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Source: *The Canadian Journal of Sociology / Cahiers canadiens de sociologie*, Vol. 22, No. 4 (Autumn, 1997), pp. 481-504

Published by: [Canadian Journal of Sociology](#)

Stable URL: <http://www.jstor.org/stable/3341694>

Accessed: 29/10/2010 15:52

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# Trust, Risk and the Public: The Case of the Guelph Landfill Site

*S. Harris Ali*

*Abstract:* This paper investigates the role of trust in mediating the expert-lay interactions that took place in the recent Guelph Landfill Search Process (GLSP). On a theoretical level, I shall discuss how the emergent expert-lay trust relations, as well as the types of issues raised in the GLSP, were influenced by the conditions of the risk society outlined by Ulrich Beck. It is concluded that a lack of general trust in technology and technical expertise is now a critical variable in the management of modern environmental risks and that the GLSP represents an example of an institutionalized response to this situation.

*Résumé :* Cette étude examine le rôle de la confiance en la médiation des interactions entre experts et profanes qui ont récemment eu lieu au Guelph Landfill Search Process (GLSP). Sur le plan théorique, je discuterai comment les conditions de la société au risque soulignées par Ulrich Beck ont influencé les rapports de confiance qui émergent entre experts et profanes, ainsi que les types de problèmes soulevés au GLSP. La conclusion sera qu'un manque de confiance générale dans la technologie et dans la compétence technique est maintenant une variable cruciale dans le contrôle de risques de l'environnement modernes, et que le GLSP représente un exemple d'une réponse institutionnalisée à cette situation.

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I would like to thank the CJS Editor, the two anonymous reviewers, and Dr. Scott Davies, for their helpful comments on an earlier draft. I would also like to acknowledge Professors Ralph Matthews, John Eyles, Cyril Levitt and Arthur Mol for their guidance in the doctoral dissertation on which this article is based.

## Introduction

This paper investigates the role of trust as a central factor involved in the relationship between lay individuals and those responsible for the management of environmental risks (such as public officials and particularly technical experts). It is argued that new public consultancy techniques and a drive for increased accountability are leading to the adoption of new strategies and mechanisms of environmental risk management which are explicitly designed to address the issue of trust. A recent landfill search conducted in Southern Ontario will serve as an empirical referent to illustrate some of these changes at the local level.

A “development issue” soon becomes a “risk conflict issue” if individuals and groups concerned with the associated risks of a proposed undertaking mobilize to change the path of development (Freudenberg and Pastor, 1992: 390). In this study, I will examine the role of trust in transforming a landfill issue, once considered a purely “development issue,” into a modern “risk conflict” issue. It will be shown that such a transformation may be understood in the context of the risk society thesis proposed by Ulrich Beck (1992).

In the past, the risks of a landfill were not known and landfills were sited without any real consideration of environmental or health impacts (Estrin and Swaigen, 1978: 229). In contrast, today it is known that landfills generate leachate — a toxic solution formed by the mixing of rainwater with decomposing waste. The resultant environmental and health risks stem from the fact that leachate may escape the landfill and travel through the underlying soils to eventually contaminate a community’s drinking water supply. Modern landfills now utilize various technologies (such as plastic liners and a system of collection pipes) to contain the leachate. Technical consideration is now also given to the soil types and hydraulic connections existing at proposed landfill sites because various soils offer varying degrees of resistance and pathways for leachate infiltration.

As knowledge about the risks of landfills became known, the management of leachate became a matter that was exclusively dealt with by members of the technical community (particularly hydrogeologists and civil engineers). However, as we shall see in this paper, the landfill issue in Guelph, Ontario became a risk conflict issue as members of the lay community were provided the opportunity to challenge the risk assessment and management strategies proposed by those experts. The issue of trust plays an important role in such risk conflicts, and the City of Guelph made a special effort to address this issue in their landfill search.

The complexity associated with determining the causes and effects of technologically produced environmental risks lead to situations in which the inherent uncertainties involved in risk management come to dominate the public discourse. Consequently, doubt becomes a dominant element of risk manage-

ment in the public forum. It is because of this doubt and uncertainty that trust becomes a crucial mediating factor that is directly implicated in the relationships among the actors involved in the treatment of environmental risk. As such, in the context of dealing with environmental risks, I will be referring to trust as it relates to: (i) the lay trust of the political and technical decision makers, and, (ii) a generalized trust in the system of science and technology (to detect and/or monitor the risks).

In what follows, I will briefly review some of the general sociological conceptualizations of trust and then move on to a discussion of the risk society thesis proposed by Ulrich Beck (1992), and what I contend to be the role of trust in that political and social context. I then will provide an overview of the GLSP, which will in turn be followed by a discussion of the significance of trust in the expert-lay interactions observed. In the final section, I will discuss how some of the issues raised in the GLSP may be explained in terms of the tenuous relationship between trust and power under the conditions of the risk society. Included in this section will be a brief discussion of how the GLSP may represent a change in approach to environmental decision-making in Canada; a change stimulated by a need to address the issue of public trust in contemporary times.

### **The Conceptualization of Trust**

In his seminal work on the sociology of trust, Bernard Barber (1983: 19) notes that trust has two general functions: the maintenance of *social order* and *social control*. Trust contributes to social order by providing cognitive and moral expectational maps for actors as they interact, while trust in relation to social control serves to maintain the shared values on which trust relationships are based. In essence therefore, trust serves to sustain solidarity in social relationships in general. Conversely, a lack of trust and the consequent disruption of social order may stimulate a drive for social change and the introduction of new mechanisms of social control.

The role of trust in sustaining interactions and social institutions has been naturally recognized by those who focus on the analysis of *social order*. Prominent among such analysts is Talcott Parsons (1954), who recognizes that trust is intimately connected to the predictability of social situations. According to this perspective, trust grounds social roles in terms of *role expectations*, which in turn allows for the predictability that lies at the core of any given social order. Such a perspective has been further elaborated upon by the ethnomethodologist Harold Garfinkel (1963), who notes that trust is a "condition of stable concerted actions" necessary for the seamless flow of all day-to-day social interactions. That is, the implicit trust that actors have that others will obey their respective roles implicitly and essentially contributes to the actors' "taken-for-granted" reality. If this trust is breached then the actors' sense of normality is broken and actions will be taken to normalize the disrupted flow of interaction.

The functional relevance of trust to the social order is further developed by the systems theorist Niklas Luhmann (1973, 1988), who points out that trust has the effect of reducing the complexity of the world we encounter. That is, there may be an almost infinite number of possible social actions that may be considered in any given interactional situation, but trust narrows the decision down to a manageable number, in effect, reducing the complexity of the given situation.<sup>1</sup>

The perspectives of Parsons, Garfinkel and Luhmann all involve a rather Durkheimian view of society, because the social collective is seen to have a reality of its own (Durkheim, 1933). These theorists therefore conceptualize trust in terms of what Lewis and Weigert (1985: 445) call a social holism perspective in which social order is seen as an emergent property of the collective that is independent of, and antecedent to interaction between individuals. This social holism approach is contrasted to what Lewis and Weigert (1985) call the social atomism perspective, which views society as being based on the social contract between individuals. More recently, this latter view of trust can be seen in the work of James Coleman's "rational choice" theory.

According to Coleman (1990: 99), the individual trustor makes the decision to trust the trustee on the basis of a rational calculation in which the trustor is in a structurally similar situation to that of an individual deciding to place a bet. That is, the trustor's decision to trust is based on some sense of the magnitude of loss or gain as well as an intuitive idea about the degree of likelihood that the trustee will keep the trust. However, such factors can not usually be known with absolute certainty, hence situations involving trust always involve risk and uncertainty. Coleman (1990: 105) notes that the trustee can often attempt to manipulate the trustor's perceptions of the likelihood of loss/gain, as well as the magnitudes of the potential loss/gain, through the strategies of impression management (as is frequently done by salespeople, for instance).

The rational choice perspective on trust is therefore similar to the manner in which trust is conceptualized by those who study the prisoner's dilemma games, in which researchers analyze the conditions under which co-operation is fostered. Thus as Good (1988: 34) notes, such a perspective conceives of trust in terms of a cost/benefit analysis, in which the cost of misplaced trust is weighed against the gains an individual can achieve by trusting the other.

For Francis Fukuyama (1995: 26), the rational choice model seems to insist that the only basis for co-operation is for the pursuit of long-term self-interests. If such a model did indeed accurately describe most trust relations then co-

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1. Sztompka (1996: 40-42) observes that types of trust will vary according to the social object in which trust is invested. On this basis, he identifies seven types of trust: generalized, institutional, technological, organizational, commercial, positional and personal (see also Misztal, 1996).

operative and group relations would necessarily have to be guided by contracts and institutionalized systems of formal rules since the prevailing assumption would hold that distrust is the natural (default) condition for most social relations. On this basis, Fukuyama (1995: 224) asserts that there is an inverse relationship between trust and rules: the more individuals depend on rules to regulate their interactions, the greater the indication that such a context is one based on a low level of trust. For example, scientific management and Taylorism in the workplace epitomize those situations which frequently occur in low-trust societies since these societies essentially create a factory culture based on strict rules of behaviour (the same could be said of bureaucracies).<sup>2</sup> As a starting point for discussion about the specific relationship between trust and risk, I will begin by briefly reviewing the work of Anthony Giddens on this subject.

According to Giddens (1990: 27), modern society has become increasingly dependent upon complex abstract systems of technical expertise that infiltrate and influence many aspects of a lay individual's daily life. For example, the problem of waste disposal in Guelph relates to the whole system of waste management involving not only technologies for waste collection, but also for the control and monitoring of leachate generated from that waste. Lay trust in the individual technical expert, and in the whole system of expert knowledge which backs the abstract system of waste management, is usually unproblematic and part of the actor's taken-for-granted reality. In turn, this taken-for-granted reality provides the foundation for the development of a personal sense of security. Usually high consequence risks are remote from the lay individual's day-to-day life, and as a result they are bracketed out, so as not to disrupt the basic taken-for-granted reality we all have. However, if it is realized that a risk may come to have direct consequences for day-to-day life then this taken-for-granted reality becomes shattered, as the activities concerned with important life goals become threatened (Giddens, 1991: 184). For example, parents living near a proposed landfill may fear that their children will be endangered by the contamination of drinking water, traffic problems, particulates in the air and so on.

Active responses to deal with such threats are pursued at those points in which lay individuals can directly confront those responsible for the development and/or implementation of the abstract systems of expertise. Such points are

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2. Fukuyama's observation that levels of general trust may vary across different societies may help to explain Jasonoff's (1987) findings that the political culture of the United States based on the adversarial model has meant that many risk management issues become litigation issues that are largely dealt with in the U.S. courts. This is in contrast to the British system of environmental risk management in which closed caucus meetings between activists and technological and political elites are the norm. It may also be inferred that these divergent approaches to environmental risks may be based on whether the society has a low-trust versus high-trust political climate.

referred to by Giddens (1990: 115) as “access points.” For example, the numerous meetings in the GLSP may be thought of as access points in which lay individuals could interact with the representatives of the abstract system of waste management. However, certain aspects in the treatment of risk at access points problematizes the role of trust in expert-lay relationships. First of all, the lay public may become explicitly aware of the issue of *risk distribution* (as we shall see later, this issue may be framed in terms of the issue of social equity). Secondly, involvement at access points may raise the lay individuals’ *awareness of the limitations of expertise* to deal with the risk in question. For Giddens (1990: 130), these two factors lead to the development of a “public relations” problem for those who seek to sustain lay trust in expert systems, because lay individuals may begin to suspect that the expert is either concealing the true nature of the risk or is denying that there are risks altogether. It is in this connection that Walsh (1987: 85) notes the emergence of a legitimacy crisis in which technical elites are now being challenged by the lay public.

Lash (1994) and Wynne (1996) argue that both Beck’s and Giddens’ accounts of lay distrust in experts over-emphasizes the rational choice model of trust. According to Wynne (1996: 47), the view that individuals are losing their sense of trust in science and technology (relative to the past) is misleading. Wynne challenges Giddens’ claim that there was once an unqualified trust in expertise as indicated by a lack of contestation to the work of technical experts. According to Wynne (1996: 52), this lack of open contestation in the past was not indicative of the acceptance of technical expertise, rather, it was indicative of a lack of opportunity structures for lay members to challenge the experts. Historically therefore, such limitations gave rise to feelings of *unexpressed* frustration, alienation, ambivalence and dependency on the part of lay individuals. For Wynne, Giddens may have mistaken the lack of *expressed* public ambivalence for unambiguous trust. However, as we shall discuss, the change in opportunity structures for lay involvement in the siting of a landfill in Guelph did indeed allow for the expression of ambivalence and distrust of technical expertise and experts.

### **The Nature of Risk**

Ulrich Beck (1992: 26) contends that society under the developing welfare state of the recent past focused much more attention on the distribution of “goods” such as wealth, consumer goods, incomes, educational opportunities and property. In contrast, today, increasingly greater attention is being focused on the distribution of “bads,” or the “side-effects” and unintended consequences of the industrial process. Such side effects include *environmental risks*, that is, those threats to human beings that arise in, or are transmitted through the air, water, soil and/or food chains (Whyte and Burton, 1980: 1).

Contemporary environmental risks are different from the “natural” risks faced in the past for several reasons. First of all, modern risks may now be global in their impact (or at least have consequences for a larger number of people) and are not limited by time (i.e. the effect may only manifest itself in the future), space or social class (Beck, 1992: 21–22). As a result, modern risks are different from other types of risks such as localized or voluntary risks. Secondly, modern risks are the result of human decisions to intervene in nature. As such, risks such as chemical pollution, global warming, nuclear accidents, and the thinning of the ozone layer, can be directly attributed to human decision-making processes (Beck, 1992), which in turn leads to a proliferation of a particular class of problems characterized by Giddens (1994b: 184) as being based on “manufactured uncertainty.” A third element of environmental risks is related to the fact that they may involve long and complex causal chains, thus making it difficult to pinpoint with precision who or what is responsible. Thus Beck (1995: 2) notes that in the case of many environmental risks, the usual rules of causality, guilt, and liability circumscribed by the insurance principle can no longer hold in modern society. Lastly, the risks that we face today may not necessarily be detectable to our physical senses, thereby increasing our reliance on scientific and technical means of detecting them.

In response to the characteristics of the risks we now face, Beck (1992) argues that new issues are brought to the fore: the issue of self-limitation of development, the redetermination of standards of responsibility, safety, monitoring, damage limitation and the distribution of the consequences of damage. It is under such conditions that Beck contends that we now live in a “risk society.”

The risk of leachate contamination typifies many of the characteristics outlined above: (i) the leachate contamination of drinking water will affect a large number of people (now and/or in the future); (ii) the risk of leachate is a direct consequence of human decisions to produce an overabundance of waste, as well on the basis of technical decisions of how best to manage the risk; (iii) leachate infiltration is a complex process involving hydrogeological systems and hydraulic connections, while the chemical composition of leachate varies and is still very much unknown; and, in some cases; (iv) leachate contamination in parts per billion is known to be lethal — a concentration that cannot be detected by our physical senses thereby compelling us to rely on technical methods.

Within the social context of the risk society, trust becomes an influential element in the treatment of environmental risks because as Lau (1992: 238) observes, there has been traditionally a separation between those who make decisions about risk and those who are affected by the risk. This, coupled with the uncertainties involved with environmental risks alluded to previously, points to the relationship between the modern division of labour and lay trust in the institutions that are responsible for the management of risk. Such a relationship



was analyzed by Freudenberg (1993), who notes that the increased differentiation of modern society (via the increasing division of labour and technical complexity) has meant that more and more lay trust must be conferred to the technical experts who do risk calculations for the benefit of broader society. Such a situation raises the issue of what Freudenberg (1993: 927) calls "recreancy," that is, "the risk that socially consequential actors will fail to carry out their duties with the full degree of competence and responsibility their fellow citizens need to expect." Recreancy is therefore related to the issue of public trust in an increasingly technologically complex world. In turn, it may be this very concern that stimulates a public demand for *accountability* in regard to the institutions responsible for risk management and control.

### **The Guelph Landfill Search Process (GLSP)**

Guelph, Ontario presently supports a population of 91,000 and is located about 100km south-west of Toronto. The Guelph Landfill Search Process (GLSP) consisted of a series of public meetings and workshops held during the period of November 1993 to February 1995. The GLSP was consciously designed to allow an extensive level of lay-public participation in technical matters such as: the consideration of alternate waste disposal technologies; the selection of the methods that should be used to identify, compare and rank the potential sites; the determination of criteria that need to be considered; and the development of compensation and impact management policies.

The data for my analysis is based on an observational study of the public meetings that comprised the GLSP (about sixty in total, including meetings between the different groups involved, technical workshops, City Council meetings and press conferences). As an overt observer, I took field notes and tape recorded the exchanges that occurred in these meetings (which usually lasted about three hours). I engaged in informal discussion with the lay participants and City Officials involved but did not carry out formal interviews, as I wished to remain a neutral and detached observer in what was clearly a conflict-based situation. My methodological emphasis was on the gathering of first-hand information of the social process as it occurred in its "natural setting" (Silverman, 1993: 11). As the GLSP was designed to be an open process, all technical and government documents, as well as personal correspondence by members of the public to the City (and the City's written responses), were photocopied and distributed at the meetings. These documents were also consulted for my analysis.

The GLSP actually began after an unsuccessful and controversial search jointly conducted by the City of Guelph and the County of Wellington in the previous year. Consequently, the City of Guelph decided to conduct its own new

search with the intention of preventing the animosity that arose between members of the public and the technical consultants that had occurred in the previous search.

In June 1993, a Landfill Search Group (LSG) consisting of four voluntary members from the community and four City staff members was formed. The community liaison representatives included a retired professor of rural economics (who served as LSG Chair), a professor of engineering, an aquatic biologist, and a geological engineer. The LSG's City Staff component included the Chief Administrator, the City Engineer, the Director of Operations and the Director of Planning and Development, as well as two alternatives (a senior planner and the Waste Management Co-ordinator).

In order to facilitate inclusive community involvement, the LSG recommended the formation of a multi-stakeholder group. In November 1993 this group, known as the Community Advisory Subcommittee (CASC), was formed. The CASC consisted of about 40 volunteers from diverse affiliations: business associations (such as the Guelph Development Association, and Guelph Chamber of Commerce), homeowners associations, environmental groups, public interest groups, service clubs, high school and university students, senior citizens and unaffiliated members of the general public. Over the duration, 36 LSG meetings and 26 CASC meetings were held (8 of these were joint LSG/CASC meetings). In addition, 10 public workshops were held to do some of the actual technical work involved.

After the announcement of the identified potential sites on May 10, 1994, two neighbourhood liaison groups were formed to represent the interest of those residents affected. Four of the five identified sites were located in an area recently annexed by the City for the expressed purpose of future industrial expansion. These residents formed a group known as the Coalition of Residents Against Landfill Sites in the Hanlon and Mill Creek Watersheds (CORALS). CORALS members argued that they had already been betrayed by the City because upon annexation they faced a hefty tax increase. Many in CORALS now felt that the annexation was a heavy-handed political manoeuvre done with the intention of siting the landfill in their area. The group also felt that their area was a significant watershed recharge area that should not be put in danger by a landfill.

The fifth site was known as the Victoria Road site and was located in a somewhat industrialized area of the city. Unlike the mostly estate dwelling residents in the annexed area, the members of the Victoria Road Neighbourhood Liaison Group (VRNLG) were of a lower economic class and consisted of a mix of senior citizens, young families and university students. VRNLG members opposed the landfill on the basis of social equity and pointed out that they had already contributed their fair share to the industrial process because their area

was already host to a fibreglass factory, a slaughterhouse, a chemical plant, four abandoned landfills, and an abandoned iron company.<sup>3</sup>

In February 1995, the final site that was selected by the LSG was rejected by Guelph City Council because of the perceived potential for negative economic impact on the City's industrial development (the site was located by an industrial park in the annexed area).

It should be noted that from the outset, the City of Guelph adopted their process to deal with anticipated problems related to public trust:

The underlying premise of this approach is that an open, collaborative and flexible process will inspire trust and confidence in the City's site search. (*City of Guelph Position Paper #1*, 1994: 1)

There was some discussion regarding *the lack of trust in the process* because of past experiences. PAC [i.e. the Public Advisory Committee involved in the joint search] had found that their recommendations and advice had been ignored on many occasions. While this point was well taken, it is recognized that *there needs to be some element of trust*, but that measures need to be taken to ensure that CASC recommendations are considered and understood by the LSG public liaison representatives. In the event that LSG as a whole does not support CASC recommendations, LSG must commit to attempt to resolve the differences with CASC. (Comments by the community involvement facilitator, Meeting Record of CASC Orientation Session, November 18, 1993; emphasis mine)

It was in this spirit of cultivating trust that the LSG was committed to the idea that all of their meetings would be open to the public:

The holding of private, closed-door meetings can frequently raise suspicions and concern. This is why the LSG has committed to holding all of its meetings in a public format. (Letter from LSG Chair to CORALS member, August 31, 1994)

Not only was the GLSP to be an open and inclusive process, it was also supposed to be a purely technical process that would not involve the "interference" of politicians, as such, no City Councillors worked with the LSG or CASC. However, despite the non-involvement of City Council in the technical process, it was Council which ultimately retained the power to reject or accept the final site proposed by the LSG.

In the following we shall see how a lack of trust in technical experts and expertise stemmed from the awareness of risk and the limits of technology to deal with the risk of leachate contamination.

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3. The soils on which this iron company was situated became so contaminated that extensive environmental remediation was required. The Ministry of Environment had brought charges against the company forcing them to clean up this particular site, but the property was sold to a religious cult for one dollar. The cult of course did not have the millions of dollars required for the remediation.

## Trust, Risk and Uncertainty in the Guelph Landfill Search Process

In directly participating in the management of environmental risk, GLSP participants had first-hand exposure to many of the inherent uncertainties involved in risk assessment. One such uncertainty pertained to the character of the waste stream that was to enter the proposed landfill. During the period in which the GLSP took place, the final stages in the construction of a new Wet/Dry Recycling and Composting Facility were being completed. This pilot project (the first of its kind in Canada) was to recycle the dry wastes and compost the organic wastes from the residential, industrial commercial and institutional sectors of Guelph and the surrounding communities. It was predicted that this would lead to the diversion of 62 percent of the waste generated away from the landfill. The adoption of such a view led City Staff members of the LSG to claim that the processed waste that was to enter the landfill would be of a less dangerous type, as organic material would be removed from the waste stream. However, CASC and the neighbourhood group members felt that since the recycling facility was based on unproven technology, it would be necessary to consider the possibility of technological failure, in which case regular waste would enter the proposed landfill thereby restoring the risk potential. The attribution of risk therefore was very closely related to the amount of trust the individual had in the recycling technology. That is, if the individual trusted the recycling technology then the risks would be down-played.

The issue of trust in technology under conditions of realized uncertainty was also raised in regard to the methods of leachate detection and containment. CASC members consistently pointed out that the chemical composition of leachate was variable and largely unknown, thereby raising the problem of how the expert is to know that he or she is testing for the "right" contaminant:

Some of us in Guelph already suspect that our aquifer and groundwater are polluted and it is merely a matter of testing for the right chemicals to provide the proper proof. (Letter from CASC member to Guelph City Council, February 21, 1995)

It is frightening to realize that there are thousands of different chemicals for which no tests are performed, and we have no understanding of the chemical reactions occurring in a landfill environment and their ultimate impact on people. (CORALS member, Joint CORALS/LSG Meeting, July 25, 1994)

The awareness of the limits associated with the means to detect the environmental risk were also expressed:

At the [present landfill in use by Guelph], chloride ion content is measured because it is easy to measure, but is it really indicative of what is actually escaping from the site? We have no idea nor do we know how to go about fishing out what trace elements could be present. We do not have the complete picture. *Our present techniques are like trying to do brain surgery with carpenters' tools — hammer, chisel and axe.* (CORALS member, Joint CORALS/LSG Meeting, July 25, 1994)

The inevitability of leachate generation and a lack of trust in technologies to contain it were also expressed by a vast number of GLSP participants:

It is well documented in scientific literature that **ALL LINERS LEAK** (both natural clay and INTACT engineered flexible membrane liners.) THEREFORE, THERE IS NO LINER IN EXISTENCE TODAY WHICH WILL MEET THE PERFORMANCE STANDARDS OF PROTECTING GROUNDWATER RESOURCES IN PERPETUITY (*sic*). (Letter from CASC member to Guelph City Council, February 21, 1995, emphasis in original)

The best engineered site is fallible. All you need is a guy in a bulldozer to cause a little rip in the liner. This must be held out in front of you [i.e. the LSG], otherwise this realization will be lost in the two thousand details. (VRNLG Member, Joint VRNLG/LSG Meeting, September 19, 1994)

The general awareness of the claim that all landfill liners will breakdown led the CASC to emphasize the need to plan in the event of just such a failure. As such, their attention focused on mitigation technologies. The need to consider mitigation is to be expected in the context of the risk society because of the public awareness that all technologies will eventually fail. Under such conditions, science cannot give any guarantees about public safety or environmental protection. For instance, such an awareness is revealed in the following comments made by a GLSP participant:

It is doubtful if anyone could successfully argue that a landfill would not have some impact on the natural environment, and many people would argue that all the impacts would be of the negative variety. Mitigation measures should not have to guarantee protection of the environment, but rather meet provincial reasonable use guidelines.

*Why not guarantee protection?* Can rural estate developments guarantee that on-site septic systems will not leach into groundwater, that road salt will not have adverse impacts on vegetation and groundwater? — No more so than a landfill can guarantee total environmental protection. (Letter from CASC member, July 14, 1994; emphasis in original)

As a result of such a realization, much of the attention of the neighbourhood groups and the CASC became focused on the need for, and the limits of, contingency planning:

Generally, the public will be told: "Well there is a contingency plan." This pacifies the public. What is needed is that the public should be informed of exactly what the contingency plans are, so that the public is educated about the fact that contingency plans are very few and very limited. (CASC member, CASC Technologies Subcommittee Meeting, August 24, 1994)

It is not sufficient to say that increased mitigation efforts will be considered to off-set the increased likelihood of water contamination. (Letter from CORALS to LSG, August 8, 1994)

Question From VRNLG Member: Much of the discussion to alleviate the concerns of residents that would be affected by potential problems of the landfill sites has been *based on faith in available (yet much of it unproven), technology and human ingenuity*. What contingency plans and precautions will be in place to minimize the risks, detect problems and compensate injured parties in the event of unforeseen problems? For example, will a bond be posted by the engineering, operating or consulting firms to demonstrate their confidence in their technologies and abilities and ensure that

they are also stakeholders in this challenging project? If not, why? What GUARANTEES do citizens have that the site will operate according to its design?

Answer From LSG: The City has committed to work with the technology subcommittee of CASC and the neighbourhood groups to put in place appropriate technologies and contingency plans for both the landfill and the wet/dry facility... Also, the City has indicated a willingness to involve the community in a monitoring committee. (LSG responses to questions from the VRNLG, July 11, 1994; emphasis in original)

The problematic relationship between uncertainty and expectation under the conditions of the risk society makes contingency planning very difficult because such plans must essentially grapple with a contradiction — how can one plan for something which one cannot anticipate with any degree of certainty? The fact that the participants in the GLSP realized that there can be no guarantees, even in regard to mitigation and monitoring technologies, meant that there was a recognition that there were indeed inherent limits to dealing with risk related problems. It is under such circumstances that Beck (1995: 25) asserts that “security degenerates into mere technical safety,” and it is against this backdrop that I contend that the issue of trust in technical expertise becomes an important variable in the analysis of expert-lay trust relations pertaining to the management of environmental risks.

### **Distrust as an Intervening Influence in Expert-Lay Relations**

Although the technical consultants who worked with CASC and the LSG were hired by the City, it was hoped that the public would consider the consultants as *their* agents in a principal-client type of relationship. In relation to this, the work of Shapiro (1987) on the *social control* of trust may be helpful in analyzing the expert-lay interactions that took place in the GLSP. Shapiro notes that principals may employ certain techniques to deal with a lack of trust in such relationships. One such technique involves the attempt by the principal to *personalize* the formal relationship. For example, principals may choose to deal only with known agents, such as those of their own social network, kinship or ethnic group. In doing so it is hoped that experienced familiarity and interdependence would allow for the exercise of informal social control sanctions to punish abuse. In the GLSP this strategy was not adopted because it was realized by the lay public that it was the City (and not the public *per se*) that was technically the client in the final instance.

A second way in which principals can deal with their lack of trust in the agent is to forgo the benefits of the division of labour by becoming jacks-of-all trades (or at least become competent in specific areas of expertise). This was in evidence in terms of the self-education process in which many lay participants in the GLSP engaged. This occurred to such an extent that terminology such as hydraulic conductivity, depth of overburden, ground water discharge areas, poly-

vinyl chloride liners and so on, were used in almost a casual manner by the lay participants involved. Such a development is indicative of one response to living in the risk society, namely the emergence of what Giddens (1994a: 84) calls "lay-experts." For example, one 'unofficial' leader of CASC was a former choreographer who attended up to eight meetings a week in dealing with environmental issues in Guelph and spent much of her free time poring over engineering documents (Dooley, 1994). One lay-expert in CORALS even prepared an educational technical document with the following expressed purpose:

These notes are provided by a non-expert to help other non-experts understand the hydrogeological questions related to the proposed Guelph landfills. (From a handout entitled "Understanding Hydrogeology.," June 16, 1994)

However, as noted by another member of the neighbourhood group CORALS, becoming a "lay-expert" is not without its problems. Responding to one exercise in the GLSP, this individual noted that

The first part of the workbook asks that I list and/or describe wildlife, endangered species, rare aquatic life and so forth. I am no ecological expert. Should I have listed the hawk we saw the other day as big — or perhaps the rabbits (genus bunny) and the groundhog that lives by the roadway or the big turtle some trucker killed up by the goose pond... (Letter to the Editor, *The Guelph Daily Mercury*, July 28, 1994)

A third strategy to deal with uncertainty and distrust is the use of a contract to ensure that the agent will act within certain specified and agreed upon parameters. It was in following the spirit of a contract that CASC members developed a series of Minimum Acceptability Standards (MAS) that related to: the minimum hydraulic conductivity of soils; the minimum distance that the landfill should be from built-up areas and wells; a maximum height requirement; and a requirement that the LSG exclude sites that could not accommodate a potential leachate treatment system. In essence, the MAS document was a form of contract intended to ensure that the wishes of the community were incorporated in the technical decision-making process:

[Minimum Acceptability Standards] are intended to provide a basic measuring point to make sure that, with all the trade-offs we are making, we don't get stuck with something that is bad for the community. (CASC member, quoted in the *Guelph Daily Mercury*, July 28, 1994)

Why do people want [Minimum Acceptability Standards]? Because people want some objective measure, rather than the reliance of LSG's "gut feelings." (Community Liaison Member of LSG, LSG/CASC Meeting, August 24, 1994)

The "gut feelings" referred to above is indicative of the lay realization that subjective aspects do indeed enter into the "objective" scientific processes involved in managing environmental risks. In fact, it is these subjective aspects which define the discretionary space of all professionals in general. If trust in the

professional agent does not exist then measures will be taken to eliminate or limit the agent's discretionary power. This was the tacit sentiment underlying the MAS document.

The LSG (and their consultants) reacted negatively to the imposition of CASC's Minimum Acceptability Standards and argued that their adoption would hinder their ability to pursue the required technical work. Several meetings were held between CASC and the LSG to resolve this dispute but these all ended in a stalemate. The importance of trust in resolving this issue was noted by the acting chairperson (i.e. the community involvement facilitator) in one of these meetings:

*We need to address the issue of trust, we need to have trust in one another, we have to stay away from personality conflicts and concentrate on the substantive. (CASC/LSG Meeting, September 14, 1994)*

CASC then approached City Council with the intention of convincing Council to force the LSG to use the Minimum Acceptability Standards, but this attempt was unsuccessful.

A fourth way in which principals can deal with their lack of trust in agents is to refuse to deal with the agents altogether. However, this strategy was not available to lay GLSP participants because of the fact that their property could be legally appropriated by the City. They therefore were compelled to participate in the process if they wanted their voices heard.

A final method of dealing with distrust is to spread the risk by investing in several agents at the same time. This was seen in the case of the neighbourhood groups who hired their own counter experts.

From the above discussion it can be seen that there were several indications of lay distrust of technical experts in the GLSP. In confirmation with Barber's (1983: 7–24) conceptualization of trust, two types of distrust may be discerned in the expert-lay interactions that were reviewed. The first pertains to the lay expectation that experts will fulfil their duty of placing the community's interest above their own (i.e. fiduciary responsibility as related to the issue of recreancy), while the second involves the expectation of technical competence.

The expectation that the technical expert's fiduciary duties would be upheld was questioned by some GLSP participants (particularly by those in the neighbourhood groups). The perceptions of these lay members was that the technical consultants did not have either: the required freedom of action from the City, or they had too much freedom of action that could be used to pursue pecuniary interests. This issue was raised at several points in the GLSP:

*For almost everybody a landfill is just a dump, but for the consultants it is a gold mine! (City Councillor, City Council Meeting, October 12, 1994).*

The public has been let down by their elected representatives who have only given lip service to public input and have tried to solve the problem of where to locate a landfill by throwing good



money after bad on overpriced consultants who have not identified any viable sites and have left the situation in a state of confusion. (CASC member, CASC Meeting, February 26, 1995)

We at CASC tried our damnest to get LSG to consider Minimum Acceptability Standards; they didn't. Therefore the LSG did not fulfil their mandate. The LSG didn't do their job, they let the technical consultant lead them up the garden path. I think there should be no consultants involved. It should be all volunteers from the public. I would not sit on any search committee which had a consultant sitting on it. (CASC member, CASC Meeting, February 26, 1995)

Underlying such assertions is the conviction that there are differences in approach between the public (which is presumably concerned with the common good) and the technical consultant (who in this case was seen as being concerned with making profit).

The issue of expected technical competence was also brought to the fore at several points in the GLSP. Trust in technical expertise is difficult to maintain in the risk society because of the increased lay awareness of the inherent uncertainties involved in environmental impact science. We have already discussed some of the uncertainties involved in the determination of leachate generation and contamination, but GLSP participants were also directly exposed to various flaws and shortcomings in the actual technical methods employed in the landfill siting procedure. For example, upon review of the site identification procedure used by the LSG, a counter-expert pointed out that an incorrect map was used to identify the degree of groundwater protection. Evidently a surficial geology map which only described the depth of soil types to 4 metres was used. According to the counter-expert the use of this type of map was incorrect because the soil types below the 4 metres may be very different from those soil types above this level. Secondly, in order to compare the potential sites the LSG's technical consultant had used soil data provided by water well drillers. The consultant noted, however, that such data must be interpreted with caution because the driller is often more interested in finding water than in accurately reporting the soil types (the latter is required by the Ontario Ministry of Environment). However, the LSG's consultant commented that:

My experience in interpreting such non-expert well driller information makes me feel confident in my characterization of hydrogeology. I feel that there should be some *trust in my experience* in analyzing such data. (LSG Meeting, July 21, 1994)

Nonetheless, CASC members disagreed and demanded that boreholes be drilled (at considerable expense) on each of the potential sites to obtain more accurate hydrogeological data concerning the soil types present. Boreholes were in fact drilled at a subsequent stage in the process in which the final site was being considered.

From the above, we can see that lack of trust in both the technical competence and the fiduciary responsibility of the experts was clearly evident in the GLSP. Such circumstances gave rise to what is known as a *suspicion awareness*

*context* (Glaser and Strauss, 1964).<sup>4</sup> In a suspicion context each actor in the dyad suspects that one another's identities are not what they appear to be. In the case of the expert-lay interactions in the GLSP, the lay-member had to determine if the "true" role-identity of the technical expert was that of a "neutral technical consultant," a "partisan political actor," or a "concerned environmentalist." The technical consultant, on the other hand, faced the task of determining if the lay-member's true identity was based on a "NIMBY" ("Not-In-My-Backyard") sentiment, or actual environmental concerns and altruistic concerns for public health. The development of a suspicion awareness context meant that some of the actual work of the technical experts was eyed with suspicion:

Some suggestions are accepted, but others seem to be reworded. I feel that the public input is being reworded and manipulated so that it turns out to be less strong. (CORALS member, CORALS Meeting, September 20, 1994)

In a similar vein, a CASC member made the following comment:

I am suspicious that, what is given back to CASC from the engineer's work is not complete. (CASC member, CASC Meeting, June 23, 1994)

Consequently, the emergence of a suspicion awareness context and the search for the other's motives compounds the problems that enter into expert-lay trust relations in the risk society. In line with this, Giddens (1994a) observes that the *demeanour* of the expert becomes very important in the mediation of trust between the technical expert and the lay-person. Thus, one CASC member noted that:

Experts may be very good in their own field, and *are usually very persuasive. They can be intimidating, due to their expertise.* It is very rare, however that they have the broad perspective needed to draw appropriate conclusions to most problems. (Letter to Guelph City Council, January 29, 1995; emphasis mine)

In this connection, Lee and Jones-Lee (1993: 4) observe that frequently, layperson regulatory agencies are not knowledgeable enough to discern the partial truths or clever wordings in technical documentation. Consequently, they note that it is the "*relative demeanour of the experts*" that often times decide the issues involved in landfill controversies. Today, however, this public-relations situation has become even more crucial because of the character of modern

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4. Glaser and Strauss (1964) identify three other forms of awareness contexts: *open awareness context* — each actor knows the other's true identity, and, his/her own identity in the eyes of the other; *closed awareness context* — one actor is ignorant of the other's identity, or, the actor is unsure of his/her identity in the eyes of the other; *pretence awareness context* — each actor is aware of the other's true identity, but, both pretend they are not aware.

environmental risks (particularly the magnitude, uncertainty, and insidious character of these risks).

The development of a suspicion awareness context, the search for motives, and the employment of strategies of impression management may occur in any situation in which "strangers" come together. But, what is notable about the occurrence of these factors in the GLSP is that their presence is symptomatic of an underlying quality of trust in the risk society. Namely, they are the result of a lack of trust in the system of technical expertise. This lack of trust in technical experts is exacerbated in the risk society because of the increasing lay awareness that environmental risks are inextricably linked to technical uncertainties (this awareness is particularly enhanced if the lay community members are provided the opportunity to directly deal with the risk issues, as they were in the GLSP). It is in this light that Giddens (1990: 130) notes that:

Widespread lay knowledge of modern risk environments leads to awareness of the limits of expertise and forms one of the "public relations" problems that has to be faced by those who seek to sustain lay trust in expert systems.

The lack of trust in experts evident in the GLSP may also reflect the broader societal trend of the general decline in deference to professionals (see for example Fischer, 1990; Coleman, 1990; Lasch, 1984; Waller, 1994). According to Barber (1983), the reasons for this decline in deference and trust include the following: (i) the ever more powerful knowledge that professions now have to influence the individual and public welfare (for example, the technical consultants involved in the GLSP); (ii) the increasing strength of the value of equality in society, with the drive for the less powerful (of all kinds) to have more control over the issues which vitally affect them (as indicated by the fact that the issue of social equity was raised in the GLSP); and, (iii) the increased knowledge and competence that a better educated public brings to bear on its relations with professionals, experts and leaders (as indicated by the involvement of "lay-experts" in the GLSP).<sup>5</sup>

### **Trust and Power in the Risk Society**

The need for trust is particularly important in the context of the risk society because modern environmental risks have the tendency to dramatically disrupt the existing social and political order. As discussed previously, this is the result

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5. An additional reason given by van den Daele (1992: 324) is that public controversies surrounding nuclear energy, chemical plants, waste management and genetic engineering are extensively covered by the media, and such widespread and dramatic coverage may have the effect of adding to the general public's scepticism.

of the fact that environmental risks are: insidious, have consequences for large numbers of people, and because they are the results of human-decision making. For those affected by a potential landfill, the environmental risks stemming from the landfill can no longer be ignored. Consequently, the lay individual's sense of taken-for-granted reality becomes disrupted and the issue of trust in technical and political experts comes to the fore.

Particularly important in the context of the risk society is the drive for accountability based on the need for those potentially affected by the risks to have some say in the decisions formerly made by technical and political elites. In this sense, the GLSP represents a response to the recognized need to share decision-making *power*. In the case of the GLSP, it should be noted that the final *political* decision was retained by City Council while the *technical* decision-making was opened to input from the lay public. Wynne (1988: 153) points out however, that the adoption of such an approach may mean that in emphasizing site-selection, design and management, the "real" issue of eliminating risk altogether may in effect be "naturalized" and avoided. In the case of the GLSP, we have seen that this may not have been entirely the case because GLSP participants consistently emphasized the need to address the issue of leachate contamination throughout the process. Consequently, much of the discussion that occurred was implicitly influenced by trust in the technical experts and expertise involved in the management of the risk.

Since modern environmental risks are based on decisions, the issue of trust is inexplicably linked to the issue of power (i.e. the power to make decisions, see for example, Eisenstadt, 1995, for a good discussion on the relationship between trust and power). This is seen most clearly in the matter of risk distribution, which in the GLSP was conceived in terms of social equity (in regard to the arguments put forth by the Victoria Road group). The distribution of the risks from a landfill can be described as the "reverse commons effect" in which a few members of the community are forced to make a sacrifice for the larger community (Edelstein, 1988). Such a situation may lead to feelings of victimization in which members of the community feel that their trust of the political and technical elites has been betrayed. On the other hand, it may also lead to empowerment (particularly if channels are consciously established for public involvement, as was the case in the GLSP). For example, towards the end of the GLSP, some CASC members felt that the final site under consideration was environmentally inadequate and one member made the following suggestion in regard to a possible response:

The solution I see to this mess is for members of the public who are dissatisfied with the status quo to *empower themselves* and shape the future the way they think it should unfold. I suggest that the public can find their own landfill with the expertise available from the members of the public present here. There is no need to spend on consultants or legal advisors. We can use specialists to answer specific questions but do not put them in charge. (CASC member, CASC Meeting, February 26, 1995)

The citation above also points to the relationship between the distrust of technical experts and the drive for self-empowerment. It seems that although some of the elites' decision-making power was shared in the GLSP, for some this was simply not adequate. It should also be noted that although environmental risk issues are clearly influenced by emotional elements (as pointed out by Wynne (1996) in his critique of Giddens' rational model of trust), the CASC member cited is nevertheless making a rationally informed, conscious, and reflexive decision about self-empowerment. The responses to trust relations involved in environmental risks issues may therefore be informed by both emotion and rationality (which are by no means mutually exclusive). Thus, Barber (1983: 167) observes that distrust need not be associated with paranoia or irrationality (as is frequently alleged), as it may equally be based on personal knowledge, experience and values, which may of course have an emotional dimension, yet, remain rationally grounded at the same time.

Finally, it should be pointed out that in responding to the problems in trust by sharing power in the technical decision-making process, the Guelph Landfill Search Process may in fact illustrate a change in conventional Canadian environmental risk policy. Harrison and Hoberg's (1994: 178) comparative analysis of U.S. and Canadian approaches to environmental risk regulation revealed that the American approach was more pluralistic and relied on interest group involvement. On the other hand, the Canadian approach was found to be based on more paternalistic assumptions in which the task of risk regulation was entrusted to experts (similar to the British model observed by Jasanoff, 1987). Consequently, the Canadian approach usually involved far less public input. Based on their research, Harrison and Hoberg (1994: 184) concluded that the potential exists for the Canadian regulatory style to combine the openness of the American style with the flexibility and co-operativeness of the existent Canadian style. That is, the possibility exists in Canada for the implementation of an alternative regulatory style that is open and accountable but at the same time avoids the adversarial legalism that encumbers the American approach. In this connection, Leiss and Chociolko (1994: 211) observe that consensus-driven, multi-stakeholder processes, such as the GLSP, are gradually receiving explicit support from Canadian government agencies and may in fact be gaining a base of popular support.

In sum, the Guelph Landfill Search Process, in switching the emphasis from representative democracy to a more participatory form of democracy, does seem to exemplify the hybrid approach optimistically pointed out as a possibility by Harrison and Hoberg.<sup>6</sup> And, in this context, as Barber (1983: 166–167) observes,

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6. Barber (1983: 93) alludes to the notion that in Jeffersonian (participatory) democracy the rational distrust of political elites is perhaps greater than in the case of Burkean (representative) democracy, in which greater public trust is conferred to elite decision-makers who are trusted to make decisions for the betterment of society.

*rational distrust* is not destructive, as a certain amount of rational distrust is necessary to ensure political accountability in a democratic society (see also Habermas' (1981, 1989) work on rationality and communication in the public sphere).

### Concluding Remarks

The expert-lay interactions that took place in the Guelph Landfill Search Process illustrate some of the problems that may arise in dealing with the environmental threats in the context of the risk society. In particular, I have attempted to show that a central problem pertains to the role of trust in maintaining or disrupting the social order involved in the management of an environmental risk issue.

Environmental risks disrupt the taken-for-granted reality of community members thereby accentuating the importance of trust in expert-lay interactions. As we have seen in this study, responses to problematic trust relations between experts and lay public members arising in the process of risk management included, the pursuit of certain social control mechanisms such as self-education and self-empowerment, the insistence on contractual forms of behaviour, an emphasis on openness and accountability, and a sharing of technical decision-making power. Such responses are in fact rationally based and represent attempts at closing the gap between those affected by the risks and those who make decisions about them. However, certain problems persisted, as indicated by the development of a suspicion awareness context and the attendant "public relations" dilemma faced by the technical consultants. Related to this is the fact that the lay awareness of the inherent uncertainties involved in the science that addresses environmental risks may further compound the problematic character of expert-lay trust relations in the risk society. Thus, as Lidskog (1996: 42) observes, the increased lay awareness of the plurality of technical claims, as well as an increased public exposure to the value-laden judgements made in environmental impact science, may both contribute to the problematic trust relations that exist between experts and lay individuals. It is under such conditions that the type of trust involved in dealing with environmental risk issues in contemporary times is, as Giddens (1990: 90) notes, based on a mixture of deference and scepticism, and, of comfort and fear.

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