

Canadian Cities as Social Technologies: An Exploratory Essay

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Article abstract

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Canadian Cities as Social Technologies: An Exploratory Essay*

Gilles Paquet
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Résumé/Abstract

Afin d'analyser la ville en tant que société technologique, il est nécessaire de se concentrer sur les phénomènes à moyen terme. Le cadre d'analyse de Polanyi/Akerman est utilisé pour effectuer une étude mésoanalytique de l'histoire urbaine du Canada pendant la période 1850-1914. L'armature urbaine au Canada est considérée comme marginale par rapport à celle des États-Unis, de la même façon que les régions de l'Atlantique et de l'Ouest le sont par rapport au Canada central. Ce type de rapport modifie l'impact que les changements technologiques et industriels devraient avoir sur le schéma de développement de l'espace urbain.

In order to analyze cities as social technologies, it is necessary to focus on middle-range phenomena. The Polanyi/Akerman framework is used to carry out a meso-analytical survey of Canadian urban history in the 1850-1914 period. The Canadian urban system is seen as marginal to the American system in the same way that the Atlantic and Western regions are marginal to Central Canada. This relationship modifies the expected impact of technological and industrial change on the pattern of urban development.

La Ville . . . une unité économique distincte et autonome jouant des rôles qui ne sont pas voulus par les unités micro-économiques qui la composent.
Jean Remy¹

INTRODUCTION

In a book published some ten years ago,² it was suggested that cities were *total social phenomena* — a label used by anthropologist Marcel Mauss to refer to complex phenomena expressing themselves simultaneously in all sorts of institutions — religious, legal, economic, political, and social³. The intent was to emphasize the fact “la ville est . . . le plus grand objet fabriqué par les hommes, probablement l'un des plus complexes”⁴ and that it should be analyzed as such. Although as an anthropologist, Mauss described such phenomena in archaic societies, he did not produce a tool box to investigate them. But even without the existence of effective tools of analysis, the concept provided some insights and looked promising as a searchlight, as evidenced by other work in Canadian socio-economic history.⁵ However, those were the days when the most eminent and astute students of the city were discouraging further theorizing and putting the emphasis on the need for more sociographic research and monographic material on individual cities.⁶ So work along that line was abandoned.

With the benefit of hindsight, this may not have been a wise decision. For it is not unfair to say that after yet another decade of good monographs guided by somewhat inadequate conceptual frameworks, and by now more than sixty years of serious work, we are still without a clear understanding of what makes the specificity of the city and of what underpins the success or failure of the urbanization process in different milieux. It may therefore be that there is some merit in re-opening the search for more comprehensive conceptual frameworks capable of guiding inquiries into the urban process and generating analyses of cities as evolutionary social phenomena.

One cannot think of more auspicious circumstances for such an exploratory essay than a trans-national/trans-disciplinary congress. This is not the place for a review of the weaknesses of the traditional analyses of cities and of the urbanization process. But it is crucial to bear in mind the main problems as one searches for alternatives. Leonard Reissman has mentioned two basic sources of difficulties: (1) the great oversimplification and the excessive reductionism in the analysis, and (2) the static nature of these analyses.⁷ The sort of analytical framework that would appear to be required would have to be able to accommodate the complexity and the evolutionary character of the city.

We shall argue that in order to be able to analyze the city as a social technology and the urbanization process as a transformation in the social architecture of socio-economies, one must avoid focusing on change *in* the city to the exclusion of change *of* the city (a distinction introduced by Harvey Lithwick in Canadian debates), *and* one must focus the analysis at the meso-level, i.e., on the middle-range phenomena instead of being satisfied with microscopic vignettes of street corner societies or with macroscopic vistas on the process of urbanization.

The next section outlines briefly the main features of the Polanyi/Akerman framework we have found useful to carry our meso-analytical study of the evolution of the Canadian socio-economy over time. Section 3 shows how this framework might deal with the urban process and suggests a basic *leitmotiv* of the process of urban growth in Canada in the late nineteenth and early twentieth century. Section 4 illustrates the usefulness of the framework in the Canadian context in general.

The emphasis of the paper, as one might have already gathered, will bear much more on the definition of a useful angle of vision to analyze the urban process than on the review of the

* We would like to thank René Durocher for comments on an earlier draft of this paper, and Gilbert A. Stelter for making available to us some unpublished papers on related topics after the first draft had been completed.

burgeoning literature on the Canadian urban process. Some of the relevant studies will be mentioned in passing. The reader interested in a guided tour of the Canadian literature should refer to the *Urban History Review* published since February 1972, and to the volumes edited by Gilbert Stelter and Alan Artibise.⁸

SOCIO-ECONOMY AS INSTITUTED PROCESS: BASIC SUB-PROCESSES AND META-PROCESSES

History amounts to a series of and explanations pertaining to a variety of objects which may be partitioned into three categories according to Popper's terminology: World 1, World 2 and World 3. World 1 refers to the "world of material things;" World 2, to the "subjective world of mind;" and World 3, to the "world of objective structures which are the products, not necessarily intentional, of mind or living creatures but which once produced exist independently of them."⁹ According to Popper, it is in the nature of history to describe and understand the dynamics of the evolutionary process of this pluralistic universe without reducing it to some determinism from either World 1 or World 2.¹⁰

It can be argued that social change in a broad sense can best be investigated by concentrating on the evolution of World 3 (institutions, customs, laws, property rights and the like), on the examination of the objective characteristics of World 3 and transactions between man and his World 3 creations. For World 3 entities maintain an objectivity and an autonomy which throw much more light on human consciousness and on the physical world than vice-versa.¹¹

World 3 entities institute the socio-economic process in order to harmonize the pressures from the other two worlds: they develop as a result of interactions between the geo-technical constraints of World 1 and the values, plans and preferences emanating from World 2, fitting, so to speak, values and plans within the geo-technical circumstances of the environment. Finding out about World 3 and about the dynamics of World 3 is to focus on the locus of social change, and explaining social change amounts to explaining how and why the socio-economy gets instituted differently from place to place and from time to time.¹²

The choice of approaching a socio-economy through its World 3 entities (i.e., through its rules of operation and structure of institutions) means that one has to deal with it as an *on-going process*, as a *going concern*. Our image of the socio-economy becomes therefore, (in the parlance of Michel Crozier) a "crudely regulated system of games" and the central problem for the analyst is to determine: (1) what are the basic games in the system, (2) how the different games can be defined by their boundaries, duration, actors, component activities and sequence of on-going operations, and (3) how the different structured games can be composed into an image of the overall socio-economy.¹³

As a first approximation in the partitioning of the socio-economic process into sub-processes or basic games, we have adopted a somewhat modified version of the scheme used by Akerman in his study of the comparative development of the western world in the modern age.¹⁴ It breaks down the overall process into a number of sub-processes that correspond to Akerman's best estimate of an *effective structuration* i.e., a set of separable games into which the socio-economic process is decomposable.¹⁵

Our modified Akerman scheme suggests that there are six basic sub-processes of which it may be said safely that, amongst the "forces motrices," "elles sont les plus importantes et qu'une reconstitution théorique doit les prendre en considéra-

tion avant toute autre":¹⁶ the demographic sub-process, the production/exchange sub-process, the financial sub-process, the ecology of groups and their motives as a sub-process, the state sub-process, and the distribution sub-process. Each of these on-going sub-processes has boundaries, components, sequence of on-going operations, and 'work' with sufficient regularity for its 'working' to be described or schematized.

Those basic sub-processes may be said to be woven to define the institutional texture of a particular socio-economic process: together, they delineate the pattern in the social fabric through space and time; their combined/confounded action help, in a way to be discussed in the next section, to identify the major *articulations* in space and the major *discontinuities* in time in the overall socio-economic process, very much like the super-imposition of transparencies as overlays elicits general patterns in a system from the composition of different sub-systems features.¹⁷

The transparencies analogy is somewhat defective, however, since the different transparencies are presumed to be completely independent while the sub-processes are in continuing intercreation, and the transparencies do not evolve in time while the basic sub-processes do. Indeed, basic sub-processes may at times be confounded into such complex interactions (intra-and transnationally) so as to give rise to particular *patterns* or *runs* in the institutional structure of groups of socio-economies, patterns or runs which appear to have a dynamic of their own. One might refer to such phenomena as meta-processes in the same sense that Michel Chevalier has talked about meta-problems. A good example of such a meta-process might be the so-called Atlantic Revolution propounded by Godechot and Palmer — a meta-process in the Atlantic system in the late eighteenth and early nineteenth centuries.¹⁸

In that context, one might suggest that the city is an organization form which evolved as a result of specific con-foundings of the basic sub-processes and that the urbanization drift might well be considered as an example of a meta-process.

A MESO-ANALYTIC PERSPECTIVE AND AN EVOLUTIONARY VIEW

It has been mentioned often that the major source of disagreement among urbanologists is the fundamental choice of the approach: is the city a unique event to be scrutinized under the microscope *or* should one examine the process of urbanization through some macroscope? (Handlin versus Lampard,¹⁹ to use the champions of both sides.) It would appear to us that this dichotomy is an unhelpful one for even if single cities have to be X-rayed, one requires some framework to ensure that the basic variables have been touched and looked at, while the macro-analytical approach must be able to descend onto specific urban realities and to throw some light on them. The two basic approaches battling it out in the literature would appear to be polar cases; what is needed is a focus on middle-range phenomena which can help guide the analysis of single cities while serving as a mechanism to bring down to finer dimensions the broad adjustments at the aggregate level.

Such a meso-analytical perspective focuses on phenomena like cities or business systems; i.e., phenomena which are characterized by organizational features, by systems of inter-relationships which are in some sense structured games. These phenomena are more complex than and different from the decision-making by individuals or groups at the micro level and more complex than and different from the empirical regularities at the macro level. They embody in their institutional features the very rules of the game which have come to be the social armistices for a given place or time.²⁰

The form of the city, very much like the form of the enterprise/ business system constitutes a set of rules, a *socio-technical system* which must be understood as a whole, as a unit. In this way, the middle-range phenomenon can elicit what were the dominant forces at work in particular cases while enabling the researcher to capture the common features of broader adjustment mechanisms.

There is a whole literature that has developed methods of analysis at this level. While it remains somewhat diffuse in very different areas of endeavour, it is clear that under slightly different names, the same craving and the same need for a different approach are both expressed and experimented with. The results are also rather impressive.²¹

In one perspective a city is an organization form, a socio-technical system which may have many characteristic ways and idiosyncratic features very much like an enterprise but which cannot be however to an instrumental dimension. The city as an evolutionary process may well have a rationale without there being a plan or a vital force moving the process. A particular city as a socio-technical system will acquire different characteristics depending on the confluence of sub-processes at work and on the shocks or "events" disturbing the process from the outside.

The particular characteristics of the city evolve as a result of a large number of rounds of *adaptation* by agents and groups (in the city and outside), but also of *adoption* by the city (and its broader circumstances) of different agents or groups. The adaptation/adoption dynamics is the mechanism through which the socio-economy gets structured and the city emerges, evolves, acquires new traits — as if through a process of sedimentation.²²

There is always a temptation to 'explain' the emergence or the transformation of a city by reference to a single sub-process — demography, machino-facture, the will of a social group — and one can always find some evidence to back up one's presumption. There is nearly always in the heart of the researcher a preference for single and simple causation, so that it may well be that one could be swayed by some correlation between two variables or activities into believing that a mechanical one-to-one relation of cause to effect exists. A much wiser course of action might be to insist on a thorough examination of the six basic sub-processes and of their inter-relationships in order to ascertain which of the sub-processes might be dominant.

In the same manner, one might search, at the level of the basic sub-processes, for the reasons why the broad meta-process of urbanization was more or less successful in different places, proceeding with different speed and fortune in different milieux. One need not block the analysis at a macroscopic level à la Lampard where the accommodation between population and environment is mediated by technology and organization. In order to understand how this accommodation works in particular contexts, one must dis-aggregate the analysis. Unless, of course, one wishes to postulate tautologically that all such accommodations always proceed smoothly through the workings of an 'invisible hand' ensuring the right technology-cum-organization which fits the population optimally within its environment.

One might, indeed, be able to reconstruct in this manner the specific mixture of sub-processes which gave rise to urbanization as a meta-process and the manner in which this meta-process in turn fed into itself triggering some sort of Innisian "cyclonics."²³ In that sense, a meso-analytical perspective is probably a good way to make Lampard's 'broad framework' more operational.²⁴

If there is one common source of unease in both these literatures, it is that one almost always senses that the reduc-

tionism (be it to a 'causal' sub-process or to some macro-analytical adjustment mechanism) leads to some *over-explanation*. Unintended consequences have little or no place in studies which ascribe to conscious adaptation or planning the existence or evolution of a city; and the reference to quasi-cosmic forces like technology à la Ellul postulates a vital force which can only be exorcised, not analyzed. In both cases, we are reminded that nothing is less rational than rationalizations.²⁵

One need not be trapped into such over-explanations. *Loose constructs (problématiques)* as conceptual frameworks and methods which do not subject the *problématique* to undue or even harsh 'methodological cruelty' (i.e., *soft methodologies*), are more in order in this context.²⁶ It might be useful to remind ourselves that the evidence compiled and adduced in most historical arguments would not be regarded as acceptable in any court of law. Up to now in social history and in urban history, the set questions guiding the researcher have often been too rigidly defined, and the methodologies, too crude. This has resulted in a certain disenchantment for more formalized historical investigations and a dubious confirmation that the old characteristic way of the historian is still the best.

Our basic point is that the Polanyi/Akerman scheme might very well provide the right set of guiding questions. As we shall see in the next section, it allows one to categorize rather easily a number of the studies already done on the Canadian scene and it suggests a number of directions for research. This is central for the capacity to generate new questions; the basic heuristic power of the *problématique* is its primary quality.

SNAPSHOTS OF THE CANADIAN SCENE (1850-1914)

Within the context of this framework, the central question raised by the theme of this session has to do with the impact of somewhat ill-defined forces labelled *technical and industrial evolution* on the growth of Canadian cities. On the face of it, these forces would appear to pertain mainly to the production/exchange process but, as we shall see, their impact cannot be ascertained without their being fitted within the context of the six basic sub-processes.

An examination of these six sub-processes broke down the period 1850-1914 into three sub-periods: (1) from 1850 to 1873, (2) from 1873 to 1896, and (3) from 1896 to 1914. While this breakdown is rough and our characterization of the sub-periods extremely sketchy, it corresponds to three relatively distinct phases of what one might call the meta-process of industrialization in Canada.²⁷

Phase (1) is a period of economic and political integration of the St. Lawrence lowlands: extension of the agricultural frontier in Southern Ontario, near-completion of the railroad system from the Great Lakes to the Atlantic, and the beginning of manufacturing industry in Ontario and Quebec. Canadian manufacturing becomes a bit more diversified under protection by the new federal state. This is a period of heavy capital inflow and heavy immigration, especially in the first decade, and one in which factory complexes begin to develop significantly in central Canadian cities. The whole social configuration of Canada is being changed: a new urban proletariat, a new generation of entrepreneurs, and new urban institutions emerge.

Phase (2) is controversial, it is referred to by some as a "breathing spell," by others as "the Great Depression," and by most as a period of growth at a reduced rate. Those are years of explicit promotion of industrialization by government and of national integration by a transcontinental railroad and a "National Policy." One notes the beginning of American direct investment and with it, the transfer of technology, but also

massive emigration from certain portions of the country towards the United States.

Phase (3) is a period of unsurpassed growth. With the increasing prosperity in Europe and in the United States and the opening of the West as free accessible American land became scarce, there was a strong stimulation to immigration of both labour and capital. This was also the period of the opening of the mining frontier in the North and the beginning of hydro-electric developments. Manufacturing thrived on these new markets which at the same time provided new raw materials for the development of new industries. As Meier puts it: "The average annual rate of increase in manufacturing production was as high as 7.5 per cent between 1896-1900 and 1911-1913, a rate only surpassed by Japan."²⁸ In World War I, Canada emerged as a political economy characterized by a pluralist population, a strong central state and a more widely diversified economic and social base.

By the middle of the nineteenth century (i.e., before industrialization), Canada had already evolved a network of cities: Halifax, Saint John, Quebec, Montreal, Ottawa, Kingston, Toronto, Hamilton, and London were the largest. It would appear to be the consensus of those who have studied the urban process that:

in most respects the change in the system in the first three decades after 1851 were relatively minor adjustments. Toronto replaced Quebec as the second city, and several manufacturing towns in Southern Ontario grew to almost 10,000 in population (Guelph, St. Catharines, Brantford and Belleville), forming a second tier of cities behind the original nine. The changes in the urban hierarchy were more dramatic and basic after 1881. Perhaps the most significant was the relative growth of the two largest cities. Montreal and Toronto previously had been only marginally larger than those ranked third and fourth, but after 1881 these two began to assume some of the characteristics of primate cities, outdistancing their nearest rivals by three and four times. Equally dramatic was the sudden appearance of the western cities, led by Winnipeg and Vancouver, which mushroomed to third and fourth place by 1921.²⁹

It would be very simple-minded to ascribe to the factory process and to innovations in the techniques of production and/or of organization of labour the restructuring of the urban network in Canada in the late nineteenth and early twentieth centuries. In a small, open, dependent and balkanized socio-economy, many more sub-processes are responsible for the shaping of the urban network, or for the prosperity or decline of a city within the network. The 1975 Canadian Historical Association symposium on the Canadian City in the nineteenth century has provided ample evidence that one cannot ascribe solely to *technical and industrial evolution* the growth and evolution of cities in Canada.³⁰ Indeed, in these position-papers on eight cities, one finds reference to the crucial impact of some social group on the growth (Winnipeg) and decline (Atlantic cities) of Canadian cities, and to the crucial role of the state (tariff protection but also tax exemptions and free land to manufacturers locating in Toronto). One might also refer to the important net migration from the province of Quebec and to the ethnic heterogeneity of the population as factors which, together with more difficult access to coal, might explain why that province did not grow as fast as Ontario even during the latter portion of the period.

Toronto and Montreal become multi-faceted urban units cashing in on their role as metropolitan cities serving a rapidly expanding hinterlands in the north and the west. They become large cities developing urban features, urban public goods that will explain their increasing attractiveness to the exploding manufacturing world of the turn of the century. The *technical and industrial evolution* is one source of this transformation, but not the cause of it.³¹

The available studies on intra-city changes in Canada, on the other hand, suggest that *technical and industrial evolution* has had a relatively more significant impact in cities and on intra-city life, than on the urban network as a whole. Goheen's work on Toronto and the work of the *Groupe de recherche sur la Société montréalaise* would appear to indicate an increasing degree of differentiation within the cities.³² But even at this level and despite the evidence adduced by the 1882 *Report of the Commissioners Appointed to Enquire into the Working of Mills and Factories of the Dominion and the Labor Employed therein* and the 1889 report of the *Royal Commission on the Relations of Labor and Capital*, it is not clear that technical and industrial evolution has done more than accelerate a process of differentiation already well under way.

This may be truer for Toronto and Montreal than for other Canadian cities. But it would hardly constitute the basic force capable of explaining the inner structuring of all Canadian cities.

As for the evidence of transiency, poverty, and ghettoization, they constitute phenomena noted in Quebec City at the turn of the nineteenth century.³³ There was obviously a decline of the artisans, but again this had been well under way by the 1850s. By the middle of the century, artisans and labourers account for approximately the same proportion of the Toronto occupational structure — the number of artisans will obviously decline as the factory system and new forms of organization of work become more popular. In a sense, this may constitute the major impact of technical and industrial evolution. It is not inconsequential, for with this growing urban proletariat, a new urban society — a new type of city — is developing. However, the varied experiences of other Canadian cities (besides Toronto and Montreal) show that the impact of that factor has been mediated and transformed considerably by the other sub-processes.

In fact, our very preliminary observations might even raise the possibility that the well-known process of differentiation/specialization at the core of the industrial urbanization process à la Lampard might not apply in Canada. Canadian cities may have grown in exactly the reverse way, i.e., by a process of aggregation and integration instead of as a result of a process of specialization and disintegration.³⁴

Given the many different factors used in the explanation of the evolution of intra-urban and exo-urban realities, there has been a tendency in Canada to fall back on a general explanation of urban development in terms of "an abstracted schematization of the metropolis-hinterland relationships which . . . provides a frame and scale ranging from the highest and most 'citized' level of urban places to the most 'countrified' level . . . of Canadian society." (Careless) This metropolitanism *problématique* has come to be widely accepted in Canada even though it has been attacked as somewhat empty by S.D. Clark and others. Even Stelter would appear to suggest that the "major, if not the determining, factor . . . may well have been the size and prosperity of the surrounding hinterland" when one tries to understand the winners and losers in the Canadian urban network in the period from 1850 to 1920.³⁵

The very vagueness of the terms and the fact that Careless explicitly states that this schematization "does not cover actual cases in their wide variety," completely immunize the scheme against refutation but also make it rather unhelpful in guiding specific analyses. Moreover, the dialectic metropolis-hinterland and the "on-going symbiotic relationship" (Careless) between urbanization and regionalization becomes rather confusing when Careless adds that "what may stand as 'metropolitan' in one regional context may be seen in an hinterland relationship in another, broader or international frame."³⁶

Even though this *problématique* may not have much heuristic power, it serves, however, as a reminder that there

may be dangers in 'closing' the region when analyzing the 'city' and that there may be dangers in separating intra-urban from exo-urban analyses. For instance, the extent of foreign control concomitant with Canadian industrialization and the dependency links it creates are only one side of the coin; foreign ownership will cast certain regions of the country under an *economic shadow* (in the sense of Michael Ray). The unwillingness of parent companies to establish subsidiaries there will simply mean that urban growth shall be stunted. Through branch plants, the American cities will often create a *replica effect* in Canadian cities regarded as profitable hosts. This is one of the reasons why Montreal has an economic structure closer to the structure of Boston or New York and why Toronto has an economic structure closer to those of Detroit or Chicago.³⁷ A study of the investment process would not only determine which cities would be "adopted" and which ones would not, but also go a long way toward explaining the sectorial and occupational structure of the "adopted" ones.

A preliminary examination of the different sub-processes for the period from 1850 to 1914 shows that (to a different degree according to the sub-period), continental transfers do occur and do matter. Loss of population to the United States, capital and technology inflows transferring into Canada the American System of Manufacture, are examples of such links emerging between the American centre and the Canadian periphery. One might perhaps refer to an "emprise de structure" à la Perroux already shaping up at the turn of the century and moulding the Canadian urban system. Easterbrook has examined the ways in which those centre/periphery or centre/margin relationships tend to generate a "persistence pattern" with a pronounced shift at the margin "to routinized technological change and a hardening of the institutional framework in which such change proceeds." He also mentions that Canada and some portions of the American south have fallen into dependency vis-à-vis the dominant northeastern complex of the United States in this very way.³⁸

Consequently, it may be wise to search for a continental adjustment mechanism in the 1850-1914 period. This has been the counsel of many Canadian historians like Albert Faucher³⁹ Such studies can only proceed in a comparative mode and the Congress of Americanists would appear to be the obvious vehicle to promote such studies.

CONCLUSION

It should be clear from the previous discussion that we feel that reference to technology and industry does not suffice in an attempt to explain the growth of the urban network and the changing composition and structure of cities in the period between 1850 and 1914. The relationship between technology and industry on the one hand, and cities on the other, must be analyzed through a disaggregated framework, at the meso-level, and it can generate the most useful results if it is conducted on a continental basis, in a comparative mode.

In the meantime, we may have found in Professor Easterbrook's work some of the reasons why the industrial revolution might not have transformed our Canadian urban system as much as we would have expected.

NOTES

1. Jean Rémy, *La ville: phénomène économique* (Bruxelles: Editions de l'ouvrière, 1966), p. 255.
2. N.H. Lithwick and Gilles Paquet, eds., *Urban Studies: A Canadian Perspective* (Toronto: Methuen, 1968), pp. 4-5.
3. Marcel Mauss, "Essai sur le don. Forme et raison de l'échange dans les sociétés archaïques," *Année sociologique*, 2^e série, 1923-4.
4. Commissariat général du Plan, *Les villes — 2. La société urbaine* (Paris, 1970), pp. 113-119 (Annexe sur la ville comme ressource et comme milieu artificiel).

5. Fernand Ouellet, "La mentalité et l'outillage économique de l'habitant canadien-français. A propos d'un document sur l'encan," *Bulletin de recherches historiques* (1956), pp. 131-139.
6. "We need fewer studies of the city in history than the history of cities. However useful a general theory of city may be, only the detailed tracing of an immense range of variables, in context, will illuminate the dynamics of the processes here outlined." Oscar Handlin, "The Modern City as a Field of Historical Study," in O. Handlin and J. Burchard, eds., *The Historian and the City* (Cambridge: MIT Press, 1963), p. 26.
7. Leonard Reissman, *The Urban Process* (New York: Free Press, 1964).
8. *Urban History Review/Revue d'histoire urbaine* is published by the National Museum of Man in co-operation with the Canadian Historical Association. Its basic preoccupation is with the historical development of urban Canada. See also G.A. Stelter and A.F.J. Artibise, eds., *The Canadian City: Essays in Urban History* (Toronto: McClelland and Stewart, 1977); Artibise and Stelter, eds., *The Usable Urban Past: Planning and Politics in the Modern Canadian City* (Toronto: Macmillan, 1979).
9. The distinction between World 1, World 2 and World 3 is expounded in K.R. Popper, *Objective Knowledge* (New York, Oxford Univ. Press 1972). The exact expressions used in the text to characterize them are borrowed from B. Magee, *Popper* (London: Fontana, 1973), p. 60. Indeed much of this section 2 of the paper borrows heavily from our paper "Pour une méso-histoire du XIX^e siècle canadien" to be published in *La Revue d'histoire de l'Amérique française*, especially sections 2 and 5.
10. Popper, *Objective Knowledge*, chap. 8, pp. 296 ff.
11. *Ibid.*, chap. 3, pp. 111 ff.
12. The idea of an economy as instituted process has been expounded by Karl Polanyi. He has put the emphasis on the transcending importance of institutions and of the instituting of the economic process. He has also focused attention on the central importance of "the study of the manner in which the economic process gets instituted at different times and places." K. Polanyi, "The Economy and Instituted Process," in K. Polanyi, *Primitive, Archaic and Modern Economies* (Boston: Beacon Press, 1971) p. 148.
13. Michel Crozier has suggested that organizations be thought of as games. See M. Crozier, "The Relationship between Micro and Macrosociology," *Human Relations*, 25, (1972), pp. 239-251. For an examination of the relationships between organization/ instituted process and games (and of the possibility and usefulness of representing an organization and instituted process as a structure of games), see O. Helmer, "The Game-Theoretical Approach to Organization Theory," *Synthese* (1963), pp. 245-253.
14. J. Akerman, *Ekonomisk Teori II* (Lund, 1944). A French translation of the book, under the title *Structures et cycles économiques*, 2 vols., (Paris, 1955), is available. The most relevant portion for our purposes is contained in vol. I, chap. 1-2.
15. For a discussion of the concept of effective structuration, see F. Bessière, "The Concept of Separability and the Optimization of Economic Organization," *European Economic Review* (Fall 1969), pp. 74-91.
16. Akerman, *Ekonomisk Teori*, p. 28.
17. The analogy might be the reconstruction of the main features of the human body through the super-imposition of transparencies defining the nervous system, the muscular system, the blood system, etc. It might be suggested that each of the sub-processes work according to certain rule which are sufficiently stable to be sketched at a given point in time but that it is only from the 'working' of the basic processes as a whole that the main features of the whole can be ascertained. This is the manner in which a useful partitioning in space and time can be arrived at with some basis to establish the source of the break in space or of the discontinuity in time.
18. The notion of meta-problem has been introduced by Michel Chevalier in *Stimulation of Needed Social Science Research for Canadian Water Resources Problems*, (Ottawa: Science Secretariat, 1967). For an overview of the Godechot/Palmer hypothesis and of the controversy it generated, see Peter Amann, ed., *The Eighteenth Century Revolution: French or Western?*, (Boston: Heath, 1963).
19. G.A. Stelter, "A Sense of Time and Place: The Historian's Approach to Canada's Urban Past," in Stelter and Artibise, eds., *The Canadian City*, pp. 422-423.
20. These social armistices are obviously some forms of precarious equilibrium: they are temporary rules of the game which are always in process of change as the game changes.
21. The literature in question is too extensive to report on it here but a sample of the works in question might provide a sense of how widely the phenomenon has spread. The most interesting area is the study of business systems or enterprises. See, for example, A.D. Chandler, *Strategy and Structure: Chapters in the History of the Industrial Enterprise* (Cambridge: MIT, 1962); A.H. Cole, "Meso-economics: A Contribution from Entrepreneurial History," *Explorations in Entrepreneurial History* (Fall 1968); F.E. Emery and E.L. Trist, "Socio-Technical Systems," in F.E. Emery, ed., *Systems Thinking* (Harmondsworth: Penguin, 1969), Chap. 14. In a more general context, economic historians like P.D. McClelland, *Causal Explanation and Model Building in History, Economics and the New Economic History* (Ithaca, N.Y.: Cornell Univ. Press, 1975), and economists like Alec Nove, *Efficiency Criteria for Nationalized Industries* (Toronto: Univ. of Toronto, 1973), have, like many sociologists, called attention to the need to deal with middle-range phenomena or to "mezzo-phenomena." The work on the evolution of the business system has been particularly successful, and it might be the one most easily used in urban studies since the *enterprise* and the *city* are socio-technical systems which may lend themselves to parallel analyses.

22. For a primer on the adaptation/adoption dynamics, see A.A. Alchian, "Uncertainty, Evolution and Economic Theory," *Journal of Political Economy* (June 1950); for some insight into the adoption process, see I.A. Adelman, "Social and Economic Development at the Micro Level: A Tentative Hypothesis," in E.B. Ayal, ed., *Micro-Aspects of Development* (New York: Praeger, 1973), or A.O. Hirschman, *Development Projects Observed* (Washington: Brookings, 1967).
23. Innis calls his theory of economic progress "cyclonics." As R. Neill explains, areas of high profit "become low pressure areas in the economic system into which, born on the winds of liquidity, liquidity resources sweep with cyclonic force." See R. Neill, *A New Theory of Value—The Canadian Economics of H.A. Innis* (Toronto, 1972), p. 57. For constructive interpretation of Innis's "cyclonics," see *ibid.*, chap. IV.
24. One may get some insight into E.E. Lampard's approach in "The Evolving System of Cities in the United States: Urbanization and Economic Development," in H.S. Perloff and L. Wingo eds., *Issues in Urban Economics* (Baltimore: John Hopkins, 1968), pp. 81-139.
25. On the first front, see L.A. Boland, "Time in Economics vs Economics in Time: the Hayek Problem," *Canadian Journal of Economics* (May 1978); on the second front, the flavour of the quasi-mystical arguments of that sort is best conveyed by Jacques Ellul, *La technique* (Paris: A. Colin, 1954). In context of Canadian urban studies, one may find examples of over-explanations of both sorts: overemphasizing the role of one social group or of technological change such as electrification.
26. These points are developed fully in Gilles Paquet and Jean-Pierre Wallot, "Pour une méso-histoire du XIX^e siècle canadien," section 5.
27. This rough breakdown is not in contradiction with the one conventionally used in textbooks. For more details, see O.J. Firestone, "Development of Canada's Economy, 1850-1900," in NBER, *Trends in the American Economy in the 19th Century* (Princeton, 1964); E.J. Chambers and G.W. Bertram, "Urbanization and Manufacturing in Central Canada, 1870-90," in S. Ostry and T.K. Rymes, eds., *Papers on Regional Statistical Studies* (Toronto, 1964); H.G.J. Aitken, "The Changing Structure of the Canadian Economy," in H.G.J. Aitken, et al., *The American Economic Impact on Canada* (Durham: Duke Univ. Press, 1959). For our purposes, we have simply provided thumbnail sketches in order to fix ideas for those less familiar with Canadian economic development. See also R. Durocher, et al., *Histoire du Québec contemporain*, (Montreal, 1979).
28. G.M. Meier, "Economic Development and the Transfer Mechanism Canada 1895-1913," *Canadian Journal of Economics and Political Science* (February 1953), pp. 5-6.
29. G.A. Stelter, "Introduction" to the symposium "The Canadian City in the 19th Century," *Urban History Review/Revue d'histoire urbaine*, 1-75 (June 1975), p. 2.
30. *Ibid.* This issue contains vignettes of Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, Winnipeg and Vancouver.
31. We would like to introduce here a distinction proposed by Mancur Olson Jr. between *source* and *cause* of growth. "The sources of growth have the same relationship to the causes of growth as the small streams and lakes that are the 'sources' for a river have to the meteorological and geological phenomena that 'explain' why a given watershed has the location, shape, flow of water that it has." M. Olson, *The Political Economy of Comparative Growth Rates* (mimeo without date).
32. P.G. Goheen, *Victorian Toronto, 1850 to 1900* (Chicago: Univ. of Chicago, Dept. of Geography, 1970); Annual reports of the *Groupe de recherche sur la Société montréalaise* and J.-P. Bernard, et al., "La structure professionnelle de Montréal en 1825," *Revue d'histoire de l'Amérique française*, 30 (Dec. 1976), pp. 383-415.
33. See J. Hare, "La population de la ville de Québec, 1795-1805," *Social History*, 7 (1974), pp. 23-47.
34. Such a position would parallel what has been found in the analyses of the evolution of large-scale organizations like enterprises. In a sense, Lampard's dynamics for the city is very much like Stigler's dynamics for the growth of the firm. The Lampard/Stigler approach insists on the differentiation/specialization mechanism with the consequence that market-type mechanisms continue to be the main co-ordinating mechanism for flows of goods, services and information. The alternative approach stresses the integration and agglomeration mechanisms with the consequence that a greater importance accrues to administrative mechanisms in the co-ordination of activities. The point was made in connection with the theory of the firm by A. Chandler, "Institutional Integration: An Approach to Comparative Studies of the History of the Large Scale Enterprise," *Revue économique* (March 1976), pp. 177-199.
35. The two items mentioned earlier in this paragraph were presented as part of a debate on the character of Canadian urban development at the annual meeting of the Canadian Historical Association in June 1974: J.M.S. Careless, "Urban Development in Canada," and S.D. Clark, "Canadian Urban Development," *Urban History Review*, 1-74 (June 1974), pp. 9-19. The statement by G.A. Stelter is quoted from the introduction to section III, "Metropolitan Growth and the Spread of the Urban Network," in Stelter and Artibise, eds., *The Canadian City*, p. 51.
36. Careless, "Urban Development," p. 13.
37. The concept of economic shadow is developed in D.M. Ray, *Market Potential and Economic Shadow* (Chicago: Univ. of Chicago, Dept. of Geography, 1965). In another paper published in 1966 in S. Ostry and T.K. Rymes, eds., *Regional Statistical Studies*, Ray shows that the differential between rates of growth in manufacturing over recent years have been accompanied by differences in important socio-economic characteristics. It is clear that the foreign ownership phenomenon is not as important in the late nineteenth century as it is now, but it illustrates sharply that the forces shaping the Canadian cities may be *continental* and may have been continental ever since the late nineteenth century.
38. François Perroux defines 'L'emprise de structure' as "la combinaison des actions asymétriques exercées plus ou moins durablement par un sous-ensemble. A sur un sous-ensemble B qui tendent à substituer, à la décision de B, la décision de A." *Indépendance de la nation* (Paris, 1969), p. 117. This has some of the flavour if not the tone of the dependency literature. Professor Easterbrook, "The Entrepreneurial Function in Relation to Technological and Economic Change," in B.F. Hoselitz and W.E. Moore, eds., *Industrialization and Society* (Paris: UNESCO, 1963) pp. 57-73, has shown how centre/margin interactions may succeed in preventing the transformation at the periphery as entrepreneurship at the margin tends to "strengthen rather than challenge the control of the centres." Not only is Canada regarded as a margin of the North-East United States, but one might also regard the Atlantic and the Western provinces as being in the same position vis-à-vis central Canada during the period of interest. One may legitimately argue (as W.T. Easterbrook does) that this 'emprise de structure' transmogrifies the impact of technological change and of industrialization on the pattern of development — but we would add also on the pattern of urban growth.
39. Albert Faucher, *Québec en Amérique* (Montreal: Fides, 1973).