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ABSTRACT

A study examined how the diversity of media sources affected the structure of social issue cognitions. Interviews with 239 adults produced data concerning (1) the need for cognition, (2) issue domain salience, (3) source reliance, (4) source diversity, (5) source exposure, (6) issue domain differentiation, and (7) domain integration. Support was found for a model in which issue integration is a function of need for cognition and issue salience. Issue differentiation was positively associated with need for cognition and with media source diversity. However, a powerful negative relationship was observed between issue salience and issue differentiation. The findings suggest that source diversity is good predictor of issue-related cognitive effects. By contrast, source exposure and source reliance appeared to be unrelated to cognitive processes of differentiation and integration. A seven-page bibliography concludes the document. (FL)

MOTIVATION AND COGNITION: MEDIA SOURCE DIVERSITY AND ISSUE DOMAIN SALIENCE, DIFFERENTIATION AND INTEGRATION

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This research asks how the diversity of media sources affects the structure of social issue cognitions. Hypotheses are offered for the effects of need for cognition, issue salience, media source diversity and media source reliance on differentiation and integration of social issues.

The data are from 239 personal interviews conducted with adults at randomly selected addresses in Gainesville, FL.

Support is found for a model in which issue integration is a function of need for cognition and issue salience. Issue differentiation is positively associated with need for cognition and with media source diversity. However, a powerful negative relationship is observed between issue salience and issue differentiation.

The authors conclude that source diversity is a good predictor of issue-related cognitive effects. By contrast, source exposure and source reliance appear unrelated to cognitive processes of differentiation and integration.

CONTENTS

Mass media bring us many of our mental images about the world. As channels for information, the media play a crucial role in shaping and organizing perceptions and beliefs about many crucial issues. The question directing this research is: How does diversity in information sources affect the structure of cognitions about social issues?

THEORIES AND HYPOTHESES

The importance of cognitions in determining behavior has long been recognized. Lippmann suggested in 1922 that the "way in which the world is imagined determines at any particular moment what men will do."

> The only feeling that anyone can have about an event he does not experience is the feeling aroused by his mental image of that event. That is why until we know what others think they know, we cannot truly understand their acts. (Lippmann, 1972, p. 273).

In the following section the construct "issue agenda" is reconceptualized as a specific example of a "cognitive domain." After exploring how cognitive domains are integrated and differentiated, a model is presented which suggests relationships between issue domain integration and an individual's need for cognition as well as the salience the individual attaches to the social issues. Issue domain differentiation is hypothesized to be a function of source exposure and source diversity.

COGNITIVE DOMAINS--DIFFERENTIATION AND INTEGRATION

An individual's self-defined set of social issues often is referred to in the mass communication literature as an "agenda" (McCombs & Shaw, 1972). Terms for similar structures are found in cognitive social psychology. For example, Scott et al. (1979) conceptualize self-defined cognitive sets as domains. They define a domain as "the set of phenomenal objects treated as functionally equivalent in the sense that a common set of attributes can be meaningfully used to appraise them" (p. 56). The researchers propose a geometric model of cognitive structure, where the elements are objects and attributes:

> A cognitive domain is defined by the objects contained in it and attributes by which objects are appraised. Objects are represented geometrically as points in multidimensional space and attributes as lines. These lines are divided into segments representing the different levels or categories of attributes which the person distinguishes. The objects are phenomenological objects, i.e., objects as seen by the person, including all of the characteristics the person uses to conceive of them. The points representing the objects are located in the space according to the characteristics the person ascribes to them. (Scott et al., 1979, p. 57)

The degree of differentiation and integration of an individual's cognitive domain are two of the ways in which domains can vary. Goldstein and Blackman, using the words "dimension" and "stimuli" for Scott et al.'s attribute and object, note that:

> Differentiation refers to the individual's ability to locate stimuli along dimensions. Integration refers to the individual's ability to utilize complex rules, or programs, to combine these dimensions. (Goldstein and Blackman, 1978, pp. 136-137)

Attributes are conceptualized as line segments representing an individual's personal constructs. For example, one person generally may use the attribute "important-unimportant" to describe his issues. At any given time an individual can locate each of his or her issues at points along the attribute. In addition, the individual may use other attributes to describe issues as well, such as "good-bad" or "involving-uninvolving." A domain is differentiated to the degree an individual makes use of a large rather than small number of attributes in structuring the domain. The domain of an individual who uses twelve attributes to structure a set of cognitions is more differentiated than that of a person who uses six attributes.

Defined formally, the degree of cognitive domain differentiation is defined as the degree an individual uses attributes in distinguishing a set of phenomenal objects treated as functionally equivalent. Attributes are defined as bipolar dimensions along which stimuli can be placed. Examples of attributes are "important-unimportant," "large-small," and "quick-slow." Objects of a cognitive domain are phenomenological, which is to say they are concepts representing persons, places, or things which have meaning for the individual.

The attributes for a domain may be orthogonal, or they may be related to one another. This quality, which is presumed to exist independently of the number of attributes, can be labeled integration. Integration is defined rather broadly by many psychologists. For example, Harvey et al. (1961) define it as

the "hooking" of differentiated parts, and Rokeach (1968) defines it as "an appreciation of similarities" among differentiated parts.

From a review of the literature, it appears that integration can be defined as both a process (the relating of differentiated parts) and a state (the degree to which differentiated parts have been related). We are concerned with integration as the degree to which the individual perceives closeness, relatedness, similarity, or association among the objects of a domain. Some degree of differentiation is considered to be a necessary but not a sufficient condition for integration.

SOURCE AND ISSUE DIVERSITY

A growing body of literature examines the relationship between channel diversity and diversity in individual or community agendas (e.g., Olien, Donohue & Tichenor, 1980; McDonald, 1972; Kent, 1980; Chaffee & Wilson, 1977; Ferguson, 1984; Allen & Izcaray, 1985).

Our definition of source diversity stems from Ferguson's (1984, 1985) concept of nominal diversity:

> The greater the number of discrete categories or classes, the higher the nominal diversity. It is similar to the structural aspect of metaphysical pluralism. It is assumed that there are basic classes or categories that can represent an object of study. (p. 4)

Ferguson's (1984) study suggests a link between the diversity of sources to which a person is exposed (nominal source diversity), and the diversity (number) of social issues that person believes

important. The findings suggest that it is the heterogeneity of a person's media environment, rather than the overall time a person spends with the media, which results in issue diversity.

Issue diversity is conceptualized as "variety, multiformity, range, variance or plurality" of social issues (Ferguson, 1984, p. 4). In examining the relationships between issue diversity and media diversity, Ferguson (1984) finds that as the number of sources a person is exposed to increases, the less he/she discriminates issues generally thought to be similar, and the more he/she discriminates those generally thought to be dissimilar.

Ferguson (1984) also finds a relationship between type of medium and issue diversity. Exposure to either radio or television is associated with viewing all issues as similar, while exposure to newspapers is associated with seeing relationships between issues people generally consider dissimilar. There is no effect for exposure to magazines.

Based on these findings, the following relationship is expected between domain relevant source diversity and domain differentiation:

> The greater the source diversity, the greater issue domain differentiation (Hy: 1).

SOURCE EXPOSURE

Some have suggested that greater levels of information exposure are associated with domain differentiation. For example, Goldstein and Blackman (1978) suggest, "The more familiar one is with objects, the more likely one is to differentiate more among the objects" (p. 137).

Scott et al. (1979) suggest that "cognitive differentiation reflects both general intellectual capacity and specific knowledge about the domain, but we cannot yet say anything about their relative contributions" (p. 215). They report that the general level of information about a domain is related to differentiation.

In order to acquire new information, it is assumed that a minimal necessary condition is exposure to that information. Exposure has been operationalized in numerous ways, but rarely conceptualized. Sedlacek (1984) provides a good starting place for defining source exposure:

> A multi-dimensional construct which is composed of the degree of physical contact or encounter a person has with mass media vehicles, via the senses of sight and/or hearing, over time. (p. 59)

Source exposure is defined here as the time an individual spends in contact with and assigning some minimal level of attention to an information stimulus. Contact is defined as perception "via the senses" (Sedlacek, 1984, p. 5). Attention is defined as "the process of allocating cognitive resources" (Wessells, 1982, p. 73). Based on the relationships cited above, the following association is expected between exposure to sources of domain relevant information and domain differentiation:

The greater the source exposure, the greater the issue domain differentiation (Hy: 2).

ISSUE INTEGRATION

In the previous discussion concerning the origins of structural differentiation, the processes described were for the most part reactive: mere exposure to sources and the diversity of those sources. In this research, however, the integration of domain objects is held to result from active mental processing. When the individual spends time thinking about objects of a domain, he is more likely to perceive associations among those objects. Since the processing and thinking capacities of people are limited, processing is more likely to occur when an individual is sufficiently motivated to do so. For example, Showers and Cantor (1985) suggest a direct link between motivational elements and flexible cognitive strategies, including multiple interpretations of situations. In the following sections sources of motivation to integrate domain objects are reviewed.

Need for Cognition

Cohen et al. (1955) suggest that individuals differ in their motivation to structure relevant situations and in their need to make reasonable their environments; their "need for cognition." They suggest need for cognition (NFC) is related to the way in which people evaluate messages.

In more recent work Cacioppo and Petty (1982) define need for cognition as "the tendency for an individual to engage in and

enjoy thinking" (p. 116). Persons high in need for cognition are believed to think about and elaborate on events to a greater degree than those low in need for cognition.

In our research need for cognition is defined as the degree to which a person is motivated to structure, integrate, or relate relevant information. Motivation is defined here as an impulse or drive to action. Action may manifest itself as: overt behavior, change in the level of mental processes, change in physiological state or emotion, or any combination of these things. Relevant is defined as that which the individual considers important, salient, or deserving of attention.

The following hypothesis is suggested for the relationship of need for cognition to issue domain differentiation.

> The greater the need for cognition, the greater the issue domain integration (Hy: 3).

Goldstein and Blackman summarize the research hypotheses of Schroder, Driver, and Streufert (1967) by suggesting that abstract individuals (defined as individuals who exhibit high levels of differentiation and integration):

> . . . are hypothesized to perform at least as well as concrete individuals in environments of low informational complexity, but they should perform better in environments of high informational complexity. The level of optimal performance attained by abstract individuals is hypothesized to occur at a higher level of informational complexity than the level of optimal performance for concrete individuals. (Goldstein & Blackman, 1978, p. 141)

Goldstein and Blackman (1978) say the aforementioned process is due to intrinsic motivation, "motivation occurring in the absence of any known tissue deficit (need for exploration, manipulation, stimulation, etc.) . . ." (p. 140).

Ferguson et al. (1985) demonstrate that individuals with high levels of need for cognition tend to rely on information-rich media sources, such as newspapers and magazines. However, they do not examine whether need for cognition is associated with source diversity. Based on the likelihood that individuals high in need for cognition will expose themselves to a greater number of novel or diverse sources, the following relationship is expected:

> The greater the need for cognition, the greater the source diversity (Hy: 4).

Issue Domain Salience

An additional motivation for information processing may be found in domain salience, or what Scott et al. (1979) refer to as centrality:

> The centrality of a domain may be identified psychologically with the amount of time the person spends thinking about it, its importance, one's degree of commitment to it, etc. Nations may be a central, enduring concern for a geographer or foreign affairs specialist but only a transient focus for a student required to pass a history exam. (p. 57)

In this research, issue domain salience as defined is: the degree to which a domain is perceived as important, salient, relevant, influential, or demanding of attention.

It is hypothesized that individuals are more likely to attend to and integrate domains which are central or salient than less central ones.

> The greater the domain salience, the greater the domain integration (Hy: 5).

METHODOLOGY

Data for this research were collected through interviews conducted in spring, 1984. Interviewers were graduate and undergraduate participants in research methodology classes.[1]

Measures were obtained for: need for cognition (X1), issue domain salience (X2), source reliance (X3), source diversity (X4), source exposure (X5), issue domain differentiation (X6) and domain integration (X7).

NEED FOR COGNITION (X1)

Need for cognition was measured using a subset of an index developed by Cacioppo and Petty (1982). The specific items used were those selected by Ferguson et al. (1985) on the basis of a reliability analysis.[2]

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[1] A total of 1,033 addresses were systematically randomly sampled from a sampling frame of 55,788 listings. From the pool of 1,033 addresses, interviewers were to complete interviews with 240 people. A list of 30 addresses was provided to 30 two-person teams.

[2] Near the end of the 20-to-30 minute interviews, respondents were handed the need for cognition measure and asked: Would you please fill out this part of the questionnaire yourself? When you're finished I'll give you an envelope in which you can put the form to protect your privacy. Written instructions specified that the measure was designed to "help us learn a bit more about how you think about different things." Respondents were assured their answers would be kept confidential. They were also told that the index contained "no correct answers."

ISSUE DOMAIN SALIENCE (X2)

The domain chosen is social issues. The domain objects were ascertained by asking the following question:

> We're interested in the issues you think are important. Please list the issues, problems or concerns you think are facing the country today. In other words, what do you think are the major problems or concerns in the United States now?

After writing down their issues, the respondents were handed a clipboard with a sheet of paper on it. On the paper was a vertical row of seven rectangles. At the top of the sheet was the phrase "Ladder of Importance." Next to each rectangle was a single number. The number next to the top rectangle was a "1." Descending rectangles were numbered in ascending order to "7." Individuals were given small adhesive-backed slips of paper. Each slip contained one of the respondent's issues, which had been printed by an interviewer. Individuals were then told:

> We'd like to know how important you believe your issues are compared to one another. If you think one of your issues is more important you might put it at the top or near the top of the ladder. If you think an issue is of less importance, you might put it toward the bottom. If two issues are of equal importance you could put them right next to one another. Please put your issues on this ladder according to how important you think they are.

Responses are reverse coded so that a "1" is assigned to issues placed at the bottom of the ladder, and "7" is assigned to issues placed at the top. To calculate issue domain salience, the sum of the scores of all of the respondent's issue saliences was computed. This sum is regressed on the total number of issues the respondent mentioned, and the residuals are standardized.

The standardized residuals are used as the measure of issue domain salience.[3]

SOURCE RELIANCE (X3)

To measure source reliance, respondents were asked:

> Where do you get your information about national issues or problems?

When subjects finished listing all the sources they could think of they were asked:

> Any other source?

Next respondents were asked:

> On a scale of 0 to 10, where 0 is very low reliance and 10 is very high reliance, how much would you say you depend on [the respondent's first source]?

This same question was repeated for each source. Source reliance was computed by summing the reliance scores for all sources. These scores were then regressed on the number of sources the respondent mentioned. The standardized residual is used to avoid a spurious correlation between this measure and source diversity.

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[3] Residuals are used because to simply sum over the saliences would create a measure biased by the number of issues. To create an average by dividing by the number of issues (initially an intuitively appealing thing to do) would also bias the measure because it will later be correlated with other variables also constructed from the number of issues.

SOURCE DIVERSITY (X4)

There are two measures of source diversity: the number of sources upon which respondents relied and the number of sources to which respondents were exposed. A description of the reliance measure is provided in the section above on source reliance.

The number of sources to which respondents were exposed was measured by asking:

> Of the total number of channels you get on your TV, how many channels do you ordinarily watch?
>
> Think of the newspapers you read regularly. What are the names of these papers?
>
> Think about the magazines you read regularly. What are the names of these magazines?
>
> How many others do you talk to over an entire week about national issues?

These items were summed for a total number of sources exposed to measure. The total number of sources relied upon and exposed to were standardized, summed, and the sums were averaged to create a measure of source diversity.

SOURCE EXPOSURE (X5)

Source exposure is measured for: television news, newspapers, radio news, magazines, and other people. Respondents were asked:

> Do you ever watch TV?

Those who said yes were asked:

> On an ordinary weekday, how much [time in hours and minutes] do you watch news-related programs? (By news-related programs we mean any program that you believe gives you the news.) How much do you watch news-related programs on an ordinary Saturday or

Sunday?[4]

Similar questions were used to obtain exposure to other sources.[5]

ISSUE DOMAIN DIFFERENTIATION (X6)

Two measures of issue domain differentiation are used. The first measure is the number of issues (nominal diversity) the respondent listed. Much of the validity of the measure rests on an untested assumption: the number of attributes within a domain and the number of objects within a domain are highly correlated.

To measure the number of issues within this domain, respondents were asked:

> Please take a minute to make a list of the issues, problems, or concerns you think are facing the country today. In other words, what do you think are the major problems or concerns in the United States today? (By issues we mean: topics, subjects, or problems.)

When respondents finished listing the issues they believed were important, interviewers asked, "Is there anything you'd like to add?" The number of issues within a person's issue domain is the number of distinct responses provided on the person's list.

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[4] Exposure to TV news on an average weekday was multiplied by five, and added to twice the number of hours and minutes respondents said they watched TV news on Saturday and Sunday. The sum of weekly levels of exposure was then divided by seven to provide a measure of average daily TV-news exposure.

[5] Measures of exposure to magazines and exposure to other people were obtained for the entire week rather than for weekdays and weekends. The total number of hours exposed to all five sources was standardized and used as a measure of source exposure.

A second measure is one labeled by Ferguson (1984, 1985) as attributive diversity: diversity of saliences about issues. The notion of attributive diversity stems from Zajonc (1968), but it refers to variance in only one particular attribute for a domain of objects. Attributive diversity as conceptualized by Ferguson (1984, 1985) is distinct from differentiation. Attributive diversity refers to discriminations along a given attribute, while differentiation as conceptualized in this research refers to the number of attributes. This leads to a second untested assumption, i.e., the variance in one attribute across all objects is strongly associated with the number of attributes used to differentiate the domain.

While salience diversity (variance) is not a direct measure of differentiation, there is some reason to believe it a useful indirect measure. Scott et al. (1979) suggest that the more attributes an individual uses to discriminate elements of a cognitive domain, the greater the distinction the individual can make about those elements.

Attributive diversity was measured using the issue salience scores for each respondent. An individual mean issue salience score was computed by summing the saliences of that respondent's issues and dividing by the number of issues mentioned. This mean score was subtracted from each observed issue salience score, and the absolute values of these deviation scores summed.[6]

[6] To avoid a spurious correlation between this measure and the total number of issues, each individual's summed absolute deviations were regressed on the total number of issues, and the residuals were standardized. The standardized residuals

The standardized residuals from the attributive diversity measure and the standardized index of the total number of issues for each respondent were combined to create a differentiation index.

ISSUE DOMAIN INTEGRATION (XZ)

The measure is an antithesis of the construct field diversity as described by Ferguson (1984). Respondents were given a sheet of paper attached to a clipboard. Across the top of the paper was the label "ISSUE SIMILARITY-DISSIMILARITY GRID." A large square was printed on the page, with four horizontal and four vertical lines crossing it to produce twenty-five smaller squares.[7] Integration represents low values (the opposite of field diversity). The greater the distance between issues, the less

were the second measure of domain differentiation.

[7] Respondents had been asked earlier for a list of the issues they thought were important. Interviewers had copied these issues onto small 'stick-up' bits of paper. Respondents were told:

> Now we'd like to understand how similar or dissimilar you think [the respondent's] issues are. Let me demonstrate how this works by using a rectangle, square, and a circle as an example. If you think a rectangle, square, and a circle are very similar you might put them on top of one another or very close together. Or if you think they are very dissimilar you would place them very far apart. The numbers in the squares have no real meaning. They are for computer coding purposes only. My partner has written your issues on these small sheets of paper. Please arrange your issues according to how similar or dissimilar you think they are.

The measure of issue field diversity is created by calculating the distance between each pair of issues in the field and summing over these distances (Ferguson, 1984, p. 19) To adjust for the number of issues, the summed distances were regressed on the total number of issues. The residuals were

the integration.

FINDINGS

DESCRIPTIVE ANALYSIS

Data were collected from 239 respondents.[a] The sample included 52 percent males. Relative to national averages, a disproportionate number of respondents were between 18 and 29 years of age (55 percent). The mean age for the sample is 35.4 years. Respondents' education levels were high, with aproximately 75 percent of the sample reporting some college education. The median category of income for respondents who reported having income was $5000 to $9000.

The need for cognition index (X1) mean score was 4.7, with a standard deviation of .70. Respondent's scores ranged from 2.5 to 6.0 on a scale from 1 to 7.

Reliability of the need for cognition index was examined by comparing means, standard deviations, corrected item-total correlations, and Cronbach's Alpha (with the item deleted from the index) for each item. No significant differences were found for the exclusion of any one item. The Cronbach's Alpha for the 15-item index is .86.

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standardized to create a degree of integration measure.

[a] Seven individuals for whom scores were not available on the need for cognition index were dropped from the analysis, as were eleven individuals who named less than two issues.

The issue domain salience (X2) mean score for the sample (prior to semi-partialling for total number of issues) was 5.6 with a standard deviation of .85 and a range of 3 to 7.

The source reliance measure (X3) mean, prior to partialling on the number of sources mentioned was 6.6 on a scale from 0 to 10, with a standard deviation of 1.8 and a range of 0 to 10.

The source diversity measures (X4), the total number of sources to which respondents were exposed, and the total number of sources upon which they relied, are correlated at r = .20, and Cronbach's Alpha is .34. The subscales were correlated with the index at r = .78.

Mean hours of exposure to news sources is 2.4 hours per day.

TESTS OF HYPOTHESES

Hypotheses are tested using path analysis. Pearson Product-Moment correlations are presented in Table 1 for each variable.

In the model, need for cognition, source reliance and issue domain salience are considered exogenous because they are argued to be motivational variables; they cause the individual to act, or think, or to feel emotion. It seems likely, however, that the reality of the world is far more complex than this simple recursive model. With that serious limitation in mind, the next section is a description of the path analysis.

The three exogenous variables (need for cognition, domain salience, and source reliance) are entered for the first

TABLE 1

Pearson Correlations for the Measures

	X1	X2	X3	X4	X5	X6
(X1) Need for Cognition	---					
(X2) Domain Salience	.10	---				
(X3) Source Reliance	-.03	.03	---			
(X4) Source Diversity	.20	.19	.00	---		
(X5) Source Exposure	-.00	-.03	.13	.22	---	
(X6) Differentiation	.16	-.60	-.01	.12	.10	---
(X7) Integration	-.21	-.43	.03	-.19	-.07	.26

r = .12 or greater, p. < .05
r = .16 or greater, p. < .01
r = .22 or greater, p. < .001

endogenous variable, source diversity.[9] The research hypothesis for this stage of the analysis is: Ha4: B41.23 GT 0. The

[9] The hypotheses are read as follows: B71.23456 LT 0 reads the beta for X7 and X1 controlling for X2, X3, X4, X5, and X6 will be significantly less than zero. The null hypothesis states that the same relationship will be greater than or equal to 0. The relationships hypothesized between integration (X7) and domain salience (X2) and need for cognition (X1) are stated negatively because the integration measure values decrease as integration increases. All tests of significance are conducted at a probability level of .05.

Data were analyzed using the statistical package SPSSX (1983). Computing was done utilizing the facilities of the Northeast Regional Data Center, University of Florida.

results support the hypothesis. Need for cognition (X1) is significant and positive with source diversity (X4) (B = .13, T = 2.7, p < .008). In addition, a significant relationship which was not hypothesized is present for domain salience (B = .17, T = 2.6, p < .02). No significant relationship is found for source reliance.

At the next stage, source exposure (X5) is treated as a function of need for cognition (X1), domain salience (X2), and source reliance. There is evidence to suggest a relationship between source diversity and source exposure (B = .24, T = 3.5, p < .001), an unhypothesized relationship.

At the next stage, the dependent variable is domain differentiation. The model suggests differentiation (X6) is a function of exposure (X5), Ha2: B65.1234 GT 0, as well as source diversity (X4): Ha1: B64.1235 GT 0.

A significant path exists between source diversity (X4) and differentiation (B = .19, T = 3.7, p < .001.). However, the path between exposure (X5) and differentiation is not significant. Two relationships that were not hypothesized are found. The first is for need for cognition (X1) (B = .19, T = 3.7, p < .001). The other is a highly significant negative association between domain salience (X4) and differentiation (B = -.65, T = -12.6, p < .001). This relationship is remarkable in that there is no covariance possible between one of the components of differentiation (the total number of issues) and domain salience. The latter variable has already been regressed on the former.

Thus, the large beta is for the variance associated with attributive diversity and domain salience.

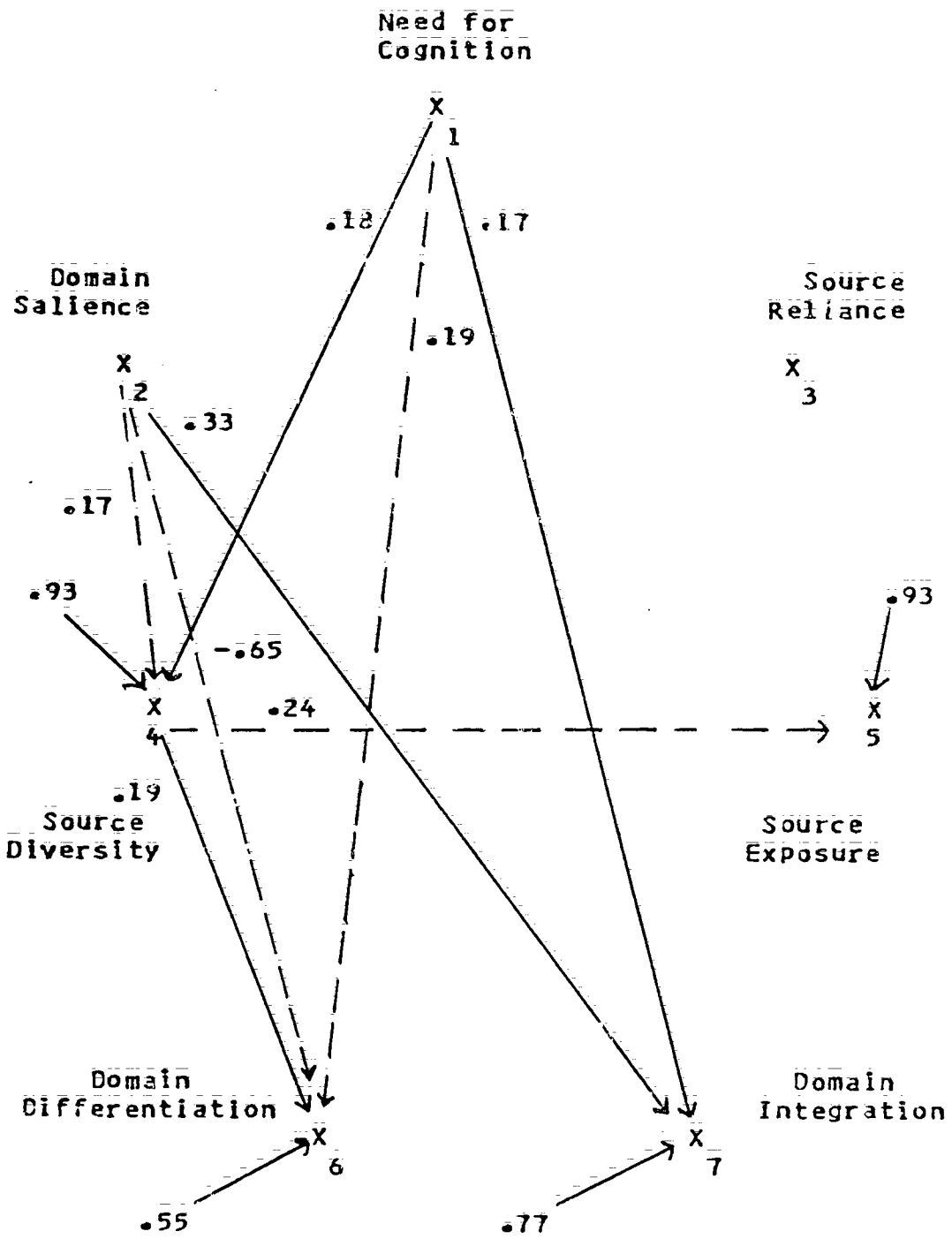
These relationships suggest motivation is strongly related to differentition, but in different ways. Need for cognition is positively associated with differentiation, while domain salience is negatively associated with differentiation. The more people tend to think in general, the greater the discriminations of social issues, but the more salient the domain of issues the less the discriminations of that domain.

The final stage tests the relationship between domain integration (X7) and each of the other variables. The model predicts that the null will be rejected for the path between integration and need for cognition (X1), Ha3: $B71.23456 LT 0, and between integration and domain salience (X2), Ha5: $72.13456 LT 0. Because of the way integration is operationalized, high integration is the equivalent of low values, and vice versa. Thus, the relationships for domain integration (X7) with need for cognition (X1) and domain salience (X2) are expected to be negative.

The findings at this stage are highly supportive of the model. Domain integration is positively associated with need for cognition ($\beta = -.17$, $T = -2.7$, $p < .008$) and domain salience ($\beta = -.33$, $T = -4.1$, $p < .001$). No other significant relationships are found.

Figure 1 indicates the relationship discovered in the path analysis. These relationships suggest the null can safely be

rejected at the .05 level for hypothesis 1, hypothesis 3, hypothesis 4, and hypothesis 5. There is no support for rejecting the null for the second hypothesis, which suggested a positive relationship between source exposure and domain differentiation.



(The numbers presented in this figure are the beta coefficients at each stage of the path analysis.)

Figure 1: Discovered Relationships

POST HOC ANALYSIS

Post hoc analysis was conducted to test whether respondents' level of education attenuated the findings, since Ferguson et al. (1985) report that need for cognition is highly correlated with level of education.

To test whether the association between need for cognition and the other variables would be weakened when respondent's education level was accounted for, the path analysis was rerun with level of education entered first separately in a hierarchical regression.

The results show that only one of the significant relationships from the earlier analysis is seriously attenuated. Education accounts for a large share of the correlation between need for cognition and source diversity. As a result of the inclusion of education in the model, the relationship between need for cognition and source diversity is no longer significant ($B = .12$, $T = 1.7$, $p < .09$).

LIMITATIONS AND SUGGESTIONS

A number of limitations must be specified when attempting to draw conclusions from this research. Drawing cause and effect inferences is not warranted in this design. A limited set of third variables has been accounted for, but many potential confounds remain. There has been no attempt to test time order.

Future research should make use of experimental and quasi-experimental designs.

Future research should also attempt to demonstrate construct validity for the measures used here. Other measures of differentiation have been proposed by many researchers (Ziller et al., 1977; Scott et al., 1979) and may be used to validate these operationalizations.

ALTERNATIVE THEORIES

An interpretation of the model offered so far suggests that those who are motivated to seek out heterogenous sources for a domain--social issues--are more likely to to develop more dimensions with which to differentiate objects. Differentiation is accentuated for those who are motivated to think in general, but it is seriously attenuated for those who consider the domain extremely salient. Perceiving relatedness among objects in a domain is not a function of the environment (source diversity or exposure), but a function of the person's motivation to think about the domain.

Other interpretations of these findings are plausible. For example, using complex sources for information about national issues could lead to seeing those issues as more important; the diversity of the sources leads to the salience of the domain, rather than the reverse. The relationship between presumed cause and effect could be reversed for other variables as well. Even more likely, there may be a third variable, such as direct

experience with issues, or the importance of knowledge about issues for the attainment of personal goals, that may account for the covariance of domain salience and domain differentiation.

IMPLICATIONS

The implications of these research findings are complex. In a model where experience and motivation lead to cognitive processes which lead to behaviors, only the first link has been examined. The next step should be to examine the link between the differentiation and integration of a cognitive domain and behaviors. For the domain of social issues, this might mean examining the relationship between cognitive structure and voting behavior or political activism. Tetlock (1983b) has shown that cognitive complexity is related to political ideology. This may have important implications for our issue research.

One of the more striking findings is the weakness of source exposure in accounting for variance in the other measures (others have also criticized exposure as a useful media variable, e.g. Sedlacek, 1984).

Some other possible implications of the findings include:

1. Issue domain effects (of the kind described in this research) are for the most part independent of the amount of time a person spends with the media.
2. Issue domain effects are heavily contingent on the salience of the particular domain, as well as the degree to which people think about information in general.

3. Issue domain differentiation is not solely a function of diverse sources, but is influenced by motivational variables as well.

4. The perception of links or associations among the elements of a domain is a function of the person's motivation to think about the domain, and is relatively independent of the environment (at least as measured by source exposure and source diversity).

In the research presented here, an investigation has been attempted into the ways in which people perceive links or relationships among the social issues they believe are important. How integration translates into perceptions is not yet clear. Individuals with high levels of integration may perceive that the effects of some social issues (i.e. the defense budget) impinge on many other social issues, some rather obvious (i.e. the budget deficit), and some perhaps less obvious. In a representative democracy, it may be vital that voters see the broader implications of social problems. All too frequently, the repercussions of an important policy decision reverberate far beyond the short-term issue addressed.

The specific constructs and measures used in the present research are but a tiny bit of the ones used in accounting for human information processing variables. This variety presents an opportunity for communication researchers to test, refine, and develop constructs which are uniquely suited to the important questions of the field.

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