Constructing the News: The Role of Local Newspapers in Environmental Risk Communication*

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Effective risk communication is central to good environmental risk management. While studies have shown that newspapers are the primary source of information to the public regarding environmental issues, little is known about how environmental news is used as a risk-communication tool. This article explores the role of local information systems in risk communication, using newspaper content analysis as well as in-depth interviews with journalists and community residents to develop a case study of an environmental assessment process for a nonhazardous industrial-waste landfill. Results indicate that risk messages were chosen and shaped by journalists on the basis of their own exigencies. In addition, while newspapers were a major source of risk information, their impact was mitigated by resident distrust and access to other information sources, most notably their own personal information networks. These results have implications for environmental policy, as decision makers often use—either passively or actively—print media as a risk-communication tool.
Key Words: environmental assessment, newspapers, risk communication, risk perception.

Introduction

Geographers have long been interested in issues related to environmental risk (e.g., Cutter 1993). In this context, the primary focus has been on risk perception (e.g., Elliott et al. 1999) and, more recently, risk communication. The research reported in this article examines the role of print media as a conduit for risk communication. Previous research has shown newspapers to be a primary source of public information about environmental issues (McCallum, Hammond, and Covello 1991). As yet, however, little is known about how local environmental news is generated, or about how local stakeholders (residents, activists, etc.) view newspapers as sources of risk information. This article attempts to address these issues through a multimethod case-study approach, using risk communication related to an environmental assessment process in Ontario, Canada, as the case study.

Environmental assessment (EA) is a legislative planning process designed to assess the potential negative or unintended consequences of a proposed undertaking/land use. While established as a far-sighted process for assessing the environmental impacts of human-induced ecosystem change, EA has become a costly, adversarial process that seldom results in community acceptance (Munton 1996). While community acceptance is not necessary for a facility to operate, continuing conflicts can tarnish the reputation of a parent company and contribute to ongoing problems with the community (Munton 1996). Other research (e.g., Baxter, Eyles, and Elliott 1999) has posited that discord within EA processes is not unavoidable, but is instead contingent on the ways in which the risk is presented and understood. In this context, risk communication becomes central to the EA process.

This article traces the relationship between an EA process (i.e., the assessment of a proposed industrial waste landfill in Ontario), newspaper coverage of the potential risk, and resident perceptions, in order to better understand the role of newspapers in local risk communication. The article has four objectives:

1. to examine the practices through which journalists construct newspaper stories about an EA process in Stoney Creek, Ontario;

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2. to identify the themes and timing of newspaper articles related to this EA;
3. to identify residents' sources of information about the EA; and
4. to explore the relative importance and credibility attached by local stakeholders to different information channels.

The researchers used multiple methods of investigation to address these objectives. This combination of traditional methods of media investigation (i.e., content analysis) with in-depth interviews with journalists and local residents allows for a comprehensive investigation of a specific medium of risk communication (i.e., the newspaper) within its wider social context.

Risk Perception and Communication: The Role of the Mass Media

The study of risk perception has been informed by a variety of disciplines and frameworks (Slovic 2000). Within geography, the study of environmental risk and risk perception has a long history within the hazards tradition (e.g., Cutter 1993). This work has been extended through the incorporation of sociological theory (e.g., risk society; Giddens 1990) and the interpretive methods employed by human geographers (e.g., Baxter and Eyles 1999). The resultant literature suggests that risk is socially constructed; that is, risk perception is not just a matter of sensory perception, but is influenced by the characteristics of the individual evaluating the risk (e.g., their attitudes and expectations) and the context in which the risk is evaluated (Sjoberg 2000). Risk perception, therefore, is rooted in daily experience and mediated by friends and family (Phillimore and Moffat 1994).

It is not surprising, then, that differences exist between the risk perceptions of experts and those of the lay public. The general public typically incorporates qualitative factors (such as dread, unfamiliarity, and catastrophic potential) into risk assessment, while scientific experts focus on quantitative assessments of potential mortality and morbidity (Fischhoff, Slovic, and Lichtenstein 1981). Under these circumstances, risk communication is an issue, as the promotion of differing conceptions of risk (through the media or through other venues, such as interpersonal communication) can either reduce or increase anxiety, opposition to potential hazards, and public trust of risk managers and others (Kasperson, Golding, and Tuler 1992; Renn et al. 1992).

In the context of an EA process, such as the one under investigation in this research, risk information can be communicated in a number of ways: for example, public meetings, open houses, pamphlets, official EA documents, and mass media outlets such as radio, television, and newspapers.

The mass media are a key source of risk information for the public (McCallum, Hammond, and Covello 1991). These venues, however, tend to be problematic at best for risk communication. Research on large media organizations has shown that the volume of coverage of a hazard is related to the rarity, exceptional nature, recency, or "human interest" associated with a hazardous event (Spencer and Triche 1994) and not to its public-health importance (Ader 1995). This is not surprising, given that the primary role of journalists is not risk communication per se. In addition, the extent of the research conducted for stories is constrained by journalists' deadlines and access to expertise (Klaidman 1990). These constraints can result in reliance on a small number of (potentially inaccurate and/or biased) sources (Beckett 1995). Little research to date, however, has investigated local news production, particularly in the context of a specific local environmental risk (a notable exception is Faupel, Bailey, and Griffin 1991).

The effectiveness of the mass media as a risk-communication tool is further complicated by our poor understanding of the ways in which these messages are interpreted by their intended audience. Some theorists suggest that the media—along with individuals and other institutions (e.g., environment ministries)—can amplify (or attenuate) individual and social perceptions of risk (Renn et al. 1992). However, others argue that the mass media have little effect on personal risk judgments, especially in relation to other information sources (Coleman 1993). In particular, the importance of media coverage to risk perception may be influenced by the credibility the public attaches to various media. Within the EA process, key stakeholders—including the proponent and involved government officials—are rarely trusted (Baxter,

Eyles, and Elliott 1999); newspapers may or may not be seen as more objective information sources. This article helps to explore local perceptions of these information sources, thereby beginning to tease out the relationships between newspaper content, local contexts, and perceptions of risk messages and messengers.

Methods

This article explores the role of the mass media in environmental risk perception through a multimethod, case-study approach, examining the relationship between an EA process, newspaper coverage of that process, and resident perceptions of that coverage. This is a departure from previous investigations, which have generally focused on specific components of the communicative process—for example, message processing and persuasion studies (Verplanken 1991) and studies of journalistic practice (Salomone et al. 1990). In addition, this research moves beyond conventional lab-based, hypothetical, quantitative studies of risk communication by beginning to explore the role of local, real-world context in the creation and interpretation of media messages. It does this by combining a traditional method of media investigation (i.e., content analysis) with in-depth interviews with journalists and local residents, thus allowing the exploration of the views of journalists, who "construct" news, and the investigation of resident access and response to newspapers and other risk-communication messages. While allowing an in-depth investigation of these processes, the results of this type of approach are not generalizable, nor are they meant to be. However, the results of the case study may be transferable (Baxter and Eyles 1999) to other communities facing similar situations.

Content-analysis techniques were used to identify and quantify topics and timing of newspaper coverage over the course of the siting process. Articles from the two local newspapers, the *Hamilton Spectator* and the *Stoney Creek News*, were collected between the first site publicity (1 June 1988) and approximately six months after the opening of the landfill (April 1997). Relevant articles ($n = 320$) were identified through an extensive manual search of each issue published during this period. Using the full article as the unit of analysis, items were catalogued according to several categories: newspaper name, date, page number, length (in cm^2), headline/title and subheading (if applicable), author (if noted), type of article (news, editorial, cartoon, etc.), and primary, secondary, and tertiary themes of the article. Primary themes were identified through headlines and content in the first paragraph; secondary themes were identified as the second issue mentioned in the article, and the tertiary theme was the third topic mentioned. All articles were categorized according to a preset coding scheme. The resulting database was used to identify trends in the timing of coverage, key themes, and differences between the two newspapers with respect to the volume, timing, and type of coverage.

While content analysis is useful for describing media coverage, it does not allow the assessment of the motivation behind articles, or how messages are being interpreted by an audience. The content analysis is therefore linked with a series of in-depth interviews ($n = 23$) with both journalists and local stakeholders. The journalists ($n = 3$) were purposively selected from the list of authors ($n = 62$) compiled through the content analysis. These reporters—two from the *Hamilton Spectator* and one from the *Stoney Creek News*—were responsible for 61 percent of the 321 articles contained in the media database, while other reporters accounted for, at most, three or four articles each. Community stakeholders ($n = 20$) were also purposively selected (Strauss and Corbin 1990) in order to represent maximum variation across a range of factors known from the literature to influence risk perception: membership in stakeholder groups (in this case, membership in the community opposition group, the proponent-facilitated study group, or neither group), age, gender, and distance from the site (Baxter and Eyles 1999). As is the case in all qualitative research, samples are not intended to be representative. Rather, a small number of extremely detailed interviews facilitates the in-depth exploration of phenomena, which allows us to explore and understand, as opposed to predict (Elliott 1999).

Interviews were conducted in June 1996 and July 1997, and lasted between thirty and ninety minutes. In each interview, a series of semistructured, open-ended questions was asked. Journalists were asked about their own

perceptions of the landfill proposal and the key concerns of the community, their role in selecting stories and choosing key informants, and the role of their newspaper in providing public (risk) information. Members of the Study Group, Stoney Creek Residents Against Pollution (SCRAP), and unaffiliated residents were asked about their awareness of and concerns about the proposed site and the assessment process, their main sources of information about the proposed site, and their perceptions of those sources.

All interviews were tape-recorded and transcribed verbatim for subsequent thematic analysis using QSR NUD.IST qualitative software. Thematic categories were identified through line-by-line coding, an interactive, inductive process widely considered the most appropriate mechanism for qualitative data analysis (Strauss and Corbin 1990). Themes related to concern about the proposed site were intentionally labeled to correspond with issue topics identified in the newspaper content analysis, in order to allow comparison between issues identified in coverage and respondent concerns.

Community Context

This research involved the study of a particular case—the EA process related to a proposed

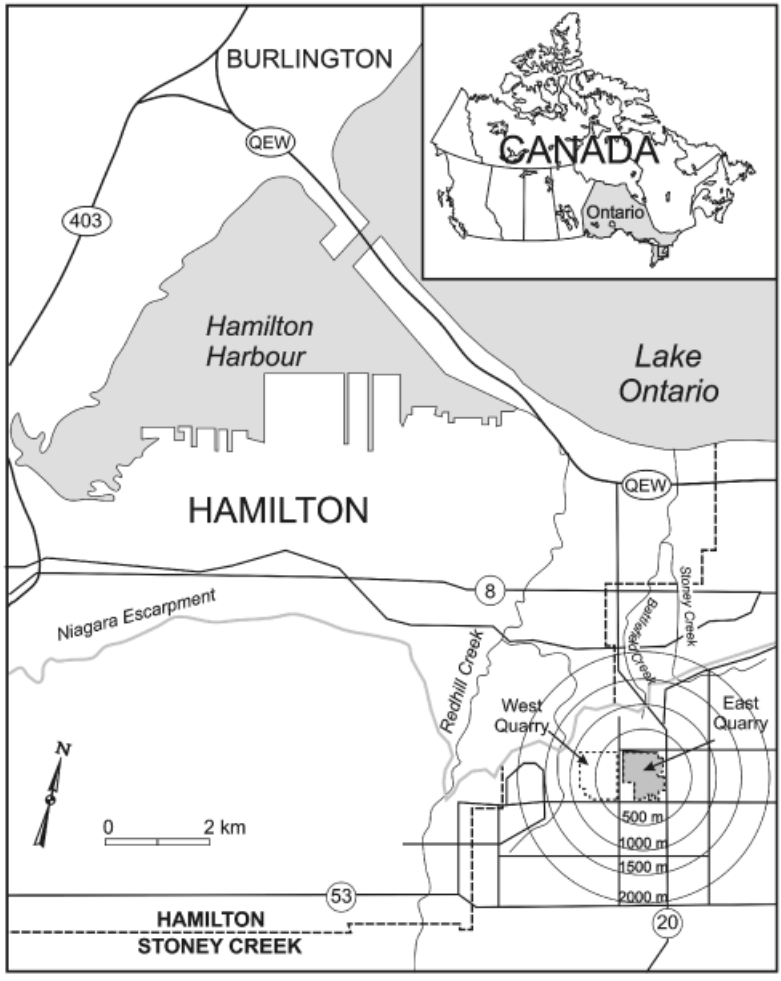

Figure 1 *Proposed East Quarry landfill site, Hamilton, Ontario.*

nonhazardous industrial-waste landfill at the site of the former Taro East Quarry in Stoney Creek, Ontario, Canada (Figure 1)—in order to investigate the risk-communication process. To outline the context in which risks are being evaluated and communicated in this instance, a brief description of the proposed facility and the adjacent community is presented.

The EA process at this site began in 1989, when the aggregate company that owned the site (Taro Aggregates) first announced plans for a nonhazardous industrial-waste landfill (Table 1). Public consultation on the landfill proposal was required under the Environmental Assessment Act (Province of Ontario 1990); consultation was therefore initiated by the proponent in 1992. This consisted of public meetings, workshops, pamphlet distribution, and open houses. As part of the consultation process, the proponent established a study group made up of industry spokespersons, government representatives, and community residents. The study group was mandated to review the proposal and report their findings to the community; the findings essentially supported the proposal.

Taro Aggregates submitted an EA document in 1995 (Table 1). This public document, required by law to anticipate and document the net environmental effects of a proposed undertaking, summarized the anticipated effects of the facility vis-à-vis a range of issues, including human heath, air quality, ground- and surface-water quality, visual impacts, nuisance (noise and truck traffic in particular), social impacts, and property values (Taro Aggregates 1995). The proponent's EA document concluded that the impacts of the proposed facility would be minimal. A vocal opposition group, SCRAP, the members of which disagreed with this conclusion, was formed at the time of the submission. As required by the Environmental Assessment Act, the EA document was reviewed by government ministries, agencies, and the public over a period of seven months.

The Environment Minister reviewed and accepted the EA document in September 1995 and decided in the summer of 1996 (after an additional public comment period) that despite public concern, a public hearing was unnecessary and that the undertaking could proceed. The new landfill site began accepting waste in the fall of 1996. However, community opposition to the operation of the site continues to this day.

The city of Stoney Creek is a suburban middle-class community, characterized by higher percentages of English-speaking residents, young adults, and children and lower percentages of landed immigrants, seniors, unemployed, and low-income residents compared to the region of Hamilton-Wentworth (Table 2). In addition, rates of homeownership are much higher in the city than in the region. The residents of Stoney Creek, particularly those adjacent to the site, had some prior experience with waste facilities of the kind proposed: a waste-disposal facility on an adjacent site, also owned by the proponent, had sensitized the local community to the potential negative effects of the proposed facility, and contributed to a loss of community trust in the proponent.

Table 1 *Stoney Creek Site History, 1989–1997*

Date	Stoney Creek
30 November 1989	Taro Aggregates (the proponent) publicly announces plans for a landfill
February 1992	Presubmission consultation with the community begins
21 May 1992	First public meeting held
23 June 1992	First meeting of the landfill study group
31 March 1993	Public workshop held by proponent
29 February 1994	Public workshop held by proponent
June 1994	Improper zoning of proposed site disclosed
29 November 1994	Open house held by proponent
26 January 1995	Proponent submits EA document
March 1995	Stoney Creek Residents Against Pollution (SCRAP) formed
September 1995	The Minister of Environment accepts proponent's EA
17 May 1996	Deadline for submissions to the Ministry of Environment (end of public comment period)
15 July 1996	The Minister of Environment grants approval to proceed with the undertaking
August 1996	SCRAP decides not to appeal decision to Ontario cabinet
December 1996	Ooze discovered that is thought to come from proponent's existing landfill site
December 1996	The new landfill site begins accepting waste
April 1997	Allegations of corruption on Stoney Creek Council surface

Table 2 *Selected Sociodemographic Characteristics for Stoney Creek, Hamilton Census Metropolitan Area (CMA), Ontario, and Canada*

Characteristics	Stoney Creek	Hamilton CMA	Ontario	Canada
% mother tongue English only[a]	84	82	78	62
% landed immigrants	16	23	23	16
% children (under 14 yrs.)	30	20	20	21
% younger adults (25–44 yrs.)	40	33	34	34
% seniors (over 65 yrs.)	4	13	12	12
% less than grade 9 education	7	12	12	14
% with university degree	9	11	13	11
% homeowners	89	65	64	63
Average value of dwelling (Cdn$000)	196	192	198	144
Unemployment rate (%)	7	9	9	10
% low-income households[b]	11	15	11	13

Source: Statistics Canada, 1991 Census.
[a]*English (single response)/total (single response): the number is low in Canada as a whole due to French-speaking Québécois.*
[b]*As defined by Statistics Canada, 1991.*

The Stoney Creek residents interviewed for this research were particularly concerned about issues related to the EA *process* (i.e., the procedural steps required as part of an EA). For example, they perceived a lack of opportunity for meaningful participation in the EA process, and felt that the process was being manipulated by/for the proponent. Respondents were also concerned about potential nuisance effects (i.e., increased traffic, dust, odor, and noise), damage to the natural environment through pollution from the landfill, a decrease in property values, and potential adverse health impacts (Table 3; see also Wakefield and Elliott 2000).

Residents in this community had access to a variety of local media (e.g., a daily and a weekly newspaper, seven regional radio stations, two local television stations, and a local cable access channel; HWEDD 1995) during the EA process. However, coverage of the proposal on radio and television was occasional at best. The two local newspapers—the regional daily newspaper, the *Hamilton Spectator*, and the free community weekly, the *Stoney Creek News*—provided the largest amount of coverage. Residents also had access to a number of other sources of information about the proposed site, including public meetings, open houses, pamphlets delivered to homes in the area, and official documentation (e.g., the proponent's EA, and associated review and technical documents produced by both the proponent and reviewing agencies) available from the proponent and at local libraries. The proponent relied heavily on pamphlets and newspaper advertisements to communicate with the public about their proposal and to advertise open houses and public meetings.

Results

The following section details the results of both the newspaper content analysis and the in-depth interviews. The section begins by describing the ways in which news stories were

Table 3 *Primary Themes*

Residents	Journalists[a]	Newspaper Coverage[b]
Nuisance	Nuisance	Process
Process	Property values	Environment/pollution
Health	Health	Technology
Environment/pollution	Environment/pollution	Community
Company's reputation	Company's reputation	Health
Property values		Business
Technology		Conflict
Community		Nuisance
		Other

[a]*Themes identified represent journalists' perceptions of issues of importance to residents, not the issues they considered most important.*
[b]*Issues listed in order corresponding to quantity of coverage; issues in other columns listed in order of importance as determined in interview analysis.*

created by journalists, focusing in particular on their perceptions of community concerns and the process by which these and other issues are translated into newspaper coverage. This is followed by a summary of the content of the articles written by these and other journalists. Finally, resident perceptions of these articles are identified, and the importance of newspapers as information sources is assessed, particularly in relation to other information sources. All names used are pseudonyms.

Constructing the EA News: The Journalist's Role

The journalists interviewed identified several issues they felt were of concern to local residents: nuisance, negative effects on property values, and adverse health and environmental impacts. In addition, journalists sensed a general community distrust of the proponent (Table 3).

While local gossip was often a key source of story ideas, the issues journalists felt were of most concern within the community were not necessarily those given the greatest amount of coverage. Rather, journalists decided which issues/events to cover by assessing their overall importance, novelty, and interest to a general readership:

> You're looking for action. You're looking for something that's happened; something that's going to advance the situation. . . . We tend to pick and choose issues based on the judgment of what's going to appeal to the broadest number of people. You pick your issues based on a judgment of what's important, based on our judgment, rather than the community group's. (journalist #1)

Providing a story of widespread interest was of particular importance to the *Hamilton Spectator*, as their paper has a region-wide readership.

In developing a story, journalists used the same information sources accessible to community residents: they talked to people, attended public meetings, and went to open houses. That is, journalists seemed to have no greater means of identifying issues than did average (albeit well-informed) residents. Journalists did, however, have ongoing contact with a number of key informants—including opposition group leaders, study group members, proponent spokespersons, local and provincial government representatives, and representatives of other formal institutions—who could serve as sources of information for their stories. Journalists reported using written sources (e.g., EA documents) very infrequently, if at all. Their reluctance to use these sources was based on time constraints:

> There are documented sources you can look at . . . but that generally takes two or three months to produce anything and I'm mostly working on a "what am I going to publish tomorrow" situation. (journalist #1)

Instead, journalists relied on sources' interpretations of these documents. This could be problematic from a risk-communication perspective, given that these sources might have inaccurate or biased views of the material.

While the journalists saw themselves as responsible for providing balanced, fair, objective coverage, issues of accuracy in coverage were not really addressed:

> You do have to verify [your facts]. Anything you're going to put in the newspaper you have to verify. Except, I mean, "Jane Smith said that" is a fact . . . we're reporting other people's beefs. (journalist #2)

Reporting material in this way freed reporters from having to do much background research, thereby allowing them to meet their deadlines.

Timing and Content of Newspaper Coverage

The activities of these and other journalists ultimately resulted in a large number of stories related to the EA ($n = 320$ in two newspapers). Coverage began in the fall of 1988 (Figure 2), when rumors of the proposed landfill began to circulate. Few articles addressed the issue prior to 1994 (the first site-related article, for example, did not appear in the *Stoney Creek News* until April 1993), but between the beginning of 1994 and the end of the study period there was only one month in which neither paper provided issue coverage, and some months saw more than ten articles per paper (Figure 2). The *Hamilton Spectator* contained more coverage of the issue than the *Stoney Creek News*, but only slightly. Given that the *Stoney Creek News* is a weekly paper, it contained a large number of site-related articles when compared to the daily paper. This may represent the importance of the issue on a local as opposed to regional scale.

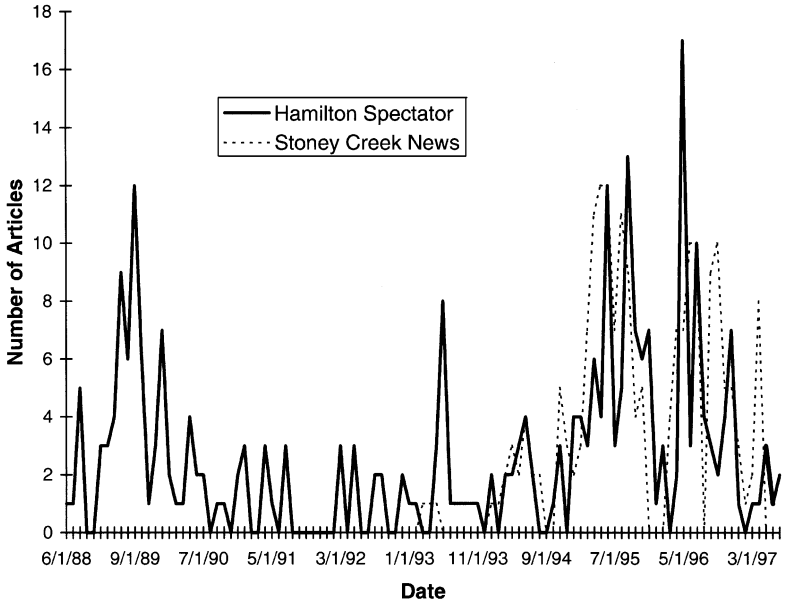

Figure 2 *Newspaper coverage of the proposed landfill site, 1988 to 1997.*

Coverage increased around key decision periods in the EA process, such as the submission of the proponent's EA document (January 1995), the deadline for submissions to the Ministry of the Environment concerning the proposal (May 1996), and the release of the decision of the Minister of Environment concerning the proposal (July 1996) (Table 1). There were, however, a number of events in the site's EA process, such as the open houses and workshops held by the proponent (Table 1), which did not receive much coverage. Neither paper recorded the opening of the site to accept waste.

Coverage also increased when controversial issues arose or process actors took controversial actions. For example, a zoning dispute (June 1994), the formation and consequent actions of SCRAP (spring/early summer 1995), the discovery of ooze thought to be leaking from the proponent's existing landfill (December 1996), and allegations of various unethical actions by a variety of players in the process (e.g., corruption on the Stoney Creek Council—April 1997) all received considerable coverage in both newspapers.

The majority of articles addressed process issues (Table 3): that is, the primary concern of most articles (54 percent) was some aspect of the EA *process*. Articles dealing with environmental concerns and issues (e.g., potential contamination of soil and waterways adjacent to the proposed site) were the next most frequent (13 percent). Technological concerns, such as the design of the liner systems of the proposed landfills, accounted for 9 percent of coverage, followed by concerns regarding effects on the community (6 percent), and health issues (5 percent).

Both newspapers covered process issues most often, followed by environmental issues and technological concerns: that is, the top three themes in both papers were the same. However, there were some substantive differences in the other themes covered in the two newspapers. While the numbers of articles involved are small, the *Stoney Creek News* carried more coverage of environmental, technological, and health issues than the *Spectator*. The *Spectator*, by contrast, accounted for nearly all the coverage of business-related issues, potentially a reflection of its broader mandate.

Resident Access to and Perceptions of Information Sources

The local residents interviewed reported that newspapers were an important source of site-related information for them. Newspapers were mentioned as a source of information by all

Table 4 *Sources of Information among Community Residents Interviewed*

Source	Unaffiliated Residents (*n* = 8)	SCRAP (*n* = 6)	Study Group (*n* = 3)	Total (*n* = 17)
Newspapers	8	2	2	*12*
Television	1	1	—	*2*
Radio	—	1	—	*1*
Informal	6	4	3	*13*
Meetings (all types)	4	4	2	*10*
Pamphlets	6	1	—	*7*
EA documents	—	3	2	*5*
Internet	—	1	—	*1*

respondents who were unaffiliated with any site-related group (Table 4), and were the mass media source most mentioned by all respondents. Respondents reported that other mass media sources, such as television and radio, rarely covered the proposed site; local newspapers were thought to provide more regular, in-depth coverage.

Newspapers were not, however, considered to be trustworthy sources of information. That is, respondents felt that there was often bias in reporting, although the direction of the perceived bias often depended on the existing views of the respondent. The *Spectator* was thought to be biased both for and against the landfill, depending on whether the respondent supported the proposal:

> The *Spectator* has two reporters and they seem to take great delight at taking pot shots at [the proponent] and the landfill. (Ryan, study group member)

> The *Spectator* was a disgusting display of bias towards the proponent, to the point where we had one resident go down there to speak to an editor. (Matt, SCRAP member)

The *Stoney Creek News*, however, was widely thought to be biased against the proposed site:

> It's the local newspaper that definitely has a mission. (Bill, study group member)

> The *Stoney Creek News* . . . there's a lot of editorials very in opposition towards the [proponent's] proposal. I found that they were very active, weekly, in the issue. (Tony, SCRAP member)

However, whether the editorial position of the *Stoney Creek News* was considered inappropriate again depended on the respondent's existing views of the site.

Informal communication—word of mouth—was a common source of information for all stakeholder groups (Table 4). Public meetings, held either by the proponents or by the opposition groups, were considered important information sources by those who attended, particularly because they provided the opportunity to ask questions and make comments. Respondents considered face-to-face communication the most reliable source of information, whether at public meetings or through word of mouth.

Pamphlets and newsletters created by both the proponents and opposition groups were commonly mentioned sources of information for respondents who were unaffiliated with a site-related group. The major complaint about these fliers, not surprisingly, was that they were biased. Residents also mentioned that they rarely read these materials in detail.

Respondents involved with site-related groups reported that EA documents were a major source of information. However, almost all respondents using this material found it difficult and time-consuming to read:

> I have seven banker's boxes full of reports and minutes. Tell me who in their right mind is going to look at those? You just don't have the time to check all that stuff. It is actually impossible, unless it's a full-time career. (Bill, study group member)

The volume and complexity of these documents limited their usefulness to the lay public. In addition, some respondents were skeptical of the validity of the science presented in these documents, particularly in information generated by the proponent.

Difficulties in finding accessible/understandable and trustworthy materials led some respondents to disengage themselves from the issue, or at least from the collection and inter-pretation of information concerning the

site:

> I briefly went through, but it was something that I really didn't understand. I really don't have the experience to make that kind of [judgment]. (Bob, unaffiliated community resident)

> I don't rely on myself for information or by reading specifically on the landfill site because I don't feel that I am knowledgeable, you know what I mean. (Alice, unaffiliated community resident)

These respondents still had many concerns about the proposed site, however. Indeed, the uncertainty engendered by an inability to find information about the site often heightened respondent concerns, while at the same time intensifying feelings of powerlessness.

Discussion and Conclusion

The media coverage of this environmental assessment process was dominated by a trio of themes: process, environmental degradation, and technology (in that order; see Table 3). This finding is not surprising, given that newspapers report what is *new* and, in this instance, issues of *process* (that is, *how* environmental-management decisions were being made) as opposed to *product* (that is, *what* environmental-management decisions were being made) were most current. Coverage of process issues followed a typical pattern, with coverage increasing at times when controversy was heightened in response to a particular event (e.g., the submission of the proponent's EA document). However, coverage was also *selective*; that is, some issues received coverage, while others (e.g., proponent-sponsored workshops) did not. In short, newspapers are clearly an *inconsistent* source of risk communication, especially when it comes to the mundane aspects of citizen participation in environmental decision making (e.g., reporting the proceedings of a noncontroversial public meeting and/or open house). Coverage was further influenced by the relative catchment area of each of the newspapers: that is, while the *Spectator* covers the greater Hamilton area, the *Stoney Creek News* is read only by residents of the local area. Thus, the scale at which each paper operates is a factor in determining what issues are given priority.

The findings also underscore the well-documented propensities of journalists to rely heavily on key informants and focus on issues that they view as newsworthy—which may or may not be of greatest importance to their audience. Their primary mandate is to report the news as they define it, *not* to accurately communicate risk. It is not surprising, therefore, that journalists spend little, if any, time reviewing background and/or technical documents related to an (environmental) issue, preferring the faster—although less reliable—quote from a key informant.

Despite this, respondents in this study reported using the print media as a regular source of information about this particular environmental management issue. This is consistent with previous studies of the role of the print media (McCallum, Hammond, and Covello 1991). Interestingly, this reliance on the print media is paralleled by a distrust of the material contained within. This paradox further complicates print media as a (useful) risk-communication tool. This begs the question, then: where do local residents obtain credible information to help them make informed decisions? Other sources of printed communication—information pamphlets, newsletters and so on—were also seen as less than credible in this context. Face-to-face communication with friends, neighbors, and officials at public meetings was reported as being more credible. This finding, in particular, has substantial implications for risk-communication policy and implementation around environmental-management decisions.

In the last analysis, then, people—not print—are the most effective risk-communication tools. This message needs to be internalized by all key stakeholders in the risk-communication process—industry, government, environmental groups—in order to facilitate effective environmental-management decision making. ■

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