

The garbage crisis: technological or cultural?

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In any discussion of environmental problems, there is a strong tendency to believe they have a physical origin and that solutions should therefore be achieved through application of so-called green technology. This is true to a certain extent, since the main ways refuse pollutes the environment are physical: through the air, underground migration of gases, and surface and underground hydrographic networks.

However, the problem of solid waste has another, no less important side to it, of a strictly social, political and economic nature. This points towards a new, much broader and more global view of the problem, as part of the challenge of urban management in the world's largest cities.

In our day cities have become enormous generators of garbage, their inhabitants being the main producers. Global estimates indicate that fifty per cent of the total refuse generated in a city (including domestic, industrial, commercial and hospital waste) is of residential origin. From his home, each citizen helps to increase the huge mass of garbage that municipal authorities no longer know where or how to dispose of.

At the same time, urban culture has also created a culture of waste: we all want to rid ourselves as quickly as

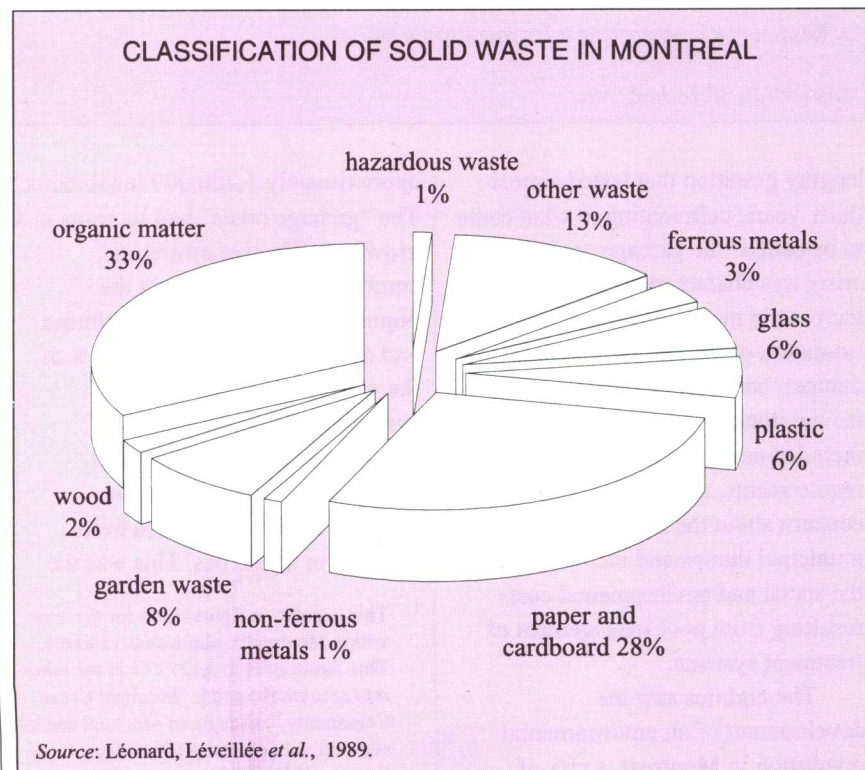
possible of the detritus we have generated, without worrying too much about what happens once the refuse collector's van has taken away our portion of garbage.

This reflection comes at a time when the world is moving towards an urban reality (in 1940, one out of every 100 inhabitants lived in cities of over a million people; by 1980, this ratio had risen to one in ten). These figures reveal the scope of the challenge facing big cities, showing the need—now more than ever—for a form of urban planning that will

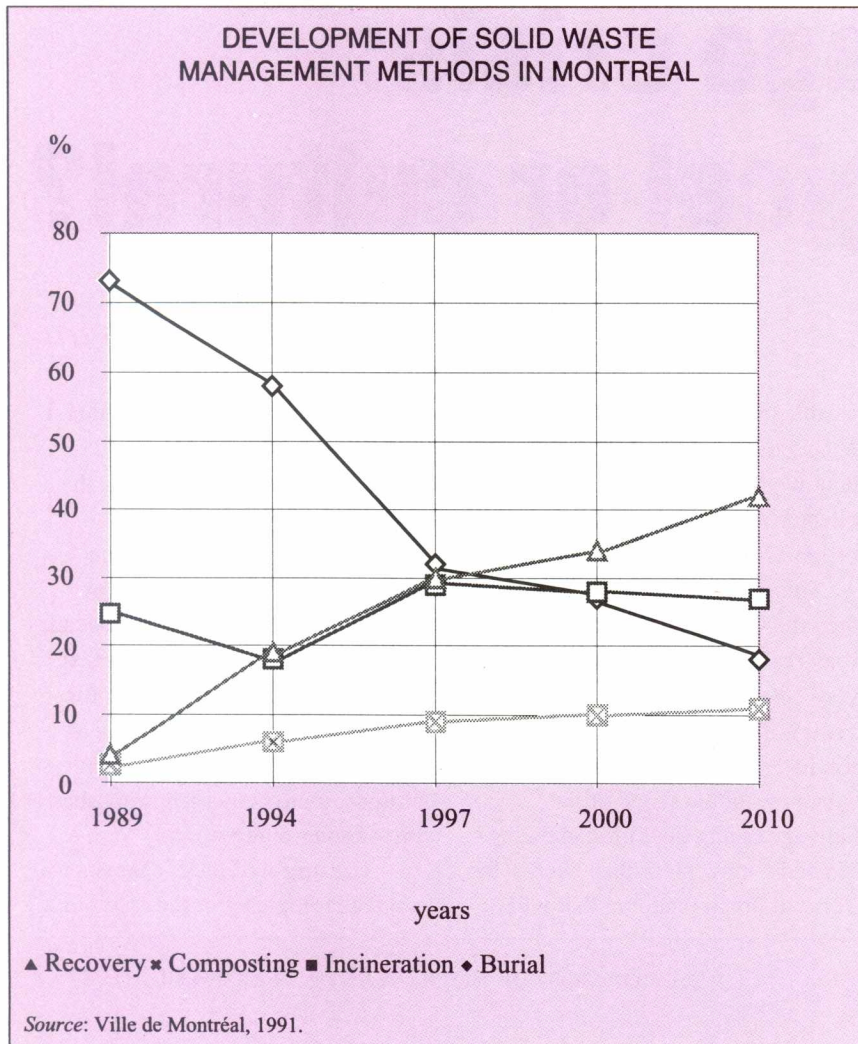
integrate environmental, social and economic dimensions.

This article will deal with the urban management policy—particularly household waste management—implemented in Montreal in 1989, following decades when waste disposal was handled anarchically, with no concern for health risks or the vast amount of resources that, as a result of this attitude, were converted into ashes or lost forever underground.

The origin of these changes was not technological but the result of a



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lengthy gestation that lasted almost thirty years, culminating in what came to be called “the garbage crisis.” This crisis was characterized by the increase in management costs, saturation of landfill sites (refuse dumps), bad publicity surrounding incinerators, legislation that included new environmental requirements, the population’s concern about the harmful effects of municipal dumps and incinerators, and the social and environmental costs resulting from poor management of treatment systems.

The eighties saw the development of an environmental revolution in Montreal, a city of

approximately 1,200,000 inhabitants.¹ The “garbage crisis” had its roots in a growing collective awareness, combined with changes in the population’s behavior and attitudes, and demanded an overall review of the way previous management systems had been operated.

However, while “the green phenomenon” exploded in the eighties, the first alarm had been sounded in the sixties. This was the

¹ This population figure holds for the area within Montreal’s administrative limits. This figure rises to 3,127,242 if one takes into account the entire “Montreal Urban Community,” made up of Montreal and all adjacent municipalities (Statistique Canada, 1991).

time when newly-formed ecological movements denounced the squandering of natural resources in the name of the quality of life. Towards the end of the decade, the population had become aware of the environmental impact of waste management practices, especially incinerators, whose bad reputation was beginning to spread.

By the seventies, the groups had consolidated and were beginning to make their environmental concerns known, giving speeches on environmental protection and against the waste of energy and resources. This was the period when waste management gained recognition as an activity that could have an impact on the quality of the environment.

The seventies were no doubt the decade of environmental concern, in which three internationally important events were to occur: the United Nations Conference on the Environment in 1972, followed by the Club of Rome’s publication of *The Limits of Growth* and the World Conference for the Environment in 1976.

During the eighties, environmental groups oriented towards meeting local challenges, leaving aside more global problems. Citizens were concerned about environmental accidents occurring in their vicinity and the repercussions on their health.

In order to express this anxiety, “syndromes” were developed, such as PDMC — “*pas dans ma cour*,” known in English as NIMBY (“not in my backyard”); GOOMBY (“get out of my backyard”), and even LULU (“locally undesirable land use”). All these are the result of the population’s increasing awareness, which led it to question all projects for installing new facilities in the local environment. As far as refuse dumps were concerned, the syndrome led to the population’s

virtual refusal to accept this type of installation in their vicinity.

Political strategies aimed at environmental protection sought to adapt to circumstances. As a result, the United Nations Brundtland Commission was formed and commissioned to produce a report on the world's environmental situation which would put forward realistic proposals for a solution.

Following the publication in 1987 of the *Our Common Future* report, the concept of "durable," "sustainable" or "sustained" development began to be heard with increasing frequency. This is an attempt to explain the need for a type of development that will satisfy the needs of the present, without compromising future generations' capacity to satisfy their own needs.

This approach marked the starting point for many policies concerning waste management, traditionally based on landfilling—a method that is no longer viable either environmentally or socially.

The new trend has therefore been to adopt the "4R-V" policy, which attempts to *reduce* the astronomical amounts of waste produced, *reuse* products by employing them for different purposes and *recover* all materials that can be used for recycling or to produce compost.

Finally, and only when materials cannot be recycled, they should be used for "energy valuing," a process whereby waste products are converted into sources of calorific or electrical energy through incineration, while refuse that is not suitable for any other form of treatment should be *eliminated* through sanitary landfilling.

As a result of this Integrated Waste Management Policy, implemented in Montreal, refuse went from being something worthless to a secondary resource which could be

made valuable through recycling and energy production.

In short, Montreal's new waste management model was created because of the environmental demands of the citizenry and grass-roots ecology movements. The influence they exerted on political programs during the so-called "garbage crisis" is undeniable. The new environmental management strategy arose in response to public pressure and, above all, as a means of achieving political consensus. It was not an easy task; environmentalists had to fight for thirty years to achieve this significant change, that was to be judged a success by public opinion.

The Montreal government also realized that the quality of urban services has an almost immediate effect on the health and productivity of people and companies, and therefore an enormous impact on national macroeconomic performance.

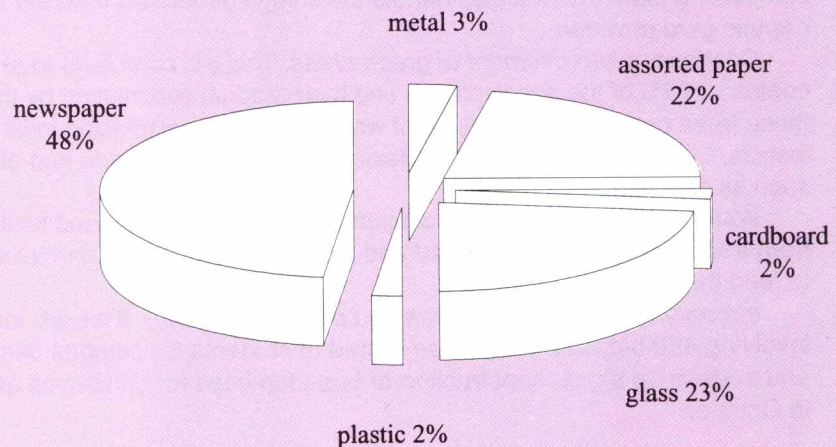
The success of the new plan was also due to the combination of a province-oriented strategy and the handing over of power to the

municipality, on the assumption that only a strong local government can guarantee the urban forms and social priorities required while ensuring that local environmental conditions are reflected in urban development plans.

Waste management is the environmental issue of the moment. It poses questions not only about the production and consumption practices of the past and present, but the political, economic and social priorities of governments and public officials.

This model highlights—particularly for those developing countries that have not faced up to the fact that uncontrolled waste endangers the lives and health of millions of people—the need for social forces to begin exercising their power to demand that governments enforce measures in keeping with the scope of the problem. Education is a key element in the success of these aims, and environmental education the main force for preventing the swift and apparently irreversible development of environmental processes from endangering the lives, and quality of life, of present and future generations \times

ESTIMATE OF VOLUME OF SOLID WASTE RECOVERED FOR RECYCLING IN MONTREAL



Source: École des commerciales et Étude économique conseil (estimates for 1994).



Angeles Torrejón / Imagenlatina.

UNAM has undertaken a series of measures to contribute to cleaning up the Valley of Mexico.

Environmental measures implemented at UNAM

The National University of Mexico began to implement part of its Ecological Improvement program in April, as a means of bettering the quality of life for university students. This program, the result of a year's planning, aims to recover the campus' green areas, recycle sewage water, save energy, and improve sanitary and road services. A description of the different phases is given below:

Energy saving and end-use efficiency. Energy consumption will be reduced 60% through the use of time switches and artificial lighting systems.

Solid waste management. Deposit stations will be set up for waste separation, collection, selection and transportation. Biodegradable waste will be converted into fertilizer for the green areas by a composting plant that will also handle the sludge generated from the treatment of sewage water and organic garden waste.

Continuous improvement of green areas. This will contribute to environmental recovery through the control of 75% of the eucalyptuses and their gradual substitution by more appropriate species, since these trees consume 130 gallons of water per month, displacing local species and killing 90% of the insects. They will be replaced by Mexican ash, jacaranda, pine and plants that thrive on stony ground, such as caucaseas.

Water management. Water consumption will be reduced and leakages avoided, while the surplus from treated waters will be filtered and stored and rainwater channelled into crevices and absorption wells to feed the subsoil.

Improvement of road services and pedestrian safety. This will include the BICI-UNAM program, involving 450 bicycles that will be rented to students for campus use, an increase in the number of road and pedestrian signs, construction of bus-stop bays for minibuses and the launching of an electric car in October.

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