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UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE INTELLECTUAL STRUCTURE OF POLITICAL COMMUNICATION

RESEARCH: AN AUTHOR CO-CITATION ANALYSIS

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Philosophy

By

YANG LIN

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THE INTELLECTUAL STRUCTURE OF POLITICAL COMMUNICATION
RESEARCH: AN AUTHOR CO-CITATION ANALYSIS

A Dissertation APPROVED FOR THE
DEPARTMENT OF COMMUNICATION

BY

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Abstract

This study applies a method of author co-citation analysis to examine intellectual structure of political communication study. Primarily based on the number of their articles in communication journals, fifty-one influential authors are selected from active members of the Political Communication Divisions of the International Communication Association (ICA), the National Communication Association (NCA), and the American Political Science Association (APSA). The results of the multidimensional scaling analysis and cluster analysis of these 51 selected authors' co-citation patterns show that intellectual fragmentation exists in political communication research; scholars with different academic backgrounds have their specialities of using a particular research approach to study certain subjects in the field; scholars do not have much information exchange, and thus they are intellectually separate and confined within the boundaries of each fragment. The findings of this quantitative study complements and cross-validates the assessment made by other traditional qualitative reviews about the field.

Chapter One Introduction

The study of political communication is a branch of contemporary communication studies which began at the turn of this century (Delia, 1987). Many of the earliest contemporary communication studies were generated by analyses of propaganda/persuasive messages, mass media effects on voting, and public opinion of political and social issues. Many of the most influential scholars in the development of modern communication studies left their footprints in the domain of political communication study, such as political scientist Harold Lasswell, sociologist Paul Lazarsfeld, and psychologists Carl Hovland and Kurt Lewin (Delia, 1987; Nimmo, 1977; Rogers, 1994). Today, political communication has developed into an academic field of inquiry. The importance of studying the intellectual structure of the field is obvious, but the structure itself is not. Studies utilizing traditional subjective and qualitative methods have produced many pictures of this structure. However, the quality of these pictures can be enhanced by information obtained from research using objective and quantitative methods. This study is such an attempt.

Political Communication--A Field of Inquiry

Although the origins of political communication can be

traced back many centuries (e.g., Plato's works in ancient Greece), as a cross-disciplinary field of study it began to emerge in the 1950s (Nimmo & Sanders, 1981). During this period, the label "political communication" first appeared to describe an intervening process by which political institutions and citizens interact with each other and "political influences are mobilized and transmitted" (p. 12).

It was the synthesis of interdisciplinary efforts which gave birth to this new area of communication study. A variety of research traditions in multiple disciplines made their unique contributions to the emergence (Nimmo, 1977). It is almost impossible to discuss all these traditions in a precise way. However, there are several which can be identified as ones that "constitute the lineage of the field" (Nimmo & Sanders, 1981, p. 17). The first is the tradition of rhetorical analysis of public political discourse. This tradition has probably the longest history in political communication study. Some of classic writers in this tradition are, Aristotle, Blair, Campbell, and Whately. This approach is generally qualitative in nature and historically and critically examines the source of political message (such as the speaker's motives and styles) and the message itself.

The second is the tradition of political propaganda study during the period of post-WWI to post-WWII. Scholars like Lasswell and Doob focused on how different governments used propaganda/persuasive messages to influence public opinion. Lasswell's quantitative analyses (content analysis) of messages generated by the government demonstrated the power of mass political communication in forming public opinion (Lasswell, 1927). His question, "Who says what in which channel to whom with what effects?" clearly describes the communication process and defines a framework for later communication studies (e.g., in political communication, Jackson-Beeck & Kraus, 1980; Mansfield & Weaver, 1982; Nimmo, 1977; Sanders & Kaid, 1978).

The third is the tradition of voting studies in the United States. Within this line of research, scholars combined a variety of quantitative and qualitative research methods (e.g., survey research with both in-depth interviewing and observation with participation, content analysis with biographies, and panel studies with focused interviews) (Rogers, 1994). Lazarsfeld and his colleagues in the Bureau of Applied Social Research at Columbia University published The People's Choice (1944) which is a classic work of voting study. Survey research methods were advanced by Lazarsfeld in terms of triangulation of

measurement, data gathering, and analysis. Later, scholars in the Survey Research Center/Center for Political Studies of the University of Michigan added contributions to this tradition (e.g., Campbell, Gurin, & Miller, 1954, cited in Nimmo, 1977).

The fourth tradition is the study of mass media effects. This tradition was initiated by Lazarsfeld. He challenged the powerful model of mass communication and developed several concepts such as opinion leadership and the two-step flow of communication (Rogers, 1994). Some scholars (e.g., Klapper, 1961) later proposed a minimal effects model of mass communication. They argued that mass communication has a limited effect on people's political behavior and "selectivity in exposure, perception, and recall of mass communication made for reinforcement or certainly no more than minor change of political predispositions" (Nimmo, 1977, p. 442). Attitude change as the focus of this line of research was mainly examined by conducting experiments, such as the series of "Yale Studies in Attitude and Communication" conducted by Hovland and his colleagues (Nimmo & Sanders, 1981).

The fifth is the tradition of institution study of the press and government in their relation to public opinion. Lippmann's study, Public Opinion (1922), was the first to

examine the agenda-setting function of mass media. The political effects of mass media, according to this tradition, are the result of the media agenda-setting process in which media "may not be successful much of the time in telling people what to think, but it is stunningly successful in telling ... [people] what to think about" (Cohen, 1963, p.13).

As a sub-field of communication study, during the early stage of its development, political communication shared a characteristic of the field in general, being "an academic crossroad where many have passed, but few have tarried" (Schramm, 1963, p. 2). Although the four "forerunners" of communication studies (political scientist Harold Lasswell, sociologist Paul Lazarsfeld, and psychologists Carl Hovland and Kurt Lewin) (Rogers, 1994) were primarily interested in and studied topics in political communication, they never permanently immigrated into this new field. Because of this, and despite Schramm's labeling of them as the "founding fathers" of modern communication studies, current communication scholars consider them only as "forerunners" and argue that the one who deserves the title of "founding father" is Schramm himself.

Why did political communication finally become an academic "Eden" for many scholars? The reason, as Swanson

observes and Nimmo echoes (Nimmo, 1977), is simply that when "the urge for mutual collaboration is stronger than disciplinary chauvinism, scholars forge a multidisciplinary effort" (p. 441). This effort is a driving force in developing an individual field of study.

The Growth of the Field

As a result of more than two decades' endeavor, in 1973 the Political Communication Division of the International Communication Association (ICA) was officially founded. This action indicated that political communication had become a "distinct and self-conscious" field of study (Nimmo & Swanson, 1990). The interdisciplinary nature of political communication is an important attribute:

[political communication] is not a discipline [or a field] distinguished by manner of explanation but a study guided by the phenomena it explains. It is a field exceedingly diverse in theoretic formulations, research questions, and methods of inquiry that transcend the boundaries of the separate disciplines from which it draws" (Nimmo, 1977, p. 441).

Today, professional recognition of political communication exceeds 24 years; and Political Communication

Divisions have been established not only in the International Communication Association (ICA), but also in the National Communication Association (NCA) (then the Speech Communication Association/SCA) and the American Political Science Association (APSA). The number of registered members (1996) in these three divisions are 386, 823 and 285, respectively. Political Communication Divisions have also been formed in some regional communication associations such as the Eastern Communication Association.

Increases in the amount of literature and the publication outlets demonstrates the rapid growth of the field. In 1974, one of the first bibliographies in the field consisted of 1,500 entries published between 1950 and 1972 (Kaid, Sanders, & Hirsch, 1974). Only a decade later (in 1985), however, there were 2,461 entries included in the second volume of the bibliography. These entries were published in a ten-year period (1973 through 1982) (Kaid & Wadworth, 1985).

In addition to large volumes of books, dissertations, and convention papers which study topics in political communication, many articles have been published in scholarly journals in different disciplines (Kaid, 1981a). *Public Opinion Quarterly* (published by the American

Association for Public Opinion Research), *Journalism Quarterly* (now *Journalism and Mass Communication Quarterly* published by the Association for Education in Journalism and Mass Communication), *Journal of Broadcasting* (now *Journal of Broadcasting and Electronic Media* published by the Broadcast Education Association), *American Political Science Review* (published by American Political Science Association), *Journal of Communication* (published by the International Communication Association), *The Quarterly Journal of Speech* and *Communication Monographs* (published by the National Communication Association), and *Communication Research* (published by Sage Publications) are just a few of these journals. Some journals published by the regional communication associations (then speech communication associations) have traditionally included articles focusing on topics in political communication. These journals include, for instance, the *Central States Speech Journal* (now *Communication Studies*), the *Southern Speech Communication Journal* (now *Southern Communication Journal*), and *Communication Quarterly*. For many years, the Political Communication Division of the ICA published *Political Communication Review*. This journal was the predecessor of *Political Communication*, an academic journal devoted exclusively to studies in this sub-field which has been co-

published by the APSA and ICA divisions since 1990. The field today is characterized by its substantial growth (Kaid, 1996) and it has entered its mature stage.

The Assessment of the Growth

Two questions emerge from the history of the study of political communication: How can this growth be assessed? What have political communication scholars contributed to this growth? These two questions can be answered simultaneously.

An indication of the maturity of a field of study, as Cheon, Grover, and Sabherwal (1993) point out, is the "balanced utilization of several different research methods, rather than excessive reliance on one or two" (p. 109). In short, a diversity of research topics and methods is a basic feature of a mature field. Orlikowski and Baroudi (1991) also argue that for those disciplines studying individual and collective human phenomena (e.g., anthropology, political science, psychology, and sociology), "one of the most pronounced features ... is the great range of research perspectives that operate concurrently" (cited in Cheon et al., 1993, p. 108). Political communication is a field with such features. Nimmo and Swanson (1990) describe the growing process of political communication as a field of inquiry. They argue that, as the field grows, it "expands

to include more and more different types of researches ..."
(p. 13). Groups of scholars in the field have been pursuing
"dissimilar agendas and approaches" (p. 10). The maturation
of the field is marked by the formation of "specialized
research communities" (Swanson, 1993). Therefore, one
answer to the above two questions is produced by describing
the state of the field by reviewing what scholars have
studied in terms of research topics, theoretical
perspectives, and research approaches.

However, communication as a field of study in general
and political communication and other sub-areas of
communication studies in particular have not produced large
quantities of publications which overview and synthesize
studies in the field or sub-areas of the field. Well
established disciplines like anthropology, psychology, and
sociology have at least one publication devoted exclusively
to reviews of the major literature in the disciplines
(Burleson, 1996), for example, *Annual Review of
Anthropology*, *Annual Review of Psychology*, *Current
Directions in Psychological Science*, and *Annual Review of
Sociology*. Communication as a field has no similar
publications. (*Communication Yearbook* tried to function in
this fashion in the late 70's and the early 80's; it stopped
making such an effort eventually. Ironically, beginning in

1996, *Communication Yearbook* refocused its attention on publishing literature reviews in the discipline.) This type of review or synthesis is certainly essential to the development of the field or sub-areas of the field; it helps "develop a historical perspective ... on the discipline as a whole" (Burleson, 1997, p. x).

For political communication study, this type of review first appeared in the first five volumes of *Communication Yearbook*, published by the ICA (Jackson-Beeck & Kraus, 1980; Larson & Wiegele, 1979; Mansfield & Weaver, 1982; Nimmo, 1977; Sanders & Kaid, 1978). These reviews examined articles published in the previous year--presenting the findings of these articles, discussing the methods used for conducting them, and describing the intellectual history of the themes of research. Four of these five essays applied the framework developed in Lasswell's famous question, "Who say what in which channel to whom with what effects?" to organize the studies reviewed. Basically, the studies reviewed were categorized into the following themes: political communicators, political messages, political media, audience, and the effects of political communication. However, scholars realized that "as researchers continue to examine the complex transactional communication process, it will be more difficult for succeeding overviews to utilize

the Lasswellian framework ..." (Mansfield & Weaver, 1982, p. 620).

In the following years, many comprehensive overviews of the state of the field have been written (Johnston, 1990; Kaid, 1996; Kaid & Sanders, 1985; Nimmo & Sanders, 1981). Compared with the previous review essays, these overviews possess three unique features. First, they reviewed more research over a longer time period (several years). Second, because they dealt with a larger body of literature, the level of synthesis in each of these overviews is greater than the previous review essays. Third, the syntheses are also more accurate and comprehensive, reflecting the state of the field in a systematic way.

For instance, Johnston's (1990) essay investigated the literature of the study of political communication in the 1980s. She classified political communication literature into four major categories: election communication, political communication and news, political rhetoric, and political attitudes, behavior, and information. Election communication includes such areas as "political advertising" and "political debates." Political communication and news include "the president and the news media," "congress and the news media," "polling and political news," "government and media," "coverage of foreign affairs and international

news flow," and so on. Political rhetoric consists of "political language" and "the rhetoric of media." Political attitudes, behavior, and information are composed of "media use, exposure, dependency," "political socialization and participation," "political information processing and seeking," and "issues, images, and candidate evaluations." She suggests that because of the interdisciplinary nature of political communication study, it is difficult for political communication researchers to "stay abreast of relevant literature" (p. 350). Thus, the comprehensive review of literature is very important and helpful.

During the last four decades (from the 1950s to the 1990s), scholars in political communication have approached topics from various theoretical bases which include, for example, Burke's "dramatistic" analysis, Bormann's "fantasy-theme" analysis, Fisher's "narrative" analysis, McCombs' agenda-setting theory, Blumler and McQuail's uses and gratifications perspective, critical theory, and constructivist views (Denton & Woodward, 1990; Kaid, 1996; Nimmo & Sanders, 1981). The mainstream of the field focuses on the "strategic uses of communication" and its effects on the public's political attitude and behavior, such as rhetorical analyses of political speeches, studies of media coverage of political events, and studies of political

advertising (Nimmo & Swanson, 1990). The major research methods are traditional ones such as rhetorical analysis, historical analysis, survey research, experimental study, and content analysis (Kaid, 1996; Nimmo & Sanders, 1981).

Noticeably, almost all reviews follow a traditional approach, providing subjective and qualitative descriptions of the state of the field. Using this traditional method, a reviewer first reads the literature; then, based on his/her reading, s/he develops a synthesis of several aspects of the field such as research topics, research approaches, and theoretical perspectives. This reviewing method has limitations due to its subjective and qualitative nature. To overcome this weakness, an objective and quantitative review is needed. Some measurable characteristics of the field have been identified; based on these objective and quantitative measurements, different approaches have been developed to assess the state of a field. The results from these approaches can be complementary to review essays which produce only subjective and qualitative descriptions.

Jackson-Beeck and Kraus (1980) provide the first attempt to do a quantitative review of political communication theory and research. In their study, they report the percentage distribution of articles with respect to research topics and research methodologies. Because the

reviewed articles were selected from a period of a year and a half (a total of 90 studies), their assessment of the field provides only a small portion of the total picture. Different from Jackson-Beeck and Kraus' approach, the current study applies a bibliometric research method, author co-citation analysis (ACA), to quantitatively study the intellectual structure of the field of political communication.

Chapter Two Literature Review

Bibliometrics

The centrality of the intellectual structure of a field of inquiry has long been stressed in science studies. The intellectual structure is generally identified by certain characteristics: subject areas common to groups of scholars, scholarly journals and other publications, membership in associations, attendance at particular conferences, and the formal and informal communication networks (e.g., citation network) (Kuhn, 1962). The most frequently used research method to quantitatively study this structure is bibliometrics. The earliest bibliometric studies can be traced back at least 80 years. In 1917, Cole and Eales published their article, "The History of Comparative Anatomy," in *Science Progress*, in which they investigated and evaluated the literature of comparative anatomy from 1543 to 1860 (Narin, 1976). In the 1920s, Gross and Gross (1927) examined citations from a chemistry journal and presented their findings in "College Libraries and Chemical Education," in *Science* (Reid, 1983).

Since then, the development of bibliometrics has evolved through different stages, and numerous scholars from multiple disciplines have been involved in the process. For example, Robert Merton and other scholars in the area of the

sociology of science made unique contributions to the growth. These contributions include their "analyses of the scientific publication system," their "view of how scientific research works," their "description of the 'normative structure of science'," and their understanding of the function of published research literatures (Merton, 1973, cited in Pierce, 1990).

Paisley (1990) identified three generations of bibliometric research. Scholars such as Zipf, Yule, and Paisley represent the first generation. Their works tend to focus on "characteristics of the text rather than on the meaning of the text" (p. 282); these studies are considered a type of text-based bibliometric research. These studies use three basic approaches: "using the occurrence of particular concepts" in the texts to trace the impact of certain researchers on other researchers, "using high-frequency concepts" to describe the concerns of a research domain, and "using longitudinal shifts in concept clusters" to illustrate the developing process of various schools of thoughts in fields of study. For example, Paisley (1986) examined 1,800 article titles in six social science journals (cited in Paisley, 1990). He identified and rank-ordered the "high-frequency concepts" appearing in the titles. He indicated that these concepts are "almost definitional

statements for each field" which those six journals represent. For instance, "communication," "rhetoric," and "effect" appear most often in the titles from *Communication Monographs*; "communication," "media," "television," "effect," and "information" appear most frequently in the titles from *Communication Research*; "polling," "opinion," "public," "survey," and "media" are those concepts appearing in *Public Opinion Quarterly*.

The second generation of bibliometric research focuses on the reference list of scholarly publication (Paisley, 1990), that is, the citation-based information. Through citation studies, researchers in this generation describe the information environment and intellectual network in which scholars work. The linkages between journals and authors are used to define intellectual networks and are examined through the citations (e.g., Parker, Paisley, & Garrett, 1967). Co-citation analysis is one of the methods in this line of research. The development of electronic databases of citations has helped co-citation analysis become a dominant and frequently applied research method in the studies.

In the third generation of bibliometric research, the focus of the studies has shifted and is on both text-based information (e.g., full text, titles, descriptors) and

citation-based information (bibliographic records) (Paisley, 1990). It is a transitional process in which, first, different types of information gathered through multiple methods are used to answer a question that used to be answered by only one type of information gathered through one particular method; second, one particular type of information can also be gathered through multiple methods. For example, in addition to the traditional method of (used in the first generation) collecting text-based information, this type of information can also be obtained through content analysis and qualitative reviews.

Scholars have defined bibliometrics in many ways; some of them are simple, with narrow scope; some are complex, with broad scope. The following are examples:

Bibliometrics is "the quantitative study of physical published units, or of bibliographic units, or of the surrogates for either" (Broadus, 1987, p. 373)

Bibliometrics is "the measuring of the accumulation of publications in particular specialities" (Lierrouw, 1988, p. 9)

Bibliometrics "shed light on the process of written communication and of the nature and course of development of a discipline, by means of counting and

analyzing the various facets of written communication"

(Pritchard, 1969, cited in Borgman, 1989, p. 585)

Bibliometrics is "the statistical analysis of scientific publications" (Small, 1990, p. 1).

These definitions hint at what researchers can learn about the structure of a field of study with the unobtrusive and quantitative approach of bibliometrics. First, bibliometrics can be used to describe the characteristics of an existing field or scholarly community (Borgman, 1989). Utilizing the concept of scientific communities, invisible colleges, and research specialities, the range of subjects, countries, languages, document forms, and groups of scholars and their theoretical approaches have been studied (e.g., Crane, 1972; Lievrouw, 1989, Rice et al., 1988; So, 1988). Key literatures and core scholars of the field can be determined. In addition, the types and the aging of the literatures in the field can be explored.

Second, bibliometrics can be utilized to investigate the historical development of a field--the evolution of scholarly communities (Borgman, 1989). The structural change of a field is reflected in its existing literatures. Studying the citation patterns among journals in different time periods can determine such changes and further describe

the field's maturity, stability, and future direction (e.g., Hinze, 1994; McCain & Whitney, 1994; Small, 1973, 1993).

Third, bibliometrics provides an effective way to evaluate the contributions of scholars in a field (Borgman, 1989). Citations connect present studies with past research endeavors; and indicate relevance, importance, and influence of cited documents (Sarabia, 1993). Therefore, for a publication, the number of citations received reflects, to some degree, the significance of the ideas in this publication. Some studies focusing on this aspect are, for example, Garfield (1985), Herbertz and Muller-Hill (1995), and Royle and Over (1994).

Fourth, bibliometrics is very useful in discovering the communication patterns of scholars in a field (e.g., McCain, 1984, 1989). Citation linkages which reflect the intellectual connections among the scholars, rather than social contacts, are the focus of bibliometrics. The patterns are described through the study of the formal channels of scholarly communication; that is, the written record of scholarship (Borgman, 1989).

Since the late 1970s, bibliometrics has reached a mature stage. This can be seen in at least two ways. First, studies approached by bibliometric methods have become common not only in the disciplines of natural

science, but also in the disciplines of social science and humanities (e.g, in psychology, Bagby, Parker & Bury, 1990; Cox, Wessel, Norton, & Swinson, 1994; in sociology, Blackburn, 1981; Culnan, 1990; in anthropology, Choi, 1988; in political science, Dosary, 1988; McGinty, 1989; Reid, 1983; in economics, Ferber, 1986; Nederhof & van Raan, 1993; in communication, Reeves & Borgman, 1983; Rice, Borgman & Reeves, 1988; and in literature, Bell, 1982). Several journals have created new policies devoting themselves to bibliometric research, such as *Scientometrics*, *Journal of Documentation*, *Science*, *Social Studies of Science*, *Science Studies*, and *Journal of the American Society for Information Science*. Other journals have accepted bibliometric studies: for example, *American Sociologist* in sociology, *American Psychologist* in psychology, *Communication Research* and *Human Communication Research* in communication, and *Sociology of Education* in education. Second, the advance of computer technology allows researchers to obtain easier access to various types of databases. Researchers can thus explore the complex interdisciplinary and intradisciplinary relationships from many angles that could not be explored before.

Citations as the Indicator

From the perspective of sociology of science, scholarly

publications are the media through which scholars make their claims to new knowledge (Gilbert, 1976). Citations to these publications acknowledge the existence of such claims (Small & Greenlee, 1989). In other words, a citation is the acknowledgment that one work receives from another (Egghe & Rousseau, 1990). Although the reason for a citation varies from author to author and from source to source (Brooks, 1988; Chubin & Moitra, 1975; Peritz, 1983), citations in articles or books demonstrate an intellectual relationship between the citing sources and the cited sources. In general, citations of a work reflect the quality, significance, and impact of that work.

At a micro-level, for individual authors, citations play an indispensable role in their intellectual development. By citing others' works, scholars communicate about and define the elements in their evolving knowledge base (Small & Greenlee, 1989), and indicate both their understanding of the classics in the area and their contributions of knowledge in forming an integrated intellectual property. Meanwhile, they can also absorb others' thoughts into their own works. Citations "bind present to past research endeavors indicating relevance, importance, and influence of cited documents" (Sarabia, 1993, p.12). Thus, citing others' works is an important

part of the practice of academic communities and "it is a way of paying intellectual debts, of giving credit to others, and of obeying the etiquette of scholarly publication" (Karki, 1996, p. 324).

At a macro-level, for various disciplines or fields, the citation patterns among and within disciplines is an indicator of a discipline or a field's history, maturity, stability, and even future direction. The sociological significance of citation lies in its function of scientific continuity (Roche & Smith, 1978). Aggregating citations of earlier works provides a means for examining consensus in an academic field (Cozzens, 1988).

Citation Analysis

One of the most important branches of bibliometrics is citation analysis. As discussed previously, citations indicate that there is a relationship between a citing work and a cited work. Citation analysis is an approach to examining this relationship. Since the 1960s, because of the creation of various citation indices, more citation analyses have been done (Peritz, 1992). Along with a great number of citation studies in both the natural sciences and humanities, there have also been many in the social sciences, including psychology (Bagby, Parker, & Bury, 1990; Cox, Wessel, Norton, & Swinson, 1994), sociology (Blackburn,

1981; Culnan, 1990), anthropology (Choi, 1988), political science (Reid, 1983), and economics (Ferber, 1986). In fact, Snyder and his colleagues (1995) report that during a ten-year period (1982 to 1992) there were eight, four, 41, and 40 articles published in major communication, economics, psychology, and sociology journals, respectively. The growth of the citation analysis' literature is significant.

According to Peritz (1992, p. 448), there are three applications of citation analysis:

the evaluation of scientists, publications, and scientific institutions;
the investigation of hypotheses concerning the history and sociology of science and technology;
and the study of the performance characteristics of information search and retrieval procedures.

The basic techniques for citation analysis are citation counts, bibliographic coupling, and cocitation analysis (Smith, 1981). Citation counts can determine the number of citations a given work or a set of works has received during a period of time from a specific set of citing works. In the case where the cited works are articles from a particular journal, in a given time period the average

number of citations received by these articles can be used to determine the journal's impact factor--the influence of a journal on others (e.g., Pinski & Narin, 1976; So, 1988).

"Two documents are bibliographically coupled if their reference lists share one or more of the same cited documents" (Smith, 1981, p. 85). For example, if a work X is cited by another two works, A and B, then A and B are bibliographically coupled and this single citation in both A and B is defined as one unit of coupling between A and B. The coupling strength between A and B is measured by the number of such coupling units between A and B; in other words, by the number of works which are cited by A and at the same time are cited by B. Therefore, the relationships among works in a particular field can be determined by their coupling strengths, and the establishment of such relationships is a process of identifying an "intellectual epidemic," "where the germ or virus is analogous to an idea, the 'case of disease' analogous to the 'author of paper' or the 'paper containing useful ideas' ..." (Hertzels, 1987, p. 165). This approach was first introduced by Kessler (1963, 1965, cited in Parker et al., 1967). The techniques of bibliographic coupling and cocitation analysis share some similarity; the latter is the one used for the current study. A discussion of it is provided in a later paragraph.

Generally, in citation analysis, data are obtained through unobtrusive measures which "do not require the cooperation of a respondent and do not themselves contaminate the response" (Webb, Campbell, Schwartz, & Sechrest, 1966, p. 2, cited in Paisley, 1990, p. 293). In other words, the data are collected unobtrusively from the published record. The process of data collection is different from that of either interview or questionnaire, and it is more reliable and easier replicated by other researchers. It is also valid to the extent that one accepts the aggregation of citations as representing the "importance" of links between citing and cited documents (White, 1990).

Citation Analysis in Communication Studies

During the past three decades, many citation studies have been conducted in the field of communication (e.g., Beniger, 1990; Funkhouser, 1996; Lau, 1995; Parker, Paisley, & Garrett, 1967; Paisley, 1984; Reeves & Borgman, 1983; Rice, Borgman, & Reeves, 1988; Rush & Kent, 1977; So, 1988; Tankard, Chang, & Tsang, 1984; Wispe & Osborn, 1982). As the very first citation study in communication, Parker, Paisley, and Garrett (1967) investigated the citation patterns of six core communication journals (*Journal of Broadcasting*, *Journal of Communication*, *Journalism*

Quarterly, *Public Opinion Quarterly*, *Journal of Advertising Research*, and *Audio-Visual Communication Review*) and 11 journals from relevant disciplines in a journal-to-journal citation count study. The data from both their citation analysis (including 9900 citations in 17 journals from 1950 to 1965) and their survey questionnaires indicate that communication journals cite each other and other disciplines' journals frequently, but other major social science journals do not cite communication journals (Reeves & Borgman, 1983). The inter-disciplinary exchange seemed to be unidirectional.

In a later study, Paisley (1984) combined data from Parker et al. (1967) with the data collected from the divisional overview chapters in *Communication Yearbook 1* through *Communication Yearbook 5* (1977-1982). Based on his analysis of citation patterns, Paisley argued that the development of communication studies suffers from the consequences of "ethnocentrism of disciplines," a process first described by Campbell (1969, cited in Paisley, 1984). He elaborated his points in two aspects. First, according to the interdisciplinary citation data during a 30-year period, "communication journals cite major journals in the other social science, but the citations are not reciprocated" (p. 28). There is no clear trend showing that

communication studies "are becoming better integrated with other social sciences over time" (p. 28). Second, the amount of cross-citation shows that the sub-fields of communication studies, such as interpersonal, mass, political, and instructional communication, don't cite each other often; and they "react to each other more ethnocentrically than they react to the other social sciences" (p. 30). For example, between any one of five mass communication journals (*Communication Research*, *Journal of Broadcasting*, *Journal of Communication*, *Journalism Quarterly*, and *Public Opinion Quarterly*) and any one of three interpersonal communication journals (*Central States Speech Journal*, *Communication Monographs*, and the *Quarterly Journal of Speech*), only 24 cross-citations occurred in a total of 5,941 citations made in the 1981 issues of these eight communication journals. The overwhelming amount of citations were within the mass communication sub-field or within the interpersonal communication sub-field.

Based on his citation analysis of ten major communication journals, So (1988) also found that communication literature is heavily dependent on the literature from other disciplines (e.g., psychology); communication literature is less likely to be cited by other disciplines. In other words, communication as a field of

study is less attractive and less influential and may occupy "only a peripheral position in the social sciences" (p. 247). Furthermore, of 1,672 citations from the ten major communication journals, only 115 cross-citations happened between the five mass communication journals and the five interpersonal communication journals (Reardon & Rogers, 1988). These findings echo what is in Paisley (1984). In addition, his findings show that there is no dominant journal in communication research; and he argues that the lack of such a dominant journal or journals implies that communication as a discipline is still at an emerging stage, and "a widely accepted cognitive structure has yet to evolve" (p. 251).

Both Reeves and Borgman (1983) and Rice, Borgman, and Reeves (1988) investigate the citation patterns of ten major communication journals. The results from their citation analyses and network analyses indicate that communication literature is dichotomous or clustered in two groups: speech/interpersonal and mass communication. The number of reciprocal citing between these two cliques is unbalanced: the former has cited the latter more frequently than vice-versa. Although there are many discussions of the feature of the field--whether it is dichotomous or not (e.g., Reardon & Rogers, 1988), the findings of these two studies

provide unique insights of the field.

Most recently, Rice and his colleagues (1996) demonstrated again how citation analysis can contribute to communication studies. Their primary interest was to use citation data collected from the *Social Science Citation Index* to study the evolution of the *Journal of Broadcasting (& Electronic Media)* during the past 40 years. Based on citation data, they assessed the *Journal of Broadcasting (& Electronic Media)*'s influence within the field of communication studies and ranked the most frequently cited authors and publications in the field. They used several two-dimensional maps to illustrate the relationships among the core communication journals, providing an intuitive view of the field.

The findings of these citation analyses provide important insights concerning many aspects of communication studies. For example, in his discussion of the historical development of communication research, Delia (1987) uses citations as an indicator to demonstrate that after WWII the central focus of communication study was no longer propaganda analysis because of "the complete absence of citations to Lasswell in Klapper's (1949, 1960) and Hovland's summaries of mass communication effects research" (p. 28). Regarding the current status of communication

studies, Berger (1991) says that "bibliometric studies of journal citations have revealed extensive Balkanization within the field [of communication studies]..." (p. 102) and "... have produced compelling evidence that the field of communication has been suffering and continues to suffer from an intellectual trade deficit with respect to related disciplines; the field imports much more than it exports" (p. 102). Based on these citation studies, Rogers and Chaffee (1993) echo Berger, "it is rare to find a mass communication study in HCR [*Human Communication Research*]... or a theory-testing study in CT [*Communication Theory*], despite the generic labels on the covers of the journals" (p. 128).

Most of the above studies, however, only examine journal-to-journal citations, which explores only the characteristics of a discipline or a field at the macro level. In order to capture the picture at a micro level, it is obvious that the focus of study must be on the level of author--that is, the pattern of author-to-author citations needs to be investigated. Lin (1996) provided the first attempt to explore such a pattern in the research area of political advertising.

Author Cocitation Analysis (ACA)

Author Cocitation Analysis (ACA) is an approach within

the larger context of citation analysis and bibliometrics (White & McCain, 1989). In ACA, "oeuvres--sets of documents by authors" are the unit of analysis (White & Griffith, 1981); the cocitation of pairs of oeuvres is the variable which indicates the intellectual relationship among authors. One assumption of this method is that if two authors are "often jointly cited," then there exists an intellectual relationship between them; "the more frequently they are co-cited, the more closely they are related" (White, 1990, p. 84). In other words, if two authors' writings are related in some way, they are more likely to be cited together by other authors. Under this circumstance, these two authors are co-cited authors. As one form of citation analysis, ACA studies the pattern among a group of co-cited authors; this pattern is based on hundreds of authors' or citers' perceptions of co-cited authors' works. The pattern is developed from a collective view of authors in a discipline or a field.

One immediate product of ACA is a map of authors' intellectual relationships in a field of study. Using a multidimensional map, an author is represented by a point, and the relationships among authors as perceived by many citers are reflected in the proximity of the points (White, 1989). For example, if two authors are perceived to be

similar with respect to their research areas or methodological approaches, then they will be positioned close to each other. Based on the same rule, if a group of authors have common or similar research subjects, or they share the same research approaches, then, in general, they will form a cluster. If a field under study is characterized with a variety of research topics which are studied by different approaches, there will be several clusters on the map to represent the features of the field's intellectual structure. In addition, the dimensions (usually the axes) of the map are also interpretable; this interpretation enhances understanding of the intellectual structure of the field.

ACA is a combination of three research traditions developed within the study of information science and the sociology of science (White, 1989). First, it involves the study of bibliographic records (including the citations) of prominent authors in particular subject areas or from certain schools of thought. Second, it involves the study of co-citation patterns of selected authors' highly cited publications through mapping techniques. The research unit in this tradition is the article or book; the patterns shown in the map are interpreted as indications of specialities and schools in the field under study. Third, it involves

research in which bibliometric data are collected from online databases which provide a large and up-to-date coverage.

Criticism and Defense of ACA

Criticism of ACA is grounded on questioning the basic assumptions of citation analysis. The critics argue that there are many reasons for an author to cite others' works and each citation cannot be treated as equal. In other words, authors are not homogeneous regarding their referencing behavior; the "normative theory of citing" or "implicit theory of citing" which is reflected in Merton's observation needs to be modified (Chubin, 1976; Lievrouw, 1989; MacRoberts & MacRoberts, 1987; Mulkay, 1974). The validity of citation analysis is under attack when the concept of "citation" is used as an operational measure (Lievrouw, 1989). Second, the critics of citation analysis argue that although two or more authors sometimes cite the same work, they may need different information from this work (Brooks, 1988).

Depending on the chosen unit of analysis in their studies, advocates of citation analysis divide into two groups in responding to these attacks. Researchers in the first group select single works as the unit of analysis and focus on studying "psychology of citation." They use

methods of content analysis and interviewing to examine the authors' motivation for citation (Brooks, 1988; White, 1990). Different citer motivation models (either univariate or multivariate) have been developed.

A univariate model tries to reflect the "psychological state of a citer along one dimension" (Brooks, 1988, p. 50); for example, the dimension of "favorable-neutral-unfavorable." Multivariate models of citer motivation have many versions; some of them are developed from a specific subject field. For instance, Garfield's (1977) model has 15 categories of citer motives which include "identifying methodology, equipment, etc.," "providing background reading," and "criticizing previous works" (cited in Brooks, 1988, p. 51). Moravcsik and Murugersan's (1979) model is designed for application in the field of the social studies of science and consists of eight categories (conceptual, operational, organic, perfunctory, juxtapositional, confirmative, and negational references).

However, researchers in the second group select the cited authors or the cited documents as the unit of analysis (that is the case in author and document cocitation analysis) and have their own responses to the criticism. White (1990) uses an analogy with voting studies in political science to articulate a defense:

It is well known that there are various reasons for voting and various accompanying states of mind. In one kind of political study, it is perfectly proper to examine voter psychology and to categorize why votes were given ... But whole other classes of studies ignore the motivations underlying the votes and focus instead on the magnitudes and distributions of the vote counts ... [I]t does not matter to some scholars why the votes were given; what matters are the tallies and patterns that emerge over the whole electorate and perhaps over more than one election. Analyses of American "critical elections" and of Congressional roll calls are of this latter kind, and bibliometric analyses are comparable (p. 90).

White (1990) further argues that researchers using cocitation analysis are not so naive, as the critics (e.g., Edge, 1979, cited in White, 1990) accuse, that they simply assume that the citing of X and Y together by Z indicates that, in Z's perspective, the work of X and Y are necessarily related. (For detailed descriptions of author and document cocitation analysis, please refer back to pp. 22-27 and pp. 32-34). What the critics miss here is that the data are actually from the "piling up of co-citations--

the fact that their count over time exceeds a certain threshold--that indicates a relationship" (p. 96), that is, "the liberating effect of using data from very large files" (p. 91).

As described in the previous discussion, citation analysis in general and author cocitation analysis in particular can yield valid and reliable research results. However, it does not mean that these research methods are perfect and without limitations. For example, first, in the case of author cocitation analysis, the selection of authors determines the outcome of the study, usually the multidimensional maps of sub-areas of a field. In other words, the maps are only as good as the researchers' selection of authors. Second, if the data are collected from SSCI (Social Sciences Citation Index), as they usually are, the cited items are listed by the first author only. However, because co-author order usually reflects the relative importance of a contribution, the second problem is minimized (Bayer, Smart, & Mclaughlin, 1990).

ACA Studies

One of the earliest uses of ACA is a study conducted by Rosengren (White, 1990). In 1968, Rosengren published a book based on his dissertation which studied what he called "co-mentions" of selected Scandinavian and world literary

figures appearing in the texts of critical reviews. He "succeeded in inventing it [ACA] to an astonishing degree" (p. 89).

Another pioneering study was White and Griffith's (1981) article in which they explored the co-cited pattern of 39 authors of information science. In their study, a two-dimensional map constructed from the results of the multidimension scaling analysis showed several features of research activities among these authors; for example, the "centrality and peripherality of authors within groups and with respect to the overall field" (p. 165) and the "proximities of authors withing groups and across group boundaries" (p. 165). A factor analysis based on these data confirmed the groupings produced by the mapping.

During the 1980s and 1990s, many articles within the tradition of ACA were published (e.g., Bayer et al. 1990; Culnan, O'Reilly, & Chatman, 1990; Eom, 1996; Karki, 1996; McCain, 1984, 1986, 1989). For example, McCain (1989) examined the co-citation patterns of 58 authors from the field of population genetics and its relevant areas. In the two dimensions resulting from the multidimensional scaling analysis, the authors' research specializations spread along the horizontal axis. Their theoretical approaches to their studies were reflected by the distribution of author groups

on the vertical axis. The findings of this study suggest that both authors' institutional affiliations and general research efforts may be reflected in the pattern of author placement and cluster assignment.

Bayer et al. (1990) selected 36 authors from the field of marriage and family study. The multidimensional scaling analysis of the cocitation data shows that the intellectual structure of this particular field of study can be represented in a three-dimensional map: dynamism (authors' perspectives which range from relatively static, structural, to comparative), temporal span (features of authors' works which have a historical and intergenerational focus or concentrate on contemporary and nuclear family system), micro-to-macro (the units of analysis, varying from psychological or interactional to societal or social-structural). Based on these three dimensions, researchers in this field are divided into six groups. The experts interviewed by the researchers agree that the groupings are relatively accurate and reflect the reality.

Regarding the uniqueness of ACA, White (1990b) concludes: "ACA helps to define the principal subject and methodological areas of literatures in terms of their major contributors, and to do so through the empirical consensus of hundreds of citers rather than the impressions of

individuals" (p. 430). He further stresses that the use of ACA does not deny the traditional subjective qualitative approach, but the findings of ACA provide complementary information which enhances researchers' understanding of the intellectual structure of a field. The information is embedded in the context of authors' bibliographic records. What ACA does is to reveal such information hidden in the context. In so doing, ACA assigns "empirical meaning to such abstract words as 'influence,' 'impact,' 'centrality,' [and] 'speciality' ... "(p.430). It is also noted that the multidimensional map that results from ACA is not a precise picture of "a full intellectual and social history of a field ..." (p. 430).

Although most previous studies have been conducted by researchers outside the field they studied, it is political communication scholars' obligation to answer such questions with respect to the intellectual structure of their field. Previous studies provide models for applying the method of co-cited author analysis to an examination of such a structure in the field of political communication.

First, as Swanson (1993) points out, because of the growth of interdisciplinary sub-fields, the intellectual structure of communication studies as a field is fragmented, which echos a charge that the "growth [of communication] has

been accompanied by differentiation" (Paisley, 1985, p. 5). Communication is a field "literally made up of dissimilarities and differences--all of those shards and fragments from other, more respected disciplines" (Frentz, 1995, p. 17). Intellectual fragmentation is not a phenomenon existing exclusively in the field of communication studies; it can be found in disciplines in the natural sciences (e.g., physics and chemistry) and in the social sciences (e.g., psychology and sociology). It has long been a topic in studies of the sociology of science (Chubin, 1983; Crane, 1972). The fragments have also been described as, for example, "specialities," "scientific communities," "invisible colleges," and "sub-fields."

The fragmentation of communication studies produces both advantages and disadvantages for the development of the field. On one hand, the fragments provide intellectual territories within which researchers from various disciplines can "legitimate themselves by distinctive theories, methods, or syntheses of multiple disciplinary perspectives that will differentiate them from parent disciplines and from other subfields" (Swanson, 1993, p. 166). On the other hand, as a result of the fragmentation, there is less intellectual exchange than scholars anticipate (Berger, 1991). "The field's intellectual capital [is

transferred] from the center to the periphery" (Swanson, 1993, p. 166).

Political communication as a sub-field of communication studies has made its unique contributions to such fragmentation (Swanson, 1993). However, for political communication scholars, a more interesting question is whether political communication possesses as much intellectual fragmentation as the field of communication studies as a whole. Scholars argue that after substantial growth during the recent decades, political communication has evolved into a mature field of study (e.g., Kaid, 1996; Swanson, 1993). A mark of this maturation is the existence of "specialized research communities [constituted by authors in the field] devoted to pursuing subjects in great depth" (Swanson, 1993, p. 165). Groups of scholars in the field have pursued "dissimilar agendas and approaches" (Nimmo & Swanson, 1990, p. 10). In the current research scene, the field is "accelerating toward 'fragmentation'" (p. 10). The process and the consequences of this fragmentation certainly have a strong impact on the future development of the field.

However, fragmentation as a feature of political communication study has been discussed only in a qualitative manner (e.g., Graber, 1993; Kaid, 1996; Nimmo & Swanson, 1990). The current study attempts to use empirical data to

quantitatively assess this feature of the field:

Q1. Is there intellectual fragmentation in the field of political communication study?

Second, political communication, as Nimmo notes (1977), is rooted in five different research traditions (discussed from p.3 to p. 5 in chapter one). It is "a field exceedingly diverse in theoretic formulations, research questions, and methods of inquiry ..." (p. 441). Sanders, Kaid, and Nimmo (1985) echo this point when saying that "what is labeled as political communication research, teaching, and practice by those involved in the field is ... varied and pluralist in outlook and approach ... (p. xiv). Some scholars also argue that political communication is "an area of scholarship defined by a distinctive subject matter" and "is characterized by a distinctive approach or methods of investigation" (Franklin, 1995, p. 225). In fact, "it is a terrain contested and enlivened by competing theories, approaches, agendas ..." (Nimmo & Swanson, 1990, p. 7). Thus, intellectual fragmentation, if it exists, should reflect the above features:

Q2. What is the pattern of fragmentation in the field of political communication with respect to scholars' research approaches (qualitative or quantitative)?

Q3. What is the pattern of fragmentation in the field of political communication with respect to major research subject areas (e.g., political rhetoric, political advertising, political debates, media coverage of political campaigns and events, and political attitude and behavior)?

Third, political communication is an interdisciplinary field of study (Denton & Woodward, 1990; Kaid, 1996; Nimmo & Sanders, 1981; Nimmo & Swanson, 1990). Scholars involved in this field are from a variety of academic backgrounds including speech communication, mass communication, journalism, political science, and social psychology. The field of political communication is thus, on one hand, a place where interests of scholars with different backgrounds converge; on the other hand, it is a place where the inherent differences of scholars' original academic areas appear:

Q4. Based on answers to question two and three, what are the characteristics of each fragment with respect

to scholars' academic homes (field of study and
institution)?

Chapter Three Research Method

As discussed in earlier sections, author co-citation analysis (ACA) is located within the larger context of bibliometrics in general and citation analysis in particular. What a scholar or a researcher can do with ACA has been demonstrated to possess validity and reliability. Many studies using this approach have been conducted during the past several decades. A relatively standard procedure for these studies has been summarized. According to McCain (1990), the general procedure for using ACA includes five steps: author selection, co-citation frequencies retrieving, composing a raw co-citation matrix and converting this to a correlation matrix, statistical analysis of the correlation matrix, and interpretation of the statistical results (Figure 1 in Appendix A).

Author Selection

In general, using bibliometric research methods to assess the state of an academic field begins with the determination of the unit of analysis, which is accomplished through the selection of some core set of journals, articles, authors, or key terms (Borgman & Rice, 1992). The results of any bibliometric study are influenced by the choice of the initial set and the unit of analysis. Depending on the research questions, a researcher can select

different emphases--for example, authors, if s/he is interested in the influence of individuals; articles, if s/he focuses on the influence of a particular idea; key terms, if s/he explores the diffusion of an idea; and journals, if s/he examines the institutional embodiment of a field. In the current study in which the intellectual structure of a scholarly community (political communication) is the focus, a set of authors is the choice, and the co-citation of a pair of authors is the unit of analysis. In other words, when using ACA to approach the research questions raised in the current study, the scope of the field is defined by authors involved in the field. Thus, selecting a sample of authors is the first concern.

If the selected authors do not capture the full range of variability on the aspects of the field of interest (such as research foci and research approaches), the intellectual structure of the field cannot be demonstrated (McCain, 1990a). Therefore, it is essential to compile a diversified list of authors. Potential sources for such a list include: membership directories, personal knowledge, review articles, and consultation with researchers in the area of studies. The criteria can be objective, subjective, or a combination of both.

In this study, authors are chosen through a three-step

process. First, primary scholars' names are obtained from the rosters of the Political Communication Divisions in the ICA Membership Directory (1996), the NCA/SCA Membership Directory (1996), and the APSA (American Political Science Association) directory (1994-1996). These three divisions consist of a total of 1,494 members, with 386, 823, and 285 members, respectively. There are a small number of overlapped members who join at least two organizations. Although other membership directories (such as that of the Association for Education in Journalism and Mass Communication) can also be examined, most of political communication scholars are probably affiliated with one of the above three because there is no political communication division existing in other associations. The selection in this stage is based on "face validity"--the chosen authors, by joining the divisions, claim that they are related to the study of political communication.

Second, the names identified in the first step are used as authors' names to be searched for in the ComIndex Database (Version 3.1.0). Comindex provides indices to articles published in 71 current and previous communication journals.¹ ComIndex offers a relatively complete set of data. The author's name search determines how many articles each member has published in communication related journals

since the 1970s. The titles of articles displayed after each search provides a general indication of the relevance of the articles to the study of political communication. To obtain usable numbers of citations of each author for later co-citation analysis, the criterion is that a member has to have published at least 10 articles related to the study of political communication to be included in the final author pool. In other words, the threshold number of the articles published in the field for an author is ten. This criterion selects those relatively well-established authors in the field; some younger scholars who are new in the field and without significant amount of publications cannot be included.

Third, because some influential members may publish primarily books or book chapters rather than journal articles, or publish in journals not indexed in ComIndex (e.g., some journals in political science and sociology), these members may be left out if the selection is based only on the number of articles published (ComIndex provides only article indices of communication journals). Thus, a complementary criterion is added at this step--a combination of consultation with a leading researcher in the field, other review articles, and personal knowledge to finalize the author pool. After going through this three-step

selection, a total of 51 authors were chosen for this study².

Cocitation Frequencies Retrieving

In author co-citation analysis, raw data are obtained from counting how many times any two selected authors (a pair) are cited together in a publication. For instance, if someone cites anything by author A and author B in the same publication, the number for the pair of author A and B will be increased by 1 (White & McCain, 1989). The total number of any given pair of selected authors is defined as the cocitation frequency of the pair. The actual number is provided by a search through an online database, *Social Scisearch*, on DIALOG. For example, the basic command used for the search is: S CR= CHAFFEE S? AND CR=MCCOMBS M?. The use of truncation symbol (?) in the search is to generalize the request to retrieve documents which cite any works by CHAFFEE or MCCOMBS. The use of "AND" combines the two searches and, in so doing, a total number of works in which any work by Steve Chaffee and Maxwell McCombs have been cited at the same time are retrieved.

Composing Raw A Citation Matrix and Converting It to Correlation Matrix

In a matrix where each row represents an author and each column represents an author (authors' names are

identically ordered on the rows and columns), the number for each off-diagonal cell is the cocitation frequency of a given pair of selected authors (see the discussion in the previous section) (Figure 2). According to McCain (1990a), the diagonal cell values are defined as missing data for the later calculation of the correlations. A complete matrix is formed after exhausting every possible pair of two authors from the selected author pool.

After the computation (in which the missing data are pairwise-deleted) of the Pearson product-moment correlations of every possible pair from the selected authors, this raw data matrix can then be converted to a matrix of proximity values--each correlation of a pair of authors "represents the similarity in co-citation pattern of the two across all the other authors in the set, with the exception of the two being compared" (McCain, 1990b, p. 200) (Figure 3). As McCain (1990b) points out, there are at least two advantages to using the correlation coefficient. First, the overall similarity of use of the works of two authors is measured. In other words, it takes all selected authors' collective perceptions of these two authors into consideration rather than just how often this pair is cited (a simple pair co-citation frequency). Second, the effects of differences in "scale" of citation and co-citation are also reduced. The

potential difference is due to the fact that every author joins the field at a different time so that some authors have fewer publications than others. These "new" comers may be cited less frequently but share some common characteristics of the field. The correlation matrix of 51 selected authors in this study is shown in Figure 4.

Statistical Analysis of Correlation Matrix

As shown in Figure 3, the correlation matrix serves as a matrix of proximity in which the correlations are the measures of similarity among the authors. To say this in a simple way, the higher the positive correlation, the more similar two authors are in the perceptions of the selected authors. Multidimensional scaling (MDS) is the approach used in this study to analyze the similarity matrixes. In ACA, the use of multidimensional scaling serves two major purposes: "to provide an information-rich display of the cocitation linkages and to identify the salient dimensions underlying their placement" (McCain, 1990a, p. 437).

In a multidimensional map, authors who are frequently cocited group together in space. Those who have many links to others tend to appear in central positions which can reflect the centrality of the field. If some authors have relatively weak connections to others, they tend to be in the periphery.

In addition, to help determine relatively accurate groups in the map, the coordinates of the selected 51 authors on each of the dimensions are submitted to the computer for a cluster analysis (Bayer et al., 1990).

Interpretation of the Statistical Results

Research Question One (Fragmentation)

If two scholars are frequently cited together, there exists an intellectual relationship between them. In other words, if two scholars' works are generally related in some way, these two scholars are more likely to be cited together by other scholars. Thus, the distribution of authors obtained from the map(s) reflects some aspects of the intellectual structure of the field. On the map(s), it is clear that those authors who are close have something in common, while those authors that have fewer things in common are distant from others. If the field is fragmented, there will be multiple authors' groups on the map(s).

Research Question Two (Research Approaches)

Generally, qualitative research approaches include rhetorical analysis, historical analysis, critical analysis, focus group, and case study. Quantitative research approaches include survey research, experimental research, longitudinal research, and content analysis. In the current study, a four-step process is utilized to interpret maps

with respect to authors' frequently used research approaches (qualitative or quantitative). The first step includes the researcher's reading previous review articles and other relevant literatures to classify the selected authors into two categories: either qualitative or quantitative. In the second step, each author's dissertation title and abstract are examined using *Dissertation Abstracts International* (index and abstracts to dissertations and theses in all subject areas completed at accredited North American colleges and universities and more than 200 institutions elsewhere since 1861). Dissertations represent an author's first major academic work and, methodologically, authors tend to apply the same research approach to their major research in the future. For the third step, the titles of the authors' articles indexed in the database *ComIndex* are examined to determine the research approach frequently used in their studies. For step four, if the above three steps combined do not provide a clear indication of an author's frequently used research approach, other bibliographic sources (e.g., ERIC, PSYCLIT, SOCIOFILE, and PAIS) or the original articles were examined to determine the author's approach. The final classification of the selected authors' major research approaches was validated by two political communication scholars in the faculty.

Research Question Three (Research Subject Areas)

Some of the most comprehensive reviews of the field are, in chronological order, Nimmo and Sanders' (1981) "The emergence of political communication," Kaid and Sanders' (1985) "Survey of political communication theory and research," Denton and Woodward's (1990) "Political communication in America," Johnston's (1990) "Trends in political communication: A selective review of research in the 1980s," Nimmo and Swanson's (1990) "The field of political communication: Beyond the voter persuasion paradigm," and Kaid's (1996) "Political communication." Nimmo and Sanders (1981) list 13 substantive research areas including "political rhetoric," "political advertising and propaganda," "political debates," "political socialization," and "election campaigns." Kaid and Sanders (1985) identify 12 research areas including "news and public affairs," "rhetoric/fantasy/symbols," "President and media," "debates," "political advertising," and "political socialization." Johnston (1990a) classifies these studies into four major areas: "election communication" which includes political advertising and political debates, "political communication and news," "political rhetoric," and "political attitudes, behavior, and information" which include media use and exposure and political socialization

are included. Kaid (1996) describes four lines of research: "media coverage of political campaigns and events," "political debates," "political advertising," and "political rhetoric."

Every author provide a variety of names and classifications for the substantive areas of the field, depending on his/her perception of the field and the scope of the review. It is clear that there is no standard organizational pattern, no comprehensive list, and no mutually exclusive categories for reviewing the studies in terms of topic area.

Based on these qualitative reviews of the field, several major research subject areas are identified for the current study to help interpret the map(s). They are: political rhetoric, political advertising, political debates, media coverage of political campaigns and events, political attitude and behavior, and other. "Political rhetoric" concerns the content of particular speakers or speeches and the politicians' use of rhetorical strategies and political language. "Political advertising" studies the use and the effects of political ads in political campaigns. "Political debates" focus on the presentation of the debates with respect to both visual elements in the coverage and verbal components of the debates. "Media coverage of

political campaigns and events" emphasizes the content and the pattern of media's coverage. "Political attitude and behavior" explores public's use of media and the effects of such a use on public's political behaviors. "Other" include the subject areas not in the above categories. These six categories reflect the feature of the most recent reviews in the field (e.g., Johnston, 1990; Kaid, 1996).

A two-step method was used to determine the selected authors' major research areas. For the first step, the researcher's reading of previous review articles and other relevant literatures and consultation with two scholars in the field provided a general understanding of the areas in which a particular author makes his/her major contributions. In the second step, three major bibliographies available in the field were searched to see in what areas an author's works appear most often. If an author appears in two or several different categories with the same or similar frequencies, this author is considered to have two or several subject areas of study.

The bibliographies used are: Kaid and Wadsworth's (1985) *Political campaign communication: A bibliography and guide to the literature, 1973-1982*, Johnston's (1990b) *Selective bibliography of political communication research, 1982-1988*, and *Political communication literature, 1980-1993*

(an unpublished bibliography prepared by Mary Hanly at the University of Alabama). One common feature of these three bibliographies is that they use very similar categories to classify the literature. The five major research areas identified for the current study are among the categories in these bibliographies. The purpose for developing the five major research subject areas for this study and for using the two-step method is to enhance the interpretation of the map(s). Thus, the information obtained from this two-step method should be sufficient for the current study.

Research Question Four (Academic Origins)

The information on these authors' original field of study and the institutions where they got their highest degree (doctorate) can be obtained from the database, *Dissertation Abstracts*. This information helps describe the characteristics of each fragment in the field. When an author's name cannot be found in *Dissertation Abstracts*, this author is not included in the interpretation of the characteristics of the fragments.

Overall, interpretation of the statistical results depends on understanding the field as a whole, particularly based on the existing literature (e.g., reviews, research articles, books) and the information obtained from other bibliographic sources. As discussed in the earlier

paragraphs, the final interpretation should be complementary to the traditional qualitative reviews, and the research questions of the current study should be answered by the integration of all of the above.

Chapter Four Findings

The correlation matrix created from 51 selected authors' cocitation frequencies was submitted to the computer for a multidimensional scaling analysis (ALSCAL in SPSS). The values of S-Stress and squared correlation (RSQ) associated with various solutions are, respectively, .14 and .93 for two dimensions; .08 and .96 for three dimensions; .07 and .97 for four dimensions. RSQ values are the proportion of variance of the scaled data in the partition which is accounted for by their corresponding distance.

McCain (1990a) suggests that, when using the method of multidimensional scaling to analyze the cocited author data, a stress value less than 0.2 "is considered acceptable" for a two dimensional solution if the R square is high enough to capture a substantial proportion of the variance (above 85%). She indicates that, if the above two conditions are met (i.e., Stress value < .2, & R square > .85), a two-dimensional solution is a parsimonious one which provides sufficient explanatory power; a three-dimensional one is "more complex" and "adds little explanatory power" (p. 439).

Thus, in the current situation, a two-dimension solution (Stress value = .14, & RSQ = .93) can sufficiently reflect the information embedded in the data. Figure 5 presents this result. As shown in Figure 5, 51 authors are

scattered in the two dimensional space, some being close to each other, and some being distant from each other. While the actual formation of author's grouping is not clear, it is obvious that these 51 authors form several clusters.

To determine the formation of the groupings, the coordinates (see Figure 6) of the 51 authors on each of the two dimensions were submitted for a cluster analysis. The results of the cluster analysis are shown in Figure 7 and Figure 9. In Figure 7, there is a relatively large increase in the value of the distance measure from a five-cluster to a four-cluster solution (stages 46 and 47). Thus, a five-group solution appears to be appropriate in the current situation (see Figure 7 & Figure 8).

These 51 authors form five groups on the map. Based on the previous discussion (see pp. 49-50), the answer to the research question one is that intellectual fragmentation exists in the field of political communication studies. Although the current groupings of authors can be debated (since cluster analysis provides no single solution regarding the number of clusters derived), the five-group solution helps reveal the intellectual fragments of the field and makes a reasonable interpretation without increasing the complexity.

These five author groups indicate the existence of

intellectual fragmentation in the field of political communication studies. Thus, an analysis of the characteristics of these groups can help further understand the intellectual structure of the field.

Characteristics of the Groups

Research Approach There are 12 scholars in the first group (Cluster 1). Their research approaches are primarily qualitative in nature--for example, Gronbeck's (1992) "Negative narrative in 1988 presidential campaign ads." In his article, Gronbeck applies "narrative performance theory" to examine "narrative or story-telling ads" sponsored by Bush and Dukakis. He categorizes these ads into two types: adversarial narratives and sequel narratives. His analysis shows that in the first type of negative political ads, sponsors use "double narrative structure" to attack opponents' "personal qualities" and their "epideictic praise;" the second type of ads, "the negative narrative in their sequels abandoned the pretense of assessing candidates' records and situated topics in a political rather than social-institutional context" (p. 339).

The second group (Cluster 2) consists of five authors. These five scholars also apply qualitative methods to their studies, such as Murray's (1975) "Wallace and the media: The 1972 Florida primary." George C. Wallace's overwhelming

victory in the 1972 Florida primary caught much attention and aroused much controversy. Murray focused on this unique event and conducted a case study of Wallace's successful use of media in his campaign.

The third group (Cluster 3, for a detailed composition, see Figure 10), the largest author group in this study, includes 18 authors. Scholars in this group approach research questions in a quantitative manner; for instance, McCombs and Shaw's (1972) "The agenda-setting function of mass media." In order to investigate the relationship between media and audience in the 1968 presidential campaign, McCombs and Shaw randomly selected registered voters from a community and asked them to specify the key issues in the campaign. During the same time period, the mass media in the community were collected and content analyzed. The high correlation between the important issues covered by the mass media and the key issues identified by the voters indicates a high possibility of the existence of media's agenda-setting function.

Group four (Cluster 4) is composed of nine authors. In this group, some of the scholars use qualitative methods (e.g., Nimmo & Combs, 1983); some of them use quantitative methods (e.g., Pfau, 1992). Nimmo and Combs (1983) applied the principles of fantasy theme analysis to demonstrate how

"rhetorical visions of politics may come into being through all types of media fare ..." (Johnston, 1990a, p. 345).

Pfau (1992) designed an experimental study to examine the effectiveness of using inoculation messages to resist the persuasiveness of comparatives in political ads.

Group five (Cluster 5), the last author group in this study, includes seven authors. Although one author (Graber) in this group sometimes applies qualitative method in her research, primarily quantitative research methods are used in other group members' studies (e.g., Hofstetter, 1979). Hofstetter (1979) studied the nature of bias in news reporting of the 1972 presidential campaign. In his study, a national sample of the voters was interviewed, and the data collected from these voters were used for several statistical analyses to examine the voters' perceptions of bias in media in relation to the type of media, the type of issue, and voters' party affiliation.

In terms of research approach, the unusual composition (i.e., mixture of both qualitative and quantitative approaches) of Group Four and Group Five indicates a special phenomenon in the development of intellectual structure of political communication study (see detailed discussion on page 82 and page 83).

Research Subject Areas The second interesting aspect

to look at is the research subject areas (see pp. 56-59) which the scholars in different groups explore. Scholars in Group One focus their study on "political rhetoric." In other words, they apply a variety of rhetoric analysis methods (e.g., Burke's "dramatistic" analysis, Bormann's "fantasy-theme" analysis, and Fisher's "narrative" analysis) to study the content of particular speakers or speeches and the politicians's use of rhetorical strategies and political languages. For instance, Hahn (1983), Medhurst (1987), Zarefsky (1983) focused on presidential speeches and analyzed how the themes, metaphors, and messages in the speeches "served to define for the speaker [the President] ... the 'reality' of the situation" (Johnston, 1990a, p. 343). Some scholars in this group studied how "the theme or metaphor was used to construct a vision and united an audience in their belief in that vision" (p. 344). For example, Erickson and his colleague (1982) showed how incumbent Presidents use the "Rose Garden" strategy in the campaigns (Johnston, 1990a). In addition, other subjects of political rhetoric have also been explored by the scholars in this group, such as political language (Hart, 1984a), the rhetoric of media (Blankenship et al., 1983; Bormann, 1982; Gronbeck, 1984) and so on.

Scholars in Group Two study a variety of subject

matters; for example, Jensen's investigation of the content of media news coverage of political and social events and the effects of such a coverage on audience (e.g., Jensen, 1987a; 1987b), Perry's study of international news (e.g., Perry, 1987; 1990), and Beasley's research on women and politics (e.g., Beasley, 1984; 1986). According to the subject categories developed for this current study (see pp. 54-58), Jensen's studies are in two areas, "media coverage" and "political attitude and behavior;" both Perry's and Beasley's are in the area of "other."

In Group Three, scholars concentrate on two major subject areas: "political attitude and behavior" and "media coverage of political campaigns and events." Focusing on public's use of media and the effects of such a use on public's political behaviors, scholars in this group have made their contributions to political communication study in developing several theoretical models, such as media agenda-setting (e.g., McCombs & Shaw, 1972; Weaver, 1984; Whitney, 1991), uses and gratifications (e.g., Blumler & McQuail, 1969; McLeod & Becker, 1981), uses and dependency (Rubin & Windhal, 1986). In addition to building theory, scholars in this group also explore other aspects of the above two categories--for example, mediation of effects by mass media uses (e.g., Chaffee & Tims, 1982), political socialization

(e.g., Atkin & Gantz, 1978), and media coverage of political events (e.g., Kepplinger, 1982; O'Keefe, 1982; Shoemaker, 1984).

Several subject areas have been explored by scholars in Group Four: political rhetoric (e.g., Bennett, 1977; Bennett & Edelman, 1985), media coverage (e.g., Nimmo & Combs, 1983), political debates (e.g., Hellweg & Phillips, 1981), and political advertising (e.g., Jamieson, 1984; 1986; Pfau, 1992). Scholars in Group Five focus on two subject areas: media coverage (e.g., Graber, 1989; Hofstetter, 1976; Patterson & McClure, 1976) and political advertising (e.g., Kaid, 1981b; 1991; 1994; Garramone, 1984; 1985).

Scholars' Academic Origins Of 12 scholars in Group One, all but one (Hahn) received their academic training in the field of speech communication/theater (Figure 11); Hahn received his in political science. In Group Two, scholars are from the field of speech communication and journalism and mass communication. Scholars in Group Three are quite similar to those in Group one in that the majority of them were from the same area: 14 from journalism and mass communication and only two from psychology. Scholars in Group Four and Group Five also have something in common. In each of these two groups, scholars are mainly from two academic areas: speech communication and political science

in Group Four; and mass communication and political science in Group Five. Most of these 51 authors graduated from the schools located in the Middle, Midwestern, and Eastern regions of the country: nine from Wisconsin, four each from Michigan, Minnesota and Pennsylvania, and three each from Iowa, Illinois, Indiana, and New York.

An analysis of the statistical results indicates the existence of five author groups in the field of political communication studies. Each of these five groups has its unique attributes with respect to authors' primary research approach, their major research subject areas, and their academic origins. These attributes are reflections of the basic characteristics of the intellectual structure of political communication study. Our knowledge of these attributes can establish a basis for us to understand the structure itself.

Chapter Five Discussion

The results of the multidimensional scaling analysis and cluster analysis of author co-citation data show that there are five author groups in the field of political communication (Figure 9). Each of these groups has its unique composition in terms of scholar's research approach, research subject matter, and academic origin. In this sense, the field is intellectually fragmented by five groups. This study thus provides empirical evidence to support other scholars' claims that the research scene in political communication is characterized by fragmentation.

Scholars in Group One (e.g., Bormann, Gronbeck, Hart, and Medhurst), with their academic training in speech communication, are interested in qualitatively studying political rhetoric. By contrast, most of the scholars in Group Three (e.g., Atkin, Becker, Chaffee, McCombs, Rubin, and Weaver) have been trained in the schools of journalism and mass communication, and they apply quantitative research methods to study people's political attitudes and political behaviors and media coverage of political activities. It is equally significant that, in Group Four, scholars received their academic training in speech communication or political science; some of them (e.g., Bennett, Denton, and Nimmo) use qualitative methods to study political rhetoric

and media coverage, while some utilize quantitative methods to approach their research questions in areas like political advertising (e.g., Pfau). Similarly, scholars in Group Five received their academic training in either political science or speech and mass communication. Most of the members in this group (e.g., Hofstetter, Kaid, and Patterson) use quantitative approaches to study a variety of topics, such as media coverage and political advertising. Finally, scholars (e.g., Murray and Perry) in Group Two, with their academic backgrounds in speech communication or journalism and mass communication, approach many subject areas (e.g., media coverage, political attitude and behavior) in a qualitative manner.

Historically, as a field of inquiry, political communication is intellectually rooted in five research traditions (see the discussion on pp. 2-5). These five traditions later evolved into two dominant approaches in political communication research: rhetorical criticism and social-scientific analysis (Nimmo & Swanson, 1990). These two approaches have generated most of studies in the field; these studies are usually considered as "mainstream" political communication research. The impact of these two approaches on the intellectual structure of the field can be clearly seen on the map (Figure 9). Based on the present

groupings, the majority of the scholars on the map can be classified into two big camps. The first one is the camp of rhetorical criticism/qualitative approach, which includes those scholars in Group One and Group Four. The second one is the camp of social-scientific analysis/quantitative approach, which consists of the scholars in Group Three and Group Five. The existence of this simple dichotomy suggests that the long discussion of the intellectual separation of interpersonal communication (broadly speaking, speech communication) and mass communication in the field of communication studies can help us understand the intellectual structure of political communication research. Most important, since such a discussion reflects communication scholars' recognition and understanding of the intellectual fragmentation of communication research as a whole (Barnett & Danowski, 1992; Delia, 1987; Reardon & Rogers, 1988; Rice et al., 1988), the fragmentation of political communication research should be the focus.

Furthermore, in a close examination of the map (Figure 9), it is evident that, among these five author groups, some are close to each other and some are distant from the other. According to the basic assumptions of citation analysis, groups which are distant from each other have less intellectual connection (i.e., exchanging information

through citing others' work) than those near to the other. In other words, the unbalanced information exchange (due to the differences in the scholarly commitments) among these five groups create the scatters of authors. Thus, this analysis indicates that understanding fragmentation of the field is the key to investigate and comprehend the intellectual connection between scholars--the intellectual structure of political communication research.

Understanding of the Fragmentation

Fragmentation, as a basic feature of political communication research, "is in no way unusual ..." (Nimmo & Swanson, 1990, p. 12). In the development of an interdisciplinary field (regardless of its scope), fragmentation of the intellectual structure indicates the field's growth and is a common phenomenon. For example, as the discipline of psychology grows, the number of divisions (as a well-accepted indicator of a growing area of study) in the American Psychological Association increased from 17 in 1951 to 41 in 1985 (Rodgers, 1988). Each of these divisions represents a particular research interest which distinguishes a group of scholars who are affiliated with the division from the others, such as the division of adult development and aging versus the division of psychologists interested in religious issues. The field of communication

studies, as a second example, has shown a similar pattern. In its comparatively short history, the field of communication studies has experienced a substantial growth. As a result of that, it has been "fractured into myriad conceptual fragments and research practices ..." (Delia, 1987, p. 22).

Thus, the map and the groupings should not be a surprise. When researchers with different backgrounds come into this new academic territory--political communication, they prioritize different research foci, follow dissimilar research agendas, and use different research methods. Some of them may call the "definition's reference to 'content' as a 'message'" (Franklin, 1995, p. 226), while other researchers may define it as a "text." The audience may be labeled as "recipients" (which sounds passive) by some or as "readers" (which sounds active) by the others (Franklin, 1995). Some may consider political communication as a sub-field of political science (Graber, 1993), and the other may view it a sub-field of communication studies.

These kinds of difference exist in many aspects of scholarship--epistemological, methodological, and social commitments (Nimmo & Swanson, 1990). Obviously, these differences are profound, and scholars' perspectives are sometimes contrary to each other. With respect to the

intellectual development of political communication research, these differences (or sometimes disagreements) can produce either positive consequences (e.g., stimulating and encouraging scholarly work with different viewpoints) or negative consequences (e.g., blocking the healthy dialogue among researchers). However, it is certain that these differences and disagreements produce the intellectual fragmentation in the field of political communication research. Take the differences between Group One and Group Three as an example. Their differences (e.g., qualitative vs. quantitative research approach; humanistic vs. social-scientific perspective) make them, to some degree, intellectually separate from each other (See Figure 9), forming two fragments.

Fragmentation as a basic feature of the research scene in political communication has caught scholars' attention (Nimmo & Swanson, 1990). They realize that, in order to understand the intellectual structure of political communication research, fragmentation is a "fundamental fact that must be taken into account ..." (Delia, 1987, p. 22). On the other hand, the extensive study of its consequences on the development of research in political communication has seldomly appeared in scholars' research agenda. Clearly, more studies need to be done.

Consequences of the Fragmentation

Based on the characteristics of these groups' composition, many sets of names can be used to describe these fragments in the research scene of political communication, such as humanistic (or rhetorical criticism) clique, empirical (or social-scientific analysis) clique, speech communication clique, journalism and mass communication clique, mass communication and political science clique and so on. However, no matter how these fragments are called, the most important concern is the deeper implications of the fragmentation for the intellectual development of political communication studies.

The pattern of fragmentation shown on the map indicates that two intellectual traditions of political communication research, rhetorical criticism and social-scientific analysis, drive scholars in opposite directions (Group One and Four on one side, and Group Three and Five on the other). Scholars in different fragments may be interested in related subjects or, in fact, the same subjects labeled in different ways (e.g., text and message; recipient and reader), but, as a result of differences in epistemological and theoretical commitments, scholars in different groups have not received benefit (as they should have) from each other (Nimmo & Swanson, 1990).

In some degree, scholars are confined to the relatively small territory of their speciality. The relatively large distance between groups (e.g., Group One and Group Three; Group One and Group Five) on the map suggests the existence of isolation and a lack of intellectual exchange between the groups. These can result in ethnocentrism of scholarship (a concept borrowed from Campell's "ethnocentrism of Disciplines", cited in Paisley, 1984). In the worst situation, some scholars in opposite groups may even develop a biased attitude, viewing others as inferior. Scholars working in the field eventually lose the feeling of intellectual cohesion.

In addition, intellectual isolation created by fragmentation makes a full understanding of political communication processes impossible. For example, in the effects study of political discourse, rhetorical critics tend to make their own interpretation of the meaning imbedded in the speech(or text). And, the effect of the speech on an audience (e.g., being informed or misinformed) is presumed subjectively. Obviously, the chance to obtain a complete understanding of the effect will be missed if other objective observations are not incorporated into the study to judge the accuracy of interpretations of the message's meaning and the effect of the message. If a researcher is

confined to his or her small intellectual territory without looking beyond the "boundaries," the potentials of what his or her research can produce in terms of the completeness of knowledge will suffer.

Certainly, political communication scholars cannot afford the unhappy consequences of fragmentation. However, there is no straight-forward road suggesting the best way for political communication scholars to overcome the undesired consequences. They must search for solutions.

Intellectual fragmentation is an inevitable product of the development of an interdisciplinary field. The field benefits from a diversity of scholarly commitments, research agendas, research subjects, and research approaches. As long as the field of political communication grows, there will be differences and disagreements, such as the ones between rhetorical criticism and social-scientific analysis, and, in turn, intellectual fragmentation.

In order to overcome the unhappy consequences of fragmentation, political communication as a field of inquiry needs a high degree of intellectual cohesion. Intellectual cohesion is a state in which differences between fragments are respected and are encouraged, and the effort of exchanging information and searching for the mutual relevance between fragment, and exploring subjects across

fragment boundaries is cheered.

For political communication scholars, differences between them are sometimes fundamental--for example, the epistemological difference between rhetorical critics and social scientists. However, in the state of intellectual cohesion, scholars' conflicting viewpoints should be respected. In the meantime, scholars' efforts to find out what the conflicting viewpoints hold in common and how to incorporate the works produced by those who have different perspectives are encouraged as well.

Intellectual integration is the best way to reach intellectual cohesion which helps avoid the unfortunate consequences of fragmentation. Intellectual integration is a process by which different perspectives are compared, information is exchanged, and the fundamentals of the field are searched. Furthermore, this process is not a selecting process which may suggest that one perspective or viewpoint is superior to the other.

Through an integration process, intellectual cohesion is possible regardless of the scope and the subject matter of the fields or disciplines. The cases of two mature disciplines (Psychology and Physics) can illustrate this point. As previously discussed, one indicator of intellectual fragmentation is the academic divisions in

these two disciplines, such as experimental and clinical psychology in Psychology and theoretical and applied physics in Physics (Reardon & Rogers, 1988). Because of the size and the complexity of these two disciplines, the level of the fragmentation is much higher than that in the field of political communication. However, it is evident that these two disciplines are still able to enjoy a high level of intellectual cohesion--their status as a discipline is firm and unquestionable.

The development of the field of communication studies provides another successful example. In the history of communication studies, "no process has been more important to the development of the field than its integration into journalism schools and speech departments" (Delia, 1987, p. 73). With respect to what happens to difference of research approach in the integration process, Schramm (1963) concludes:

Expectation is not that quantitative research will crowd out qualitative or that the two will necessarily live in the worlds of their own, but rather they will go forward together on the road to an adequate theory of communication(cited in Delia, 1987, p. 77)

It is noted that the field of communication studies today has reached a high level of intellectual convergence or cohesion (Rogers & Chaffee, 1993). But, it has not yet established its status as an academic discipline. Ironically, the establishment of its disciplinary status depends on the level of intellectual cohesion of its sub-fields, such as political, interpersonal, mass, instructional, and intercultural communication (Swanson, 1993). Thus, establishing intellectual cohesion in the field of political communication study is necessary not only for the needs of its own field, but also for those of communication studies as a whole.

In the field of political communication research, both rhetorical criticism and social-scientific analysis make important contributions, but neither of them establishes hegemony. These two dominant perspectives should work together and benefit from each other, and at the same time incorporate other possible alternative perspectives. It is predictable that the richness of the rhetorical criticism tradition (such as the studies of persuasion and political process) can provide helpful insights for study based on the social-scientific approach. Some attempts have been successfully made. For example, Hart (1984) use a computer program (DICTION) to study how media coverage of presidents

may influence the presidents' use of language; Kaid and her associates applied both rhetorical analysis and empirical analysis methods to study the 1996 presidential debates: the former focusing on the content of the debates and the latter examining the viewers' responses.

On the map (Figure 9), Group Four and Group Five are a bridge connecting two opposite groups (one and three). The short distance between Group Four and Group One, Group Four and Group Five, and Group Five and Group Three indicates that the intellectual exchange between these groups reaches a relatively higher level. One apparent reason to explain this fact is that in both Group Four and Group Five communication scholars are sharing their works with the scholars from political science. Thus, the "cross-fertilization" of disciplines or fields can also help the integrating process. As a result of the "cross-fertilization," the distance between two different perspectives becomes shorter (when we compare the distance between Group Four/rhetorical criticism/qualitative and Group Five/social-scientific analysis/quantitative with that between Group One/rhetorical criticism/qualitative) and Group Three/social-scientific analysis/quantitative). The intellectual exchange is thus increased, which has positive impact on the field's intellectual integrating process.

The intellectual integration in the field is not a theory-building process; thus, the intellectual cohesion of the field does not suggest the existence of some "grand theory" which embraces all kinds of approaches utilized in political communication research (Nimmo & Swanson, 1990). In fact, that kind of theory probably cannot be developed. Intellectual cohesion makes the field at large "more easily confront the kinds of broad generalizations about political communication that seem to be implied in the field's research taken as a whole ..." (p. 22).

Chapter Six Conclusion

Using the method of author co-citation analysis, this study presents a quantitative examination of the intellectual relationship among scholars in the field of political communication. The findings of this study are considered complementary to other traditional qualitative reviews about the field. In other words, a complete understanding of the intellectual structure of the field cannot be established without the integration of the both.

There are at least two immediate contributions of this study to the field. First, it provides convincing evidence to support previous qualitative studies. Fragmentation exists in political communication research; scholars with different academic backgrounds have their specialities of using a particular research approach to study certain subjects in the field; scholars do not have as much information exchange as they should and, in this sense, scholars are intellectually separate and limited within the borders of each fragment.

Second, beyond the general scope of those traditional review essays about the field, this study, through the mapping, statistically documents scholars' differences in their scholarly commitment and the interdisciplinary "cross-fertilization" and its effect on political communication

research. The mapping helps scholars trace and understand various traditions which originated the field. The establishment of this understanding is the basis for scholars to further develop political communication into a cohesive field which can encompass scholars who have different epistemologies, research subjects, research agendas, and other commitment.

However, there is a limitation of the current study. Time as a factor is not incorporated in the data collection procedure. In other words, the data are not obtained in such a way that several sub-sets of data (according to the time periods, such as from 1973 to 1983 and from 1983 to 1993) are separately collected. Without several maps reflecting the intellectual structures in a time span, change in the intellectual structure of the field cannot be assessed. In addition, a survey of the selected authors about their research interest areas and methodological perspectives might help to enhance the accuracy of the interpretation or at least to validate the interpretation.

Co-cited author mapping, as one of the multiple indicators being employed to describe the intellectual structure of the field, complements and cross-validates other studies and itself has become a research approach in the field of political communication. The study of

political communication is no longer a group of irrelevant research programs in various disciplines. Political communication has evolved into a field characterized by its various methodologies based on pluralistic theoretic perspectives. The intellectual cohesion is vital, for the field is in a fragmented territory with fluid boundaries.

As the field becomes larger and more complex, political communication scholars need to review the field's past, assess the current status, and discuss the future direction. Review and synthesis of the studies in the field through either qualitative/subjective or quantitative/objective methods should be regularly featured in our journals (such as in *Political Communication*) and other publications. In the past, the field benefited from this type of intellectual practices. Today, this kind of self-reflection should be considered a sign of the field's stability and maturity.

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Notes

1. Journals indexed in ComIndex 4 Version 3.1.0

American Journalism
Argumentation and Advocacy
Asian Journal of Communication
Australian Journal of Communication
Australian Studies in Journalism
Canadian Journal of Communication
Central States Speech Journal
Communication
communication Education
Communication Monographs
Communication Quarterly
Communication Reports
Communication Research
Communication Research Reports
Communication Studies
Communication Theory
Communication Yearbook
Critical Studies in Mass Communication
Discourse and Society
Discourse Processes
Electronic Journal of Communication
European Journal of Communication
Free Speech Yearbook
Gannett Center Journal
Health Communication
Howard Journal of Communication
Human Communication Research
Iowa State Journal of Business & Technical Communication
Issues in Applied Linguistics
Journal of Applied Communication Research
Journal of Applied Communications Research
Journal of Broadcasting
Journal of Broadcasting and Electronic Media
Journal of Business and Technical Communication
Journal of Business Communication
Journal of Communication
Journal of Mass Media Ethics
Journal of Public Relations Research
Journal of the American Forensic Association
Journalism History
Journalism Monographs
Journalism Quarterly
Management Communication Quarterly
Mass Comm Review
Media Studies Journal
Media, Culture and Society
News Computing Journal
Nordicom Review
Operant Subjectivity
Philosophy and Rhetoric
Political Communication

(continued)

Political Communication and Persuasion
Progress in Communication Sciences
Public Opinion Quarterly
Public Relations Research Annual
Public Relations Review
Quarterly Journal of Speech
Research on Language and Social Interaction
Rhetoric Review
Southern Communication Journal
Southern Speech Communication Journal
Southern Speech Journal
Speech Monographs
Speech Teacher
Today's Speech
Western Journal of Communication
Western Journal of Speech Communication
Western Speech
Western Speech Communication
Women's Studies in Communication
Written Communication

2. Selected authors for this study and the symbols representing them

a1/ Adams, William C.	a2/ Andrews, James R.
a3/ Atkin, Charles	a4/ Atwood, L. Erwin
b1/ Beasley, Maurine	b2/ Becker, Lee B.
b3/ Bennett, W. Lance	b4/ Blankenship, Jane
b5/ Blumler, Jay G	b6/ Bormann, Ernest G.
c1/ Chaffee, Steven H.	d1/ Denton, Robert
e1/ Entman, Robert M.	e2/ Erickson, Keith V.
g1/ Garramone, Gina	g2/ Graber, Doris A.
g3/ Gregg, Richard B.	g4/ Gronbeck, Bruce E.
h1/ Hahn, Dan F.	h2/ Hart, Roderick P.
h3/ Hellweg, Susan A.	h4/ Hofstetter, C Richard
j1/ Jamieson, Kathleen H.	j2/ Jeffres, Leo W.
j3/ Jensen, Klaus Bruhn	k1/ Kaid, Lynda L.
k2/ Kepplinger, Hans Mathias	l1/ Larson, Charles U.
l2/ Lemert, James B	m1/ Medhurst, Martin J.
m2/ McCombs, Maxwell E.	m3/ Mcleod, Jack M.
m4/ Murray, Michael D.	n1/ Nimmo, Dan
o1/ O'Keeffe, Garrett J.	p1/ Paletz, David L
p2/ Patterson, Thomas	p3/ Perry, David K.
p4/ Pfau, Michael	p5/ Powell, Larry
r1/ Reese, Stephen D.	r2/ Rubin, Alan M.
s1/ Shaw, Donald L.	s2/ Shoemaker, Pamela J.
s3/ Simons, Herbert W.	s4/ Stevenson, Robert L.
s5/ Swanson, David L.	t1/ Trent, Judith
w1/ Weaver, David H.	w2/ Whitney, D. Charles
z1/ Zarefsky, David	

Appendix A

Figure 1 Steps in Author Cocitation Analysis

1. Author Selection

- a. Directories/Political Communication Divisions in the ICA, NCA/SCA, and APSA
- b. Author search in ComIndex/publications more than 10
- c. Consultation with the leading researcher; other review articles; personal knowledge

2. Cocitation Frequencies Retrieving

- a. S CR=CHAFFEE S? AND CR=MCCOMBS, M?

3. Composing Raw Citation Matrix and Converting to Correlation Matrix

- a. the cell value=the cocitation frequencies
- b. Compute the Pearson product-moment correlations

4. Statistical Analysis of Correlation Matrix

- a. Multidimensional scaling analysis

5. Interpretation of the Statistical Results

Figure 2 Cocitation Data Retrieving and the Raw Data Matrix**CITATIONS**

1. 1979 Chaffee S ...
2. 1982 Chaffee S ...
3. ...
4. ...
5. 1972 McCombs M ...
6. ...
7. 1980 Rubin A ...
8. 1987 Rubin A ...
9. ...
10. ...

SEARCH

CR=CHAFFEE S?
AND
CR=MCCOMBS M?

CR=CHAFFEE S?
AND
CR=RUBIN A?

Raw cocitation frequencies matrix

	BECKER	BLUMLER	...	...	...	...	...	...	...
BECKER		60	1	84	38	77	29	29	21
BLUMLER	60		0	70	34	61	67	16	43
BORMANN	1	0		4	5	1	2	0	8
CHAFFEE	84	70	4		50	96	37	21	12
GRABER	38	34	5	50		69	15	31	8
MCCOMBS	77	61	1	96	69		17	84	17
RUBIN	29	67	2	37	15	17		7	29
SHAW	29	16	0	21	31	84	7		8
SWANSON	21	43	8	12	8	17	29	8	

Figure 3 Creating the Correlation Matrix**a. Computing the Pearson "r" for each pair of authors**

	BECKER BLUMLER			BECKER BORMANN	
BECKER		60	BECKER		1
BLUMLER	60		BLUMLER	60	0
BORMANN	1	0	BORMANN	1	
CHAFFEE	84	70	CHAFFEE	84	4
GRABER	38	34	GRABER	38	5
MCCOMBS	77	61	MCCOMBS	77	1
RUBIN	29	67	RUBIN	29	2
SHAW	29	16	SHAW	29	0
SWANSON	21	43	SWANSON	21	8
$r1=+.74$			$r2=-.30$		

b. A new correlation coefficient matrix

	BECKER	BLUMLER	...	...	...	...	...	...
...								
BECKER	1.0000	.74 (r1)						
BLUMLER	.74 (r1)	1.0000						
BORMANN	-.30 (r2)		1.0000					

Figure 4 Correlation Matrix of 51 selected authors

	a1	a2	a3	a4	b1	b2	b3	b4	b5
a1	1.00	-0.05	0.36	0.45	0.00	0.43	0.69	0.00	0.44
a2	-0.05	1.00	-0.15	-0.13	-0.06	-0.13	0.08	0.49	-0.16
a3	0.36	-0.15	1.00	0.76	0.48	0.90	0.28	-0.14	0.87
a4	0.45	-0.13	0.76	1.00	0.39	0.87	0.30	0.00	0.75
b1	0.00	-0.06	0.48	0.39	1.00	0.52	0.05	-0.12	0.46
b2	0.43	-0.13	0.90	0.87	0.52	1.00	0.32	-0.10	0.88
b3	0.69	0.08	0.28	0.30	0.05	0.32	1.00	0.10	0.34
b4	0.00	0.49	-0.14	0.00	-0.12	-0.10	0.10	1.00	-0.11
b5	0.44	-0.16	0.87	0.75	0.46	0.88	0.34	-0.11	1.00
b6	-0.02	0.69	-0.19	-0.19	-0.24	-0.23	0.11	0.44	-0.19
c1	0.37	-0.13	0.94	0.74	0.51	0.91	0.21	-0.07	0.84
d1	0.39	0.23	0.00	0.04	-0.19	0.03	0.54	0.29	0.02
e1	0.71	-0.05	0.33	0.31	0.04	0.38	0.86	0.05	0.32
e2	0.03	0.43	-0.10	-0.14	-0.22	-0.11	0.08	0.29	0.04
g1	0.14	-0.12	0.73	0.47	0.26	0.63	0.39	-0.13	0.68
g2	0.78	-0.15	0.60	0.58	0.24	0.64	0.77	0.00	0.61
g3	-0.04	0.83	-0.19	-0.18	-0.16	-0.19	0.13	0.50	-0.20
g4	0.05	0.61	-0.19	-0.20	-0.25	-0.24	0.21	0.47	-0.21
h1	0.19	0.79	-0.18	-0.13	-0.21	-0.18	0.23	0.53	-0.14
h2	0.16	0.57	-0.05	-0.05	-0.21	-0.05	0.45	0.49	-0.01
h3	0.40	-0.01	0.34	0.20	-0.04	0.18	0.51	-0.01	0.28
h4	0.78	-0.15	0.62	0.55	0.17	0.64	0.70	-0.13	0.64
j1	0.56	0.11	0.35	0.26	-0.07	0.33	0.75	0.04	0.30
j2	0.29	-0.16	0.76	0.52	0.39	0.76	0.07	-0.18	0.82
j3	0.26	-0.01	0.31	0.33	0.14	0.43	0.21	0.27	0.38
k1	0.50	-0.09	0.58	0.47	0.16	0.53	0.53	0.02	0.54
k2	0.58	-0.17	0.63	0.74	0.38	0.77	0.65	-0.01	0.66
l1	-0.01	0.67	-0.05	-0.05	-0.09	-0.04	0.23	0.28	-0.05
l2	0.52	-0.10	0.81	0.76	0.34	0.83	0.40	-0.07	0.75
m1	-0.17	0.67	-0.22	-0.22	-0.20	-0.23	0.10	0.38	-0.25
m2	0.60	-0.15	0.79	0.87	0.23	0.91	0.42	-0.05	0.77
m3	0.34	-0.13	0.96	0.74	0.33	0.89	0.23	-0.12	0.84
m4	0.31	0.28	0.16	0.09	0.35	0.24	0.04	0.28	0.27
n1	0.71	0.09	0.54	0.49	0.14	0.58	0.79	0.10	0.51
o1	0.43	-0.17	0.97	0.80	0.51	0.92	0.34	-0.14	0.89
p1	0.84	-0.03	0.36	0.50	0.09	0.49	0.84	0.01	0.44
p2	0.73	-0.11	0.68	0.68	0.27	0.69	0.70	0.02	0.65
p3	0.18	0.04	0.61	0.57	0.42	0.66	0.08	0.04	0.51
p4	0.29	0.01	0.31	0.11	-0.01	0.16	0.39	0.08	0.25
p5	0.44	0.08	0.45	0.12	0.11	0.31	0.40	-0.08	0.52
r1	0.64	-0.23	0.51	0.63	0.26	0.64	0.51	-0.13	0.59
r2	0.19	-0.14	0.75	0.52	0.48	0.78	0.11	-0.15	0.90
s1	0.52	-0.16	0.64	0.86	0.43	0.80	0.44	-0.02	0.71
s2	0.60	-0.19	0.53	0.75	0.33	0.70	0.50	-0.03	0.56
s3	-0.02	0.77	-0.02	-0.05	-0.03	-0.07	0.17	0.31	-0.05
s4	0.63	-0.12	0.69	0.78	0.37	0.84	0.45	-0.17	0.65
s5	0.29	0.06	0.56	0.43	0.35	0.58	0.15	0.08	0.78
t1	0.32	0.17	0.24	0.15	-0.12	0.11	0.45	0.21	0.23
w1	0.53	-0.13	0.75	0.88	0.46	0.88	0.42	0.03	0.80
w2	0.49	-0.16	0.67	0.76	0.34	0.74	0.42	0.02	0.65
z1	-0.03	0.76	-0.25	-0.26	-0.21	-0.24	0.11	0.46	-0.24

(Continued)

	b6	c1	d1	e1	e2	g1	g2	g3	g4
a1	-0.02	0.37	0.39	0.71	0.03	0.40	0.78	-0.04	0.05
a2	0.69	-0.13	0.23	-0.05	0.43	-0.12	-0.15	0.83	0.61
a3	-0.19	0.94	0.00	0.33	-0.10	0.73	0.60	-0.19	-0.19
a4	-0.19	0.74	0.04	0.31	-0.14	0.47	0.58	-0.18	-0.20
b1	-0.24	0.51	-0.19	0.04	-0.22	0.26	0.24	-0.16	-0.25
b2	-0.23	0.91	0.03	0.38	-0.11	0.63	0.64	-0.19	-0.24
b3	0.11	0.21	0.54	0.86	0.08	0.39	0.77	0.13	0.21
b4	0.44	-0.07	0.29	0.05	0.29	-0.13	0.00	0.50	0.47
b5	-0.19	0.84	0.02	0.32	0.04	0.68	0.61	-0.20	-0.21
b6	1.00	-0.21	0.59	0.05	0.49	-0.11	-0.04	0.88	0.87
c1	-0.21	1.00	0.04	0.25	-0.01	0.64	0.54	-0.18	-0.20
d1	0.59	0.04	1.00	0.49	0.38	0.28	0.48	0.47	0.68
e1	0.05	0.25	0.49	1.00	0.07	0.39	0.76	0.03	0.19
e2	0.49	-0.01	0.38	0.07	1.00	0.02	0.08	0.55	0.56
g1	-0.11	0.64	0.28	0.39	0.02	1.00	0.58	-0.15	-0.01
g2	-0.04	0.54	0.48	0.76	0.08	0.58	1.00	-0.07	0.02
g3	0.88	-0.18	0.47	0.03	0.55	-0.15	-0.07	1.00	0.82
g4	0.87	-0.20	0.68	0.19	0.56	-0.01	0.02	0.82	1.00
h1	0.76	-0.15	0.39	0.14	0.35	-0.11	0.01	0.84	0.78
h2	0.71	-0.02	0.71	0.27	0.69	0.08	0.13	0.72	0.79
h3	0.09	0.17	0.50	0.41	-0.05	0.63	0.39	0.01	0.25
h4	-0.16	0.60	0.35	0.60	-0.04	0.75	0.87	-0.18	-0.08
j1	0.29	0.25	0.75	0.60	0.19	0.59	0.71	0.27	0.41
j2	-0.25	0.70	-0.13	0.19	-0.02	0.52	0.41	-0.24	-0.28
j3	-0.11	0.29	0.04	0.25	0.09	0.22	0.25	-0.10	-0.06
k1	-0.03	0.48	0.45	0.44	0.05	0.84	0.69	-0.03	0.15
k2	-0.20	0.59	0.28	0.63	-0.13	0.59	0.73	-0.18	-0.14
l1	0.65	-0.03	0.31	0.05	0.62	-0.02	-0.08	0.69	0.60
l2	-0.21	0.75	0.04	0.49	-0.04	0.57	0.66	-0.18	-0.22
m1	0.83	-0.19	0.44	-0.05	0.72	-0.15	-0.16	0.83	0.75
m2	-0.23	0.76	0.08	0.45	-0.02	0.61	0.69	-0.24	-0.20
m3	-0.17	0.93	-0.07	0.33	-0.01	0.61	0.51	-0.17	-0.19
m4	0.14	0.26	0.09	0.11	0.11	0.06	0.28	0.22	0.08
n1	0.04	0.44	0.52	0.80	0.12	0.65	0.88	0.11	0.19
o1	-0.22	0.93	-0.03	0.35	-0.09	0.71	0.62	-0.22	-0.24
p1	-0.01	0.45	0.46	0.84	0.00	0.48	0.86	-0.06	0.05
p2	-0.08	0.60	0.37	0.75	-0.07	0.70	0.92	-0.12	0.04
p3	-0.20	0.63	-0.14	0.10	-0.01	0.39	0.30	-0.21	-0.23
p4	0.10	0.18	0.52	0.35	0.13	0.74	0.43	0.06	0.31
p5	0.20	0.17	0.35	0.46	0.19	0.55	0.45	0.07	0.18
r1	-0.24	0.53	0.11	0.68	-0.09	0.37	0.63	-0.24	-0.21
r2	-0.21	0.78	-0.10	0.17	-0.05	0.58	0.37	-0.19	-0.20
s1	-0.19	0.69	0.12	0.50	-0.11	0.40	0.66	-0.15	-0.19
s2	-0.25	0.49	0.09	0.67	-0.11	0.32	0.61	-0.21	-0.23
s3	0.76	-0.06	0.47	0.04	0.49	-0.04	0.01	0.85	0.80
s4	-0.30	0.61	-0.01	0.49	-0.17	0.44	0.63	-0.25	-0.34
s5	0.09	0.55	0.22	0.30	0.19	0.47	0.41	0.08	0.11
t1	0.33	0.15	0.72	0.39	0.20	0.56	0.50	0.28	0.53
w1	-0.22	0.78	0.06	0.47	-0.02	0.52	0.70	-0.18	-0.21
w2	-0.19	0.59	0.05	0.55	-0.13	0.40	0.57	-0.19	-0.18
z1	0.89	-0.21	0.53	0.14	0.59	-0.19	-0.02	0.92	0.85

(Continued)

	h1	h2	h3	h4	j1	j2	j3	k1	k2
a1	0.19	0.16	0.40	0.78	0.56	0.29	0.26	0.50	0.58
a2	0.79	0.57	-0.01	-0.15	0.11	-0.16	-0.01	-0.09	-0.17
a3	-0.18	-0.05	0.34	0.62	0.35	0.76	0.31	0.58	0.63
a4	-0.13	-0.05	0.20	0.55	0.26	0.52	0.33	0.47	0.74
b1	-0.21	-0.21	-0.04	0.17	-0.07	0.39	0.14	0.16	0.38
b2	-0.18	-0.05	0.18	0.64	0.33	0.76	0.43	0.53	0.77
b3	0.23	0.45	0.51	0.70	0.75	0.07	0.21	0.53	0.65
b4	0.53	0.49	-0.01	-0.13	0.04	-0.18	0.27	0.02	-0.01
b5	-0.14	-0.01	0.28	0.64	0.30	0.82	0.38	0.54	0.66
b6	0.76	0.71	0.09	-0.16	0.29	-0.25	-0.11	-0.03	-0.20
c1	-0.15	-0.02	0.17	0.60	0.25	0.70	0.29	0.48	0.59
d1	0.39	0.71	0.50	0.35	0.75	-0.13	0.04	0.45	0.21
e1	0.14	0.27	0.41	0.60	0.60	0.19	0.25	0.44	0.63
e2	0.35	0.69	-0.05	-0.04	0.19	-0.02	0.09	0.05	-0.13
g1	-0.11	0.08	0.63	0.75	0.59	0.52	0.22	0.84	0.59
g2	0.01	0.13	0.39	0.87	0.71	0.41	0.25	0.69	0.73
g3	0.84	0.72	0.01	-0.18	0.27	-0.24	-0.10	-0.03	-0.18
g4	0.78	0.79	0.25	-0.08	0.41	-0.28	-0.06	0.15	-0.14
h1	1.00	0.59	0.09	-0.05	0.30	-0.21	0.00	0.01	-0.14
h2	0.59	1.00	0.26	0.10	0.49	-0.16	-0.01	0.28	0.04
h3	0.09	0.26	1.00	0.59	0.60	0.13	0.02	0.66	0.38
h4	-0.05	0.10	0.59	1.00	0.70	0.42	0.23	0.76	0.72
j1	0.30	0.49	0.60	0.70	1.00	0.08	0.13	0.67	0.50
j2	-0.21	-0.16	0.13	0.42	0.08	1.00	0.38	0.30	0.43
j3	0.00	-0.01	0.02	0.23	0.13	0.38	1.00	0.18	0.49
k1	0.01	0.28	0.66	0.76	0.67	0.30	0.18	1.00	0.57
k2	-0.14	0.04	0.38	0.72	0.50	0.43	0.49	0.57	1.00
l1	0.51	0.72	0.02	-0.01	0.28	-0.07	0.02	0.06	-0.05
l2	-0.15	0.01	0.31	0.65	0.32	0.68	0.25	0.48	0.63
m1	0.56	0.85	-0.04	-0.23	0.21	-0.24	-0.14	-0.05	-0.22
m2	-0.11	-0.01	0.28	0.73	0.42	0.64	0.51	0.54	0.78
m3	-0.16	-0.10	0.25	0.53	0.24	0.77	0.29	0.49	0.54
m4	0.26	0.01	-0.05	0.18	0.05	0.24	0.29	0.01	0.14
n1	0.17	0.31	0.52	0.81	0.74	0.34	0.42	0.68	0.79
o1	-0.19	-0.07	0.31	0.66	0.35	0.79	0.28	0.56	0.66
p1	0.08	0.19	0.49	0.79	0.67	0.23	0.33	0.53	0.73
p2	-0.03	0.16	0.59	0.92	0.63	0.50	0.38	0.74	0.81
p3	-0.20	-0.13	0.04	0.38	0.04	0.48	0.54	0.23	0.39
p4	0.08	0.34	0.75	0.52	0.66	0.09	0.01	0.84	0.32
p5	0.13	0.15	0.42	0.51	0.46	0.40	0.23	0.42	0.31
r1	-0.15	-0.02	0.22	0.59	0.33	0.53	0.39	0.42	0.76
r2	-0.17	-0.09	0.13	0.44	0.15	0.82	0.44	0.44	0.48
s1	-0.13	-0.02	0.13	0.60	0.30	0.48	0.48	0.46	0.82
s2	-0.15	-0.05	0.13	0.54	0.28	0.45	0.42	0.36	0.82
s3	0.81	0.73	0.06	-0.04	0.29	-0.10	-0.10	0.04	-0.15
s4	-0.20	-0.12	0.14	0.67	0.33	0.55	0.30	0.41	0.77
s5	0.10	0.12	0.15	0.30	0.19	0.75	0.51	0.29	0.50
t1	0.32	0.52	0.67	0.48	0.73	0.10	0.03	0.71	0.26
w1	-0.13	-0.03	0.23	0.66	0.32	0.71	0.43	0.47	0.77
w2	-0.13	-0.03	0.26	0.56	0.27	0.60	0.40	0.39	0.71
z1	0.80	0.76	-0.05	-0.22	0.29	-0.27	-0.09	-0.07	-0.25

(Continued)

	l1	l2	m1	m2	m3	m4	n1	o1	p1
a1	-0.61	0.52	-0.17	0.60	0.34	0.31	0.71	0.43	0.84
a2	0.67	-0.10	0.67	-0.15	-0.13	0.28	0.09	-0.17	-0.03
a3	-0.05	0.81	-0.22	0.79	0.96	0.16	0.54	0.97	0.36
a4	-0.05	0.76	-0.22	0.87	0.74	0.09	0.49	0.80	0.50
b1	-0.09	0.34	-0.20	0.23	0.33	0.35	0.14	0.51	0.09
b2	-0.04	0.83	-0.23	0.91	0.89	0.24	0.58	0.92	0.49
b3	0.23	0.40	0.10	0.42	0.23	0.04	0.79	0.34	0.84
b4	0.28	-0.07	0.38	-0.05	-0.12	0.28	0.10	-0.14	0.01
b5	-0.05	0.75	-0.25	0.77	0.84	0.27	0.51	0.89	0.44
b6	0.65	-0.21	0.83	-0.23	-0.17	0.14	0.04	-0.22	-0.01
c1	-0.03	0.75	-0.19	0.76	0.93	0.26	0.44	0.93	0.45
d1	0.31	0.04	0.44	0.08	-0.07	0.09	0.52	-0.03	0.46
e1	0.05	0.49	-0.05	0.45	0.33	0.11	0.80	0.35	0.84
e2	0.62	-0.04	0.72	-0.02	-0.01	0.11	0.12	-0.09	0.00
g1	-0.02	0.57	-0.15	0.61	0.61	0.06	0.65	0.71	0.48
g2	-0.08	0.66	-0.16	0.69	0.51	0.28	0.88	0.62	0.86
g3	0.69	-0.18	0.83	-0.24	-0.17	0.22	0.11	-0.22	-0.06
g4	0.60	-0.22	0.75	-0.20	-0.19	0.08	0.19	-0.24	0.05
h1	0.51	-0.15	0.56	-0.11	-0.16	0.26	0.17	-0.19	0.08
h2	0.72	0.01	0.85	-0.01	-0.10	0.01	0.31	-0.07	0.19
h3	0.02	0.31	-0.04	0.28	0.25	-0.05	0.52	0.31	0.49
h4	-0.01	0.65	-0.23	0.73	0.53	0.18	0.81	0.66	0.79
j1	0.28	0.32	0.21	0.42	0.24	0.05	0.74	0.35	0.67
j2	-0.07	0.68	-0.24	0.64	0.77	0.24	0.34	0.79	0.23
j3	0.02	0.25	-0.14	0.51	0.29	0.29	0.42	0.28	0.33
k1	0.06	0.48	-0.05	0.54	0.49	0.01	0.68	0.56	0.53
k2	-0.05	0.63	-0.22	0.78	0.54	0.14	0.79	0.66	0.73
l1	1.00	-0.03	0.85	-0.05	-0.05	0.11	0.21	-0.07	0.04
l2	-0.03	1.00	-0.21	0.78	0.81	0.20	0.60	0.86	0.54
m1	0.85	-0.21	1.00	-0.26	-0.20	0.04	0.03	-0.25	-0.15
m2	-0.05	0.78	-0.26	1.00	0.81	0.14	0.62	0.83	0.64
m3	-0.05	0.81	-0.20	0.81	1.00	0.03	0.51	0.96	0.34
m4	0.11	0.20	0.04	0.14	0.03	1.00	0.14	0.13	0.12
n1	0.21	0.60	0.03	0.62	0.51	0.14	1.00	0.57	0.82
o1	-0.07	0.86	-0.25	0.83	0.96	0.13	0.57	1.00	0.46
p1	0.04	0.54	-0.15	0.64	0.34	0.12	0.82	0.46	1.00
p2	0.04	0.71	-0.16	0.77	0.66	0.04	0.90	0.74	0.85
p3	0.03	0.59	-0.19	0.64	0.56	0.28	0.30	0.60	0.32
p4	0.06	0.24	0.07	0.20	0.21	-0.01	0.48	0.27	0.36
p5	0.10	0.30	-0.07	0.35	0.49	0.27	0.52	0.39	0.38
r1	-0.07	0.66	-0.27	0.71	0.52	0.12	0.61	0.61	0.72
r2	-0.02	0.54	-0.20	0.67	0.71	0.09	0.42	0.75	0.26
s1	-0.08	0.72	-0.21	0.92	0.59	0.18	0.63	0.71	0.60
s2	-0.04	0.72	-0.25	0.78	0.58	0.12	0.65	0.61	0.69
s3	0.70	-0.08	0.79	-0.09	-0.07	0.09	0.11	-0.07	-0.02
s4	-0.07	0.78	-0.29	0.83	0.67	0.26	0.61	0.73	0.63
s5	0.10	0.37	0.03	0.50	0.51	0.19	0.45	0.56	0.27
ti	0.28	0.17	0.27	0.19	0.16	-0.04	0.55	0.21	0.39
w1	-0.06	0.84	-0.23	0.94	0.74	0.30	0.65	0.84	0.61
w2	-0.04	0.81	-0.25	0.78	0.69	0.14	0.58	0.74	0.64
z1	0.67	-0.22	0.81	-0.25	-0.23	0.19	0.10	-0.29	-0.02

(Continued)

	p2	p3	p4	p5	r1	r2	s1	s2	s3
al	0.73	0.18	0.29	0.44	0.64	0.19	0.52	0.60	-0.02
a2	-0.11	0.04	0.01	0.08	-0.23	-0.14	-0.16	-0.19	0.77
a3	0.68	0.61	0.31	0.45	0.51	0.75	0.64	0.53	-0.02
a4	0.68	0.57	0.11	0.12	0.63	0.52	0.86	0.75	-0.05
bl	0.27	0.42	-0.01	0.11	0.26	0.48	0.43	0.33	-0.03
b2	0.69	0.66	0.16	0.31	0.64	0.78	0.80	0.70	-0.07
b3	0.70	0.08	0.39	0.40	0.51	0.11	0.44	0.50	0.17
b4	0.02	0.04	0.08	-0.08	-0.13	-0.15	-0.02	-0.03	0.31
b5	0.65	0.51	0.25	0.52	0.59	0.90	0.71	0.56	-0.05
b6	-0.08	-0.20	0.10	0.20	-0.24	-0.21	-0.19	-0.25	0.76
cl	0.60	0.63	0.18	0.17	0.53	0.78	0.69	0.49	-0.06
dl	0.37	-0.14	0.52	0.35	0.11	-0.10	0.12	0.09	0.47
el	0.75	0.10	0.35	0.46	0.68	0.17	0.50	0.67	0.04
e2	-0.07	-0.01	0.13	0.19	-0.09	-0.05	-0.11	-0.11	0.49
gl	0.70	0.39	0.74	0.55	0.37	0.58	0.40	0.32	-0.04
g2	0.92	0.30	0.43	0.45	0.63	0.37	0.66	0.61	0.01
g3	-0.12	-0.21	0.06	0.07	-0.24	-0.19	-0.15	-0.21	0.85
g4	0.04	-0.23	0.31	0.18	-0.21	-0.20	-0.19	-0.23	0.80
hl	-0.03	-0.20	0.08	0.13	-0.15	-0.17	-0.13	-0.15	0.81
h2	0.16	-0.13	0.34	0.15	-0.02	-0.09	-0.02	-0.05	0.73
h3	0.59	0.04	0.75	0.42	0.22	0.13	0.13	0.13	0.06
h4	0.92	0.38	0.52	0.51	0.59	0.44	0.60	0.54	-0.04
j1	0.63	0.04	0.66	0.46	0.33	0.15	0.30	0.28	0.29
j2	0.50	0.48	0.09	0.40	0.53	0.82	0.48	0.45	-0.10
j3	0.38	0.54	0.01	0.23	0.39	0.44	0.48	0.42	-0.10
kl	0.74	0.23	0.84	0.42	0.42	0.44	0.46	0.36	0.04
k2	0.81	0.39	0.32	0.31	0.76	0.48	0.82	0.82	-0.15
ll	0.04	0.03	0.06	0.10	-0.07	-0.02	-0.08	-0.04	0.70
l2	0.71	0.59	0.24	0.30	0.66	0.54	0.72	0.72	-0.08
ml	-0.16	-0.19	0.07	-0.07	-0.27	-0.20	-0.21	-0.25	0.79
m2	0.77	0.64	0.20	0.35	0.71	0.67	0.92	0.78	-0.09
m3	0.66	0.56	0.21	0.49	0.52	0.71	0.59	0.58	-0.07
m4	0.04	0.28	-0.01	0.27	0.12	0.09	0.18	0.12	0.09
nl	0.90	0.30	0.48	0.52	0.61	0.42	0.63	0.65	0.11
ol	0.74	0.60	0.27	0.39	0.61	0.75	0.71	0.61	-0.07
p1	0.85	0.32	0.36	0.38	0.72	0.26	0.60	0.69	-0.02
p2	1.00	0.45	0.50	0.45	0.73	0.53	0.70	0.74	0.00
p3	0.45	1.00	-0.01	0.16	0.32	0.54	0.48	0.37	-0.08
p4	0.50	-0.01	1.00	0.37	0.17	0.11	0.10	0.06	0.05
p5	0.45	0.16	0.37	1.00	0.31	0.41	0.12	0.17	0.10
r1	0.73	0.32	0.17	0.31	1.00	0.45	0.69	0.90	-0.19
r2	0.53	0.54	0.11	0.41	0.45	1.00	0.47	0.41	-0.05
s1	0.70	0.48	0.10	0.12	0.69	0.47	1.00	0.81	-0.06
s2	0.74	0.37	0.06	0.17	0.90	0.41	0.81	1.00	-0.17
s3	0.00	-0.08	0.05	0.10	-0.19	-0.05	-0.06	-0.17	1.00
s4	0.60	0.53	0.05	0.27	0.69	0.52	0.79	0.81	-0.14
s5	0.48	0.25	0.14	0.47	0.43	0.80	0.44	0.42	0.13
t1	0.46	-0.09	0.76	0.38	0.14	0.11	0.14	0.05	0.38
w1	0.75	0.60	0.18	0.22	0.73	0.59	0.93	0.81	-0.08
w2	0.75	0.52	0.14	0.21	0.83	0.51	0.75	0.83	-0.13
z1	-0.14	-0.25	0.05	0.13	-0.20	-0.21	-0.22	-0.22	0.79

(Continued)

	s4	s5	t1	w1	w2	z1
a1	0.63	0.29	0.32	0.53	0.49	-0.03
a2	-0.12	0.06	0.17	-0.13	-0.16	0.76
a3	0.69	0.56	0.24	0.75	0.67	-0.25
a4	0.78	0.43	0.15	0.88	0.76	-0.26
b1	0.37	0.35	-0.12	0.46	0.34	-0.21
b2	0.84	0.58	0.11	0.88	0.74	-0.24
b3	0.45	0.15	0.45	0.42	0.42	0.11
b4	-0.17	0.08	0.21	0.03	0.02	0.46
b5	0.65	0.78	0.23	0.80	0.65	-0.24
b6	-0.30	0.09	0.33	-0.22	-0.19	0.89
c1	0.61	0.55	0.15	0.78	0.59	-0.21
d1	-0.01	0.22	0.72	0.06	0.05	0.53
e1	0.49	0.30	0.39	0.47	0.55	0.14
e2	-0.17	0.19	0.20	-0.02	-0.13	0.59
g1	0.44	0.47	0.56	0.52	0.40	-0.19
g2	0.63	0.41	0.50	0.70	0.57	-0.02
g3	-0.25	0.08	0.28	-0.18	-0.19	0.92
g4	-0.34	0.11	0.53	-0.21	-0.18	0.85
h1	-0.20	0.10	0.32	-0.13	-0.13	0.80
h2	-0.12	0.12	0.52	-0.03	-0.03	0.76
h3	0.14	0.15	0.67	0.23	0.26	-0.05
h4	0.67	0.30	0.48	0.66	0.56	-0.22
j1	0.33	0.19	0.73	0.32	0.27	0.29
j2	0.55	0.75	0.10	0.71	0.60	-0.27
j3	0.30	0.51	0.03	0.43	0.40	-0.09
k1	0.41	0.29	0.71	0.47	0.39	-0.07
k2	0.77	0.50	0.26	0.77	0.71	-0.25
l1	-0.07	0.10	0.28	-0.06	-0.04	0.67
l2	0.78	0.37	0.17	0.84	0.81	-0.22
m1	-0.29	0.03	0.27	-0.23	-0.25	0.81
m2	0.83	0.50	0.19	0.94	0.78	-0.25
m3	0.67	0.51	0.16	0.74	0.69	-0.23
m4	0.26	0.19	-0.04	0.30	0.14	0.19
n1	0.61	0.45	0.55	0.65	0.58	0.10
o1	0.73	0.56	0.21	0.84	0.74	-0.29
p1	0.63	0.27	0.39	0.61	0.64	-0.02
p2	0.69	0.48	0.46	0.75	0.75	-0.14
p3	0.53	0.25	-0.09	0.60	0.52	-0.25
p4	0.05	0.14	0.76	0.18	0.14	0.05
p5	0.27	0.47	0.38	0.22	0.21	0.13
r1	0.69	0.43	0.14	0.73	0.83	-0.20
r2	0.52	0.80	0.11	0.59	0.51	-0.21
s1	0.79	0.44	0.14	0.93	0.75	-0.22
s2	0.81	0.42	0.05	0.81	0.83	-0.22
s3	-0.14	0.13	0.38	-0.08	-0.13	0.79
s4	1.00	0.36	-0.03	0.83	0.74	-0.31
s5	0.36	1.00	0.30	0.50	0.39	0.08
t1	-0.03	0.30	1.00	0.20	0.13	0.34
w1	0.83	0.50	0.20	1.00	0.83	-0.24
w2	0.74	0.39	0.13	0.83	1.00	-0.22
z1	-0.31	0.08	0.34	-0.24	-0.22	1.00

Figure 5 Two-dimensional Plot of 51 selected authors

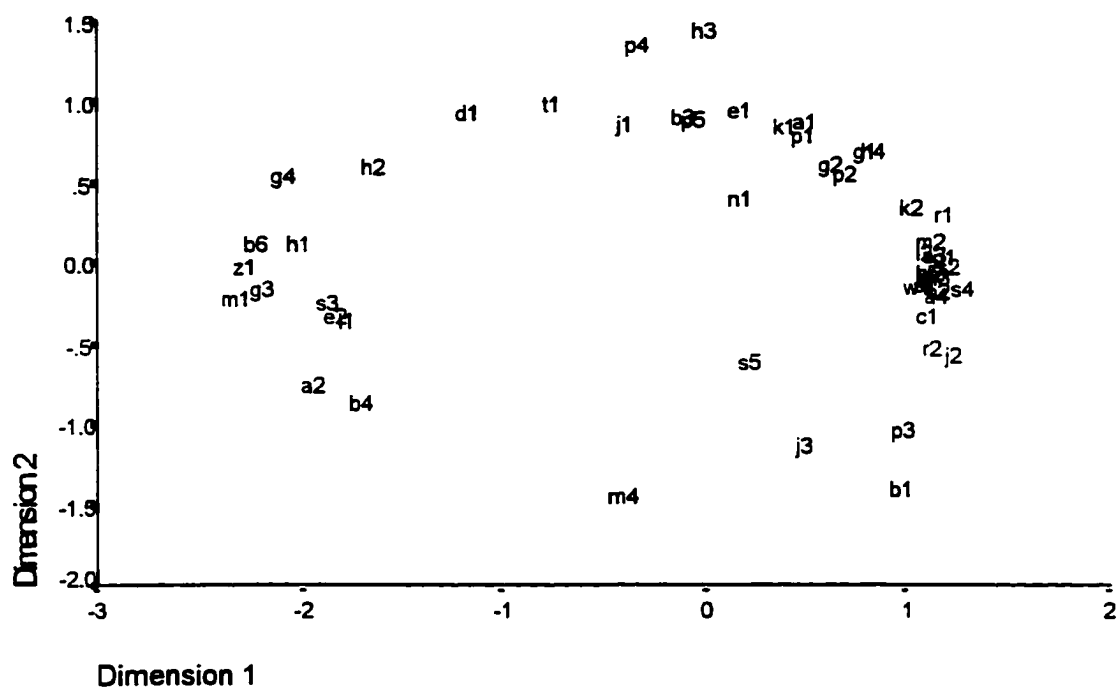


Figure 6 Coordinates of the 51 Authors on Each of the Two
Dimensions

Stimulus Number	Stimulus Name	Dimension	
		1	2
1	A1	.4812	.7840
2	A2	-1.9602	-.8596
3	A3	1.1257	-.0462
4	A4	1.1326	-.3074
5	B1	.9595	-1.5050
6	B2	1.1434	-.2761
7	B3	-.1270	.8058
8	B4	-1.7260	-.9650
9	B5	1.0972	-.1631
10	B6	-2.2386	.0241
11	C1	1.0970	-.4355
12	D1	-1.1837	.8311
13	E1	.1515	.8480
14	E2	-1.8484	-.4349
15	G1	.7798	.6039
16	G2	.6018	.5100
17	G3	-2.2037	-.2681
18	G4	-2.1007	.4388
19	H1	-2.0272	.0133
20	H2	-1.6595	.5056
21	H3	-.0274	1.3500
22	H4	.8159	.5996
23	J1	-.4044	.7732
24	J2	1.2223	-.6754
25	J3	.4797	-1.2334
26	K1	.3804	.7593
27	K2	1.0149	.2465
28	L1	-1.7906	-.4540
29	L2	1.0795	-.0318
30	M1	-2.3342	-.3146
31	M2	1.1035	.0304
32	M3	1.1263	-.1937
33	M4	-.4225	-1.5426
34	N1	.1521	.3029
35	O1	1.1735	-.0698
36	P1	.4695	.7031
37	P2	.6690	.4505
38	P3	.9673	-1.1320
39	P4	-.3561	1.2666
40	P5	-.0706	.8003
41	R1	1.1753	.1975
42	R2	1.1166	-.6276
43	S1	1.0794	-.2298
44	S2	1.1916	-.1228
45	S3	-1.8870	-.3460
46	S4	1.2677	-.2556
47	S5	.2004	-.7111
48	T1	-.7662	.8982
49	W1	1.0454	-.2519
50	W2	1.1177	-.1686
51	Z1	-2.2837	-.1210

Figure 7 Results from the Cluster Analysis

Stage	Clusters Cluster 1	Combined Cluster 2	Coefficient	Stage Cluster 1st Appears Cluster 1	Cluster 2	Next Stage
1	9	50	.000225	0	0	4
2	4	6	.000773	0	0	15
3	15	22	.001434	0	0	26
4	9	32	.002188	1	0	19
5	43	49	.003010	0	0	15
6	3	29	.004181	0	0	10
7	35	44	.005750	0	0	19
8	7	40	.007355	0	0	27
9	14	28	.009208	0	0	16
10	3	31	.012420	6	0	24
11	1	36	.015760	0	0	13
12	16	37	.019788	0	0	26
13	1	26	.025964	11	0	35
14	24	42	.032693	0	0	40
15	4	43	.040999	2	5	21
16	14	45	.050498	9	0	39
17	17	30	.060094	0	0	31
18	10	51	.071638	0	0	25
19	9	35	.084779	4	7	24
20	27	41	.098843	0	0	38
21	4	46	.121380	15	0	22
22	4	11	.146967	21	0	33
23	2	8	.179946	0	0	39
24	3	9	.213297	10	19	33
25	10	19	.252328	18	0	31
26	15	16	.293480	3	12	35
27	7	13	.336594	8	0	36
28	21	39	.394094	0	0	42
29	5	38	.463688	0	0	34
30	23	48	.536951	0	0	37
31	10	17	.629089	25	17	43
32	18	20	.728649	0	0	43
33	3	4	.861733	24	22	38
34	5	25	1.022538	29	0	41
35	1	15	1.224256	13	26	47
36	7	34	1.444311	27	0	42
37	12	23	1.683047	0	30	45
38	3	27	1.967846	33	20	40
39	2	14	2.268648	23	16	46
40	3	24	2.756188	38	14	48
41	5	47	3.279240	34	0	44
42	7	21	3.853715	36	28	45
43	10	18	4.540010	31	32	46
44	5	33	5.589408	41	0	48
45	7	12	6.687770	42	37	47
46	2	10	8.152704	39	43	50
47	1	7	11.522663	35	45	49
48	3	5	17.601301	40	44	49
49	1	3	38.075291	47	48	50
50	1	2	102.000778	49	46	0

(Continued)

D1	12	*****
P4	39	*****
H3	21	*****
N1	34	*****
E1	13	*****
P5	40	*****
B3	7	*****
P2	37	*****
G2	16	*****
H4	22	*****
G1	15	*****
K1	26	*****
P1	36	*****
A1	1	*****

Cluster 1

h2/ Hart	g4/ Gronbeck	m1/ Medhurst
g3/ Gregg	h1/ Hahn	z1/ Zarefsky
b6/ Bormann	s3/ Simons	l1/ Larson
e2/ Erickson	b4/ Blankenship	a2/ Andrews

Cluster 2

m4/ Murray	j3/ Jensen	s5/ Swanson
p3/ Perry	b1/ Beasley	

Cluster 3

r2/ Rubin	j2/ Jeffres	r1/ Reese
k2/ Kepplinger	c1/ Chaffee	s4/ Stevenson
w1/ Weaver	s1/ Shaw	b2/ Becker
a4/ Atwood	s2/ Shoemaker	o1/ O'Keefe
m3/ McLeod	w2/ Whitney	b5/ Blumler
m2/ McCombs	l2/ Lemert	a3/ Atkin

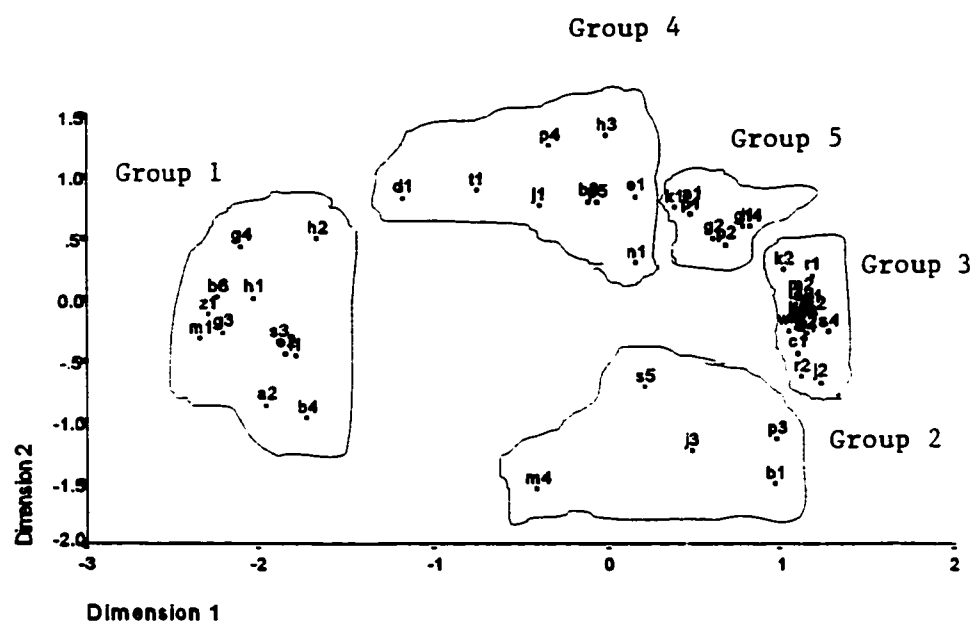
Cluster 4

t1/ Trent	j1/ Jamieson	d1/ Denton
p4/ Pfau	h3/ Hellweg	n1/ Nimmo
e1/ Entman	p5/ Powell	b3/ Bennett

Cluster 5

p2/ Patterson	g2/ Graber	h4/ Hofstetter
g1/ Garramone	k1/ Kaid	p1/ Paletz
a1/ Adams		

Figure 9 Five Author Clusters



* The detailed composition of Cluster Three can be seen in Figure 10.

Figure 10 Detailed Composition of Cluster Three

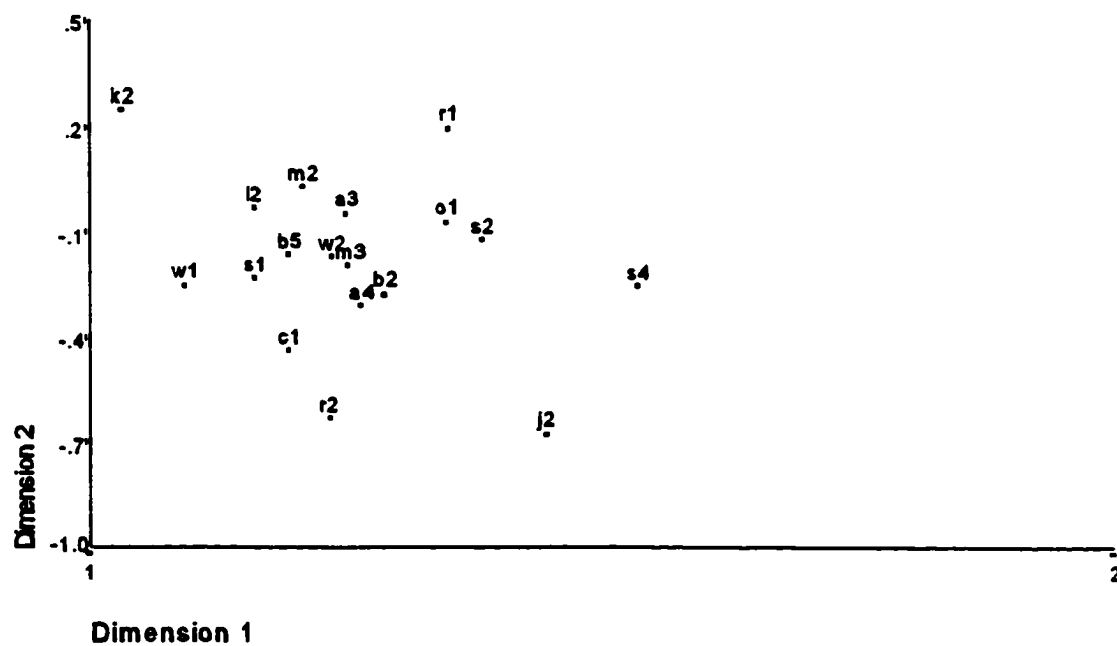


Figure 11 The academic origins of 51 selected authors

<u>Name</u>	<u>Area of Dissertation</u>	<u>Institution</u>
<u>Cluster 1</u>		
h2/ Hart (1970)*	speech communication	Penn. State Univ.
g4/ Gronbeck (1970)	speech communication	Univ. of Iowa
m1/ Medhurst (1980)	speech communication	Penn. State Univ.
g3/ Gregg (1963)	speech-theater	Univ. of Pittsburgh
h1/ Hahn (1968)	political science	Univ. of Arizona
z1/ Zarefsky (1974)	speech communication	Northwestern Univ.
b6/ Bormann (1953)	speech-theater	Univ. of Iowa
s3/ Simons (1961)	speech-theater	Purdue Univ.
l1/ Larson (1968)	speech communication	Univ. of Minnesota
e2/ Erickson (1972)	speech communication	Univ. of Michigan
b4/ Blankenship (1961)	speech-theater	Univ. of Illinois
a2/ Andrews (1966)	speech communication	Penn. State Univ.
<u>Cluster 2</u>		
m4/ Murray (1974)	speech communication	Univ. of Missouri- Columbia
j3/ Jensen	N/A	Univ. of Aarhus Denmark
s5/ Swanson (1971)	speech communication	Univ. of Kansas
p3/ Perry (1984)	mass communication	Univ. of Wisconsin- Madison
b1/ Beasley (1974)	journalism	George Washington Univ.
<u>Cluster 3</u>		
r2/ Rubin (1976)	mass communication	Univ. of Illinois
j2/ Jeffres (1976)	mass communication	Univ. of Minnesota
r1/ Reese (1982)	mass communication	Univ. of Wisconsin- Madison

(Continued)

<u>Name</u>	<u>Area of Dissertation</u>	<u>Institution</u>
k2/ Kepplinger	N/A	Univ. of Mainz Germany
c1/ Chaffee (1965)	journalism	Stanford Univ.
s4/ Stevenson (1975)	journalism	Univ. of Washington
w1/ Weaver (1974)	mass communication	Univ. of North Carolina/Chapel Hill
s1/ Shaw (1966)	journalism	Univ. of Wisconsin- Madison
b2/ Becker (1974)	mass communication	Univ. of Wisconsin- Madison
a4/ Atwood (1965)	journalism	Univ. of Iowa
s2/ Shoemaker (1982)	mass communication	Univ. of Wisconsin- Madison
o1/ O'Keefe (1971)	psychology	Univ. of Wisconsin- Madison
m3/ McLeod (1963)	psychology	Univ. of Michigan
w2/ Whitney (1978)	mass communication	Univ. of Minnesota
b5/ Blumler	N/A	Oxford Univ.
m2/ McCombs (1966)	journalism	Stanford Univ.
l2/ Lemert (1964)	journalism	Michigan State Univ.
a3/ Atkin (1972)	mass communication	Univ. of Wisconsin- Madison
<u>Cluster 4</u>		
t1/ Trent (1970)	speech communication	Univ. of Michigan
j1/ Jamieson (1972)	speech communication	Univ. of Wisconsin- Madison
d1/ Denton (1980)	speech communication	Purdue University
p4/ Pfau (1987)	speech communication	Univ. of Arizona
h3/ Hellweg (1977)	speech communication	Univ. of Southern California
n1/ Nimmo (1962)	political science	Vanderbilt Univ.
e1/ Entman (1977)	political science	Yale Univ.

(Continued)

<u>Name</u>	<u>Area of Dissertation</u>	<u>Institution</u>
p5/ Powell (1987)	political science	MIT
b3/ Bennett (1974)	political science	Yale Univ.
<u>Cluster 5</u>		
p2/ Patterson (1971)	political science	Univ. of Minnesota
g2/ Graber (1949)	law	Columbia Univ.
h4/ Hofstetter (1967)	political science	Indiana Univ.
g1/ Garramone (1981)	mass communication	Univ. of Wisconsin- Madison
ki/ Kaid (1974)	speech communication	Southern Illinois Univ.
p1/ Paletz (1970)	political science	UCLA
al/ Adams (1977)	political science	George Washington Univ.

*: the year in which his or her doctoral degree was granted.