

Rand (1984) quotes the characteristics of buildings and apartments that are more frequently visited by burglars:

- There is a larger number of traffic (speed limit and stop) signs posted on blocks where a higher number of burglaries was recorded, while the speed limit is slightly higher than along the blocks where no burglaries were recorded. Public signs and information prevail. It seems that this makes a perpetrator feel safe if other signs indicate that nobody is at home. This might be a perpetrator's stereotype view of the city, namely that an area with these signs shows reduced social interest in the community and greater expectations from public authorities.
- Homes which were broken into have much less fences and obstacles than homes that remained intact. In general, burglars avoid large numbers of obstacles. They prefer entering apartments from public areas. If they have to cross courtyards or inner areas, and then find their way in inner home zone, they have to pass at least three important boundaries and plan a possible – more complicated – retreat. If therefore a house is surrounded by real and symbolic obstacles, burglary is less likely to happen.
- Homes which were broken into show less signs of being inhabited. Burglars obviously always search for signs of absence, such as piles of newspapers, mail, milk bottles, etc. They prefer buildings that are left empty only temporarily or for a few hours if they can reliably anticipate when the residents will return, enabling them to carry out a burglary in that time. In buildings where residents are on vacation, the presence of a burglar can be more obvious and can be noticed by neighbours or passers-by which might not know the residents at all. In such cases, burglars interrupt a usual daily routine. The presence of a car is also important. Houses without garages are more vulnerable to burglaries since the presence of a car in front of a house tells burglars whether anyone is at home (this of course is especially true for the USA where almost everyone owns a car);
- Houses which were broken into are less visible from neighbouring buildings.

## 5. Introduction to a conclusion

The above discussed issues already include the ways of dealing with a problem. With this we also terminate our walk through hazards faced by our environment. Of course, the story is far from being finished, only its fragments were presented in this article. We started with the worst disasters, at least according to the number of people involved, and ended with less dangerous – although annoying and sometimes also dangerous for involved persons – events. Throughout the discussion, the importance of other people and our relationships with them for our lives is present as a guiding principle.

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### Comments to the figures:

**Figure 1:** A ground plan and a presentation of what happened in Lowenbraukeller in Munich (according to Sime, 1990)

**Figure 2:** An emergency exit in a shopping mall in northern England (Sixsmith et al., 1988)

**Figure 3:** A „fear“ map of northern Philadelphia (according to Downs and Stei, 1977)

**Figure 4:** Cognitive maps of three black children (according to Gould and White, 1974)

**Figure 5:** A map of dangerous areas in New York

**Figure 6:** A map of the campus with attack points indicated (black points) and pictures of „safe“ and „dangerous“ areas as evaluated by students (Kirk, 1988)

**Figure 7:** Anticipated and real burglaries (van der Voordt, 1988)

**Figure 8:** Prototypes of „safe“ and „burglary prone“ houses (McAndrew, 1993)

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Drago KOS

## Refuse Treatment or a Contribution to a „Sociology of Garbage“

### Introduction

Generally garbage, in the strict sense of the word, isn't the worst, i.e. most difficult environmental problem. Although quantity and diversity increase (inversely to bio-diversity), the problem can technically be easily solved. This also applies to nuclear waste, that are created in nuclear technology in energy production, industry, research and development institutions, medical services etc. The estimate is however quite different if amongst garbage we include all kinds of emissions, i.e. all that modern society, civilisation „emits“ into the environment. A comprehensive solution of the problem affects the very basic structural core of modernism. The problem is so central that it can be applied for easy definition of modern societies: it is the degree of human development that creates highly unmanageable quantities and varieties of garbage. Of course such definition could be brushed off as one-sided, but it is analogous to the one-sided character of numerous other definitions that only see modern society as the peak of technological, cultural, scientific ... development. „Sociology of garbage“ therefore has at its disposal a very wide specter of problems. It can deal with rather banal questions, such as order and hygiene or embark on in-depth analysis of purposely obscured open questions of modern development. The paradox is, that when one is deep enough, dramatic views are revealed. Garbage can be dealt with as „a symptom of disturbed relations between humanity and nature and thus a symptom of a failed life“ (Hebermayer, Lotter, 1995).

Nevertheless analysis of waste treatment in concrete social environments can be very productive even if we don't follow this completely radical route. As is the case of history of „clean and dirty“ (Vigarello, 1999), which is very illustrative and narrative, because it uncovers the poorly known „history“ of individual hygienistics, even research of relations to

garbage, i.e. concrete dealing with waste or garbage, uncover withheld or purposely hidden scandalous relations to the environment etc. Waste treatment in Slovenia can be dealt with as a real indicator of relations to the environment, nature, space etc. Even more, for sociological analysis it is important, that by this relationship we can also analyse general social relations, for example relations between public and private, dangerous and safe, beautiful and ugly, clean and dirty, healthy and unhealthy and so forth.

In Slovenia it would be extremely interesting to research how the „responsible“ manage their „love for nature“ and disposal of waste into wild dumping grounds. How can we understand someone who builds a completely communally unequipped home directly adjacent to, or even on top of a watershed and simultaneously savagely argue against any possibility of locating a well managed dumping ground, exceeding all existing treatment standards, in his immediate neighbourhood; how can we believe research surveys, that declare a relatively high environmental consciousness, when we can see in the most idyllic and virtually „unaffected“ natural settings, almost the whole assortment of Gorenje and other producers of domestic apparatus (washing machines, refrigerators etc.). It would definitely be most enlightening to analyse the motivation and attitudes of individuals who dispose of many still usable objects and material and shun the presence of gypsies, who make a living out of recycling „their“ garbage. It is almost impossible to evade cynical interpretation when comparing the „underdeveloped“ region of Pomurje, where for many years they have successfully managed to collect garbage selectively, while in the other parts of the country and the cultural capital environmentally conscious individuals have to search for rare remaining containers for glass etc. In short, the „sociology of garbage“ could, together with archeology, anthropology and ethnology, offer many interesting interpretations of contemporary Slovenian society, even when considering the inconsistency of environmental and spatial perception.

In this confusing context we can also integrate the problems concerning low and medium radioactive waste (LMRW). Despite general conviction, it is not a technically impossible endeavor. However the long-term „unsolvability“ of the problem is a consequence of various social factors, reaching from the „sanctified“ role of high technology in the recent past and thus developed engineer arrogance, to sometimes unbelievable or irrational responses to risks connected to such waste matter. The technical engineers“ logic doesn“t suffice, because suitable apparatus for measuring, for example „symbolic contamination“, caused by such waste matter, doesn“t exist. The last decade has nevertheless provided for numerous evidence that social dimensions are as important as a technical engineers“ virtuosity and thus enabled the execution of several social-ecological investigations of the problems relating to disposal of radioactive waste. Quite a few totally unsuccessful experiments had to be done for the sociology of LMRW to emerge.

In continuation, by means of a rather concise summary, I will present what emerged in the minds of people that were direct witnesses of the search for a suitable LMRW dump in the regions of Haloze and Posavje in the late 80“s and early 90“s.<sup>1</sup> The goal of the research „Analysis of experience in the preliminary procedure of selecting a site for storing low and medium radioactive nuclear waste: attitudes of local communities“ (Kos et al., 1999), was to establish what the

consequences of the poorly thought out and improvised search for nuclear waste disposal sites on five concrete sites was, in the late 80“s and early 90“s. The research wasn“t primarily directed into establishing the factographic evidence of events at real sites during the search on the local level. The flow of events is relatively well known and documented in media and other reports.<sup>2</sup> The aim of the exercise was to analyse perception of the procedure that provoked such a volatile response from the directly involved individuals, while the side effect is strong support for the development of „sociology of garbage“.<sup>3</sup>

One of the first starting points was the hypothesis that conflict procedures, in searching for a site, are strongly imbedded in the individual and collective memory, thus it is still highly problematic to research the question in the affected areas. The hypothesis was proven correct and to a certain degree affected the course of research, i.e. the extent and method of conducting interviews. It turned out that a certain part of the local population still strongly objected, thus preventing normal research procedures. During the first contacts readiness for dialogue was rather high, however quite soon readiness for co-operation decreased leading to possible (threats) limited movement.

Interviews carried out on five sites began after the local elections in November 1998 and lasted until mid December. All the respondents were asked, who could according to their opinion say anything important or new about the events we were examining. Attitudes were quite unanimous. Three-quarters didn“t allow any possibility for having a waste dump in their community. Rejection was so strong that a large majority doesn“t even accept information about a possible dump. According to the respondents, the basic reason for rejection weren“t only the scandalous events during the search, but also the nature of the object itself that can lead to degradation of the whole area (land and other property, crops etc.). One-fourth of the respondents allowed the possibility of different solutions to the search in the past, under condition that the communication procedure would be properly run and the investor offered adequate compensation on time. However, even they changed their mind and because of past events, possibilities in the given areas were lost for good. The prime reason for such attitude is therefore inadequate communication during the recent search, which has because of completely inexpert communication provoked instead of diminished rejection. Only one respondent felt that patience, i.e. long-term informative and educational activity and adequate compensation, could facilitate changes in attitudes towards the dump among the inhabitants. Utterly negative experiences amongst the local population are predominantly a consequence of poor approach, the people were badly informed and kept away from decision making processes. This conclusion however doesn“t necessarily mean that better communication could have changed the negative attitude. The problem is much more serious and complex, as was shown in the qualitative analysis of attitudes.

### Qualitative analysis of attitudes to „nuclear storage“

Qualitative analysis is based on selected statements by respondents, that have in view of the content and method of argumentation joint into eight thematic groups. Criteria for selection were chosen from analysis of media coverage and

quantitative analysis of interviews. Some of the statements overlap, but they can be qualitatively joint by qualitative discourse.

Statements on when and how information was released on the fact that their village or their land would be used as a possible site for a nuclear waste dump show obvious inadequate information quality to the directly involved:

- great „demand“ for information and extremely poor and inadequate „supply“;
- occasional and informal rumours;
- misleading the directly involved and interested individuals;
- hiding information;
- secrecy and connections to „military affairs“;
- extremely dynamic information on the „nuclear dump“;
- imaginary superstructure added to rumours;
- inadequate information sources (journalists, operatives);
- inadequate language, inadequate public image of the information source;
- „simultaneous“ research and dissemination of information.

The decision making process on the local level was conducted spontaneously and in a very archaic fashion, a fully understandable consequence of the method of involving and/or excluding the local community from the process. Because of such an approach the conflict situation emerged, involving these intertwining characteristics:

- feeling of being cheated, powerless;
- defiance and rebelliousness;
- ignoring the local community;
- fear and pugnacity;
- total blockade of the formal decision making process;
- total loss of trust and credibility;
- ranking of territorial problematic and local jurisdiction;
- past heritage: mistrust by landowners;
- lack of trust in local representatives (municipality, local community);
- constant tension and expectation.

An undisputed conclusion is that fear is a basic feeling defining the relation to waste matter and dumps. Similarly it is possible to deduct from the obtained statements, that people don't distinguish between different kinds of waste matter and corresponding levels of danger. Low credibility of experts and a very pronounced „demonstration“ effect added to the conviction, that dangerous substances were being dealt with. The entire maze of true information and imaginary additions, i.e. „shine above Krško“ (the nuclear power plant) created matching attitudes to waste matter. Despite the prevailing general condition we registered lonely, different, less fearful opinions. A synthesis of circumstances creating attitudes to waste matter are as follows:

- fear from waste matter (poison);
- connections to severe diseases, genetic changes;
- no differentiation between different waste;
- demonstration effect (Austria, Germany, Černobyl);
- poor credibility of experts;
- knowledge from „military“ sources;
- lonely, different opinions.

Reasons for describing the waste dump as unacceptable are numerous, ranging from technical and „common sense“ arguments to completely irrational and completely emotional rejection. One argumentation was often heard, i.e. the unacceptability of such a „dangerous“ activity in under developed areas, that „deserve“ something better. Such disposition re-

lies on the rather strong antagonism between the centre and periphery and general mistrust of politics. Common sense led many people to conclude, that the best location for the nuclear dump is the nuclear power plant in Krško itself. Synthesis of arguments why the proposed sites were bad, showed the following:

- incompatibility of tourism and a waste dump;
- beautiful and preserved nature is all that they have;
- underdeveloped region;
- dangerous object, a security hazard;
- stock piling of dangerous nuclear objects (Posavje region);
- potential earthquake disaster;
- the wasted dump would also include fuel;
- Krško is the best location;
- unsolved property disputes with Croatia;
- succumbing to irrationality;
- mistrust of the central government;
- mistrust of Slovenian technical capabilities.

Thoughts on economic possibilities brought with the waste dump waver from completely moralistic rejection to rather lonely, but relatively highly placed expectations and even temptations. If social (local) self-censorship wouldn't work, this second feature would probably be much more pronounced. The classic pose of opposing politics and the central government is common. It is also obvious that all the speculation and guessing didn't really contribute to normal argumentative support for the activity. Basically the ideas can be grouped as follows:

- trade with „fear“ was condemned;
- suspicion that some (politicians) made an easy profit;
- dramatic exaggeration (emigration etc.);
- degradation of the whole area;
- strategy of miserable paupers;
- high expectations in some cases.

Memories of a protest which escalated into physical violence are still very alive. Interpretations are directed towards diminishing the importance of elements of violence, while at the same time the story is instrumental in deterring possible repeated attempts of searching for the site in the same region. It is interesting to note that in this case the perception of the role of media (journalists) was very negative. Bearers of news were equal to reporters of news. Even this proves that the level of agitation in the local community was so high, that it led to escalation of violence being understood as legitimate, i.e. justified action. In interpretation of events, these elements were noted:

- high level of collective agitation justifies violent responses;
- individuals were offended because of alleged drunkenness;
- journalists are disseminators and instigators of fear (panic);
- diminishing (excusing) violence;
- unsuccessful search for the responsible person (scape goat);
- search for excuses and support for such action.

Ideas about the best way of searching for a waste dump confirm, that it would have been possible to run the whole procedure much more efficiently and in line with „common sense“. In interpretation the whole width of attitudes is noticeable. People are aware that search for a site is not a routine procedure and that general social circumstances are important, even those that aren't in favour of quiet argumentative procedures. The most important conclusion is that des-

pite the highly emotional agitation of individuals, there is still a high level of prudence, i.e. argumentative logic. The main elements of the procedure were:

- emphasis on professionalism and ethics;
- using the model of better organised countries;
- timely and comprehensive informing;
- necessity of including the inhabitants without force;
- deliberation and gradual action.

Even the range of statements, opinions and attitudes relating directly to the problem of finding a site shows a very wide context of the whole affair. In view of deep ideological, political, development and even existential connections of the problem, this however is not surprising. Such a radical problem cannot be dealt with, without the risk of straying into more or less often „digressions“ or widening of the problem – an activity opposed to technical, professional, rather narrow instrumental functioning.

### Basic findings from the analysis

Besides the general circumstances adding to the negative attitudes to „nuclear“ problematics almost everywhere in the World, based on quantitative and qualitative analysis carried out on real sites in the Haloze and Posavje regions, we can discern basic characteristics in recent search for a suitable nuclear waste dump.

**Incompetent communication skills of actors:** no information, education or even withholding information and intentional de-information. The main actors, right from the start, were dilettantes, as if they were convinced about their promoting a bad thing, something that should be hidden or even supported by lies. Information was distributed among the public by „negligence“, i.e. for gaining political (election) points or disclosing (military) secrets. In this way imaginary representations about the waste dump blossomed.

**Unclear and twofaced role of the media:** The media, with rare exceptions, was biased and instigated emotional responses of the affected people, they fueled fears and built a very unclear picture of the waste dump. When the conflict escalated, there were absolutely no articles that would expertly and with proper argumentation diminish fear of radioactive waste. Obviously there was no actor that could intervene with arguments and start a dialogue with the offended individuals and calm the communicational situation.

**Casual and undifferentiated perception of the problem:** Information given to the inhabitants about the technical characteristics of the object were very deficient and therefore suspect to imaginary superstructuring and off-hand conclusions. A lot of misleading information was distributed, also disseminated by the formally structures involved to solve the problem, therefore it is not surprising, that the lay public still doesn't know more about the features of the object.

**Underestimated fear of radioactivity:** Despite high risks in public hearings on risk technology, the procedure of search for the site only led to even more fear and anxiety among the affected. Development of events brought about a situation, whereby even those, that were open to argumentation, simply retreated. The majority of people, not believing that a waste dump could be safe, prevailed.

**Exclusion rather than inclusion of affected individuals:**

The inhabitants were not informed and of course weren't organised into the procedure. There was nobody, who could answer the many questions, on time. Logically informal opposition emerged. When the conflict escalated, un-biased political coalitions also emerged, i.e. twofaced games played by political parties.

**No respect for basic spatial and social characteristics of involved areas:** The fact that the potential sites were in the so called underdeveloped regions was underestimated or even mistakenly interpreted as an extenuating circumstance. The growing tensions between the centre and periphery were completely disregarded, thus provoking defiance, based on the hypothesis of neglect for certain areas.

**Incompatibility of refuse sites and development plans:**

The population in the Haloze region were told about the refuse dump just when they embarked on a new development project in which they would employ all of the (possible) comparative advantages a waste dump would (presumably) destroy. This interpretation was never satisfactorily brushed aside. Similarly there were no responsible comments on the possible degradation caused by the nuclear waste dump. A normal debate and negotiation process concerning compensation for damage caused, never happened or even could happen. The general opinion is that a nuclear waste dump would lower the value of property, hinder development of tourism and marketing of products from the area. Simultaneously with the search for a site a research on development potentials was going on, a research dealing with those advantages of the region that have until now been a hindrance to development (under development, thus beautiful countryside, no industrial buildings, clean air, healthy, quiet environment, possibilities for alternative agriculture, gardening and fruit growing). Haloze should change into a tourist area with alternative agriculture, all of which is made impossible, if nuclear waste dumps are dispersed in the countryside.

**Political and ideological interpretation of events:** Understanding and interpretation of events were heavily coated with politically and ideologically coloured motivation, quickly dissolving into somewhat folklore and mythological management of public affairs. Localist, radical actions of local authorities and state officials were common, taking care of their own affairs and positions. Because of such development, local politicians were under constant suspicion of betraying their own people. Search for the site coincided with the reform of local self-government, an added inconvenience. The „atomic lobby“ was established under the former regime, a heavily used argument. In short, planners (if they can be named as such) estimated the situation badly or even ignored the relatively low legitimacy of state authorities, especially on the local level. They also forgot about the changing attitudes to experts, i.e. low trust, who are hardly known or convincing outside their referential circles. Uncoordinated actions of different actors also contributed to failure. Because of this, many different groups appeared in the area, promoting their tasks, ideas in different ways. When the matter became complicated, the responsible individuals couldn't be found.

Qualitative analysis showed that despite the weight of the task of finding a site, possible common ground could be established, on which by well thought out and legitimate actions (actions based on contemporary knowledge, reflected

in the legal decision making order and frankness of all involved pursuing the common goal) the process of search could be managed. We have to emphasise that opposition wasn't only emotionally motivated (fear from radiation), but also motivated by rational economic contemplation, that presumed loss of property value. Here the initiator of the search should have responded. Common ground were also the individuals that entertained some respect for science and technology, i.e. that it is possible to organize a nuclear waste dump by using available technology. The analysis also showed that people aren't opposed to development in general. Development which could bring personal gain to them (i.e. building a highway), meets much less opposition. A probable hypothesis is also that there wouldn't be so much opposition if the proposed waste dump would have been perceived as a development possibility. In the past, search for possible sites brought about excessive confrontation, in the affected areas the possibility for new research or a new procedure was thus almost impossible. Analysis showed that the level of anxiety and readiness to „defend“ a territory with „all means“ were still very high, because of previous unprofessional and unethical enforcement of the waste dump. In fact, conditions during the last few years, when the project was at a standstill, haven't changed. Therefore the logical conclusion is that the common ground and starting points of a possible new procedure will have to be changed dramatically. The rather selectively collected and presented data, allows added analysis and interpretation. The presented analysis could of course be more in-depth and detailed, but it confirmed the predicted interpretation possibilities for „sociology of garbage“. Among other it strongly confirms the known thesis on faltering credibility of expert judgment (Offe, 1987), in fact a major challenge for professional work, one which many are not willing or even able to accept.

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#### Notes

- 1 The title of the research is Analysis of experience in the preliminary procedure of selecting a site for storing low and medium radioactive nuclear waste: attitudes of local communities (Kos et al., 1999).
- 2 We relied on the analysis of media coverage, commissioned by the Agency for radioactive waste and carried out by others and on our own media analysis, mainly newspapers. Based on these documents it was possible to reconstruct the events at the five proposed sites rather accurately.
- 3 The basic research method were non-standard interviews with formal and informal representatives of affected local communities, opinion leaders, landowners where geological research was carried out and also with less active individuals, that didn't perform significant roles in the events. All together 21 interviews were performed, while the number of involved individuals was much greater, e.g. the whole family took part or the occasional visitor, neighbours, friends etc. Among the interviewed were 17 men and 4 women, on average members of the intermediate age group. Two of the men and one woman were younger than 30 years. 21 men and 1 woman were in the age group 30-55, while the elderly group was represented by 3 men and 1 woman. The education was above average, 8 individuals had high school or college diplomas. The dominant characteristic of the employment structure was that 13 individuals were involved with agriculture (or had the status of half-farmer).

#### Captions

- On information *We that live here know nothing*
- On decision making *They drew and wrote everything, but they never asked us*
- On dangers from radioactive waste *It is poisonous, surely*
- On the best site *Because you're there, where something stinks*
- On economic opportunities *They said that it would be an atomic gold-mine*
- On violent protest *There was a scuffle, but the people were agitated*
- On correct choice of site *An individual needs a permit for sewage, garbage disposal, the state needs nothing*

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Aleš BIZJAK

## Climatic Changes, Flood Prevention and Water Supply in Slovenia

### 1. The Climate and Changes in the Water Cycle

The forecasts following research on climatic changes and consequences of global warming on the environment that were carried out by research institutes (e.g. Max Planck Institute in Hamburg, with the hypothesis of increase in concentration of CO<sub>2</sub> in the atmosphere by 1% per year in Hadley Centre in Bracknell, England, with the hypothesis of increase in concentration of CO<sub>2</sub> in the atmosphere by 1,3% per year) predict qualitative and quantitative changes in certain elements of the water cycle, such as: precipitation, soil humidity, storms and intensive weather and the sea level (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 1997).

Global climatic changes will probably affect the distribution and availability of water quantities. Generally the weather will be more humid in the northern, and drier in the southern hemisphere. We can expect longer periods of drought and shorter periods of intensive regional precipitation. Similarly, the volume of winter precipitation will increase, while the quantity of Summer precipitation will decrease. The Alps and the Mediterranean, thus also the territory of Slovenia, northern Scandinavia and central and eastern Europe are in this sense defined as vulnerable areas. Consequently periodic, geographic and flood quantity patterns will change, the medium low flows of water courses will diminish and we can also expect problems with water supply because of the drop in the level of the water table and exploitation of subterranean water below the existing minimal level (Watson et al., 1998).