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A Content Analysis of the Content Analysis Literature in Organization Studies

Research Themes, Data Sources, and Methodological Refinements

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We use content analysis to examine the content analysis literature in organization studies. Given the benefits of content analysis, it is no surprise that its use in organization studies has been growing in the course of the past 25 years (Erdener & Dunn, 1990; Jauch, Osborn, & Martin 1980). First, we review the principles and the advantages associated with the method. Then, we assess how the methodology has been applied in the literature in terms of research themes, data sources, and methodological refinements. Although content analysis has been applied to research topics across the subdomains of management research, research in strategy and managerial cognition have yielded particularly interesting results. We conclude with suggestions for enhancing the utility of content analytic methods in organization studies.

Keywords: *content analysis; theoretical frameworks; methodologies; analytical techniques*

The past two decades have seen an increasing scholarly interest in qualitative methodologies to study complex business phenomena, borrowing and adapting from more established disciplines (Miles & Huberman, 1994; Tesch, 1990). Content analysis, a class of methods at the intersection of the qualitative and quantitative traditions, is promising for rigorous exploration of many important but difficult-to-study issues of interest to management researchers (Carley, 1993; Morris, 1994; Woodrum, 1984). The computer revolution also has contributed to the proliferation of qualitative methodologies, especially the approach called content or text analysis (Kelle, 1995; Roberts, 1997; Tesch, 1991; Weitzman & Miles, 1995).

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Note of Thanks: Vincent Duriau passed away in February 2005. He enriched the lives of all who knew him. We are delighted to honor his life and work by seeing this paper, which he began with Rhonda Reger, through to publication.

To make sense of this literature, we turn to content analysis to examine the trends and categorize the burgeoning management research of the past 25 years that uses content analysis.

Our interest centers on three major questions: (a) What have been the contributions of content analysis to management research? (b) What can be learned from the way the methodology has been implemented in organization studies? and (c) How has this literature evolved through time? We conclude our investigation with a discussion of the issues and opportunities of using content analysis for management research in the future.

Principles of Content Analysis

A wide range of theoretical frameworks, methods, and analytical techniques have been labeled content analysis (Denzin & Lincoln, 1994; Miles & Huberman, 1994). Shapiro and Markoff (1997) reviewed six major definitions from various sources in the social sciences (see also Kabanoff, 1996; Kassarian, 1977; and Woodrum, 1984, for complementary perspectives). They proposed a minimal and encompassing definition that we also adopt: “any methodological measurement applied to text (or other symbolic materials) for social science purposes” (Shapiro & Markoff, 1997, p. 14). We believe that the Shapiro-Markoff definition provides an acceptable conceptual grounding to evaluate the management literature that has used content analysis.

Central to the value of content analysis as a research methodology is the recognition of the importance of language in human cognition (Sapir, 1944; Whorf, 1956). The key assumption is that the analysis of texts lets the researcher understand other people’s cognitive schemas (Huff, 1990; Gephart, 1993; Woodrum, 1984). At its most basic, word frequency has been considered to be an indicator of cognitive centrality (Huff, 1990) or importance (Abrahamson & Hambrick, 1997). Scholars also have assumed that the change in the use of words reflects at least a change in attention, if not in cognitive schema (Namenwirth & Weber, 1990). In addition, content analysis assumes that groups of words reveal underlying themes, and that, for instance, co-occurrences of keywords can be interpreted as reflecting association between the underlying concepts (Huff, 1990; Weber, 1990).

Content analysis advocates have noted several advantages of this class of methods over competing choices. Foremost to management research, content analysis provides a replicable methodology to access deep individual or collective structures such as values, intentions, attitudes, and cognitions (Carley, 1997; Huff, 1990; Kabanoff, 1996). As such, content analysis is applicable to a broad range of organizational phenomena. For example, applications in management have included corporate social responsibility (see Ullmann, 1985; Gephart, 1991 for reviews), industrial accidents (e.g., Gephart, 1993), and managerial cognition (Huff, 1990), topics that are difficult to study using traditional quantitative methods and archival, financially oriented databases.

Another key strength is the analytical flexibility allowed. For instance, analysis of content can be conducted at two levels (Erdenner & Dunn, 1990; Holsti, 1969; Woodrum, 1984). At one level, the manifest content of the text can be captured and revealed in a number of text statistics. At a second level, the researcher is interested in the latent content and deeper meaning embodied in the text, which may require more interpretation. In addition, the method can be used to conduct both inductive and deductive research (Roberts, 1989).

Last, content analysis allows rendering the rich meaning associated with organizational documents combined with powerful quantitative analysis. In that, content analysis differs from other purely qualitative procedures such as hermeneutics and literary interpretation (Tesch, 1990).

Third, longitudinal research designs can be implemented because of the availability of comparable corporate information through time, such as annual reports or trade magazines (Jauch, Osborn, & Martin, 1980; Kabanoff, 1996; Weber, 1990). Multiple sources of data can serve as inputs to content analysis, both internal and external to the firm (Jauch, Osborn, & Martin, 1980).

Finally, content analysis can be nonintrusive, and therefore, does not suffer from researcher demand bias (Woodrum, 1984). This advantage only applies to existing texts or other source materials and not to interviews or open-ended responses to surveys. Being nonintrusive is particularly relevant to management research and the study of senior executives, in which access to informants is often a serious issue (Morris, 1994).

Several additional methodological and practical benefits have been noted in implementing content analysis (Woodrum, 1984). First, content analysis is a safe methodology because the coding scheme can be corrected if flaws are detected as the study proceeds (Tallerico, 1991; Woodrum, 1984). Second, when content analysis is done correctly, it entails the specification of category criteria for reliability and validity checks that fosters the creation of a replicable database (Lissack, 1998; Woodrum, 1984). Third, content analysis can be used in conjunction with other methods for the purpose of triangulation (Erdener & Dunn, 1990; Jauch, Osborn, & Martin, 1980; Kabanoff, 1996; Smith, Grimm, & Gannon, 1992).

Finally, costs can be kept low and the method easily can be used for small-scale studies with minimal requirements (Erdener & Dunn, 1990; Woodrum, 1984). In addition, the advent of computer-aided text analysis (CATA) greatly has increased the effective scalability of the method to include quite ambitious projects by enhancing access and automating some of the tasks and functions such as data storage, dictionaries, and word counts (Gephart, 1991; Wolfe, Gephart, & Johnson, 1993). Computers also can remove some of the tediousness of the methodology (Kabanoff, 1996) and facilitate collaborative work on a project (Tallerico, 1991).

Content Analysis in Management Research

Given these benefits, it is no surprise that the use of content analysis in organization studies has been growing in the course of the past 25 years (Erdener & Dunn, 1990; Jauch, Osborn, & Martin, 1980). We decided to take stock and critically assess this literature, and we turned to content analysis to organize our review.

Methods

Sample. To survey articles comprehensively using content analysis in the management literature, we used a two-stage strategy. First, we searched the major academic and practitioner journals in the Proquest and Ebsco databases using the keywords *content analysis*

and *text analysis* for the period from 1980 to the present (October 2005). This time frame was selected because it corresponds to the period during which content analysis gained its legitimacy as a methodology in the management field (Bowman, 1984; Huff, 1990) and during which computers became available to aid text analysis for empirical research (Abrahamson & Hambrick, 1997; Wolfe et al., 1993). Journals searched included *Academy of Management Journal*, *Academy of Management Review*, *Academy of Management Executive*, *Administrative Science Quarterly*, *California Management Review*, *Harvard Business Review*, *Journal of Applied Psychology*, *Journal of International Business Studies*, *Journal of Management*, *Journal of Organizational Behavior*, *Organization Behavior and Human Decision Processes*, *Organizational Research Methods*, *Organization Science*, *Sloan Management Review*, and *Strategic Management Journal*. Second, we checked the reference lists of the articles obtained through the initial search to uncover additional studies. In total, this search yielded 98 articles, which are listed in Table 1. Thus, this article provides researchers interested in content analysis with a fairly comprehensive and up-to-date review of the literature.

Content analysis. Although the implementation of content analysis varies considerably, there are commonalities in the methodology that cut across the various approaches (Carley, 1993; Fielding & Lee, 1998; Gephart, 1993; Kelle, 1995; Wolfe et al., 1993). The basic phases of data collection, coding, analysis of content, and interpretation of results each introduce unique validity and reliability concerns (Holsti, 1969; Weber, 1990). Using content analysis, we examined the research themes, sources of data, theoretical stance, coding approaches, and analytical methods used in the management literature based on content analysis. The following sections present our findings in each of these areas.

The scheme used to code the 98 articles is explained in the appendix. The categories were established following the propositions pertaining to the advantages of content analysis developed in the first section, and were refined per the literature reviewed (e.g., Scandura & Williams, 2000).

The first author coded the 89 articles from 1980 to 2001; the third author coded the nine from 2002 to 2005. Coding reliability was established in two ways. First, a graduate student assisting with the study proceeded with coding a random sample of the articles (Holsti, 1969; Weber, 1990). Second, the first author recoded the same random sample at a later time (Erdener & Dunn, 1990). The results for interrater and intrarater reliability are acceptable and are reported in Table 2 for each coding category (Weber, 1990).

Research Themes

We categorized the research themes of the 98 articles according to the divisions of the Academy of Management (Scandura & Williams, 2000). There were 39 studies in business policy and strategy, 15 in managerial and organizational cognition, 14 in research methods, 11 in organizational behavior, 6 in human resources, 6 in social issues management, 3 in technology management, 2 in international management, and 2 in organizational theory. Below, we highlight research in strategy and managerial cognition because the use of content analysis in these two areas has yielded particularly important results.

(text continues on page 14)

Table 1
Content Analysis in Management Research

Authors	Date	Field	Research Theme	Data Sources							
				Longitudinal	Focus	Features	Design	Interpretation	Methods	Test	CATA
Mishina, Pollock, & Porac	2004	BPS	Growth logics	0	1	AD	1	1	3	1	0
Ferrier	2001	BPS	Competitive aggressiveness	1	2	FC, AD	1	1	3	1	1
Lee, Smith, Grimm, & Schomburg	2000	BPS	New product introduction	1	1	FC	1	1	3	1	1
Ferrier, Smith, & Grimm	1999	BPS	Leaders and challengers	1	2	FC, AD	1	1	3	1	1
Young, Smith, & Grimm	1996	BPS	Competitive activity	1	2	FC	1	1	3	0	1
Miller & Chen	1996	BPS	Competitive repertoire	1	0	FC, AD	1	1	3	1	0
Hambrick, Cho, & Chen	1996	BPS	Competitive moves	1	2	FC, AD	1	1	3	1	0
Chen & Hambrick	1995	BPS	Competitive behavior	0	2	FC, AD	1	1	3	0	0
Schomburg, Grumm, & Smith	1994	BPS	New product rivalry	0	2	FC	1	1	3	1	1
Miller & Chen	1994	BPS	Competitive inertia	1	2	FC, AD	1	1	3	1	0
Chen & MacMillan	1992	BPS	Competitive responses	0	2	FC	1	1	3	1	0
Chen, Smith, & Grimm	1992	BPS	Competitive responses	0	2	FC	1	1	3	1	0
Smith, Grimm, Gannon, & Chen	1991	BPS	Competitive responses	0	1	FC	1	1	3	1	0
Birbaum-More & Weiss	1990	BPS	Basis of competition	1	2	FC	0	1	3	0	1
Clapham & Schwenk	1991	BPS	Managerial attributions	0	2	FC	2	1	3	1	0
Salancik & Meindl	1984	BPS	Managerial attributions	0	2	FC	1	1	3	1	0
Bettman & Weitz	1983	BPS	Managerial attributions	1	2	FC	1	1	3	1	0
Staw, McKechnie, & Puffer	1983	BPS	Managerial attributions	0	0	FC	1	1	3	1	0
David	1989	BPS	Mission statements	0	2	FC	2	1	3	1	0
Pearce & David	1987	BPS	Mission statements	0	2	FC	1	1	3	1	0
Cochran & David	1986	BPS	Mission statements	0	2	FC	1	1	0	1	0
McConnell, Haslem, & Gibson	1986	BPS	Corporate disclosures	0	2	FC	1	1	3	0	1
Bühner & Möller	1985	BPS	Corporate disclosures	1	1	FC	1	1	3	0	0
Ingram & Frazier	1983	BPS	Corporate disclosures	1	0	FC	2	1	3	0	1
Bowman	1984	BPS	Corporate strategy and risk	1	0	FC	1	1	0	0	0
Bowman	1982	BPS	Risk-seeking behavior	0	0	FC	1	0	3	0	0
Fiol	1990	BPS	Strategic alliances	0	0	FC	1	0	0	0	0
Fiol	1989	BPS	Joint ventures	1	0	QA	1	1	0	1	0

(continued)

Table 1 (continued)

Authors	Date	Field	Research Theme	Data Sources	Longitudinal Focus	Features	Design	Interpretation	Methods	Test	CATA
Dirmith & Covaleski	1983	BPS	Environmental fit	BC	0	FC	1	1	3	0	0
Jauch, Osborn, & Glueck	1980	BPS	Environment-strategy fit	BC	0	FC	1	2	3	1	0
Osborne, Stubbart, & Ramaprasad	2001	BPS	Strategic groups	AR	1	FC, QA	2	0	1	1	1
Arndt & Bigelow	2000	BPS	Impression management	AR	0	QA	0	1	0	1	0
Palmer, Kabanoff, & Dunford	1997	BPS	Downsizing	AR	1	FC	0	1	3	1	1
Abrahamson & Park	1994	BPS	Organizational outcomes	AR	0	FC	1	1	3	1	1
Marcus & Goodman	1991	BPS	Corporate crises	TM	0	FC	1	1	3	1	0
Fombrun & Shanley	1990	BPS	Reputation	TM	0	FC	1	0	3	1	0
Huff	1982	BPS	Strategy reformulation	TM	1	QA	0	1	2	0	0
Osborn, Jauch, Martin, & Glueck	1981	BPS	CEO succession	TM	0	FC	1	0	3	1	0
Myers & Kessler	1980	BPS	Concerns of businessmen	PD	0	QA	0	0	0	0	0
Gephart	1997	MOC	Sensemaking	PD	0	FC, AD, QA	0	0	2	1	1
Gephart	1993	MOC	Sensemaking	PD, ID, TM, IN, FD	0	FC, QA	0	0	2	1	1
Gioia & Chittipeddi	1991	MOC	Sensemaking	IN, ID	1	QA	0	1	2	0	0
Huff & Schwenk	1990	MOC	Sensemaking	TM	0	FC	1	0	3	1	0
Gephart	1984	MOC	Sensemaking	BC	0	QA	0	1	0	0	0
Kabanoff & Holt	1996	MOC	Organizational values	AR, MS, ID	1	FC	1	1	3	1	1
Kabanoff, Waldersee, & Cohen	1995	MOC	Organizational values	AR, MS, ID	0	FC, AD	1	1	2	1	1
Sussman, Ricchio, & Belohlav	1983	MOC	Corporate values	PD	1	FC	2	1	0	1	0
Abrahamson & Hambrick	1997	MOC	Managerial attention	AR	0	AD	1	1	3	1	1
D'Aveni & MacMillan	1990	MOC	Managerial attention	AR	1	FC	1	1	3	1	0
Fiol	1995	MOC	Categorization	AR, ID	1	FC	2	1	3	0	0
Carley	1997	MOC	Team mental models	OQ	0	FC, AD	2	1	0	1	1
Simons	1993	MOC	Cognitive maps	TV	1	FC	1	0	3	1	0
Barr, Stimpert, & Huff	1992	MOC	Cognitive change	AR	1	AD	1	0	0	1	0
Narayanan & Fahey	1990	MOC	Managerial causal maps	AR, TM	1	FC, AD	0	0	0	1	0
Boyd, Gove, & Hitt	2005	RM	Construct measures	SJ	1	FC, QA	1	1	2	1	0
Bergh & Fairbank	2002	RM	Measuring change	IN	0	QA	1	2	1	1	0
Scandura & Williams	2000	RM	Research methods	SJ	1	FC, AD	1	1	3	1	0

Mowday	1977	RM	Management research	SJ	1	1	1	FC	1	0	0	0
Bergh & Holbein	1997	RM	Longitudinal analysis	SJ	1	1	1	FC	1	2	1	0
Bergh	1995	RM	Repeated measures	SJ	0	1	0	FC	1	2	0	0
Bartunek, Bobko, Venkatraman	1993	RM	Research methods	SJ	0	1	1	QA	0	0	0	0
Podsakoff & Dalton	1987	RM	Research methodology	SJ	0	2	1	FC	1	0	0	0
Flanagan & Dipboye	1981	RM	Research settings	SJ	0	1	1	FC	1	0	1	0
Daft	1980	RM	Organization analysis	SJ	1	0	0	FC	0	0	0	0
Reeve & Smith	2001	RM	Job involvement	MI	0	0	1	FC	1	1	0	0
Kellogg & Chase	1995	RM	Customer contact	ID	0	0	1	FC	1	1	1	0
Mossholder, Settoon, Harris, & Armenakis	1995	RM	Emotions	OQ	0	0	1	FC	1	3	1	1
Ellis	1989	RM	Differential item functioning	MI	0	0	2	QA	2	0	0	0
Bligh, Kohles, & Meindl	2004	OB	Language of leadership	PD	0	1	2	AD, FC	1	0	0	1
Farh, Zhong, & Organ	2004	OB	Organizational citizenship behavior in China	OQ	0	0	2	AD, QA	0	2	0	0
Hodson	2004	OB	Organizational trust	PD	0	1	1	AD, QA	1	0	1	1
Ahuja & Galvin	2003	OB	Virtual groups	ID, IN	0	0	1	FC, QA	1	2	1	0
Druskat & Wheeler	2003	OB	Self-managed teams	IN, OQ, TV	0	1	2	FC, QA	0	0	1	0
Bateman, O'Neill, & Kenworthy-U'Ren	2002	OB	Top management team goals	IN	0	1	2	QA	1	1	1	0
Schneider, Wheeler, & Cox	1992	OB	Service climate	IN	0	2	2	FC	2	1	1	0
Chen & Meindl	1991	OB	Leadership	TM	1	0	0	FC	0	2	0	0
Dewe & Guest	1990	OB	Stress	OQ	0	0	2	FC	2	1	0	0
Barley, Meyer, & Gash	1988	OB	Organizational culture	SJ, TM	1	1	1	FC	2	3	1	0
Machungwa & Schmitt	1983	OB	Cross-cultural motivation	IN	0	2	2	FC	2	1	1	0
Frazier, Ingram, & Mack Tennyson	1984	SIM	Accounting disclosures	AR	0	2	2	FC	2	3	1	1
Freedman & Jaggi	1982	SIM	Pollution disclosures	AR	0	1	1	FC, AD	1	3	0	0
Wiseman	1982	SIM	Environmental disclosures	AR, PD	0	1	1	FC, AD	1	3	0	0
Ingram & Frazier	1980	SIM	Corporate disclosures	AR	0	0	1	FC	1	3	0	0
Anderson & Frankle	1980	SIM	Social disclosures	AR	0	1	1	FC	1	3	0	0
White & Montgomery	1980	SIM	Codes of conduct	ID	0	2	0	FC	0	0	0	0
Wade, Porac, & Pollock	1997	HR	Executive pay	PS	0	0	1	FC	1	3	1	1

(continued)

Table 1 (continued)

Authors	Date	Field	Research Theme	Data		Features	Design	Interpretation	Methods	Test	CATA
				Sources	Longitudinal Focus						
Zajac & Westphal Thompson, Gentner, & Loewenstein	1995	HR	CEO compensation	PS	1	FC	1	1	3	1	0
	2000	HR	Training	OQ	0	FC	1	1	3	1	0
Hogan, Hakeel, & Decker Köhnen, Schimossek, Aschermann, & Hofer	1986	HR	Behavior modeling training	TV, ID	0	FC	1	1	3	0	0
	1995	HR	Cognitive interview	IN	0	FC	1	1	3	1	0
Baxter, Brock, Hill, & Rozelle	1981	HR	Letters of recommendation	FD	0	FC	1		3	1	0
Gephart & Pitter	1995	TIM	Technology risk	PD	0	FC, QA	2	1	2	1	1
	1986	TIM	Robotic manufacturing	OQ	0	FC	1	2	1	0	0
Chao & Kozlowski	1985	TIM	computer-based modeling	IN, TM, PD, SJ	0	FC, QA	2		2	0	0
	1997	IM	Intercultural conflict	IN	0	FC	2	1	1	1	1
Doucet & Jehn	1980	IM	Advertising of Japanese firms	TM	1	FC, AD	1		0	0	0
Suzuki	1987	OT	Industrial incidents	PD	0	QA	0	1	0	0	0
Gephart	1981	OT	Vesting economic interests	PD	1	FC	1		0	1	0

Table 2
Raters' Reliability

Articles	Field	Data Sources	Longitudinal	Focus	Features	Design	Interpretation	Methods	Reliability	CATA
Köhnken et al., 1995	HR	IN	0	0	FC	1	1	3	1	0
	HR	IN	0	0	FC	1	1	3	1	0
	RM ^a	IN	0	0	FC	1	1	3	0 ^a	0
Chen et al., 1992	BPS	TM	0	0	FC	1	1	3	1	0
	BPS	TM	0	2 ^a	FC	1	1	3	1	0
	BPS	TM	0	0	FC	1	1	3	1	0
Palmer et al., 1997	BPS	AR	1	0	FC	0	1	3	1	1
	BPS	AR	1	0	FC	0	1	3	1	1
	BPS	AR	1	0	FC	0	1	3	1	1
Fiol, 1995	MOC	AR, ID	1	0	FC	1	1	3	0	0
	MOC	AR, ID	1	0	FC	1	1	3	0	0
	MOC	AR, ID	0 ^a	0	FC	1	1	3	0	0
Bettman & Weitz, 1983	BPS	AR	1	2	FC	1	1	3	1	0
	BPS	AR	1	2	FC	1	1	3	1	0
	BPS	AR	1	2	FC	1	1	3	1	0
Ingram & Frazier, 1983	BPS	AR	0	0	FC	1	1	3	0	0
	BPS	AR	1 ^a	0	FC	2 ^a	1	3	0	1 ^a
	BPS	AR	0	0	FC	1	1	3	0	0
Sussman et al., 1983	MOC	PD	1	0	FC	1	1	0	1	0
	MOC	PD	1	0	FC	2 ^a	1	0	1	0
	MOC	PD	1	0	FC	1	1	0	1	0
Flanagan & Dipboye, 1981	RM	SJ	0	1	FC	1	1	0	1	0
	RM	SJ	0	1	FC	1	1	0	1	0
	RM	SJ	0	1	FC	1	1	0	1	0
Ingram & Frazier, 1980	SIM	AR	0	0	FC	1	1	3	0	0
	SIM	AR	0	0	FC	1	1	3	0	0
	SIM	AR	0	0	FC	1	1	3	0	0
Ferrier, 2001	BPS	CD	1	1	FC, AD	1	1	3	1	1
	BPS	CD	1	2 ^a	FC, AD	1	1	3	1	1
	BPS	MI ^a , AR ^a , FD ^a , ID ^a	0 ^a	1	FC, AD	1	2 ^a	3	1	1

Note: The first and second lines indicate the initial and later ratings by the first author, respectively. On the third line appear the graduate student's ratings.
a. These ratings show the coding differences.

Strategic management. Content analysis has allowed the exploration of a wide variety of strategy topics, including strategic groups (Osborne, Stubbart, & Ramaprasad, 2001), impression management (Arndt & Bigelow, 2000), downsizing (Palmer, Kabanoff, & Dunford, 1997), negative organizational outcomes (Abrahamson & Park, 1994), corporate crises (Marcus & Goodman, 1991), corporate reputation (Fombrun & Shanley, 1990), strategy reformulation (Huff, 1982), CEO succession (Osborn, Jauch, Martin, & Glueck, 1981), and concerns of the business community (Myers & Kessler, 1980).

Some areas have been the focus of particular scholarly attention. Consistent with the tradition in business policy and strategy (e.g., Thompson, 1967), early researchers examined various aspects of the interaction between the firm and its environment. Using cases from *Fortune* to measure their two dependent variables, Jauch, Osborn, and Glueck (1980) tested the hypothesis that the fit between strategy and environment has an impact on short-term performance. Dirsmith and Covalleski (1983) investigated the information sources used by analysts in their evaluations of corporations depending on the maturity of the industry in which they operate.

Second, Bowman (1982, 1984) used content analysis of annual reports and other corporate documents to test some unconventional hypotheses pertaining to risk-taking behavior of corporations. Building on his previous work, he provided empirical support for his argument that troubled firms may be more risk-seeking, contrary to the prevalent belief in economics and finance of a positive relationship between risk and returns (1982).

Third, Fiol (1989, 1990) used semiotic analysis to access the deeper meaning often communicated by firms through different media. Semiotic analysis deals with how language conveys meaning to signs and symbols in a specific social context. Her focus was in explaining the motivation to engage in joint ventures and strategic alliances. She found two potential reasons: (a) the respective strength of the external and internal boundaries of the firm (1989) and (b) executives' perception of the external environment as a threat or as an opportunity (1990). In both cases, she relied on letters to shareholders as a basis for her analysis.

Fourth, another research stream has studied the content of mission statements and the impact of their use on firm performance (Cochran & David, 1986; David, 1989; Pearce & David, 1987). This literature has clarified the nature and the definition process of mission statements, but additional research is warranted to establish the link between the existence of formal mission statements and superior performance. In addition, it would be valuable to investigate whether such documents, such as for external stakeholders as discussed below, are subject to the same type of manipulations of internal constituents by senior managers.

Fifth, other research has examined the content of corporate disclosures (Ingram & Frazier, 1983; McConnell, Haslem, & Gibson, 1986) and its impact on economic performance (Bühner & Möller, 1985; Ingram & Frazier, 1983; McConnell et al., 1986) based on analyses of annual reports. These results need to be considered carefully, as such disclosures are fraught with ambiguous and self-serving attributions and attempts by managers to influence the impressions of external stakeholders (Bettman & Weitz, 1983; Clapham & Schwenk, 1991; Salancik & Meindl, 1984; Staw, McKechnie, & Puffer, 1983).

Finally, competitive dynamics is one area in which the use of content analysis has allowed particularly important developments. This area has been one of the most fruitful applications

of content analysis. One of the challenges addressed in recent strategic management research has been to bridge the gap between macroperspectives and microperspectives (Smith, Grimm, and Gannon, 1992). Macromodels such as Porter's (1980) five forces do not capture the dynamic nature of competitive interactions, and predictions of firm-level behavior from game theory are often difficult to study empirically. Content analysis has contributed to the development of a literature that has provided some insightful answers to these critical questions (Grimm & Smith, 1997; Jauch, Osborn, & Martin, 1980).

The competitive-dynamics articles applying content analysis appear in Table 1. Many interesting hypotheses have been investigated pertaining to the impact of action characteristics and response types on firm performance (Birnbaum-More & Weiss, 1990; Chen, Smith, & Grimm, 1992; Smith et al., 1992; Smith, Grimm, Gannon, & Chen, 1991).

In addition to these seminal studies, other work has illuminated specific aspects in competitive dynamics. For instance, Chen and McMillan (1992) looked at the influence of competitor dependence and action irreversibility on the nature of responses to competitive actions. Schomburg, Grimm, and Smith (1994) examined the influence of industry characteristics on new product introductions. Miller and Chen (1994) investigated the causes and consequences of competitive inertia. Chen and Hambrick (1995) showed that small firms tend to be more active, speedier, lower key, and more secretive in their actions than large firms and that their responses are less likely and slower. Hambrick, Cho, and Chen (1996) demonstrated that homogeneous and heterogeneous top-management teams differed in their propensity and speed to initiate competitive actions. Young, Smith, and Grimm (1996) tested how the paradigms from structure-conduct-performance (S/C/P) and Schumpeterian economics help explain differences in competitive activity. Finally, Lee, Smith, Grimm, and Schomburg (2000) found that the lack of imitation and the speed of new product introduction favorably impact stock-market returns.

Recent work (Ferrier, 2001; Ferrier, Smith, & Grimm, 1999; Miller & Chen, 1996) has begun to examine patterns of competitive interaction beyond the classical action-response framework on which much of competitive dynamics is based (Chen, 1996; Smith et al., 1992). Increasingly, this stream of research also has moved to the level of studying latent constructs associated with competitive moves, a potentially fertile ground for future investigation.

Managerial cognition. Recent literature using content analysis has made particularly worthy contributions in the area of managerial and organizational cognition. This research underscores the breadth of the field with the exploration of topics such as cognitive and causal maps (Narayanan & Fahey, 1990; Simons, 1993), team mental models (Carley, 1997), and cognitive change (Barr, Stimpert, & Huff, 1992; Narayanan & Fahey, 1990), borrowing from a wide variety of content analytical techniques to develop new insight (Fiol, 1995).

In particular, the literature has shown that corporate values, as one form of "relatively enduring beliefs" (Kabanoff & Holt, 1996, p. 201), have an impact on organizational outcomes (Sussman, Ricchio, & Belohlav, 1983). Using documents such as annual reports, internal magazines, and mission statements of Australian organizations, Kabanoff and his colleagues (Kabanoff & Holt, 1996; Kabanoff, Waldersee, & Cohen, 1995) showed that firms typically embrace four types of value structures: elite, leadership, meritocratic, or

collegial. Although this research stream provides some evidence of a relationship between the types of values espoused and organizational change, it remains to be shown that a correlation with performance exists.

In addition, the literature has reported significant empirical support for the construct of sensemaking (Weick, 1995). For example, Gioia and Chittipeddi (1991) have shown how the president of a large public university was able to facilitate organizational change within his institution by engaging in sensemaking and sensegiving activities. By carefully examining different organizational incidents and crises, Gephart and his associates have outlined components of the sensemaking process, including political aspects (Gephart, 1984), attribution of risk and blame (Gephart, 1993), management of technology (Gephart & Pitter, 1995), and use of quantitative criteria (Gephart, 1997). Huff and Schwenk (1990) proposed a broader conceptual interpretation for managerial attributions in good and bad times based on the changes in managers' sensemaking frames in response to environmental variations.

In related research, D'Aveni and MacMillan (1990) also have shed empirical light on the attentional deficiencies during crises that characterize managers of poorly performing firms. Further, Abrahamson and Hambrick (1997) observed that managerial attention could be constrained by the discretion allowed in the industry in which managers operate. Finally, Fiol (1995) studied public and private documents of firms and concluded that nonevaluative statements might be more appropriate to use as sources of data to make inferences about the categorization schemes used by senior managers.

One of the criticisms of this line of research has been that documents such as annual reports, speeches, and industry publications, used as data sources for inferring managerial cognitive maps, intentionally are biased for specific audiences (Huff, 1990; Morris, 1994). Huff also noted that the themes elicited through content analysis may not capture the real-time dimensions of strategic decision making and that measures such as word centrality often do not reflect the hidden intent of the strategist.

The response to these challenges in the literature has been threefold: (a) use multiple sources of data (Kabanoff & Holt, 1996; Kabanoff, et al., 1995) and richer databases (Gephart, 1993, 1997) to capture the multiple dimensions of the phenomena; (b) triangulate basic content analysis (Weber, 1990) with complementary methodologies such as causal mapping (Barr, et al., 1992) or ethnomethodology (Gephart, 1993) to augment the validity of the analysis; and (c) introduce more sophisticated techniques, such as mapping algorithms (Carley, 1997) and linguistic indicators (Abrahamson & Hambrick, 1997; Simons, 1993), to provide more accurate measurements of the constructs of interest. We now turn to the consideration of the methodological issues in the articles reviewed.

Methodological Issues

Sources of data. Among the 98 papers reviewed, 30 list annual reports or proxy statements as a data source. Other sources of textual information include trade magazines (18), scholarly journals (12), other publicly available documents (12), notes from interviews (11), other internal company documents (9), open-ended questions in surveys (7), mission statements (5), computerized databases (5), business cases (3), transcribed videotapes (3), measurement items (2), and other field data (2).

Annual reports are prime materials to study the interaction of firms with their environment (Dirsmith & Covalleski, 1983). For instance, a significant research stream has examined the various types of corporate information disclosed by firms (e.g., Ingram & Frazier, 1983; Wiseman, 1982) and their impact on performance (Bühner & Möller, 1985; McConnell et al., 1986; Ullmann, 1985).

In addition, annual reports have several advantages over other sources of corporate information to study cognitive phenomena. Osborne et al. (2001) noticed their reliability compared to interviews or questionnaires of senior executives, as they do not suffer from retroactive sensemaking (Barr et al., 1992), and then play to the nonintrusive strength of content analysis (Bowman, 1984). Other researchers have emphasized the validity of annual reports because senior executives "spend considerable time outlining the content of the report, sketching out much of it, and proofreading and changing most of it to their taste" (Bowman, 1984, p. 63; see also Barr et al., 1992; D'Aveni & MacMillan, 1990).

However, annual reports also have been criticized in managerial-cognition research because they can be prepared by public relations specialists rather than the top management team (Abrahamson & Hambrick, 1997) and suffer from significant bias in the attribution of organizational actions and outcomes (Barr et al., 1992; Clapham & Schwenk, 1991). Researchers must be aware of the communication strategies of senior executives with external stakeholders (Arndt & Bigelow, 2000; Clapham & Schwenk, 1991; Ingram & Frazier, 1983). Therefore, Fiol (1995) has cautioned regarding the information considered when content analyzing annual reports and recommended focusing on nonevaluative statements.

Trade magazines are another source of corporate information that has gained increasing acceptance when implementing content analysis (Smith et al., 1992). In particular, trade magazines have been used to examine the competitive actions of firms in various industries and through time (Grimm & Smith, 1997). Several studies, mostly of the interpretive type and focused on eliciting latent dimensions of the constructs of interest, also have used trade magazines in conjunction with other data sources (e.g., Gephart, 1993; Kabanoff et al., 1995).

Researchers have explained in detail how information can be accessed in the hard copies of trade magazines (e.g., Miller & Chen, 1994; Smith et al., 1991) and in computerized databases (e.g., Ferrier et al., 1999; Schomburg et al., 1994). In addition, such studies have established the validity of the information obtained through a careful comparison with other publications (e.g., Chen et al., 1992; Smith et al., 1991) or evaluation by industry experts (e.g., Miller & Chen, 1994; Schomburg et al., 1994).

The advent of CATA has had a determinant impact on the use of trade magazines. Large, computerized databases equipped with search languages have made access to such information much faster and more reliable (Schomburg et al., 1994; Grimm & Smith, 1997).

Data collection. Regarding the first phase of content analysis, data collection, Weber (1990) identified three critical sampling decisions. When it is not possible to work with the entire population, researchers have to select their sources of information, define the type of documents for the project, and choose specific texts within these documents. These decisions depend on the purpose of the research, the methodological approach, and the availability of information.

For instance, multiple sources of information may be warranted when new and unique phenomena such as managerial sensemaking or technology emergence are studied (e.g.,

Gioia & Chittipeddi, 1991; Gulley & Mei, 1985). This approach ensures the validity of the research through data triangulation and the incorporation of the perspectives from multiple participants (Gephart, 1993, 1997).

When the topic of interest has been studied more frequently and the research contribution is incremental, the range of data sources used may be narrower. For example, business cases from *Fortune* have been used to illuminate specific aspects of strategy-environment fit theory pertaining to external communications (Dirsmith & Colaveski, 1983) and short-term performance (Jauch, Osborn, & Glueck, 1980).

Exploratory and interpretive research is more likely to rely on primary data such as interviews, field notes, videotapes, and open-ended questions to surveys. For this kind of research, basic content analysis often is used in conjunction with other interpretive techniques such as ethnomethodology (Gephart, 1993; Gioia & Chittipeddi, 1991).

Interviews, field notes, videotapes, and open-ended questions have been content analyzed to make inferences and develop new theory about a number of interesting organizational and managerial topics, including competitive actions (Birbaum-More & Weiss, 1990), sensemaking during environmental disasters (Gephart, 1993, 1997; Gioia & Chittipeddi, 1991), team mental models (Carley, 1997), service climate (Schneider, Wheeler, & Cox, 1992), strategies for coping with stress (Dewe & Guest, 1990), cross-cultural motivation (Machungwa & Schmitt, 1983) and conflict (Doucet & Jehn, 1997), and the use of computer-based modeling (Gulley & Mei, 1985).

The use of multiple and richer sources of information begs the question of which texts are actually included for the analysis. "Concept sampling, a new twist for content analysis" (Lissack, 1998, p. 484) is an approach that has been adopted by several researchers. For example, Gephart (1993) discussed in great detail the theoretical rationale for the sampling decisions to assemble a comprehensive and valid database from multiple sources regarding an industrial accident. Computers might be of assistance here, especially when the software used includes a parsing functionality (Lissack, 1998). Still, researchers must make critical decisions about data sources based on theoretically sound research designs.

Computers facilitate access to texts and allow the simultaneous consideration of a much larger corpus of documents than what is possible with manual content analysis (Gephart, 1997; Kabanoff et al., 1995). In addition, there exist ready-made computerized databases (e.g., Academic Universe, Proquest, LexisNexis, S&P Predicast) that can be used for the purpose of content analysis. Given the prevalence and convenience of computerized databases, it is surprising that only seven of the studies reviewed here reported their use (Bligh, Kohles, & Meindl, 2004; Ferrier, 2001; Ferrier et al., 1999; Hodson, 2004; Lee et al., 2000; Schomburg et al., 1994; Young et al., 1996).

A concluding observation regarding the data samples featured in the 98 articles is warranted. Thirty-four studies were categorized as longitudinal, which is actually a fairly conservative number. Several more studies collected data through time without exploiting them for analytical purposes, and therefore, are not counted as longitudinal (Bergh & Holbein, 1997). Given the predicted advantage of content analysis to implement longitudinal research design, this number might be considered by some as surprisingly low.

Coding. Regarding text coding, Weber (1990) suggests eight steps for creating, testing, and implementing a coding scheme to overcome concerns about rater bias at this critical

Table 3
Steps in Coding Text

The Weber Protocol (Weber, 1990)
1) Definition of the recording units (e.g., word, phrase, sentence, paragraph).
2) Definition of the coding categories.
3) Test of coding on a sample of text.
4) Assessment of the accuracy and reliability of the sample coding.
5) Revision of the coding rules.
6) Return to Step 3 until sufficient reliability is achieved.
7) Coding of all the text.
8) Assess the achieved reliability or accuracy.

stage in content analysis. The Weber protocol is referenced widely in the literature, sometimes with minor modifications (Wolfe, 1991). We therefore list these steps in Table 3.

The development, refinement, and implementation of the coding scheme are central to the quality of textual analysis, especially in the case of latent content analysis (Carley, 1993; Gephart, 1993). Weber (1990) provided a comprehensive discussion and suggested numerous ways to address reliability and validity concerns. However, Kabanoff (1996) observed that a consensus has yet to emerge on a standard procedure to establish coding reliability and validity. Morris (1994) and Rosenberg, Schnurr, and Oxman (1990) particularly have examined the issues associated with computerized content analysis.

In their study of conflict across cultures, Doucet and Jehn (1997) provided an example of the challenges involved with the implementation of various categorization techniques. In the first section of their article, they described the process by which three judges identified the conflict-related words in the interviews of American and Chinese managers working at a Sino-American joint venture and then categorized these words to characterize intracultural and intercultural conflict. After proceeding with frequency counts and context ratings of the corpus of interviews based on these categorization schemes, Doucet and Jehn used factor analysis and multidimensional scaling to identify the factors associated with the two types of conflict.

There are numerous instances in which articles reviewed here used such an inductive and exploratory approach to investigate such diverse themes as strategic groups (Osborne et al., 2001), cognitive maps (Carley, 1997), research methods (Bartunek, Bobko, & Venkatraman, 1993), codes of conduct (White & Montgomery, 1980), leadership images (Chen & Meindl, 1991), technology risk (Gephart & Pitter, 1995), and industrial accidents (Gephart, 1987).

In a more deductive and confirmatory mode of analysis, Doucet and Jehn (1997) proceeded in the second section of their article with the evaluation of the degree of hostility implied by the same interviews, this time using three standard lists of hostility words. Following the procedures described by Weber (1990), they developed custom dictionaries of terms specific to their study using various construction techniques. Methodologies to create and implement dictionaries also are discussed in other content analysis studies (e.g., Kabanoff et al., 1995; Mossholder, Settoon, Harris, & Armenakis, 1995; Smith et al., 1991).

The results obtained in the two sections of Doucet and Jehn's study reflect an important difference between exploratory and confirmatory research purposes (Gephart, 1993, 1997; Smith et al., 1992; Weber, 1990). The key lesson here is that the research purpose and methodology should drive the coding approach.

The use of computers has had a significant impact on the coding process. For instance, Salancik and Meindl (1984) employed 23 raters to code 324 letters to shareholders. Today, this work could be done via CATA with higher reliability, lower cost, and greater speed. Computers and computerized databases have allowed researchers to access and code hundreds of trade magazines longitudinally using Boolean algorithmic searches, saving countless hours of valuable graduate-assistant time (Osborne et al., 2001). The field of competitive dynamics provides a case in point (Grimm & Smith, 1997). As a general characterization, most recent work uses a combination of manual and computerized coding (Abrahamson & Hambrick, 1997).

Analysis of content. The third phase, analysis of content, exhibits significant consistency in its implementation. Most of the studies reviewed here (83 of the 98 articles) report some form of frequency counts, including cross-tabulations. For example, such counts and cross-tabulations have been an impactful way to outline the trends in management research methodology (Bergh & Holbein, 1997; Flanagan & Dipboye, 1981; Mowday, 1997; Podsakoff & Dalton, 1987; Scandura & Williams, 2000).

In addition, content analysis lends itself to the use of sophisticated approaches to measure constructs such as degree of internationalization of advertising schemes (Suzuki, 1980) and pollution performance (Freedman & Jaggi, 1982). Recent studies have continued to report innovative measurements to operationalize concepts such as attack diversity and predictability (Ferrier, 2001), simplicity of competitive repertoire (Ferrier et al., 1999; Miller & Chen, 1996), action scope (Hambrick et al., 1996), firm responsiveness (Chen & Hambrick, 1995), competitive inertia (Miller & Chen, 1994), nomological network of quantitative sensemaking (Gephart, 1997), perceptions of organizational change (Kabanoff et al., 1995), team mental models (Carley, 1997), attentional homogeneity (Abrahamson & Hambrick, 1997), causation (Barr et al., 1992; Narayanan & Fahey, 1990), and research method heterogeneity (Scandura & Williams, 2000). Introducing new and more sophisticated measurement approaches is a fruitful research area that could help further our understanding of many organizational constructs, especially at the latent level, that have remained unexplored until now.

Articles that do not report such statistics describe in purely qualitative terms the themes emerging from their investigation (Arndt & Bigelow, 2000; Bartunek et al., 1993; Ellis 1989; Fiol, 1989; Gephart, 1984, 1987; Gioia & Chittipeddi, 1991; Huff, 1982; Myers & Kessler, 1980). For instance, Arndt and Bigelow (2000) discussed the mostly defensive impression-management techniques used by the management teams of hospitals to discuss the structural innovations of their organizations.

These qualitative analyses use various formats to present their observations. For instance, Fiol (1989) used the three structural levels—surface, narrative, and deep—that form the basis of semiotic analysis. Gioia and Chittipeddi (1991) differentiated between their ethnographic study and content analysis as first- and second-order findings. Finally, Gephart (1984) reported his data in textual tables and exhibits, a format that later became one of the main analytical components of his textual approach (Gephart, 1993).

In summary, these studies reflect the versatility of the analyses that can be conducted. Whereas the vast majority relied on simple counts, 18 also included advanced measurements, and 20 used a qualitative approach. In addition, both latent and manifest variables were covered in the 98 articles reviewed: 23 studies focused on manifest content, 43 on latent content, and 32 covered both latent and manifest types of variables.

Interpretation of results. The fourth and final phase of any project is the interpretation of the results within the theoretical framework guiding the research endeavor. The intellectual product may be measurement, description, or inference, depending on the research purpose (Tesch, 1990).

Several types of analyses have been used in conjunction with content analysis. Because of the qualitative nature of much of this work, a number of studies report only descriptive statistics to convey their results (e.g., D'Aveni & MacMillan; 1990, Pearce & David, 1987; Salancik & Meindl 1984). Recently, more sophisticated quantitative analyses have come into vogue. For example, factor and cluster analyses are natural fits with content analysis (e.g., Doucet & Jehn, 1997; Kabanoff et al., 1995; Mossholder et al., 1995; Schneider et al., 1992). Variables measured through content analysis also have been incorporated into multiple regression analysis (e.g., Abrahamson & Hambrick, 1997; Fombrun and Shanley, 1990). Finally, longitudinal techniques are used increasingly, leveraging a natural advantage of content analytical research (e.g., Ferrier, 2001; Kabanoff & Holt, 1996; Lee et al., 2000).

Of the 98 articles reviewed, 66 used a deductive research design, whereas 17 used a more inductive approach; 15 used a combination of both. Seventy-six articles were of a more quantitative bent, 15 were purely qualitative, and 7 had both a quantitative and qualitative orientation. Finally, all types of research approaches were represented: single method (24 articles), elaboration (14), triangulation (9), and integration (51).

These results illustrate the richness and continued potential of content analysis for management research. Below, we address two specific concerns relating to reliability and validity issues in content analysis and the advent and impact of CATA.

Two Methodological Considerations

Reliability and validity. As with all methodologies, reliability and validity are the most fundamental issues associated with the application of content analysis (Huff, 1990; Morris, 1994; Weber, 1990). In general, reliability is easier to achieve at the manifest level, but validity can be higher at the latent level.

Much of the empirical literature in management thoroughly explains reliability and validity procedures when applying content analysis (Bowman, 1984). Reliability has been addressed primarily through the use of multiple coders. We found that 62.2% of the articles reviewed (61 out of 98) had used multiple raters and reported interrater reliability checks.

As discussed before, one key validity concern is whether content analyses of documents such as letters to shareholders are indicative of deep managerial structures. Researchers have addressed this issue thoroughly (Abrahamson & Hambrick, 1997; Bowman, 1984; Huff, 1990; Clapham & Schwenk, 1991), but skeptics will continue to raise the concern.

Finally, there are encouraging signs that the semantic validity possible with manual coding using multiple coders can be achieved at lower overall cost with CATA (Kabanoff, 1996;

Kelle, 1995; Morris, 1994). Morris (1994) tested the validity and reliability of manual and computerized approaches. Using the mission statement data from Pearce and David (1987), she compared the outcome of computerized coding in ZyIndex, a text management software, to that achieved with a panel of six graduate business students. She found that results from ZyIndex and the human coders agreed at an acceptable level and that computerized coding yielded an acceptable level of semantic validity (Morris, 1994).

Computer-aided text analysis. Several definitions of computer-aided text analysis have been proposed (Kabanoff, 1997; Mossholder et al., 1995; Wolfe et al., 1993). Because multiple methodologies and technologies have been included under the CATA rubric, we have adopted Wolfe and his colleagues' inclusive definition: CATA is constituted by software programs that "facilitate the analysis of textual data" (p. 638). Most authors use the expression *computer-aided textual analysis* (CATA) because its short form is preferred to the unfortunate acronym for computer-aided content analysis. Nonetheless, the terms are interchangeable.

The use of text analysis software affords several analytical advantages that greatly enhance the methodology. First, computerization allows the manipulation of large data sets (Gephart, 1991; Lissack, 1998; Morris, 1994; Wolfe et al., 1993). The complexity and interrelationships of concepts increase exponentially with the quantity of data. Software programs offer features for organizing, searching, retrieving, and linking text that renders the process of handling a large project much more manageable and productive (Kabanoff, 1997). For instance, Lissack described how a parsing functionality can be used to sample concepts from a large corpus of documents. This sampling approach allows the researcher to content analyze a reasonable amount of data representative of the initial corpus.

Second, the analytical flexibility afforded by CATA is a recurring theme in the literature (Gephart 1997; Tesch, 1991). For instance, in the Special Issue of *Qualitative Sociology*, Tesch outlined many of the software options available for descriptive or interpretative research, theory-building research, or traditional content analysis.

Importantly, the use of computers addresses many of the reliability concerns associated with manual coding (Gephart & Wolfe, 1989; Morris, 1994; Wolfe et al., 1993). Coding rules are made explicit, which ensures perfect reliability and comparability of results across texts.

Finally, computers reduce the time and cost of undertaking content-analysis projects (Mossholder et al., 1995). Savings stem from the minimization of the coding task, the reduction in coder training, the elimination of interrater checks, and the ease of running multiple analyses (Carley, 1997).

Given these advantages, it is surprising that only 24.5% of the articles reviewed (24 out of 98) reported the use of computers for part or all of the content-analytic task. Nonetheless, these studies provide excellent examples of the use and advantages of CATA, especially as it pertains to computerized databases (Ferrier, 2001; Ferrier et al., 1999; Lee et al., 2000; Schomburg et al., 1994; Young et al., 1996), data mining and search (Osborne et al., 2001; Wade, Porac, & Pollock, 1997), dictionaries (Birnbaum-More & Weiss, 1990; Doucet & Jehn, 1997; Mossholder et al., 1995; Palmer et al., 1997), ease of manipulation (Abrahamson & Hambrick, 1997; Abrahamson & Park, 1994; Frazier, Ingram, & Mack Tennyson, 1984; Gephart, 1993, 1997; Gephart & Pitter, 1995; Kabanoff & Holt, 1996; Kabanoff et al., 1995; McConnell et al., 1986), objectivity (Ingram & Frazier, 1983), and processing power (Carley, 1997).

Discussion and Conclusion

The goal of this research was to provide a comprehensive review of the past 25 years of content analysis in organization studies. We first focused on the strengths of the methodology in general. Content analysis implemented with care should be of particular interest for management researchers because of several factors, including access to deep structures of managers, nonintrusiveness, analytical flexibility, and the ability to implement longitudinal designs. Several additional methodological and practical advantages also have been identified in terms of safety, scalability, cost effectiveness, collaboration, triangulation, and replicability.

Content analysis offers significant advantages for management research that, in our opinion, outweighs potential limitations. Most of the pitfalls of the method can be minimized through carefully implemented studies.

Contribution of content analysis to management research. Our content analysis of the literature revealed that the management research of the past quarter century has addressed many of the potential critiques concerning the application of content analysis. First, scholars often have been concerned to draw the method out of its methodological ghetto into the research mainstream (Roberts, 1997; Woodrum, 1984). We found 98 articles published or referenced in management journals between 1980 and 2005 that used content analysis in areas as diverse as business policy and strategy, managerial and organizational cognition, research methods, organizational behavior, human resources, social-issues management, technology and innovation management, international management, and organizational theory.

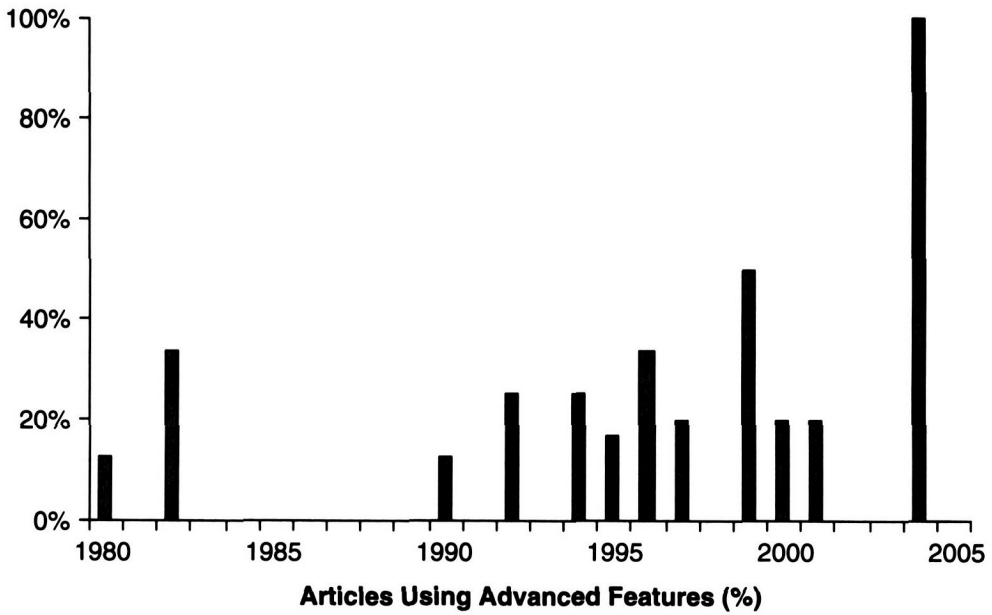
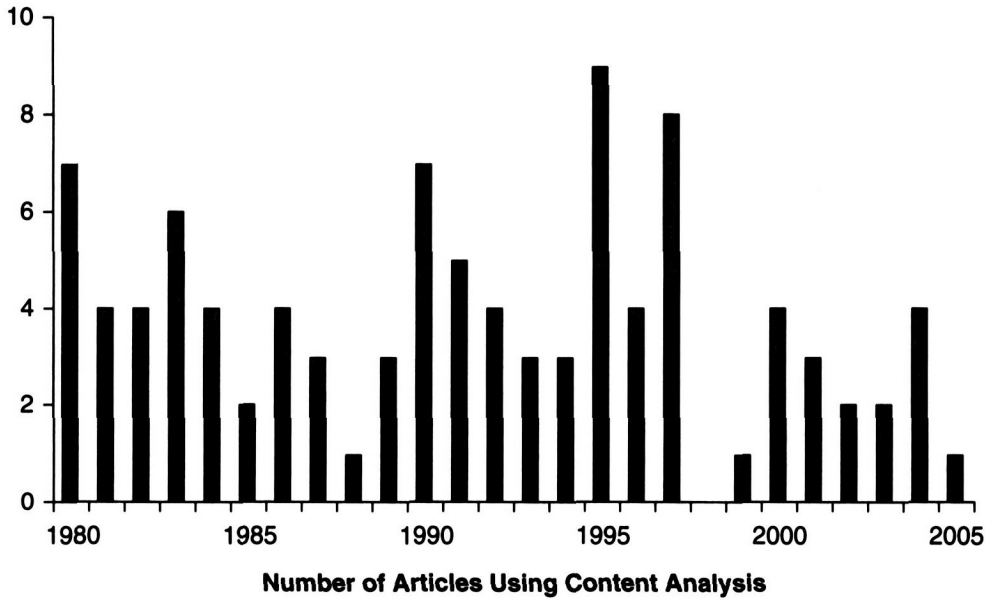
Second, it has been observed that despite its merits, the use of content analysis remains subsidiary in social science research and often has yielded studies of marginal quality (Woodrum, 1984). On the contrary, the studies reviewed here took great pain to justify the validity of the data sources used, such as annual reports, mission statements, and trade magazines (Abrahamson & Hambrick, 1997; Bowman, 1984; David, 1989; Smith et al., 1992). The majority of the studies reported comprehensive reliability testing, thereby avoiding the risk of coder bias.

Surprisingly, some have expressed concerns that being at the frontier between qualitative and quantitative research hinders rather than fosters the development of content analysis because of factionalism (Gephart, 1991). In this study, we found that management researchers using content analysis leveraged the conceptual and analytical flexibility afforded by the method to yield studies mixing inductive and deductive approaches based on rigorous quantitative analysis as well as rich qualitative insight.

Finally, there is always a risk of a disconnect between the content of the messages studied and the characteristics of the informants as well as the source materials, which can introduce additional ambiguity associated with the inferences drawn (Huff, 1990). We found clear evidence that this concern could be addressed through the use of multiple sources of information (Gephart, 1993, 1997; Gioia & Chittipeddi, 1991; Kabanoff et al., 1995) and triangulation (Carley, 1997; Doucet & Jehn, 1997; Osborne et al., 2001).

Trends through time. In addition to the results previously exposed, we charted the evolution of the literature along the coding dimensions used for our analysis. Our observations are rendered in Figure 1.

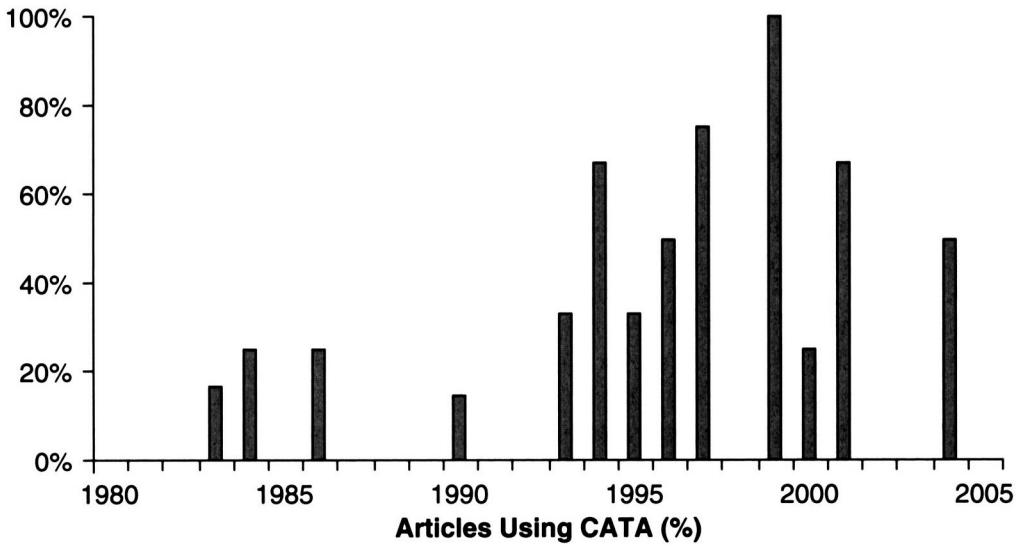
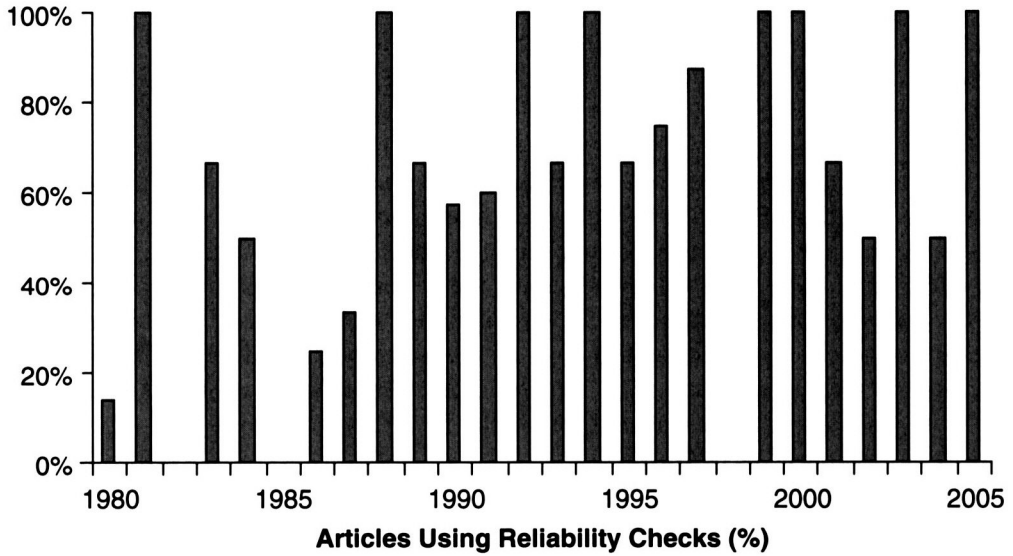
Figure 1
Trends in Content Analysis Research



(continued)



Figure 1 (continued)



In addition to this graphical rendition, we tested the differences in means between the 1980–1990, 1991–2000, and 2001–2005 periods and detected time trends using regressions (available from the authors). Only those aspects that changed significantly through time appear in Figure 1.

This analysis indicates an increase in the sophistication and quality of the articles reviewed through time. For instance, content-analytic studies in management research increasingly have adopted advanced measurements. In addition, the use of reliability checks and CATA software also has been on the increase. Conversely, there seem to have been no detectable changes in the focus, type, and presentation of the analyses performed.

Direction for future research. We see at least three areas in which research based on content analysis could be enhanced to yield even more interesting and insightful studies. The first one would be to adopt richer conceptual frameworks. Prior studies (e.g., Gephart, 1993; Gioia & Chittipeddi, 1991) have shown the potential of combining content analysis with ethnographic approaches. Several other qualitative methodologies potentially could be applied in conjunction with content analysis techniques (Denzin & Lincoln, 1994; Gephart, 1991). For instance, a reviewer of this article suggested that content analysis could be used to replicate studies such as Calas and Smircich (1991) and yield new insight into critical postmodern research.

The literature reviewed here has shown that a wide variety of external and internal documents could be used for the purpose of content analysis (e.g., Gephart, 1993, 1997; Kabanoff et al., 1995). One could envision further research in which other rich sources of information are incorporated, such as presentation to analysts, institutional advertising campaigns, or internal and external flows of electronic mails.

Web sites provide management scholars with a particularly intriguing data source of corporate information. Firms use web sites to communicate with various organizational stakeholders, including investors, employees, suppliers, and the general public. Web sites contain both qualitative and quantitative data on firms' products, markets, and strategy. Many run to hundreds and even thousands of pages of text and graphic, audio, and video data containing information on virtually every aspect of the corporation, its officers, history, and identity. Many sites also provide previously difficult-to-obtain executive speeches and press releases intended for investors and other publics. To date, this rich data source has remained essentially untapped in management research.

Finally, the content analysis performed here of the 98 articles revealed the strength of basic content analysis in studying both manifest and latent constructs that would be more difficult to access using alternative techniques. In addition, several studies revealed more sophisticated approaches to measure advanced new concepts (e.g., Carley, 1997; Ferrier, 2001). This trend should continue in the near future, with an emphasis on network-related approaches (Roberts, 1997).

Enabled in part by recent advances in computer-aided text analysis, the use of network concepts has been one of the most exciting developments of the past few years in content analysis research (Carley, 1997; Kelle, 1995). New linkage features between text, memos, and codes, such as hyperlinks and graphical tools, can apply to the areas of theory building, hypothesis testing, and integration of qualitative and quantitative analysis. These developments seem particularly apt to quell concerns about the decontextualization of results that is inherent to a methodology based on coding and retrieval (Dey, 1995; Prein & Kelle, 1995).

Appendix Coding Scheme

Research themes

As per Scandura and Williams (2000), we sorted the articles according to the various divisions and interest groups of the Academy of Management.

- Type of data
 - Annual reports (AR)
 - Mission statements (MS)
 - Proxy statements (PS)
 - Other publicly available documents (PD)
 - Internal company documents (ID)
 - Trade magazines (TM)
 - Scholarly journals (SJ)
 - Business cases (BC)
 - Computerized databases (CD)
 - Open-ended questions in surveys (OQ)
 - Transcribed videotapes (TV)
 - Interviews (IN)
 - Other field data (FD)
 - Measurement items (MI)

From the methodological literature, we expected certain types of data sources to be used (e.g., Jauch, Osborn, & Martin, 1980; Gephart, 1993). Articles revealed additional categories (e.g., proxy statements, as in Zajac & Westphal, 1995) that were incorporated in the final categorization scheme.

- Longitudinal design
 - Yes (1) or no (0)

Longitudinal design is indicated for studies that examined trends through time. Some research collected data for several years without necessarily performing longitudinal analyses. For instance, Ferrier (2001) was classified as longitudinal because of its use of event-history techniques. Conversely, Schomburg et al. (1994) appears as nonlongitudinal, based on an approach pooling the data of competitive actions collected during the 1975 to 1990 period to perform ordinary-least-squares regression analyses. This definition of longitudinal design is consistent with that of Bergh and Holbein (1997), but different than that of Scandura and Williams (2000).

- Focus of the analysis
 - Latent (0), manifest (1), or both (2)

Analysis of latent and manifest content is defined by Holsti (1969) and Erdener and Dunn (1990). Exemplars for latent content analysis include Gioia and Chittipeddi's (1991) and Gephart's (1993) accounts of sensemaking, and for manifest content analysis, several competitive-dynamics studies by Smith, Grimm, and their associates. Numerous articles report analyses in which latent and manifest

dimensions both are content analyzed, such as in the case of studies focusing on mission statements (e.g., David, 1989).

- Content analysis techniques
 - Frequency count (FC)
 - Advanced features (AD)
 - Qualitative approach (QA)

Frequency counts form the basis of content analysis (Holsti, 1969; Krippendorff, 1980; Weber, 1990). Most studies include this type of counts unless they rely purely on qualitative analysis, such as in the case of Gephart's examination of crises and disasters (e.g., Gephart, 1987). More advanced features are used in a number of studies. Examples include competitive repertoire simplicity (Miller & Chen, 1996) or linguistic indicators (Abrahamson & Hambrick, 1997).

- Research design
 - Inductive (0), deductive (1), or both (2)

Exemplars of articles using inductive and deductive research designs include Gioia and Chittipeddi (1991) and Abrahamson and Park (1994), respectively. Formal hypotheses (e.g., Smith et al., 1991) or research questions (e.g., Bergh & Holbein, 1997) are possible expressions of a deductive approach. In some cases, as in Doucet and Jehn (1997), authors have used both approaches in developing their research.

- Type of interpretation
 - Qualitative (0), quantitative (1), or both (2)

This category is consistent with, albeit simpler than, the categorization scheme used by Scandura and Williams (2000) to code the type of data analysis used in the articles that they reviewed.

- Multimethods
 - Single (0), triangulation (1), elaboration (2), and integration (3)

An article is considered multimethods when it includes several (at least two) quantitative and/or qualitative methods. Gephart (1991) proposed that content analysis can be used in conjunction with other methodologies for the following purposes: (a) triangulation, in which the same hypotheses are tested through different approaches (e.g., Doucet & Jehn, 1997); (b) elaboration, whereby different facets of the same phenomenon are uncovered through alternative methods (e.g., Gephart, 1993); (c) integration, in which several methods are integrated for a single research purpose (e.g., Fombrun & Shanley, 1990).

- Reliability checks
 - Yes (1), no (0)

Reliability checks were attested by the mention of several (at least two) coders and the explicit mention of interrater reliability scores in the articles.

- Computer-assisted text analysis
 - Yes (1), no (0)
-

Note

1. These four categories explaining the coding scheme are described in the appendix.

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