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Abstract

Lutz and Miller discuss how varying media exposure and interpersonal communication patterns might influence the transmission of information from the media to citizens. The authors detail a content analysis data collection scheme that would allow researchers to focus on the connection between media content and (1) agenda setting (2) perceptions of candidate qualities and (3) interpersonal communications. The paper also provides a preliminary assessment of the authors' machine content analysis coding system, based on its performance in analyzing network news coverage of the 1976 presidential debate. Lutz and Miller find that the machine output is very similar to the hand coded content analysis performed by Center for Political Studies staff. The authors therefore suggest using the machine coding system to monitor the media during the 1980 presidential campaign.

Media Monitoring and Political Cognitions:
A Feasibility Study Report

by

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The Survey Research Center/Center for Political Studies presidential election surveys conducted during the past quarter century have focused entirely on the respondent's perception as a description of political reality.¹ Although this approach is important for an individual level, psychological model of voting behavior it ignores the important role of the media and mass communications in the political process. Virtually all political experience is mediated, therefore, in theory mass communications provides a crucial link between government and citizens.

Determining the extent to which mass communications shape and give meaning to individual **cognitions** of politics is the general purpose of the media monitoring project described below. A more specific goal of this **memo** is to provide a preliminary report on the feasibility of employing machine content coding as a method for monitoring the media during the 1980 presidential campaign. Before turning to a discussion of the **feasibility** study, it would be useful to briefly specify some of the conceptual and substantive themes motivating our investigation of media content.

Substantive Themes

The 1980 election study provides an opportunity for testing many of the hypotheses surrounding the impact of campaigns and the role of the media in mass attitude formation and change--provided that it is accompanied by a systematic effort at monitoring news media content. In fact,

the utility of media monitoring in conjunction with the 1980 study extends well beyond the specific goal of assessing the role of the mass media in the process of political attitude formation. It is at the same time a **practical** strategy for measuring the quality and quantity of stimulus flows originating from the political "environment?--an important element in any model designed to explain the public's cognitive and affective response to specific primaries and the general campaign. In this sense, media monitoring can serve to generate a precise, operational chronology of the 1980 campaign.

More importantly, the media content data we expect **to** gather will provide a critical independent variable needed to answer substantive questions about the development of political **cognitions**. It is widely believed that the media greatly influence the candidate selection process by affecting both the public's reaction to the issues of the campaign and evaluation of the candidates' performance during the primaries. Having media content data 'respondents acquire about each candidate and the issues discussed as part **of** the campaign? To what extent are perceptions of candidates and issues structured by broad political orientations, group interests, personal experience, or more specifically, the information presented in the mass media? Are connections of particular candidates with personal qualities (e.g., Carter as a model of integrity), issue positions (e.g., Carter opposed to tax reductions), or group interests (**e.g., Carter as the** candidate of the poor), which appear in the media reflected in the political thinking of survey respondents?

How do varying media exposure and interpersonal communication patterns influence the transmission of information from medium to citizen?

Generally these questions suggest three substantive themes that focus on the connection between media content and (1) agenda setting (2) perceptions of candidate qualities, (3) interpersonal communication. Each of these themes is discussed further below.

Agenda-Setting

Turning to the agenda-setting theme, there are at least two distinct concerns to be pursued with the grid of media content monitoring. First, **it** is generally assumed that changes in issue emphasis by the mass media are a (the major source of denying mass public issue priorities over time, subject to contingent conditions representing differential issue sensitivity of the audience. However, it is less clear whether "emphasis" should be reflected by the sheer frequency of references to various issues in the news media, or whether the specific context of news items themselves introduces further contingencies on the media side, in terms of 'salience symbols (if group relevance or involvement), actor linkages (e.g. the President) or topical associations (e.g. inflation in terms of government spending or wage/price controls). **It** is through exploring alternative hypotheses such as these that more can be learned about the nature of the process which links news media content to mass public responses. Therefore, our content analysis scheme is designed to allow virtually unlimited flexibility for coding and analyzing contingencies of occurrence in the stream of news media content, with respect to any of the reference categories incorporated in our dictionary.

Second, it is sometimes suggested that temporal patterns of media coverage are as important characteristics of agenda-setting effects, analogous to the differential effects of constant vs. variable-reinforcement schedules in conditioning. The particularities associated with highly concentrated, **transcient** ("dramatic") event coverage, as opposed to the **cummulative** effects of continuous, flexible ("business-vs-usual") drafts in perennial issue coverage, whether constant or intermittent, are a potentially important characteristic of news media reporting and its impact on the public. Therefore, our media monitoring scheme allows the flexibility of defining and analyzing content categories and/or contingencies at any desired level of analysis, from the sentence upward (story, day, source, etc) and for any desired subset of content units (candidate references, actor conflict, dramatizing language, etc).

Ultimately, of course, the benefits to be derived from "higher-order" specifications of content contingencies or aggregations are circumscribed in an essential way by the validity and reliability of the "lower-order" content categories which provide the fundamental building blocks of our salience. These are the so-called content "tags" (variables), operationally defined by our General Inquirer dictionary in terms of word and phrase occurrences (as indicators to be search in the text). Our present test dictionary contains approximately 4000 entries which serve to define 94 content variables (20 actors, 50 Appendix issues, and a set of ancillary variables). An initial test of performance involved a comparison of TV network news coverage of the 1976 presidential debates-once content-coded manually by CPS coders from transcripts of the audio track of the TV news stories, once content-coded automatically by our General Inquirer program and dictionary from the text of Vanderbilt TV Abstracts of the **corresponding news stories**.

Specifically, we were able to map the major issue categories from the hand-coded CPS data into issue tags (or sets of tags) employed in our machine-coding in order to compare relative issue occurrence frequencies in the coverage of the debates as a first step. The results are summarized in Table 1, where CPS percentages are based on original story units (paragraphs) and GI percentages are based on TV Abstract sentences.

On the whole, the two issue profiles are seen to be quite close, with two major exceptions which are easily explained by the incomplete state of our test dictionary:

1) our over-reports of economic issues and "other" domestic issue references are due to a pair of freak accidents (the word "notes" is a standard, high-frequency item in the language of the Vanderbilt TV Abstracts, yet it was originally coded as an "economy" reference in our dictionary; and the word "boycott" happens to be coded as an indicator of protest behavior, yet the news reports included an abundance of statements about US business involvement in the Arab boycott of Israel and publicreactions*thereto;

2) our under-reports of Eastern Europe references (Ford's statement about Poland) and of candidate personality references are simply due to the fact that none of the words denoting Eastern European nations and none of the relevant personal attribute terms were as yet included in our dictionary.

These "new marginal8 are merely the starting point for subsequent, more complex and time-tuned content analytic inquiries, as suggested by some of the results discussed below; however, the "raw" frequencies are important in their own right, least any of the more sophisticated

constructions stand in feet of clay. Of course, for present purposes we have treated the hand-coded data as our reference standard, which is not always justified (e.g., the higher frequency of group references in the GI data is probably more accurate than the lesser percentage in the CPS data).

Candidate Qualities

Political figures, whether they are candidates, cabinet members, elected officials or the heads of major lobby groups are important actors in the political process. The public learns about these political actors through the news. One important question regarding the content of the news, therefore, is the frequency with which various political officials appear in the news and in what context. Simply knowing the relative frequency of appearance of various political **candidates is, for example,** an important piece of information for assessing the public salience of each candidate. See the content coding tag definitions in the Appendix for a description of the various political actors included in the coding scheme.

An even more important question addresses the extent to which the media conveys associations between different candidates or political figures **and social** issues. The content coding scheme we have developed will allow us to determine the extent to which particular actors talk about specific issues. **FUrthermore,** on those issues where it is possible to access directionality, e.g., pro or anti-abortion, we will be able to measure the issue position taken by particular actors. Thereby providing data that could potentially explain how the public comes to link candidates and issues.

Information the media provides in describing the candidates may also influence public perceptions of the **qualifications**, abilities and personalities of the candidates. The coding scheme will, therefore, attempt to measure candidate attributes or images by focusing on media references to personality, leadership, honesty and competence. Here the coding scheme is designed to search for and count the occurrence of words that convey particular types of candidate images.

The degree of apparent conflict between various political actors may also have a significant impact on public perceptions and attitudes. The extent to which prior partisan predispositions may influence the perception of intra-party conflict, for example, is a particularly interesting question which cries out for content data. Our coding scheme and content analysis will address this topic by measuring the degree of **agreement** and disagreement between political actors.

Thus far the feasibility study has proceeded primarily to an investigation of candidate-candidate associations and inter-candidate *conflict. We have yet to complete the definitions of those code tags which refer to candidate personality, honesty, leadership and competence. Thus Table 1 showed considerable discrepancy between the hand and machine coding for these dimensions.

The preliminary analysis is quite promising, however, where the **concern** is with the joint occurrence or conflict between actors.. Table 2 presents **a summary** of the two methods. The lower half of the table shows a close approximation of the machine coded to the hand coded when one simply looks at comments that one candidate made about the other. Both approaches show Carter talking more (approximately 2 to 1) about Ford

than vice versa. When conflict between candidates is the topic of interest (upper part of Table 2) the fit between the two methods is not quite as good. Nevertheless, both methods show a greater frequency of statements in which Carter was critical of Ford, or in conflict with Ford -than statements which had Ford criticizing Carter. Given the greater complexity of this type of comparison the data from the two different methods appear quite similar.

It should be noted that the comparison being made in Table 2 requires that statements meet a rather complex set of conditions. Thus demonstrating the power of the machine coding to fit with what we would consider very complicated coding rules. The machine coding manages this through the use of the associate and dissociate **tags**, combined with the **appropriate** actor tags.

In brief, despite some obvious discrepancies between the two approaches we are extremely satisfied with the preliminary results.

Table 1: Comparison of Machine and Hand Coded Content From Television Coverage of the 1976 Presidential Debates

<u>Topic'</u>	HAND CODED			MACHINE CODED		
	ALL	<u>FORD</u> ^a	<u>CARTER</u>	ALL	<u>FORD</u> ^a	<u>CARTER</u> ^a
Foreign Issues	13%	16%	11%	12.8%	28	22
Economy	5%	4%	9%	9.0%	35	22
East Europe	9%	18%	3%	5.1%	25	3
Partisan	2%	b	b	2.8%	b	b
Other Domestic Issues	4%	b	b	15.9%	b	b
Govt. Trust/Watergate	3%	4%	2%	3.0%	9	4
Groups	3%	b	b	11.7%	b	b
Campaign & Elections	18%	16%	17%	16.9%	44	40
Personality	11%	b	b	1.5%	b	b

^aThese entries reflect the connection between issues and candidates as indicated by co-occurrence within the sentence for the machine coding and a meaningful link determined by the coder doing the hand coding. Note that hand coded entries are percents while machine coded entries are raw counts; this is not important because what is of interest is the ratio of Carter to Ford entries for each method.

^bComparisons not made.

^cThe topic categories were defined by combining the content tags with the following tag numbers (see Appendix for tag description).

<u>Topic</u>	<u>Tag Numbers</u>
Foreign Issues	35, 36, 38, 39, 41, 84-86
Economy	47-52
East Europe	34
Partisan	5
Other Domestic Issues	56, 57, 62-67, 70-82
Govt. Trust/Watergate	58, 61, 69, 96
Groups	15, 17, 18
Campaign and Elections	91, 92
Personality	58-61

Table 2: Relations Between Actors (Candidates)

HAND CODED		MACHINE CODED	
<u>Amount of Criticism^a</u>	CPS	<u>Incidence of Disagreements</u>	<u>GI</u>
Source: Ford Object: Carter	31%	Source: Ford, Target: Carter	22%
Source: Carter Object: Ford	48%	Source: Carter, Target: Ford	34%
		<u>Incidence of Agreement</u>	
Source: Ford	—	Source: Ford, Target: Carter	28%
Source: Carter	—	Source: Carter, Target: Ford	35%
			N = 89
<u>Reciprocal References</u>		<u>Joint Occurrences (sentences)</u>	
Ford about Carter	18% of Ford items	Source: Ford, Target: Carter	15% of Ford sentences
Carter about Ford	49% of Carter items	Source: Carter, Target: Ford	28% of Carter sentences
		<u>Joint Occurrences (stories)</u>	
	--	F/C Disagreement	2X
	--	F/C Agreement	16%

^aThe percentage base is all paragraphs containing criticism attributable to the source and directed at the object. N = 85

Updated Description of Tag Entries

- 00 (Person-Name): Entries based on the names Brown, Carter, Ford, Johnson, Kennedy, Mondale, Nixon and Reagan. Only Ford and Carter are now **tagged in** such a way that there will be only one actor tag assigned when their last names are preceded by titles.
- 01 (Office-Title): Names of various political and governmental positions, most but not all of which could stand as actors by themselves (e.g. Attorney General, but not Chairmanship, Gubernatorial, Race and Salary).
- 02 (Agency) Parts of government at all branches and levels.
- 03 (Job-Role): Mostly private sector or local government job titles, but also some roles (e.g. Protestor) and titles that could apply to national government (e.g. Conferees, Aides).
- 04 (Party): Incomplete list of party actors.
- 05 (President): Incomplete list of words designating the president and those who generally speak for him.
- 06 (Pres-Candidate): The non-incumbent candidate in the general election, plus references to Ford.
- 07 (Ex-President): Synonyms for "ex-president," plus Nixon references.
- 08 (Administration): Incomplete list of references to the federal government in general and to specific parts of it.
- 09 (Congress): Small but fairly complete list of references to Congressional actors other than Congressmen.
- 10 (International): Foreign citizens, countries and capitals, and actors speaking on their behalf; also international organizations.
- 11 (US/America): Small and somewhat incomplete list of words representing the nation as a whole.
- 12 (State): States and state-level actors, plus some adjectives and state-level issues.
- 13 (Local): Long list of cities and other sub-state areas, local-level actors, and some adjectives and local-level issues.
- 14 (People/Voters/Groups): Social, geographic and ideological groups, without reference to organized groups; also words representing the public in general.
- 15 (Supreme Court): Supreme Court, High Court, Justices.

- 16 (Corporations): Names of corporations; also words that signify a corporation (e.g. Co.).
- 17 (Groups): Names of various organized non-profit groups; also Party and Texaco , which must be moved.
- 18 (Judicial): Actors representing the judicial branch below the Supreme Court.
- 19 (Democrat): Democratic politicians, and words identifying Democrats.
- 20 (Republican): Republican politicians, adjectives identifying Republicans, and Ex-Attorney General.
- 21 (Incumbent): Incumbent politicians, their activities and the word Incumbent.
- 22 (Non-Incumbent): Challengers and their activities.
- 23 (Winners): A few politicians who won in 1974, and the word Winner.
- 24 (Losers): A few politicians who lost in 1974.
- 25 (Senate): A few politicians who ran for Senate in 1974, plus Sen., Senator and Senate Candidate.
- 26 (House): A few politicians who ran for the House in 1974, plus titles identifying actors as Representatives or candidates; also Rules Committee.
- 27 (Associate): Words and phrases connecting actors with issues or other actors.
- 28 (Disassociate): Words and phrases dissociating **actors** from issues or other actors.
- 29 (Not): Words which when combined with Tag 27 words forms Tag 28 phrases, and vice versa; also a few dissociative phrases.
- 30 (Action): Names and verbs representing political action.
- 31 (Overstate): Words emphasizing association or dissociation, either alone (e.g. Disgust) or in combination with Tags 27 or 28 (e.g. Absolutely).
- 32 (Understate): Words that, at least in some contexts, modify association or dissociation.

33 (Europe)

34 (Vietnam/Indochina)

35 (Asia/Others)

36 (China)

37 (Mid-East)

38 (Russia)

39 (South-America)

40 (Africa)

Actors and other words connected to these areas of the world. Note: Tag 39 should be renamed Latin America as it contains countries as far north as Mexico.

41 (Future): Words indicating a future action (including Mid-1978).

42 (Past): Words indicating a past action or formerly held office.

43 (Attribution): Words linking actors and statements.

44 (Ideals): Words describing qualities desired in candidates or, in some cases, policies.

45 (Ideology): Various ideologies and alignments, plus those two words; includes **entires** on Business Regulation.

46 (Economy): Various economic terms and issues.

47 (Inflation): Terms representing prices.

48 (Recession): Terms representing recession, depression or bad economic news for individual actors.

49 (Employment): Terms representing employment and related issues.

50 (Spending): Terms for (or associated with) spending.

51 (Taxes): Terms representing specific taxes or taxes in general.

52 (Business-Regulation): Issues involving government regulation of business.

-53 (Housing): Terms associated with housing and housing programs.

54 (Consumer): Terms associated with consumerism.

55 (Balance-Branch-Power): Terms associated with executive-legislative relations.

- 56 (Federal-Power): Terms indicating federal power with respect to citizens and to other levels of government.
- 57 (Honesty): Terms associated with the questioning of an actor's honesty.
- 58 (Personality): Descriptions of an actor's personality that presumably don't fit into Tags 57, 58 or 60.
- 59 (Leadership): Description of an actor as administrator and **policy-maker** (e.g. Competence).
- 60 (Quality/Effectiveness): Evaluation of policies' or actors' quality or effectiveness.
- 61 (Education): Various words associated with education.
- 62 (Health): Terms associated with those illnesses that may sometimes be the focus of political debate; treatments for illnesses; government health care programs (but not yet including National Health Insurance).
- 63 (Poverty): References to poverty and other social welfare problems, including old age.
- 64 (Welfare): Reference to poverty and welfare programs and agencies; also Domestic.
- 65 (Labor): Labor unions, their actions, and related terms.
- 66 (Transit): Terms associated with various public and private means of transportation.
- 67 (Apathy): Terms associated with disinterest in politics.
- 68 (Moral-Decay): Terms associated with moral issues generally of a conservative religious nature (but not Abortion).
- 69 (Religion): Term clearly associated with religion, plus including Immoral, Morale, Moral Values, and Spirit (but not Morals).
- 70 (Abortion): Abortion.
- 71 (Farm/Food): Agricultural terms, products, and issues.
- 72 (Energy): Energy resources and issues (but not Conservation or any terms regarding nuclear power).
- 73 (Ecology): Terms associated with the environmental movement, including Conservation.
- 74 (Womens-Rights): Terms associated with the women's movement.

- 75 (Minorities): Terms associated with race and the civil rights movement.
- 76 (Civil Liberties): Terms associated with equality and civil liberties that do not belong in Tags 74 or 75.
- 77 (Protest/Demonstration): Terms associated with public protests.
- 78 (Extremist/Terrorist): Terms associated with violent protests.
- 79 (Drugs): Terms associated with illegal drugs.
- 80 (Nuclear-Power): Terms associated with nuclear power.
- 81 (Crime/Violence): Terms associated with illegal activities.
- 83 (Military): Military weapons, personnel and activities.
- 84 (Defense-Disarm): Terms related to SALT and the draft.
- 85 (Foreign-Relations): Terms associated with U.S. foreign relations; also, general terms for the rest of the world (e.g. International).
- 90 (Elections): Terms associated with elections.
- 91 (Campaign-Finance): Terms directly related to campaign finance and spending, plus Reapportionment and Vote Inconsistency.
- 93 (Arts/Culture): Terms associated with high-brow entertainment.
- 94 (Cand 76): Incomplete list of actors entered in the 1976 presidential primaries, plus 76 Contender.
- 95 (Watergate): Terms associated with Watergate.
- 96 (Media): Terms associated with the news media.
- 97 (Sports): Sports terms.
- 98 (Accidents): Accident terms.
- 99 (Illnesses): Health terms presumably not the focus of any political debate.