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Content Analysis as a Foundation for Programmatic Research in Communication

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Abstract

Previous arguments that content analyses provide the descriptive foundation for media effects research (McLeod & Reeves, 1980) are extended to include that content analyses can provide a sound and useful foundation for programmatic research by individual communication scientists. I discuss examples from my own work and from that of colleagues in communication and related disciplines. Use of messages sampled and coded in a content analysis in combination with survey data sets or as stimuli in experiments are highlighted. The particular potential for employing larger numbers of randomly sampled messages in experimental designs, and, with use of appropriate statistical methods, being able to generalize to populations of messages, is described.

In a classic discussion, McLeod & Reeves (1980) argue that content analysis provides the foundation for research on the impact of media on individuals and society. Once provocative patterns of media content are identified by content analysis, researchers can use survey methods to document evidence for effects associated with exposure to those patterns of content. Researchers can then study various mechanisms that may be responsible for such effects through experimental methods. My intention here is to illustrate that this content analysis-to-survey-to-experiment framework, while initially proposed to describe the progression of media effects research, may also be adapted to guide the development of an individual researcher's work.

Content analyses can be used to identify promising research directions suggested by descriptive findings (typical possibilities include patterns of portrayals of various races and ethnicities, exemplars of pro- and anti-social behavior, news coverage frames, etc.). The content analysis, once each sampled message has been successfully coded into conceptually meaningful and statistically reliable variables, then provides a source of data and stimuli that can be used in research with human participants. Content analysis data can be combined with survey data. When this approach is employed, the researcher study associations between specific elements of message content ascertained by content analysis coding and survey responses. This approach permits substantially closer study of the impact of media content than is possible when generic self-reports concerning exposure to various genres of message are the only available indicator of media content read or viewed.

The messages sampled for the content analysis can also readily supply experimental stimuli, as they have already been identified and coded as representative of various message types of interest. Messages may be selected for use in an experiment because they are typical of a message type, represent common variants of a given type, or are extreme cases of theoretical interest. Moreover, and excitingly, messages randomly sampled for inclusion in a content analysis can in turn be used as stimuli experiments using a larger numbers of messages. With appropriate analysis, one can thereby create experiments whose findings are more reasonably generalizable across populations of messages than is normally the case.

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In this article, I will focus on my personal experience as a researcher (and to some extent as a graduate advisor) in using content analysis as both a starting point for and as a crucial element in subsequent survey- and experiment-based research. My hope is that this experience may provide ideas and guidance for other researchers, especially those early in their careers.

Tapping Existing Content Analyses—a Typical Approach

The approach to utilizing content analyses I, as is the case for most researchers, have often employed in my own work is to tap content analyses conducted by others to guide or provide a rationale for surveys or experiments of my own. To do so is often a necessity. Recently, for example, I wanted to test some ideas based on the Reinforcing Spirals Model (Slater, 1997) regarding how exposure to media showing pro-substance use norms in early adolescents would be likely to influence their social identity. I believed this would take place by allowing youth to vicariously "try on" such norms prior to actually interacting with others who might have pro-use norms. Therefore, by helping socialize young viewers to peer groups that smoke, drank, or used marijuana, such exposure would lead to increased uptake of various forms of substance use (Slater & Hayes, 2010; Slater & Henry, 2013).

I had access to longitudinal data of my own and of others to permit such tests. However, the idea was premised on MTV and similar outlets providing illustrations of such use norms. If portrayals of such use were not demonstrably commonplace on MTV and similar programs, then there was no basis for pursuing these hypotheses and empirical tests. But findings from a prior content analysis (DuRant et al., 1997) documented such norms in popular programs targeting adolescents and were therefore essential to justifying our research and the hypotheses therein.

Building a Series of Studies from a Content Analysis

An alternative approach, and the focus of the present paper, is to build a systematic series of research studies from one's own content analyses. Many content analyses have been conducted over the decades and generations, and few seem to evolve directly into empirical studies to test processes the content analysts speculate may be at work among those exposed (or not) to that content, *using materials from the content analysis in that subsequent research*. This is unfortunate, for it renders a content analysis a mere description of past media practice, and it ends up a missed opportunity for the communication discipline as a whole.

Until the past decade or so, my own pattern was little different in this regard. For example, as a graduate student I was involved in an extensive content analysis looking at over 80 years of cigarette advertising in magazines (Altman, Slater, Albright, & Maccoby, 1987; Albright, Altman, Slater, & Maccoby, 1988). We had some nice findings showing that cigarette advertising themes increased emphasis on healthy outdoor activity and romance—themes inherently inconsistent with disease—following the 1963 Surgeon General's report. I now wonder why it never occurred to me to follow up such findings with experiments examining whether such ads in fact discouraged associations of smoking with ill health when tested in a laboratory setting, or to look for data from existing surveys where I might find if people with greater exposure to such ads had different attitudes toward smoking risks. (We knew which magazines were mostly likely to show various kinds of ads, and could measure variation in exposure to such magazines, making such a survey approach a possibility.) My impression is that my experience is far from unique, and the communication literature is rife with such missed opportunities.

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The content analyses, of course, had their own descriptive value. More relevant to the present discussion, the findings led directly into both survey-based and experimental research of substantive and theoretical interest, drawing directly from the data and stimuli obtained from the content analysis itself.

A First Effort: Combining our Content Analysis With Survey Research

In the bulk of the remainder of this article, I discuss how I have used a content analyses conducted with several colleagues using a random sample of local and national news coverage of intended and unintended injuries (Bjornstrom, Kaufman, Peterson, & Slater, 2010; Carlyle, Slater, & Chakroff, 2008; Slater, Long, & Ford, 2006; Tatum, Canetto, & Slater, 2010) and of cancer-related issues (Larson, Long, Slater, & Bettinghaus, 2009; Long, Slater, & Lysengren, 2006; Slater, Long, Bettinghaus, & Reineke, 2008) as a foundation for my research program. The design of the study was complex (obtaining a national random sample of local and national news is no easy undertaking) and has been described in detail elsewhere (Long, Slater, Boiarsky, Stapel, & Keefe, 2005). Briefly, we divided the 210 Dominant Market Areas (DMAs) into six strata each approximating one-sixth of the U.S. population. Using two constructed months (see Riffe, Lacy, & Fico, 2005) over two years, we randomly sampled local TV news and newspapers from each DMA strata, as well as getting national news coverage from each day of the two constructed months. The content analysis looked at a variety of cancer coverage issues, including (among other topics) the relative emphasis on coverage of prevention versus treatment and negative outcomes (deaths of prominent people, etc.). One finding was that coverage of cancer prevention was relatively modest. For those in public health and health communication concerned with preventive health, this was a concern.

Modest coverage of a topic such as cancer prevention matters little if such coverage has no impact on the media audience. How might we assess such impact? The National Cancer Institute sponsors a periodic national, population-based, random-digit-dial survey relevant to media use and cancer-related knowledge, attitudes, and behavior—HINTS, or Health Information National Trends Survey (see hints.cancer.gov for details). Looking at our content analysis data, we found we could identify regional differences in the amount of prevention information in the news. If we could link the HINTS survey data to our content analysis data geographically, we would be able to assess evidence for the impact of differences in coverage of prevention. The HINTS team at NCI regarded inclusion of Federal Information Processing Standard or FIPS codes (codes that indicated respondents' county of residence) as potentially identifying, but were willing to include data on the media market (Dominant Market Area or DMA) for each respondent when we provided a table linking FIPS codes with DMAs. As we also could link our news content to the DMA for each news source, we could link content analysis content to the responses of people in each DMA.

Given regional differences (with regions organized by DMA) in the amount of prevention coverage observed from the content analysis, we could test if this corresponded to survey respondents' knowledge of cancer prevention in the same regions. Our approach had significant advantages as a complement to exposure self-report, since self-report can always be biased or inaccurate (see Slater, 2004). By looking at the interaction between our geographic-based assessment of exposure to prevention news with measures of respondent education (Slater, Hayes, Bettinghaus, & Reineke, 2009), we were able to provide a test of the knowledge-gap hypothesis (e.g., Viswanath & Finnegan, 1996) using national data not dependent on self-report, thereby offering a unique test high in validity.

We are certainly not the only ones who have combined content analysis with survey research. Using regional data to link content to respondents is far from the only way to make

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such a linkage. Sometimes researchers have generated important findings by combining their own content analyses with survey data through a willingness to do a comprehensive content analysis of a relevant domain. Such a comprehensive content analysis allows the researcher to ask about specific messages seen and thereby link survey responses directly to data from the content analysis. This approach has been successfully used to provide evidence that tobacco and alcohol use portrayed in movies have a substantial impact on youth substance use (Dalton et al., 2003). The approach has also been used to link exposure to popular media to adolescent expression of sexuality (Brown, L'Engle, Pardun, Guo, Kenneavy, & Jackson, 2006). An encouraging contemporary approach involves use of automated content analyses, which considerably reduce the coding burden for an ambitious content analysis. The resulting data can then be linked to cross-sectional surveys based on region variables (e.g., Hoffman, 2012) or to longitudinal surveys using regional or temporal variability (e.g., Fan, 1988; Yanovitzky, 2012).

Content Analysis as the Basis for Experiments

Perhaps the most readily implemented means of incorporating a content analysis into subsequent data collection is by using content sampled and coded during the content analysis as experimental stimuli. There is a variety of methods and designs for doing so, depending on the nature of one's research question, time, and available resources. Some designs are very simple and can be executed with little difficulty with nothing but a little time and access to undergraduate research participants. Some approaches can be quite ambitious as well, and I will start by describing an example of such an ambitious undertaking.

From our news content analysis, we found that alcohol's role in violent crime and unintended injury was much under-covered relative to its actual role in such events (Slater et al., 2006). For example, alcohol plays a role in over 30 per cent of homicides (Smith, Branas, & Miller, 1999) but possible involvement was mentioned in only 2.6 per cent of TV news stories and 7.3 per cent of newspaper articles on violent crime in our national sample. Research in the substantive use area suggests that alcohol control policies (controls over underage drinking, outlet density, and so forth) are among the more effective ways of reducing the harms of alcohol in a community (e.g., Holder et al., 2000). And, of course, public support is typically necessary for the passage of such policies and the allocation of resources for their enforcement. Therefore, we were interested in the potential impact of whether or not the role of alcohol was mentioned in news coverage of violent crime and unintended injuries on concern about alcohol risks and support for alcohol control policies, as well as the mechanisms that might explain such effects.

After an initial pilot study with an undergraduate student population (Slater, Goodall, & Hayes, 2009) provided encouraging results, we conducted a full-scale experimental test intended to discover whether including alcohol-related content in news articles might have an impact on the general population. Our study involved randomly sampling 60 news stories from our content analysis sample, 20 each from the categories of violent crime, car crashes, or other unintended injury stories, and then manipulating them to either mention or not mention alcohol as a causative factor in the incident. Stories were presented to a national on-line respondent sample provided by Knowledge Networks. Response to the stories measured included concern about the issue and support for alcohol control policies (Slater, Hayes, Goodall, & Ewoldsen, 2012).

Use of the 60 different randomly-sampled stories as the basis for our stimuli allowed us to estimate the variability in responses that were due to which story participants saw. This variability could be incorporated as a random effect in a multilevel model, and effects tested across such variability. Doing so permitted us to create an experiment in which results could

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reasonably be generalized to the population of U.S. local news coverage, with of course a caveat about the inclusion of our experimental manipulation. In addition, the influence of this experimental manipulation was tested using participants that were reasonably representative of the U.S. population.

A subsequent study using the same statistical modeling approach examined discrete emotions as mediators of the effects of stories with alcohol mentions on public policy support (Goodall, Slater, & Myers, in press). In other study we analyzed concern about personal versus social level or impersonal risk as mediators of policy support as (Slater, Hayes, & Chung, under review). Use of the 60 randomly sampled and then experimentally manipulated stories permitted robust tests of theoretical as well as substantive questions and hypotheses, with an unusual level of external validity and generalizability by the standards of experimental methods. Exploration of other theoretical mechanisms is still in progress based on these message stimuli.

It should also be noted that there are larger issues for our discipline regarding how communication researchers approach the challenge of message sampling or selection for experimental stimuli, which we have addressed elsewhere (see Slater, Valkenberg, & Peter, in preparation). Suffice it to say for now that being able to generalize across messages in order to demonstrate the substantive importance of an effect or the robustness of a theorized relationship across messages should be of obvious importance to communication scientists and the discipline as a whole.

The content analysis of ours described above was perhaps unusual in its attention to obtaining a representative random sample from a national population of messages. However, much more readily obtainable samples can also be used in a similar way. A researcher can simply define the message population in terms of those messages available for sampling and coding using existing archival sources. Typical approaches might include using the Lexis/Nexus or Newsbank data bases for news, TV Guide and other similar sources for entertainment television programming, or lists of available series obtainable via DVD. Limitations associated with the available stimuli and resulting sampling frame, and the resulting limitations to generalizability across messages, can be addressed in one's discussion. Such an effort to obtain stimuli from a sample are usually well-appreciated by reviewers even when necessarily imperfect, as long as the discussion clearly notes the imperfections and possible uncertainties or boundary conditions that may result from the limitations of the available sample (again, see Slater et al., in preparation, for a more in-depth analysis of these issues).

Content Analyses as a Launching Pad for Sustained Research Efforts

Many communication scholars and scholars-in-training have domain-specific interests with respect to messages. These interests may include news coverage of or advertising for presidential campaigns, AIDS/HIV prevention communication, entertainment portrayals of minority persons, or dating blogs, for instance. The primary research focus may be critiquing negative (or acknowledging positive) social impacts. The researcher may primarily be concerned with improving message design in areas such as health and environmental communication or marketing. Whatever the area, hopefully the researcher is also concerned with developing, extending, or testing theories of message influence, reception or selection through work in any of these contexts.

Most such studies I see as a reader or reviewer, particularly experiments, go straight into an examination of effects and mechanisms using some convenience selection of messages. I have no inherent objection to such studies, especially when researchers provide a reasonable justification regarding the message or messages studied. Such studies often are excellent and

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significant contributions. However, it does seem to me that when a researcher plans to examine a particular domain of messages in multiple studies over time, beginning with a content analysis is a logical starting point. Such an analysis provides in-depth insight into the range of messages available, ways they may differ, and message differences or patterns that may provide worthwhile opportunities for study in experiments (see Slater et al., in preparation, for a detailed conceptual discussion). Increasingly, I am encouraging graduate students with particular interests in a given message domain to conduct a content analysis early in their graduate career that they may draw upon for subsequent research, perhaps for their dissertations, and hopefully for research during the years after obtaining the doctorate. (Periodic updates of such content analyses might be good projects for advisees and ambitious undergrads in later years as well.)

For example, Jain (Jain & Slater, in press) was interested in entertainment portrayals of medical practice and practitioners. She wanted to know how provider-patient interaction (especially patient-centered communication) was modeled in television programming. An underlying concern was the implications of such coverage for viewers' expectations regarding minority and female physicians' communication behavior. She therefore conducted a content analysis of entertainment and reality medical shows examining physician-patient interactions on these shows, and differences by race, ethnicity and gender in how these interactions were conducted. Findings of course were of value in their own right, assessing how stereotypes of gender and race were and were not reflected in the way patient care was shown.

One finding particularly intrigued her—that there was only one regular portrayal of a foreign medical graduate on entertainment programs in her sample, despite the fact that nearly one-fourth of U.S physicians practicing today are graduates of foreign medical schools. This became a focus of her dissertation. Jain tapped her collection of portrayals of that physician to create stimuli showing the physician as a highly competent or incompetent communicator with patients, testing a theoretical model of increased or decreased accessibility of attitudes toward physicians of the same nationality resulting from such exposures (Jain, 2011). Beyond the dissertation lies the potential for a variety of studies following up other intriguing findings about patterns of race and gender portrayals of physician communication practice with patients drawing from the stimuli that had already been sampled and coded. Developing experiments based on such content analysis findings provides an opportunity to study and elaborate theoretical explanations of how exposure to such programs may influence perceptions, attitudes, and expectations regarding physicians who happen to be of a race, ethnicity, or sex that differs from (or is the same as) one's own.

Conclusion

Content analyses, then, can do much more than provide a needed and perhaps provocative description of a domain of media content. A content analysis can be the basis of a coherent, rigorous, and well-designed series of studies that results in both substantive insight and theory-building. A content analysis can do so by identifying important research questions and variables to study. The content analysis can also provide a basis for identifying messages to be examined in experiments and perhaps in survey research—a basis that permits a clear rationale regarding why these particular messages were selected for use in the follow-up study. Moreover, it is possible to use randomly-sampled messages in designs that use many message instantiations, and to thereby (along with use of appropriate statistical analyses) create designs that permit theories and substantive claims to be tested for robustness across populations of messages.

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Building a series of empirical studies on an initial content analysis is likely to help render the researcher—even a young researcher launching a career—an authority on messages in that domain and their potential influence. If the researcher effectively combines this substantive interest with a willingness to examine and develop theories of message influence, he or she is likely to find that a substantive focus on a domain of messages will also sharpen theoretical thinking and quality of research design. If so, conducting a content analysis has the potential to support the development of systematic and rigorous research programs, theory building, and concomitant worthy contributions to the communication literature.

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