (1941) describes how he meticulously examined filmed specimens of gestures to identify and operationalize the definitions of the movement patterns before surveying their occurrence within groups of speakers. Without this stage, he would not have seen the most salient details. Nowhere is this more dramatic than in Scheflen's (1973) 4-year film study of one therapy session. Repeated, exhaustive viewing generated discovery of patterns that could never be identified with group comparative methods. In this tradition questions of generalizability, frequency, and variation are explored only after microanalysis of complex examples is completed. Or, put another way, prototype analysis precedes and is essential to assessment of large samples.

What we would submit here is that it also stands as important data in its own right. Allport and Vernon's individual examples and Scheflen's therapy session description are vivid and compelling. Efron's Italian and Jewish subjects could be recognized today on New York City's Lower East side. Hopefully, the following descriptions of the body movement patterns of George Bush, Mikhail Gorbachev, and Saddam Hussein—derived from many hours of very dry and technical microanalysis—will also be at once recognizable and eye-opening.

GEORGE BUSH: NONVERBAL CORRELATES OF PUBLIC IMAGE

American presidential campaigns are field days for research on social or person perception. How potential voters judge "character", "presidentialness", credibility, etc., from the candidates' public presentations is endlessly discussed in the media, while armies of communications graduate students and political analysts assess the impact of the candidate style and public performances for years after each campaign (Jameison, 1984). Since a reporter was allowed to accompany Richard Nixon and his advisors on his 1968 campaign (McGinnis, 1969), documentation of the extraordinary lengths "handlers" go to improve the images of their candidates has become very extensive and sophisticated. And there are no limits to what is subject to image management. For example, throughout the 1988 campaign, George Bush was coached by Roder Alies on vocal quality, gesture style, and how to take charge of a situation within seconds (Newsweek, Nov.21, 1988).

There is growing evidence that body movement patterns influence judgement of characteristics such as genuineness (Burgoon, 1980: Tepper & Haase, 1978). This hypothesis has an affinity with media analyst descriptions of the primacy of the visual image over the word, and nowhere is this clearer than in communications research on the influence of a presidential candidate's communicative manner on viewer impression (Pflu & Kang, 1991).

One aspect of this subject that warrants greater research attention is examination of relationships between what the candidates actually do nonverbally and how their visible behavior is interpreted, i.e. the encoding-decoding relationship. When groups of subjects report that one candidate is "warmer" than another, rarely are they asked--nor do researchers attempt to analyze--what specifically may contribute to such impressions that is visible in the candidate's behavior or nonverbal style. Because variations in vocal character and movement are so complex, this is very difficult to decipher. We will not attempt to experimentally determine which of a number of very specific kinesic patterns contribute to such impressions. What we will do is present a method for identifying the subject's individual movement style and then compare it with adjectives that have been used to describe the candidate. This becomes an exercise in illustrating the potential of nonverbal microanalysis for research in person perception in hopes that greater attention will be paid to the nonverbal bases of social perception.
Movement Signature Analysis

To identify the subject’s nonverbal style, we first select film or video segment "specimens" of his gestures for very detailed microanalysis. This permits identification of how the individual precisely organizes and patterns his movement. The criteria for sample selection involves both pragmatic and theoretical considerations. First, the person must be seen in full or at least medium body shots throughout the entire movement sequence (from resting or "base" position through the gesture to rest position). Secondly, the movement should be among the most complex of all movements seen for that person, i.e. have the most changes in direction, spatial complexity, dynamic variation, and body part involvement. Once a "full out" example is identified, it is subjected to microanalysis using at least 13 different categories of body movement variation (see Figure 1). The steps of this procedure, "Movement Signature Analysis" or MSA, are described in detail in Davis (1991), and include analysis of short and medium-complexity gestures for assessment of the range of the person’s repertoire. For the purposes of this report, only the complex example will be discussed.

Within the extensive television coverage of the 1988 presidential candidates, the camerawork of the presidential debates allowed for the fullest, continuous shots of animated speaking. We also chose the debates because of the equal floor time and treatment of each candidate and the importance of the debates on potential voters. To analyze the relationships between the candidate’s movement style and viewer impressions, we pursued a three-stage study of the first debate: 1) initial impressions based on silent viewing by the first author, 2) microanalysis of selected movements by the first and second authors, and 3) comparison of the microanalysis with experimental studies of viewer impressions of the candidates.

Before the first debate, there were recurrent discussions within print media, such as the New York Times, of what problems the candidates "needed to correct" in the debate. Bush was still considered to be under Reagan’s shadow, too adaptive to policies as he found them and needing to convey that he could be independent and beat the "wimp" factor (Drew, 1988). He was also described as awkward, prone to broken sentence structures, and excitable (Brustein, 1988). He needed to project presidential authority and a command of himself while being personable and accessible. Dukakis also had to project presidential authority and strength (Oreskes, 1988). He was also characterized in the media as a "meritocrat" who needed to project a warmer, more personable image. Named "iceman", he was to "show feeling" and not be too much the logical lawyer.

The first author observed the first debate several times without sound while she avoided exposure to post-debate opinions. She then made judgments on how well each "succeeded" in projecting the qualities described above. To this experienced observer of nonverbal communication, it appeared that Bush "won" handily if the sole basis of the judgment was the visible behavior (Davis & Dulicai, in press). But what features contributed to these judgments?

In the second stage of this exercise, the first author did formal Movement Signature Analyses of two phrases of movement selected from the first debate--each segment being the best continuous shot of the most complex movement of the candidate. (Not surprisingly these responses received audience reactions of clapping or laughter, suggesting that the criteria for most "full out" specimens may identify effective communications. The criteria certainly helps in predicting which "soundbites" will be picked for the evening news.)

Space does not permit complete description of the nonverbal segment analysis and operational definitions of each category that can be found in Davis (1991). The recording itself takes several hours of repeat viewing because not only is the observer recording each aspect to a 1/2 second level of accuracy, she is also trying to discern distinctive variations, and how the individual uniquely performs each general category, in other words, the individual's "movement
signature. While observers working separately achieve good reliability on the coding of these dimensions (see Davis & Hadikis, 1987, 1990), it is more efficient for one observer to do the microanalysis and for another trained observer to check it, ask for clarification, debate certain details, etc. until consensus is reached as was done in this case.

Once the recording is completed and checked for accuracy, the incidence of variation in each category can be tallied to produce a profile of the person's movement repertoire that can then be used to survey other movements to determine what persists and what varies. Summaries of the Movement Signature Analyses of Bush and Dukakis are presented in Figure 1. It must be emphasized that comparison of the two comes from a scan of the lists of features after they are obtained from independent observations. Note in Figure 1 that Bush displays more slight facial expression, changes in gaze direction, head movement variations, weight shifts, "homebase" positions, variety of gesture types, direction variation, and full extensions than Dukakis. Dukakis displays more gesticulations, more vigor and intensity in his gestures, and more dynamic variation than Bush. One of the most dramatic contrasts is in continuity: Dukakis repeats over and over in a steady, driving rhythm, while Bush starts an action, interrupts it with another action, and may perform a string of incomplete and disconnected gesture forms amidst the various changes in focus and orientation.

In a third stage, we scanned communications research for more systematic assessments of impressions of the first debate to compare with our microanalysis of the movement behavior. We were particularly interested in studies that experimentally distinguished effects of the verbal content from effects of the communicative styles. The initial list of terms culled from the print media turned out to be similar to the lists of terms used in experimental studies of viewer impressions of the candidates. One study by Ott-Rose (1989) found that while viewers felt Dukakis won on the arguments in the first debate, this advantage was offset by impressions of Bush as "more likeable." Another study (Pfau & Kang, 1991) used a rigorous method for determining the influence of "relational messages" that pertain to how "people regard each other, regard their relationship, or regard themselves" (Burgoon & Hale, 1984, p.193) within the relationship and that are largely conveyed nonverbally.

We do not have space to describe the impressive evidence from Pfau and Kang's controlled study of viewers of the first debate that it was the relational messages that significantly influenced the nonpartisan viewers of the debate. While research indicates that debates reinforce partisan positions (Gallup, 1987), there is evidence that they can influence undecided or nonpartisan viewers (Pfau & Kang, 1991). We have extrapolated evidence from Pfau & Kang's study about how nonaffiliated viewers judged the two candidates, that is relevant to our study. The debate "exerted a significant, positive impact toward Bush" for these viewers, enhancing the likelihood they would vote for him and their attitudes toward the "credibility dimensions of competence,...[his] sociability,...character,... and composure" (p. 121). But the debate "produced a significant, negative impact on nonaffiliated viewers compared to nonviewers on attitude toward Dukakis,...[his] competence,...and sociability..." (p. 121). The relational dimension that Pfau & Kang found to be the factor in the judgments was of all the viewers "similarity/involvement." This factor involved communication of "cooperative attitude, equality, the absence of a superior attitude, warmth, interest, similarity, friendliness, sincerity, and honesty" (p. 119). While Pfau & Kang regret the overinclusiveness of this factor, as we do, it is nonetheless experimental evidence that viewers were particularly impressed by relational messages about personableness, friendliness and approachability.

Finally, there is evidence that the nonverbal behavior of Dukakis contrasted noticeably with his verbal behavior. In a linguistic examination of speeches, Dukakis was found to be in the middle to high range on a number of positive dimensions compared to other presidential candidates (Hahn, 1988). That he sounded better than he looked was graphically proposed by
one political analyst who encouraged readers to watch Dukakis with the sound turned off to understand why he was losing (Klein, 1988).

Comparison of Nonverbal Repertoires with Viewers’ Impressions

Finally we attempt what might be called an anatomy of adjectives. Terms selected from print media coverage just prior to the first debate and the adjectives used in research on viewer judgments of the debate listed below will be compared with the list of body movement patterns in Figure 1:

<table>
<thead>
<tr>
<th>Print media before debate:</th>
<th>Bush</th>
<th>Dukakis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not independent enough</td>
<td>&quot;meritocrat&quot;</td>
</tr>
<tr>
<td></td>
<td>excitable, awkward expressive style</td>
<td>unemotional &quot;iceman&quot;</td>
</tr>
<tr>
<td></td>
<td>articulate but too legalistic</td>
<td></td>
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<tr>
<td>Oft-Rose:</td>
<td>more likable communicator</td>
<td>less likable communicator</td>
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<tr>
<td>Pfau &amp; Kang:</td>
<td>more positive</td>
<td>more negative re:</td>
</tr>
<tr>
<td></td>
<td>sociability, competence, character</td>
<td></td>
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<tr>
<td></td>
<td>(and by inference) the Similarity/Involvement relational message dimension (warmth, interest, similarity, cooperation not superior attitude, equality, friendliness, sincerity, honesty)</td>
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We will not venture to posit the nonverbal correlates of very general and abstract concepts such as "competence" and "character." We will say something about nonverbal cues to honesty and sincerity in the third section of this presentation, but this is difficult to do here. Within the movement analysis, Bush does not display more signs of credibility than Dukakis. For the most part they are both in what we will describe later as "rhetorical" gesture modes. And our approach to credibility involves a comparative analysis of specific answers, while the viewers were presumably reporting impressions of the overall debate performance. The factor analysis done by Pfau & Kang unfortunately does not distinguish between what we would rather keep separate: the credibility indicators and the sociability indicators.

The nonverbal correlates of impressions that Bush is the more "likeable communicator" and more personable and sociable of the two seem obvious. Bush is more animated in ways associated with interaction: looking more at individual listeners, displaying more facial variation, using more expansive gestures, while Dukakis stands with head held in a tilt, trunk and face immobile, upper arms close to his sides. Yet, if Dukakis’ patterns are associated with being an unemotional "iceman," other nonverbal cues qualify them. Dukakis is far more intense in his gesticulations than Bush. There is a strength and drive in his body movement that apparently does not convey passion or conviction to viewers or enhance their impressions of him. This pattern might have parallels in the labels of "meritocrat" and "lawyerly" which connote well-reasoned and incorruptible as well as "icy." Dukakis’ continuous, powerful gestures straight up and down could be seen as a kind of relentless assertion of his commitment to his points, and are consonant with a "meritocrat" who is very persistent and prefers arguments by logic.

The descriptions of Bush as not sufficiently independent of Reagan involve a high order of inference. Inferring such characteristics from body movement, might be regarded as a cut above astrology. It is more credible to look for movement correlates of expressive awkwardness. In general it was much harder to find specific references to Bush’s body movements in the press, than it was to his speech patterns. Expressive "awkwardness" was detailed in a speech pattern so widely noted in the last four years that there is now a name for it.
"Bushisms" are "the staccato sentences with no pronouns. The long, meandering non-sentences that reverse course or get lost completely halfway through." (Kinsley, 1992, p. 1). The strings of incomplete, interrupted gesture types seem a movement parallel of the "clipped" speech pattern, but it is important to point out that this is not a literal correspondence. We thought when we first identified these interruptions through the Signature Analysis that they reflected speech breaks, as if he suddenly changed the referent or another thought occurred to him before he completed the first. However, when we turned on the sound, we discovered that the speech breaks and movement interruptions were not necessarily simultaneous. He can do "Bushisms" with his body separate from the ones he expresses in speech.

As far as the effort to counter the "wimp" image and project strength, Bush displays several patterns we associate with dominant, white males: the thumbing of Dukakis, the large one-unit arms sweeps, and the wide arm positions. To the extent that it was critical for him to appeal to the target audience of white male voters, we would predict that those who coached him on his public speaking style particularly encouraged him to emphasize these aspects of his body movement. On the campaign trail, reporters described a pattern in which Bush was tough and critical in one speech and "kinder, gentler" in the next. Bush's movement has equivalents: the way he thumb Dukakis without looking at him contrasts with the gentle, smoothing arm gestures.

We will demonstrate in the video that the body movement patterns are very robust, that they can be seen in different parts of the first debate, in the second debate, and, indeed, in post-election public speeches. As Alport and Vernon (1933) argued 60 years ago, movement style features remain consistent in many salient and important ways through time and context. What persists is not just the forms of the gestures--stock moves that performers such as Dana Carvey can duplicate (e.g., Bush's bilateral, slicing and smoothing motions) but the structural and dynamic patterns that can be seen through diverse actions and types of gestures. For example, while the specific gesture types may vary for Bush, the tendency to perform them in interrupting series of incomplete actions persists through press conferences and interviews to this day. When this level of dynamic and structural detail varies, it is considered by us very important because these formal patterns are so robust. For example, Dukakis performed his vertical forearm gestures with considerable strength and vigor during virtually all of the interviews we saw him during the campaign. But there were two times that he responded with the gesture form devoid of vigor. One was in response to the what-would-you-do-if-your-wife-were-raped question in the second debate. The other was during an interview days before the election in which Ted Koppel of ABC TV kept pressing Dukakis to acknowledge his poor standing and Dukakis persisted in optimistic forecasts of his chances.

In the next two sections we will show how we start with the profile of the individual's movement repertoire and examine notable variations by context or specific response for the study of nonverbal cues to clinical state changes in one project, and assessment of credibility in another application of the method. That is, we will move from study of nonverbal correlates of person perception and decoding-encoding relationships, to research of nonverbal encoding of psychological processes that need independent validation.

Lately, we are asked have you "done" the other candidate of the 1992 presidential campaign, Bill Clinton. But we need a research reason to do many hours of a Signature Analysis and this seems a request for an exotic measure of who is the best candidate, a question that voters must answer, not researchers. We do feel that we have learned something about how voters can seriously consider the nonverbal behavior as well as the candidates' words. For a "civic semiotics" we recommend that voters record the contexts on television in which they are likely to get long, fully visible shots of the candidate answering serious questions. We would put more stock in good samples of animated responses to serious questions than in the dramatic flubs television loves to capture and replay again and again.
In this campaign we recommend the talk show interviews where the candidates are not sitting behind tables. After recording, do a fast forward scan of the interview and mark where you see a complex and animated segment that is not interrupted by camera close-ups or pans to the audience. Then replay that segment about five times without sound. Each time you will note more details. Watch particularly for the position repertoire, the ways the candidate holds his torso and limbs, the ways hands and head are coordinated, the sequence of facial movements and any perceptible facial expressions, and most of all how the gestures develop and repeat. Note not only what the person does, (e.g. fixes his tie, crosses his legs, etc.) but how he does it, with what intensity, spatial pattern, and body part involvement. We submit that this exercise will enrich and deepen your impressions of the candidate and that you will be able to trace how characteristic these patterns are in later viewings without as much work. We also believe that such an exercise is informative. If nonverbal behavior is to influence how one judges a political candidate, it warrants serious attention and not just body language videobites shown for comic relief in long campaigns.

MIKHAIL GORBACHEV: NONVERBAL STATES CHANGES THROUGH SUMMIT, COUP AND POST-COUP

If individuals have distinctive movement styles, how are these to be interpreted? At a descriptive level, this subject is part of research on individual differences. Allport and Vernon considered reliable assessment of individual movement style as the first stage in a study of relationships between movement and personality. Although we are exploring relationships between individual "movement signatures" and psychological processes, we do not regard movement style as solely the domain of research on personality and intrapsychic phenomena. We take as our historical mentors both psychologists Allport and Vernon and Davis Efron (1941), an anthropologist who demonstrated important relationships between movement style and culture. In our research, individual movement style is regarded as a manifestation of culture, gender, social status, age and personality dimensions (to name just the primary factors). In other words, movement style relates to identity in its broadest sense. A thirty-second sequence subjected to microanalysis tells us something important about the person on all of these levels because so many changes are occurring within this brief interval.

How a Movement Signature Analysis is applied depends on the research question. We find that it is particularly useful in the "discovery phrase" of the research. The next example illustrates this. We completed a microanalysis of Mikhail Gorbachev when he was "in top form." Then we asked whether there were significant changes in his movement patterns during and after a crisis, namely during and after the Russian coup attempt of 1991. This becomes an example of the potential for nonverbal assessment of changes in clinical state, particularly in relation to major disturbances in one's life. The Signature assessment becomes the baseline for comparisons over time and context (or perhaps we should say the apex, because the full out, most complex and robust manifestations of style are used for this.)

With each of the men we will discuss, we cannot pretend to be objective in the name of research. We vote for American presidents; we cared deeply what happened to Gorbachev during the coup; and we were glued to CNN during the Gulf War. But the method is based on such detailed analysis, that initial impressions become modified and expanded over time and the most important discoveries emerge when parts of the assessment—in some cases completed separately by different coders—are brought together and we identify patterns we did not anticipate. Also, these men are so important that many hours of analysis of their communications is warranted. In our research on subjects who are not famous, the initial time
spent in microanalysis of selected segments is valuable because it clarifies distinctions and operationalizes patterns so rigorously. Actually, it saves time because it maximizes the clarity and discriminant power of an inventory based on it.

Method

First we completed a Movement Signature Analysis of Mikhail Gorbachev from a segment chosen in what was called the Second Summit press conference, a meeting of President Bush and Gorbachev in the Spring of 1990 in Washington, D.C. Gorbachev was described in the press as in top form, buoyant and assertive, despite his very low ratings and considerable problems back home. At the end of a round of talks, he and President Bush had a joint press conference. The press is fond of describing Gorbachev as the master of the half-hour soundbite. In this press conference, however, he held his answers to under seven minutes. Both men appeared relaxed, in good rapport with each other, and very determined to present a united front. One of the remarkable aspects of this press conference was the way it was televised. Both sat next to each other at a large table that allowed us to see their legs as well as their upper bodies much of the time. One could do a fascinating study of the synchrony and mirroring of positions between them (but be frustrated searching for other meetings with such good camera shots).

For the first 14 minutes they read prepared statements, then they answered questions, most of which were directed at Gorbachev. A scan of his movements revealed that part of his last answer displayed his most complex and animated movement for this session, so we chose this for the Signature Analysis. Once we completed the Signature Analysis to be described, we devised a coding sheet of features derived from it for a comparison of Gorbachev “at his peak” with Gorbachev in crisis. The time interval that we chose to rate with this observation instrument was the shortest session under consideration, the home video of Gorbachev taken by his son-in-law during the coup attempt.

It is our experience that fixed time intervals should be avoided as units for this research. Changes per question and answer or speaking turn are far better. But because we were not doing an analysis of answers, we did not use each Q and A as the behavioral unit to be assessed here. The three events we were to compare varied greatly in length. We took the shortest event—the nine-minute home video of Gorbachev made while he was under arrest—and made that the approximate unit of measurement. This created five units in the Summit Press conference (excluding the reading of their statements) and ten units in the post-coup press conference. The length of the intervals in the longer events were nine minutes (plus or minus one). As much as possible breaks between units were made after answers were complete so as not to cut an answer in two. While these units are not strictly equal in length, they are sufficiently comparable for our purposes.

Gorbachev’s Movement Style

Analyzing Gorbachev’s movement when he is in top form is not unlike analyzing a dance by Mikhail Baryshnikov. Figure 2 shows a very intricate coordination of head, gaze and gesture. Note how he changes his gaze direction with a weight shift and rising and arcing head movement that synchronize with the hand action at the downbeat. (When we described Gorbachev’s intricate coordinations at a conference at the Laban/Bartenieff Institute of Movement Studies in New York, Forrestine Paulay (1991), an expert on cultural study of movement, suggested that such a fine-grained coordination of head, gaze and hand was especially Slavic).
In addition to the subtle coordinations, Gorbachev's movement is striking for the balanced play of right and left. He alternates his attention back and forth over the group in a balanced distribution of head turns. And he may alternate right and left limbs punctuated by bilateral motions in a subtle differentiation of right and left. Sometimes he will end a bilateral sequence by keeping one hand poised while the other returns to rest position. Related to this right-left balancing and differentiation is a tendency to do lateral combinations such as from unilateral to bilateral in one continuous motion, a more complex pattern than unilateral-base position-bilateral in our experience.

Figure 3 is a summary of the number of changes per dimension and represents a movement profile derived from the recording of the 36-second segment. It could be compared with the summaries of Bush and Dukakis in the previous section to get a stronger sense for Gorbachev's style. Note that while Gorbachev has a range of dynamics, he "favors" directness and suddenness in his gestures, strength in his head movements, and his movement is very crisply defined in space.

The Movement Signature recording of Gorbachev was completed in the same way as that of Bush and Dukakis—one observer recorded the segment from hours of viewing and a second checked and corrected it. Once the primary features of his style were identified, we asked how do they change during a crisis. To do this systematically we devised a simplified coding instrument based on the microanalysis. Note that these were coded only for phases of speaking.

1. Presence within the time interval of at least one brief phase of smiling vs no smiling while speaking.
2. A wide, medium or narrow range in gaze direction.
3. Presence of gaze held down for 5+ seconds as he speaks.
4. Range of head movement intensity from diminish intensity, to occasional strong emphasis, to medium degree of strong accents, to a high degree or rapid series of strong head movements.
5. Head movements with a downward stress vs head movements accompanying speech that involved lateral vs downward arcs and/or up and back stress.
6. Trunk shifts that are side-side repetitions vs those that support arm gestures or orientation change vs those that are initiated by head movements.
7. Unilateral to bilateral gesture in continuous phrase.
8. A range of rest positions from open, hands apart palms on table to hands folded or clasping an object to arms half-folded forearm over forearm on the table to arms tightly crossed over his chest.
9. One or more face touch, excluding eyeglass adjusting.
10. Continuous handling of an object such as a pen.

The observer devising this coding completed observations for all three sessions: the five-segment Summit, the one-segment home video, and the ten-segment post-coup press conference. She instructed another trained observer in the coding categories who in turn coded the sessions independently. Note that the task required the observer to characterize the nine-minute segment per dimension, not to record moment to moment changes. For some items (1, 3, 5, 6, 7, 9, 10) this meant any appearance of the feature during the segment. For others (2, 4, 8) it meant coding the most extreme case seen in the segment. It took each observer only two or three viewings of the sessions to complete the coding. Statistical assessment indicated adequate levels of observer agreement (percentage of agreement
ranged from 63-94%, kappa coefficients from .58-.80). However, we need each code to be as accurate as is feasible for a continuous recording. Each disputed code was reviewed until consensus was reached, so that no data were lost because of observer disagreement.

Figure 4 graphs the nonverbal coding and tells the story of the crisis in a vivid way. The emergence of up-back thrusts of the head, the postural shifts led by head actions, and the increased forcefulness of the heads movements appear to us signs of defiance and protest. The change to tightly closed positions seems an effort to support and control himself. In the early part of the post-coup conference, the greatly diminished intensity of head movements, lack of smiling, low number of gesticulations, averted gaze, and continuous manipulation of his pen as he spoke reflects a shaken Gorbachev, more subdued and personal than the comfortably public man holding forth at the Summit.

In this framework the sequence becomes a story of recuperation through resilience and defiance. From these nonverbal signs, Gorbachev appears overwhelmed during the first part of the post-coup meeting, but not during the coup video. In the home video, his head movements alone express the vigor and complexity of his movement style. He appears defiant and indignant. In the second half of the post-coup meeting he rallies. While he does not sustain the Summit movement repertoire through several segments, he displays all of the elements of his former style in bits and pieces. He is not quite back to his former style. The characteristic balances of his repertoire between right and left, bouyancy and vigor, stability and mobility are noticeably off. But he is recouping these patterns very quickly.

Our research on psychiatric in-patients and on out-patients in psychotherapy has focused on the potential of movement analysis to identify changes in clinical state akin to analyses discussed in Horowitz (1987). Often this means study of phases of an interview in which the patient's movement becomes severely disorganized, restricted or exaggerated (Davis 1985, 1991). Gorbachev does not display such signs of motor disturbance. The nosology of psychopathology is not appropriate here (e.g. motorically he does not appear clinically depressed or disorganized by the trauma). Still, we regard this as an assessment of changes in clinical state, broadly defined. He appears to be a very resilient personality, literally thrown off balance by the crisis, who is getting his bearings within hours of being released. The Summit meeting showed how Gorbachev's movement is very highly integrated. This integration persists through the crisis and is to us one of the greatest signs of his personal strength.

When we listened to the audio after the movement analysis, we were particularly struck by Gorbachev's response to the question by a Newsweek correspondent, "How have you changed as a man,...what changes in your behavior may we expect to see?". Up to this point Gorbachev had been quite candid about his experience and what he considered his mistakes, but he quickly evaded this question. While the effects of the crisis are quite visible, one would imagine he needs far more time to reflect on this question than the few hours between the coup attempt and this press conference.
SADDAM HUSSEIN: NONVERBAL CUES TO CREDIBILITY

In the extensive literature on nonverbal communication, there is great interest in the potential for detecting deception from nonverbal behavior (Ekman, 1985; Miller & Burgoon, 1982; Zuckerman, DePaolo & Rosenthal, 1981). While this literature is promising, its application to actual cases—as such as the interview we will discuss—is limited. Much of the research focuses on how accurately observers judge lying, not on the behavioral bases of these judgments. When the research does identify nonverbal behaviors associated with deception, the experimental context is vastly different from actual situations. And the behaviors identified are often so general, it is difficult, if not impossible, to apply them to individual cases.

It is particularly difficult to determine whether someone is lying because there are marked cultural, gender and individual differences in expressive manner. This is why researchers such as Ekman (1985) propose that the best detectors are those who know the speaker’s expressive style and range. But despite references to the importance of baselines and individual differences, methods for determining these are not offered. Much of our research effort has been precisely in this area (Davis, 1985, 1991)—defining the person’s nonverbal repertoire, establishing baselines and ranges, and identifying exactly how the individual performs the various conventions of gesticulating, head movements, gaze behavior, fidgeting, etc., in order to accurately track changes by question and answer. The method originated in studies of psychiatric interviews (Davis, 1985; Davis & Hadiks, 1990); was extended to analyses of interviews of political leaders (Davis, Dulicai & Hadiks, in preparation); and has recently been adapted to forensic interviews of violent offenders.

Often research on nonverbal cues to deception identify signs of discomfort and/or inhibition. For example, when an experimental subject is known to be lying he may be observed to decrease gesticulating (Zuckerman, DePaolo & Rosenthal, 1981, p.10). However, people decrease gesticulating under many different conditions; it is a rather general sign, and in some contexts may even be associated with becoming more relaxed. The problem remains whether signs of stress specific to lying or obfuscation can be distinguished from signs of stress having other sources. The method to be illustrated here is based on the assumption that because nonverbal behavior is so complex and multidimensional, an individual is likely to display a range of stress signs that by their intrinsic character and form indicate something about the source of the stress. In research now in progress we are examining the premise that certain nonverbal patterns—defined relative to the individual’s movement style and range—will indicate evasion or lying and can be distinguished from signs of conflict having other bases such as anger at being accused, newness of the context, etc.

Although we cannot test formal hypotheses with a single case, we can illustrate the assumptions and analytic procedures that form the basis of our research to contribute to the dialogue on this rapidly developing research area. The following assumptions pertain to real interviews where the stakes are high and opinions and actions of the individual are specifically questioned (e.g., interviews of political candidates or interrogations of criminal suspects).

If the question/topic is a sensitive and important one (as opposed to trivial, commonly known or didactic), then the following patterns are posited:

1) Low intensity gesticulations with little body activation will accompany "pre-digested", "rhetorical" answers or "party lines".

2) Intense gesticulations with large limb or total body activation will indicate issues most personally and immediately engaging to the subject.
3) Signs of stress that vary by Q and A and that are "more autonomic" and "inadvertent" (such as increases in eyeblink rate or split second darting glances) will indicate mcmentary stress over the topic/question.

4) Signs of stress that have an aversive/negative character such as vigorous nosewipes or sudden, retracting gestures performed with the subject's answer suggest qualification or compromise of the answer as well as discomfort with the topic.

5) Signs of stress or gesture/position states that convey a bravado or "best-defense-is-a-good-offense" character such as grins with elaborate clothes preening or large, "overblown" gesticulations lacking dynamic intensity are likely to accompany evasion or refusal to give specific information.

6) While there are no specific and universal actions that signal "now I am lying", there may be specific, individual patterns that signal "now this individual" is lying or seriously distorting his or her answers. These cues are specific actions or mannerisms within the distinctive movement repertoire, with particular attention to aversive or repetitive self-touch behaviors.

7) Another sign of lying or obfuscation is "the constraint of calculation" that may be visible when one formulates an answer that is not truthful. This must be determined relative to the individual's range of motion. It may be as subtle as an increase in the tension of common hand tosses.

Of course, the way to confirm these assumptions is by accurate prediction of a) their occurrence during lies/obfuscations that can be independently confirmed, and b) their non-occurrence during answers that are known to be absent of lies or evasions. However, there are rules that increase the possibility of identifying and validating nonverbal signs of deception. As emphasized, they must be assessed relative to the individual's nonverbal style. Secondly, the behaviors must vary by Q and A. Constant features or patterns that pervade the interview—while they may indicate stress and even deception—cannot be subjected to the comparative analysis of responses that allows for discriminating types of stress signs.

Thirdly, certain patterns may vary according to the conventions of dialogue and turn-taking, not specific topic or question, and so need to be excluded. In the example to be described, Hussein displayed phases of rapid eyeblinking. Closer analysis revealed that these occurred when he stopped to listen, irrespective of the topic. For another example, Hussein's position shifts primarily occurred at changes in topic (see Figure 5), and so appeared related to structural aspects of the interaction, not credibility. Fourth, the nonverbal analysis must be done without sound—hearing the dialogue skews and influences perceptions of the movement and casts doubt on the independence of the observations. Once the nonverbal behaviors are delineated and recorded, they can be compared with verbal responses that have been independently assessed as to topic, specificity of information, seriousness of subject, etc. In this final stage, prediction of whether a specific form of nonverbal behavior is the way that individual cues lying is based on its intrinsic character (see list of seven hypotheses above) and whether it occurs only with certain specific, sensitive topics or types of answers.

Method

We examined Saddam Hussein's nonverbal behavior during his interview with Peter Arnett in the second week of the Gulf War. The interview lasted one and a half hours and was broadcast by Cable News Network to 124 countries. The camera usually focused on Hussein in a medium shot that made his gestures visible. The time in seconds and minutes was superimposed on the research copy.
NONVEREAL ANALYSIS: Three experienced movement analysts working independently completed the nonverbal coding as adapted from the Nonverbal Interaction and States Analysis (NISA) method of Davis (1991). This is a systematic method for recording onset and variation in sitting positions and orientation, gaze direction, specific actions such as types of self touch, and characteristics of gesticulations. The coding is tailored to the individual through operationalizing each category from initial views of the videotape. All movement analysis is done without sound.

For Huszen, the following behaviors were identified and recorded according to onset time and duration to the second: face wiping, clothes preening, bilateral palming, looks toward aids, darting looks toward the camera, and facial expression in terms of no smile, slight smile, and broad smile or laughing. In addition four gesticulation types were identified:

A-states ("pro forma"): low level of spatial complexity, no dynamic intensity, typically arcs back and forth in one plane.

B-states ("overblown"): extensive and spatially elaborate gesticulation without dynamic intensity, giving it a hollow character.

E-states ("medium intensity"): illustrative or baton-like motions of the forearm probably related to the emphasis pattern of his speech that were of medium spatial complexity with strong and/or quick accents.

Peak-states: the most complex gestures he displayed, they involved the whole body, the most extensive spatial range and strong and/or quick emphasis patterns.

Reliabilities were calculated, and only categories that exceeded reliability coefficients of .70, Cohen’s (1960) kappas of .45, or percentage agreement of .66 were used in the analyses. Reliability coefficients were calculated for those categories that involved counting frequencies (e.g., looks to aides, darts toward camera). Pearson r’s ranged from .71 to .93. Percentage agreement between the two raters was calculated for those categories that occurred infrequently (e.g., positions shifts, clothes preen). These ranged from 67% to 94%. Finally, Cohen’s (1960) kappas were calculated for categories that were measured on nominal scales (e.g., spatial complexity, limb unit). These ranged from .49 to .82. Once the coding was completed and the reliability of a feature was determined to be adequate, disagreements or specific codes for that feature were resolved by consensus so that all the data could be used. Statistical criteria for reliability are actually not strict enough for what must be continuous recordings that are as accurate as possible. The second check to insure no loss of data becomes an additional quality control.

Of course, for such complex coding, we have had to put a great deal of effort into reliability studies (Davis & Hadikis, 1987, 1990), and these have proved to support the contention that even fairly subtle details of movement can be reliably coded. But because multivariable coding by several trained observers is time-consuming and expensive, we are currently working with a computer expert to adapt video image analysis software to perform the simpler coding tasks and leave the more difficult observations to trained observers.

VERBAL ANALYSIS: A verbal transcript was made from the videotape and a separate team of 3 researchers worked on the verbal analysis. Twelve content themes were identified. The unit of analysis was an utterance bounded by translations or Arnett questions. Reliabilities for the verbal analysis yielded a kappa of .78 and a percentage agreement of 82%. Twelve verbal themes were identified: Islamic loyalty, immoral Allied aggression, Gulf Allied tactics,
Iraqi tactics, appeal to Western people, references to President Bush, warnings of bloodshed, Iraqi resolve, morality of Iraqi stand, references to Israel, hypocrisy of the Alliance, and miscalculation of the Alliance. See Figure 5 for when certain of these themes occurred.

Results

Throughout the interview, Hussein sat in a wide, open body position, back against the chair, legs apart, feet flat on the floor. His torso was still for long periods with occasional tilts right, left or into an upright position, the forearms down on the chair arms or his head leaning on one raised hand. He did not appear to fidget very much and he never did anything markedly hostile, menacing or agitated. Superficially, he appeared the confident, dignified, and in-command head of state.

Hussein sat facing Arnett throughout without pivoting. He looked directly at Arnett most of the time, but he also frequently looked right to his translator or left to where his aides were standing off camera. Slow motion analysis also revealed that Hussein made darting glances at the camera to his left. On rare occasions, Hussein could be seen making a distinctive wiping action of his lip or cheek done with a light, controlled motion. He also displayed some clothes preening--adjusting his jacket several times and once elaborately fixing his tie. His gesticulations were generally characterized by a low level of spatial complexity and little variation in intensity or dynamics. Even the exceptions—the E-, B-, and Peak-state gestures—were relatively low in occurrence. One important aspect of his gesticulation was a frequent tendency to segment the gesture, perceptibly stopping between changes in direction.

Given this repertoire, what aspects of it help in an assessment of the credibility of his responses. To examine this we distinguish gesture states and types of stress. Although we did not listen to the sound to do this, we did visually parse the behavior by Q and A. As stated earlier, we have to do a contrastive analysis to distinguish those features that vary by response from those that are constant or vary by turn-taking structure. The specific stress signs that fluctuated by Q and A appeared to be:

1) bursts of darting glances at the camera
2) clusters of looking toward his aides
3) increases in gesture segmentation
4) broad smiling or chuckling
5) preening behaviors
6) face stroking

To this are added the variations in gesticulation states. In this model, if Hussein’s answers addressed specific, sensitive information or issues, those accompanied by the third and fourth gesture states (E and Peak) would be the most credible, while the first and second (A and B) would indicate evasion or obfuscation. Hussein displayed a fifth gesture/position state—little or no gesticulating while he assumed an upright position and brought his elbows tight to his sides. This, we would hypothesize, is one way he indicates calculated responses beyond evasion and into intentional lying.

Speech-Motion Analysis

When the nonverbal analysis is complete, the speech is compared with it. In this interview shifts in position tilt and/or gesticulation type defined 16 distinct intervals, many of which we found were preceded by Arnett questions or change of topic (see Figure 5). A more complete presentation of this interval analysis is in Davis, Dulicai & Hadiks (submitted for
publication). When the nonverbal patterns could be examined with the speech themes, several striking patterns emerged that lent support to the assumptions listed earlier.

First, the occurrence of periods of A-state gestures (strings lasting 30 seconds to several minutes) accompanied verbal themes that were most rhetorical (e.g. Islamic loyalty, immoral Allied aggression, morality of Iraqi stand). Particularly in the first quarter, Hussein stayed in this "rhetorical" stance for long periods. We have seen political leaders do this with repetitions of movements with little intensity, complexity, body involvement—as if going through the motions while reciting party lines that are much practiced, and Hussein seems no exception here.

In contrast are the periods in which he displays strings of Peak with B-state gestures. During these periods he is his most animated and physically active (although relative to many world leaders he might seem quite "subdued" nonetheless). The verbal theme most closely associated with these features is reference to George Bush himself. Of the 11 postural shifts in the session, 6 occur when he referred to Bush, and 7 of the 13 peak gesture phrases accompany remarks about Bush, even though explicit references to Bush occupy less than 7% of Hussein's speech. Notice particularly the string of Peaks, B-state gestures and postural shifts in interval 10 which is devoted to Bush. He is clearly preoccupied with the President and seems to bear a grudge with him that is distinct from conflicts with Israel or the other members of the Gulf Alliance. This is a very personalized fight and when he criticizes and accuses President Bush, he rises to the arguments with relish. Examining gesture states allows us to examine "levels" of credibility, not just truthfulness or lying. For example, the rhetorical, A-state responses are least "convincing," while the Peak-state/postural shift pattern suggests he is most invested in his preoccupation with President Bush.

We must emphasize that this analysis is not based on impressions. In fact some of the patterns were not detected until the end of many hours of coding in which different aspects were done by different pairs of observers. For example, we realized that Hussein had a specific set of E-state gestures with his discussion of Israel—the only left arm, vertical jabs up and down displayed in the interview. They were a curiously tense, restrained form of emphasis. We also realized that the only time Hussein sat up and held arms close to his sides with gestures restricted was when he discussed the Iraqi planes that flew to Iran and said, "in all circumstances we respect the decision and the regulations of Iran." This nonverbal behavior appears to be Hussein's way of displaying the constraint that can accompany calculation and indicates that this is his least credible assertion.

When the speech-motion analysis was finished and the stream of behavior graphed as in Figure 5, we realized that Hussein had distinctive movement patterns for his three archenemies: Peak and B-state gestures for Bush; left forearm, vertical "E-states" for Israel, and constricted gesticulation and position for Iran.

Hussein made it clear that he would not divulge anything of specific strategic import. In this sense he evaded Arnett's requests for specific information quite openly. Nonverbally, he maintained a steady stream of rhetorical responses, serious or slightly smiling facial expression, and A-state gestures, and in 20 of 25 questions, his immediate remarks were made with A-state gestures. Still, signs of stress as well as levels of credibility could be differentiated within the political rhetoric.

One notable exception to the sober, A-state responses was a rare direct refusal to answer a question about damage to Iraqi nuclear power plants, refused with a broad grin that turned to chuckling (see Interval 14). Broad grinning and full body shifts accompanied a discussion of the Iraqi decision to release foreign hostages (see Interval 9, Figure 5). Hussein evaded the question of whether Iraq had chemical warheads by discussing the correct name for Iraqi missiles with broad grins and chuckles (see Interval 13). Hussein sometimes
responded to tough questions with broad grins, measured position shifts and clothes preening (e.g., using PCW pilots as human shields, Interval 3). While all of the topics were serious and tough, the ones accompanied by broad grinning and face stroking, preening and/or full body shifts appeared to stress him particularly. These behaviors were not frequent and their contiguity with each other and with very loaded questions supports the assumption that they are stress signs. The verbal remarks also support the "bravado" cast to the preening, broad smiling, and chuckling (e.g., "did you know these facts [name of missile]" or "how can you describe [Iraq as] a dictatorship [and expect strategic information to be divulged]").

The verbal remarks accompanying the two most rapid strings of serious looks towards his aides suggest that "flurries" of aides looks is an important stress sign. One string occurred in Interval 8 after Arnett asked if there was still time for dialogue and Hussein replied "not with President Bush, not with tyrants." The second occurred in Interval 11 after a question of how long he thought the war would last which Hussein evaded for some time, referring to "fickle politicians who deceive you" followed by a series of unclear sentence fragments. A "flurry" (6 in 20 seconds) of darting glances at the camera occurred after the more bravado reaction to the question of detaining foreigners in Interval 9. These flurries of pressured looks seem to belie the bravado of the grins and preening, and appear to be the nonverbal stress cues that are most difficult to control or manage.

Despite the stress signs that emerge from the microanalysis, Hussein's command of the interview and his visible relish of the process is notable. He appears confident and self-assured on the basis of the still, open positions, ready initiation of actions, relative absence of fidgeting, and smiling glances to his aides after many answers. While he can act almost prankish and joking, he works hard to present a controlled, presidential image. Still this considerable display of ease and authority contrasts with the flurries of furtive glancing at the camera or at his aides, the bodily constriction in certain passages, and a recurring, if subtle, aspect of his gesticulations: segmentation. The arc-like sweeps of open hands are often done with perceptible pauses between changes in direction, a subtle and potentially important sign of disruption in the fluency and ease of his expressive manner. Segmentation has been seen in individuals in acute states of stress, such as in Richard Nixon's movement during the days before his resignation, or in adults whose mental state is fragile (Davis 1991). Not surprisingly, two of the three intervals with the lowest segmentation are dominated by strings of Peak and B-State gestures (Intervals 10 and 16), and B-state gestures seem the most fluent and least segmented of the four types. To the extent that segmentation is a form of incipient disorganization, it is striking that he counters it best with overblown, hollow gesticulation.

Finally, a note on the comparison of Hussein and Hitler that occurred during the Kuwaiti crisis. After doing this microanalysis of Hussein, it was difficult to understand this comparison. We have done an equally detailed analysis of Hitler's movement (Davis & Dulical, 1992), and we can identify in both men the trappings of power and domination. But Hussein does not visibly display the degree of unmitigated destructiveness and imperviousness to others that is visible in micro-details of Hitler's movement. Our nonverbal analyses of Hussein seems more consonant with Peter Arnett's characterization of him as something of a conman who has a relationship to working class Iraqis that is closer to Castro and his support from working class Cubans than it is to Ceausescu's terrorizing of Rumanians (Arnett, 1991).

In one sense the nonverbal analysis generates evidence that Hussein's verbal assertions of concern for the potential carnage of the war are unconvincing, as is his professed confidence in the outcome. There are nonverbal signs that Hussein is under far greater stress than his remarks indicate. Perhaps most notable are the nonverbal signs that Hussein is highly responsive and related to the actions of President Bush during this period. One interpretation of our data is that despite Hussein's seeming intractability, President Bush himself has a considerable amount of personal leverage with Hussein at this time.
Acknowledgment: We are grateful for the consultation with Peter Arnett that clarified questions about the interview.

REFERENCES


*Newsweek*, (Nov. 21, 1988). The inside story of Campaign '88, Election Special Issue.


Figure 1: Movement Signature Comparison of Bush and Dukakis

<table>
<thead>
<tr>
<th>Category</th>
<th>Dukakis</th>
<th>Bush</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facial Expression</td>
<td>No change from &quot;neutral/serious&quot;</td>
<td>Several &quot;slight&quot; FEs: worried, near-smile, serious, stern</td>
</tr>
<tr>
<td>2. Gaze Direction</td>
<td>All at camera but brief toward, not at Bush</td>
<td>Several: at floor, Dukakis, panelist, audience</td>
</tr>
<tr>
<td>3. Head Movement</td>
<td>Up-down with speech, rare turn with gaze direction</td>
<td>Head moves mainly serve gaze direction, occsional down accent, shake &quot;no&quot;, or tilt</td>
</tr>
<tr>
<td>4. Trunk Orientation</td>
<td>Frontal throughout segment</td>
<td>Frontal throughout</td>
</tr>
<tr>
<td>5. Weight Shifts</td>
<td>No shifts of weight on feet</td>
<td>WSS at phrase starts, ends</td>
</tr>
<tr>
<td>6. Position:</td>
<td>Homebase; arms symmetric, left hand over right on lectern</td>
<td>Postural at start, trunk frontal, one unit</td>
</tr>
<tr>
<td>7. Gesticulation</td>
<td>Batons throughout, rare indicator, wave or kinetograph is mixed with baton characteristics</td>
<td>Homebase varied: arms wide and symmetric, hands on lectern rim or hands together on lectern</td>
</tr>
<tr>
<td>Type</td>
<td>Right forearm/hand as unit; secondary bilateral forearm/hand as unit, no whole arm activation with elbow away from side; no isolated hand gestures</td>
<td>Variety: tosses, batons, indicators, physiographs which have symbolic element e.g. &quot;smoothing out&quot; motion</td>
</tr>
<tr>
<td>Limb Unit</td>
<td>Fists, hand flat with fingers close together, near-fist with thumb under forefinger (of flicking)</td>
<td>Primarily whole arm active, left uni- or bilateral; some left forearm gestures and left hand articulation at end of whole arm actions</td>
</tr>
<tr>
<td>8. Hand Configuration</td>
<td>Some thumb-pointing and finger-pointing, some hand flat, palm facing down or inward</td>
<td>Series of directions: sideways, forward, backward, up and down, down-side diagonals; about 25 changes in direction</td>
</tr>
<tr>
<td>9. Direction</td>
<td>Almost all vertical up and down throughout, rare sideward, over fifty changes in direction</td>
<td>Some full extensions to sides</td>
</tr>
<tr>
<td>10. Reach Space</td>
<td>Medium reach, elbows stay close to sides</td>
<td>Straight and arced paths, angular or simple reversal transitions</td>
</tr>
<tr>
<td>11. Path Type</td>
<td>All straight path but one arc, all simple reversal</td>
<td>All directional in variety of planes, no shaping</td>
</tr>
<tr>
<td>12. Spatial Quality</td>
<td>All directional projecting in vertical dimension, no 3-dimensional shaping</td>
<td>Effort qualities rare or emergent, only two moments of definite qualities, one direct, one strong</td>
</tr>
<tr>
<td>13. Dynamic Intensity</td>
<td>Various combinations of strong, sudden, direct often with bound to very bound flow</td>
<td>Gesture units may be interrupted midway without abruptness</td>
</tr>
<tr>
<td>Additional Patterns</td>
<td>Batons are short and build in intensity; bilateral ones become the most intense, ending very small, cramped</td>
<td>Repetition of up-down moves for emphasis is done with strain; only strong move is very small and cramped. Gestures are performed with a smooth, even quality but compared to variety of directions, emphasis and dynamics are notably sparse.</td>
</tr>
<tr>
<td></td>
<td>May begin baton with move up that is held momentarily</td>
<td>In contrast to above he may point a thumb and/or jerk his head toward Dukakis with vigor and without looking at him</td>
</tr>
<tr>
<td></td>
<td>Head moves, some very small, are downward stress synched with baton downward strokes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bilateral hand gestures may be performed with right more closed than left</td>
<td></td>
</tr>
</tbody>
</table>

*Analysis based on 32* segment of Dukakis and 30* segment of Bush

Adapted from Davis & Dulicai (in press)
Figure 2: Three second segment of Gorbachev Movement Recording*

<table>
<thead>
<tr>
<th></th>
<th>28</th>
<th>29</th>
<th>30</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAZE DIRECTION</td>
<td>🠅</td>
<td>🠆</td>
<td>looks towards Audience to his Left; then to Left Front</td>
<td></td>
</tr>
<tr>
<td>HEAD MOVES</td>
<td>🠈</td>
<td>🠇</td>
<td>🠇</td>
<td>🠇</td>
</tr>
<tr>
<td>TRUNK ORIENTATION</td>
<td>🠅</td>
<td>🠆</td>
<td>trunk accompanies changes in Gaze Direction facing Left/Audience then Front</td>
<td></td>
</tr>
<tr>
<td>WEIGHT SHIFTS</td>
<td>🠅</td>
<td>🠐</td>
<td>the total body shift follows the arc of the head movement; slight shift back is transition to gestu</td>
<td></td>
</tr>
<tr>
<td>REST POSITIONS</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**GESTURE TYPE/UNIT**

the arms make a small outward movement in preparation for a gesture.

**PALM FACING**

one hand faces down while the other stays poised; later both palms face medially

**DIRECTION**

*Facial expression, reach space, dynamic intensity and spatial form are not included as these did not change in this passage.*
Figure 3: Gorbachev Movement Summary*

1. Facial Expression--Primarily neutral, brief slight smile, 1 pursed-lips action
2. Gaze Direction--Evenly divided alternations right and left over wide range
3. Head Movement--Primarily supports gaze direction or has downward emphasis. Some vigorous accents.
4. Trunk Orientation--Seven shifts in 36 seconds
5. Weight Shift--Side-side weight shifts mark speech junctures; some postural shifts support arm gesture or orientation change. Trunk is one frontal unit.
7. Gesticulation--Variety of waves, batons and emblems. Primarily forearm and uni-lateral with some whole arm and bi-lateral actions.
8. Hand Configuration--Flat hands, palms facing.
9. Direction--Wide variety with emphasis on vertical and downwards. 28 changes in direction in 36 seconds.
10. Reach Space--Some full forward and high to the sides
11. Path type--Three to one ratio of straight to arc
12. Directional/shaping--The directional phases are primarily vertical; the three-dimensional shaping phases are in three planes.
13. Dynamic intensity--Combinations of strong, direct and/or quick with occasional light accents.

Special Patterns
Preparatory/hold--Starts gesture with a precise motion than is then held.
Subtle Body Transitioning--Distinct sequences of body units, head movements or torso shifts are sometimes transitions between arm gestures.
Head leading--Sometimes initiates gesticulation sequence with head-gaze direction change.
Right/left balance and differentiation--Upper limbs may alternate back and forth or differentiate with the hand held up & one placed down during pauses.

*Based on 36 second movement segment.
### Figure 4: Nonverbal changes from Summit to Post-Coup Conference

| SUMMIT A | B | C | D | E | POST-COUP A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SMILING | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| **GAZE RANGE** | | | | | | | | | | | | | | | |
| HEAD INTENSITY | 1 | 2 | 2 | 2 | 3 | 3 | 0 | 3 | 2 | 1 | 3 | 3 | 2 | 3 | 3 | 3 |
| HEAD DIRECTION | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| WEIGHT SHIFTS | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← | ← |
| GESTURE COMPLEXITY | 3 | 2 | 3 | 3 | 3 | 0 | 1 | 2 | 1 | 1 | 3 | 1 | 3 | 2 | 3 | 2 |
| REST POSITION | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| **FACE/OBJECT TOUCH** | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |

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**KEY:** Letters A-J refer to intervals of approximately 9 minutes, the length of the Coup Video

* = at least one phase of smiling during speaking

| = wide gaze range | | = medium range | | = frontal

| = holds head/gaze down for 5 or more seconds as speaks

0 = very diminished 1 = downward stress without marked strength

2 = some strong head moves 3 = high degree of strong head moves

| = emphasis down/vertical | | = some arc-to-down emphasis

\( V \) = some emphasis lateral, or up-back

0 = side to side # = head leads weight shift

/\ = weight supports arm gesture

0 = no gesticulation 1 = few short and/or two-phasic gestures

2 = gesticulations of medium range and complexity

3 = greater extensiveness and/or more complex laterality

() = hands apart, palms on table () = arms tightly folded

(x) = hands folded or touching (=) = forearms crossed

F = touches face during speaking turn (does not include glasses)

obj = continuous fidgeting with object, usually pen
Figure 5: Coding and Interval Diagram of Hussein Interview

Speech Key:
- $\mathcal{A}$ = Amnet speaking
- $\mathcal{I}$ = Hussein speaking
- IRAN = Iran as fellow Arab country
- HUMAN SHIELDS = Response to ? on Human Shields
- BUSH = President Bush Primary Subject
- ISRAEL = Israel subject of entire interval
- FOREIGN HOSTAGES = Iraq releases; war anyway
- IRAQI VALOR = Anti-aircraft Resistance
- NUCLEAR FACILITIES = ? on damage to them

Face Key:
- $|$ = Serious
- $\mathcal{M}$ = Slight or difficult
to judge Smile
- $\mathcal{B}$ = Broad Smile
- $\mathcal{L}$ = Laughing

Gesture Key:
- $\mathcal{N}$ = None with speech
- $\mathcal{A}$ = A-Stage gestures
- $\mathcal{B}$ = B-Stage (B) = short B
- $\mathcal{E}$ = E-Stage (E) = short E
- $\mathcal{P}$ = Peak gestures

Position Key:
- $\mathcal{T}$ = lean to his right
- $\mathcal{?}$ = lean to his left
- $\mathcal{U}$ = upright and centered
- (UL) $\mathcal{?}$ = upright and slightly left
- (UR) $\mathcal{?}$ = upright and slightly right

Not Shown: forearm position changes

Legend:
- $\mathcal{D}$ = Dot
- $\mathcal{C}$ = Circle
- $\mathcal{X}$ = Cross
- $\mathcal{O}$ = Oval
- $\mathcal{F}$ = Vertical line
- $\mathcal{H}$ = Horizonal line
- $\mathcal{P}$ = Upward line
- $\mathcal{V}$ = Diagonal line

Time intervals:
- 1:00 PM - 1:30 PM
- 1:30 PM - 2:00 PM
- 2:00 PM - 2:30 PM
- 2:30 PM - 3:00 PM

Hussein discussed various topics during his interview, including his response to a question about human shields, his views on Iraqi valor, and his stance on chemical warheads and nuclear facilities.

During the interview, Hussein expressed serious and slight or difficult facial expressions, and he leaned occasionally to his right. The diagram also shows a peak gesture at a certain point, indicating a significant change in his behavior or speech.