MARGINAL REGIONS IN DISCURSIVE SPACE: AN EXAMINATION OF SOCIO-ECONOMIC CONDITIONS, DEVELOPMENT PATHS AND SPATIAL DIFFERENTIATION IN THE ECONOMIC SYSTEMS OF THE CANADIAN AND RUSSIAN NORTH

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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This dissertation is an effort to provide a new insight into the problem of regional
development in remote areas under changing global and national political and economic
conditions. It undertakes an assessment of shared economic histories, recent changes and future
possibilities of socioeconomic prosperity and sustainability in marginal regions of Canada and
Russia.

The first chapter re-examines the structure of Canada’s and Russia’s space-economies by
evoking the concept of regional multichotomies and economic marginality. I consider whether
outcomes, geographic patterns and spatial logics of regional differentiation in the two countries
are similar and explore the evidence of similarity between the North(s).

Finding development outcomes in the Russian and Canadian North strikingly similar, the
second chapter uses a combination of discursive analysis and regulation theory to re-interpret the
origins of present-day problems and examine the genealogy of northern development. It argues
that the Canadian and Russian northern development regimes shared profound commonalities.
From these positions, the chapter compares and critiques past and present policies of regional
development in the two Norths, and discusses their viability.

The third chapter dwells upon a concept of ‘development regimes’ to analyze and compare
contemporary regional development policies. It further investigates how recent economic
development policies in the two Norths are adapting to changing economic and political realities,
and if they were able to deliver desirable results to northern communities. The chapter compares
and critiques contemporary policies and discusses possible alternative perspectives that reconcile
an emerging postcolonial paradigm of development and realities of post-Fordism. It introduces
the notion of the neo-staple development regime and describes its manifestations (Impact and
Benefit Agreements).

The fourth chapter presents a case for fostering knowledge-based development and creative
capital in the North. It builds on the innovation systems and institutional geography literatures to
argue that the creative capital in the periphery is a pivotal factor of regional development. The
chapter provides a conceptualization and empirical analysis of the creative class in remote
regions. Contrary to the metropolitan bias, I argue that creative ‘hot spots’ beyond metropolis
exist, and could become the centres of regional reinvention, if appropriate policies are introduced
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INTRODUCTION

This dissertation is an effort to provide a new insight into the problem of regional development in remote areas under changing global and national political and economic conditions. It aims to undertake an assessment of shared economic histories, recent changes and future possibilities of socioeconomic prosperity and sustainability in marginal regions of Canada and Russia.

Northern regions of Canada and Russia share both remarkable similarities and significant differences. Both regions occupy remote, but extraordinarily large parts of vast and sparsely populated countries, both have unfavorable climatic conditions, outstanding resource potential, and a colonial past. Being deeply peripheral or, more precisely, frontier regions, the Canadian and Russian North share many ‘marginal’ conditions (economic, social, political), which are so typical for the world’s peripheries (Gradus & Lithwick, 1996; Lithwick & Gradus, 2000).

Northern frontiers have always been considered as economically troubled and marginalized spaces. Regional development theories of all sorts, from neoclassical economics to neo-Marxist radicalism, from neo-Schumpeterian institutionalism to the Krugmanian ‘new economic geography’, paint a picture of disadvantages experienced by peripheries. Friedman’s (1966) idea of peripheries as ‘catching up’ spaces is, of course, a more optimistic ‘final equilibrium’ view, which contrasts with disequilibrium theories such as of uneven development/dependency (Smith, 1984; Pretes, 1988) and cumulative causation (Myrdal, 1957; Krugman, 1991).

Market and non-market underpin the conditions of economic disadvantage and marginality in northern frontiers, like they do in many other peripheral regions around the world. Economic development efforts in the North face no less formidable challenges and obstacles than experienced in the Third World. In addition, these northern frontiers suffer from similar
development mis-steps prompted by colonial paternalism and social engineering (Hamilton, 1994; McCannon, 1998).

In the past, and especially in the 20th century, northern regions of the two countries had diverging paths of development, as they belonged to different and adversarial political and economic systems. Some observers noted that “the very nature of the two governmental systems complicates any comparison” (Barr & Bradshaw, 1983, p. 14) between the two ‘Norths’. Resource Fordism in the Canadian North (Jenson, 1989; Southcott, 1998, Hayter & Barnes, 2001) with its corporate capitalism and welfare governance, in many ways contrasted the socialist system of the Soviet North and East, with its control and command economy and communist political regime (Slavin, 1985; Wood, 1987).

At the same time, the collapse of the Soviet Union and the weakening of the Canadian welfare state, followed by the neoliberal revolution in both countries, posed new, and in many ways similar challenges to northern frontiers. This change serves as a new incentive for a growing interest to the internationalized approach to northern development. In this vast area of research, however, there are some themes that appear to be the most crucial. A spatial framework of socio-economic change, changelessness and development in the North is one of such themes.

Economic development in the North has been a subject of heated debates in the course of many decades in both Russia and Canada. In Russia, the Soviet policy of “conquering the North” by industrializing and populating it faced mounting criticism since the 1970s, and was eventually discontinued in the 1990s. In the wake of the “crisis in northern policy” (Leksin & Andreeva, 1994), the debate between the apologists of the Soviet expansionist development doctrine and proponents of the ‘scaled-down’ development continues (Agranat, 1992, 2007; Chilingarov & Kokorev, 2003; Lazhentsev, 2005; Pilyasov & Goldsmith, 1996; Pivovarov, 1997). The question “what to do with the North?” remains open.
On the one hand, the protagonists of development (Agranat, 1992, 1999, 2007; Kotlyakov & Agranat, 1994; Oleynik, 2007) argue that Russia must maintain its presence and economic activity in the North. They insist that the North is the Russia’s future: indeed, with just 8% of country’s population, the North gives over 90% of diamonds, cobalt, platinum, natural gas, and copper, 75% of crude oil, over 60% of gold, and 50% of lumber and fish produced in Russia.

The other camp, however, insists that the way the Soviet/Russian North has been developed is inefficient, because of the extremely high costs of production and excessive subsidies (Gladky, 2006; Hill & Gaddy, 2003; Leksin & Andreeva, 1994; Pilyasov & Goldsmith, 1996; Pivovarov, 1997). These hikes, they contend, are not solely caused by the harsh environment and remoteness, but by the inefficient industrial organization and overpopulation. Millions of northerners who lost their jobs during the post-Soviet economic crisis live in misery (Lynch, 2003). Therefore, they argue, the North must be “relieved” of its “surplus” population and “unessential” economic activities. In the 1990s the Russian government embraced this argument, and implemented policies (albeit not very thoroughly) to deindustrialize and depopulate the North.

Interestingly, both sides of the debate in Russia appeal to the Western, first of all Canadian, experience to substantiate their viewpoints (e.g., Agranat, 1992; Pilyasov & Goldsmith, 1996; Lazhentsev, 2005). However, either side demonstrates an apparent superficiality in understanding the realities in the Canadian North. Meanwhile, Canada itself has been debating and reinventing its northern development paradigm for the last 30 years (Barre, 1987; Bone, 2003), and the conclusion of this process is yet to be reached. Complexities associated with the neoliberalizing state, strengthening Aboriginal power, rising environmentalism, growing global competition and increasing geopolitical concerns present a serious development policy conundrum (Cameron & White, 1995; CARC, 2006; Solomon, 2004). Canada, just like Russia,
has its own skeptics, who reject the very idea of developing the North (Howard & Widdowson, 1999). Meanwhile, northern regions and communities (especially Aboriginal) continue to lag behind southern Canada in terms of socio-economic well-being (e.g., Bone, 2003; Green & Bone, 1984; McHardy & O’Sullivan, 2004). It appears that past development paths and current formidable economic problems in the Canadian and Russian North, although differ in scale, share much more substantive similarities than it is traditionally recognized.

With pivotal changes happening in the Arctic, the question of developing northern frontiers has boldly returned to the domain of everyday politics and policy making. It seems that as never before, Russia and Canada, natural allies in developing the North, are eager to share their experiences in fostering development in the northern frontiers. Not accidentally, Canada announced the “first ever comprehensive northern strategy” in 2004 (CARC, 2006), and Russia produced a new Concept of socio-economic development of the North in 2000 (Pravitel’stvo RF, 2000). This sharing is, however, yet to happen.

Mutual experiences in developing the North have always been of interest to both academics and practitioners in Canada and Russia. However, political hostilities and ideological divides of the Cold War era greatly limited possibilities for exchange and learning. Traditionally, the Soviet literature on the Canadian North focused on the military aspects and critiqued Canadian northern development strategies (Black, 1988). Nonetheless, Soviet authors repeatedly pointed out that the Canadian development path resembles the Soviet one in respect to the government involvement in development processes (e.g., Cherkasov, 1979). Some even praised Canadians for higher economic efficiency of Canadian northern industries, but slammed Canada for its dependency on US capital in developing the North (Agranat, 1984; Cherkasov, 1983; Karpov, 1972).

In the West, the Cold War era literature on the Soviet North varied in its assessments from the admiration of Soviet successes in industrializing the North, to the blistering criticism of
militarization, environmental negligence, ideological opportunism and geopolitical expansionism of the Soviets (Armstrong et al., 1978; Barr & Bradshaw, 1983; Dienes, 1987; Taaffe, 1984; Wood, 1987). For example, in 1971 Pierre E. Trudeau called the city of Noril’sk (a 200,000 megapolis in the Arctic) a “modern wonder of the world” (Vazhnov, 1994). Advantages and especially flaws of the Soviet northern development policy were under an increasing scrutiny in the 1970-1980s, when the northward shift of the Soviet economy became apparent (e.g., Dienes, 1987; Taaffe, 1984; Wood, 1987).

However, research collaboration in the 1980s was hindered by the western sanctions on scientific exchange against the USSR. It seems that collaboration resurfaced in the late 1980s after the 1987 Gorbachev’s “Murmansk speech” (Cherkasov, 1988). With the collapse of the USSR and looming economic crisis in Russia (and in the Canadian North), the collaboration has never achieved a desired scale, although it has never ceased to exist (e.g., Agranat, 1992; Cherkasov, 1998).

In sum, there have been surprisingly a few studies that practically addressed the issues of mutual experience and commonality in development paths of the two Norths (Agranat, 1984, 1992; Cherkasov, 19791; Barr & Bradshaw, 1983; CARC, 1988), and the process of reopening each other’s experiences is in its early stages (Solomon, 2004). Most recently, several years of collaborative efforts between Canadian and Russian researchers under the auspice of the INAC2 Circumpolar Directorate produced four excellent monographs that document mutual experiences (Solomon, 2004, 2005, 2006, Young, 2007), but they do not (nor are designed to) tackle fundamental questions in a historical-economic and spatial perspectives. Recently, especially after the publication of the “Siberian Curse” (Hill & Gaddy, 2003), the Canada-Russia comparisons fueled a contentious debate concerning real or perceived historical differences in

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1 Grigory Agranat and Arkadii Cherkasov were the principal authors on the Canadian North in the USSR.
2 Indian and Northern Affairs Canada.
developing countries’ frontiers (Gaddy & Hill, 2006). Led by economists and political scientists, this debate, albeit very informative, reiterated the superficiality and lack of understanding of the geographical substance and societal origins of northern development projects in each of the two countries.

**RESEARCH OBJECTIVES AND RESEARCH QUESTIONS**

**Purpose and scope**

The main objective of this study is to determine whether development paths and regional differentiation in the Canadian and Russian North share common fundamental causes embedded in social construction of marginal space and discursive production of development regimes. Accordingly, this study has three thematic foci: spatial aspects of economic marginality, embedded frameworks of development (development regimes) and the nature postcolonial development alternatives. It aims to answer the following questions:

1. *Do Canadian and Russian Norths demonstrate conditions of marginality and are these conditions similar in the two regions?*
2. *Why, despite different paths of development, do the Russian and Canadian northern geoeconomic systems possess substantial similarities in their contemporary socio-economic conditions, problems and economic structures?*
3. *Is there evidence of Canadian and/or Russian governments are implementing regional development policies that can adequately address conditions of marginality in the new economic settings of the 21st century? Were development policies and development paths in the Canadian and Russian Norths converging or diverging in the last 20 years?*
4. *Is there evidence of an emerging new development regime(s) that can reconcile a postcolonial development ideal with the realities of post-Fordist capitalism?*
As one may see, I explore the problem of economic development in the North, then identify its driving forces and, lastly, turn to finding possible solutions to an apparent conflict between hegemonic development models and unsettling economic realities. The study addresses these questions in four essays. Each essay focuses on one research question from the above list while maintaining links with findings in the preceding essays.

In this manner I advance five main hypotheses:

1. Regions of the Canadian and Russian North demonstrate conditions of marginality, identified along multiple vectors in the context of the core-periphery continuum.

2. Principal similarity of development regimes in the Canadian and Russian North determined commonalities in economic marginalization and regional differentiation of northern frontiers.

3. In the last 20 years regional development policies in the Russian and Canadian North demonstrated both signs of convergence and divergence. Post-developmentalist approaches appear to be advantageous in its ability to adequately address conditions of marginality in the new economic settings of the 21st century.

4. The emerging neo-staple development regime that rests on contractual collaboration between the state, corporations and communities might serve as a useful way to reconcile the realities of post-Fordist capitalism with alternative modernities of the local.

5. Knowledge-based and creative economies in the North, pursued thoughtfully, can put modern capitalism at the service of remote communities and, thus, also become a part of a postcolonial solution.
DISSERTATION STRUCTURE

The following chapters are designed to provide a coherent story, which by answering the aforementioned questions and advancing arguments in a consecutive manner develops an up-to-date understanding of northern frontiers as functional regions within national geoeconomic systems. The first chapter re-examines the structure of Canada’s and Russia’s space-economies by evoking the concept of regional multichotomies. I consider whether outcomes, geographic patterns and spatial logics of regional differentiation in the two countries demonstrate similarity and evidence of common mechanisms of regional polarization. Dwelling on these findings, I further explore the evidence of similarity between the North(s) in two countries in terms of their economic relationships with the mainland. In broader terms, a comparative approach, undertaken below, aims to find out whether logics, processes and conditions of spatial differentiation (particularly in respect to northern frontiers) remain similar in distinct economic, social and political settings.

The second chapter pursues three objectives. It starts by discussing socio-economic challenges that I identified in my preceding chapter. Finding them strikingly similar, the paper uses a combination of discursive analysis and regulation theory to re-interpret the origins of present-day problems and examine the genealogy and outcomes of northern development trajectories. It argues that the Canadian and Russian northern development regimes shared profound commonalities, which are as important as differences. Lastly, from these positions, the paper compares and critiques past and present policies of regional development in the two Norths, and discusses their viability. I finish by pointing to possible alternative perspectives that reconcile an emerging postcolonial paradigm of development and realities of post-Fordism.

The third chapter addresses three objectives. First, it dwells upon a concept of ‘development regimes,’ suggested in the previous chapter, to discuss and compare contemporary regional development policies. The second objective is to investigate how (or whether) recent
economic development policies in the two Norths are adapting to changing economic and political realities in both countries and if they were able to deliver desirable results to northern communities. Finally, the paper compares and critiques present policies and discusses possible alternative perspectives that reconcile an emerging postcolonial paradigm of development and realities of post-Fordism.

The fourth chapter presents a case for fostering knowledge based development and creative capital in the North. It builds on innovation systems and institutional geography literatures to argue that, because of its transformative role, the creative capital in the periphery is a pivotal factor of regional development, no less than in metropolis. The paper provides a conceptualization and empirical analysis of the creative class in remote regions. It extends the appropriate class metrics and applies them to 34 communities in the Canadian North. I attempt to identify creative clusters, i.e. communities that serve as creative ‘hot spots’. Contrary to the metropolitan bias, my results indicate that peripheral communities may not be ‘hopeless places’ fully deprived of the creative class. I argue that creative ‘hot spots’ beyond metropolis exist, and could become the centres of regional reinvention, if appropriate policies are introduced in support.

RESEARCH CONTEXT: FUNDAMENTAL ISSUES AND MAJOR THEMES

Spatial structures of economic development, globalization and regional disadvantage

Lagging regions, globalization and modern capitalism. Economic and social development in less favored regions (LFRs) has been on the radar screen of many generations of economic geographers. There is little doubt that the uneven pattern of economic change has always constituted a fundamental part of the geographic inquiry. However, both classical and contemporary theories of regional development tend not only to concentrate on more advantaged, “winning” or central regions, but to marginalize the periphery as a subject of a
thorough study (Hayter et al., 2003). This trend is especially noticeable in the recent decades, when virtually all major theoretical breakthroughs emerged from studying rapidly growing core regions, whether it be Krugman’s manufacturing cores, Porterian clusters, advanced regional innovation systems or places with explicit institutional advantages (Porter, 1998; Krugman, 1995; Lundvall, 1992; Saxenian, 1994). Peripheral areas, especially most remote and marginal ones, were on the outskirts of the fundamental inquiry. Meanwhile, some specialists convincingly argued that peripheries may serve as the focal points of the contemporary shifts in economy and society: they most definitely are diverse and deeply contested spaces where “there is a clash of industrial, environmental, cultural and geopolitical dimensions not found in cores” (Hayter et al., 2003, p. 19). Moreover, the external effects of globalization and intersection of internal institutional values, associated with industrialism, environmentalism, aboriginalism and imperialism, make peripheries “remarkably complex and fragmented [in their] local-global dynamics” (Hayter et al., 2003 p. 21).

This, certainly, does not suggest that peripheries were completely outside the interest of the mainstream economic geography. In many ways, particularly in the recent years there was a considerable return to studying LFRs from newly defined perspectives of economic advantage and competitiveness. The literature in the 1990s and 2000s clearly pointed out that LFRs were deeply touched by the pivotal transformations in the world economy, and that their socio-economic systems try to adjust (with or without success) to meet new realities. Among these “new realities” and changes most decisively affecting LFRs were: a knowledge-based endogenous foundation of the economy (Romer, 1990; Feldman, 2000) – that placed resource-based economies in conditions of persistent structural disadvantage due to deteriorating terms of trade for raw materials (Sarkar, 1994), globalization (Webber, 2000), emerging post-industrial society (Bell, 1973), post-Fordist regulation (Harvey, 1989; Tickell & Peck, 1992) and the
increasing role of social embeddedness in economic competitiveness (Amin, 1999; Gertler, 2004). Economic changes coincided with deep social shifts in the periphery, including growing environmentalism, political fracturing, contestability, redistribution of power and reinvention of governance, and emancipation of various social groups.

There is a number of major conceptual questions concerning contemporary peripheries that remain unanswered. Among them what are ‘the periphery(ies)’? What conditions and characteristics do they possess? Are they different from the past? How and why if they are? What forces shape development of marginal regions? How do these regions participate in global processes? How are these forces modified by local conditions?

**Core, periphery and multicentered regional structures.** As mentioned earlier, there have been claims that peripheries occupy a remarkable place in the post-modern world. Fundamental changes in functioning of socio-economic systems under globalization and post-Fordism affected peripheries by transforming mechanisms and forms of peripherality. The nature of these redefined peripheries and northern frontiers in particular is still an open question (e.g. Gradus & Lithwick, 1996; Lithwick & Gradus, 2000).

Perspectives on regional development as geographically uneven process have been central for many theoretical traditions. Center-periphery dichotomy was in different forms represented in the works of such diverse scholars as T. Hagerstrand, J. Friedmann, I. Wallerstein, N. Smith, P. Krugman and others, who offered arguments based on a great variety of conceptual frameworks, from neo-classical to neo-Marxian. In most basic terms, the core/periphery approach explains how the economic system evolved into distinct spatial units.

Industrialization (or other advanced form of economic development) takes place in a few favored areas known as cores, while the rest of the territory is a periphery that supplies the core with raw materials, energy, food, etc. Consequently, the world is divided into two interrelated
functional units: industrial cores and a resource periphery. Core determines the direction and rate of development of its periphery. Sometimes the core is referred to as a Heartland and the periphery as a Hinterland (McCann & Gunn, 1998). Core regions tend to be relatively powerful and wealthy, while peripheral regions are usually relatively weak and poor. In terms of trade, the core exchanges manufactured goods for primary products from the periphery. Some (e.g. neo-Marxian theorists of ‘uneven development’ like Neil Smith) maintain that this trade enriches the core and impoverishes the periphery, whereas others (neo-classical economists) argue that the market economy benefits all regions.

The core-periphery (CP) approach focuses on the asymmetric relationships that function at different spatial levels: global, regional and local. The CP concept may be viewed as a multiple system of “nested” cores and peripheries, each operating at particular spatial levels, but with all levels interconnected and dominated by the highest-order core. In this sense, peripheral regions are underdeveloped essentially not because of their marginal location per se, but because of their relative position to cores. In other words, the CP model implies epistemological relativism, when there may be no periphery if there is no core.

If most CP theorizations agree on this matter, the nature of relationships between core and periphery are often conceptualized very differently. Theoretical conceptualizations of regional structure draw strikingly different conclusions from the fact of territorial differentiation. Both character and vector of the core-periphery relationships are interpreted with great discrepancy of positions. Some argue that the inferior position of peripheries stems from their ‘weak linkages’ with cores (e.g., neoclassical, institutional economists). Others argue that exactly the opposite is true: strong ties with the core impede development of the periphery (e.g., staple thesis, uneven development theorists).

There are many alternative interpretations of the CP idea. Neo-classical economists, for example, argue that the core, by investing in the periphery, is not exploiting but developing the
latter (the modernization perspective). Following the classical concept of self-equilibrating economy, they maintain that regional differences are only temporary and will disappear with time, when economic equilibrium will be achieved.

J. Friedmann (1966) combined elements of export base theory and cumulative causation approach (Myrdal, 1957) by arguing that exogenous economic growth in the periphery is possible, if export demand induces the rise of non-basic local sectors. Rejecting self-equilibrating neo-classical model, Friedman envisioned more complicated set of relationships between core and periphery, although he still was a strong believer in regional convergence.

Friedman’s model has been criticized most notably, on the grounds that *uneven development* (Smith, 1984) is not the inevitable consequence of development *per se*, but of a particular mode of production. The theory of uneven development mastered by neo-Marxist writers (Castells, Smith, Harvey) defines uneven development as resulting from contradictions of capital, relationships of exploitation and unequal distribution of power.

In the recent decades, exogenous theories of economic development were challenged by concepts based on endogenous growth. Krugman (1991) used the case U.S. Manufacturing Belt to devise a new core-periphery concept known as *‘new economic geography’*. His model of geographic concentration, based on Myrdal’s (1957) cumulative causation principle provides an idea why economic activity tends to be concentrated in a specialized region, which possesses initial advantage followed by accumulating agglomeration economies. Krugman envisiones a long-run endogenous divergence among regions, i.e. a persistent disequilibria status, as long as low, but non-zero transportation costs and strong agglomeration effects are sustained.

Institutional economic geography offers another argument. It argues that opportunities of peripheries to take advantage of innovations are somewhat truncated by their lower institutional capacity. Deficiencies of institutional capacity may be related to various reasons of economic, cultural, political and social nature (Fucks & Shapira, 2005). ‘Learning’ in the periphery could
be extremely difficult, because peripheral regions do not have context infrastructure and human capital to utilize knowledge. Poor networking and weak external connections exacerbate regional lock-in (see Morgan, 1997).

Finally, a Canadian home-grown Innis’s *staple concept* was the first theorization of the core-periphery relations in Canada (see Barnes, 1993, 1999). Innis proposed a notion of the dichotomy between frontier (hinterland) and mainland (core). Being a specific case of the economic base theory, staple thesis deviates from its traditional views by rejecting a neo-classical thesis of achieving equilibrium. Whereas core regions enjoyed economic prosperity by exercising their comparative advantages by using staples, there were no, in Innis’s opinion, advantages to specializing in staples. Staples production resulted only in the incomplete development and what he called ‘staples trap’ (see Barnes, 1993). The ‘staples trap’ leads to the dependency of staple-producing region on powerful core.

Recent changes in the global and national geo-economic systems question appropriateness of traditional views on relationships between cores and peripheries and about the relevance of these categories themselves. Some contended that in the new conditions of flexibility, the core-periphery dichotomy would remain in place, although its nature would change. Some authors predicted that ‘high waged skill-flexible core’ would be opposed to ‘low waged, time-flexible periphery’ (Jessop, 1987 cit from Gertler, 1988). In a slightly different view, Welch (1996, p. 47) pointed out, “while the tendency will continue for core and periphery characteristics to emerge within geoeconomic systems, the geographical nature of the two – and particularly of the periphery – will be less easy to define”. Further, he insisted that “it is no longer appropriate to view periphery as a single, homogenous entity – if it ever was” (*ibid.*). Therefore, the tendency of post-industrial (post-Fordist, post-welfare, post-modern) era is the *differentiation* of peripheries and, consequently, differentiation of their relationships with cores (Escobar, 1995;
Welch, 1996; Bourne, 2000). Generally supporting this thesis, a number of empirical studies on restructuring of in the periphery revealed two major tendencies: one of diversification (Clemenson, 1992; Ehrenshaft & Beeman, 1992; Randall & Ironside, 1996; Bone, 1998), and another of convergence of some peripheral and core regions (Bollman, 1992, Southcott, 1998).

Most recent accounts dismiss traditional representations and interpretations of peripherality (inspired by the Friedmann’s core-periphery concept, uneven development theory or neo-classical models) and search for novel approaches. Among then is the institutional concept of peripherality that operationalized such categories as institutional thinness, weak hard and soft infrastructure, institutional lock-in, branchplant culture and so forth. Without regional renewal, the economic path-dependency based on old technologies and economic practices, and institutions persists (Scherrer, 2005) and, thus, further peripherization, is the prospect for many peripheral regions (Bastian & Hilpert, 2003).

Considering the growing multiplicity of core-periphery relationships (economic, social, political, etc.), it becomes particularly challenging to define and conceptualize peripherality (or underpinning it marginality). Bourne (2000) outlined conditions and outcomes of marginality in peripheral urban systems. He described the conditions of marginality through different ‘organizational logics’ of spatial relationships between urban core and urban periphery that are embedded in alternative spatial models of urban systems. This concept of ‘multiscalar’ marginality is yet to be further explored and empirically substantiated.

**Theorizing Regional Marginality.** Although there are various understandings and interpretations of marginality (within and beyond economic geography), the basic idea of marginality refers to “a complex condition of disadvantage that individuals and communities experience, because of vulnerabilities that may arise from unfavorable environmental, cultural, social, political and economic [and locational] factors” (Mehretu et al., 2003, p. 320). This
disadvantage results from being ‘distant’ (economically, socially, politically, culturally, etc.) from a respective system’s ‘center’ (of power, competitiveness, wealth, etc.) and, as a result, less integrated, exploited or isolated from the rest of the system. Marginal regions lag behind expected levels of performance, have severely truncated linkages with the ‘mainland’ and demonstrate underdevelopment of their internal potential (Gurung & Kollmair, 2005; Sommers et al, 1999).

Summarizing existing definitions (Andreoli, 1992, Leimgruber, 2004; Schmidt, 1998, Sommers et al, 1998; Mehretu et al, 2000; Gurung & Kollmair, 2005), one can identify three major characteristics (or conditions) of regional economic marginality: (1) regions are subordinated, dominated and are in asymmetric relationships with other subsystems, including the system’s core(s); (2) lag behind an expected level of performance on various socio-economic dimensions compared with average condition in the territory as a whole (a “mainstream”) or in the territory’s core(s); (3) residual or alien to the system, i.e. substantially deviate from the system’s mainstream behaviors (non-integrated, or have an outsider status).

Sommers et al (1998) and Mehretu et al, (2003) argue that marginality should be studied not only in its observed forms (i.e., conditions of marginality), but in terms of processes, which underpin them. These processes are driven by dominant production systems, power relations, geographic location, or other logics of spatial organization. At the most generic level, regional marginality emerges as a systemic phenomenon driven by two major forces: competitive inequality and hegemonic inequity. Competitive inequality results from outcomes of market competition. Hegemonic inequity originates from imposed inequities created within the system by a regulation system and its power-holding agents (e.g. governments, corporations, elites). Apparently, in capitalist societies both sources of marginality coexist. Market forces and hegemonic projects may have same or opposite vectors.
Some theorists of regional marginality argue that the core-periphery continuum must be extended to include the margin as a separate type of regions beyond periphery (Leimgruber, 2004). Although a conventional view is to consider marginal regions as parts of the periphery, many see them as a distinct type of functional territories (Andreoli, 1992; Schultz, 1998), thus extending the core-periphery continuum(s) to the core-periphery-margin (CPM) continuum(s). I accept the latter approach in a sense that I use the term margin to designate ultimate peripheries, which are distinct in the level of isolation, disintegration and marginality from less isolated and disintegrated peripheries (as it becomes clear from the analysis).

Development paths, frameworks of embeddedness and regulation regimes

The role of internal and external frameworks of embeddedness. Human geography has long maintained that economy is embedded in a wide range of social relations. Economy as a process is constructed by the society through a complicated interplay of structures and agencies (Massey, 1984; Giddens, 1984). Human geographers followed different schools of thought in assigning weights and meanings to these two categories (e.g. structural Maxism, structuration theory, poststructuralism), but it became almost conventional to understand that economic development is socially and spatially framed. If we accept this thesis, it is natural to suggest that these frameworks of embeddedness are multiple and can reflect various sides and scales of social reality. They also can be formally and informally institutionalized.

Embeddedness of economic development has been extensively studied from different perspectives. The conflict of societal forces, means and modes of production interconnected by the flowing capital is at the core of Marxist theorization (Harvey, 1989), the interplay of regimes of production and modes of social regulation are at the focus of the regulation school (Jessop, 1990; Tickell & Peck, 1992), innovation and path dependency determine the economic change in neo-Schumpeterian evolutionary theories (Cook et al, 2004), whereas the binding and enabling
role institutions is the epicenter of the institutional economics (Grabher, 1993, Storper, 1997).

The ideas of societal embeddedness (formally or informally institutionalized, internal and external) of economic change and path dependency are critical to understanding both processes: the *economic change* and *regional difference* (including the comparison between Canada and Russia).

In order to understand and interpret the economic restructuring and marginalization in the frontier as well as to conceptualize successful coping strategies, it is necessary to uncover the nature of the transformation. This is by far the most important theoretical issue in studying regional differentiation and dynamics. Moreover, it has direct practical implications as it allows developing adequate measures of improving competitiveness and survivability of socio-economic systems. Policies of economic development associated with different interpretations of societal embeddedness may be assessed against empirical evidence to determine their relevance and applicability into particular geographical circumstances, e.g. in the frontier.

*Nature of development: Regulation theory, institutionalism and discourse analysis.*

Frameworks of embeddedness can be viewed in a number of ways and at various scales. It appears that international comparisons involving regional economic structures would be better served by a structural model, in which societal agents and forces operate within a well-defined system of relationships. By combining regulationism and institutionalism with post-structural Foucauldian approaches, one can achieve an important balance and provide a unique insight into processes of regional differentiation.

In a classic Regulation model, the *regime of accumulation* determines organizing principles of the economy (production, consumption and transaction regimes), whereas mode of social regulation (MSR) is responsible for establishing the regulation environment – an institutionalized set of social regulation practices. Informal and formal institutions maintain a *regulation*
environment by creating and enforcing codes of conduct and rules of practice. The principles of economic organization and the regulatory framework are reciprocally related, since the compliance between them is necessary for the system to be stable (Liepetz, 1987; Harvey, 1989).

Regulation principles manifest themselves through institutions. Social institutions play a pivotal role in economic change, in both capitalist and (post)socialist settings (North, 2005). It has been demonstrated that differences in institutional frameworks are based on fundamental dissimilarities among regional societies, i.e. that institutions are regional phenomena (Amin, 1999). In other words, societal embeddedness is a significant factor of economic development (Grabher, 1993; Storper, 1997).

Public policies, in turn, can be seen as institutionalized products of dominant discourses, empowered by regional development actors (e.g. state and corporations). In Jessop’s terms (1990), discourses embraced by such ‘hegemonic blocks’ are societalized through societal structures and actor strategies, in which state plays the central role. That is why I emphasize the third component of a development regime – discursive paradigms of development. According to post-structuralists (Foucault, 1970), discourse is a socially embedded practice of obeying certain rules and, through formal or informal means, regulates behaviors of societal actors. Embeddedness of discourses is revealed through analyzing their archaeologies and genealogies.

Geographers argued that discourses form regional discursive formations, which “originate in, and display the effects of, certain physical, political economic, and institutional settings, [and are] grounded in material, political, or ideological power supremacies, demonstrate a continual tendency to extend over spaces with greatly different characteristics and discursive traditions" (Peet & Watts, 1993, p. 231). One of the well-documented discursive formations is, indeed, the Western discourse of development (Watts, 1993). In the 20th century, the hegemony of the development discourse derived from sociopolitical blocks that cemented uneven power relationships between metropolises and colonies, between ‘developed’ and ‘developing’ regions.
Albeit the development discourse is largely documented in the ‘Third World,’ the “internal colonies” have also been deeply affected (Sidaway, 2002).

‘Post-modern’ alternatives to regional development in the periphery

The place of LFR in the knowledge-based economy of post-industrialism. In the emerging post-industrial era, a position of less favored regions, in terms of their ability to generate and sustain knowledge-based economy, is far from certain. It became conventional to argue that for various reasons these regions, especially peripheries and frontiers, are greatly disadvantaged compared to cores (e.g. Gradus & Lithwick, 1996; Lithwick & Gradus, 2000). Different theoretical traditions offered their own explanations for the lower potential of LFRs in generating knowledge-based economic growth, including absence of agglomeration and clustering effects (Porter, 1998; Krugman, 1991), ‘thin’ institutional endowments and weak information networks (Morgan, 1997), technological and institutional lock-in (Fucks & Shapira, 2005), disconnectedness from the networks and communities of practice (Berry, 1996; Gertler, 2005), low creativity levels and absence of strong creative class (Florida, 2002), to name a few.

At the same time, another, more optimistic, perspective on economic futures of LFRs argues that these regions may be in a good position to accomplish path-creation and achieve regional reinvention. Some authors emphasized a window of opportunities opened up by a new knowledge paradigm, economic pressures (e.g. a severe crisis) to adapt to the new paradigm, change events that generate and support the transformation process and courses of action that push techno-economic development into a new direction (Bathelt & Boggs, 2005). They contend that ‘low start’ may be a positive factor for regional ‘break-through’, and that innovation-focused policies of regional development may deliver regional renewal (see Morgan, 1997). These arguments are in line with the basic Schumpeterian idea of regional evolution, when less dominated by existing technology regions become the birth-places for new technological paradigms through ‘creative destruction’ of their preceding economic systems.
It is in the spirit of Daniel Bell to contend that in the post-industrial (and, perhaps, post-Fordist (Harvey, 1989)) era, there are no low-tech economic sectors, and that innovations are vital for virtually all types of economic activity. However, one must be cautious about overgeneralizing these tendencies. In the regional context, it could be argued that, although all types of regions are able to conceive a sustainable knowledge-based economy, it does not necessarily emerge there by default. It will likely emerge in the core, but unlikely (at least in the short term) in the periphery.

If in Krugman’s, Porter’s or Florida’s models LFRs appear to be at the permanently losing side, with only few opportunities to emerge as new cores or clusters, other theoretical approaches to peripheral development provide more optimistic perspective. For example the ‘learning region’ concept argues that learning and endogenous growth may lead to the regional breakthrough (Morgan, 1997). However, this, as any other optimistic assertion is yet to be conceptually and empirically substantiated in the context of extreme economic marginality. Further in the dissertation I will argue that remote areas in Canada possess unique characteristics that make some northern communities ‘hot spots’ of creative economy.

Postcolonialism, local models and development solutions. Critical post-development and postcolonial scholarship provides a comprehensive critique of capitalist development regimes and their marginalizing effects on peripheral communities. These vast literatures that engage a variety of methodologies to advance what became known as ‘post-development’ and ‘post-colonial’ argument(s) (that can take more than one dissertation to survey) have been reviewed in a number of recent publications (Power, 2003; Radcliffe, 2005; Sidaway, 2007), so I do not attempt to repeat this discussion here. I will rather just stress particular aspects that are important for my study.

Post-development scholarship points out that the economic development ‘project’ of the 20th century relied upon a false picture of the reality in the “underdeveloped” regions as well as upon
erroneous ignorance of capitalism’s regional varieties (e.g., Escobar, 1995). Imposing the example of the Western economic success developmentalists continued a “civilizing mission” of colonialism and neither acknowledged obvious economic differences between the Global North and the Global South nor, more hidden from economists, cultural discrepancies. This, according to the post-development scholars, was the result of epistemological and cultural conditions of the production of developmentalist discourse within the society of Western economists. As many of Keynesian efforts perished in the 1980s, a new, neoliberal vision, took over the policies of development. But neoliberalism, seemingly, inherited the tradition to disregard “marginal voices,” dismiss the importance of alternative economies and ignore local discourses. Post-developmentalists are convinced that the idea of universal model of the economy should be abandoned in favor of “peripheral polymorphy” and hybrid models.

However the unconditional condemnation of any form of development rooted into capitalism is, in fact, counterproductive. Seeking the alternatives to development exclusively in localism, community and Indigenous responses and ignoring all-pervasive global capitalism is unlikely to deliver substantial changes to the marginal regions (Sharp & Briggs, 2006). A more useful way is to follow the argument of ‘constructive’ post-developmentalists (see Power, 2003; Radcliffe, 2005), who envision an alternative development regime as simultaneously based on emerging traditions of the post-industrial society, post-Fordist regime of regulation, and the postcolonial paradigm. This development strategy dwells on ‘situatedness’, appreciation of local knowledge, promotion of local initiative, devolution of control, development of knowledge-based economy, and emancipation of minorities (e.g., in “local models of development” (Hayter & Barnes, 2005)).
METHODOLOGICAL APPROACHES

The four chapters are united by the idea of a similarity between the development paths of the Russian and Canadian North. In accordance with my objectives I lay out my argument in several stages, starting by a quantitative analysis of regional characteristics in Canada and Russia, moving on to a qualitative interpretation of development trajectories and concluding by an exploration of alternative development options. As a result, I pursue multiple methodological approaches from factorial ecology and spatial ‘regionometrics’ to discourse analysis and critical postcolonial theory. Below I briefly introduce some of the methodological ground and innovations that are used throughout the dissertation.

**Regional multichotomy and latent vectors of regional differentiation.**

Each of the grand center-periphery concepts offers its own explanation of asymmetries within systems of regions by employing *distinct organizational logics of regional polarization* (market competition, power struggle, agglomeration effects, political dependency, institutional weakness, etc. (Bourne, 2000). Distinct theoretical approaches should not be interpreted as competing with each other, but as reflecting different aspects of differentiation, which create regional *multichotomies* (rather than a dichotomy) and heterogeneous (multiple) cores and peripheries (Welch, 1996; Bourne, 2000). This view may be called a *synergistic* view, because it sees a regional structure as a product of many differentiation processes (organizational logics) acting simultaneously. Since the processes of spatial differentiation are highly scale-sensitive, asymmetric relationships function at different spatial levels resulting in a multiple system of “nested” cores and peripheries, each operating at particular spatial level, but with all levels interconnected and dominated by the highest-order core. Consequently, when modeling regional structure, one should think of core-periphery continuum(s) as *multiscalar* (i.e. evolving along many dimensions), *multiscale* (i.e. existing at many spatial levels) and *multicenter* (i.e. having many heterogeneous cores and peripheries for each dimension and scale).
I operationalize this complexity to produce a coherent quantitative system by using the notion of marginality. The basic idea of marginality refers to “a complex condition of disadvantage that individuals and communities experience, because of vulnerabilities that may arise from unfavorable environmental, cultural, social, political and economic [and locational] factors” (Mehretu et al., 2003, 320). Marginal regions lag behind expected levels of performance, have severely truncated linkages with the ‘mainland’ and demonstrate underdevelopment of their internal potential (Gurung & Kollmair, 2005; Leimgruber, 1994).

My methodological approach to unveiling regional differentiation is based on several propositions. Most importantly, I assume that the each layer of an uneven structure of geoeconomic systems can be represented as a dichotomous model with two opposing spatial poles, i.e. geographic regions that occupy opposite positions in the core-periphery-margin continuum(s). The distinction between the two can be made by measuring a centrality-marginality gradient: a degree of marginality will vary along the core-peiphery-margin (CPM) continuum(s) with core areas being least and margins being most marginal. Since regional differentiation has multiple layers, the dichotomic structures will overlap producing multilayered and multichotomic configurations.

Secondly, hegemonic inequities and competitive inequalities that underpin marginality result from multiple organizational logics of regional differentiation. Thirdly, I conceive marginality as a measurable and indicative condition. Finally, I consider marginality as an inherently spatial phenomenon, because it reflects spatial manifestations of competitive inequalities and hegemonic inequities.

Bourne (2000), by examining urban inequalities in Canada, linked conditions of marginality to different embedded ‘organizational logics’ of spatial organization, which are described by alternative spatial models of regional systems. According to Bourne’s model that I introduce and develop in this dissertation, each logic produces unique conditions of marginality and inevitably
creates regional polarities. Many logics working together in a form of synergy, produce multiple CPM structures, and, ultimately, define regional multichotomies. The analytical task, therefore, is to develop a method capable of identifying corresponding vectors of marginality (created by one or many intertwined logics) and measuring regional polarities.

**Regulation regimes, discursive paradigms and development policies**

To understand and compare processes of regional development in the Canadian and Russian North, I link development discourses, institutionalized public policies and mechanisms of economic regulation. Altogether, these components describe unique *development regimes*, in which institutionalized regional regulation frameworks and discourses generate particular forms of regional development.

The discourse of development, dominant at a given time affects the formation of the regional development paradigm. A development paradigm may be defined as a socially embedded and legitimized through social institutions mode of conceptualizing and practicing development, including its purposes, means and methods. Major actors in the region, such as state and large resource corporations, perform as strategic interlocutors in forming and applying a regional development paradigm to existing principles of economic reproduction through a particular mode of social regulation. The interplay for these factors determines the nature of a development regime. Each development regime entails certain policies and favors selected types of economic development efforts over others. The change in a development regime sets off pivotal transformations in regional policies, brings about the revision of the old and the emergence of new development strategies.

A development regime is best described in terms of the Regulation theory by invoking such notions as a mode of social regulation, production regimes and bargaining among its primary actors, e.g., state, enterprises and unions. (Jensen, 1989; Smith, 1998; Southcott, 1998). Although the regulation theory was devised to explain the inner workings of capitalism, it has been applied
to socialist and post-socialist economic systems (Altvater, 1993; Smith, 1998). Some even argued (not too persuasively) that the state socialism was a ‘bastard’ form of Fordism (Altvater, 1993; Murray, 1992). In terms of regional development, the primary difference between the two, perhaps, is best described by the process, by which regulation frameworks operate. I suggest that, at least in the context of development in the North, regulation mechanisms vested into multiagent negotiations shared a lot in common. Instead of Fordist capital accumulation and circulation, mediated by negotiations between the state, corporations and unions, the determining factor in socialist economic regime is a process of bargaining between the capital-constrained state and investment-thirsty producers, in which the severity of bureaucratically determined capital constraints provides the ultimate regulation mechanism (Smith, 1998; Kornai, 1992).

**Critical inquiry into the societal fabric of capitalism and regional development**

In this study the post-development and postcolonial scholarship informs my epistemological stance rather than supplies a distinct methodology(ies). As Radcliffe (2005, 292) rightly noted “drawing on the highly distinctive approaches of Marxism and (often Foucauldian) poststructuralism, postcolonialism has given rise to a theoretically diverse set of approaches rather than a coherent theory or paradigm.” In fact, my methods may be a subject to critique by some members of these research communities as I primarily focus on relationships among hegemonic structures and collective agents, as opposed to post-structuralist approaches favored within these fields (Cuples et al, 2007). Perhaps, by emphasizing similarities between the Russian and Canadian Norths I may even appear countering the main ideology of postcolonialism that is “to disabuse social theory, and perhaps spatial theory, of its claims to universalism” (Robinson, 2003, 650).

Whereas I do take the Regulation theory and the notion of hegemonic structural blocks as my conceptual foundations, I engage in “tracing the spatial genealogy of ideas,” which many consider central to the postcolonial critique (Bell, 2002). In line with this latter mode of research,
I uncover archeology and genealogy of development discourses in the North in order to
deconstruct the history of policy interventions and reveal the structure of power hegemonies. I
further subject my findings to a critical inquiry from post-developmentalist and postcolonial
positions, ultimately arguing in favor of alternative ways of developing the North.

STUDY AREA DEFINITIONS

Defining “the North” is an extremely complicated matter. There have been numerous
attempts to define, delineate or conceptualize the North, and identify its ontological
characteristics, encompassed by the terms ‘northerness’ or ‘nordicity’ (see reviews in Graham,
1990; Petrov, 2003). Academic geographers, both physical and human, in the West and in the
USSR, were among the most active theorists in these areas, since the ‘idea’ of “the North” is in
itself inherently geographic. However, as Ken Coates concedes, the northern scholarship so far
has failed to develop the theoretical concept of the North that would satisfactorily explain the
reality and nature of Northern experience (Coates, 1995).

Conventional (and formal) definitions of the North in Russian and Canadian literature
include vast areas converging up to two-thirds of each country’s territory. In Russia (Figure I),
the official definition of the Russian North (in legal documents it is referred as the “regions of
the Far North and equated areas”) is adopted by the Government includes northerly located
territories with limited transportation accessibility, which enjoy special privileges (indexation of
salaries, prioritized cargo delivery, economic programs, etc.). This definition, however, is purely
bureaucratic. Another problem is that this delineation is based on subregional units (rayony, i.e.
counties), and, thus, is difficult to reconcile with the scale of analysis undertaken in this
dissertation. Besides, it is a bureaucratic rather than geographical designation that incorporates
many southerly located territories. A more useful definition is, perhaps, the one used by the
World Bank (2001) and in many Russian sources, according to which the Russian North is
comprised of 14 regions (Figure I).
Figure I. **Boundaries of the Russian North**


Figure II. **Boundaries of the Canadian North**

*Notes: 1 – Baffin Region, 2 – Cochran, 3 - Division 10, 4 – Division 16, 5 - Division 17 , 6 - Division 18, 7 – Division 22, 8 – Division 21, 9 – Division 23, 10 – Fort Smith Region, 11 – Inuvik Region, 12 – Keewatin Region, 13 – Kenora, 14 – Kitikmeot Region, 15 – Nord-du-Québec, 16 – Northern Rockies Regional District, 17 – Peace River District, 18 – Sept-Rivières-Caniapiscau, 19 – Stikine Region, 20 – Yukon (boundaries as of 2001). Black line delineates the approximate border of the North by McNiven & Puderer (2000).
In Canada, researchers traditionally follow the Hamelin’s delineation of the North (Hamelin, 1975; Bone, 2003). However, Statistics Canada (McNiven & Puderer, 2000) recently developed a multivariate definition that uses census geographical units as a base, and, therefore, is quite convenient for analysis (Figure II). Throughout the dissertation, I refer to the World Bank’s and Statistics Canada’s delineations as the Russian and the Canadian North respectively, unless noted otherwise. In Chapter 1 I attempt to amend the delineation of the North based on my empirical results.

Among other areal terms used throughout the dissertation are the following. The ‘mainland’ refers to the country’s territory excluding the North. It is synonymous to “the South.” ‘Non-central regions’ pertain to all regions of the country outside the core. Definitions of the terms ‘core,’ ‘periphery’ and ‘margin’ are discussed in the preceding sections of the Introduction, and, when necessary, reiterated in the chapters’ text.

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CHAPTER 1
Redrawing the Margin: Re-examining Regional Structures, Regional Multichotomies and Conditions of Marginality in the Canadian and Russian Norths*

INTRODUCTION

Despite repeated calls among economic geographers for more attention to peripheral regions, including resource frontiers (Hayter et al, 2003, Lithwick & Gradus, 1996), these regions remain in the deep periphery of geographic inquiry. Fascination with vibrant metropolitan areas, the engines of post-industrial global economy, is understandable, but not satisfying. Major recent conceptual discussions in economic geography largely excluded non-central regions from their scope, as they “were designed for core-economic regions, bearing only tangentially on resource economies” (Barnes & Hayter, 2005, 457). Meanwhile, the growing volume of research has documented pivotal transformations in non-central regions and seriously questioned the relevance of their stylized representations (Randall & Ironside, 1996; Welch, 1996; Bourne, 2000).

Russian and Canadian circumpolar regions have always occupied a unique place in global and national geo-economic systems. These resource frontiers exhibit advanced forms of marginality – a complex condition of disadvantage that arises from unfavorable environmental, cultural, social, political, economic and locational factors – with all corresponding economic and social consequences, almost exclusively negative (at least from the normative perspective of modern regional development theory). Although there is a common perception that “northern” regions (in the Arctic and Sub-Arctic) share a degree of similarity (Agranat, 1992, AHRD, 2004), there has been no attempt to demonstrate this likeness formally. In contrast, most
comparative research to date focuses on recording differences among circumpolar areas, especially between the Soviet and non-socialist North (Barr & Bradshaw, 1983; Agranat, 1992). Recent changes in global and national economies seriously challenge the appropriateness of traditional views on relationships between “the North” and the “mainland” in all parts of the circumpolar world, including Russia and Canada. Over the last two decades, both countries and their northern frontiers have evolved in response to the new settings of post-socialist economies, emerging post-Fordism, neoliberal governance and globalization (Bradshaw, 1995; Southcott, 1998; Bone, 2003; Göler, 2003). These processes sharpened regional inequalities and contributed to the production of “multiple peripheries” (Welch, 1996). Northern frontiers, like other peripheries, became diverse and deeply contested spaces where external effects of globalization and the intersection of internal institutional values produce “remarkably complex and fragmented local-global dynamics” (Hayter et al., 2003 p. 21).

On the other hand, the growing economic integration of northern regions and the prevalence of the market economy, by invoking common pressures and responses, may have strengthened similarities across the North Pole. A transnationalization of the resource sector through new multinational corporate structures and a convergence in public policies through a neoliberal governance signified new commonalities among many parts of the North. In addition, the common conditions of marginality, including remoteness, asymmetric power relationships with the metropolis, limited human capital, lack of competitive advantage, uneven terms of trade, high cost differentials, and socio-economic deprivation show little sign of vanishing (Bone, 2003; Hanson & Bradshaw, 2000; Huskey, 2005; Lynch, 2003). But have they transformed?

Given new tendencies introduced by post-socialism and globalization, this study attempts to examine these complexities in order to develop a more up-to-date understanding of northern frontiers as functional regions within national geoeconomic systems. My first goal is to re-examine the structure of Canada’s and Russia’s space-economies by evoking the concept of
regional multichotomies. I consider whether outcomes, geographic patterns and spatial logics of regional differentiation in the two countries demonstrate similarity and evidence of common mechanisms of regional polarization. Dwelling on these findings, I further explore the evidence of similarity between the North(s) in two countries in terms of their economic relationships with the ‘mainland.’ In broader terms, a comparative approach, undertaken below, aims to find out whether logics, processes and conditions of spatial differentiation (particularly in respect to northern frontiers) remain similar in distinct economic, social and political settings.

Accordingly, my research objectives are: (a) conceptualize and identify organizational logics of space-economy and dimensions of regional differentiation; (b) identify regional conditions of marginality and group regions along the core-periphery-margin continuum; (c) examine regional differences within the Norths; and (d) compare marginal regions in the Canadian vs. Russian North.

**APPROACH**

Each of the grand center-periphery concepts offers its own explanation of asymmetries within systems of regions by employing *distinct organizational logics of regional polarization* (market competition, power struggle, agglomeration effects, political dependency, institutional weakness, etc. (Bourne, 2000)). I have no intention to survey these theories here, since it has been done many times before (Dawkins, 2003; Steinbach, 1999). However, I would like to dwell on the emerging consensus that regional structures and associated inequalities/polarities must be viewed in the context of *multiplicity* of center-periphery relationships, an understanding of which comes from the insights of different core-periphery theories (Welch, 1996; Bourne, 2000). Accordingly, distinct theoretical approaches should not be interpreted as competing with each other, but as reflecting different aspects of differentiation, which create regional *multichotomies* (rather than a dichotomy) and heterogeneous (multiple) cores and peripheries. This view may be called a *synergistic* view, because it sees a regional structure as a product of many differentiation
processes (organizational logics) acting simultaneously. Since the processes of spatial differentiation are highly scale-sensitive, asymmetric relationships function at different spatial levels resulting in a multiple system of “nested” cores and peripheries, each operating at particular spatial level, but with all levels interconnected and dominated by the highest-order core.

This multifaceted view of core-periphery relationships better reflects recently observed transformations and restructuring in the non-central regions of the world, including Canada and Russia. A well-documented tendency is the growing diversity of non-central regions and the differentiation of their relationships with cores (Welch, 1996; Clemenson, 1992; Randall & Ironside, 1996; Fedorov, 2002; Bradshaw & Vartapetov, 2003; Göler, 2003). Collected evidence suggests that presently “it is no longer appropriate to view periphery as a single, homogenous entity – if it ever was” (Welch, 1996). Consequently, when modeling regional structure, one should think of core-periphery continuum(s) as multiscalar (i.e. evolving along many dimensions), multiscale (i.e. existing at many spatial levels) and multicenter (i.e. having many heterogeneous cores and peripheries for each dimension and scale).

If this complex representation of a country’s regional structure is accepted, it becomes particularly challenging to find a useful framework to apply for the purposes of empirical analysis, especially in an international context. Meanwhile, there has to be a common ‘coordinate system’ to navigate among multiple centers, vectors and scales of interregional relationships. In this context, I propose using the notion of ‘marginality’ to operationalize an otherwise increasingly ‘fuzzy’ (in Markusen’s (1999) terms) concept of regional multichotomy.

Although there are various understandings and interpretations of marginality (within and beyond economic geography), the basic idea of marginality refers to “a complex condition of
disadvantage that individuals and communities experience, because of vulnerabilities that may arise from unfavorable environmental, cultural, social, political and economic [and locational] factors” (Mehretu et al., 2003, 320). This disadvantage results from being ‘distant’ (economically, socially, politically, culturally, etc.) from a respective system’s ‘center’ (of power, competitiveness, wealth, etc.) and, as a result, less integrated, more exploited, and more isolated from the rest of the system.

Summarizing existing definitions (Andreoli, 1992, Leimgruber, 2004; Schmidt, 1998, Sommers et al, 1998; Mehretu et al, 2000; Barnes, 2005; Gurung & Kollmair, 2005), one can identify three major characteristics (or conditions) of regional economic marginality: (1) regions are subordinated, dominated and are in asymmetric relationships with other subsystems, including the system’s core(s); (2) they lag behind an expected level of performance on various socio-economic dimensions compared with average condition in the territory as a whole (a “mainstream”) or in the territory’s core(s); and, (3) they are residual or alien to the system, i.e. substantially deviate from the system’s mainstream behaviors (non-integrated, or have an outsider status).

Sommers et al (1998) and Mehretu et al. (2002) argue that marginality should be studied not only in its observed forms (i.e., conditions of marginality), but in terms of processes, which underpin them. At the most generic level, regional marginality emerges as a systemic phenomenon driven by two major forces: competitive inequality and hegemonic inequity. 

Competitive inequality results from outcomes of market competition. Hegemonic inequity originates from imposed inequities created within the system by a regulation system and its power-holding agents (e.g. governments, corporations, elites). Apparently, in capitalist societies

\footnote{Interestingly, the idea of the multiplicity of forces acting with changing temporal and spatial biases to create disequilibria between metropolis and its staple periphery is present in Harold Innis writings (Innis, 1956; Barnes, 2005).}
both sources of marginality coexist. Market forces and hegemonic powers may have the same or opposite vectors.

Some theorists of regional marginality argue that the core-periphery continuum must be extended to include the margin as a separate type of region beyond periphery (Leimgruber, 2004). Although a conventional view is to consider marginal regions as parts of the periphery, many see them as a distinct type of functional territories (Andreoli, 1992; Leimgruber, 2004; Schultz, 1998), thus extending the core-periphery continuum(s) to the core-periphery-margin (CPM) continuum(s). I accept the latter approach in the sense that I use the term margin to designate ultimate peripheries, which are distinct in the level of isolation, disintegration and marginality from less isolated and disintegrated peripheries (as it becomes clear from the analysis).

How exactly does the theory of marginality help in re-interpreting the growing complexity of interregional differentiation? My approach is based on several propositions. First, I assume that the each layer of an uneven structure of geoeconomic systems can be represented as a dichotomous model with two opposing spatial poles, i.e. geographic regions that occupy opposite positions in the core-periphery-margin continuum(s). The distinction between the two can be made by measuring a centrality-marginality gradient: a degree of marginality will vary along the CPM continuum(s) with core areas being least and margins being most marginal. In other words, conditions of marginality such as dependency, underperformance and disintegration increase from a center to a margin, following growing hegemonic inequities and competitive inequalities. Since, as I argued before, regional differentiation has multiple layers, the dichotomic structures will overlap producing multilayered and multichotomic configurations.

Secondly, hegemonic inequities and competitive inequalities that underpin marginality result from multiple organizational logics of regional differentiation. Each logic or a combination of
logics signifies a particular ‘fault line’, i.e. a vector of dissimilarity between a center and a margin.

Thirdly, I conceive marginality as a measurable and indicative condition. Literature points out that marginality may have multiple aspects and meanings, both objective and subjective. However, most applications, dealing with regional models, focus on ‘objective’ (observable) economic marginality (Leimgruber, 2004). The advantage of this approach is that it ensures measurability, which is crucial to complete an exploratory empirical study. At the same time, existing research tends to oversimplify the measurement of marginality by exclusively focusing on “deficient magnitudes of growth processes [which make regions] incapable to sustain living standards above [a] defined level” (Sommers et al, 1998, 136). In my analysis, I use a much broader framework of indicators to describe the general economic status of a region within the national geoeconomic system rather than at growth or living standard performances solely. I also replace normative benchmarks by the empirically-derived characteristics of cores (defined for each CPM continuum), to which other regions are compared.

To produce a coherent framework of regional analysis based on the “multicohotmic” model, I need to explain how exactly the notion of multiscalar, multiscale and multicenter CPM continuum(s), conditions of marginality and existing regional models are related. For this, I again turn to Bourne (1997, 2000), who by examining urban inequalities in Canada, linked conditions of marginality to different embedded ‘organizational logics’ of spatial relationships operating within the CPM continuum(s), which are described by alternative (and complementing) spatial models of regional systems (see Table 1.1). Bourne (2000) distinguished several main logics of regional spatial organization (or, in other words, vectors of regional differentiation), which form regional polarities: exploitation (dependency), production (manufacturing), distribution, social dynamics, communication, and political (regulation), each underpinning particular manifestations of marginality and each described by one or more theories. Perhaps, the only
missing logic in the Bourne’s list is the institutional logic that emphasizes endogenous institutional differences between cores and peripheries (Amin, 1999).

According to Bourne’s model, each logic produces unique conditions of marginality and inevitably creates regional polarities. In other words, each logic, by invoking processes of differentiation, is responsible for a separate CPM continuum with two poles: one representing centrality, and another representing marginality. Despite the variety of organizational logics, there are two major underlying polarization mechanisms, by which they operate: hegemonic inequity and competitive inequality. Many logics working together in a form of synergy, produce multiple CPM structures, and, ultimately, define regional multichotomies. The analytical task, therefore, is to develop a method capable of identifying corresponding vectors of marginality (created by one or many intertwined logics) and measuring regional polarities.

Table 1.1. **Organizational logics of spatial differentiation, characteristics of regions and possible indicators**

<table>
<thead>
<tr>
<th>“Layers” of regional differentiation (individual core-periphery multichotomies)</th>
<th>Characteristics of dichotomic poles</th>
<th>Possible economic indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational logic of regional differentiation</strong></td>
<td><strong>Centrality</strong></td>
<td><strong>Marginality</strong></td>
</tr>
<tr>
<td>Colonial exploitation</td>
<td>Control over resource production and consumption</td>
<td>Dominate, economic power, stability</td>
</tr>
<tr>
<td>Production</td>
<td>Diversified post-industrial specialization, high-end tertiary sector, strong innovation capacity, agglomeration, localization and urbanization economies,</td>
<td>Advantage, growth, diversification, post-industrial mix Low unemployment/high participation Strong ‘new economies’ and advanced service</td>
</tr>
</tbody>
</table>
Table 1.1 links the Bourne’s (2000) organizational logics to characteristics (conditions) of marginality and, its complement, centrality. This framework will be helpful in interpreting the empirical regional polarities I discuss below. The list is built with Canada and Russia in mind (based on Bourne, 2000; Southcott, 1998; Bone, 2002; Agranat, 1992; Gritsai et al, 1991; Bradshaw & Vartapetov, 2003; Dienes, 2002), but certainly reflects more universal dependencies. I identify groups of possible indicators to characterize each logic of regional

<table>
<thead>
<tr>
<th>Distribution/service delivery</th>
<th>Strong local market</th>
<th>Sector (e.g. FIRE)</th>
<th>Demand economies, strong manufacturing or low-end services</th>
<th>Bankruptcy rates, bottom-up economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social dynamics</td>
<td>Strong human and creative capital, abundant labor force</td>
<td>Stability, social cohesion, inequality, high-skilled labor force, high consumption power and entrepreneurial capacity, balanced population structure</td>
<td>Extremely high or low labor turnover, variable social capital, uncertain migration flows, vulnerability to population change, demographic disproportions</td>
<td>Inequality, social marginalization, social turnover and instability, weak human and creative capital, limited consumption, deformed population structure</td>
</tr>
<tr>
<td>Communication, interaction and transportation</td>
<td>Abundant networks, economies of scale, fast diffusion of innovations</td>
<td>Proximity, accessibility, low costs, intensive interregional interactions and circulation</td>
<td>High transportation costs, limited capacity, high multiplier effect, competitive ‘new economies’</td>
<td>Isolation, remoteness, cost differentials, limited intensive interregional interractions and flows</td>
</tr>
<tr>
<td>Political (power, control)</td>
<td>High electoral and financial power, headquarters effect</td>
<td>Power, influence, concentration of political capital</td>
<td>Small electoral power, state intervention, fiscal instability</td>
<td>Powerlessness, exploitation, political marginalization</td>
</tr>
<tr>
<td>Institutional</td>
<td>‘Thick’ institutions, strong SMEs, active knowledge flows,</td>
<td>Vibrancy, innovation, transformation, knowledge-based growth, strong ‘new economies’</td>
<td>‘Thin’ institutions, weak SMEs</td>
<td>Dependency, stagnation, lock-in, weak ‘new economies’, conflict</td>
</tr>
</tbody>
</table>

Notes: * based on Bourne (2000)
differentiation. Generally, they resemble ones used in other studies of regional inequality, albeit now these indicators receive somewhat different conceptual reading.

METHODOLOGY

Since I attempt to re-examine regional differentiation and conditions of marginality from an alternative perspective of regional multichotomies, I deliberately avoid using any preconceived groupings of Canadian and Russian regions. Instead, I remap a regional structure from scratch by applying an identical methodology to both regions, and then compare my results with existing interpretations of regional structures and with each other.

Quantitative analysis of regional structure has been criticized for its adherence to quantifiable, observable and ‘objective’ indicators (Leimgruber, 2004). However, other commentators note that quantitative techniques are well suited for macro-scale exploratory analyses, which aim to provide initial examination of regional differences and processes of marginalization: Andreoli & Tellarini (1998) pointed out that such analytical studies, based on multivariate analysis, help to identify, measure, and map ‘structural’ components of regional marginality. Existing experience suggests that quantitative indicators (economic, demographic, social, cultural) can be successful in revealing regional differentiation (Andreoli, 1992; Bourne & Flowers, 1996; Bradshaw & Vartapetov, 2003).

A major problem in many studies of this sort is an unclear rationale behind the choice of measures and units of analysis (e.g., Leimgruber, 2004). The conceptual model of regional differentiation that I described earlier provides a coherent theoretical framework for comprehensive and purposeful selection of variables. The notion of margins as opposites of the ‘mainstream core’ assists in defining criteria of regional differentiation. Consequently, the resulting analysis becomes theoretically more satisfying, but yet empirically manageable.

The operationalization of the proposed model with many vectors of differentiation, each characterized by several variables, is a challenging exercise. The basic idea behind the study’s
methodological design is borrowed from the ‘factorial ecology’ approach, although extended into what one may call an interregional factorial-clustering analysis. The choice of factorial ecology as a baseline methodology is justified by the ability of the former to handle a large number of indicators. Factorial ecology techniques are particularly useful for exploring complex phenomena, identifying the underlying structures and exposing spatial patterns in the multivariate datasets (Davies, 1984). Although this approach is mostly used in meso-scale analysis of urban differentiation, it has been successfully applied to the macro-scale (regional) studies (Bourne & Flowers, 1996; Horvath, 1994; Steinbach, 1999).

Factorial techniques, albeit widely and successfully utilized, are not without limitations, especially related to “crudness of classification, difficulties in interpretation, and inadequacies in variable input” (Palm & Caruso, 1972, p. 133). Therefore, one needs to exercise rigor and caution when using this method. In my analysis some of the typical problems are partially alleviated at both technical and conceptual levels. First of all, and most importantly, the theoretical approach, discussed in the previous section, provides a framework for choosing appropriate and comparable variables according to the suggested criteria (Table 1). Secondly, I employ component identification and rotation methodologies that tend to produce robust results (Davies, 1984; Giggs & Mather, 1975). Lastly, the labeling and interpretation of latent vectors is not entirely arbitrary, but is based on linking the derived latent dimensions to specific logics of spatial differentiation⁴. In sum, although there is always an element of uncertainty in respect to the robustness and interpretation of results, factorial ecology serves best to identify dimensions, weights and complex indicators, arising from original multivariate complexities.

I start with the principal components analysis (R-mode PCA) to isolate common vectors of regional differentiation using sets of similar socio-economic variables for each of the countries. I

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⁴ The best safeguard against subjectivity in labeling and interpretation is to make judgments public so that others can come to their own conclusions (Harris, 1967; Hunter, 1972).
interpret the obtained components as separate dimensions of regional polarity, which, according to the theoretical model, represent co-existing logics of economic marginality. Principal components with eigenvalues greater than one are taken for further analysis. Following the factorial ecology approach, I map and discuss each vector using each regions’ principal components scores as variables. Since vectors of marginality are identified for both Canada and Russia independently, by comparing the results I can determine whether or not dimensions and latent processes of regional differentiation are similar. This stage of analysis also exposes the poles (i.e. centers and margins) along each vector (an individual CPM continuum), and some observations on regional multichotomies can already be made. By examining the autocorrelation of principal component scores on each dimension (computing global Moran’s I), I find out whether regions with similar loadings tend to spatially cluster. However, it is still unknown what specific regional groupings will emerge, if all dimensions are combined to reflect the multiplicity of interregional relationships.

Figure 1.1. The analysis flowchart
I address this complexity by means of agglomerative and subsequent k-means clustering (Figure 1.1). The former serves to identify a likely number of region-groupings with similar combinations of vectors. The latter defines and describes groups (clusters) of regions that share similar socio-economic conditions. Regional factor scores are used as clusterization variables. In effect, I identify multiple centers, peripheries and margins. Based on this, if logics and conditions of marginality tend to converge in particular areas, these areas can then be considered as marginal regions of “the North(s)”.

Further, I seek to find out if and how the North is distinct from the “mainland.” I carry out the discriminant analysis to identify what structural vectors produced these groupings. The discriminant analysis statistically distinguishes between two or more groups by fitting discriminant functions, in which inter-group differences are maximized (Klecka, 1980). I use two dummy variables: designating the Norths and the “mainland” (all other regions of Russia and Canada respectively). Regions’ scores on structural vectors from PCA analysis are taken as discriminating variables. In addition, I now include distance from Moscow and from Canadian “supercore” centers to evaluate whether remoteness exerts a differentiation effect between the North and the “mainland”. As mentioned earlier, I deliberately did not use distance in the factor and cluster analyses so as not to overshadow socio-economic differences and to avoid a possible bias (when distant is conflated with peripheral). Having region-groups, derived without a distance bias, I can determine if distance is important as a discriminating factor between them.

DATA

The choice of variables for any type of interregional analysis is constrained by data availability and comparability. Unfortunately, in case of Canada and Russia existing datasets, from which desired variables could be taken, do not share much in common. Not only are definitions, methods of measurement, temporal coverage and forms of reporting are largely different, but levels of data reliability and trustworthiness also vary substantially. Luckily, these
limitations are offset by the proposed methodology, which is based on latent components of regional differentiation (derived by combining multiple variables), rather than on individual indicators.

Problems with Russian official statistics, especially in respect to GDP, unemployment, productivity, economic structure, and other variables, have been repeatedly discussed in the literature (e.g., Bradshaw & Vartapetov, 2003). These limitations are mostly Soviet legacies, arising from outdated, biased or inconsistent definitions, an overemphasis on industrial statistics, possible bureaucratic or political intervention, and a failure to incorporate unregistered (‘shadow’) economies. (Data for Chechnya is missing for the most of 1990s and early 2000s.) Despite all these limitations, official Russian statistics represent the only source of socioeconomic data for Russia and its regions. As such, the following analysis will make use of this data.

Most of my data (see Table 1.2) is taken from Rosstat (2005) for the year of 2004 pertaining to 88 regions of the Russian Federation (Chechnya is excluded). A few variables come from the 2002 Census (Rosstat, 2003). The analysis is constrained to variables available for all regions, including the autonomus okrugs. The selection of indicators aimed to cover as many logics of differentiation as possible (Table 1.1), considering data availability and findings of other researchers (Hanson & Bradshaw, 2000; Bradshaw & Vartapetov, 2003; Carluer & Sharipova, 2004). See Table 1.2 for the list of chosen eighteen socio-economic variables.

To analyze Canada’s regional structure, indicators are fashioned using variables taken from the 2001 Census of Population and the 2001 Labour Force Survey. Using provincial data in Canada (as opposed to Russia) is not the best option, because of the small sample problem arising from having only thirteen observations (provinces and territories) that is likely to

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5 While municipal (rayony) level datasets can be purchased from regional statistical offices, the quality and scope of data are inferior, especially in rural areas. The use of such datasets is extremely problematic, if not impossible.
invalidate statistical analysis. The next level of spatial hierarchy in the Statistics Canada standard
geographic classification scheme is an economic region. Economic regions (ER) constructed as
groupings of census divisions created for analysis of regional economic activity. In number and
spatial extent, they are roughly comparable to Russia’s regions. The problem with ERs is that
not all census variables are readily available at this spatial level, however, due to direct
connection to census divisions, census data can be aggregated to this level (CID, 2007). On the
other hand, the Labour Force Survey uses ER as geographic units to distribute labor

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Source</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVDWEL</td>
<td>Average value of dwellings, $C</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>GOVAST</td>
<td>Social assistance: government transfer in family income, %</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>HITECH</td>
<td>Employment in professional, scientific and technical services (NAICS 5411-5419)</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>LOWINC</td>
<td>Incidents of low family income, %</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>NATSCI</td>
<td>Persons with natural and applied sciences and related occupations, %</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>TOTINC</td>
<td>Total income, $C</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>UNEMPL</td>
<td>Unemployment rate 15 years and over, %</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
<tr>
<td>UNIV</td>
<td>Males and females 25 and over with university education, %</td>
<td>Census 2001 (CID)</td>
<td>Statistics Canada, 2007</td>
</tr>
</tbody>
</table>


In contrast to Russia’s regions, ERs have no administrative function.
### Table 1.3. Variables and definitions, Russia

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Source</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEDINVES</td>
<td>Federal investments, % of total</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>GOVTRANS</td>
<td>Government transfer in income, %</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>INVESTM</td>
<td>Capital investments (all sources)</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>LIVCOST</td>
<td>Ratio of income and living cost</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>LOSSBUSI</td>
<td>Share of unprofitable enterprises, %</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>LOWINC</td>
<td>Population with incomes below the ‘subsistence’ income, %</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>MANUF</td>
<td>Employment in manufacturing, %</td>
<td>2002 Census</td>
<td>Rosstat, 2002</td>
</tr>
<tr>
<td>PCGDP</td>
<td>GPD per capita</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>PUBLIC -</td>
<td>Employment in public sector, %</td>
<td>2002 Census</td>
<td>Rosstat, 2002</td>
</tr>
<tr>
<td>RESOUR</td>
<td>Employment in resource extraction sector, %</td>
<td>2002 Census</td>
<td>Rosstat, 2002</td>
</tr>
<tr>
<td>SERV</td>
<td>Employment in services, %</td>
<td>2002 Census</td>
<td>Rosstat, 2002</td>
</tr>
<tr>
<td>SME</td>
<td>Share of small enterprises in GDP, %</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>SOCASS</td>
<td>Social assistance as percentage of government</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td></td>
<td>transfer in income. %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOPQUAL</td>
<td>Top qualification occupations, %</td>
<td>2002 Census</td>
<td>Rosstat, 2002</td>
</tr>
<tr>
<td>TOTASSET</td>
<td>Total value of economic assets</td>
<td>Rosstat annual publications (2004)</td>
<td>Rosstat, 2005</td>
</tr>
<tr>
<td>UNI</td>
<td>Population 25 and over with university degree</td>
<td>2002 Census</td>
<td>Rosstat, 2002</td>
</tr>
</tbody>
</table>

Statistics. In the following analysis, I use eighteen socio-economic variables, reflecting various aspects of regional economic differentiation (Table 1.1) and, to a maximum possible extent, comparable to the ones in the Russian dataset7 (Table 1.3). The sample size is 76 (the number of Canadian ERs in 2001).

**RESULTS AND DISCUSSION:**

**RE-EXAMINING REGIONAL MULTICHOTOMIES**

My first task is to empirically identify major dimensions of regional differentiation, which, as I argued before, underpin conditions of regional marginality. First, because CPM continuums are multiple, I expect to find more than one dimension. Ideally, the result should closely follow the logics of differentiation discussed in the preceding sections, i.e. the dimensions or vectors should be attributable to one or several spatial logics. Secondly, along each vector (representing a CPM continuum), I expect to identify regional polarities with opposite component scores on that dimension, one of which being a core and another being a margin in this particular continuum.
Cores and margins on different vectors may not be the same regions, because they are produced by distinct processes. Conditions of marginality (as identified in Table 1.1) will be increasing from a core to a margin along each dimension.

PCA involving 18 economic variables for 88 Russian regions detected four dimensions (Table 1.4), all of which had clear and distinct nature. First dimension has high and positive factor loadings on GDP, gross investments (INVESTME), regional financial balance (FINANCES), and value of assets (TOTASSET). All of these indicators describe the size and wealth of economy, and wealthy and economically powerful regions will have high factor scores. In other words, this vector reflects regional dominance. Core-periphery relationships emerging along this dimension are likely to be produced by several logics of spatial organization, most importantly logics of colonial exploitation, hegemony and production (both centrally-planned and market). In other interpretations, this dimension divides regions on ‘haves’ and ‘have-nots’, or ‘rich’ and ‘poor’. The map of factor loadings provides an intriguing picture (Figure 1.2). The group with highest scores consists of three regions: Moscow and Tyumen oblast’ (including Khanty-Mansi okrug). Moscow, of course, is the quintessential center of economic and political power, which certainly fits a description of a core. In contrast, Tyumen oblast’ is a remote region, which, thinking traditionally, is difficult to associate with the core. However,

7 Unfortunately, Statistics Canada does not provide GDP data at the ER level. I try to substitute it using total income as a proxy.
8 For both Russian and Canadian datasets, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett’s test of sphericity indicated the appropriateness of factor analysis.
Table 1.4. **Extracted dimensions of regional differentiation, Russia**

<table>
<thead>
<tr>
<th>Components (eigenvalue &gt;1.0)</th>
<th>Dominance</th>
<th>Dependency/deprivation</th>
<th>Staple</th>
<th>‘New economies’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of variance</td>
<td>22.9</td>
<td>22.4</td>
<td>18.9</td>
<td>12.9</td>
</tr>
<tr>
<td>FONDS</td>
<td>0.917</td>
<td>0.264</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINANCES</td>
<td>0.909</td>
<td></td>
<td></td>
<td>0.226</td>
</tr>
<tr>
<td>INVESTME</td>
<td>0.903</td>
<td>0.305</td>
<td></td>
<td>0.323</td>
</tr>
<tr>
<td>GDP</td>
<td>0.900</td>
<td></td>
<td>0.323</td>
<td></td>
</tr>
<tr>
<td>SERV</td>
<td></td>
<td></td>
<td></td>
<td>0.260</td>
</tr>
<tr>
<td>MANUFACT</td>
<td></td>
<td>-0.855</td>
<td>-0.230</td>
<td></td>
</tr>
<tr>
<td>GOVT</td>
<td>-0.312</td>
<td>0.820</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCASSPC</td>
<td></td>
<td>0.759</td>
<td>0.355</td>
<td>-0.281</td>
</tr>
<tr>
<td>FEDINVES</td>
<td></td>
<td>0.597</td>
<td>-0.515</td>
<td></td>
</tr>
<tr>
<td>LOSSBUSI</td>
<td>-0.350</td>
<td>0.578</td>
<td></td>
<td>-0.294</td>
</tr>
<tr>
<td>SOCASS</td>
<td>-0.263</td>
<td>-0.246</td>
<td>-0.797</td>
<td></td>
</tr>
<tr>
<td>EXTRACT</td>
<td>0.302</td>
<td>0.318</td>
<td>0.718</td>
<td>-0.339</td>
</tr>
<tr>
<td>MINIMUM</td>
<td></td>
<td></td>
<td>0.708</td>
<td></td>
</tr>
<tr>
<td>BELOWMIN</td>
<td></td>
<td>0.455</td>
<td>-0.706</td>
<td></td>
</tr>
<tr>
<td>GDPPC</td>
<td>0.439</td>
<td>0.215</td>
<td>0.701</td>
<td>-0.215</td>
</tr>
<tr>
<td>SMALLGDP</td>
<td>0.231</td>
<td></td>
<td>0.820</td>
<td></td>
</tr>
<tr>
<td>UNIVERS</td>
<td>0.261</td>
<td></td>
<td>0.814</td>
<td></td>
</tr>
<tr>
<td>TOPQUAL</td>
<td>0.257</td>
<td>0.377</td>
<td>-0.282</td>
<td>0.552</td>
</tr>
</tbody>
</table>

Leading logics of spatial organization (Table 1.1) producing each dimension:

- Colonial exploitation: ++
- Production: +
- Distribution: ++
- Social dynamics: +
- Communication: +
- Political: +
- Institutional: +

**Note:** Extraction Method: Principal Component Analysis; rotation Method: Varimax with Kaiser Normalization. Loadings less than 0.2 are not reported.
Figure 1.2. Spatial distribution of factor scores on extracted dimensions of regional differentiation, Russia (notations see in Appendix 1)
Figure 1.3. **Spatial distribution of factor scores on extracted dimensions of regional differentiation, Canada** (notations see in Appendix 2)
under the new perspective of multiplicity and multicentricity core-periphery continuums, there is nothing wrong with a conventionally considered ‘peripheral’ region becoming a ‘core’ region along with Moscow. In fact, this is an alternative and quite elegant depiction of the contemporary regional structure of the staple-driven Russia’s economy, with it’s notorious concentration of economic resources in Moscow (Carluer & Sharipova, 2004) and few oil and gas regions (Bradshaw & Hanson, 2002; Carluer, 2007). However, Moscow, perhaps, remains to be the only colonial metropolis.

A second extracted vector is *dependency/deprivation* (Table 1.4). High loadings of federal investment, public sector employment, and social assistance (as a percent of income) suggest that this dimension reflects conditions of regional dependency: economic, social and political (through financial hegemony). At the same time, these variables (quite interestingly) are highly correlated with indicators of poverty (BELOWMIN), disadvantageous business environment (LOSSBISI) and weak industrial sector (MANUFACT). The map of factor scores (Figure 1.2) illustrates that one pole along this dimension is formed by regions in the Siberia, the Far East, and the South (strongest marginality). In contrast, regions of Central Russia, especially major industrial centers, are at the opposite side of the continuum (have negative factor scores), thus, representing core areas.

Third dimension is represented by the *staple* vector. High loading of resource sector employment coincides with high loading of living costs and GDP per capita (Table 1.4). On the other hand, negative correlations observed with FEDINVES, SOCASS and BELOWMIN. The latter results point to a fairly good socio-economic situation. These results, however, should not be misleadingly interpreted, because regional indices mask vast internal income disparities and other chronic socio-economic problems of staple economies. Many northern regions score high on this vector, whereas regions in central Russia score low (Figure 1.2).
The last vector of regional differentiation is associated with ‘new economies’. It combines measures of human capital (UNIV and TOPQUAL) and vibrancy of bottom-up market economy (small business is, perhaps, the most ‘capitalist’ form of entrepreneurship in the Russian context). Certainly, regions representing the core in this vector will have high scores on this dimension. The core is expected to have the most developed ‘new economy’, especially knowledge-based industries and the most advanced entrepreneurial (‘soft’/institutional) infrastructure (see Cooper & Bradshaw, 2007). In contrast, peripheries and margins will generally lack both human capital and bottom-up economies. These expectations are confirmed by spatial distribution of factor scores (Figure 1.2). St. Petersburg and Moscow clearly form the core in the ‘new economy’ CPM continuum. Staple regions of the North represent are most marginal in respect to new economies.

Summing up these findings, the analysis revealed four distinct co-existing core-periphery continuums (or dimensions of regional differentiation): one associated with regional dominance, another with dependency/deprivation, another with staple development, and the last with ‘new economies’. Each continuum has an identifiable core and margin, and has been produced by a combination of logics of spatial organization. In every continuum, there is measurable gradient of marginality (from low to high factor scores or vise versa).

The same methodology was applied to identify the dimensions of regional differentiation in Canada. Five principal components had eigenvaues over 1.0. The first component (Table 1.5) demonstrates high loadings of the size of economy indicator (TOTINC), indicators of economic affluence and growth (AVDW, INCCHAN), indicators of post-industrial economic organization (FIRE, HITECH, SERVICES), and indicators, associated with high quality human capital, underpinning ‘new economies’ (well-educated labor force with strong entrepreneurial and management components). Clearly, in the context of a developed country, regional economic power, prosperity, post-industrialism and quality of human capital are hardly separable.
Interestingly, a strong covariance between indicators of dominance and attributes of ‘knowledge-based economy’ (in contrast to Russia) suggests that regional differentiation in Canada is largely produced by competitive inequalities based on region’s capacity to foster innovation and compete for human capital. The map of factor scores (Figure 1.3) reveals that the core in this dominance/‘new economy’ continuum is represented by major city-regions (Toronto ER with the highest score), whereas northern regions tend to be on the opposite side.

Table 1.5. Extracted dimensions of regional differentiation, Canada

<table>
<thead>
<tr>
<th>Components (eigenvalue &gt;1.0)</th>
<th>Dominance/‘new economies’</th>
<th>Dependency/deprivation</th>
<th>Public subsidization</th>
<th>Manufacturing/staple</th>
<th>Labor market condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of variance</td>
<td>34.3</td>
<td>15.0</td>
<td>11.1</td>
<td>10.2</td>
<td>8.3</td>
</tr>
<tr>
<td>PROFSCI</td>
<td>.906</td>
<td>.204</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNI</td>
<td>.897</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUSMANAG</td>
<td>.877</td>
<td>.276</td>
<td>.229</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATSCI</td>
<td>.875</td>
<td></td>
<td>.216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVDWEL</td>
<td>.711</td>
<td>-.219</td>
<td></td>
<td>-.454</td>
<td></td>
</tr>
<tr>
<td>TOTINC</td>
<td>.694</td>
<td>-.418</td>
<td>.207</td>
<td>-.247</td>
<td></td>
</tr>
<tr>
<td>SERVALL</td>
<td>.681</td>
<td>.398</td>
<td>.231</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIRE</td>
<td>.649</td>
<td></td>
<td>.517</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INCCHANG</td>
<td>.565</td>
<td>-.457</td>
<td>-.338</td>
<td>.205</td>
<td></td>
</tr>
<tr>
<td>LOWINC</td>
<td>.883</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELFEM</td>
<td>-.715</td>
<td>-.234</td>
<td>-.251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCPUHEL</td>
<td>.649</td>
<td>.588</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVAST</td>
<td>-.552</td>
<td>.590</td>
<td>-.242</td>
<td>.309</td>
<td></td>
</tr>
<tr>
<td>PUBLIC</td>
<td>.201</td>
<td>.857</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIMARY</td>
<td>-.349</td>
<td></td>
<td>-.835</td>
<td>.857</td>
<td></td>
</tr>
<tr>
<td>MANUF</td>
<td>-.426</td>
<td>.712</td>
<td>.245</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNEMPL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.857</td>
</tr>
</tbody>
</table>

Leading logics of spatial organization (Table 1.1) producing each dimension

<table>
<thead>
<tr>
<th>Colonial exploitation</th>
<th>++</th>
<th>+</th>
<th>++</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Distribution</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Social dynamics</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Communication</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Political</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Institutional</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: Extraction Method: Principal Component Analysis; rotation Method: Varimax with Kaiser Normalization. Loadings less than 0.2 are not reported.

The dependency/deprivation vector resembles the analogous one in Russia. High loadings of incidents of low income, share of government income assistance, and high negative loadings of the INCCHAN portray conditions of economic decay and dependency. The distribution of factor
scores (Figure 1.3) demonstrates that rural areas in the provinces, particularly outside the laborsheds of metropolitan centers, are the most marginal on this dimension.

The *public subsidization* dimension is the third vector of regional differentiation in Canada (Table 1.5). In contrast to Russia, this component is separate from the dependency/deprivation vector, and demonstrates the outstanding and active role of public sector in the Canadian geoeconomic system. Certainly, unlike Russia, where the public sector has been paralyzed by a severe crisis (e.g. Stenning, 1997), government jobs in Canada are well-paid and public-dependent economies can be quite affluent. However, this does not alleviate the dependency of such economies on incoming public subsidies and investment (Simmons, 1986).

The next dimension is associated with economic specialization and signifies the dichotomy between manufacturing and resource-based economies, and, thus, represents the *manufacturing/staple* vector of regional differentiation. Regions scoring low on this dimension are likely staple-dependent or, at least, tend to specialize in primary sector. Expectedly, they also have a poor manufacturing base and underdeveloped tertiary sector. In its genesis and manifestations, this vector is similar to the staple vector of differentiation among Russian regions. Apparently, the logic of regional differentiation described by the Innis’s staple thesis almost a century ago is still a profound force in creating regional differences in both Russia and Canada.

The defining variable of the last *labor market dimension* is UNEMPL. Other socio-economic variables depict a substantial degree of economic deprivation in regions scoring high on this vector (Table 1.5). These seem to be regions devoid of strong economic base and competitive advantage and prone to dependency on public welfare. Note, however, that this component explains only 8.3% of total variance, and should be considered a minor dimension.

The factorial ecology approach allowed identifying major dimensions of economic differentiation among regions in Russia and Canada. The first major conclusion from this
analysis is that the logics of spatial differentiation, to which I alluded earlier, do work in both countries, producing generally similar regional multichotomies. Again, despite drastic differences in economic history, policy and institutional arrangements, the economic forces, stemming from both hegemonic inequities and competitive inequalities, work to create similar vectors and patterns of differentiation (i.e. CPM continuums). Although one should not be carried away by this likeness to claim that the two counties possess identical regional structures (they, of course, are quite distinct), the evidence of the principal similarity is irrefutable. The same applies to conditions of marginality: in both Canada and Russia marginal regions share very similar characteristics.

Earlier I suggested that not only the vectors of regional differentiation are similar, but that cores and margins on each of the CPM continuums will tend to spatially coincide (to cluster). I alluded to the idea of synergy between organizational logics, which determine resulting conditions of marginality in every location. If such co-incidence exists, marginal regions will tend to be marginal in many dimensions. Consequently, processes originating from different logics will reinforce marginality in such regions. A method to test this hypothesis is to conduct a cluster analysis.

An initial indication of spatial clustering along individual structural dimensions is given by the autocorrelation tests. Table 1.6 contains global Moran’s I for component scores on each of the extracted vectors. Most of the vectors demonstrate a substantial degree of spatial autocorrelation, indicating that regions with similar loadings tend to be geographically clustered. Notable exclusions are the vectors associated with regional dominance and ‘new economy’. As further analysis shows, this corresponds to isolated geographies of Canadian and Russian “supercores”, represented by leading metropolitan centers. Apparently, the spillovers from these cores are not registered at least at the regional level. Autocorrelation suggests that typological
groups of regions identified by forthcoming cluster analysis based on component scores may also possess an internal spatial coherency.

Table 1.6. **Spatial clustering of regional differentiation: evidence of spatial autocorrelation**

<table>
<thead>
<tr>
<th></th>
<th>Russia</th>
<th>Moran’s I</th>
<th>Canada</th>
<th>Moran’s I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance</td>
<td>0.18</td>
<td>Dominance/*new economies’</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>Dependency/deprivation</td>
<td>0.51</td>
<td>Dependency/deprivation</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>Staple</td>
<td>0.37</td>
<td>Public subsidization</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>‘New economies’</td>
<td>0.09</td>
<td>Manufacturing/staple</td>
<td>0.52</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor market condition</td>
<td>0.60</td>
<td></td>
</tr>
</tbody>
</table>

I use hierarchical clustering (Ward’s method, squared Euclidean distance) to estimate an approximate number of regional clusters in both (Canadian and Russian) datasets using principal components scores for multiple extracted dimensions. The results produced nine distinctive clusters for Russia and eight for Canada. The purpose of hierarchical clustering is to suggest a number of clusters for the subsequent \(k\)-means clustering procedure. The latter was employed to identify final regional groupings, which could be interpreted based on the factor scores for each cluster center. As a result, Russian regions were grouped into nine (Table 1.7, Figure 1.4) clusters and Canadian regions were grouped into eight clusters (Table 1.8, Figure 1.5).

Table 1.7. **Characteristics of region-groups, Russia**

<table>
<thead>
<tr>
<th>Clusters</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance</td>
<td>-.56670</td>
<td>5.93833</td>
<td>-.05401</td>
<td>4.12686</td>
<td>-.44230</td>
<td>.11197</td>
<td>.04863</td>
<td>-.51832</td>
<td>.62234</td>
</tr>
<tr>
<td>Dependency/deprivation</td>
<td>-.47140</td>
<td>.05503</td>
<td>-.71572</td>
<td>.44783</td>
<td>.03238</td>
<td>1.20887</td>
<td>1.12203</td>
<td>1.16871</td>
<td>4.22661</td>
</tr>
<tr>
<td>Staple</td>
<td>1.50495</td>
<td>-.64369</td>
<td>-.23491</td>
<td>1.35226</td>
<td>.42127</td>
<td>2.90766</td>
<td>-1.41877</td>
<td>.53328</td>
<td>-2.54202</td>
</tr>
<tr>
<td>‘New economies’</td>
<td>6.26966</td>
<td>3.88676</td>
<td>-.22148</td>
<td>-1.63343</td>
<td>.55391</td>
<td>-.99860</td>
<td>.05935</td>
<td>-.13987</td>
<td>.43704</td>
</tr>
</tbody>
</table>
Table 1.8. **Characteristics of region-groups, Canada**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dominance/new economies’</strong></td>
<td>2.53556</td>
<td>1.22355</td>
<td>-.44956</td>
<td>-.24445</td>
<td>-.00293</td>
<td>-.66232</td>
<td>-.80448</td>
<td>-.47604</td>
</tr>
<tr>
<td><strong>Dependency/deprivation</strong></td>
<td>1.16668</td>
<td>.05691</td>
<td>-.41586</td>
<td>-1.30189</td>
<td>-.05517</td>
<td>.86949</td>
<td>2.53802</td>
<td>.33496</td>
</tr>
<tr>
<td><strong>Public subsidization</strong></td>
<td>-1.86014</td>
<td>.76834</td>
<td>-.18061</td>
<td>-.42168</td>
<td>-.08475</td>
<td>-.61579</td>
<td>.08822</td>
<td>2.59165</td>
</tr>
<tr>
<td><strong>Manufacturing/staple</strong></td>
<td>.49709</td>
<td>-.28046</td>
<td>.82840</td>
<td>-1.33351</td>
<td>.49406</td>
<td>-.95438</td>
<td>-.35378</td>
<td>.06840</td>
</tr>
<tr>
<td><strong>Labor market condition</strong></td>
<td>-1.39810</td>
<td>.29633</td>
<td>-.28675</td>
<td>-.51476</td>
<td>1.32569</td>
<td>.51049</td>
<td>-1.09701</td>
<td>-1.20660</td>
</tr>
</tbody>
</table>

Figure 1.4. **Socio-economic region-groups in Russia** (notations see in Appendix 1)
Since the underlying vectors of regional differentiation in Russian and Canada are quite similar, one would expect their spatial structures to demonstrate a degree of resemblance. As I describe below, this is definitely the case, although regional systems are not identical. Using Tables 7 and 8 I label region-groups based on their cluster centers on each of the measured dimensions, assuming that higher degree of marginality would signal a more peripheral status of a region. Both countries have identifiable “supercores”, industrial semi-peripheries, and complex peripheries, which include resource-reliant regions, rural hinterlands and public-dependent margins. It is interesting that the regional structure in the peripheries is the most fragmented and diverse.

Toronto, Montréal and Lower Mainland-Southwest (Vancouver) ERs emerge as a “supercore” cluster with very high score on the dominance/‘new economies’ component and low scores on public subsidization and manufacturing/staple vectors (Table 1.8). In Russia, similar
positions are held by Moscow and St. Petersburg (Table 1.7). Different organizational logics of regional differentiation coincide in space to produce national “supercores.” This result confirms a widely cited supremacy of Moscow (and, to a lesser extent, St. Petersburg) in the Russia’s geoeconomic system (Carluer & Sharipova, 2004) and the exclusive role of the metropolitan triad in Canada (Bourne & Flowers, 1996; McCann & Simmons, 2000).

Another common cluster with an intermediate position in the CPM continuum can be identified as an agro-industrial semi-periphery\textsuperscript{9}. In Russia it represents the mainstream of Russia’s regions\textsuperscript{10}, which are weak on dominance and ‘new economies’ dimensions, but have a negative dependency/deprivation score (Table 1.7, Figure 1.4). In Canada, this group is comprised by relatively well-off, but less than economically dominant regions with considerable manufacturing base and limited dependency on public sector. Most of the cluster membership concentrates along the US-Canadian border (Table 1.8, Figure 1.5). In the Russian case, however, it must be noted that this vast semi-periphery is likely to have several mini-cores, such as major metropolitan ‘hubs’ (Nizhniy Novgorod, Ekaterinburg, Samara, Kazan’), hidden within much more marginalized environs (Dienes, 2002; Bradshaw & Hanson, 2002).

The resource-industrial semi-periphery includes relatively wealthy territories, which, however, score weakly on dominance, ‘new economies’ and dependency dimensions, but demonstrate high staples-reliance (Table 1.7). In Russia they include Krasnoyarskiy, Khabarovskiy, Primorsliy kray, Tomsk and Novosibirsk, and Komi regions and some others. In Canada, this group appears to be more resource than industrial, with most regions concentrated in Alberta and British Columbia (Table 1.8, Figure 1.5).

\textsuperscript{9} Using the world system’s terminology (Wallerstain, 1979) for convenience, however, I do not imply a direct application of Wallerstain’s generalized characterizations of the global semi-periphery to this regional context.

\textsuperscript{10} Bradshaw & Hanson (2002, 10) call them “typical Russian regions” (agricultural and industrial), which “suffered from a lack of farm restructuring and massive deterioration of agricultural prices [or were] victims of the lack of competitiveness of Russian industry and have failed to develop new activities…”.
Three other common clusters describe different types of periphery. Canadian rural hinterland (Table 1.8, Figure 1.5). It is comprised of mostly rural ‘have not’ regions with high dependency/deprivation, weak competitiveness in respect to ‘new economies’ and limited public sector and resource economic base. Even more dependent and dominated is the Canadian deep periphery. It includes regions in northern Manitoba, Saskatchewan and remote Atlantic margin with strong marginality conditions.

The equivalent of the rural hinterland and the deep periphery clusters in Russia is the group of regions that may be described by a Russian term ‘glubinka’ (deep periphery). Based on its scores (Table 1.7, Figure 1.4), this group demonstrates key conditions of marginality falling somewhere between the rural hinterland and Canadian deep periphery with strong dependency/deprivation and a dominated status. Its economic base is weak: it is not staple-reliant, nor does it have substantial manufacturing base or the ‘new economies’. The group includes most economically underdeveloped regions of Russia (cf. Hanson & Bradshaw, 2002).

The following clusters include regions with high levels of staple and/or public dependency. Russia’s resource margin is a group of dominated, dependent and poor regions with weak and resource-reliant economic base (Table 1.7, Figure 1.4). It gives, perhaps, the most vivid depiction of the North as a marginal space. A public dependant cluster (Table 1.7) illustrates another form of extreme dependency. In some respects, it is similar to the deep periphery, but the distinctive feature is an exceptionally high score on the dependency/deprivation vector. The sole region in this cluster, the Republic of Ingushetia, is an impoverished mountainous region, located next to the war-torn Chechnya, has limited internal resources and is heavily dependent on the federal center.

The Canadian regional system does not appear to have the above region-groups. Instead, the northern margin region-group combines characteristics of the two. It is a group of dominated ‘have not’ regions, distinct by being both heavily public dependent and staple-reliant. The factor
score on the dependency/deprivation vector is also substantial (Table 1.8). It is likely that both staple and public sector dependencies reinforce each other to produce extremely high factor loadings here. This cluster includes Nunavut, Yukon and Northwest Territories, as well as Nord-du-Quebec (Figure 1.5).

A number of identified region groups are unique for Russia or Canada, and highlight systematic differences in economic development and spatial differentiation in the two countries. The Canadian large city-regions (other than Toronto, Montréal and Vancouver) comprise the urban core (Table 1.8, Figure 1.5), which is missing in the Russian regional structure. They are dominant regions with a strong economic competitiveness (highest dominance/‘new economy’ score). Previous studies have illustrated the growing level of metropolitan dominance as cities acquire more post-industrial competitive advantages and economic power (Bourne & Flowers, 1996; Britton, 1996). However, the fact that these regions score positively on dimensions with considerable loadings of public subsidization indicates that metropolitan areas are prioritized by the government sector.

Three other region-groups are formed by different interplays of regional multichotomies, but all can be considered as peripheries. They, however, are unique for either Russia or Canada. Most of them demonstrate strong conditions of marginality associated with certain vectors, but not with the others.

In Russia the analysis identified two distinct clusters of resource-dependent regions. One of them, comprised of only Tyumen oblast’ (with Khanty-Mansi autonomous okrug), passes the criteria for the core region, if measured by its score on the economic dominance vector of regional differentiation. However, this group represents the ultimate case of resource-dependency (highest among all clusters). This is Russia’s staple ‘quasi-core’ that includes the main oil and gas producing regions (Table 1.7, Figure 1.4). Benefiting from this role in terms of
economic ‘power’ and affluence, the quasi-core is marginal on other dimensions (strong resource-dependency, weak ‘new economies’, etc.)

A resource frontier has considerably high score on the staple dimension, whereas exhibiting negative score on ‘new economies’ (Table 1.5). This cluster is neither economically dominant, nor particularly prosperous. At the same time, regions that belong to the cluster (Netnets, Yamal-Nenets and Chukchi autonomous okrugs) are a new resource frontier of Russia that benefits from the current resource boom.

An interesting type in the Canadian periphery is the industrial outskirts (which also could be considered as a distinct part of the rural hinterland) is represented by depressive regions with weak economic base and competitive capabilities (Table 1.8), but with slightly stronger manufacturing. These territories suffer from high levels of unemployment and considerable economic deprivation.

Turing back to the main questions I intend to answer, what do these results suggest? First, the factorial-clusterization analysis of Russian and Canadian regions revealed that regional structures adhere to similar logics of spatial differentiation represented by common latent dimensions. Secondly, conditions of marginality, which are used to quantify and interpret interregional differences, exhibit a tendency to diverge between certain groups of regions thus signifying multiple bi-polar spatial structures. Thirdly, Individual CPM continuums that are formed by a logic or a combination of logics, geographically overlap with a noticeable tendency of convergence (clustering) of either conditions of marginality or ‘centrality’. A synergy among several vectors of differentiation creates a complex regional structure with multiple cores, peripheries and margins, exhibiting different degrees and conditions of marginality. Lastly, in this intricate picture, northern regions in Canada and Russia demonstrate remarkable similarities in terms of their relative positions on CPM continuums and manifestations of economic marginality.
REMAPPING THE NORTHS

Based on the previous analytical steps, I can finally “remap” the regional structure of the Norths in both countries. Conventional definitions of the North in Russian and Canadian literature include vast areas converging up to two-thirds of each country’s territory. In the case of Russia, the most useful definition is, perhaps, the one used by the World Bank (2001), according to which the Russian North is comprised of 14 regions (Figure 1.4)\textsuperscript{11}. In Canada, researchers traditionally follow the Hamelin’s delineation of the North (Hamelin, 1975; Bone, 2003). However, Statistics Canada (McNievem & Puderer, 2000) recently developed a multivariate definition that uses census geographical units as a base, and, therefore, is easily compatible with ERs (Figure 1.5). In the following section, I refer to World Bank’s and Statistics Canada’s delineations as the Greater Russian and the Greater Canadian North respectively.

Given the ‘traditional’ designations of the North, my task now is to describe the regional differentiation within the North (i.e. the multiple Norths). Of course, the results already in hand forcefully suggest that it is not appropriate to talk about only one “North”: processes of regional fragmentation induced by compartmentalized synergies of organizational logics of spatial differentiation produce multiple Norths (as well as multiple Souths). Based on the derived clusters, the Greater Russian North is comprised by very different region-groups. On the one hand, two northern regions define the Russian staple quasi-core. Tyumen’ proper and Khanty-Mansi regions are wealthy and dominant, although resource-reliant territories with a special and pivotal role in the national geoeconomic system. On the other hand, the North includes two strongly marginalized groups: northern frontier and northern margin. Both are dominated, heavily staple-dependent, and score very high on dependency/deprivation vector, while having weak ‘new economies’. Although northern regions from these clusters may have high standing
on GDP per capita or income (if not deflated by living costs), they are among the most marginal regions in the country. Several regions in the European North belong to semi-peripheries (Komi, Karelia and Arkhangel’sk). They cluster with regions in southern Siberia and Central Russia and, thus, should be considered as a special, somewhat less marginal, part of the North. In sum, Russia has four distinct Norths, which differ in levels of resource-dependency, economic size and deprivation.

The Greater Canadian North has an even more differentiated regional structure. It includes regions from four peripheral groups: northern margin, deep periphery, rural hinterland, and industrial outskirts, as well as portions of resource semi-periphery (Figure 1.5). The resource semi-periphery is associated with northern parts of Alberta and British Columbia. These territories with booming resource economies are wealthier than other Norths, but still dominated by the core and heavily resource-reliant (Table 1.8). Industrial outskirts (northern British Columbia, Ontario and Labrador) are more disadvantaged regions with weaker economic base, albeit lesser resource-dependency. The competitiveness of local resource-processing industries is insufficient to sustain healthy labor markets, and unemployment appears to be a substantial problem (Table 1.8). The rural hinterland largely represents what is known as the “Near North” in Ontario, Quebec, and Atlantic provinces. This region is characterized by dominated, disadvantaged hinterlands, but they are generally not as marginalized as the Far North. The deep periphery group (Northern Saskatchewan and Manitoba North) is a vivid illustration of what has been referred to as the “Forgotten North”. This region is dependent and dominated, but devoid public sector investments and employment, enjoyed by its territorial counterparts. Finally, the northern margin region-group represents a part of the Canadian North distinguished by its public dependency (subsidization). Indeed, the levels of government employment and subsidization are

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11 Russia’s official definition of the North (so-called “regions of the Far North and equated areas”) is based on subregional units, and, thus, is difficult to reconcile with the current scale of analysis; besides, it is a bureaucratic
remarkable, while regional socio-economic conditions are noticeably better than in the deep periphery.

THE NORTH VS. THE “MAINLAND”

I take the Greater Russian and Canadian Norths to carry out the discriminant analysis to identify what structural vectors produced these groupings. I also seek to find out if and how the North is distinct from the “mainland”, i.e. to unveil the discriminating factors (“fault lines”) between the North and the ‘mainland’. Table 1.9 contains standardized canonical discriminant function coefficients and means for the two groups of regions. In Russia, the discriminant function successfully classified 94.3% of cases and had Wilk’s Lambda 0.38. The staple, distance and dependency-deprivation vectors have highest canonical coefficients, thus being most influential discriminating components. It can easily be seen that the North has much higher means on both dependency-deprivation and staple structural variables. Reflecting back on the PCA, these results suggests that the northern regions are more dependent, deprived and staple-reliant than southern. Most definitely, they are more distant as well (the average distance from Moscow is 1,609.4 kilometers vs. 275.6 for the “mainland”). The ‘new economy’ variable contributes less to the discriminanting function, albeit is still quite influential (coefficient exceeds 0.3). Again, the mean values of factor scores demonstrate that the North tends to be dominated and to have a weak ‘new economy’ (in both scores are negative).

Table 1.9. Differentiation between the North and “mainland”, Russia

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Standardized Canonical Discriminant Function Coefficients</th>
<th>Mean “mainland”</th>
<th>Mean the North</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance</td>
<td>.042</td>
<td>.026</td>
<td>-.137</td>
</tr>
<tr>
<td>Dependency/deprivation</td>
<td>.333</td>
<td>-.181</td>
<td>.954</td>
</tr>
<tr>
<td>Staple</td>
<td>.652</td>
<td>-.244</td>
<td>1.300</td>
</tr>
<tr>
<td>‘New economies’</td>
<td>-.301</td>
<td>.084</td>
<td>-.441</td>
</tr>
<tr>
<td>Distance</td>
<td>.634</td>
<td>275.6</td>
<td>1609.4</td>
</tr>
</tbody>
</table>
In Canada, the discriminant function was less successful (Wilk’s Lambda 0.62), but still significant, and classified correctly 89.5% of cases (Table 1.10). It appears that the manufacturing/staple, public subsidization, labor market and distance from the “supercore” (Toronto, Montréal and Vancouver regions) are the most important discriminating factors. The role of dominance/’new economies’ is also substantial. In effect, this means that the discriminating variables in the Russian and Canadian North are similar. A logical conclusion from these observations (taken together with the previous results) is that processes of regional differentiation and marginalization of the North in Russia and Canada are very much alike. The only notable difference is that the dominance vector does not appear to be discriminating between the Russian North and the “mainland” (because of the special role of the staple quasi-core in Russia’s economy). On the other hand, a smaller coefficient assigned to dependency/deprivation in Canada than in Russia points to a lesser socio-economic gap between northern margin and the “mainland” in Canada (see discussion in Agranat, 1992).

Table 1.10. **Differentiation between the North and “mainland”, Canada**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Standardized Canonical Discriminant Function Coefficients</th>
<th>Mean “mainland”</th>
<th>Mean the North</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance/’new economies’</td>
<td>.330</td>
<td>.084</td>
<td>-.495</td>
</tr>
<tr>
<td>Dependency/deprivation</td>
<td>-.167</td>
<td>-.042</td>
<td>.245</td>
</tr>
<tr>
<td>Public subsidization</td>
<td>-.554</td>
<td>-.133</td>
<td>.786</td>
</tr>
<tr>
<td>Manufacturing/staple</td>
<td>.599</td>
<td>.140</td>
<td>-.824</td>
</tr>
<tr>
<td>Labor market</td>
<td>.562</td>
<td>.128</td>
<td>-.754</td>
</tr>
<tr>
<td>Distance</td>
<td>-.187</td>
<td>661.1</td>
<td>1436.6</td>
</tr>
</tbody>
</table>

**FURTHER DISCUSSION**

Results point to both existential and fundamental similarities between mechanisms of regional economic differentiation in Russia and Canada. Here I leave aside a general discussion of why logics and principles of regional differentiation appear to be near identical, despite apparent (objective and perceived) historical, institutional, political and ‘cultural’ differences
between Canadian and Russian geo-economic systems. A possible explanation is the universality of organizational logics that operate by creating competitive inequalities and hegemonic inequities among regions in any geoeconomic environment and at any scale. Of course, any given combination of these logics, their strengths and forms, will be place-specific (emerging as ‘local models’ (Barnes & Hayter, 2005)).

As I argued earlier, the processes of regional differentiation are controlled by complementing logics of spatial self-organization of geoeconomic systems (see Table 1.1). I also contended that overlapping logics create regional polarities by producing competitive inequalities and hegemonic inequities. The adverse effect of competitive inequalities on resource-based economies is well-studied. Various market-based logics of spatial differentiation related to production, communication, social dynamics, distribution and institutional models (Table 1.1), can be mobilized to explain such inequalities, and market mechanisms are believed to be universally applicable. On the one side, economic forces described in Harold Innis’ Staple Theory create ultimate competitive disadvantage for any resource-reliant economy (Innis, 1956; Barnes, 1993). Remoteness, lack of access, and isolation increase transportation, production and delivery costs (Huskey, 2005). Disconnectedness also may imply ‘cultural distance’ that increases ‘transaction costs’ between businesses in the resource frontier and the “mainland”. In terms of production, northern regions lack fundamental competitive advantages such as agglomeration, localization and urbanization economies (e.g. Krugman, 1991). From the institutional perspective, these territories, as many other peripheries, have ‘thin’ institutions, inflexible social frameworks, unfriendly innovation environments, and are generally ill equipped to engage in the process of institutional ‘learning’, let alone in a new path creation (Bastian & Hilpert, 2003; Morgan, 1997; Petrov, 2007). Due to limited local markets, fluctuating populations, a strong decoupling effect and a symptomatic ‘Dutch disease,’ frontier economies are also devoid benefits of the consumption-driven growth (Bourne, 2000).
To a different degree, all of these typical logics and outcomes of economic marginality exist in the Canadian and Russian North. However, the Russian North has been developed in conditions of suppressed (or ignored) competitive inequalities mitigated by the Soviet planning system (through artificial pricing, subsidies, forced labor, etc.). An enactment of competition after the market reforms led to a devastating crisis and further marginalization of the North (Bradshaw, 1995), serving as a proof that competitive inequalities unavoidably present in the frontier.

Hegemonic inequities, rather than market competition, represent the leading mechanism of creating regional structure under the state-socialist regulation system. Planning was the major driving force of economic development and regional investment. Soviet planners utilized a system of prioritization among industries, enterprises and regions. Under the Leninist doctrine of regional development based on the idea of an ‘even distribution of productive forces’ (Hill & Gaddy, 2003), northern regions (and other peripheries) automatically became prioritized. Putting this in terms of Kornai’s (1992) hard-soft budget constraint perspective, some northern regions enjoyed the ‘softest’ investment constraints, since resource enterprises located on their territory were poised to receive virtually endless public investments. Under the high-priority-soft constraint system, northern regions have become increasingly dependent on inward investments from the center and on its direct and indirect subsidies (Dienes, 1987)\(^\text{12}\). The outcome was a growing dependency and a dominated status (despite their dominant role in generating export revenues) in the Soviet economic system. On the other hand, the underinvestment in non-basic sectors (including services) as well as in housing and social infrastructure resulted in high levels of socio-economic deprivation in most northern regions, even despite high (state subsidized) wages (Agranat, 1992; Wood, 1987).

\(^{12}\) There were other fundamental reasons for growing inefficiency of Soviet economy and need for increasing capital investments (see Ickles, 2001)
Hegemonic inequities between Canadian northern frontier and the metropolitan core emerged under different, although not completely dissimilar circumstances. Innis (1956) pointed to the fundamental dichotomy between the staple frontier and metropolis. Although in his staple theory Innis alluded mostly to comparative disadvantages (Barnes, 1993), the metropolitan-hinterland dichotomy had other dimensions vested in hegemonic inequities (which Innis also acknowledged). In the 20th century, these inequities were associated with both the pre-Fordist colonial regime and the Fordist state paternalism institutionalized since the 1950s. The state became the main developer of the North, and introduced a system of public subsidization (Rea, 1976; Bone, 2003), in some respect similar to the “soft-constraints” under central planning. The North became increasingly dependent on the federal state, much like in the former USSR. Even after the demise of the Fordist state the public dependency remained, whereas socio-economic deprivation (a main condition of marginality) has not been eliminated. Similarly to Russia’s northern regions, hegemonic inequities propelled and preserved resource dependency (since staple sector concentrated the lion share of investments), but did not allow local capacities to develop (as they were de-prioritized and underfunded).

CONCLUSIONS

My principal conclusions can be summarized as follows. First, at the theoretical level, I demonstrated how core-periphery-margin multichotomies are multicentric and multivector and each is associated with particular (and universal, at least in case studies presented here) logics of spatial differentiation governed by hegemonic inequity and competitive inequality. Complexities of regional structure and local models of regional paths result from configurations, in which these continuums overlap. Empirical evidence from Russia and Canada shows that conditions of marginality tend to converge in particular regions (i.e. act synergistically), producing multilayered “supercore”, “superperiphery” and “supermargin”, although these “supergroups” are internally not homogenous.
Secondly, based on the multichotomic approach, I ‘remapped’ the regional structure of Canada and Russia. I demonstrated that vectors of differentiation and organizational logics underpinning them, as well as conditions of marginality in Russia and Canada are generally similar. This conclusion fully applies to the northern frontiers of the two countries, whose boundaries I mapped by tracing marginal resource- and public-dependent regions. As a result, the paper revises regional structures of both countries and ‘redefines’ the Norths. The new internal regional structure of the North differ from conventional designations used in the geographic literature, and reflects more appropriately a multiplicity and complexity contemporary of the state of northern frontiers.

The contemporary North in both countries is a remarkably economically marginalized and considerably fractured space. It is also a strikingly similar space, although there are apparent cross-country and regional differences. I discussed some forces and processes that I think contributed to creating these similarities from positions of market and non-market (hegemonic) mechanisms. This later analysis should be continued to include a more thorough qualitative study of northern development paths in Canada and Russia. My results strongly urge scholars of the North to focus on understanding similarities between capitalist and post-socialist resource frontiers to pave a way of learning from both experiences. The analysis also suggests that despite growing diversity of peripheries, they continue to share conditions of marginality and develop under systemic logics of regional differentiation. Regional scientists must step up efforts to rediscover frontiers in order to learn about the regional dynamics with profound local, regional, national and global implications.
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Appendix 1. Regions of Russia

1. Bryanskaya Oblast
2. Vladimirskaya Oblast
3. Voronezhskaya Oblast
4. Ivanovskaya Oblast
5. Kaluzhskaya Oblast
6. Kostromskaya Oblast
7. Kurskaya Oblast
8. Lipetskaya Oblast
9. Moscovskaya Oblast
10. Orlovskaya Oblast
11. Ryazanskaya Oblast
12. Smolenskaya Oblast
13. Tambovskaya Oblast
14. Tverskaya Oblast
15. Tulskaya Oblast
16. Yaroslavskaya Oblast
17. City of Moscow
18. Republic of Karelia
19. Republic of Komi
20. Arkhangelskaya Oblast
21. Nenets AO
22. Vologodskaya Oblast
23. Kaliningradskaya Oblast
24. Leningradskaya Oblast
25. Murmanskaya Oblast
26. Novgorodskaya Oblast
27. Pskovskaya Oblast
28. City of St. Petersburg
29. Republic of Adygeya
30. Republic of Dagestan
31. Checheno-Ingushskaya Republic
32. Kabardino-Balkarskaya Republic
33. Republic of Kalmykia
34. Karachaevo-Cherkesskaya Republic
35. Republic of North Ossetia-Alania
36. Krasnodarskiy Kray
37. Stavropolskiy Kray
38. Astrakhan skaya Oblast
39. Volgogradskaya Oblast
40. Rostovskaya Oblast
41. Republic of Bashkortostan
42. Republic of Mariy El
43. Republic of Mordovia
44. Republic of Tatarstan
45. Udmurt Republic
46. Chuvash Republic
47. Kirovskaya Oblast
48. Nizhegorodskaya Oblast
49. Penzenskaya Oblast
50. Perm skaya Oblast
51. Perm skiye AO
52. Komi-Permyatskiy AO
53. Samarskaya Oblast
54. Saratovskaya Oblast
55. Ul'yanovskaya Oblast
56. Kurganskaya Oblast
57. Sverdlovskaya Oblast
58. Tyumenskaya Oblast
59. Khanty-Mansi AO
60. Yamalo-Nenets AO
61. Chelyabinskaya Oblast
62. Republic of Altay
63. Republic of Buryatia
64. Republic of Tyva
65. Republic of Khakasia
66. Altayskiy Kray
67. Krasnoyarskiy Kray
68. Taimyrskiy AO
69. Evenkiyskiy AO
70. Irkutskaya Oblast
71. Ust'-Ordynskiy Buryatskiy AO
72. Kemerovskaya Oblast
73. Novosibirskaya Oblast
74. Omskaya Oblast
75. Tomskaya Oblast
76. Chitinskaya Oblast
77. Aginskiy Buryatskiy AO
78. Republic of Sakha
79. Primorskiy Kray
80. Khabarovskiy Kray
81. Amurskaya Oblast
82. Kamchatksaya Oblast
83. Koryaki AO
84. Magadanskaya Oblast
85. Sakhalinskaya Oblast
86. Evreyska autonomous oblast’
87. Chukchi AO
88. Belgorodskaya Oblast
89. Orenburgskaya Oblast

Note: AO – autonomous okrug
**Appendix 2. Economic regions of Canada**

<table>
<thead>
<tr>
<th></th>
<th>Region Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ER1010 Avalon Peninsula</td>
</tr>
<tr>
<td>2</td>
<td>ER1020 South Coast - Burin Peninsula</td>
</tr>
<tr>
<td>3</td>
<td>ER1030 West Coast - Northern Peninsula - Labrador</td>
</tr>
<tr>
<td>4</td>
<td>ER1040 Notre Dame - Central Bonavista bay</td>
</tr>
<tr>
<td>5</td>
<td>ER1110 Prince Edward Island</td>
</tr>
<tr>
<td>6</td>
<td>ER1210 Cape Breton</td>
</tr>
<tr>
<td>7</td>
<td>ER1220 North Shore</td>
</tr>
<tr>
<td>8</td>
<td>ER1230 Annapolis Valley</td>
</tr>
<tr>
<td>9</td>
<td>ER1240 Southern</td>
</tr>
<tr>
<td>10</td>
<td>ER1250 Halifax</td>
</tr>
<tr>
<td>11</td>
<td>ER1310 Campbellton-Miramichi</td>
</tr>
<tr>
<td>12</td>
<td>ER1320 Moncton - Richibucto</td>
</tr>
<tr>
<td>13</td>
<td>ER1330 Saint John - St. Stephen</td>
</tr>
<tr>
<td>14</td>
<td>ER1340 Fredericton - Oromocto</td>
</tr>
<tr>
<td>15</td>
<td>ER1350 Edmundston - Woodstock</td>
</tr>
<tr>
<td>16</td>
<td>ER2410 Gaspésie-Oles-de-la-Madeleine</td>
</tr>
<tr>
<td>17</td>
<td>ER2415 Bas-Saint-Laurent</td>
</tr>
<tr>
<td>18</td>
<td>ER2420 Capitale-Nationale</td>
</tr>
<tr>
<td>19</td>
<td>ER2425 Chaudière - Appalaches</td>
</tr>
<tr>
<td>20</td>
<td>ER2430 Estrie</td>
</tr>
<tr>
<td>21</td>
<td>ER2433 Centre-du-Québec</td>
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<td>22</td>
<td>ER2435 Montérégie</td>
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<td>ER2440 Montréal</td>
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<td>ER2465 Abitibi- Témiscamingue</td>
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<tr>
<td>29</td>
<td>ER2470 Mauricie</td>
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<tr>
<td>30</td>
<td>ER2475 Saguenay - Lac-Saint-Jean</td>
</tr>
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CHAPTER 2
Marginal Regions in Discursive Space: Struggling with Development in the Russian and Canadian North*

*in preparation for the *Environment and Planning A*

INTRODUCTION
Reading a local magazine, published in one of the northern Russian provinces in the early 1920s, I ran into an article with an intriguing title “Canadianization of the Murmansk railway” (Chirkin, 1923). Its author advocated using the Canadian experience to colonize the Russian North. Canadians, in his opinion, introduced a successful system of attracting settlers and investment to areas along the newly built transcontinental railways that, he argued, should be adopted in Russia. This article was, to my knowledge, the first deliberate attempt to compare northern development initiatives in Canada and Russia and to grasp the counterpart’s experience. Previously, references to the “Canadian schema” of development were made only in relation to the settlement of peasants in the very south of Siberia (Voronov, 2006).

It seems that over eighty years later, both Canada and Russia are still searching for better ways to manage their northern frontiers. The “first ever comprehensive northern strategy” was announced by the Liberal Government in 2004 (CARC, 2006), and the new Concept of socio-economic development of the North was adopted by the Russian Cabinet in 2000 (Pravitel’stvo RF, 2000). The emergence of new strategies and the continuing reevaluation of the past policies raise a number of important questions. Does this revisionism point to the failure of past development trajectories? If yes, in what ways did they fail? Does the failure on both sides mean that strategies, policies and political economies of northern development

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13 However, neoliberal governments, now in power in Canada and Russia, have done little to finalize and implement these strategies. While in the last few years the rhetoric on this matter became more affirmative, scattered actions have not yet materialized in a coherent regional policy.
shared a degree of similarity? If so, do we understand how these similarities of the two *Norths* have been socially constructed and materially produced?

Even from purely descriptive observations, northern regions of Canada and Russia share both remarkable similarities and significant differences. Both regions occupy remote, but extraordinarily large parts of vast and sparsely populated countries, both have unfavorable climatic conditions, both possess outstanding amounts of natural resources, and both have colonial past. At the same time, in the 20th century northern regions of the two countries had diverging paths of development, belonging to different and adversarial political systems. Some observers noted “the very nature of the two governmental systems complicates any comparison” between the Norths (Barr & Bradshaw, 1983, p. 14). Resource Fordism in the Canadian North (Jenson, 1989; Southcott, 1998, Hayter & Barnes, 2001) with its corporate capitalism and welfare governance, in many ways contrasted the Soviet North, with its state-socialist economy and communist political regime (Slavin, 1972; Wood, 1987). The collapse of the Soviet Union and the weakening of the Canadian welfare state, followed by the neoliberal reforms, posed new, and largely similar challenges to both northern frontiers. Some analysts argued that in this new era of globalization both regions would exhibit strong convergence, and that former differences must be studied to enrich mutual experiences of the two nations (Cherkasov, 1988).

It seems that as never before, Russia and Canada are eager to share their experiences in fostering development in the northern frontiers, but the study of their pivotal commonalities and differences is, surprisingly, yet to be done. There have been only a few studies that practically addressed these questions (Agranat, 1992; Barr & Bradshaw, 1983), and the process of reopening each other’s experiences is in its early stages (Solomon, 2004). Recently, especially after the publication of the “Siberian Curse” (Hill & Gaddy, 2003) the Canada-Russia comparisons fueled a contentious debate concerning real or perceived historical differences in developing countries’ frontiers (Gaddy & Hill, 2006). Led by
economists and political scientists, this debate, albeit very informative (especially the work of Mikhailova, 2004), reiterated the superficiality and lack of understanding of the geographical substance and societal origins of northern development projects in each of the two countries.

This paper pursues three objectives. First, it identifies and discusses socio-economic challenges that both of the “Norths” face. Secondly, finding them strikingly similar, the paper uses a combination of discursive analysis and regulation theory to reinterpret the origins of present-day problems and examine the genealogy and outcomes of northern development trajectories. It argues that the Canadian and Russian northern development regimes shared profound commonalities, which are as important as differences. Lastly, from these positions, the paper compares and critiques past and present policies of regional development in the two Norths, and discusses their viability. I finish by pointing to possible alternative perspectives that reconcile an emerging postcolonial paradigm of development and realities of post-Fordism.

APPROACH: REGULATION, INSTITUTIONS AND EVOLUTION OF DEVELOPMENT DISCOURSES

In contrast to many other recent inquiries into the phenomena of development (e.g., Escobar, 1995; Power, 2003, Cupples et al, 2007) this study adopts a structural model to explain and compare development trajectories. It combines three conceptual interpretations of the society-economy relationships, coming from the regulation theory, discursive analysis and institutional economic geography. I attempt to model ‘development regimes’, in which institutionalized regional regulation frameworks and discourses generate particular forms of regional development. This approach is well warranted to meet my objectives as it offers a useful combination of factors, linkages and forces that is helpful in interpreting and comparing a complex nature of economic development regimes.

14 To situate my paper, I define the Canadian North according to the Statistics Canada recommendations to include 20 northern Census divisions (McIven & Puderer, 2000). The Russian North is comprised of 14 Russia’s regions (provinces), a definition recommended by the World Bank (2001).
Figure 2.1 presents a model of a development regime in a hypothetical region. In this model, the *regime of accumulation* determines organizing principles of economy (production, consumption and transaction regimes), whereas mode of social regulation (MSR) is responsible for establishing the regulation environment – an institutionalized set of social regulation practices. Informal and formal institutions maintain a *regulation environment* by creating and enforcing codes of conduct and rules of practice. The principles of economic organization and the regulatory framework are reciprocally related, since the compliance between them is necessary for the system to be stable (Liepetz, 1987; Harvey, 1989).

Regulation principles manifest themselves through institutions. Social institutions play a pivotal role in economic change, in both capitalist and (post)socialist settings (North, 2005). It has been demonstrated that differences in institutional frameworks are based on fundamental dissimilarities among regional societies, i.e. that institutions are regional phenomena (Amin, 1999). In other words, societal embeddednes is a significant factor of economic development (Grabher, 1993; Storper, 1997). In the case of northern development, formal institutions and institutionalized practices of regional planning should be considered even more carefully: the role of public policy in economic development in the frontier is important as, perhaps, nowhere else. Thus, the analysis of such policy provides a pivotal milestone in understanding economic trajectory in the North (Hill & Gaddy, 2003).

Public policies, in turn, can be seen as institutionalized products of dominant discourses, empowered by regional development actors (e.g. state and corporations). In Jessop’s terms (1990), discourses embraced by such ‘hegemonic blocks’ are societalized through societal structures and actor strategies, in which state plays the central role. That is why I emphasize the third component of a development regime – *discursive paradigms* of development (Figure 2.1). Discourse is a socially embedded practice of obeying certain rules (Foucault, 1970). It is in possession of knowledge that is considered to be the ‘truth’, and it constructs a ‘topic’ (or a particular paradigm) by producing the objects of knowledge shared by people. A discourse of
development, thus, is related to power, and, through formal or informal means, regulates behaviors of societal actors.

Figure 2.1. **Structural components of a development regime**

Despite multiplicity, discourses constitute embedded and hegemonic *regional discursive formations*, which “originate in, and display the effects of, certain physical, politicoeconomic, and institutional settings, [and are] grounded in material, political, or ideological power supremacies, demonstrate a continual tendency to extend over spaces with greatly different characteristics and discursive traditions” (Peet & Watts, 1993, p. 231). One of the major global discursive formations is the Western discourse of development (Watts, 1993). In the 20th century, the hegemony of the development discourse derived from sociopolitical blocks that cemented uneven power relationships between metropolises and colonies, between ‘developed’ and ‘developing’ regions. Albeit the development discourse is largely documented in the ‘Third World,’ the “internal colonies” within metropolises have also been deeply affected (Sidaway, 2002).

As this paper is concerned with the regional development in the Canadian and Russian North, I attempt to dynamically link development discourses, institutionalized public policies and mechanisms of economic regulation to describe dominant (or hegemonic) *development*
regimes (Figure 2.1). The discourse of development, empowered by hegemonic blocks of societal actors, affects the formation of paradigms of regional development. A development paradigm may be defined as socially embedded and legitimized through social institutions ways of conceptualizing and practicing development, including purposes, ideas, ideals, means and methods of regional development. Major actors in the region, such as the state (national, provincial, local) and large resource corporations, perform as strategic actors in forming and applying a regional development paradigm to existing principles of economic reproduction through a mode of social regulation that they embody. These three components in their interplay determine the nature (i.e. regime) of regional development in a given region.

This conceptual scheme is the starting point of the analysis undertaken in this paper. I focus on the link between discourses of regional development, regulation regimes of capitalist production and actual development practices, considering changes of formally institutionalized regulatory frameworks. I begin by contemplating whether these two regions do indeed share similar challenges. I continue by unveiling archaeologies and genealogies of northern development discourses in the two countries. I then discuss regulation regimes associated with development discourses and demonstrate their links with conditions of marginality common to both northern peripheries. Reflecting on the failure of both northern development projects, I critique and juxtapose past development trajectories to alternative (“postdevelopmentalist”) approaches, which, I argue, can deliver more success under the contemporary capitalist regime. I argue that postcolonial development project can be reconciled with the post-Fordist reality of contemporary capitalism.

THE RUSSIAN AND CANADIAN NORTH: SHARING CHALLENGES OF MARGINALITY

Past analyses identified the most acute economic challenges of the contemporary northern regions (Agranat, 1992; Bourne, 2000; Bone, 2003; Petrov, 2007). They include, but are not limited to the lack of economic viability and stability, staple-reliance and public sector-
dependency, deficient levels of population well-being, scarce infrastructure, truncated labour markets, shortage of local capacities and competencies, subordinated political status, and environmental consequences of mega-projects and of environmental change. In sum, from the perspective of regional disadvantage, the great resemblance between the Russian and Canadian North is difficult to dispute (see Petrov, 2007). One of the possible explanations to this fact (and my working hypothesis in this paper) is be that similar development paths of the Norths delivered similarly unsuccessful results. Further, engaging the discourse analysis and regulation theory, I attempt to develop this argument and to unveil the fundamental similarities between the hegemonic projects of northern development in Canada and USSR/Russia. I use this approach to shed a light on why both of them did not succeed and what alternatives, if any, can make the northern development work.

TRACING DEVELOPMENT PATHS: ARCHEOLOGY AND GENEALOGY OF NORTHERN DEVELOPMENT PROJECTS

In the 20th century, the northern frontier has been an object of discursive development policies and has been a discursively constructed space (West, 1991). From the constructivist positions, one may argue that the material being of the North, its development path, is a reflection of discursive policies, empowered by social actors and societal institutions throughout the history of colonization. In order to unveil the nature of regional development regimes in the North, it is necessary to find out how the development in the North has been socially produced. Therefore, I begin by contemplating the archaeologies and genealogies of hegemonic northern development discourses in Canada and Russia.

Any discussion of this matter, however, is impossible without placing development in the North into the global context of development projects that have been unveiling around the “underdeveloped” world throughout the 20th century. Summarizing experiences in the ‘Third World,’ Peet & Watts (1993) pointed out the existence of the dominant Western regional discursive formation of development that crosses political and geographic boundaries in
shaping development doctrines. This formation (exposed and fiercely criticized in the postcolonial literature) presents an overarching framework for modernist discourses of development, which are “calibrated around the relative weight attributed in its normative vision to the role of the state, the market, and civil institutions” (Peet & Watts, 1993, p. 233), but share a number of principal similarities. The nature of the Western discursive formation is based on the normative views on development imported from the West (Escobar, 1995; Watts, 1993). Resting on assumptions and ideals invented by classical and neoclassical economists, equipped by the Western strategies of economic growth and enforced by the state or international organizations, the colonial development doctrine emphasizes industrialization, external aid and development planning. By emulating the Western economic success, development efforts fulfill a “civilizing mission” of colonialism and attempt to create “modernist utopias” (Scott, 1998), neither acknowledging economic differences nor appreciating cultural discrepancies around the world (Power, 2003).

This interpretation of development as a hegemonic discursive project (see reviews in Radcliffe, 2005; Sidaway, 2007), entirely applies to the Canadian and Russian Norths. The ‘Western’ discourse of development was intact in the northern frontier as much as it was in the ‘developing’ countries: “[t]he systemic exploitation and Othering of ethnically or spatially distinct populations” (Sidaway, 2002, pp. 18-19) and the marginalization of internal colonies constituted the dynamics of the “settler capitalism” in Canada and other countries with vast frontiers. As their counterparts in Asia, Latin America and Africa, northern developers believed that “a majority of the people who live in the north want a change in present conditions which corresponds to what is generally understood as modernization” (Orvik, 1983, p. 11). Applied at the national scale, this development discourse juxtaposed ‘developed’ mainland vs. ‘underdeveloped’ frontier and justified the ‘regime of truth’, under which the superiority of ‘developed’ was unquestionable (Pretes, 1988). The assumption of
the mainland’s supremacy over the hinterland validated the state-led economic, political and social intervention in the periphery.

Below I demonstrate that the Canadian and Soviet development doctrines engaged the ‘othering’ of the North in order to differentiate the North from the South (just like the Orient from the Occident (Said, 1978)), to accentuate its dissimilarity and distinction through ‘nordification’ (West, 1991) and then to exploit and govern the North. Much like in other parts of the ‘developing’ world, ‘othering’ has been instrumentalized and promoted by state and corporations, which used the estrangement of the North as a justification for commodifying it and as a mean of governing it (see Watts, 2003 for a discussion of links between capitalism, governance and development). On the other hand, a ‘dis-othering’, i.e. the emulation of the Western (or, in the context of Russia and Canada, ‘southern’) development path, was the implicit objective of development policies. ‘Dis-othering’ through development served the task of making the North an exploitable and governable space.

**The Canadian North**

The invention of the Canadian North as a space of economic colonization is captured by the Harold Innis’s (Innis, 1956) notion of a perpetual dichotomy between the North and the South (“mainland”). The “Innisian” hinterland discourse (transformed into the Laurentian thesis or the metropolitan-hinterland paradigm (Careless, 1989)) was a manifestation of the European colonial discourse, in which the alienation of the ‘other’ (e.g. the frontier, the North, the Orient) was a prerequisite for its subsequent exploitation by metropolis (Pretes, 1988). The Hudson Bay Company that governed the Canadian North for centuries on behalf of the British government was engaged in exploiting the region and never in developing or settling it (Rich, 1958). Notably, this paradigm of colonization contrasted with the American ‘Turnerism’ practiced in colonizing the Great American West and Canadian Prairies. The latter was a colonial discourse of acquisition and expropriation of the frontier (Francis, 2003), when the frontier has been deemed a continuation of the mainland, not its antipode
Although the immediate effect of both approaches was a subordination of colonized spaces and a ‘cyclonic’ (using Innis’s metaphor) nature of regional development (Barnes et al, 2001), associated with resource cycles and extreme instability of economies and population, the long term differences emerged in the ability of regional systems to withstand the economic ‘storms’ and ‘calms’.

However, by the early 1950s, the Canadian (or was it British?) discourse of development in the North underwent significant changes. The Canadian state found itself in a new political, economic and geographic environment, when the importance of northern resources and of the space itself increased (Pearson, 1946). In the emerging national consciousness with its mythical representation of Canada as a nation of the ‘true North’, the northern frontier has increasingly become “a resource and economic hinterland, which is simultaneously incorporated in a social spatialization as a mythic heartland” (Shields, 1991, p. 163). In addition, the country had to respond to the increasing demands of the resource-thirsty Fordism (Jensen, 1989) and to assert its political control over northlands. It also could no longer ignore critical social problems in the region and its socioeconomic backwardness, even compared to Alaska and Siberia (Rea, 1968).

The formal inauguration of the new discursive paradigm of developing the North came in the 1950s, when Canada’s Prime Minister John Diefenbaker launched a new national policy for the North – so called ‘Northern Vision’. Diefenbaker’s program emphasized the development of infrastructure and communication using public funds in order to facilitate access to resources and link staple regions with the south (Diefenbaker, 1958; Rea, 1976; Bone, 2003). Implicitly, this program aimed to making the North a more exploitable and governable space, an utopist land of modernization and prosperity. According to the new discursive paradigm, the federal and provincial governments assumed a responsibility for maintaining growth and welfare in the hinterland. They also implemented measures to

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15 A Turnerian discourse was prevalent in developing the Canadian Prairies and southern portions of provincial Norths, but has not been ‘extended’ to the Far North. The acquisition and appropriation of the “northern space”
facilitate Indigenous ‘social modernization’ (Hamilton, 1994). Development and planning were formally institutionalized through establishing and expanding responsible government agencies (most notably DIAND\textsuperscript{16}) and passing regulatory legislation (e.g. “instant town” acts).

The ‘Northern vision’ was a manifestation of a new hegemonic discourse of northern development that may be termed Diefenbakerism. Diefenbakerism brought about a doctrine of centrally-planned publicly-funded development and of shared responsibility between the state and monopolistic capital. It became a central component of the new development regime in the Canadian North. This regime, dominant in the 1950-1970s, secured the culmination of resource Fordism, although untimely was responsible for its demise. Not entirely dis-alienating the frontier, Diefenbakerism moved closer to ‘Turnerism’ in its desire to make the North an integral part of national territory and national identity. Not accidentally, Diefenbaker offered this metaphorical connection in his “northern Vision” speech: “Sir John A. Macdonald … opened the West. He saw Canada from East to West. I see a new Canada - a Canada of the North.” (Diefenbaker, 1958, p.1)

The reign of Diefenbakerism was almost uncontested until the early 1970s, when alternative counter-discourses, propelled by environmentalism and aboriginalism, began to emerge (Hayter, 2003). The adequacy of the industrialism (and “high modernism” as termed by Scott (1998)) for delivering viability to northern regions was boldly challenged. The 1972 Federal Government strategy of northern development demonstrated a shift towards mixed development, community viability, environmental issues and Aboriginal people. The policy studies by the Canadian Council on Rural Development (1974) and the Science Council (1977) advocated the abandoning the objective of “industrial growth” by means of mega-projects in favor of “locally based development strategies” and mixed development options (industrial and traditional sectors, non-renewable and renewable resources (Barrie, 1987, p.

\textsuperscript{16} Department of Indian Affairs and Northern Development = INAC (Indian and Northern Affairs Canada)

(and the expansion of the Ecumene) has never extended beyond the limits of arable lands (Woods, 2006).
Most vocally, the Diefenbakerist doctrine was confronted in the Berger’s inquiry (1977) that disputed the legacy of resource mega-projects and emphasized the importance to Indigenous rights and institutions (e.g. native development corporations and cooperatives) in regional development. In essence, these writings outlined a counter-discourse that rejected the idea of “opening the North for Canada” and the ideal of “modernizing North” – central premises of Diefenbakerism and the Western development discourse in general.

The Soviet North

The development regime in the Russian-Soviet North was based on different, although not antagonistic, approaches. Much like in Canada, the Soviet discourse of developing the North was based on ‘othering’ the North from the mainland and assigning a unique role to the region in the national mythology. If the Canadian northern development discourse could be traced to Harold Innis, the genealogy of the Soviet one points to Vladimir Lenin. However, Bolsheviks’ views largely inherited the core components of the Russian Imperial discourse on Siberia. In the public consciousness of the Imperial Russia, Siberia has always been the ‘other’, but yet has been considered ‘ours’ (Weiss, 2007). Much alike the American West, Siberia emerged as a mythical realm of future power and prosperity, yet an exotic, but an integral part of Russia.

After taking power, Lenin\(^{17}\) (1918) strongly promoted the idea of rapid exploration and development of the North. A new discourse of development fully emerged in the 1920s, when the Bolsheviks’ government proposed an ambitious plan of economic and social development of the country, known as the GOELRO plan (Bandman & Chistobaev, 1990)\(^{18}\). The leitmotif of GOELRO, derived from the Marxist economic theory, was the ‘rationalization of allocation of productive forces’ based on the geographic division of labor. GOELRO propagated the minimization of transportation costs by moving production closer to raw materials. In addition, it also advocated complex development, when economy in every region

\(^{17}\) It is worth reminding that Lenin spent three years of exile in the Siberian village of Shushenskoye.
(including most remote areas) was based on developing a mix of industries (Granik, 1971), and, thus, decreasing dependency of regions on one another.

In 1932, the Soviet Government (Gosplan\(^{19}\)) adopted the concept of northern development, which required including the North into the plans of ‘rational [equalized or even] distribution of productive forces’ (Letopis’ Severa, 1979). It was argued that single-industry development was disadvantageous and against the principles of socialist political economy, which required balancing among economic sectors in each region (Egorov & Lischenok, 1987). It was believed that northern regions would ultimately become self-sufficient. At this point, the Soviet discourse of hinterland development substantially diverged from the Canadian colonial discourse of the pre-Diefenbaker times. The Soviet paradigm of ‘conquering’ the North magnified and empowered the Turnerist ideas of acquisition and expropriation of the frontier space and its resources. Soviet regional planning was built upon the ideology of acquiring and remaking the North by expropriating its riches for the Stalinist “mobilization economy” (Gregory, 2003; McCannon, 1998). The economic ideology also served a geopolitical goal of Soviet planners to re-construct Soviet nation-space and make the USSR self-sufficient in natural resources.

In the 1960-1980s, the lack of investment capital and a weakening ability to enforce plans made the reality of northern development differ from anticipated results (Logunov, 1987). The orthodox paradigm of northern development was challenged by the Party’s discontent with the slowing rates of economic growth and by the strengthening counter-discourse of development that demanded a quicker and less costly exploitation of northern resources. The adoption of the Third program of the Communist Party cemented the shift. The development doctrine now advocated a “temporary” resource-reliant variant of regional development in the North: “in order to save time, first of all [to] use natural resources available for quick

\(^{18}\) GOELRO – The State Commission for the Electrification of Russia. It was later further reinforced in the so-called ‘Third program of the Party’ of the 1960-70s (Lynch, 2003).

\(^{19}\) Gosplan – Gosudarstvennyi Komitet po Planirovaniyu (State Committee for Planning) – the planning department within the Soviet government.
extraction and giving the largest economic effect” (Programma KPSS, 1961, p. 74). Thus, the Soviet discourse focused on exploitation rather than acquisition of the northern space as a whole, a paradigm inherited in the post-Soviet times. This shift is important to explain persisting economic marginality and sectoral and geographic disproportions in regional development in the Russian North.

Being the products of the Western development discursive formation (Watts, 1993), the Soviet and Canadian discursive paradigms of northern development shared some principal commonalities. As in other parts of ‘developing’ world, they included ‘othering’ and subordinating the North to the mainland. The normative development paradigm attempted to dis-other the North by emulating development paths of the ‘South’. Whereas the ideological bases of Difernbakerism and the Soviet development discourse were different, the idea of ‘taking care’ of the North by ‘taking advantage’ of its resources was the center block in both. So was the idea of state involvement and state intervention as a primary regulation mechanism. In sum, the common discursive elements of the development regimes in the Norths included: a teleological approach to planning (based on normative, discursively constructed set of goals), the conception of nature as an object of activity and an inexhaustible storage of resources, the mythology of frontier as an empty space (devoid its own value and meaning), and the positioning of state as a primary actor and the leader in the developmentalist ‘hegemonic block’ (Egorov & Egorova, 2006, Bolotova, 2004, Watts, 1993).

REGULATION SYSTEMS AND REGIONAL DEVELOPMENT: RESOURCE FORDISM AND GOSPLANISM

According to the conceptual scheme of a development regime (Figure 2.1), societal forces work to construct a system of regulation that enforces the dominant discourse of development. The resultant hegemonic project is institutionalized in forms of governance, legal and political systems, and public policies, which collectively constitute a mode of social
regulation. Policy, in this reading, is an institutional and institutionalized mechanism of empowering and materializing the discourse. The policy is applied in particular societal and economic arrangements and is embodied by the dominating regulation regimes. To understand processes and outcomes of regional development in the North, it is necessary to analyze the regulation regimes, under which development occurred. Below I describe the resource Fordism (Jonston, 1989; Tickell & Peck, 1992) and Gosplanism (a form of the state socialism (Smith, 1998)).

Although the regulation theory was devised to explain the inner workings of capitalism, it has been applied to socialist and post-socialist economic systems (Altvater, 1993; Murray, 1992; Smith & Swain, 1998; Smith, 1998). Some even argued that the state socialism was a ‘bastard’ form of Fordism (Altvater, 1993; Murray, 1992). This argument highlights several major commonalities (Taylorism, mass production, although without mass consumption), but ignores more important fundamental differences of the socialist regulation (Smith, 1998), related to the absence of intensive accumulation, limited role of financial capital, unique wage and labor relations and the distinct bargaining process. In terms of regional development, the primary difference between the two, perhaps, is best described by the process, by which regulation frameworks operate. Instead of Fordist capital accumulation and circulation, mediated by negotiations between the state, corporations and unions, the determining factor in socialist economic regime is a process of bargaining between the capital-constrained state and investment-thirsty producers, in which the severity of bureaucratically determined capital constraints provides the ultimate regulation mechanism (Smith, 1998; Kornai, 1992).

The Soviet regulation system that I term here Gosplanism (taking the name of its main institution) was a regulation environment and system of spatial organization of economy based on direct state control and noneconomic exploitation of factors and means of production. The direction of economic development depended on internal bargaining among
actors representing different elements of the state’s machine. The central pillar of Gosplanism was planning. Under Gosplanism, an ultimate purpose of planning was not the accumulation of capital (or an efficient allocation of such), but the accumulation of output (Ickes, 2001).

The ever-growing demand for output from the state (defined by the plan) met the ever-growing demand for capital from enterprises (to produce the output).

Given limited resources, the state in this situation has an option to employ harder or softer capital constraints by prioritizing or de-prioritizing producers. In the Soviet system, the state made deliberate (and discursive) choices of what industries or projects could enjoy softer constraints (Sjoberg, 1998). Similar bureaucratic choices have been made between not only individual enterprises and ministries, but among regions (note that this distinction was almost irrelevant in the North, where entire regions relied on a few large, vertically-integrated enterprises and resource ministries). Ultimately, the plan reflected “the composite of ideological convictions and political clout, compromises, and horsetrading” (Dienes, 1987, p. 235) among and within the state and enterprises.

The choices surrounding planning and development decision-making were discursive in nature. They were driven by the dominant discourse of economic development in the North described in the previous section. This discursive paradigm dictated to put softest constraints on ‘northern’ enterprises in the base (staple) sector to ensure a quick expropriation of natural resources and industrialization. That is why investments of labor and capital have always been made available for northern producers to ensure the growth of strategic outputs. Apart from direct investments and incentives to labor force, “capital investments … in the North have tended to be artificially favored through lower putative interest charges (i.e. longer recoupment period), faster depreciation rates, omission of certain infrastructural costs” (Dienes, 1987, p. 235).

As one can see, the inner workings of Gosplanism were distinct from the classic Fordism. However, the resource Fordism may have more commonalities with Gosplanism than one
would expect. The distinctive features of Canadian “permeable” Fordism and particularly, the resource Fordism in the Canadian North, can be summarized as the following (Jacobs, 1989; Southcott, 1998). As its classic counterpart, resource Fordism rested on Taylorist organization of labor, intensive accumulation of capital (based on mass production and mass consumption), strong welfare system and long-term contractualization of wage relationships (Liepetz, 1997). As a mode of regulation, Fordism entailed a high degree of intervention by the Keynesian state and operated in accordance with the ‘trilateral agreement’ between state, corporations and labor unions (Southcott, 1998).

Resource Fordism’s distinctiveness, however, primarily derived from “remoteness and inherently strong ‘global’ influences”, dependence on exports, foreign ownership, and foreign technology, and “the possibility of resource exhaustion” (Hayter, 2003, p. 709). The “exploitation alliance” in the North was formed by federal/provincial/territorial governments, big transnational businesses and unions (Hayter, 2003). On the other hand, resource Fordism was marked by a particularly important role of the capitalist state in its entrepreneurial, regulation and welfare capacities, as well as by the conflict between national and local state.

In this view, the mechanism regulating regional development under resource Fordism, similarly to Gosplanism, may be best interpreted as a multipartite negotiation process. Bargaining between the stakeholders and forming of strategic alliances, not merely ‘market forces’, determined the direction of capital flows and terms of accumulation. In other words, the large-scale direct involvement of the state and the public sector in developing the North was operationalized by a complex system of bargaining, in which the coalition of state and corporations dominated and marginalized other stakeholders. The fundament for these arrangements has been laid by the Diefenbaker’s ‘Northern Vision’ program that advocated co-operation between federal and provincial governments and corporations. Such development practice was well suit to the discursive development paradigm of Diefenbakerism.
The state, centrally positioned in this system, exercised a priority-constraint mechanism: it deployed *softer* constraints in respect to chosen northern development actors (corporations) by widely subsidizing their activities through direct investment and/or indirect incentives. The history of northern mega-projects indicates that the degrees, to which the natural constraints, imposed by the market, were relaxed, depended on negotiations between the government (national, regional, local) and companies (Bone, 2003).

Of course, it is important to make a distinction between bargaining processes under resource Fordism and Gosplanism. In the case of resource Fordism, the negotiations between the state and enterprises not so much concerned the redistribution of inputs and surpluses, but conditions, under which corporations agreed to assume a residual risk to proceed with a frontier mega-project, passing most of the high-risk burden to the state. Given a limited availability of capital, the state, in effect, used a priority-constraint mechanism by rewarding the ‘more important’ producers (and projects) and constraining others. ‘Planning’ in this case, negotiated the allocation of investment priorities among capital-thirsty enterprises, according to a dominant paradigm (institutionalized by public policies). Ultimately, the development of the North was a state policy and was, in fact, centrally planned (Barre, 1987; Southcott, 1998). However, if ‘taut’ planning under Gosplanism aimed to securing a maximum output (and minimizing a risk of failing the plan (Dyker, 1992)), the ‘planning’ in resource Fordism was driven by an attempt to minimize a risk of large-scale investments of capital and technology.

The two development regimes, described above, remained dominant for the most part of the 20th century. Both Canadian and Soviet discourses shared the principal characteristics of Western discursive formation of development. Despite the regulation system of Gosplanism was designed to mediate bargaining among actors who represented different elements of the state to achieve maximum outputs, not capital accumulation as in resource Fordism, the two frameworks utilized similar *plan-and-bargain* and *priority-constraint* mechanisms of
regulation. In this respect, they shared problems and advantages in implementing regional
development policies.

UNDERSTANDING THE FAILURE: THE END OF DEVELOPMENT AS WE KNEW IT

Is the 20th century’s project of developing the Norths fundamentally flawed? Table 2.1
attempts to associate selected characteristics of northern development, shared by the two
development regimes, with their marginality-contributing outcomes. The latter were
elaborated from the framework proposed by Bourne (2000). Given the previous discussion, it
is not surprising that the strategies of development in Canada and Russia produced rather
similar outcomes. The colonial developmentalist project in the North ended in failure in a
sense that it was unsuccessful in mitigating marginality and delivering sustainability to
northern regions. Instead, it exacerbated levels of marginality and worsened dependency and
vulnerability of northern economies. The development in the North failed much like their
counterparts in the Third World (Watts, 1993; Escobar, 1995; Scott, 1998).

Table 2.1. Selected similarities of Soviet and Canadian development regimes and their
contribution to regions’ marginality

<table>
<thead>
<tr>
<th>20th century development regimes</th>
<th>Marginality outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Modernist imperatives</td>
<td>• Marginalization of local authenticity</td>
</tr>
<tr>
<td>• Paternalism, top-down development</td>
<td>• Local apathy, culture of dependency</td>
</tr>
<tr>
<td>• Inadequate planning</td>
<td>• Dependency on government, social marginalization, mobility</td>
</tr>
<tr>
<td>• Mega-projects</td>
<td>• Environmental destruction, dislocation of people and resources</td>
</tr>
<tr>
<td>• Piecemeal development</td>
<td>• Unevenness, inequality</td>
</tr>
<tr>
<td>• Resource exploitation</td>
<td>• Vulnerability, instability, truncatedness</td>
</tr>
<tr>
<td>• Political dependency</td>
<td>• Powerlessness</td>
</tr>
<tr>
<td>• Neglect to Aboriginal cultures</td>
<td>• Social marginalization</td>
</tr>
<tr>
<td>• Economies of scale</td>
<td>• Territorial disproportions, unevenness</td>
</tr>
<tr>
<td>• Routine jobs</td>
<td>• Low-skill labor force</td>
</tr>
<tr>
<td>• State intervention</td>
<td>• Bureaucratization</td>
</tr>
<tr>
<td>• Dual governance: state and corporations</td>
<td>• Powerlessness</td>
</tr>
</tbody>
</table>

The fundamental reason for such a failure of the 20th century development projects has
been suggested by the ‘postdevelopment’ scholarship. The modernist normative premises of
development (and of “high modernism” in economic planning), upon which the western
development project was conducted in the ‘developing’ world brought this effort to a
devastating collapse (Escobar, 1995).

However, to explain the failure of northern development as “we knew it”, one does not
need to rely exclusively on theorists who observed similar problems elsewhere. Forty years
ago, a Canadian remote area development policy study (Freeman, 1969) warned that the
“inadequacy of western-style industrialization” will result in economic inadequacies in
“underdeveloped pockets of developed nations,” including the Canadian North, just as it did
in the Third World (see also Barre, 1987). This study rebutted almost all premises of the
modernist development doctrine including the attempt to adjust social and cultural norms and
technologies developed elsewhere to northern societies (i.e. “modernization”), the reliance on
centralized bureaucracies to coordinate development, and the emphasis on industrialization as
the main development tool (Freeman, 1969).

Another fundamental problem, associated with both development regimes in the North is
that the plan-and-bargain regulation was responsible for creating hegemonic inequities
between the North and South and among northern regions (see Petrov, 2007). This not only
undermined the development of regional economic sovereignty and political power,
exacerbated uncertainty and deepened dependency of the North, but also placed northern
communities in the midst of the conflict between various levels of government, different
ministries and corporations. Arguably, such circumstances made impossible any type of
comprehensive development. State and corporate dependency greatly contributed to
conserving the economic structure of northern communities with its overgrown resource and
public sectors.

The outcomes of development recorded in Table 2.1 confirm that the critique of Western
development projects in the ‘Third World’ waged by post-developmentalist thinkers (see
Rahnema, 1997), to a large extent, applies to the Canadian and Russian North. Not only
discursive doctrines, economic regimes and policies of development muted local voices and ignored the cultural “polymorphy” of the frontier, they delivered unsustainable, inefficient, and sometimes destructive forms of development. The crises of Fordism and state socialism and the pivotal changes in political discourses in both countries resulted in the demise of the resource Fordist and Gosplanist regimes in the 1980s. Both Norths ultimately witnessed what some termed the “impasse of development” (Schuurman, 1993).

However, the development regimes in the North have not been completely unsuccessful. After all, resource Fordism and Gosplanism remained unchallenged throughout many decades. In fact, they worked well for some places and in some periods. Regions involved in mega-projects received enormous investments, drastically improved their infrastructure and population well-being (Agranat, 1992; Rea, 1976; Slavin, 1972). Workers in the northern wage sector were well paid and the industrial towns, in which they lived, were the state of the art in urban planning and design (Stelter & Artibise, 1978). Native welfare and employment dramatically increased (Stabler & Howe, 1990). However, as powerful cyclones (Barnes et al, 2001), these development surges dissipated, often leaving little but ruins behind. In other words, Fordism and Gosplanism may not have been so much a problem as is their inheritance (Hayter, 2003).

As the result of the fundamental inadequacies of development policies, both the Canadian and Russian North share extreme levels of marginality. Although some radicals question the very possibility to ‘develop the North’, and call for abandoning this idea (Pivovarov, 1997; Howard & Widdowson, 1999), it appears that development project in the North is far from being finished. The optimistic view may be related to at least two considerations: a continuing (and increasing) importance of northern resources as the assets of the future and a surge in post-developmentalist discourses of regional renewal aimed to bring sustainable development to lagging regions. Conceiving regional growth as endogenous and socially embedded may also be helpful in devising new northern policies (House, 2003).
DISCUSSION: A NEOLIBERAL EXPERIMENT AND BEYOND

Unfortunately, early neoliberal experiments of the 1980-1990s did not empower a ‘post-development’ discourse, nor provided an adequate framework of regulation suitable for survival of northern communities. In both Canada and Russia, the early neoliberal regimes emerged as incrementally scaled-back versions of resource Fordism: while neoliberal policies severely limited the state support to remote areas, they did not offer new sources of viability and preserved resource dependency. The removal of protectionism resulted in increasing vulnerability of northern industries to market fluctuations, whereas social and economic assistance from the federal government diminished (Bradbury & Wolfe, 1983; Pilyasov & Goldsmith, 1996; Stabler & Howe, 1990). On the other hand, economic development became falsely conflated with business development, market triumphalism justified the lack of policy, and fiscal responsibility was made an excuse for unwillingness to invest in lagging regions. In Canada it resulted in overemphasizing venture investment programs at the expense of capacity building (Lewis & Lockhart, 2002). In Russia, the North, except for a few oil and gas rich provinces, became one of the poorest and most disadvantaged regions, and was fled by two million people (Heleniak, 1999; Oleynik, 2007).

More recently (and most recent policy changes need to be discussed in a separate paper), both countries moved away from policies of state withdrawal and aggressive devolution to more balanced approaches that combine public assistance with market mechanisms. Some neoliberal experiments, including the implementation of new public management, were, in fact, successful in empowering local actors, improving local capacities and increasing the efficiency of economic development programs (Petrov & DiFrancesco, 2007). However, classic neoliberalism could not be practiced successfully in remote areas. Recent policy steps in Canada and, to a lesser extent, in Russia suggest the emergence of new development regimes (and new development alliances) that while emphasizing local interests and capacities, provide remote regions with the access to the global capital. The Resource Access
Negotiations Programme is one example in Canada. The Concept of Socio-Economic Development of the Regions of the Far North in Russia (2000) also shares some of these goals, although the current policies have a stronger neoliberal tilt. (Oleynik, 2007).

As the northern development project continues, where may be its future? If elaborate the argument made by ‘constructive’ post-developmentalists (see Power, 2003; Radcliffe, 2005), an alternative development discourse in the North must be simultaneously based on emerging traditions of the post-industrial society, post-Fordist regime of regulation, postcolonial consciousness and the consensus between aboriginalism, environmentalism, industrialism and nationalism (Hayter et al, 2003). It appears that a postcolonial solution rests not upon resisting and substituting capitalism, but upon reconciling post-Fordist capitalism with the alternative modernities of the local. This combination of global, national and local narratives, regulation modalities and actions is a characteristic of all contemporary ‘rescalings’ (Sidaway, 2007). A trade-off, a new negotiation must happen and new development alliance must emerge to achieve an optimal and sustainable consensus that would effectively end the decades-long “war in the woods” (Hayter, 2003) – a perpetual conflict around resources, development and governance in the northern frontier.

It would be overly optimistic to suggest that the North would be able to simply escape its dependencies, especially a resource-reliance and dependency on public funding. However, new post-developmentalist approaches, may prove to be viable, especially because the global and national geo-economic and social systems have substantially changed since the “development impasse” happened. Some pivotal transitions have already occurred in the North, particularly in the Canadian (Cameron & White, 1995; Dacks & Devine, 1999). Russia slowly followed the same track (Solomon, 2004), although recent political and policy changes make these tendencies less certain (Oleynik, 2007).

What could be the possible policy objectives that would comfortably place the North in the new economic world order and mitigate persisting northern marginality? Some of
prospective characteristics of the alternative development regime are summarized in Table 2.2. Table 2.2 contrasts them with the previously dominant regimes of the 20th century. As one can see, in order to move towards the alternative development project, discourses and policies of development in the North have to undergo major transitions. Some of these transitions have already started, but some are yet to emerge.

Table 2.2. **Prospective characteristics of a future development regime in the North**

<table>
<thead>
<tr>
<th>20th century development regimes</th>
<th>Alternative development regime</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Modernist imperatives</td>
<td>• Post-developmentalist imperatives</td>
</tr>
<tr>
<td>• Paternalism, top-down development</td>
<td>• Entrepreneurialism, bottom-up development</td>
</tr>
<tr>
<td>• Inadequate planning</td>
<td>• Comprehensive and situated planning</td>
</tr>
<tr>
<td>• Mega-projects</td>
<td>• Local initiatives</td>
</tr>
<tr>
<td>• Piecemeal development</td>
<td>• Strategic development</td>
</tr>
<tr>
<td>• Resource exploitation</td>
<td>• Tertiary and Quaternary sectors</td>
</tr>
<tr>
<td>• Political dependency</td>
<td>• Devolution and self-determination</td>
</tr>
<tr>
<td>• Neglect to Aboriginal cultures</td>
<td>• Aboriginal self-government</td>
</tr>
<tr>
<td>• Economies of scale</td>
<td>• Innovation and Cooperation</td>
</tr>
<tr>
<td>• Routine jobs</td>
<td>• Creative jobs</td>
</tr>
<tr>
<td>• State intervention</td>
<td>• Co-management, deregulation</td>
</tr>
<tr>
<td>• Conflict: unions and corporations</td>
<td>• Consensus, flexible practices</td>
</tr>
<tr>
<td>• Ideals of profitability &amp; stability</td>
<td>• Ideals of efficiency &amp; sustainability</td>
</tr>
</tbody>
</table>

The experience in the Canadian North (much less so in Russia) shows that there are avenues in which such expectations may be attained. There are examples of emerging regulation frameworks and approaches of post-developmentalist and post-Fordist nature. One of them is associated with the Comprehensive Land Claims Agreements (CLCA) process, when Indigenous communities obtain financial self-determination, co-management rights and an ability to be equal participants in developing natural resources on their lands (Saku & Bone, 2000). Another possibility is to foster the emerging local industries, both export-oriented and endogenous. The success of the latter is often contingent to the support given to local innovation, entrepreneurship and creativity (Petrov, 2007a).

A remarkable example of the new development regime that both suits the needs of local empowerment and adjusts to requirements of flexible accumulation, is the regime of Impact and Benefit Agreements. IBAs are privately negotiated contracts between corporations and
Aboriginal stakeholders that are legally binding. In effect, IBAs institutionalize a new development alliance between Aboriginal communities and resource companies, in which (ideally) they both have equal opportunities to pursue their objectives. The state, the third member of the new alliance, while normally having no formal power over IBAs, enters through bilateral negotiations with the primary IBA actors (e.g., via separate Socio-economic agreements with corporations) and available regulatory mechanisms. Warranting further thorough study, it may be argued that the development framework provided by IBAs better serves to the post-Fordist terms of competition, simultaneously favoring local synergy, embeddedness and networking celebrated by post-developmentalist.

CONCLUSIONS

Development policies assume a major role in reducing marginality and making northern regions more economically viable. This vision of development in the 20th century was empowered by the hinterland development discourses and supported by regulation systems of resource Fordism and Gosplanism to form hegemonic development regimes. My analysis suggests that projects of northern development in Canada and Russia share a lot more commonalities than usually acknowledged. Both colonial endeavors, development regimes in the North are genealogically linked to the Western discourse of development that uses ‘othering’ of non-Western regions to justify commodifying, exploiting and governing the ‘other’. I identified these primary similarities, while noting some fundamental differences, most importantly the ‘Innisian’ nature of the Canadian discourse vs. the ‘Turnerist’ nature of the Soviet one. I argued that regulation frameworks in Canada and Russia also shared important similarities as they both were based on the priority-constraint system of allocating investments, regulated by the ad hoc bargaining among multiple actors. The plan-and-bargain system worked well for large mega-projects, but failed to provide a comprehensive strategy of regional development in the Norths.
The growing discontent with the modernist northern development project underpinned the demise of the Canadian and Soviet models, as they were unable to fulfill their development objectives and appeared to be a systematic failure to both developers and ‘developees’. As I show in the outset of this paper, the Norths continued to be socio-economically marginalized spaces with little evidence of sustainability and an uncertain future. The mixed results of the neoliberal intervention, especially the neoliberal brutalism in the Russian North, suggest that classic neoliberalism could not be practiced successfully in remote areas.

Market triumphalism would have led to a disappointing conclusion about futures of the northern regions, if there had been no other options. Fortunately, Canada (and to a lesser extent, Russia) is experiencing the rise of alternative development doctrines, which put the emphasis on alternative modernities, local knowledge and traditional economies of the North. New opportunities provided by the postcolonial shift in development paradigms, give new hope to marginal resource-reliant regions. I argue that a postcolonial solution rests not upon resisting and substituting capitalism, but upon reconciling post-Fordist capitalism with alternative modernities of the local. Northern communities should be given chances to benefit from both top-down and bottom-up development opportunities.

One may find this paper emphasizing structural aspects of development and saying little about agency, about resistance, politics, contestations and “every day lives” of development. Conceding this, I argue that my approach suits the nature of this paper the best: it allows accomplishing broad-scale comparisons between Soviet and Canadian hegemonic projects and assists in deconstructing development experiences. Further inquiry into this matter, no doubt, must go beyond structural abstractionism to explore poststructural complexities of hegemonic projects.
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CHAPTER 3
Where the Edges Meet: Comparing Economic Development Regimes in the Russian and Canadian North*

*in preparation for The Canadian Geographer

INTRODUCTION

It is a matter of common sense to think of Russia and Canada as the great “northern nations” sharing the majority of the circumpolar region. Both Canada and Russia possess vast northern frontiers and both countries face substantial issues and challenges in terms of the economic and social development of their northern frontiers. Indeed, both Norths occupy remote, and extraordinarily large parts of sparsely populated countries, both have unfavorable climatic conditions, both stand as holdes of significant nature resource wealth, and both have a distinct colonial past.

Northern frontiers have always been considered as economically troubled and marginalized spaces. Regional development theories of all sorts, from neoclassical economics to neo-Marxist radicalism, from neo-Schumpeterian institutionalism to the Krugmanian ‘new economic geography’, paint a picture of disadvantages experienced by peripheries. Friedman’s (1966) idea of peripheries as ‘catching up’ spaces is, of course, a more optimistic ‘final equilibrium’ view, which contrasts with disequilibrium theories such as of uneven development/dependency (Smith, 1984; Pretes, 1988), cumulative causation (Myrdal, 1957; Krugman, 1991) and, to a degree, ‘anti-equilibrium’ institutional approaches (Hayter, 2004).

Some researchers have previously argued that the similarity between the Russian and Canadian Norths stem from shared competitive inequalities and hegemonic inequities that each region experience as a part of overarching national and global geoeconomic systems (Petrov, 2008a). Market and non-market forces, working in synergy, underpin the conditions of economic disadvantage and marginality in northern frontiers, like they do in many other peripheral regions around the world. Economic development efforts in the North face no less
formidable challenges and obstacles than experienced in the Third World. In addition, these northern frontiers suffer from similar development mis-steps prompted by colonial paternalism and social engineering (Hamilton, 1994; McCannon, 1998; Petrov, 2008b).

Whereas earlier commentators rightly pointed out that “…the very nature of the two governmental systems complicates any comparison…” between the two Norths (Barr & Bradshaw, 1983, p. 14), the demise of Soviet Union and the Canadian welfare state, followed by the neoliberal reforms, posed largely similar challenges to both northern frontiers. It is reasonable therefore to think that in this new era both regions would exhibit some form of convergence in policy challenges and responses.

This fascinating subject, however, is yet to be studied. Curiously, interest in the mutual experiences of Russia and Canada vis-à-vis northern economic development has been on the wane in recent decades. The only substantial analytical inquiries date back to the 1980s and early 1990s (Barr & Bradshaw, 1983; Agranat, 1992). This scarcity sharply contrasts the plentiful literatures devoted to the Russian and Canadian Norths individually (see surveys in Agranat, 2007; Bone, 2003). Increased attention to northern issues is not surprising, given the renewed appreciation of economic and geopolitical importance of the Arctic. Recently, both countries have announced their intentions to formulate new strategies of northern development to respond to challenges of globalization, economic restructuring and changing political landscapes (Pravitel’stvo RF, 2000, CARC, 2006). As such, the time is right to look back and review, compare and understand economic development policies undertaken in the Russian and Canadian Norths in the last two decades.

This paper has three objectives. First, it sets up a conceptual framework for discussing regional development policies by using the notion of ‘development regimes’. The second objective is to describe and discuss recent economic development policies in the two Norths, investigate how (or whether) they were adapting to changing economic and political realities in both countries and if they were able to deliver desirable results to northern communities.
Finally, the paper compares and critiques present policies and discusses possible alternative perspectives that reconcile an emerging postcolonial paradigm of development and realities of post-Fordism.

DEVELOPMENT REGIMES AND DEVELOPMENT ISSUES IN THE NORTH

To understand and compare processes of regional development in the Canadian and Russian Norths, it is useful to link development discourses, institutionalized public policies and mechanisms of economic regulation. Altogether, these components describe unique development regimes, in which institutionalized regional regulation frameworks and discourses generate particular forms of regional development.

The discourse of development, dominant at a given time, affects the formation of the regional development paradigm (Petrov, 2008b). A development paradigm may be defined as a socially embedded and institutionally legitimized mode of conceptualizing and practicing development, including its purposes, means and methods. Major actors in a region, such as the state and large resource corporations, perform as strategic interlocutors in forming and applying a regional development paradigm to existing principles of economic reproduction through a particular mode of social regulation. The interplay of these factors determines the nature of a development regime. Each development regime entails certain policies and favors selected types of economic development efforts over others. Any change in a development regime sets off pivotal transformations in regional policies, brings about the revision of the old and the emergence of new development strategies.

Since this paper is devoted to the most recent period of economic policy making in the North, I provide only a brief description of the preceding development regimes in order to assist in understanding the roots of some current problems and policies. In the 20th century, the two major development regimes in the Canadian and Russian Norths were associated with Canadian resource Fordism and Soviet Gosplanism respectively (Petrov, 2008b). Policies under resource Fordism (Jensen, 1989; Southcott, 1998) reflected the desire of the welfare
state to induce economic development in its frontier regions by both direct and indirect interventions. In Canada, state regulation attempted to mitigate risks and disadvantages assumed by private and crown corporations in industrializing the frontier (Rea, 1976). The central planning system in the USSR (“Gosplanism”) exercised the priority-constraint mechanism of regulation (Kornai, 1992; Petrov, 2008b) based on ideological and geostrategic (rather than economic) objectives of development. In both cases, however, the state assumed the role of the principal “developer” and the development itself was discursively conceived in terms typical for the colonial “developmentalism” in the Third World.

The two development regimes, described above, remained dominant for the majority of the 20th century. Since the 1950s, the regime of development in the Canadian North has been based on a discursive paradigm – one of “opening the North” to southern businesses - and combined the elements of resource Fordism and welfare regulation with the state, private corporations, and unions as central actors. The Soviet development regime embraced the ideology and political economy of Marxism. However, both Canadian and Soviet discourses shared the principal characteristics of the ‘Western discursive formation’ of development (Watts, 1993). Despite profound differences in principles of regulation, Gosplanism and resource Fordism utilized similar plan-and-bargain and priority-constraint mechanisms of regulation (Petrov, 2008b). In this respect, they shared problems and advantages in implementing regional development policies.

Development efforts by both nations in their northern frontiers are almost universally viewed as having been unsuccessful: in both cases, these efforts failed to mitigate marginality or to deliver sustainability to northern regions. Discursive doctrines, economic regimes and policies of development muted local voices, ignored the cultural “polimorphy” of the frontier, and ultimately delivered unsustainable, inefficient, and sometimes destructive forms of development to both frontiers. The crises of Fordism and state socialism and the pivotal changes in political discourses in both countries resulted in the demise of the resource Fordist
and Gosplanist regimes in the 1980s. Developmentalist efforts in the Canadian and Russian Norths ended in an impasse paralleling outcomes of such efforts in the Third World (Watts, 1993; Escobar, 1995; Schuurman, 1993).

Certainly, economic policies of the 20th century worked well for some places and in some periods. Regions involved in mega-projects attracted substantial public and private investment as well as population, and experienced a general improvement in overall socioeconomic well-being (Agranat, 1992; Rea, 1976; Slavin, 1972). Workers in the northern wage sector were well paid, and the industrial towns, in which they lived, were the state of the art in terms of urban planning (Stelter & Artibise, 1978). Native welfare and employment dramatically increased (Stabler & Howe, 1990; Slavin, 1982). However, as powerful cyclones (Barnes et al, 2001), these development surges dissipated, often leaving little but ruins behind. Migrant workers went back to the South and industrial towns, some exemplars of southern urban modernism, were left to decay.

COMMON CHALLENGES

Bourne (2000) offered an elegant conceptualization of conditions and outcomes of marginality in peripheral regions, later elaborated by Petrov (2008a). He described the conditions of marginality through different ‘organizational logics’ of spatial relationships between core and periphery that are embedded in alternative spatial models of urban/regional systems. Bourne argued that all frontier communities share similar conditions and outcomes of marginality, which are consequences of different logics embedded into core-peripheral relationships. Among condition-outcome pairs Bourne (2000) named economic specialization – vulnerability, high level of external ownership – uncertainty of growth, truncated labor markets – dependency and job scarcity, limited inter- and intraurban linkages – isolation, incomplete private service systems – exploitation, uneven income distribution – social marginalization, high labor turnover – social mobility, state control – political powerlessness.
and others. Taken together, the effects of marginality put northern frontier communities in an economically, socially and politically disadvantaged position.

Figure 3.1 presents an unsettling picture of socio-economic hardships in northern communities of both nations. The Cumulative Socio-Economic Benchmark Index that measures community’s standing on major socio-economic indicators compared to national benchmarks, shows that northern cites in Canada and Russia are remarkably behind the respective national levels of well-being. Despite decades of regional development efforts, many northern cities are failed communities exposed to major socio-economic problems associated with extreme marginality (see also Petrov, 2008a; Vlasova & Petrov, forthcoming).

Regional development efforts throughout the 20th century were designed to mitigate the conditions of marginality in northern regions (Barre, 1987, Logunov, 1987; Rees, 1978; Taaffe, 1984), but never truly succeeded (Agranat, 1992; Bone, 2003; Petrov, 2008a). The reason for this failure, however, was deeper than erroneous planning, geographic isolation or an inherent instability of staple economies. It was in the nature of the dominant frameworks of economic regulation that maintained competitive (market) inequalities and hegemonic (non-market) inequities between the North and the South (Petrov, 2008b).

The adverse effect of competitive inequalities on resource-based economies is well-studied. Various market-based logics can be mobilized to explain these deep and enduring inequalities. Remoteness, lack of access, and isolation increase transportation, production and delivery costs (Huskey, 2005). Disconnectedness also may imply ‘cultural distance’ that increases ‘transaction costs’ between businesses in the resource frontier and the “mainland”. In terms of production logics, northern regions lack fundamental competitive advantages such as agglomeration, localization and urbanization economies (e.g., Krugman, 1991). From the institutional perspective, these territories, as many other peripheries, have ‘thin’ institutions, inflexible
Indicators used:

**Russia**: average personal earnings, unemployment rate, availability of residential space, availability of hospital beds, crime rate, favorability of economic trends, and amount of retail activity per person.

**Canada**: average personal earnings, unemployment rate, dwelling ownership rate, share of people with university degree (in the 35-44 age cohort), share of primary sector in total employment and dependency of personal incomes on social assistance.


**Figure 3.1.** Socio-economic conditions: Cumulative Socio-Economic Benchmark Index for selected northern settlements in Russia and Canada (2001)
social frameworks, unfriendly innovation environments, and are generally ill equipped to engage in the process of institutional ‘learning’, let alone in a new path creation (Morgan, 1997; Bastian & Hilpert, 2003). Due to limited local markets, fluctuating populations, a strong decoupling effect, and a symptomatic ‘Dutch disease,’ frontier economies are also devoid of the benefits of consumption-driven growth (Bourne, 2000). Social dynamics plagued by the ‘culture of dependency’ and a lack of creative capital are ill-positioned to support an endogenous development trajectory in the periphery (Petrov, 2007). Interestingly, the enactment of competition after the market reforms in Russia vividly demonstrates that competitive inequalities are unavoidably present in the frontier, despite decades of suppression by the non-market policy tools (Petrov, 2008a).

A major consequence of hegemonic inequities between the northern peripheries and the economic heartlands of both Canada and Russia is dependency. Some forms of dependency are hardly separable from market disadvantages experienced by the North. In the Canadian North, for example, a limited and truncated labor market has given rise to myriad problems including: high reliance on social assistance among many northern populations; fiscal dependence of local governments on the federal government, and a weak private sector which naturally leads to a disproportionately large public sector, etc.

Other aspects of dependency are directly or indirectly associated with asymmetries within political and economic systems. Under both resource Fordism and Gosplanism, central governments exercised discretion over prioritizing certain regions or mega-projects. The ‘bargaining’ systems of both regulation regimes alienated local stakeholders (with the exception of some powerful unions and local lobbyists) let alone the Indigenous communities.

The legacy of top-down planning in the North led both northern peripheries to become increasingly dependent on investments from the center and on its direct and indirect subsidies (Rumer, 1984; Pretes, 1988; Pilyasov, 2005). The combined effect of this hegemonic
imbalance and the characteristic stark under-investment in non-basic sectors and local
capacity-building (including services, housing, and social infrastructure) created conditions
of persistent social and economic polarities between centre and periphery, and, thus, a high
degree of dependence on social assistance. In other words, hegemonic inequities propelled
and preserved multiple dependencies, and did not allow local capacities to develop (as they
were de-prioritized and under-funded).

A BRIEF HISTORY OF NORTHERN ECONOMIC DEVELOPMENT POLICIES IN
RUSSIA AND CANADA

Prior to the Second World War the involvement of the Canadian government in the
economic and social systems of the North was limited, especially in the Arctic. The Second
World War brought with it fears that North America was vulnerable to invasion and assault
via the northern polar region, and this led to publicly funded mega-projects (e.g., the Alaska
Highway and the Canol Project) designed to buttress North American defenses to this
perceived threat. While the resulting construction boom in the Canadian and American polar
regions was short-lived, the effects have proven to be long lasting and intransigent (Rea,
1968). These projects seemed to further entrench a reliance on the wage economy by northern
populations, an economic system which proved to be largely untenable in the periphery
without significant government intervention. Overall, the policy regarding the North was
incoherent and reactive (Coates, 1985).

In the decade following the end of the Second World War, Ottawa and the provinces re-
evaluated the importance of their northland: they waged an attempt to ‘open’ its reaches for
the resource-thirsty Fordist economic machine and to ‘equip’ the Arctic theater of the Cold
War. The ‘Northern Vision’ and ‘Roads to Resources’ federal programs as well as ‘province-
building’ efforts at the provincial level (e.g., in British Columbia) were designed to facilitate
the exploitation and ‘domestication’ of the North. In 1953 the Government of Canada (GOC)
created the Department of Northern Affairs and National Resources. With the election of
John Diefenbaker as Prime Minister, Canada’s attempts to develop its northern periphery intensified. In the 1950-1970s resource mega-projects and welfare assistance became the primary pillars supporting the social and economic systems of the Canadian North. Investments by the GOC in northern mega-projects remained very substantial over the following decades (Bone, 2003). In most instances, the scope of government involvement was the result of bargaining between the state and corporations and/or between federal and provincial states. Negotiations among these principle actors of resource Fordism (in many instances, also including unions) routinely marginalized local stakeholders (Hayter, 2003), thus, continuing a colonial mission of “developing the frontier” on the terms of the metropolis. Over the 1960s, 1970s and 1980s, this governmental involvement has been manifested most notably in the planning and establishing new industrial towns (Stelter & Artibise, 1978).

After Diefenbaker, interest in the North receded, and policies resorted largely to incremental welfare interventions (McManus, n/d). In the face of ever increasing criticism, regional policies in the 1970s and 1980s exhibited a mix of welfare paternalism, industrial modernization, market reforms, and local capacity building (Barre, 1987). The bulk of these programs and initiatives were developed and implemented by federal agencies (e.g., the Department of Regional Economic Expansion (DREE)), in particular under the Special Agriculture and Rural Development Act (ARDA) of 1977 (Savoie, 1990). The focus of these efforts was not simply to provide welfare assistance, but to offer training and financial support to Indigenous people and Native businesses, improve harvests and land-based economies (DiFrancesco, 2000). Many of these initiatives were short-lived and largely unsuccessful (Markey et al., 2007).

Other programs in this period included the Native Economic Development Program (1984-1989) and, since 1989 the Canadian Aboriginal Economic Development Strategy (CAEDS). The latter provided hundreds of millions of dollars to support Aboriginal
businesses and community development projects with varying degrees of effectiveness across the North (Auditor General, 2003; Lewis & Lockart, 1999). Although CAEDS is considered a step forward in fostering Aboriginal community development, its counterparts of the time (especially the Territorial programs) were often over-spending on venture development and under-funding capacity building (Lewis & Lockart, 2002).

The 1980s heralded the beginning of parallel trends toward the devolution of decision making power to more local and appropriate institutions and the waning of mega-project investment and activity in the North. The federal government signed a number of Economic Development Agreements (EDA) with the Territories and launched new local initiatives in the provinces (e.g., the FedNor in northern Ontario). These programs targeted small business development, tourism, traditional economies and community planning and were available for all businesses (DiFrancesco, 2000). In the mid-1990s the EDAs gave way to neoliberal models of fostering economic development with a less direct government involvement. While welcomed by many, these ‘enabling’ strategies have been criticized as being nothing more than a cover for the GOC’s “silent surrender” in the area of northern socioeconomic development (Polese, 1999).

Political and economic changes over recent decades provided the stimulus for myriad local initiatives, largely from Aboriginal communities, aimed at leveraging natural resource endowments for long-term social and economic development. Classic examples of these efforts can be observed in the arrangements embedded in “Impact and Benefit Agreements” (or IBAs) that have been included in some more recent Comprehensive Land Claim Agreements (CLCAs) in the Canadian North (Bone, 2003; Saku & Bone, 2000). Other examples include the devolution of some development functions to regional and local entities, such as Community Economic Development Organizations (CEDOs), Aboriginal governments, etc. These and other recent developments constitute a shift away from top-
down development programs to bottom-up, flexible initiatives, and signify a turn to the post-developmentalist paradigm of northern development amid the post-Fordist regulation regime.

The origin of the Soviet development regime in the Russian North is associated with the early years of the Bolshevik government. In 1918, Russia’s Prime Minister Vladimir Lenin asserted that the exploration and use of northern resources and lands must be a priority for the Socialist Russia to ensure its self-sufficiency and to quell regional economic disproportions (Lenin, 1918). Accordingly, the Soviet government from its very conception was actively engaged in developing the North. In the midst of the Civil War (in 1918-1919) the Bolsheviks created several institutions to direct the exploration and use of mineral resources as well as to coordinate other aspects of development in the northern frontier. By the 1930s, the Soviet discourse of development set the ‘conquest’ of the North as an ideological priority.

Much like in Canada, the Soviet regime of development focused on resource mega-projects, though run by powerful governmental organizations, such as Dal’stroi (1930-1950s), and ministries (1960-1980s), not private corporations. Among the prominent mega-projects were the development of Kolyma, Vorkuta, Noril’sk and Kol’skiy resource regions (largely by GULAG inmates), Kansko-Achinskiy energy project, Baikal-Amur Railway and Western Siberia oil and gas fields. Investments in the North and the Far East were most intensive in the pre World War II period and in 1960-1980s (Rumer, 1984). Since the 1970s, considerable funding for regional and infrastructure development was dispatched through ‘special purpose programs’ designed to facilitate industrialization in areas surrounding the on-going mega-projects. Besides capital investments and subsidies, the Soviet system maintained artificial pricing that masked real production and living costs in the North. The centralized delivery system also helped to alleviate shortages of supplies. Since the 1960s, the government provided financial incentives to in-migrants in order to ensure a sufficient supply of labour for the northern mega-projects.
In addition, the Soviet government (not unlike the Canadian) launched a series of measures designed to address problems associated with the social and economic development of Indigenous societies. Under the supervision of the Committee on the North (1923-1935) the Aboriginal northerners were subjected to collectivization and sedentarization (Khruschev & Klokov, 2001) that delivered a major blow to reindeer herding. Further, the government undertook controversial efforts to “modernize” indigenous cultures and integrate Native societies into the socialist system of production. While special development programs introduced after the World War II improved the socio-economic situation among Aboriginals, they intensified assimilation and undermined the traditional private sector (that was considered alien to the socialist production system). Undisputedly, the ‘recasting’ of Aboriginal peoples as Soviet citizens and collective farmers was one of the implicit strategies of the Soviet state to expropriate and govern the North.

In essence, the system of Soviet government institutions and public policies in the North has been designed to operationalize a development regime, in which multi-actor bargaining (Gosplan vs. ministries, center vs. enterprises, Moscow vs. regional governments) and discursive prioritization (based on the Engels-Lenin doctrine (Hill & Gaddy, 2003)) have been key factors in the spatial distribution and redistribution of funds and surpluses (Kornai, 1992; Sjoberg, 1998; Petrov, 2008b). Note that similar processes were observed in Canada: regional development in the frontier resulted from multi-partite negotiations among the state, corporations and, at times, unions, each with its discursive priorities. However, while the Canadian development regime was designed to respond to global market signals and Canadian aspirations of nation building, the Soviet regime was setup to translate the ideological paradigms of the orthodox Marxism into material outcomes. As many critics at the time pointed out, this translation has not always been successful (Agranat, 1984; Karpov, 1972; Slavin, 1972; Wood, 1987), and both the ideological nature of planning and a systematic failure to fulfill plans contributed to the demise of this development regime. The
stiff regulatory framework, lack of counterbalances and taut nature of planning made the Soviet development regime inflexible to changing economic realities (Pilyasov, 2005). The hegemony of vertical governance structures (represented by federal and ministries) severely limited interministerial, interregional and intraregional coordination. A piecemeal development with each ministry having its own plan, targets and funding was a common practice, even though a principle of complex development’ was formally declared by the planners.

RECENT ECONOMIC AND POLITICAL CHANGES IN THE NORTH

Both the Canadian and Russian Norths have witnessed dramatic changes over the last few decades. Sweeping political shifts, economic restructuring, cultural emancipation, and institutional reforms are only a few aspects of the fundamental transformation observed in these northern regions. Contemporaneously, these regions have witnessed major environmental changes which have seriously impacted traditional- and wage-economy-based livelihoods in northern communities.

After the demise of both Fordist and Soviet economic regimes, both the Canadian and Russian Norths have become a highly fragmented and contested ground between industrialism, aboriginalism, environmentalism and nationalism (Hayter et al, 2003). Dimensions of economic restructuring and social transition in resource reliant Canadian communities are well described by geographers (Southcott, 1998; Barnes & Hayter, 1993). Caught at the “flexible crossroads” of post-Fordism and amid the “war in the woods” for natural resources (Hayter, 2003), northern regions struggle to find new sources of vitality. Fortunately, some of these communities are benefiting from the political and economic emancipation of Indigenous peoples, particularly under comprehensive land claim agreements (CLCAs). In contrast to single-industry towns hurt by globalization and industrial restructuring, many Aboriginal communities have prospered as a result land claims settlements (Saku & Bone, 2002).
Petrov (2008a) shows that in addition to the aforementioned changes, the periphery is no longer a homogenous entity. Regional differentiation is directly related to political, economic and social diversification and institutional transformation (Randall & Ironside, 1996; Erenshaft & Beeman, 1992, Pilyasov & Goldsmith, 1996). The flexible nature of capitalist accumulation and the rising role of local context in development (see Barnes & Hayter, 2005) encourage the plurality of new (and sometimes contesting) economic regimes. As a result, the emerging regional map of the North is growing in its complexity (Petrov, 2008a).

Over the past two decades, the Russian and Canadian Norths have experienced similar trends in terms of their social, political and economic development. To begin, both have witnessed sweeping institutional transformations. Both regions have seen a substantial decline in the (direct) role of the federal state in managing economic development. Neoliberal practices of devolution and the inauguration of Aboriginal self-government played a fundamental role in Canada. Similar neoliberal policies coupled with fiscal and political bankruptcy of the federal center worked to diminish its role in Russia’s northern affairs. Although Prime Minister Putin’s reforms have acted to swing the pendulum back in the direction of federal state-control in the North, regional and local governments still have more power and responsibility than in the Soviet times.

Similarly, both the Russian and Canadian Norths have witnessed the demise and fracturing of several major northern staple industries, including forestry, mining and fishing (Hayter, 2003; Radcliffe, 2001; Bradshaw, 1995; Golubchik, 2003). International competition amid low raw material prices devastated largely inflexible production complexes in the North. In Russia it was coupled with skyrocketing production costs (as artificial pricing was eliminated20) and drastically reduced domestic demand. The late 1980s and 1990s were the hardest years for the mining sector in both countries. When cyclical recovery arrived at the beginning of the 2000s, it found the staple sector – in both peripheries – in a very different

20 Remaining energy price subsidies for domestic consumers strongly disfavored northern resource regions, which had to sell crude oil up to 40 times cheaper than the world market price (see Grace, 2005 in brsh06).
state: privatized, fragmented and diversified. Privatization, most prominent in Russia, diminished the role of state in northern economic affairs. Production complexes run by central ministries gave way to privately owned decentralized enterprises (often with foreign presence), which attempted to exert maximum flexibility to remain competitive (mostly by reducing labour input requirements) shrinking. For example, the enterprises formerly run by the USSR Ministry of Oil Industry were transformed into two dozen major independent oil companies. Some of new corporate players inherited older public-corporate or ministerial foundations (PetroCanada, Gazprom, ALROSA), but underwent substantial restructuring.

The weakening of labor unions is another important trend. Unions were the corner component of the Fordist triangle (state and corporations were the other two). Hayter et al., (1994) illustrate the demise of union power in BC’s lumber industry, a process observed throughout the North (Southcott, 1998). Soviet labor unions did not bear similar independent functions and were rather a part of political-administrative system of the state. Even if unions might have assumed more bargaining power After the Soviet system’s collapse the neoliberal reforms prevented unions from ceasing more bargaining power.

Both regions are also experiencing significant changes vis-à-vis Indigenous rights and self-governance. The land claims process in Canada, launched in the early 1970s, turned Indigenous communities in a powerful driving force of development decision-making (Cameron & White, 1995; White, 2002; AHDR, 2004; Dahl et al, forthcoming). Vested with the power to govern and economic resources, Indigenous organizations in both countries have become central bargaining parties in an emerging new development regime (see below). Whereas the land claims process is not present in Russia in a similar form (Fondahl et al., 2001), Indigenous people are granted considerable economic privileges and land use rights. However, major legislative acts to this effect are not properly enforced and, as a result, Russia’s Indigenous people have had difficulty in exercising these rights and entitlements. (Stammler & Wilson, 2006).
CONTEMPORARY ECONOMIC DEVELOPMENT POLICIES IN THE RUSSIAN NORTH

Russia’s economic reforms following the collapse of the USSR have had a long-standing and dramatic impact on northern regions. The history of the early post-Soviet policies in the North is a vivid illustration of chaos and disarray in regional development. While the neoliberal character of these policies has been maintained a lack of regulatory clarity and inconsistencies have worsened an already dire economic situation in the Russian frontier.

The decades of Soviet development ended in 1990, when the central government of the USSR implemented reforms aimed at limiting and later withdrawing its commitments associated with the centralized delivery system, subsidization and the guaranteed purchase of northern products. This effectively terminated the Gosplanist ‘priority-constraint’ system of development, under which prioritized enterprises received virtually unlimited investments in order to fulfill the Plan, regardless of their immediate economic efficiency21 (Petrov, 2008b). In 1992 the market reformers in Moscow continued and amplified this policy. In the full accordance with the new belief in market forces as the primary policy tool, all protectionist regulations, preferential trade and investment conditions, and subsidies to northern industries were cancelled. As a result, stark polarities have emerged between northern and southern regions in terms of the ability of producers to compete in a market economy. The subsequent political and economic devolution and disintegration of Russia left the North without a coherent federal economic development policy. Facing severe economic and political crises, the federal government had neither the political influence nor financial means to conduct such a policy. The center of economic policymaking moved to regions, which obtained power and fiscal might under the bilateral agreements with the federal center (Solomon, 2004).

Thus, in less than five years, the overcentralized Soviet regional policy transformed into its

21 As described in many sources (Kornai, 1992; Ickes, 2001, paper 3), this ‘soft constraint’ system was designed to maintain highest possible volumes of output, not the efficiency of production. There was no true notion of enterprise profitability.
antipode, an array of disconnected region-based policies without a coherent common objective.

Since 1995 (after the downfall of the radical liberals) the federal government renewed attempts to create or revitalize a comprehensive development policy in the North, but with little success. In 1996, the passing of the Law on the State Regulation of the Socio-economic Development in the North (Ob osnovakh…, 1996) the federal state once again became directly involved in the protection and enhancement of northern regions. This legislation contained a peculiar mix of Soviet-like ‘selective protectionism’, and state support to prioritized industries in addition to neoliberal provisions (e.g., fostering private investment, closing inefficient enterprises and stimulating out-migration), and it formed the basis of the Russian northern development policy into the late 1990s. Formally, the guaranteed wage indexation and other privileges of northern workers were preserved (the law of 1993), but they were almost meaningless at the time of severe economic crisis, when salary payments were delayed by months or even years. Overall, while the policy statements were mildly neoliberal, the lack of state resources to deliver on the welfare and subsidy programs effectively brought a stronger neoliberal stint to the post-Soviet development doctrine. State withdrawal, fiscal austerity (partially caused by the acute fiscal crisis) and ‘free market’ triumphalism became the hallmarks of the northern development policy of the 1990s. At the same time, all attempts to establish a complex legislative framework to regulate the development in northern regions in that period largely failed (Kharitonova & Vizhina, 2005).

Another major dimension to the development policies in the 1990s was associated with a widely-shared belief that the North was overpopulated and, thus, its population had to be reduced. Different estimates put the number of the “surplus population” of the Russian North at 2.5 to 5.5 million (Agranat, 1992; Petrov, 2006), and many specialists and politicians advocate “shrinking” Russia by stimulating out-migration from the North (Pivovarov, 1997). While in the regional development literature this thesis was a matter of heated debate (e.g.,
Agranat, 1999; 2007; Pilyasov, 2005), the Russian government quickly adopted the out-
migration doctrine and established its policies accordingly. The law of 1998 launched so-
called “resettlement programs”, which were designed to stimulate the out-flow of population
from the North by providing them with housing subsidies in more southern regions. The lack
of funds, however, severely limited the program’s efficiency.

To partially alleviate this problem, the government sought support from the international
organizations, and received 80 million dollars under the World Bank’s northern restructuring
program (World Bank, 2001). In the 2000s, with the improvement of the fiscal situation, the
domestic resettlement funds were channeled more regularly. Since 2003, the program
delivery mechanism changed due to the introduction of ‘housing certificates,’ state-issued
personal vouchers that could be used to receive a subsidy in order to purchase or build
housing\(^{22}\). Still, many accounts suggest that these subsidies (based on strict housing quotas
and eligibility restrictions) are typically not enough to acquire desirable housing at southern
destinations (Thompson, 2002). In addition, the programs budgets have consistently been far
below the levels required to satisfy the demand from populous regions (Krasnoyarsk krai,
Murmansk oblast’, etc.).

As I already mentioned, the scarcity of policy instruments on the part of the federal state,
along with the strong devolution within the system of policymaking, made subjekty of
federation (i.e. regions) the focal points of regional development in the North. Some northern
regions were more active than others. For example, the Sakha Republic (since it declared
“independence” in 1992 and passed its own constitution) pioneered a number of policy
innovations in respect to Indigenous economies and resource governance (Fondahl & Sirina,
2003). Similar active policymaking occurred in other richer northern regions, e.g., in Khanty-
Mansi and Yamal-Nenets autonomous districts. These territories, which until 2002 retained
60% of the “mineral resources use tax,” established and funded local development programs,

\(^{22}\) The total funding allocated for this program in 2002-2010 years is 24.5 billion rubles or one billion US dollars (Finmarket, 2007)
invested in infrastructure, supported Native reindeer herders and created heritage funds (Solomon, 2004; Stammler, 2005; Stammler & Wilson, 2006). Regional administrations used their considerable political weight to negotiate assistance from large resource corporations in building public infrastructure and serving communities (e.g., Rosneft-Sahkalinmormorfigaz in Sakhalin, ALROSA in the Sakha Republic, and Norilsk Nickel in Taimyr). However, most northern regions were left without means to support themselves, let alone to conduct a coherent regional policy (Pilyasov, 2005).

Some observers considered 2000 as the ending date of the ‘post-reform’ period in the North and contended that the development regime has finally entered a “mixed regulation” phase, where continuing state support (regulatory, subsidies, etc.) coexists with economic coordination. The latter is a more flexible model of regulation, under which the accent is shifted from redistributional budget mechanisms to multipartite coordination and institution building (Pilyasov, 2005). The federal state that continues to support northern industries, is joined by the strong regional state and powerful corporations in a complex system of negotiation and coordination of northern development. The resulting development model, thus, in many ways is converging with its Canadian counterpart.

However, regional development policy experienced a sharp turn during the first Putin administration, when the federal government started concentrating decision-making power and fiscal instruments back in its hands. After the reforms of 2002, regions lost their share of resource-related revenues to Moscow (Oleynik, 2007). Tax reforms also deprived regions and municipalities of substantial sources of income and denied them flexibility in tax regulation (Committee, 2007). Simultaneously, the new Ministry of Regional Development started formulating a new policy for the North.
The new “Concept of the State Support to the Economic and Social Development of the Regions of the North,” adopted in 2000, outlines the priorities of economic development in the North. It emphasizes restructuring, market efficiency and indirect support for basic industries. It further asserts the doctrine of depopulating the North, withdrawing direct state subsidies and minimizing protectionism. Although labeled neoliberal (Oleynik, 2007) because of its dismissal of past subsidization policies, the Concept continues to call for an active role of state in directing economic growth, improving social conditions, coordinating labor market and assisting Indigenous peoples. The strategic policy objectives are summarized in Table 3.1.

The authors of the Concept argue that the old-fashioned development policy based on the state support to prioritized industries or regions is institutionally inadequate to improve the “effectiveness” of northern economy in the market conditions. In their opinion, the immediate post-Soviet system (based on the law of 1996) is not working because of the budget-oriented rather then market-oriented mechanisms of policy delivery, an overreliance on private corporations to support social infrastructure and housing (a legacy of the Soviet ‘socially responsible enterprises’ (Humphrey, 1995), an instability of regulatory frameworks, and a disconnectedness from institutional and legislative changes in the Russia’s economic system (Pravitel’stvo RF, 2000). They conclude that “the reasons for the low efficiency of the current [pre-2000 – A.P.] system of state support of economic and social development in the North have institutional, regulation and conjuncture nature” (Pravitel’stvo RF, 2000).

Despite its criticism of the Soviet system and a stronger neoliberal spirit, the 2000 Concept does not completely abandon the priority-constraint principle, nor does it suggest an alternative. While advocating a reduction in direct government support of inefficient enterprises, the Concept retains an emphasis on state support of a number of strategic (e.g., the military complex, petrochemistry, gold mining, timber, pulp and paper, fishing). These
industries, according to the Concept, should be subjects of “targeted development programs,” which are to become prominent mechanisms of policy delivery.

Table 3.1. **New strategic goals and objectives of regional development in the Russian North**

<table>
<thead>
<tr>
<th>Overall goals</th>
<th>Specific objectives</th>
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<tbody>
<tr>
<td>• Development of internal capacities that would foster economic development in northern regions that possess required natural resources</td>
<td></td>
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<tr>
<td>• Search for new avenues of economic development</td>
<td>• Economic restructuring and improvement of the viability of base enterprises using fiscal, financial and investment interventions at federal and regional levels</td>
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<td></td>
<td>• State regulation of labor markets by implementing the universal system of contracting in public and private sectors, fly-in fly-out system, etc.</td>
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<tr>
<td></td>
<td>• Transformation of state support and compensation to northerners based on revised regionally differentiated standards</td>
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<tr>
<td></td>
<td>• Development of the efficient social support system for Indigenous northerners</td>
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<tr>
<td></td>
<td>• Improvement of the centralized seasonal cargo delivery to ensure food and energy security in northern communities</td>
</tr>
<tr>
<td></td>
<td>• Centralization of decision-making power at the federal level</td>
</tr>
</tbody>
</table>

With reference to Indigenous peoples, the Concept contains a mixture of traditional welfare commitments and a desire to improve the indigenous human capital and encourage labor force participation. The Concept also endorses the implementation of employment quotas for Indigenous workers under new development projects in the Native homelands. It also calls for supporting traditional economies and socio-economic organization of the Indigenous societies (these aspects are already regulated by a number of federal laws (see Fondahl & Sirina, 2003; Stammler & Wilson, 2006)).

Lastly, the Concept presents an interesting scheme of dividing the Russia’s northern regions in three tiers, with different short-term development priorities. In doing so, the authors accepted repeated calls to make northern development efforts more region-specific and, thus, more differentiated (Petrov, 2006). However, it remains uncertain how this proposal is compatible with the rest of policies suggested in the Concept: not surprisingly, the differentiated approach seems not to be reflected in legislation or policy implementations that followed the adoption of the Concept.
While the Concept was approved by the Russian Cabinet in 2000, it is a framework document without a binding power. Ministries\textsuperscript{23} may choose to ignore or discard those Concept’s recommendations, which do not line up with their agendas. For example, in 2005 and again in 2006 Moscow terminated funding for the centralized delivery system and programs supporting some industries (despite these actions were against the principles declared in the Concept).

In the seven years since the Concept was approved, the Russian government has largely failed to act on most of its suggestions. It would appear that interest on behalf of the federal Russian state in northern development policy has waned (Oleynik, 2007). This is clearly illustrated by the fact that the law “On the Fundamentals of the State Regulation of the Social and Economic Development of the North of the Russian Federation” was repealed during the sweeping regional governance reform of 2004, and never replaced, thereby leaving northern development policies without a legislative base and at the mercy of ministerial policymakers\textsuperscript{24}. Notably, the North remains the only large peripheral area of Russia without a special federal development program (such programs function in the Russian rural South, in the Far East and Baikal Region, in the Chechen Republic, in Kuril Islands and other marginal territories).

In addition, northern economic development policy was essentially de-institutionalized by constant changes in responsible agencies and ministries. After 1991, Goskomsever (the State Committee on Northern Affairs) carried out the regional component of development in the North for the large part of the immediate post-Soviet period (although it was abolished and reinstalled in several short-lived Cabinets). Goskomsever was responsible for the federal ‘northern policy’ and coordinated between branch ministries, central and regional administrations in the North. It also was in charge of running special programs to foster

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\textsuperscript{23} Since 2004, northern development is a joint responsibility of the Ministry of Economic Development and Trade and the Ministry of Regional Development.

\textsuperscript{24} The concept of a new federal law “On the fundamentals of the state policy of the Russian Federation in the regions of the Far North and equalized areas” was developed in 2002, but the law has never materialized.
socio-economic development of northern regions and Indigenous minorities. In its functions it shared some similarity with INAC. During its short tenure, Goskomsever received high appraisals from observers and practitioners, as well as from regional elites (Pilyasov, 2005; Oleynik, 2007). Nonetheless, in 2000 Goskomsever ceased to exist as a separate entity and its functions were transferred to the Ministry of Regional Development and Ministry of Economic Development and Trade. As a result, the governmental agency with an exclusive focus on the North and Indigenous issues was effectively lost.

Most critics give the contemporary development policies in the North slashing assessments (Agranat, 1999; Oleynik, 2007; Committee, 2006). Russia’s northern regions remain deeply marginalized with little hope of improvement and with a growing gap between them and the Russia’s economic core (Bradshaw & Vartapetov, 2003, Petrov, 2008a). Even the resource-rich regions arguably are falling victims of the resource curse (Bradshaw & Bond, 2004). The windfall of investments in the recent years, associated with the global resource boom, does not seem to substantially improve the socio-economic conditions in the North, positively affecting only areas and people closely involved with the extraction industry (Vlasova & Petrov, forthcoming).

In the 1990s Russia passed laws and decrees recognizing and regulating special rights of Indigenous peoples, their economic, social and legal status and the traditional use of the ancestral lands (Fondahl, 1995). Russia does not have a ‘land claims’ process similar to Canada, partially because of historical reasons and partially because of lacking political will (Fondahl et al, 2001). However, Indigenous northerners (at least formally) enjoy the right to freely use their ancestral lands and to be consulted, if the traditional land use is being affected by other activities. Indigenous peoples are also entitled to form communes (obschinas) to exercise the elements of economic and political self-governance. The land, however, remains the property of the state.
Looking from the theoretical perspectives outlined above, the post-Soviet strategy of economic development in the Russian North changed the priorities and mechanisms of state support to northern industries, but it has not eliminated the ‘priority-constraint’ system itself. Instead, it migrated from the priority-constraint bargaining system of Gosplanism to the negotiation process more typical for the Canadian resource Fordism. For example, the aforementioned Concept demands that regional governments provide “lists of most important enterprises … and industrial investment projects that require state support” (Pravitel’stvo RF, 2000), i.e. it asks regional authorities to define their priorities and communicate them to Moscow. Such requests will most likely entail a negotiating process involving federal ministries, provincial governments and enterprises, a bargaining triangle, very familiar in Canada’s northern affairs. However, an obvious distinction is that after Putin’s reforms, the federal interlocutors have now much more leverage in terms of constraining the incoming financial demands or enacting regulatory adjustments.

Two decades of reforming Russia’s northern development policy failed to implement progressive or alternative ways of delivering viability to northern economies. An odd combination of Soviet legacies and neoliberal innovations, the northern development regime in Russia remains a peculiar, but yet a mere version of the resource Fordism. The strength of the state and the weakness of local stakeholders (including Indigenous communities) reduce the negotiation parties to two principal actors – the state and corporations – which determine the nature of the hegemonic project of ‘development’ in the North. Alternative avenues of regional viability, e.g., associated with the land claims process, community-corporate agreements, and multipartite resource co-management, remain virtually unexplored25.

25 Even though in some instances the government passed laws and decrees recognizing and regulating special rights of Indigenous peoples, their economic, social and legal status and the traditional use of the ancestral lands (Fondahl, 1995; Osherenko, 2001), few legislative acts are supported by well-defined implementation mechanisms. See an extensive discussion of these issues in Fondahl & Sirina (2003), Murashko (2003), and Stammler & Wilson (2007).
Contemporary regional development policies in the Canadian North follow a generally neoliberal path, bounded by welfare commitments of the state, negotiated with Aboriginal communities and between levels of government. They include incentives for businesses (especially local), increase in accessibility to negotiate socio-economic impacts with resource developers and direct investments in infrastructure and human capital. It must be said that efforts implemented since 2004 bear a strong influence of the ‘knowledge-based’ development paradigm and explicitly target economic diversification and innovation activity.

Whereas attempts to design the new comprehensive strategy for the North to date have failed, partially due to the change in political control in Ottawa, some distinct economic development mechanisms came to fruition over the last few years. The Strategic Investments in Northern Economic Development (SINED) program is an example of strategic investment coming from the federal budget. Its two components (Targeted Investment Program (TIP) and the Innovation and Knowledge (I&K) Fund) provide approximately C$90 million in 2004-2009 to three Territories for projects that strengthen ‘driver sectors’, broaden economic base, improve local capacities and increase coordination among partners and programs (INAC, 2008).

The TIP pumps C$6 million a year into each Territory making available funds to specific projects according to annually updated (in consultation with respective governments) territorial investment plans (e.g., INAC, 2007). Most of funding goes to building knowledge base, enhancing infrastructure, capacity building and economic diversification. (INAC, 2008). Investment plans are coordinated with the Territorial governments in consultation with Aboriginal governments and development corporations and other stakeholders. Funds primarily go to public or private organizations, small and medium size enterprises (SME) and individuals working to advance economic development in the North. The Northwest
Territories plan focuses on investing in geosciences, tourism, support infrastructure, and assistance to SME. In Nunavut funding targets fisheries, geosciences, cultural industries, community organizational capacities, trade and broadband networks (INAC, 2008).

Innovation and Knowledge (I&K) Fund makes investments (C$350,000 annually) in purpose of helping northerners. This is a notable initiative in the light of the discussion about perspectives of knowledge-based development in the North (Petrov, 2007; 2008c). The principal objective is to disseminate knowledge and support its production in the North (INAC, 2008). Clearly, fostering innovation is an alternative way to induce economic growth and achieve diversification in remote communities. However, the question remains whether these investments would become another tool in the arsenal of neocolonial utopianism, or would truly nurture a production of local knowledge. Another “enabling” program is the Resource Access Negotiations Programme. By introducing it, INAC seeks to improve the ability of Native communities to negotiate socio-economic impact and benefit agreements with resource companies.

Current economic development policies, although seem to lack an overall strategic vision (since the northern strategy is yet to be developed), are quite distinct of both welfare paternalism of the 1950-70s and ‘wild’ neoliberalism of the 1980-90s. While some still find them to be a form of “silent surrender” of active economic development in the North (Polese, 1999), these policies attempt to mitigate the harsh environments of post-Fordist globalized capitalism and foster community capacity building. Indeed, funding constraints are much harder, and residual risks that transnational corporations are ready to assume are lower compared to the crown corporations of the past. The system of economic governance is also somewhat more complex with all peculiarities of Canadian multipartite “negotiated federalism” (Stein, 2007). To make things worse, in spite of program restructuring and substantial cuts in federal funding over the last two decades (Hicks & White, 2001), the ‘patchiness’ of economic development interventions remain intact: today, for example, in the
Northwest Territories 16 federal agencies operate 76 programs, while the territorial government runs another 24 (GNWT, n/d).

Another prominent avenue to stimulate regional development is associated with compensatory payments under comprehensive land claim agreements (CLCA). In most cases, the beneficiaries of such payments (i.e., Aboriginal organizations) use a portion of funds to establish Aboriginal corporations. Although forms and mandates of the latter may vary, they channel funding (whether settlement money or self-generated incomes from their portfolios) into communities (Saku & Bone, 2000). In other words, Aboriginal corporations adopted modern investment strategies and, in many instances, purchased stakes in the on-going resource projects. For example, the Inuvialuit Regional Corporation and its subsidiaries (Inuvialuit Development Corp. (IDC), Inuvialuit Investment Corp. (IIC), Inuvialuit Petroleum Corp., etc.) invested in a number of oil projects. IDC with the asset base over C$135 million (2004) and annual revenue of C$190 million (2005) is a major shareholder of more than 20 subsidiaries and has joint venture interests in energy, transportation, service and manufacturing sectors (IRC Annual Report, 2005). Saku and Bone (2000) found a direct correlation between availability of CLCA payments and the economic prosperity of northern communities.

While this paper focuses largely on federal northern development initiatives, in the Canadian context it is impossible leave out provincial programs. Economic development in the provincial North is under provincial jurisdiction, and varies among provinces. The notable examples of North-focused provincial efforts are the FedNor programs in Ontario, various initiatives in British Columbia (e.g., the Northern Development Initiative), and the Canada-Saskatchewan northern development agreement. The FedNor, originally created to manage regional adjustment funds, has evolved into a complex institutional structure that operates multiple regional development programs in rural and northern Ontario. The Northern Ontario Development Program has a mandate somewhat similar to SINED, and invests in projects
related to innovation, community and human capital development. The institutional infrastructure program component is represented by Community Futures Development Corporations that offer services to support (both with a consultation and funds) small businesses and community initiatives.

The Canada-Saskatchewan Northern Development Agreement (NDA), signed in 2002, in many ways resembles the SINED as it funds infrastructure, innovation, skill development and capacity building projects using federal appropriations. NDA is directing C$10 million of federal money over five years (with an equal provincial match) to non-profit and public applicants with community and business-related proposals in northern Saskatchewan. While SINED and FedNor are run by government departments, NDA is governed by the Northern Development Board that includes delegates from several northern Saskatchewan Aboriginal and community organizations. A tri-partite committee (with federal, provincial and Board representatives) reviews all projects and approves allocation of funds. This is a more explicit attempt to deploy a ‘postcolonial’ form of economic development governance. It is also an illustration of a new post-Fordist regulation framework in the North, where Aboriginal actors are actively involved in decision making.

In British Columbia, since the end of the grand W.A.C Bennett’s ‘province building’ program (Toblin, 1999), northern development initiatives turned into a “sporadic tree” of short-term policies and a patchwork of programs with largely disappointing results (Markey et al., 2007, 64). Lately, however, the Northern Development Initiative employed the idea of a regionally-controlled trust that manages portions of resource revenues to operate regional programs in the North. The Northern Trust funds local governments, businesses, and the First Nations for projects that “stimulate sustainable economic growth and job creation within the Trust area” (that is 70% of the province’s territory (Northern Trust, 2007, 4).

Economic development policies in northern Canada are both adjusting to new institutional and political settings of the 21st century, while presenting some elements of the
past, such as program patchiness, overreliance on business incentives, and absence of clear conflict resolving mechanisms. This is not to deny progress that has been made in making development more tailored to community needs and focused on long term capacity building. In contrast to Russia, devolution and deregulation did not produce the regulatory chaos and secession of funding. The Canadian civil society is also appear to be more open (or historically prepared) to listen to economic desires of Aboriginal northerners. An increased access to market (as well as non-market) means of regulation on the part of Indigenous communities has become an important tool in ensuring locally-oriented economic development. In contrast, in Russia the market reforms seem to empower resource corporations who added new powers to the administrative support that they almost certainly enjoy (especially the state monopolies).

Needless to say that the Russian development regime has been set to accomplish two irreconcilable discursive purposes: a neoliberal scaling-down of northern economy and a Soviet-rooted maintaining of production and living standards in the North. Neither was achieved, and the development regime is yet to finish its transition. In the Canadian North, however, we see an emerging new development regime that, as argued below, is able to become a postcolonial model of regional development that successfully reconciles post-Fordist capitalism with the postcolonial ideal.

It would be inappropriate to end this section without pointing out a remarkable surge in investments in the North associated with geopolitical changes in the Arctic. A renewed interest to the Northern Sea Route in Russia and the North West Passage in the Canadian Arctic signified dramatic moves on the part of both governments to enhance economic and military infrastructure in the region. Within the last two years, the Canadian government pledged C$3.5 billion for new patrol boats, C$100-200 million for a new deep water port in Nanisivik, C$45 million to increase and reequip Canadian Rangers force, and C$4 million for the Canadian Forces Arctic Training Centre in Resolute Bay (Office of the Prime Minister,
2007). In 2007 Russia commissioned its first nuclear icebreaker in 20 years and started
slowly to reinvest in its military installations in the Arctic.

NEW DEVELOPMENT PARADIGMS IN THE POST-COLONIAL ERA

If we follow the argument of ‘constructive’ post-developmentalists (see Power, 2003;
Radcliffe, 2005), an alternative development regime must be simultaneously based on
emerging traditions of the post-industrial society, post-Fordist regime of regulation, and the
postcolonial paradigm. In the North, it also must be supplemented by the consensus between
aboriginalism, environmentalism, industrialism and nationalism (Hayter et al, 2003). This
complex task, in terms of regional policies, must result in ‘situatedness’, appreciation of local
knowledge, promotion of local initiative, devolution of control, development of knowledge-
based economy, and emancipation of minorities (e.g., in “local models of development”
(Hayter & Barnes, 2005)).

The unconditional condemnation of any form of development rooted into capitalism by
development critics, in fact, is counterproductive. Seeking the alternatives to development
exclusively in localism, community and Indigenous responses and ignoring all-pervasive
global capitalism is unlikely to deliver substantial changes to the marginal regions (Sharp &
Briggs, 2006). Fascinating tales of local success and benefits of social economies (Gibson-
Graham, 2005) are impressive, but not sufficient to quell the inequalities between marginal
regions and the “mainland”, at least not in Canada. A relative success of social economies in
forms of co-operatives and Indigenous community enterprises in the Canadian North
(Ironside, 2000), albeit helpful, has not been able to eliminate the socio-economic gap
between these communities and the Canadian south.

Perhaps, if the Canadian and Russian Norths were isolated, the non-capitalist scenario
could have been possible. In contrast, however, resource peripheries are very much open to
global influences, possibly, even more than some other areas (Hayter et al., 2003). Therefore,
the effects globalization, socio-economic and environmental change are strongly felt in the
North. Numerous studies presented convincing evidence of the economic and social restructuring in northern communities (Randall & Ironside, 1996; Southcott, 1998). In such circumstances, the alternative development doctrine must accommodate major socio-economic transformations to the best interests of northerners, with respect to their cultures, socio-economic status, viability of their communities and their political aspirations.

It appears that a postcolonial solution rests not upon resisting and substituting capitalism, but upon reconciling post-Fordist capitalism with the alternative modernities of the local. This combination of global, national and local narratives, regulation modalities and actions is a characteristic of all contemporary ‘rescalings’ (Sidaway, 2007). A trade-off, a new negotiation must happen to achieve an optimal and sustainable consensus that would effectively end the decades-long “war in the woods” (Hayter, 2003) – a perpetual conflict around resources, development and governance in the northern frontier.

It also should be noted that an entirely ‘local’ and bottom-up post-colonial solution in the North is not conceivable since the federal and national states remain to be the principal stakeholders. Whereas state-controlled development projects have failed (Savoie, 1992), denying the state a part in a new development regime is counterproductive. In contrast, the state can and must be a transforming and enabling actor in the region (Markey et al., 2007). However, the form of state’s participation in regional development may differ from the past priority-constraint invasive regulationism. Positive examples of new (and diverse) strategies assumed by federal and provincial state in Canada include the integrated federal approach (e.g., the FedNor program), regional development agency approach (Alberta), federal-provincial agreements (Saskatchewan) and other emerging models.

No matter what shape a new development regime takes, it would be overly optimistic to expect that the North would be able to escape its dependencies, especially a resource-reliance and dependency on public funding. However, new post-developmentalist approaches may prove to be viable, especially because the global and national geo-economic and social
systems have substantially changed since the “development impasse” happened. Some pivotal transitions have already occurred in the North, particularly in Canada (Cameron & White, 1995; Dacks & Devine, 1999). Russia slowly followed the same track (Solomon, 2004), although recent political and policy changes make these tendencies less certain (Oleynik, 2007).

Some of prospective characteristics of the alternative development regime that is likely to place the North in the new economic world order and mitigate persisting northern marginality are summarized in Table 3.2. Table 3.2 contrasts them with the previously dominant regimes. As one can see, in order to move towards the alternative development project, discourses and policies of development in the North have to undergo major transitions. Some of these transitions have already started, but some are yet to emerge.

Table 3.2. Prospective characteristics of a future development regime in the North

<table>
<thead>
<tr>
<th>20th century development regimes</th>
<th>Alternative development regime</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Modernist imperatives</td>
<td>• Post-developmentalist imperatives</td>
</tr>
<tr>
<td>• Paternalism, top-down development</td>
<td>• Entrepreneurialism, bottom-up development</td>
</tr>
<tr>
<td>• Inadequate planning</td>
<td>• Comprehensive and situated planning</td>
</tr>
<tr>
<td>• Mega-projects</td>
<td>• Local initiatives</td>
</tr>
<tr>
<td>• Piecemeal development</td>
<td>• Strategic development</td>
</tr>
<tr>
<td>• Resource exploitation</td>
<td>• Tertiary and Quaternary sectors</td>
</tr>
<tr>
<td>• Political dependency</td>
<td>• Devolution and self-determination</td>
</tr>
<tr>
<td>• Neglect of Aboriginal cultures</td>
<td>• Aboriginal self-government</td>
</tr>
<tr>
<td>• Economies of scale</td>
<td>• Innovation and Cooperation</td>
</tr>
<tr>
<td>• Routine jobs</td>
<td>• Creative jobs</td>
</tr>
<tr>
<td>• State intervention</td>
<td>• Co-management, deregulation</td>
</tr>
<tr>
<td>• Conflict: unions and corporations</td>
<td>• Consensus, flexible practices</td>
</tr>
<tr>
<td>• Ideals of profitability &amp; stability</td>
<td>• Ideals of efficiency &amp; sustainability</td>
</tr>
</tbody>
</table>

Source: Petrov, 2008b

Experiences in some parts the North discussed below demonstrate that there are avenues in which such expectations may be attained. There are examples of emerging regulation frameworks and approaches of post-developmentalist and post-Fordist nature. They may be associated with the CLCA process, when local Indigenous communities obtain financial self-
determination, co-management rights and an ability to be equal participants in developing natural resources on their lands (Saku & Bone, 2000). Another possibility is to foster the emerging local industries, both export-oriented (such as tourism) and endogenous. The success of the latter is often contingent to the support given to local innovation, entrepreneurship and creativity (Petrov, 2007; Polese & Shearmur, 2002). Below I describe a flexible regulatory framework, a foundation of a new, neo-staple development regime, that appears to be well reconcilable with the post-Fordist and, simultaneously, post-colonial objectives of regional development in the North.

AN EMERGING NEW REGIME?

A CASE FOR A NEO-STAPLE DEVELOPMENT REGIME

Although Table 3.2 suggests that the alternative ways of developing the North need to depart from the staple dependency, it is naïve to argue that the resource sector will no longer constitute the economic base in the frontier. However, it appears that the post-developmentalist paradigm can still be reconciled with staple-reliance. The case in point is a new operational framework that has emerged around so-called Impact and Benefit Agreements (IBA) which often accompany CLC settlements between Canada and Aboriginal groups. It may be argued that this framework is a reflection of a working post-developmentalist discourse coupled with the principles of flexible and pluralistic regulation.

IBAs are private negotiated contracts between corporations and local stakeholders (almost exclusively – Aboriginal communities) that are legally binding, but typically not formally legislated (Kennet, 1999). Aboriginal communities negotiate IBAs to address various concerns and expectations that exist in relation to a proposed resources project. A company’s rationale is to obtain a ‘social license’, i.e. to ensure a long-term support of Aboriginal titleholders, and, thus, to avoid costly disruptions or delays in a project (Public Policy Forum, 2005). On the other hand, IBAs empower local communities to advance their own vision of future economic development. By diminishing the role of the state in
negotiations, IBAs may help to partially overcome a paternalistic bias of “modernization”, imposed by the government, and allow alternative modernities to be recognized and institutionalized through the contract.

Perhaps the most significant economic element distinguishing IBAs from compensation agreements is the IBA’s focus on building local ‘hard’ and ‘soft’ infrastructures, most importantly, Aboriginal businesses and human capital. Capacities and competencies fostered by IBAs may result in long-standing economic benefit, and are intended to outlive a particular extraction project. Frequently, companies are not only expected to meet local employment targets, provide training to Aboriginal residents, maximize local purchases, and reserve a bulk of subcontracted work to Aboriginal-owned contractors, but to assist in launching and financing local businesses (see Kennett, 1999).

IBAs represent a relatively new new phenomenon in Canada. Around 50 modern IBAs were signed in Canada between 1988 and 2006 (IBARN, 2007) and since have become a common practice in Canada. Similar in nature Community benefits agreements and Socio-economic monitoring agreements (latter with a government as a signatory) comprise a new institutionalized regulatory framework of what may be called a neo-staple regime of development.

A neo-staple regime is rooted into the resource Fordism of the 20th century, and two of its major actors remain the same: the capitalist state and corporations. A transitional crisis from Fordism to post-Fordism diminished the power of ‘inflexible’ unions. Instead, the transformation in the political landscape gave strength to other actors, first of all, Aboriginal communities, who forcefully pursued their claims and demands. The environmentalists have also secured an opportunity to intervene as resource projects undergo environmental impact assessments. A neoliberal central state limited its role and power (although its positions in the North are still very strong), while corporations became increasingly ‘socially responsible’. Amid building tensions among old and new principal actors of development (Hayter, 2003),
the adoption of an alternative development doctrine became the only avenue to mitigate the economic and political crises. A new mode of social regulation combined legacies of the neoliberal and welfare paradigms, and is institutionalized by settling CLCA and, more generally, emancipating the North in Canadian political and legal systems (Cameron & White, 1995).

Table 3.3 **New development paradigm and the neo-staple regime in the frontier**

<table>
<thead>
<tr>
<th>Characteristics of the alternative development regime</th>
<th>Neo-staple regime (IBAs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Post-developmenalist imperatives</td>
<td>• Multiple modernities and actors are appreciated, no paternalism</td>
</tr>
<tr>
<td>• Entrepreneurialism, bottom-up development</td>
<td>• Local businesses, capacity-building, ‘hard’ and ‘soft’ infrastructure, but still driven by mega-projects</td>
</tr>
<tr>
<td>• Comprehensive and situated planning</td>
<td>• Participant, bottom-up planning. Economic, cultural and environmental aspects</td>
</tr>
<tr>
<td>• Local initiatives</td>
<td>• Locally based impacts, benefits, initiatives</td>
</tr>
<tr>
<td>• Strategic development</td>
<td>• Long-term consequences and targets (beyond a current resource project)</td>
</tr>
<tr>
<td>• Tertiary and Quaternary sectors</td>
<td>• Primary sector, but increased local multipliers and business infrastructure</td>
</tr>
<tr>
<td>• Devolution and self-determination</td>
<td>• Local authority, limited role of federal and regional governments</td>
</tr>
<tr>
<td>• Aboriginal self-government</td>
<td>• De facto recognition of Aboriginal rights</td>
</tr>
<tr>
<td>• Innovation and Cooperation</td>
<td>• Innovation and cooperation required to meet negotiated targets</td>
</tr>
<tr>
<td>• Creative jobs</td>
<td>• Education and training, plus building of entrepreneurial competencies, but most jobs are not creative</td>
</tr>
<tr>
<td>• Co-management, deregulation</td>
<td>• Agreement as a form of legally binding co-management</td>
</tr>
<tr>
<td>• Consensus, flexible practices</td>
<td>• Flexibility of negotiations, consensus is a requirement</td>
</tr>
<tr>
<td>• Ideals of efficiency &amp; sustainability</td>
<td>• Efficiency and sustainability are the major rationales of agreements</td>
</tr>
</tbody>
</table>

The neo-staple regime is still linked to resource mega-projects. However, it is devoid of their past paternalist and normative nature, and is oriented to maintain the sustainability of environmental and social systems, as negotiated amongst local actors (Table 3.3). Despite its link to the staple sector, the new approach alleviates past pitfalls of resource-driven development by setting long-term horizons and emphasizing *local capacity building*. The negotiation process, by which the neo-staple regime is made operational, is also successful in mitigating a conflict between environmentalism, aboriginalism, industrialism, and
colonialism (Hayter, 2003). Contesting discourses receive a mechanism of reaching a compromise, and local agents, not courts or legislators in Ottawa, have themselves a power to affect the outcome.

The neo-staple settings better suit the post-Fordist terms of competition that require flexible and innovative forms of production, consumption and transaction (Southcott, 1998), but also favors local synergy, embeddedness and networking (Table 3.3). Flexibilization and diversification, delivered by the neo-staple regime, conveniently coincide with the post-developmental ideals of the economic development situatedness, embeddedness and plurality. To a certain extent, similar arrangements have also spread to other economic sectors, including the public sector – another major segment of the economic base in the North (Petrov & DiFrancesco, 2007).

THE RUSSIAN EXPERIENCE

In respect to newly negotiated staple-development, the Russian North presents a rather disappointing example. The weakness of relevant legislation and its enforcement is a well known (Stammler & Wilson, 2006). Russian laws require ecological impact assessments of every new project, but when it comes to social and economic impacts, the legislation is insufficient or non-existent. In these murky waters, companies and communities are left to resolve their issues for themselves. Observers distinguish two predominant strategies: an alliance between Indigenous NGOs and the regional state and a direct dialogue with Western companies and NGOs (Stammler & Wilson, 2006; Roon, 2006). The former strategy appears to be a preferred option in regions dominated by Russian-owned companies (e.g. Western Siberia), the latter – in areas with foreign-funded projects (e.g., Sakhalin).

In case of Sakhalin, the government (federal and regional) and foreign investors signed Production Sharing Agreements (PSA) that prescribe the distribution of revenues and benefits (Routledge, 2004). Unfortunately, these contractual agreements leave out local stakeholders, including Indigenous communities. PSAs do not contain any provisions pertaining to local
development or ancillary infrastructure building. However, the development objectives are partially met by additional community based efforts that foreign companies chose to implement following the international standards (e.g., World Bank’s operational directives) and pressure from lenders. In other words, the elements of agreement central to IBAs elsewhere are left at the discretion of companies. International consortia for Sakhalin-2 project, for example, put in place a number of development programs, including Social Investment Program, Supplemental Assistance Program and Sakhalin Indigenous Minorities Development Plan. The latter supports traditional economic activities, health care, education, culture initiatives, training/capacity building, and provides mini-grants (Sakhalin Energy, 2007). Sakhalin Energy also set up a tripartite consultation and monitoring processes and procedures for community participation.

The neo-staple development regime has taken its root in the North. A new negotiation process (or dialog) involving state, companies and local (Indigenous) communities has replaced Fordist and Soviet bargaining arrangements. In Canada, IBAs and similar agreements institutionalize a new regulatory framework that attempts to reconcile postcolonial development alternative with realities of capitalist markets. In Russia, this system is yet to emerge, however some progress has already been made. The recent trend to concentrate Russian natural resources in hands of large state-controlled companies, questions whether the neo-staple regime can be truly successful. These entities might be less inclined to follow international standards and use Russia’s legislative loopholes to minimize their community obligations. On the other hand, in a long-standing Soviet tradition, these companies are still expected to be “socially responsible” and provide social infrastructure and assistance to communities (Humphrey, 1995), and often do assume these responsibilities from regional and local governments. It remains to be seen, however, whether this post-Soviet legacy may become a component of neo-staple arrangements similar to existing in other resource frontiers.
CONCLUSIONS

It has been said before that resource Fordism in the North may not have been so much a problem as is its inheritance (Hayter, 2003). While regional development policies of the 20th century delivered unsatisfactory results, they certainly benefited some communities and groups. However, the demise of the 20th century development regimes brought the North to the strategic crossroads, where it inevitably faces a drastic reformulation of development policies. This process has already started.

Are development policies in the North in Canada and Russia converging? On the one hand, the answer is yes, as both countries went through a period of neoliberal reforms that replaced the past state-dominated systems of planning and negotiating economic growth (whether Fordist or Soviet) with more flexible, devolved and deregulated development frameworks. Federal states in both countries limited their involvement into northern economic affairs and resorted to coordinating and enabling mechanisms of development. In Canada this resulted from the rising bottom-up movement, the unfolding land claim process and the devolution of economic governance. Indeed, the most pivotal change in the northern policy in Canada in the recent decades was associated with the shift of power to Aboriginal people. In Russia the withdrawal of the federal state from northern affairs was both a deliberate objective of market reforms and an unintended consequence of a severe fiscal crisis. In the first instance, strengthening local initiative was coupled with capacity building, in the second, policy disarray and lack of resources delivered a devastating blow to northern economies, although empowered some regional stakeholders.

These latter differences mean a lot when one observes the consequences of neoliberalism. Whereas both Norths went through troubled years of economic decline, experienced a mounting pressure of flexibilization, restructuring and global competition, fiscal austerity and increasing regional disparity, Canada managed to open up several new development avenues during the 1980s and 1990s. Based on the novel principles of regional development laid upon
cooperation between state, locality and corporate capital, these alternative strategies are gaining momentum to form a new, post-colonial regime of development in the North. These strategies are slowly penetrating in the Russian North (Stammler & Wilson, 2006). However, federal government’s attempts to centralize resource ownership and strengthen its regulatory grip may be not helpful for forging a new dialog around community development, if an appropriate legislation and contractual obligations (that guarantee local development) are not implemented.

It is too early to assess the viability of the neo-staple regime and its adaptability to various regional contexts in the Arctic. In addition, it is indeed not the only way to advance economic growth and development in the North. An attractive feature of the neo-staple arrangements is their likely ability to design a regulation framework that can mitigate a perpetual conflict between aboriginalism, environmentalism, industrialism and nationalism for the benefit of northern communities. However, the success is far from certain and both best practices and failures need to be carefully studied to make policy recommendations in either Canadian or Russian contexts.

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INTRODUCTION

The importance of talent, human capital and creative class in economic development has spawned considerable debate in economic geography. Volumes of studies demonstrated that the quality of a region’s workforce is a key determinant of that region’s economic success (e.g., Glaeser, 2000; Florida, 2002a, Simon and Nardinelli, 2002). Regional development studies now commonly stress the need for regions, both urban and rural, to be open and attractive to human capital (Bollman, 1999). Some, however, argue that not just a level of skills, but a creative ability of the labor force (or of the creative class) is a key ingredient of endogenous development in urban areas (Anderson, 1985; Florida, 2002a, b). The creative class thesis, although debated by many (Glaeser, 2004; Markusen, 2006), found its support in a number of empirical studies, which measured creativity and its effect on regional economic competitiveness (see Florida, 2002a, b; Florida and Gates, 2001, McGranahan and Wojan, 2007). These studies also demonstrated that the ‘quality of place’ (interpreted as a function of diversity and openness) represents one of the most important factors in attracting creative capital (Florida, 2002b, 2005), and hence acts as a powerful force of urban and regional economic growth and development.

The creative class is often identified as the group of individuals who either are highly educated or engaged in creative (i.e., scientific, artistic or technological) types of activities (Florida, 2002b, 2005). Although all humans possess creativity, the distinctive feature of the
creative class is that its members translate their creativity into economic returns (Florida, 2005). Richard Florida and his followers argued that the economic prosperity of a region (or a city) is contingent on its ability both to attract and to retain the creative class (Florida, 2002a, b, 2005; Gertler et al., 2002). Applying Florida’s ideas to Canada, the recent work by FCM (2002) and Gertler et. al (2002) measured the creative class (and the attributes for attracting it) in the Canadian context. These studies revealed the geography of creative class in Canadian metropolitan areas and compared Canadian and American city-regions.

To date, the creative class research has been limited to large urban regions. This preoccupation is understandable, given that large cities act as clusters of creativity. However, it does not mean that peripheral areas should be completely excluded from the creative class debate. Rather, the role and function of talent and, more broadly, of the creative class as factors of endogenous development in non-central regions has to be closely considered. It may require revising the creative class concept to meet the realities of peripheral regions, since it is naïve to expect that they simply replicate processes observed in metropolitan cores. A serious analysis of the creative class in rural and remote areas will also serve to avoid fallacies of blind application of now popular “Floridian” policies, while helping to identify useful practices.

Many smaller cities in Canada’s periphery, and specifically in the Canadian North, have been in a constant search for new development opportunities, given (among other things) the continuing decline of their base industries (Bone, 2003), although a few places experienced a temporary upturn in recent years. The necessity to find alternative sources of economic growth appears to be the inevitable consequence of deteriorating terms of trade for staples in today’s world (Sarkar, 1994). The process of economic restructuring in the resource industry caused many northern towns to experience significant out-migration and de-population, which have left many devoid of younger, highly educated and skilled individuals. Likewise, these events have left many communities without the fiscal means to reverse these trends.
Other communities, however, have benefited from an influx of younger, more educated, skilled, and creative persons, including highly skilled equipment operators and local bohemia – artists, singers, and crafters.

In the past, it was repeatedly demonstrated that the northern labor force is ‘disadvantaged’ (Bone and Green, 1984; Hull, 2000) in terms of skills and education. At the same time, studies demonstrate that the quality of human capital in Canadian peripheral areas is associated with better economic performance (Bollman, 1999). Does this mean that in an era when the economic prosperity of regions is likely to depend on their creative human capital, northern communities are doomed to be losers? Or is there a place for talent in ‘the cold’? What are the geographies of the northern creative class, and what are the regional differences in attracting or losing it?

This study aims to address these questions. My main objective is to discuss the utility of the creative class argument to the case of northern Canadian communities and to measure and map the creative class in the Canadian North. I redesign creative class metrics to rank northern communities, which can assist in developing alternative strategies of regional growth in the Canadian periphery. I explore interrelationships among different groups within the creative class, between occupation-based and education measures of the creative class, and between the creative class metrics and indicators of ‘quality of place’. Special attention is given to the Native population as a potential element of the ‘northern creative class’.

BACKGROUND: HUMAN CAPITAL, CREATIVE CLASS AND THE PERIPHERY

Since the late 1970s, geographers started to consider human capital as a crucial factor of regional economic growth and development (Jacobs, 1984). A number of further elaborations provided empirical evidence regarding the relationship between economic development and the ability to attract and embrace creative and educated people (Desrochers, 2001; Florida, 2002a; Glaeser, 2000). The link between the economic growth and human capital is closely associated with the notion of the knowledge-driven growth (Romer, 1990).
Drawing on the notion of human capital, Florida (2002b) suggested that the advancement of regions depends on whether they possess a specific qualitative type of human capital, the *creative capital*. According to the creative capital perspective, creative people, or the *creative class*, are the major driving force of economic development. The creative class includes not just educated individuals or high-tech workers, but all people who are “engaged in [paid] work whose function is to create *meaningful new forms*” (Florida, 2005:34, emph. orig.). Therefore, the notion of the creative class goes beyond traditional representations of a highly skilled labor force, knowledge workers and so forth. The creative class may be viewed as being based on two conceptual elements: human creativity (defines ‘creative’) and economic/labor status (defines ‘class’).

The growing importance of creative workers in the ‘new economy’ triggered changes in the way we conceive regional economic development. Porter (1998) noted that successful clusters produce and maintain a set of competitive advantages in efficiency, effectiveness, and flexibility that enhance productivity and the ability to innovate. Florida offered his own three major components of competitiveness in the ‘new economy’: technology, talent, and tolerance (Florida, 2005). He found that all three were closely related to high levels of spatial economic competitiveness. Here, ‘technology’ is defined in a broad sense as a primary output of innovation, and is measured by the high-tech sector concentration in a city-region. ‘Talent’ is a measure of a highly educated labor force. ‘Tolerance’ is conceptualized in terms of openness, inclusiveness and diversity. According to Florida (2005), cities that are well endowed with all three “T’s” have an advantage in accumulating creative capital and achieving high levels of economic competitiveness (Florida, 2002a, 2005).

A number of opponents fiercely criticized Florida’s thesis. Some pointed out the lack of evidence of causality between the creative class and economic growth in thriving urban areas, where it is unclear, whether the creative class fosters growth or the growth itself attracts the creative labor force (Glaeser, 2004; Shearmur, 2007). Other critics focused on
Florida’s interpretations of the creative class as privileged urban techno-elite, on his metropolitan culturalism or his cliché policy scripts (Markusen, 2006; Peck, 2005; Scott, 2006). In this paper, I largely leave this discussion aside, partially because of volume limitations, but also because it almost exclusively concerns metropolitan regions and says little about peripheries. As I convey below, the role of the creative class in non-metropolitan areas may be somewhat different from large city-regions, so that main arguments of the creative class debate should be reconsidered accordingly, when enough evidence is collected.

Frontier regions have always been viewed as a special case of regional economic development. Core-periphery theorists well documented that frontier economies are marginal, vulnerable, structurally truncated and functionally dependent (Friedmann, 1996). Unevenness of power relations with the southern core, remoteness, and isolation determine low efficiency and flexibility of frontier economies and are responsible for setting their current development path. The inability of marginal regions to take advantage of new economic opportunities provided by the knowledge economy received different explanations. Under the classic core-periphery concept (Friedmann, 1966), for example, resource frontiers are the last in line to enjoy the ‘trickle down effect’ from the core. Dependency theorists see little chance for exploited peripheries to benefit from new economic opportunities, which do not eliminate dependency, but merely change its form- (Amin, 2001). Alternatively, institutionalists argue that “learning” (Morgan, 1997) and endogenous growth (Romer, 1990) in the peripheral regions are inhibited because of limited local capacities (institutional and infrastructural) and the lack of human capital (Hanson, 2000). The disconnectedness of frontier firms from communities and networks of practice (Gertler, 2005) prevents the transfer of tacit knowledge. In addition, peripheral regions suffer from a “branchplant” syndrome, when linkages with externally located headquarters replace local entrepreneurship and innovativeness. In sum, most peripheries benefit neither from initial conditions, nor from internal or external processes that can induce a desired transformation.
A path-dependency approach seems to be another useful way to interpret a disadvantage of peripheries. Path-dependency is the persistence of historically and socially embedded organizational trajectories, i.e. specific arrangements of means, oriented towards increasing productivity and competitiveness (Bathelt and Glucker, 2003; Lundvall, 1992). Technological, organizational, and social settings in regional economies have traditionally been oriented to follow the increasing returns logic (Arthur, 1996) by dwelling on the existing technological paradigm. However, the increasing accumulation of such returns typically fails to continue infinitely long, and the absence of change in the chosen trajectory results in the ‘lock-in’ (Grabher, 1993), when a region eventually loses its competitiveness. To ensure future prosperity, the regional innovation system must develop or assume a new technological paradigm through economic, institutional, and social transformation.

The development path for the Canadian North has largely been set by discourses and practices theorized in Harold Innis’s staple theory (Innis, 1956). In a staple economy, the physical nature of a resource, not the amount of knowledge used for its production, provides a desired comparative advantage. Regional innovation systems depend on very narrow flows of knowledge through a few major institutional agents, such as the state and large corporations (Bone, 2003). Due to the monopolistic character of resource extraction there are no competing technologies or other forms of innovation that could weaken the rigidity of the current techno-economic trajectory (Clark et al., 2001). Consequently, the condition of path-dependency in frontier communities remains exceptionally strong, preventing them from being successful in a modern economic competition.

In the case of such lock-in, there are two possibilities for a region: a new path creation (or regional reinvention, when a region develops new forms of competitiveness) or decline (Bathelt and Boggs, 2005). The concept of new path creation postulates that among the most important arrangements that can lead to regional self-reinvention are the scientific, institutional, economic and social shifts that allow inventing or adopting new knowledge
Schienstock (2007) argues that a window of new opportunities is opened up by a combination of a new knowledge paradigm, economic pressures to adapt to the new paradigm, change events that generate and support the transformation process and courses of action that push techno-economic development into a new direction. Some of these ‘change events’ are in place in the Canadian periphery: a pressure to foster sustainable development, new technological opportunities, the effects of globalization, regional self-determination and the devolution of power. So, why, then, do only a few peripheral regions demonstrate signs of new path creation? Is there a missing factor?

The fallacy of structural models of development, whether neoclassical or institutional, is the neglect of human agency as a key transformative factor. Meanwhile, agents of transformation are another critical and necessary component of change. These agents can be political institutions, firms or non-governmental organizations. However, in the end, the agents of change are people, individuals and their groups who ‘write’ the innovation history of the region (Bassanini and Dosi, 2001). As Schienstock (2007: 95) points out, “to explain the development of a new …trajectory, we cannot only refer to objective factors such as new opportunities, economic pressures, or change events... Path creation [should be] seen as a process of mindful deviation by people who have an understanding of the opportunities that the new paradigm offers... Therefore, the transformation process to a great extent depends on the engagement of social pioneers such as scientists, politicians and entrepreneurs prepared to initiate and conduct anticipatory institutional change.” In other words, a regional innovation system can move on from path-dependency and reinvent itself if it possesses the necessary creative capital.

So far, there is only limited evidence of the transformative role that the creative class plays in the periphery. The importance of creative individuals in innovative processes in remote regions has been highlighted in a number of studies from different regions (Aarsæther, 2004; Ferrucci and Porcheddu, 2006; Hayter et al, 1994). Some researchers have
observed that less favorable business and social environments of the periphery amplify the importance of creativity and require individual innovators and firms to be more creative than in the core (Aarsæther, 2004; North and Smallbone, 2000). More recently, a formal analysis by McGranahan and Wojan (2007) indicated that major conceptual links between the creative class and economic development exist in American non-metropolitan settings.

It is difficult to argue that the creative capital in the peripheral northern communities can make them successful in competing with national and global innovation powerhouses, but it is plausible to suggest that the availability of this factor improves the prospects for future economic transformation and development. This proposition, however, remains the subject of the ongoing research. A necessary first step involves a study of the nature and spatial distribution of creativity in the Canadian North.

**APPROACH AND METHODS**

Much of the creative class literature is devoted to developing two sets of measures: one to quantify the creative class and another to measure pull-factors responsible for attracting creative people to ‘high quality’ places. Conventionally used indices include the talent index, the tech pole index, the melting pot (or mosaic) index, and the bohemian index (Table 4.1). However, as critics pointed out, the traditional creative class metrics fail to capture the diversity of the creative class by concentrating on formal education credentials and technological occupations. I consider the creative class as a heterogeneous entity consisting of at least four large groups (in which creativity finds its application in different ways): scientists, entrepreneurs, leaders and bohemia. The *four-sector model* of the creative class is adopted in this study as more inclusive. Accordingly, the creative class metrics must be extended. All measures also have to be redefined to reflect the Canadian context. A chosen set of indicators (Table 4.1) consists of two groups: measures of the creative class and measures of the ‘quality of place’ (or of a place’s attractiveness to the creative class). I define traditional indicators in both groups in the manner laid out by Gertler et al., (2002),
with the exception that the creative class indices are calculated as location quotients, not simple shares. Location quotient (LQ) – is a measure of the relative status of a phenomenon (e.g., employment in the technology sector) in a given region compared against the reference region (Canada).

Table 4.1. **Indices used in the study**

<table>
<thead>
<tr>
<th>Creative class metrics (Characteristics of the creative class)</th>
<th>Target of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional measures</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Talent Index (TI)</strong> is a location quotient of the population over 20 years of age who have a university degree.</td>
<td>Level of formal education of the labor force</td>
</tr>
<tr>
<td><strong>Bohemian Index (BI)</strong> is a location quotient of the employment in artistic and creative occupations: “Art and Culture” (NOC group F)</td>
<td>Creative class: bohemians</td>
</tr>
<tr>
<td><strong>Leadership index (LI)</strong> is a location quotient of people with leadership and managerial occupations (NOC group A);</td>
<td>Creative class: leaders</td>
</tr>
<tr>
<td><strong>Entrepreneurship index (EI)</strong> is a location quotient of people with business occupations (NOC group B);</td>
<td>Creative class: entrepreneurs</td>
</tr>
<tr>
<td><strong>Applied science index (ASI)</strong> is a location quotient of people with applied science occupations (NOC group C);</td>
<td>Creative class: scientists</td>
</tr>
<tr>
<td><strong>Quality of Human Resources Index (QHRI)</strong> is an integral indicator that combines the educational and professional characteristics of population and is defined and a half-sum of the proportions of people with university degree and a creative occupation</td>
<td>A degree to which the region’s labor force has university education and engaged in creative professional activity “Power” of the creative drive in a region</td>
</tr>
<tr>
<td><strong>Creative Drive Index (CDI)</strong> is calculated by multiplying the TI by LI (i.e. by combining talent and leadership).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures of ‘quality of place’ (characteristics of attractiveness to the creative class)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional measures</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Mosaic Index (MI)</strong> is a proportion of the total population that is foreign-born.</td>
<td>Society’s diversity</td>
</tr>
<tr>
<td><strong>Visible Minority Ratio (VMR)</strong> is a proportion of visible minorities in total population.</td>
<td>Society’s diversity</td>
</tr>
<tr>
<td><strong>Additional (new) measures</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Common Law Couples Ratio (CLCR)</strong> is a proportion of population in common law relationship.</td>
<td>Society’s tolerance</td>
</tr>
<tr>
<td><strong>Feminist Index (FI)</strong> is a location quotient of women in managerial (leadership) occupations</td>
<td>Society’s openness, “low barriers of entry”</td>
</tr>
<tr>
<td><strong>Aboriginality Index (AI)</strong> is a proportion of people with Aboriginal identity (by the Census definition) in total population.</td>
<td>Presence of Aboriginal population</td>
</tr>
<tr>
<td><strong>Resource-dependency Index (RDI)</strong> is a location quotient of employment in the occupations unique for the primary sector.</td>
<td>A degree of resource reliance</td>
</tr>
</tbody>
</table>

**Measure of technology sector specialization**

| **Tech Pole Index (TPI)** is a location quotient of the employment in North American Industry Classification System (NAICS) high technology sectors (information and cultural industries and professional, scientific and technical services). | Specialization in technology sectors |

**Notes:** NOC – national occupation classification. Traditional measures are based on Gertler et al. (2002).

This is a more advantageous measure, because it compares all communities with a single common denominator, in this case with the national benchmark. The formula for calculating LQ is:
\[ LQ_i = \frac{\lambda_n}{\lambda_c}, \]  

in which \( LQ_i \) is a location quotient of phenomenon \( i \) (industry, occupation, education, etc.), \( \lambda_n \) is a share of population with a measured characteristic \( i \) in region \( n \) (North) and \( \lambda_c \) is a share of population with the same characteristic in Canada. If \( LQ > 1 \), a given phenomenon is more significant (larger) in a study region than in the country as a whole.

Following the four-sector model, the creative class occupational metrics include four group-specific indices: the bohemian index (BI), the leadership index (LI), the entrepreneurship index (EI), and the applied science index (ASI), each measuring a distinct creative class group (see definitions in Table 4.1). The talent index, as in Florida (2002a), measures the level of formal education of the labor force. I also develop two composite indices: the quality of human resources index and the creative drive index. Altogether, I call all these indices the “creative class metrics.” The quality of human resources index (QHRI) is an integral indicator that combines the educational and professional characteristics of population and is defined as a half-sum of the shares of people with university degree \( \lambda_{uni} \) and people with the above-mentioned creative occupations \( \lambda_{cr, occup} \):

\[ QHRI_i = 0.5 \sum (\lambda_{uni} \; \lambda_{cr, occup}) \]  

The QHRI attempts to provide a proxy to an actual share of people, who both have higher education and are engaged in creative professional activity. This index, perhaps, may serve as the best indicator of the creative class size. The creative drive index (CDI) is a measure of the “power” of the creative drive in a region. The CDI is calculated by multiplying the TI by the LI (i.e. by combining talent and leadership indices). It is designed to portray an ability of the creative class to lead and, thus, to deliver a regional breakthrough.

The measures of the ‘quality of place’ (Table 4.1) incorporate the mosaic index (MI), the visible minority ratio (VMR), the common law couples ratio (CLCR), the feminist index (FI), aboriginality index, (AI) and the resource-dependency index (RDI). First two indices
aim to measure population diversity. The CLCR and FI target place’s openness and tolerance (similar to the gay index (Florida, 2002a)). Tolerance openness and diversity were singled out by Florida as leading factors attracting the creative class (Florida, 2002a,b; Florida & Gates, 2001; Gertler et al, 2002). The AI is designed to reflect a role of Aboriginal population and heritage in accumulating the creative class. The RDI measures community resource-reliance. The AI and RDI are designed to account for special social and economic characteristics of the North.

I also use the tech pole index (TPI) as a proxy of community’s specialization in high technology sectors (Table 4.1). The TPI was first developed by the Milken Institute and later used by Florida (2002a) as an indicator of a region’s high technology specialization. The TPI is calculated here as a location quotient of the employment in North American Industry Classification System high technology sectors (Table 4.1).

In the following analysis, I first computed and analyzed indices that characterize the creative class. All indices for northern communities were compared to those for the two control regions – Canada and the City of Toronto. Toronto was selected as the key comparator city to represent the country’s creative core (Gertler et al., 2002). Then I turned to indicators of attractiveness and studied them in a similar manner. To analyze the relationships among indices, between and within the two groups, both correlation and principal components analyses were performed. In this step, I also assessed a performance and relevance of the selected measures. I then ran two regression models (log-transformed ordinary least squares (OLS) with a stepwise elimination of insignificant variables) to test possible dependencies between the creative class, attractiveness factors and specialization in high technology sectors. After exploring individual metrics, northern communities were ranked using both the creative class and attractiveness measures. Overall, two composite rankings were produced: one by combining equally weighted individual rankings of the creative class indices (TI, LI, EI, BI and ASI), and second by combining rankings of the
‘quaintly of place’ indicators (MI, VMR, FI, CLCR, AI and RDI). I identified leading communities (“creative hot spots”) and those lagging behind. Finally, I conducted a cluster analysis (k-means method) to detect the extent of typological heterogeneity within the dataset. While an exclusively quantitative approach to studying the creative class has received criticism for its excessive emphasis on statistical associations at the expense of the qualitative assessment (Markusen, 2006), my goal here is to conduct an exploratory empirical study aimed at quantifying and measuring the creative class in the Canadian North.

The working definition of the North includes three Territories and the northern portions of seven provinces. Following Bone (2003), I selected 34 ‘most important’ northern cities and towns (Figure 4.1). The largest urban centre is Chicoutimi-Jonquière CMA, QC with a population of approximately 155,000 in 2001, and the smallest is Rankin Inlet, NU with 2,177 residents (Figure 4.1, Table 4.1). All data were obtained from the Statistics Canada’s 2001 Census database (Statistics Canada, 2002).

Figure 4.1. Thirty-four northern communities (color represents the Talent index)
RESULTS AND DISCUSSION

Creative Class Characteristics

The calculation of the talent index (TI) for 34 northern cities and towns (Table 4.2) reveals an apparent shortage of highly educated individuals: on average, the TI in the entire dataset is only 0.65 (in Toronto it is 1.42). However, there is a leading group of communities consisting of the territorial capitals, Whitehorse and Yellowknife, with the TI exceeding 1.0 (Table 4.2; Figure 4.1). Fort Smith takes the third place with the TI matching the Canadian average. The second tier of cities (0.8 ≤ TI ≤ 1.0) consists of Iqaluit, Rouyn-Noranda, Thunder Bay and Inuvik. Interestingly enough, Thunder Bay was ranked 20th among 25 largest metropolitan regions by Gertler et al. (2002). In sum, despite the northern labor force is generally short of educational credentials, there are still places with a prominent concentration of talent.

The distribution of the leadership index (LI) has a different pattern (Table 4.2). The average LI is 0.9. In addition to three territorial capitals, five other communities, including Inuvik, Hay River, Rankin Inlet, Smithers, and Fort Smith, have higher than average proportion of managerial occupations. Clearly, the leadership potential of the Territorial North is quite high. In contrast, in old industrial and resource towns the leadership component of the creative class is underdeveloped (Table 4.1) reflecting their dependency on an externally located decision-making (the “branchplant” syndrome).

The entrepreneurship index (EI) exhibits a somewhat similar distribution (Table 4.2). Rankin Inlet is ranked first (almost tied with Toronto!) pointing to a large creative capacity of Native-run businesses, when they receive appropriate support and are favorably located in the emerging regional center. Three territorial capitals closely follow Rankin Inlet, building on the advantage of being political and economic headquarters. Only a few other communities have a relatively developed entrepreneurial class (Hay River, Inuvik, Smithers,
Kirkland Lake, Happy Valley-Goose Bay, Rouyn-Noranda, Fort Smith, and Prince George).

Overall, the North seriously lacks the entrepreneurial capital.

Table 4.2. Characteristics of the creative class in northern communities

<table>
<thead>
<tr>
<th>Community name</th>
<th>Population</th>
<th>TI</th>
<th>LI</th>
<th>EI</th>
<th>ASI</th>
<th>BI</th>
<th>QHRI</th>
<th>CDI</th>
<th>TPI</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellowknife</td>
<td>16,541</td>
<td>1.14</td>
<td>1.70</td>
<td>1.12</td>
<td>1.43</td>
<td>1.12</td>
<td>41.0</td>
<td>361.70</td>
<td>1.14</td>
<td>1</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>19,058</td>
<td>1.15</td>
<td>1.56</td>
<td>1.13</td>
<td>1.04</td>
<td>1.30</td>
<td>40.7</td>
<td>338.90</td>
<td>1.09</td>
<td>2</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>5,236</td>
<td>0.87</td>
<td>1.68</td>
<td>1.12</td>
<td>0.93</td>
<td>1.94</td>
<td>39.1</td>
<td>304.15</td>
<td>0.77</td>
<td>3</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>2,185</td>
<td>0.99</td>
<td>1.23</td>
<td>0.94</td>
<td>1.15</td>
<td>1.03</td>
<td>38.4</td>
<td>256.07</td>
<td>0.60</td>
<td>4</td>
</tr>
<tr>
<td>Inuvik</td>
<td>2,894</td>
<td>0.80</td>
<td>1.66</td>
<td>1.00</td>
<td>1.01</td>
<td>0.77</td>
<td>35.6</td>
<td>275.68</td>
<td>0.75</td>
<td>5</td>
</tr>
<tr>
<td>Smithers</td>
<td>5,414</td>
<td>0.77</td>
<td>1.21</td>
<td>1.00</td>
<td>1.45</td>
<td>0.72</td>
<td>32.3</td>
<td>199.99</td>
<td>1.09</td>
<td>6</td>
</tr>
<tr>
<td>Rouyn-Noranda</td>
<td>28,269</td>
<td>0.86</td>
<td>0.83</td>
<td>0.97</td>
<td>1.05</td>
<td>0.74</td>
<td>32.5</td>
<td>173.98</td>
<td>0.62</td>
<td>7</td>
</tr>
<tr>
<td>Rankin Inlet</td>
<td>2,177</td>
<td>0.57</td>
<td>1.23</td>
<td>1.19</td>
<td>0.71</td>
<td>1.41</td>
<td>34.1</td>
<td>181.80</td>
<td>0.62</td>
<td>8</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>154,938</td>
<td>0.78</td>
<td>0.62</td>
<td>0.89</td>
<td>1.06</td>
<td>0.62</td>
<td>29.0</td>
<td>122.75</td>
<td>0.77</td>
<td>9</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>6,600</td>
<td>0.62</td>
<td>1.01</td>
<td>0.83</td>
<td>0.88</td>
<td>0.74</td>
<td>27.0</td>
<td>132.83</td>
<td>0.57</td>
<td>10</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>121,986</td>
<td>0.84</td>
<td>0.79</td>
<td>0.87</td>
<td>0.76</td>
<td>0.79</td>
<td>29.2</td>
<td>154.49</td>
<td>0.69</td>
<td>11</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>22,748</td>
<td>0.64</td>
<td>0.77</td>
<td>0.90</td>
<td>0.85</td>
<td>0.69</td>
<td>27.0</td>
<td>117.09</td>
<td>0.86</td>
<td>12</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>3,510</td>
<td>0.63</td>
<td>1.27</td>
<td>1.05</td>
<td>0.78</td>
<td>0.36</td>
<td>29.6</td>
<td>164.95</td>
<td>0.42</td>
<td>13</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>85,035</td>
<td>0.62</td>
<td>0.85</td>
<td>0.94</td>
<td>0.87</td>
<td>0.56</td>
<td>26.6</td>
<td>111.48</td>
<td>0.83</td>
<td>14</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>23,079</td>
<td>0.66</td>
<td>0.60</td>
<td>0.81</td>
<td>1.14</td>
<td>1.06</td>
<td>26.9</td>
<td>91.28</td>
<td>0.36</td>
<td>15</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>78,908</td>
<td>0.75</td>
<td>0.69</td>
<td>0.84</td>
<td>0.85</td>
<td>0.59</td>
<td>27.5</td>
<td>129.57</td>
<td>0.59</td>
<td>16</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>13,256</td>
<td>0.69</td>
<td>0.65</td>
<td>0.79</td>
<td>1.02</td>
<td>0.46</td>
<td>27.5</td>
<td>94.09</td>
<td>0.36</td>
<td>17</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>41,466</td>
<td>0.65</td>
<td>0.93</td>
<td>0.78</td>
<td>1.25</td>
<td>0.32</td>
<td>25.1</td>
<td>113.70</td>
<td>0.50</td>
<td>18</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>30,126</td>
<td>0.73</td>
<td>0.56</td>
<td>0.90</td>
<td>0.69</td>
<td>0.68</td>
<td>26.7</td>
<td>98.50</td>
<td>0.64</td>
<td>19</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>8,616</td>
<td>0.49</td>
<td>0.85</td>
<td>0.98</td>
<td>0.70</td>
<td>0.48</td>
<td>27.8</td>
<td>113.08</td>
<td>0.60</td>
<td>20</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>7,969</td>
<td>0.47</td>
<td>0.96</td>
<td>0.97</td>
<td>0.94</td>
<td>0.29</td>
<td>26.6</td>
<td>96.08</td>
<td>0.47</td>
<td>21</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>11,956</td>
<td>0.54</td>
<td>0.63</td>
<td>0.76</td>
<td>0.45</td>
<td>1.26</td>
<td>27.0</td>
<td>128.69</td>
<td>0.88</td>
<td>22</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>15,838</td>
<td>0.66</td>
<td>0.91</td>
<td>0.74</td>
<td>0.68</td>
<td>0.41</td>
<td>26.2</td>
<td>135.96</td>
<td>0.36</td>
<td>23</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>43,686</td>
<td>0.52</td>
<td>0.68</td>
<td>0.82</td>
<td>0.93</td>
<td>0.40</td>
<td>24.3</td>
<td>86.12</td>
<td>0.66</td>
<td>24</td>
</tr>
<tr>
<td>Whitehorse</td>
<td>16,034</td>
<td>0.48</td>
<td>0.98</td>
<td>0.76</td>
<td>0.79</td>
<td>0.44</td>
<td>23.1</td>
<td>92.82</td>
<td>0.58</td>
<td>25</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>9,238</td>
<td>0.49</td>
<td>0.76</td>
<td>0.76</td>
<td>0.57</td>
<td>0.57</td>
<td>22.7</td>
<td>91.86</td>
<td>0.43</td>
<td>26</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>7,744</td>
<td>0.49</td>
<td>1.04</td>
<td>0.56</td>
<td>0.65</td>
<td>0.37</td>
<td>20.0</td>
<td>106.63</td>
<td>0.19</td>
<td>27</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>5,206</td>
<td>0.46</td>
<td>0.55</td>
<td>0.79</td>
<td>0.88</td>
<td>0.24</td>
<td>20.0</td>
<td>51.52</td>
<td>0.31</td>
<td>28</td>
</tr>
<tr>
<td>Whitehouse</td>
<td>10,906</td>
<td>0.59</td>
<td>0.49</td>
<td>0.69</td>
<td>0.54</td>
<td>0.48</td>
<td>22.7</td>
<td>71.37</td>
<td>0.31</td>
<td>29</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>7,922</td>
<td>0.50</td>
<td>0.58</td>
<td>0.75</td>
<td>0.66</td>
<td>0.52</td>
<td>21.9</td>
<td>65.21</td>
<td>0.38</td>
<td>30</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>6,000</td>
<td>0.46</td>
<td>0.68</td>
<td>0.78</td>
<td>0.62</td>
<td>0.34</td>
<td>21.2</td>
<td>69.49</td>
<td>0.30</td>
<td>31</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>5,217</td>
<td>0.46</td>
<td>0.51</td>
<td>0.65</td>
<td>0.40</td>
<td>0.76</td>
<td>20.6</td>
<td>60.68</td>
<td>0.14</td>
<td>32</td>
</tr>
<tr>
<td>Whitehouse</td>
<td>6,412</td>
<td>0.39</td>
<td>0.53</td>
<td>0.76</td>
<td>0.79</td>
<td>0.29</td>
<td>20.4</td>
<td>51.01</td>
<td>0.27</td>
<td>33</td>
</tr>
<tr>
<td>Iqaluit</td>
<td>5,662</td>
<td>0.43</td>
<td>0.67</td>
<td>0.54</td>
<td>0.57</td>
<td>0.41</td>
<td>20.5</td>
<td>62.99</td>
<td>0.29</td>
<td>34</td>
</tr>
<tr>
<td>Yellowknife</td>
<td>30,007,094</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>33.4</td>
<td>224.66</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Happy Valley-Goose Bay</td>
<td>4,682,897</td>
<td>1.42</td>
<td>1.30</td>
<td>1.22</td>
<td>1.28</td>
<td>1.32</td>
<td>42.4</td>
<td>400.14</td>
<td>1.75</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: notations see in Table 4.1; rank represents the composite ranking of TI, BI, LI, EI and ASI.

The applied science index (ASI) adds some new insights into the pattern of scientists and engineers in the North. In this case, the high index is associated with the active industrial centers: Smithers, Fort McMurray, Yellowknife, Baie-Comeau, Rouyn-Noranda, and
Thompson (Table 4.2). These towns are potential centers of industrial high-tech production. Nonetheless, the North is behind the rest of Canada in high-skilled technical occupations with the average ASI of 0.85.

In the previous studies, the bohemian index (BI) has been considered solely as an attractiveness factor, but not a characteristic of the creative class (Florida, 2002a; Gertler et al., 2002). As discussed above, a broader definition of the creative class requires incorporating bohemia as its component. On average, the share of bohemians in northern communities is lower than in Canada, although in two towns (Iqaluit and Rankin Inlet) it is even greater than in Toronto. Accordingly, Table 4.2 shows a considerable variation within the North. Iqaluit, for example, exhibits the BI almost ten times as large as that of Mackenzie (1.94 compared to 0.24). Five top communities: Iqaluit, Whitehorse, Yellowknife, Rankin Inlet, and Elliot Lake, are distantly followed by Slave Lake, Smithers, and Thunder Bay.

The quality of human resources index (QHRI) is one of the integral indices. This measure is derived both from educational and occupational characteristics of population. Not surprisingly, the QHRI for Toronto is 1.3 times greater than the Canadian average and clearly illuminates Toronto’s high creativity profile (Table 4.2). In keeping with expectations, northern communities do not possess high QHRI. However, four of them stand out as those with the highest QHRI, and, hence, the greatest creative potential. Table 4.2 shows that Yellowknife, Whitehorse, Iqaluit, and Fort Smith exhibit the QHRI values, exceeding the Canadian average. Inuvik and Rankin Inlet, Rouyn-Noranda and Smithers have the QHRI around the national average. This, again, illustrates a strong unevenness in the distribution of high quality human capital among northern Canadian communities.

The creative drive index (CDI) combines education and leadership characteristics of northern communities (illustrates a “propulsive capacity” of the creative class). Generally, the pattern of the CDI across the North mirrors the QHRI. However, a much stronger standing of Toronto against the Canadian average suggests the independence of this
parameter. Among northern communities, the discrepancy between the capitals and the rest of the North is substantial. Yellowknife, Whitehorse and Iqaluit are the only communities to demonstrate high CDI values. This is a sign that the three capitals possess the most developed creative class, and the greatest potential for increased creativity. As such, the CDI results show that these towns are likely to be the creative class “hot spots”.

The tech pole index (TPI) demonstrates that only a few northern communities had a considerable concentration of high-tech employment and specialized in technology-intensive industries (Table 4.2). Only Yellowknife, Whitehorse and Smithers have slightly higher shares of such employment than Canada on average. In old industrial towns, the technology sector is particularly small. Fort McMurray, the only growing industrial center on the list, also has a limited knowledge-based industry.

Correlation and concordance coefficients were used to ensure the consistency (reliability and validity) of the introduced measures and to statistically analyze the relationships among them. Correlation coefficients illustrate close associations (Table 4.3) among different creative class indices that is a likely sign of reliability of these measures (I address the issue of redundancy later). Reliability is also confirmed by the high degree of concordance demonstrated by new indices (Kendall’s coefficient of concordance 0.66). In addition, theoretically expected strong correlation of the introduced measures with the well-established ones (used in previous studies, i.e., the TI, TPI and BI) signals that new indices possessed necessary validity.

Correlation results (Table 4.3) strongly support the idea that different groups of the creative class are clustered and interdependent. Four creative class groups, most likely attract each other, and creative class clusters benefit from this synergy. That is why, for example, previous studies found the concentration of bohemians useful to explain the attractiveness of cities to the talent (Florida, 2002a, b). Table 3 also illustrates that the specialization in high technology industries (TPI) in the North is associated with well-educated and strong creative
class, i.e. much like in urban areas. The notable difference, however, is that high-tech activities are related with not only highly educated and applied science workers, but, even more strongly, with the concentration of entrepreneurs and managers. It appears that the availability of leadership and entrepreneurial capabilities in peripheral settings stands as a key factor in developing knowledge-based industries.

Table 4.3. Correlation matrix of the creative class metrics and indicators of attractiveness

<table>
<thead>
<tr>
<th>Indices</th>
<th>CDI</th>
<th>QHRI</th>
<th>TPI</th>
<th>TI</th>
<th>BI</th>
<th>LI</th>
<th>EI</th>
<th>ASI</th>
<th>MI</th>
<th>VMR</th>
<th>CLCR</th>
<th>FI</th>
<th>AI</th>
<th>RDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDI</td>
<td>1.000</td>
<td>.950**</td>
<td>.712**</td>
<td>.872**</td>
<td>.835**</td>
<td>.876**</td>
<td>.744**</td>
<td>.559**</td>
<td>.370*</td>
<td>.411*</td>
<td>.227</td>
<td>.692**</td>
<td>.523**</td>
<td>-.504**</td>
</tr>
<tr>
<td>QHRI</td>
<td>1.000</td>
<td>.735**</td>
<td>.890**</td>
<td>.819**</td>
<td>.817**</td>
<td>.849**</td>
<td>.613**</td>
<td>.302</td>
<td>.328</td>
<td>.293</td>
<td>.622**</td>
<td>.568*</td>
<td>-.575</td>
<td></td>
</tr>
<tr>
<td>TPI</td>
<td>1.000</td>
<td>.692**</td>
<td>.596**</td>
<td>.597**</td>
<td>.679**</td>
<td>.545**</td>
<td>.531**</td>
<td>.379*</td>
<td>.069</td>
<td>.429*</td>
<td>.145</td>
<td>-.398*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TI</td>
<td>1.000</td>
<td>.701**</td>
<td>.563**</td>
<td>.633**</td>
<td>.636**</td>
<td>.356*</td>
<td>.369*</td>
<td>.180</td>
<td>.360*</td>
<td>.256</td>
<td>-.398*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>1.000</td>
<td>.743**</td>
<td>.644**</td>
<td>.297</td>
<td>.209</td>
<td>.338</td>
<td>.597**</td>
<td>.527**</td>
<td>.472*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LI</td>
<td>1.000</td>
<td>.723**</td>
<td>.354*</td>
<td>.292</td>
<td>.276</td>
<td>.178</td>
<td>.886**</td>
<td>.697**</td>
<td>-.432*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI</td>
<td>1.000</td>
<td>.537**</td>
<td>.204</td>
<td>.340*</td>
<td>.315</td>
<td>.485**</td>
<td>.551**</td>
<td>-.587**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASI</td>
<td>1.000</td>
<td>.594**</td>
<td>.486*</td>
<td>.214</td>
<td>.126</td>
<td>.195</td>
<td>-.305</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MI</td>
<td>1.000</td>
<td>.694**</td>
<td>-.540**</td>
<td>.305</td>
<td>.035</td>
<td>-.132</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMR</td>
<td>1.000</td>
<td>- .189</td>
<td>.192</td>
<td>.157</td>
<td>-.150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLCR</td>
<td>1.000</td>
<td>.042</td>
<td>.276</td>
<td>-.179</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FI</td>
<td>1.000</td>
<td>-.667**</td>
<td>-.213</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AI</td>
<td>1.000</td>
<td>-.227</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RDI</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: notations see in Table 1; ** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed)

In order to explore the covariance among variables, all creative class indices were subjected to the principal components analysis (Table 4.4). Its results demonstrate several important patterns. First, the creative class indicators in northern communities constitute two distinct groups: technical workers (engineering, applied and natural science occupations) and non-technical creative occupations (including leaders, entrepreneurs, scientists and bohemia). Importantly, both the TI and the tech pole index exhibit substantial covariance with each group of occupational indicators implying that both groups are well educated and linked to
technological production. Overall, the analysis shows that the CDI and QHRI are the most integrative among new indices, although principal components did not provide enough evidence to identify any of the introduced indices as redundant.

Table 4.4. **Principal components of creative class metrics**

<table>
<thead>
<tr>
<th>Components</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI</td>
<td>.924</td>
<td></td>
</tr>
<tr>
<td>LI</td>
<td>.858</td>
<td>.269</td>
</tr>
<tr>
<td>CDI</td>
<td>.802</td>
<td>.535</td>
</tr>
<tr>
<td>QHRI</td>
<td>.779</td>
<td>.598</td>
</tr>
<tr>
<td>EI</td>
<td>.664</td>
<td>.536</td>
</tr>
<tr>
<td>TPI</td>
<td>.578</td>
<td>.592</td>
</tr>
<tr>
<td>TI</td>
<td>.570</td>
<td>.692</td>
</tr>
<tr>
<td>ASI</td>
<td>.959</td>
<td></td>
</tr>
<tr>
<td>Percent of variance</td>
<td>49.3</td>
<td>34.4</td>
</tr>
</tbody>
</table>

*Note: notations see in Table 4.1; extraction method: PCA, Jolliffe criterion; rotation method: varimax with Kaiser normalization. Loadings less than 0.1 are not reported.*

**Factors of Attractiveness**

According to Florida (2002b, 2005), measures of attractiveness may be viewed as pull-factors of the creative class. He alluded to tolerance and diversity as the most important factors of the place’s attractiveness to the creative class (and major determinants of the ‘quality of place’). Thus, higher indices of attractiveness (except for the resource-dependency index) would indicate a competitive advantage in terms of drawing and retaining the creative class.

The bohemian index is considered in the literature among the top measures of attractiveness, so it should be analyzed from this standpoint as well. This index strongly correlates with the talent index and the CDI (Table 4.3), confirming that it could be a powerful pull-factor. At the same time, my results reveal a weaker interdependence between the BI and TI in the North than reported by Gertler et al. (2002) for 25 major Canadian cities. This may suggest that the northern bohemia is, perhaps, a less powerful pull-factor for the talent. For example, two centers of Native arts – Iqaluit and Rankin Inlet – are comparatively
modest in terms of residents’ education. At the same time, if consider an integral creative
drive index, rather than the education-only TI, the strength of relationship substantially
improves (Table 4.4).

A recommended measure of diversity is the melting pot or mosaic index (Florida, 2002a;
Gertler et al, 2002). In the Canadian context, however, it has been found a less valid predictor
of talent than expected (Gertler et al, 2002). As seen from Table 4.5, the diversity of northern
communities is low, compared to the rest of Canada. The statistical association between the
share of foreign-born population and the talent index is positive, but rather moderate (Table
4.3). The relationship is insignificant for the QHRI. The foreign-born factor in the North is
seems to be much less important in attracting creativity than in the rest of Canada. Diverse
Mackenzie and Elliot Lake have comparatively low educational profiles, and moderately
diverse Iqualuit, Inuvik and Fort Smith rank high in terms of residents’ education. At the
same time, the overall pattern suggests that diversity is still a considerable pull-factor as
expected. Clusters of creativity in diverse Yellowknife and Whitehorse illustrate this point
well.

The visible minority ratio (Table 4.3 and 4.5) was used as an alternative indicator of
diversity. Although the percentage of visible minorities in most communities is small, the
relationships between the VMR, the talent and the creative drive indices are moderate (as in
all smaller cities, see Ottavanio and Peri (2006)), significant and stronger than with the
mosaic index (Table 4.3). This shows that the visible minority share might be a better
indicator of diversity and especially tolerance, and that the creative class clusters in diverse
and tolerant places, even those in the North.
Table 4.5. **Indicators of attractiveness to the creative class in northern Canadian communities**

<table>
<thead>
<tr>
<th>Community name</th>
<th>MI</th>
<th>VMR</th>
<th>CLCR</th>
<th>FI</th>
<th>AI</th>
<th>RDI</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehorse</td>
<td>10.8</td>
<td>4.8</td>
<td>13.9</td>
<td>1.34</td>
<td>15.8</td>
<td>0.3</td>
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<td>5.2</td>
<td>1.0</td>
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<td>8.9</td>
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<td>2.3</td>
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<td>0.2</td>
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<td>13.3</td>
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<td>3.3</td>
<td>1.0</td>
<td>-</td>
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<td>36.6</td>
<td>5.0</td>
<td>1.45</td>
<td>0.4</td>
<td>0.2</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: notations see in Table 4.1; rank represents the composite ranking of MI, VMR, AI, CLCR, FI, and RDI.

The common law couples ratio initially failed to explain the distribution of the creative class (Table 4.3) producing insignificant correlations. However, when the dataset was readjusted to eliminate cities and towns in Québec (which are the obvious positive outliers,
see Kerr et al, (2006) for the sociological analysis of this phenomenon), the relationships with the QHRI \((r=0.60)\) and the CDI \((r=0.59)\) became significant. Therefore, the common-law-based measure of tolerance is more successful, if the Québec-English cultural heterogeneity is removed.

The feminist (women leadership) index was designed as an indicator of “low barriers of entry” and openness. A northern economy and leadership has always been perceived as male-driven, due to the male predominance in the region. The analysis reveals that this gendering is not necessarily the case, and that there are profound variations of women’s role across the region. Surprisingly enough (although partially because of the population structure), in many Native communities women tend to hold more leadership positions than in non-Native towns (see Table 4.5). The empirical evidence (Table 4.3) confirms that the creative class metrics demonstrate strong and significant positive correlations with the FI. Therefore, the feminist index may be considered as a useful indicator of the ‘quality of place’ (and, perhaps, can be used to substitute the infamous gay index, for which good data are not available). Still, the creative class in the capitals and some regional centers is under-predicted by the FI. In these towns, the creative class has an apparent male dominance.

Distribution of the aboriginality index (AI) demonstrates that selected communities have strong Aboriginal presence with four of them being Native-dominant (Table 4.5). However, the AI is difficult to place on any side of the attractiveness scales, since the relationship between Aboriginality and the creative class is not well-understood. A large share of the Aboriginal population may be an indicator of both higher tolerance and lower openness of the community. On the other hand, Aboriginal communities have their own ways of nurturing and raising internal creativity (e.g. Native arts, entrepreneurship). Table 4.3 provides evidence that a greater share of Aboriginal population in northern towns is a positive sign for creativity, although the creative class structure in such cases is shifted towards a non-education-driven creativity: Aboriginal leadership, entrepreneurship and
bohemia are the major bearers of creativity in many northern towns (Table 4.2 and 4.4). This result may be an outstandingly encouraging signal for communities, which may have an ability to generate creative capital without being solely dependent on the in-migration of creative individuals. However, the capacity of such endogenous growth is limited, and without further advancement in education, the future success is unlikely. This observation is clearly an important one and needs a further thorough study.

The resource-dependency index (RDI) was chosen as an indicator of economic marginality. It is expectedly high in most northern communities (Table 4.5). Table 4.3 demonstrates that resource dependency is negatively correlated with creativity. Thus, socioeconomic marginality of resource-dependent settlements, limited diversity of the primary sector jobs, and the “branchplant” culture inhibit the development of the creative capital and undermine the attractiveness of such communities to the creative class.

Table 4.3 also reports correlations among the attractiveness measures themselves, and suggests that they are fairly independent from each other. Strong correlations exist only between several variables – a pattern that is also reflected when principal components were defined (Table 4.6). In particular, the mosaic and visible minority indices appear to be most closely associated. This association may not be a surprise, considering that both indicate the diversity and tolerance of the society. The feminist and aboriginality indices also exhibit covariance and constitute another principal component (Table 4.6). This result is particularly interesting and requires further investigation. In sum, the selected indices seem to cover different aspects of attractiveness and do not appear to be redundant, except for the MI, which could potentially be eliminated in favor of the VMR.
Table 4.6. **Principal components of attractiveness factors**

<table>
<thead>
<tr>
<th>Components</th>
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<th>2</th>
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<tbody>
<tr>
<td>MI</td>
<td>.940</td>
<td>.127</td>
<td>.261</td>
</tr>
<tr>
<td>VMR</td>
<td>.775</td>
<td>.152</td>
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</tr>
<tr>
<td>CLCR</td>
<td>-.693</td>
<td>.229</td>
<td>.439</td>
</tr>
<tr>
<td>AI</td>
<td>.908</td>
<td></td>
<td>.157</td>
</tr>
<tr>
<td>FI</td>
<td>.197</td>
<td>.894</td>
<td></td>
</tr>
<tr>
<td>RDI</td>
<td>-.103</td>
<td>-.919</td>
<td></td>
</tr>
<tr>
<td>Percent of variance</td>
<td>33.6</td>
<td>28.8</td>
<td>18.9</td>
</tr>
</tbody>
</table>

*Note: notations see in Table 4.1; extraction method: PCA, Jolliffe criterion; rotation method: varimax with Kaiser normalization. Loadings less than 0.1 are not reported.*

**Regression Modeling: Exploring Possible Dependencies**

The analysis of correlations gave a proof of statistical associations between technology production, creative class and ‘quality of place’ in the Canadian North. However, the direction of causality between the creative class, attractiveness factors and specialization in high technology sectors is debatable, and there is still not enough evidence to establish firm explanatory links between them (Florida, 2005; Shearmur, 2007). Nonetheless, building regression models with exploratory purposes to test possible dependencies (under an assumed scenario) is still informative. It is also useful for examining the multicollinearity among the metrics.

The first model looks at the relationships between the creative class and the ‘quality of place’. The QHRI is the dependent and the attractiveness factors (Table 4.3) are the independent variables. If accept the scenario under which the ‘quality of place’ attracts the creative class (Florida, 2002b; McGranahan and Wojan, 2007), one would expect the attractiveness indicators to be good predictors of the QHRI. The final regression equation (with all insignificant variables excluded) is as follows ($r^2 = 0.61$):  

$$lqQHRI = 1.15 + 0.207lgCLCR + 0.172lgFI - 0.124lgRDI + 0.08lgVMR$$  \(3\)

The CLCR and the FI appear to be the strongest predictors with positive slopes, suggesting that openness and tolerance may play a key role in accumulating the high quality
human capital in the North. In contrast, the resource dependency (expectedly) may work is a negative factor. Again, these observations, albeit interesting, are suggestive, because only detailed qualitative research can establish whether they reflect certain causalities. The MI and AI were discarded by the stepwise regression algorithm as not significant. The MI and VMR exhibited collinearity, but after the former was excluded, the final model (1) did not have a multicollinearity problem.

The second model uses the TPI as regressand and TI, BI, LI, EI and ASI as regressors, i.e. assumes another “Floridian” scenario, under which the specialization in high-tech industries (the TPI) is a function of the creative class accumulation. Modeling results ($r^2 = 0.64$) support this expectation (all insignificant variables are dropped):

$$\text{lgTPI} = -0.09 + 0.929\text{lgEI} + 0.505\text{lgASI} + 0.366\text{lgBI}$$  \hspace{1cm} (4)

Two potentially important observations stem from this model. First, entrepreneurial, applied science and artistic occupations, not educational attainment (TI), appear to be the best predictors of the TPI (the TI and LI were not significant). Secondly, the ambiguity of the relationship between the high-tech industrial specialization and the creative class (i.e., whether the creative class boosts the technology sector or the strong technology sector attracts the creative class), typical for urban areas, is less evident here. Two of the regressors (the EI and BI) represent creative class groups, which may be least affected by the high-tech job market, but which likely to contribute to creating favorable business environment, generating creative jobs and attracting high quality labor force. This result may point to the special role of entrepreneurship (rather than education) in nurturing knowledge-based industries in the periphery. The model was not seriously affected by multicollinearity.

**Rankings and Clusters: Summarizing Geographies of the Creative Class**

After individual characteristics and relationships among indices are clarified, it is possible to proceed with identifying communities, which have the strongest creative class and the greatest ability to attract it. Table 4.2 contains a composite creative class ranking of
34 northern communities (based on TI, LI, EI, BI and ASI). The group of six leading communities at the top of the ranking represents the creative core of the North. These towns are Yellowknife, Whitehorse, Iqaluit, Fort Smith, Inuvik, and Smithers. Noticeably, territorial capitals and most regional centers are ranked high, whereas cities of the Near North are ranked quite low (e.g., Timmins, Thompson, many Québec cities). This finding suggests that remoteness may be a positive condition for the creative class, probably, because a remote location stimulates local leadership, entrepreneurship and the rise of the northern creative class, including Aboriginal. Other factors may include a high demand for leadership and other types of creativity in the frontier, a superior political status of northern capitals, unique experience and economic opportunities for young professionals, and a more favorable demographic composition of population.

A second tier of towns includes Rankin Inlet, Rouyn-Noranda, Prince George, Hay River, NWT, Thunder Bay, Chicoutimi-Jonquière, Fort McMurray, and six other communities predominantly in the provinces. These places have limited creative capital, but still may catch up, if local development delivers positive results. The rest of the communities (15) are almost devoid of a creative class. Many of them face severe economic troubles and urgently need to reinvent themselves in order to survive. Unfortunately, the change of the trajectory does not seem likely from the results discussed here.

To further explore the typological differences across the sample of communities, I employed a cluster analysis. The task was to determine whether northern towns could be sorted into several distinct groups based on their individual creative class characteristics (TI, BI, LI, EI and ASI) and controlling for the population size. Clustering reveals five groups of communities (Figure 4.1). The group with the strongest creative class includes the “creative hot spots” (Whitehorse, Yellowknife, Smithers, Inuvik and Fort Smith) showing high scores in all measures. Iqaluit and Rankin Inlet form their own cluster that may be called the Aboriginal creative towns with strong bohemia, leadership and entrepreneurship components.
of the creative class, but weaker in terms of population’s formal education and technical occupations. Another three groups represent different types of industrial towns: larger cities with a modest creative capital (Baie-Comeau, Chicoutimi-Jonquière, Fort McMurray, Prince George, Sault Ste. Marie, Slave Lake, Thunder Bay, Rouyn-Noranda, Timmins, and Happy Valley-Goose Bay), and two groups of progressively smaller single industry towns with a weak and very weak creative class respectively (all other communities).

Since the results, discussed so far, strongly suggest that the ‘quality of place’ exerts influence on the creative class, the attractiveness ranking was also performed (Table 4.5). The same communities, which already had relatively large creative class, occupy the first five places: Whitehorse, Inuvik, Yellowknife, Rankin Inlet and Iqaluit. The ranking (again) demonstrates the unevenness in the distribution of the creativity potential in the North with several stable centers that could be potentially attractive for the creative class. The high position of Inuvik and Rankin Inlet appears to be remarkable (since they are not capitals) and deserves a further inquiry.

Both creative class and attractiveness indicators reveal the advantage of territorial capitals. They dwell on their thriving public sector that creates high-skilled well-paid jobs and a dynamic social environment, desirable to the creative class. On the other hand, industrial towns (e.g., Fort McMurray, Baie-Comeau) score relatively high in creativity measures based on technical occupations, but have a low profile in others. In contrast, Aboriginal communities usually have good standing on bohemia, leadership, and (sometimes) entrepreneurship indices, but perform poorly in terms of technical occupations and residents’ education.

**Potential Policy Implications**

What do the results of this research mean for regional development in the North? Traditionally, regional development policies there targeted primary manufacturing, local services, and tourism (Barre, 1987), whereas the approach to planning and implementation
was strictly top-down (Ironside, 2000). Only since the late 1980s, a real economic value of education and culture has been finally recognized, and bottom-up development efforts have been appreciated (SCONE, 1989). However, creating opportunities for people to receive and use educational, leadership and entrepreneurial competencies was rarely considered among the top policy efforts.

A case in point is northern bohemia. Northern artists earn considerably lower wages than do their counterparts in other parts of Canada (Hill Strategies, 2004). Consequently, a northern artisan industry is unable to fully realize its economic potential and to become a major driver of economic development. The current weakness likely arises from the lack of entrepreneurial opportunities, business management practices and infrastructure to market local arts and crafts. The promotion of the cultural economy may not only provide additional source of income, but also strengthen the northern labor force by attracting non-participants, especially Native women.

If the results of this analysis are further confirmed, one may argue that more attention should be given to developing creative economies, ‘soft’ infrastructure and creative human capital. Some of these activities will be linked to staple or public sector; others will rely on ‘cultural’ and environmental uniqueness of the North or on local industries. Arguably, there is a need for a policy shift, most particularly in selected leading communities, to ensure a simultaneous development of education, business skills, leadership abilities and artistic talents. This will likely to stimulate economic growth, if pursued thoroughly on the basis of bottom-up, community-based approaches (Ironside, 2000; Ross and Usher, 1986). However, I agree with Bollman (1999, 27) that human and creative capital is a “necessary, but not sufficient condition” of economic growth in peripheral areas, and nurturing the creative class will not automatically deliver positive results, unless complemented by other development incentives.
CONCLUSION

This paper presented an alternative perspective to regional development in the Canadian North by drawing on the concept of the creative class and creative economies. I argued that the creative class is an important factor of economic transformation in the periphery alike other regions. This first-cut empirical analysis of the creative class in the Canadian North sheds a new light on the applicability of the creative class argument in the peripheral settings. However, there is no doubt that Florida’s methodology and theory has to be adjusted to the regional specifics. More so, due to the unique role of the creative class in the periphery (as agents of transformation, not merely producers of knowledge and high-end consumers), his metropolitan policy prescriptions, taken uncritically, are unlikely to be fruitful in peripheral settings. This, however, does not mean that non-metropolitan communities cannot find alternative ways to compete for the creative capital and benefit from it (Scott, 2006).

Two major conclusions of this exploratory analysis are the following. First, the overall potential and the degree of development of the creative class in the Canadian North are low. Northern creative class is also less formally educated and lacks entrepreneurial capacities. In terms of attracting creativity, northern communities also face formidable challenges in their competition with the rest of the country. However, few places can compete for the creative class countrywide, most prominently Whitehorse and Yellowknife (and, possibly, Inuvuk, Rankin Inlet and Iqaluit).

Secondly, the group of six leading communities, which scored high in all creative class indices, represents the creative core of the North (Yellowknife, Whitehorse, Iqaluit, Inuvik, Fort Smith, and Smithers). These are places where the creative potential is high, and where the efforts of developing new economic trajectory, perhaps, would be the most fruitful. The analysis also revealed the systematic differences among communities, likely linked to their size, economic specialization and population composition. Interestingly, less remote
communities in the Near North tend to have weaker creative class than some more distantly located ones.

By design, this study is exploratory. The analysis, started in this paper, should be followed with a more exhaustive inquiry, possibly involving a greater number of communities, more elaborated measures of innovative and technological activity, more detailed occupational data and, most importantly, qualitative methods. There is more to learn regarding the role of distance and proximity to southern creative centers and regarding the importance of push-factors (such as harsh environment, housing problems and isolation) for attracting the creative class. Future research must also address negative externalities of creative economies, such as socioeconomic inequality, housing affordability, environmental impacts, over-consumption, and political polarization.

ACKNOWLEDGEMENTS

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CONCLUSIONS

This collection of papers has its primary goal to develop a more apt (both conceptually and empirically) understanding of northern frontiers as functional regions within national geoeconomic systems. The **first chapter** re-examines the structure of Canada’s and Russia’s space-economies by evoking the concept of regional multichotomies. The **second chapter** uses a combination of discursive analysis and regulation theory to re-interpret the origins of present-day problems and examine the genealogy and outcomes of northern development trajectories. The **third chapter** dwells upon a concept of development regimes to discuss and compare contemporary regional development policies and makes the case for an emerging neo-staple development regime. Finally, the **forth chapter** tackles possibilities of knowledge based development and the use of creative capital in the Canadian North.

My principal conclusions can be summarized as following. First, at the theoretical level, I demonstrated how core-periphery-margin multichotomies are multicentric and multivector and each is associated with particular (and universal, at least in case studies presented here) logics of spatial differentiation governed by hegemonic inequities and competitive inequalities. Complexities of regional structure and local models of regional paths result from configurations, in which these continuums overlap. Empirical evidence from Russia and Canada shows that conditions of marginality tend to converge in particular regions (i.e. act synergistically), producing multilayered “supercore”, “superperiphery” and “supermargin”, although these “supergroups” are internally not homogenous.

Secondly, based on the multichotomic approach, I ‘remapped’ the regional structure of Canada and Russia and demonstrated that vectors of differentiation and underpinning them organizational logics, as well as conditions of marginality in Russia and Canada are generally similar. This conclusion fully applies to the northern frontiers of the two countries. As a result, the paper revises regional structures of both countries and ‘redefines’ the Norths. The new internal regions structure of the North somewhat differ from conventional designations
used in geographic literature, and reflect more appropriately a multiplicity and complexity of the contemporary state of northern frontiers.

The contemporary North in both countries is a remarkably economically marginalized and considerably fractured space. It is also a strikingly similar space, although there are apparent cross-country and regional differences. I identified forces and processes that I think contributed to creating these similarities from positions of market and non-market (hegemonic) mechanisms. My results strongly urge scholars of the North to focus on understanding similarities between capitalist and post-socialist resource frontiers to pave a way of learning from both experiences. The analysis also suggests that despite growing diversity of peripheries, they continue to share conditions of marginality and develop under systemic logics of regional differentiation. Regional scientists must step up efforts to rediscover frontiers in order to learn about the regional dynamics with profound local, regional, national and global implications. This analysis should be continued to include a more thorough qualitative study of northern development paths in Canada and Russia.

Development policies in the North traditionally assume a major (and discursively constructed) role in reducing marginality and making northern regions more economically viable. This vision of development in the 20th century was empowered by the hinterland development discourses and supported by regulation systems of resource Fordism and Gosplanism to form hegemonic development regimes. In unison with my empirical findings, further analysis suggests that projects of northern development (and, thus, development paths) in Canada and Russia share a lot more commonalities than usually acknowledged. Both colonial endeavors, development regimes in the North are genealogically linked to the Western discourse of development that uses ‘othering’ of non-Western regions to justify commodifying, exploiting and governing the ‘other’. I identified these primary similarities, while noting some fundamental differences, most importantly the ‘Innissian’ nature of the Canadian discourse vs. the ‘Turnerist’ nature of the Soviet one. I argued that regulation
frameworks in Canada and Russia also shared important similarities as they both were based on the priority-constraint system of allocating investments, regulated by the ad hoc bargaining among multiple actors. The plan-and-bargain system that I indentify as the main operation mechanism in both development regimes, worked well for large mega-projects, but failed to provide a comprehensive strategy of regional development in the Norths.

The growing discontent with the modernist northern development project underpinned the demise of the Canadian and Soviet models, as they were unable to fulfill their development objectives and appeared to be a systematic failure to both developers and ‘developees’. As I show in the outset of this paper, the Norths continued to be socio-economically marginalized spaces with little evidence of sustainability and an uncertain future. The mixed results of the neoliberal intervention, especially the neoliberal brutalism in the Russian North, suggest that classic neoliberalism could not be practiced successfully in remote areas.

Market triumphalism would have led to a disappointing conclusion about futures of the northern regions, if there had been no other options. Fortunately, Canada (and to a lesser extent, Russia) is experiencing the rise of alternative development doctrines, which put the emphasis on alternative modernities, local knowledge and traditional economies of the North. New opportunities provided by the postcolonial shift in development paradigms, give new hope to marginal resource-reliant regions. I argue that a postcolonial solution rests not upon resisting and substituting capitalism, but upon reconciling post-Fordist capitalism with alternative modernities of the local. Northern communities should be given chances to benefit from both top-down and bottom-up development opportunities.

It has been said before that resource Fordism in the North may not have been so much a problem as is its inheritance (Hayter, 2003). Same applies to Gosplanism. While regional development policies of the 20th century delivered unsatisfactory results, they certainly benefited some communities and groups. However, the demise of the 20th century
development regimes brought the North at the strategic crossroads, where it inevitably faces a drastic reformulation of development policies. This process has already started.

Are development policies in the North in Canada and Russia converging? On the one hand, the answer is yes, because both countries went through a period of neoliberal reforms that replaced the past state-dominated systems of planning and negotiating economic growth (whether Fordist or Soviet) with more flexible and less invasive development frameworks. Federal states in both countries limited their involvement into northern economic affairs and resorted to ‘enabling’ mechanisms of development.

In Canada, this shift resulted from the rising bottom-up movement, the unfolding land claim process and the devolution of economic governance. The empowerment of Aboriginal stakeholders constitutes the most pivotal power shift in the recent history of the Canadian North, and to some extent, in the Russian North. In Russia the withdrawal of the federal state from northern affairs was both a deliberate objective of market reforms and an unintended consequence of a severe fiscal crisis. In the first instance, strengthening local initiative was coupled with capacity building, in the second, policy disarray and lack of resources delivered a devastating blow to northern economies.

These latter differences mean a lot when we observe consequences of neoliberalism. Whereas both Norths went through a troubled years of economic decline, experienced the mounting pressures of flexibilization, restructuring and global competition, fiscal austerity and increasing regional disparity, Canada managed to open up several new avenues of development during the turmoil in the 1980s and 1990s. Based on novel principles of regional development laid upon cooperation between state, locality and corporate capital, these alternative strategies are gaining momentum to form a new, post-colonial regime of development in the North. These strategies are slowly penetrating in the Russian North (Stammler & Wilson, 2006). However, federal government’s attempts to centralize resource ownership and strengthen its regulatory grip may be not helpful for forging a new dialog.
around community development, if appropriate legislation and contractual obligations that
guarantee local development actions are not implemented.

Finally, I argued that there are could be some alternative avenues to delivering economic
viability in selected regions of the North based on experiences learnt in the cores. I presented
one such alternative (and unconventional in northern studies) perspective by drawing on the
concept of the creative class and creative economies. I argued that the creative class is an
important factor of economic transformation in the periphery alike other regions. This first-
cut empirical analysis of the creative class in the Canadian North sheds a new light on the
applicability of the creative class argument in the peripheral settings. However, there is no
doubt that Florida’s methodology and theory has to be adjusted to the regional specifics.
More so, due to the unique role of the creative class in the periphery (as agents of
transformation, not merely producers of knowledge and high-end consumers), his
metropolitan policy prescriptions, taken uncritically, are unlikely to be fruitful in peripheral
settings. This distinction, however, does not mean that non-metropolitan communities cannot
find alternative ways to compete for the creative capital and benefit from it.

Whereas the overall potential and the degree of development of the creative class in the
Canadian North are low and northern communities face formidable challenges competing for
creative capital, a few places have extraordinary high concentration of creative workers and,
thus, represent the creative core of the North (Yellowknife, Whitehorse, Iqaluit, Inuvik, Fort
Smith, and Smithers). These are places where the creative potential is high, and where the
efforts of developing new economic trajectory, perhaps, would be the most fruitful. The
analysis also revealed the systematic differences among communities, likely linked to their
size, economic specialization and population composition. Interestingly, less remote
communities in the Near North tend to have weaker creative class than some more distantly
located ones.
Marginal regions of the North populate a discursively constructed space, in which colonial developmentalism empowered by a combination of market and non-market economic mechanisms produced complex and fragmented regional structures, plagued by conditions of marginality. Contemporary policies of regional development aim to mitigate these conditions. The success of such policies depends on whether the origins and the nature of the past development trajectories are well understood. A new path(s) for the North can be set by reconciling the realities of post-Fordist capitalism and the postcolonial ideal of the local economic indemnity, while not letting a top-down priority-constraint game to trump a bottom-up development initiative.

Turning back to the questions that I asked in the beginning, what do my results show?

_Do Canadian and Russian North demonstrate conditions of marginality and whether these conditions are similar in the two regions?_ The answer is definitively positive: both regions are marginalized within respective geoeconomic systems and share common conditions of marginality.

_Why, despite different paths of development, the Russian and Canadian northern geoeconomic systems possess so much similarity in their contemporary socio-economic conditions, problems and economic structures?_ Whereas there are various possible explanations to this fact, and several factors may be at play (including climatic conditions, geographic location, historical development, etc.), I argue that the fundamental similarities result from commonalities in development regimes. In the same manner, observed pivotal distinctions stem from differences in these regimes. In particular, I find the nature and the mechanism of regulation, empowered by discoursive modernist paradigm of development, to be an underlying reason for fundamental similarity and eventual failure of the 20th century development regimes in the North.

_Is there evidence of Canadian and/or Russian governments implementing regional development policies that can adequately address conditions of marginality in the new_
economic settings of the 21st century? Is there evidence of an emerging new development regime(s) that can reconcile a postcolonial development ideal with the realities of post-Fordist capitalism? Analysing a contemporary status of northern development policymaking, I attempt a structural approach by using the lense of development regime and connect policies in space and time. I also identify and discuss recent trends in regional development in the North. Admittedly, I cannot provide a clear-cut answer to the first question. There are certainly attempts on both sides of the Arctic Ocean to reassess and redesign policies to alleviate economic hardships in northern communities and prepare them for new economic settings of changing (and thriumphing) capitalism. Among these attempts, there are some remarkable practices that I suggest as possible solutions. For example, I refer to Impact and Benefit Agreemsnts as manifestations of a new neo-staple regime. At the same time, the lack of clear strategic vision for the North in the 1990s and early 2000s in both countries, as well as on-going rapid changes in the Arctic, makes impossible to give a final judgement on what direction northern policies are going to unfold.

My research outlines new dimensions of conceptualizing and re-theorizing economic geography of the North. It sheds light on issues of crucial importance for both a theoretical debate and practical application of economic development policies in marginal regions. Nonetheless, it represents a very initial step of an ambitious research agenda that will eventually bring peripheries to the core of economic geography theorizing (Hayter et al, 2003). However, a thorough inquiry into emerging development regimes and alternative development avenues in the North is still pending. Future research should focus on the following areas:

Understanding mechanisms by which local synergies (stemming from simultaneous utilization of human/creative, physical, financial and social capital in a given institutional context) can be utilized to de-marginalize remote regions is one of the primary objectives of future analysis. These capacities may result from a neo-staple development regime or other
postcolonial regulation frameworks that, while capital-friendly, do not mute and victimize other development stakeholders.

Intensive mutual learning across the Arctic region should begin with further comparative inquiry into institutional foundations and social organization of public policy in the North. Regrettably, there is a lack of such insights, and think information flows do no allow the learning process to occur. This is true not only in the Russia-Canada context, but within the North-South divide within these countries themselves. A number of findings in this dissertation are preliminary, but warrants thorough analysis, as they may present new avelues of interpreting past, present and future development processes in the Circumpolar region.

There ought to me many more case studies before one can conclude whether avenues of development discussed in these chapters are useful. Certainly more time has to elapse to observe long-term benefits of new development approaches. Besides, policy-makes will need to adjust to alternative ways of thinking about northern development and to become open for the ‘outside-the-box’ solutions. The movement in a right direction is already happening, and I am delighted that my research has contributed (even thought just a tiny bit) to this process through a few interested people in the Northwest Territories and Yukon Governments.