The new knowledge aristocracy: the creative class, mobility and urban growth

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ABSTRACT

Many policy-makers, particularly in North America, have been seduced and influenced by the ideas of Richard Florida, who suggests that cities and regions can be economically revitalised if they make themselves attractive to the mobile and talented 'creative class'. This suggests that economic growth is caused by an influx of such people. This paper argues that it is more plausible to suggest the reverse – that the 'creative class' is attracted to economic growth and that Florida's theories have the unintended consequence of justifying the investment of considerable public resources in support of the lifestyle choices of this already privileged class, in effect sustaining a new knowledge aristocracy at the expense of the immobile majority.

On 27th January 2005 Richard Florida unveiled his analysis of Montreal's economy (Stolarick *et al.*, 2005) during a fine luncheon in one of Montreal's upmarket hotels. Backed by, amongst others, the Chamber of Commerce, *Culture Montréal*¹ and *Montréal International*², this \$85 a head ceremony gathered the municipal, economic and cultural glitterati of Montreal: for thirty minutes we listened to Dr. Florida explain how winning cities need to attract and retain 'talent'. The best way for them to become attractive to these very mobile and well educated people is to, amongst other things, encourage cultural activities, the lifestyle that these people enjoy, and – particularly – 'tolerance'.

Obviously, this flattering message went down very well with the audience. No one in the room – except maybe the waiters – could doubt that he (or she) was included in the rather wide definition that Florida (2002) gives of 'talent' and of the 'creative class' (i.e. educated and innovative people – vague terms, but which, in practice, gather together most people in design, development and managerial occupations). How pleasant to nod off to a post-prandial address that reminds one of one's own importance. Such an address is all the more pleasant when it emphasises the urgency to (re)model the city to meet our needs. It is therefore to the honour of 'creative' Montrealers that the message was received with a certain amount of scepticism.

1 An organisation that gathers Montreal's cultural elite and that lobbies for more funding.

2 A provincially funded organisation the purpose of which is to market the Montreal agglomeration to outside companies and potential – usually wealthy or educated – immigrants.

This scepticism has parallels in some more fundamental questions of development economics, theorisation, and the bridge between theory and public policy raised by Florida's ideas. In this paper I will try to present a number of elements, both theoretical and empirical, that explore the reservations that can be formulated with regard to his thesis. It is not my intention to deny that there exists a link between economic growth and people with talent, education, know-how or creative abilities. However, it is important to look closely at this link and to see whether it applies to *urban* and *regional*³ growth, and, if so, to question the direction of causality. Florida suggests that a city merely needs to attract the creative class in order to benefit from subsequent economic growth. I will argue that it is highly probable that the opposite is true, and that educated or talented people are mobile, well informed, and attracted to opportunities in faster growing regions.

In the first part of the paper I briefly review the literature on the link between human capital and economic growth (usually of *countries*) as well as income growth (of *individuals*). Research on the growth of *regions*, however, tends to emphasise that migration is attributable to opportunities available in the destination region. Regional growth, which is a question of location rather than of growth generation, is linked to industrial structure, geographic location relative to major markets, local culture and diffuse agglomeration economies that cannot be attributed to any isolated factor.

In the paper's second section I examine the distinction that Florida makes between human capital and 'talent', a distinction that is a little difficult to follow and which carries with it some particularly problematic connotations. In the final section of the paper I present some empirical results from Canada that call into question any simple link between human capital and regional growth. These results tend to demonstrate that educated people move towards regions that grow fast: hence growth would tend to be a cause, rather than a consequence, of the in-migration of 'talent' (although it is undeniable that some feedback is involved).

Human capital and growth

Human capital theory, growth and regional development

For over fifty years economists have been investigating the link between education and economic growth. Lewis (1955) and Schultz (1959) – who received the economics Nobel Prize in 1979 – were amongst the first to theorise this link and to place it in a far wider context. Indeed, Lewis (1955), in his book *The Theory of Economic Growth*, strongly insists upon the role of human and institutional capital in the process of national development. According to him, it is property rights, the organisation of markets, religion, attitudes towards risk and change – and education and training – that are the basis for development. No simple causality exists between any unique factor and development: rather, it is the complementarities and synergies that arise from different combinations of these factors that lead to growth.

Becker (1964) subsequently formalised the link between human capital and growth

3 In this text 'city' and 'region' are used interchangeably to denote small open economies within a country.

by integrating the concept to Solow's (1956) growth model. Indeed, despite the important theoretical advances of Lewis and Schultz – which remind one of certain principles of institutional economics behind recent work in the field of regional development (Nelson & Winter, 1982; Cooke et al., 2004) – human capital was only fully accepted by the community of economists once it had been formally integrated into mathematical models. Solow (1956) had identified an unexplained per capita growth 'residue' (over and above growth what could be explained by classic factors such as quantities of labour and capital) which he attributed to technological change. Becker (1964), in order to explain technological change itself (in order to make it endogenous to the model), integrated the qualitative change of labour, the increase in its stock of 'human capital', to the model.

It is important to emphasise that labour's know-how was assimilated to capital, because capital has an important property: like physical capital (tools, machines, infrastructure, etc.), human capital can be increased by investment (most notably in education and training). For an individual, human capital therefore corresponds to a stock of knowledge and know-how that enables him or her to obtain an income. By increasing this stock, an individual can increase his or her income.

Becker's (1964) idea, which was initially intended to explain technological progress in economic growth models, has been used to explain differences in standards of living and growth between countries. Romer (1989), for instance, has examined the stock of human capital at the scale of a country, and has shown that countries with a greater stock of this type of capital tend to have higher standards of living. Furthermore, increases in this stock lead to increasing standards of living. The desire to endogenise technological progress has thus given rise to a wider school of thought, that of endogenous growth theory (Lucas, 1988; Martin & Sunley, 1998). This theory (in fact a number of different theories that share similar basic principles) suggests that a country's level of growth is determined endogenously by its accumulation of (and by its capacity to generate) physical capital, human capital and technological know-how. In short, it is undeniable that theoreticians have, during the course of the last fifty years, integrated into their models the idea that an individual's income and a country's standard of living are partly attributable to human capital. Empirical studies tend to show that this is the case for countries (Barro & Lee, 2000; Romer, 1989) and for people (Constantinos & West, 1991; Card, 1999): positive correlation is found between education levels (individual attainment for people, average levels for countries) and income. Human capital theory explains the causal relationships for individuals, and endogenous growth theory (together with the work of Schultz (1955) and Lewis (1959), to name but them) explains the causal processes at the level of countries.

There exists, however, another approach to examining growth that seems to contradict those just described. Indeed, theories of *regional* growth, which analyse the location of economic activity, emphasise labour mobility. Labour is deemed to move from region to region in order to maximise income: workers therefore move towards locations with high salaries (Courchene, 1986; Dicken & Lloyd, 1990). In a regional context, therefore, human capital does not necessarily benefit the region where it is located, even if it quite clearly benefits the individual who possesses it. People are mobile, and

regional development theory assumes that they will migrate towards regions that offer the best opportunities. From an empirical perspective it has been verified that not only are people mobile, but that the most educated people – those best able to identify and benefit from new opportunities wherever they may be – are the most mobile (Cousineau & Vaillancourt, 1987; Antolin & Bover, 1997).

There are, however, two different points of view as to the consequence of this migration. On the one hand, it is argued that the influx of people will lower wages (by increasing the supply of labour) and that high wages will make employers seek out cheaper locations. In this context migration is merely a short term phenomenon leading to regional equilibrium as employers and labour move in opposite directions (Courchene, 1986). On the other hand, it is argued that cumulative processes are at play: the concentration of labour (and especially of qualified labour) will, indeed, lead to wage increases, but also to positive externalities (information spill over, innovation, division of labour, shared infrastructure...), the combined effects of which are often termed agglomeration economies. Such agglomeration economies attract further migrants to the same places, and lead to a cumulative growth process (Myrdal, 1959; Kaldor, 1970; Krugman, 1995).

These migration processes are not immediately compatible with Romer's (1989) or Lucas's (1988) empirical results or with endogenous growth theory. Indeed, as soon as one takes migration into account, a given (local) stock of human capital will not always have the expected (local) growth effect. Human capital is not an attribute of the region where it is located, and can easily move elsewhere. One of the theoretical problems yet to be fully resolved in this area is how to integrate cumulative regional growth models, which deal with the *location* of economic activity), with endogenous growth theories, which deal with the endogenous generation of growth within a particular area (Baldwin & Forsild, 2000).

These theories and observations can to some extent be reconciled if one remembers that Romer (1989) and Lucas (1988), together with most theoreticians of economic growth, have taken countries as their unit of analysis, and seek to understand what generates economic growth within a country. At the scale of a country – and notwithstanding the growing international migration flows that may yet invalidate this assumption – it is still reasonable to suppose that the stock of human capital is constant in the short to medium term, and that it will tend to increase as investment in education and training increases. In other words, we can assume that human capital is an attribute of countries. An economic reasoning premised upon concepts such as 'stocks' and 'investments' makes sense, since there is a given stock of human capital in a country, and investments in human capital can be appropriated at the (national) scale where they are made. Similarly, if one reasons at the scale of the individual, notions of a stock of human capital and investments therein make sense: my knowledge is my own stock of human capital (not someone else's) and if I study further I will add to it (and not to someone else's). But for a region or a city such reasoning does not work: regions are open systems with no migration controls, and migration, particularly that of qualified people, can be great. Investments made by one region in human capital can easily benefit another, and one region's stock can diminish if another region is more attractive (Cousineau & Vaillancourt, 1987).

A number of researchers have studied the correlation between education and urban growth (for example Simon, 1998; Shearmur, 1998), and correlations indeed exist between these two phenomena. However, in the light of the migration question it is difficult to impute a causal direction to these relationships. Simon (1998), whilst acknowledging this difficulty, concludes that human capital is a factor of employment growth in US metropolitan areas: his reasoning, though, is somewhat circular since his preference for this interpretation rests on the fact that it is compatible with human capital theory, the very theory he is attempting to corroborate. Shearmur (1998), who analyses the link between education levels and employment growth in disaggregated economic sectors, notes that correlations seem to be as expected by human capital theory during the 1980s (it is basic industries that grow faster in cities with high levels of degree holders), but that correlations are compatible with consumer driven growth in the early 1990s (it is retail and leisure sectors that are connected with employment growth during this period, suggesting that high education levels may – during some periods – be connected with growth merely through the local spending power of more educated people). In any case the evidence that education levels are connected to regional growth is not conclusive; indeed, the correlation between initial education levels and employment growth becomes weak to non existent if other growth factors, such as city size (as a proxy for agglomeration effects), proximity to major markets and industrial structure are introduced (Shearmur & Polèse, 2006).

A question that is in fact central to discussions of human capital and growth concerns the measurement of human capital. Above, I loosely defined human capital as ‘a stock of knowledge and know-how that enables [a person] to obtain an income’. Human capital can thus be defined in an abstract but fairly clear fashion. However, as Krahn & Lowe (1998) and Field (2003) point out, when it comes to *measurement* this stock is in fact difficult to disentangle from social status and family background, i.e. from social capital. Thus, even if human capital can be *defined*, a question remains as to what is being *measured* by indicators of human capital: is it ability and knowledge, or is it social connections and status? Although this may make little difference in terms of outcome – both may lead to positive economic outcomes for an individual – from a theoretical and policy perspective the distinction is crucial. How can know-how and knowledge be measured? Many studies rely on simple indicators such as years of education or percentage of degree holders: these indicators certainly measure something, but is it intrinsic ability, is it social status, or is it acquired human capital? Furthermore, an increase in education levels over time does not necessarily signify an increase in human capital: given the strong competition for status and jobs, obtaining education credentials may merely be a product of ‘credentialism’ (Wolf, 2002) – an entrance requirement for a job irrespective of the skills involved. Given the problems associated with the use of formal education (or training) statistics, some researchers have investigated knowledge and know-how through interviews and tests (Boothby, 1993). But here too, given that the ability to perform in literacy or numeracy tests (for instance) is in part culturally determined, is it in fact possible to investigate human capital (as distinct from social capital) in this way? In short, although the concept of human capital is clear, it is very difficult to operationalise in a satisfactory way. Thus, even though these measurement problems are

not the focus of this paper, it is important to remember that it is tenuous, at best, to assume that human capital can be measured unambiguously, and in particular to assume that it can be disentangled from social capital and status. Yet much of the empirical work purporting to demonstrate a link between human capital and growth – including, but by no means exclusively, Richard Florida's – fails to make this assumption explicit.

In sum, and even putting aside questions surrounding the measurement of human capital, there exist solid theoretical and empirical reasons for questioning any straightforward extension of human capital and endogenous growth theories to cities and regions, partly because urban and regional growth (a question of where economic activity will take place) is different from economic growth (a question of how economic activity is generated). Without claiming that these approaches have no application to the study of growth in small open economies (see Baldwin & Forsild, 2000), the high mobility of human capital (mobility is much lower internationally) and the effects of agglomeration economies (because of their spatial dimension these do not, by definition, act at a national scale) make it dangerous to suppose that these theories are applicable without modification at the urban or regional level. With these reservations in mind, we now turn to Richard Florida's theories.

The knowledge aristocracy and its mobility

Richard Florida places himself in the tradition of human capital theory, but makes two fundamental modifications to it, which have important consequences. First, he uses the notions of 'talent' and 'creative class', abandoning the term 'human capital'. Second, he transposes ideas developed in the context of economic growth analysis (and which are valid at a national and individual scale), to the question of urban and regional growth (which is basically a question of location).

It could be argued that the first modification is merely semantic, and of little fundamental relevance. Florida (2001; 2002; Gertler *et al.*, 2002) no longer speaks of human capital, but of 'talent' and 'creativity'. The declared purpose of this new vocabulary is to create a distance between his theory and some restrictive notions of what constitutes human capital. But although formal knowledge has often been used (for measurement purposes) as a proxy for human capital, the multiple facets of human capital – in particular the importance of informal types of knowledge – are well recognised and have been integrated into the literature surrounding the concept (though informal knowledge is often difficult to measure empirically, Livingstone, 1997; 1999). The continued use of the term 'human capital' carries through an important aspect of human capital theory: that human capital can be increased through investment (Ray, 1998). In other words, individuals (by way of experience or formal training) and countries (by way of investment in education or training) can, in theory, increase their human capital. The concept – for all its limits – remains fundamentally democratic in the sense that no one is, *a priori*, excluded from it⁴.

In contrast, Florida (2002) writes of a 'creative class' made up of 'talented' people. This vocabulary carries very exclusive connotations. The 'creative class' must necessarily

⁴ Of course, if human capital in fact reflects social capital and status, then this argument does not hold in practice. But in theory at least, it is possible for everyone to increase their human capital even if maximum attainments are partly socially constrained.

be constituted in opposition to a 'non-creative class'. This other class – which, according to Florida, comprises about 70 per cent of the population – is not addressed by his theory. The notion of 'creative class' immediately raises the issue of this class's interests – interests that Florida actively encourages cities and regions to promote. The message that he sends to municipal and regional politicians and policy-makers is that cities should modify their local policies, their planning and their budget, in order to respond to the preferences of this creative class. Given that by definition this class comprises those people best suited to succeed in the 'new' or 'knowledge' economy – the knowledge aristocracy – this message boils down to saying that municipalities and regions should reinforce and subsidise their elites. Such 'talent welfare' is reminiscent of 'corporate welfare' policies relied upon by certain jurisdictions to attract companies (Shearmur, 2000).

The term 'talent' is no more neutral than 'creative class'. In general a 'talent' is considered as a gift, or as luck. Of course a 'talented' pianist (for instance) will no doubt have worked hard to perfect this talent, but at the origin this talent is a gift of nature. Florida insists on the great importance of 'talent' which, unlike human capital, cannot really be acquired. So, over and above the elitism inherent in the notion of 'creative class', it could be argued (with a little exaggeration) that Florida's message is, despite itself, one of social Darwinism: certain people are born lucky (with talent), and municipal and regional policies should promote their interests and desires. It is thus – from a Spencerian perspective – a means of reinforcing natural social selection (Spencer, 1857)⁵.

Needless to say, these criticisms are not in line with Florida's own perception of his work, which he sees as representative of the US liberal tradition. He responds to a number of critiques (Florida, 2004), which he considers to be of two types. First, there are critiques of a cultural order, that often turn upon his gay index (which he uses as a proxy for tolerance), his bohemian index (a proxy for originality and innovation), and the idea that his 'creative class' excludes hard working small business men and women. This first set of criticisms principally reflects the divide that exists in the USA between a traditional and populist culture on the one hand and an urban and multicultural one on the other (Frank, 2005). Florida (2004) defends his positions well against these criticisms, and I will not enter these debates.

Second, there are critiques which dwell upon the elitism (avowed or latent) of Florida's creative class (Florida, 2004), which are along the lines of those presented above. Florida proposes two lines of defence. First, according to him, the attraction of 'talent' will end up benefiting everyone, since the whole population will benefit from urban growth. Second, he claims to be well aware that creativity exists in all walks of life and in all occupations.

Neither of these justifications is sufficient to refute the points raised. The idea that everybody will benefit from the success of an elite creative class is reminiscent of Ronald Reagan's economic policies premised on the trickle-down effect. According to this way of viewing the economy, it is necessary to reduce all administrative and policy hurdles to enrichment (such as progressive income tax, inheritance

5 It could be argued that Florida even goes further than Spencer. Spencer was against all government intervention, in particular intervention to help the poor. To my knowledge, he never advocated government intervention to help the rich.

tax, control of work conditions, welfare...) because, in the end, enrichment of the upper classes will pull all of society upwards: all boats rise on a rising tide. Given the widening gap between rich and poor in the USA since the early 1980's (Schluter, 1998), the trickle-down theory – which is not so much a theory as an ideological platform – has not been validated. Similarly, there is little empirical backing for Florida's contention that the prosperity of a city benefits all those who live there. Quite the contrary, in fact: economic growth – particularly when driven by elites (Hamnett, 2003; Donald, 2001) – often puts pressure on poorer people. The increased congestion and pollution that accompany fast growth often have, as first victims, the residents of poorer neighbourhoods. Poor neighbourhoods that are attractive are rapidly gentrified. Rising real estate prices put property ownership out of reach of many people. Studies of the distributional impact of urban and regional growth on the local (pre-growth) population are sorely needed, and Florida's statements in this regard are at the very least premature.

The second defence put forward by Florida is that creativity can be found in all walks of life and occupations. According to him (Florida, 2004), his theory of the creative class merely emphasises the fact that creativity is behind all economic growth. Were the theory limited to this, it would be banal and inoffensive. But the theory of the creative class goes much further, and Florida claims to be able to identify the creative class from a list of occupations. In his report on Montreal (Stolarick *et al.*, 2005), he writes that the economy of the creative sector can be summarised by the TAPE formula: Technology and innovation, Arts and culture; Professionals and managers; and Education and training. These occupational categories leave little space for creative blue-collar municipal workers, seamstresses, or waiters; indeed, the TAPE occupations strangely resemble the professional profile of his audience on 27th January. It is not because Florida (2004) claims to recognise the existence of creativity in all occupations that his public policy prescriptions – or even his analyses – take much notice of it. In fact, the type of municipal and regional policy inspired by Florida's ideas is squarely aimed at attracting and retaining elites, often at the expense of other pressing, concrete but less visible municipal and regional responsibilities (Donald, 2001). In short, it could be argued that Florida firmly entrenches the connection between human capital and social status, not by recognising that educational or professional attainment is often an outcome of social status, but by confounding the two: human capital is social status. Human capital – by virtue of its command of economic power – must be respected and courted in a way similar to yesterday's aristocracy (Cannadine, 1999).

Florida's theory and growth prescriptions rest upon the idea that attracting individuals well endowed in talent and creative powers will lead to growth within the regions that succeed in doing so. But regional growth theories suggest that the reverse is true: that the economic motive for migration is the differential in opportunities and income that exist between the origin and the destination regions. This theory of migration accords with many facts: whether one considers international migrants from developing countries, Canadians migrating to the USA, or Quebecers from outlying rural regions migrating to Montreal, many share a common motive.

They are attracted by the better life that they expect at their destination. In other words, it is the fact that there is greater wealth (or better prospects of wealth) in other countries or regions that, from an economic perspective, motivates migration. In terms of causality, it is therefore wealth and/or growth that attract human capital. Florida claims, on the basis of static and qualitative analysis (not the analysis of migration flows), that the creative elite is no longer subject to such forces, and that it is now seeking out particular lifestyles. This is a fundamental departure from what we know about migration, and we will return to this in the empirical section of the paper.

The question of causality is at the heart of Florida's thesis, and this question is its greatest weakness. According to Florida it is the capacity to attract the knowledge aristocracy that determines growth. This conclusion rests upon qualitative analysis, theoretical reasoning (loosely based on human capital theory) and correlations. However, on the basis of the underlying motivations for migration, and if one rests one's analysis upon regional growth theory, then identical correlations can lead to very different conclusions. The well informed and highly mobile aristocracy has the information and the capacity to move to the most 'rewarding' areas – those where economic activity and growth are occurring (Angell, 1999). Furthermore, this interpretation is in accord with the ideas of sociologists such as Bauman (2002) and Urry (2000) who suggest that mobility – or the capacity to move – has become an important social determinant since it allows one to maximise the chance of success:

'Mobility becomes a most precious and sought after resource. If chances cannot be "fixed to a place" and made to last, one needs to go where the chances appear and when they appear'. (Bauman, 2002, p83)

A secondary aspect of Florida's theory – if one has accepted that the attraction of 'talent' will lead to growth – concerns the factors that will attract it. According to him, it is the availability of a certain lifestyle, and especially cultural and leisure amenities, that attracts the creative class. Thus, cultural industries are put forward as a key to economic growth, and it is easy to understand why the cultural milieu has quickly rallied round. However, even on Florida's own terms, the link between cultural industries and growth is somewhat circuitous: 'talent' creates growth, and, amongst the variety of things that attract 'talent', are cultural industries. This hypothesis is as questionable as the rest: although it is outside the scope of this paper to analyse the link between culture and the economy, it is probable that a historic investigation would demonstrate that cultural industries have tended to develop in cities and regions that were prosperous. For instance, I would suggest that the prosperity of Florence in the 13th and 14th centuries has a direct bearing on the subsequent explosion of renaissance art (and, conversely, that it is not Florence's artistic community – to the extent that it existed prior to its prosperity – that built the city's power and wealth). It is Lorenzo de Medici's wealth that permitted him to patronise Leonardo de Vinci and Michelangelo, not the patronage that led to his enrichment.

A few empirical results

So far I have raised some theoretical issues relating to Florida's ideas and have questioned the implication of the vocabulary that is used. In this section I present some

empirical results that allow one to better assess the direction of causality between migration, human capital and regional growth.

Factors of local growth in Canada

It is not possible, in this paper, to present a complete justification for the two regional growth models that will be presented below. These two models rest upon the work of Polèse and Shearmur (Polèse & Shearmur, 2002; Shearmur & Polèse, 2005, 2006) and their units of analysis are Canada's 152 urban agglomerations of over 10,000 people⁶. The theoretical reasoning that leads to the inclusion of each variable can be found in Shearmur & Polèse (2006), the basic idea being that local growth can be explained by a number of factors. First, geo-structural factors (the wider regional economy, distance to major markets, path dependent historical growth patterns) explain urban growth, hence the inclusion of two systems of geographic classification (metro/centre/periphery and regions). Second, a variety of theories such as those relating to agglomeration effects (hence the inclusion of city size) and human capital (hence the inclusion of initial education levels and their subsequent growth) are taken into account. Finally, income levels (as a proxy for local costs) and industrial structure (cities are classified into six different industrial profiles, and a diversity index is included) are also thought to influence local growth. These models draw upon a series of possible explanations of urban growth, and do not limit themselves to studying any single growth factor⁷.

The dependent variable of the first model in table 1 is employment growth between 1996 and 2001, the dependent variable of the second model is mean salary growth over the same period. Geo-structural variables are important determinants of regional growth: indeed, the best predictor of employment growth is proximity to a metropolitan area (the cent variable), and a good predictor of both employment and salary growth is the region in which the city is located. City size has no effect on growth, but industrial structure and – in the case of salaries – diversity does. Cities with higher salaries tend to experience slower growth, all else being equal. Both models explain a high proportion of the variance in urban growth (62 per cent for employment, 53 per cent for salaries).

Turning now to the education variables, they behave the same way in each model. If the human capital model were applicable to urban areas, one would expect the initial stock of human capital (measured as the percentage of university graduates in 1996) to be positively related to growth: it is not. Given the other determinants of urban growth, cities with a high initial stock of educated people do not grow faster than cities with a lower initial stock. However, there is a strong association between increases in human capital and growth. This result seems to conform with Florida's theory, since according to him it is the attraction of 'talent' that leads to growth.

⁶ All data are drawn from the census. Data for the urban growth model are drawn from the 1996 and 2001 census; data for migration are from the 1981, 1986, 1991, 1996 and 2001 censuses. Note that for the 1996 to 2001 net migration model only 136 urban units are analysed, since only those south of the 55th parallel have been retained and a few urban areas are unavailable for reasons of boundary changes.

⁷ These models have been estimated using SAS GLM which permits classification and continuous variables to be analysed simultaneously. Only the coefficients of continuous variables are indicated in these tables.

Table 1: Employment and Income Growth in the Canadian Urban System, 1996-2001

Dependent variable: employment growth, 1996 to 2001					
	Variable	dl	F	Pr>F	Coeff
Classification of cities into 6 Canadian regions	reg	6	6.81	<.0001	-
Classification of cities into metro, centre, periphery	cent	2	10.69	<.0001	-
Log of population, 1996	lp 96	1	0.13	0.717	0.00
% of population with university degree, 1996	pg96	1	0.54	0.464	0.19
Increase of graduates, 1996-2001	pg9601	1	8.60	0.004	2.13
Index of industrial specialisation, 1996	sp96	1	1.40	0.239	-0.02
Mean salary, 1996	sal96	1	1.24	0.267	-0.09
Classification of industrial structure	c196	7	3.93	0.001	-
	R2	0.62 n=152 urban areas			

Dependent variable: salary growth, 1996 to 2001					
	Variable	dl	F	Pr>F	Coeff
Classification of cities into 6 Canadian regions	reg	6	6.46	<.0001	-
Classification of cities into metro, centre, periphery	cent	2	1.57	<.211	-
Log of population, 1996	lp 96	1	0.37	0.546	0.00
% of population with university degree, 1996	pg96	1	2.65	0.106	0.21
Increase of graduates, 1996-2001	pg9601	1	6.94	0.009	0.95
Index of industrial specialisation, 1996	sp96	1	0.37	0.544	-0.02
Mean salary, 1996	sal96	1	7.22	0.008	-0.11
Classification of industrial structure	c196	7	2.45	0.021	-
	R2	0.53 n=152 urban areas			

Source: Polèse, M. et R.Shearmur, 2005, *La production, l'attraction et la rétention des diplômés universitaires. Étude comparative de la région métropolitaine de Montréal et d'autres métropoles canadiennes et américaines*, Montréal : INRS-Urbanisation, Culture et Société, <http://www.inrs-ucs.quebec.ca/pdf/ProductionAttractionRetention.pdf>

However, this result is also compatible with the alternative theory that growth attracts 'talent'. For this reason we will turn to migration data in order to attempt to understand the direction of causality.

Migration and the attraction of 'talent'

In figure 1 the evolution of net migration flows to (and from) major Canadian agglomerations is presented. These flows are expressed as a percentage of the cities' initial number of graduates, and results are presented for four five-year periods between 1981 and 2001.

We can see that, over the entire period, net flows are high towards Toronto, Vancouver and Ottawa, are very modest towards Montreal, Winnipeg and Quebec, and are progressing over the period for Calgary and Edmonton. Florida, in his report on Montreal, insists quite strongly on the city's attractiveness to 'talent'; our results do not support his claim.

A closer look at Figure 1 suggests that it is more reasonable to conclude that the flow of graduates increases as economic performance improves. Calgary and Edmonton have benefited from very fast growth⁸, especially in the late 1990s, because of their oil boom; migration flows seem to have reacted quite markedly to this boom. Vancouver, which relies heavily on Asian markets, saw its migration rates decline in the late 1990s (when the Asian crisis occurred); this decline in the flow of talents coincides with economic stagnation in Vancouver's (and in much of British Columbia's) economy. In the early 1990s a recession and 'jobless recovery' hit many white collar occupations, and principally those in the financial sector. In the late 1990s, this sector strongly bounced back with the dot.com boom. Migration flows to Toronto, which has an economy strongly oriented towards white collar and financial occupations, declined in the early 1990s and bounced back in the late 1990s. Over the same period (early 1990s) the federal government began drastically cutting back on recruitment in order to control the budget deficit; over the same period, migration flows of graduates to Ottawa, seat of the federal government, declined. The high-tech boom that Ottawa subsequently experienced in the late 1990s coincides with renewed in-migration of graduates.

None of this evidence is conclusive: causality is always extremely difficult to pin down with statistics. However, there is considerable circumstantial evidence in Figure 1 to suggest that, overall, the migration flows of graduates react to economic conditions and structural changes, and not the reverse. It is simply not plausible to attribute Calgary and Edmonton's recent growth to the influx of graduates. Neither is it plausible to attribute Ottawa's and Toronto's early 1990s recessions to the decline in graduate in-migrants; nor can Vancouver's late 1990s economic troubles be assigned to its inability to attract graduates. In sum, Figure 1 allows us to state with confidence that, at least for Canada's major metropolitan areas, the flow of migrant graduates responds to local economic conditions and not the reverse.

⁸ In this section 'growth' is not merely that of employment or incomes, but a combination of factors: in the cities mentioned growth consisted of rising incomes, house prices and employment, whilst decline consisted of stagnant housing markets, failing businesses and slower employment and income growth. The point being made is that 'growth' or 'decline' in these cities, however measured, can be explained by wider economic and structural factors. To the extent that migration appears to be correlated with this growth and decline, it cannot be argued that it is a cause of growth and decline. Rather, it appears to be a consequence of these wider factors.

Figure 1 : Net Flows of Graduates Towards the Principal Canadian Urban Agglomerations, 1981 to 2001

Source: Polèse, M. et R. Shearmur, 2005, *La production, l'attraction et la rétention des diplômés universitaires. Étude comparative de la région métropolitaine de Montréal et d'autres métropoles canadiennes et américaines*, Montréal : INRS-Urbanisation, Culture et Société, <http://www.inrs-ucs.quebec.ca/pdf/ProductionAttractionRetention.pdf>

To conclude, we will test one final aspect of Florida's thesis: the idea that cultural amenities attract 'talent'. Is it possible that migration flows respond to the presence of cultural activities in urban areas? In order to address this issue a regression model has been estimated for net flows of graduates towards Canadian urban agglomerations. Between 1996 and 2001, 31 per cent of the variance in these flows could be explained by straightforward geo-structural variables associated with urban size. Graduates tend to flow towards larger cities, towards Alberta and British Columbia, and towards small cities located close to metropolitan areas.

The addition of a variable that measures cultural 'supply' (the local concentration of employment in the cultural sector) has no effect on the model: graduates are not particularly attracted to urban areas with a more developed local cultural sector. On the other hand, graduates tend to flow away from university towns; there is a strong negative relationship between the presence of university employment and graduate migration flows. This is not surprising since universities produce graduates, who then disperse across the territory.

Table 2 : Net Flows of Graduates Towards 136⁹ Canadian Urban Agglomerations of over 10,000 Population, South of 55th Parallel, 1996-2001

Description of the variable	Variable	Coeff.	T	Pr> t
Intercept		-0.595	-4.04	<.0001
Metropolitan areas, population 500K+	AM	-0.042	0.59	<.211
Towns (50K-500K) <100km from metro area	ACA	0.007	0.20	0.546
Towns (10K-50K) <100km from metro area	ACB	0.090	3.73	0.106
Towns (50K-500K) >100km from metro area	APA	-0.058	-1.74	0.009
Towns (10K-50K) >100km from metro area	APB			0.544
Alberta	AL	0.106	2.92	0.008
Atlantic Provinces	AT	0.039	1.31	0.021
British Columbia	BC	0.086	3.13	
Ontario	ON	0.035	1.60	
Prairie Provinces	PR	0.033	1.07	
Quebec	QC	0.000		
Log of Population		0.049	3.30	
	<i>r</i> ²	0.312		
	<i>n</i>	136		
Concentration of cultural jobs added* to model		0.000	0.53	
Concentration of university jobs added* to model		-2.261	-2.64	
<i>*Each variable is added to the model separately</i>				

Source: Polèse, M. et R. Shearmur, 2005, *La production, l'attraction et la rétention des diplômés universitaires. Étude comparative de la région métropolitaine de Montréal et d'autres métropoles canadiennes et américaines*, Montréal : INRS-Urbanisation, Culture et Société, <http://www.inrs-ucs.quebec.ca/pdf/ProductionAttractionRetention.pdf>

In sum, Florida's ideas do not stand up to simple empirical tests. This does not mean that the processes he describes never occur: it is quite possible that some specific urban areas or regions have managed to develop by attracting graduates and by generating their own knowledge spillovers and agglomeration effects. What the results do quite clearly show is that Florida's theories cannot be generalised. It is therefore incorrect for Florida to claim that he has found the recipe for 21st century urban and regional growth. Had this message

⁹ It should be noted that only 136 urban areas can be analysed (rather than the 144 that are south of the 55th parallel) in these models. This is because flows could not be calculated for some urban areas owing to changes in geographic boundaries between 1996 and 2001.

remained hidden in academic journals, it would have had very limited consequences, and other more robust theories would eventually have proven their worth. However, the influence of these ideas over politicians and policy-makers is such that it is very important to demonstrate their limits, something I have attempted to do.

Conclusion

Florida's recent work has had the great merit – as Glaeser (2004) points out – of generating public debate about the factors and causes of urban and regional growth. This topic is rarely deemed newsworthy, and Florida has become its ambassador. His theory of the creative class is not devoid of merit; it rests to some extent on human capital theory, but also raises interesting questions about this theory's limits when it is applied to regional and urban growth, which is primarily a question of location. Indeed, the difference between endogenous growth theories on the one hand and regional growth theories on the other is an important source of the conceptual confusion surrounding Florida's ideas. Whereas endogenous growth theories attempt to explain how economic growth is generated, regional and urban growth theories attempt to explain where this growth will locate. By attempting to mix these theories without clearly conceptualising or distinguishing them, Florida has ended up generating a series of fascinating questions without really providing the answers.

At a different level, and despite his stated intentions, Florida has expressed his theories in a very elitist language. As any lobbyist well knows, choice of words is not without consequence, particularly when one is addressing politicians and policy-makers. Any theory of urban and regional growth that seems to actively promote the interests of a small and already privileged elite – in this case the knowledge aristocracy – is not a neutral theory. Although the author may not have wished to promote such an idea, there is little doubt that the success of his theory is partly attributable to the fact that it can serve to justify elitism. Furthermore, the popularity of his theory in the cultural milieu, which can be explained by the fact that it provides economic arguments justifying the financial support of cultural industries, cannot hurt its dissemination and media credibility. Without being fundamental criticisms of the theory itself, these points nevertheless raise important political and policy questions which are crucial when cities begin to apply recommendations derived from Florida's reports.

From an empirical perspective, Florida's theories are not verified in Canada. First, a city's initial endowment in 'talent' is not a predictor of future employment or income growth. Second, even if the increase in 'talent' is correlated with growth, an analysis of graduate migration flows shows that these flows increase towards fast growing regions and decrease towards slow growing ones, and that this growth can most plausibly be explained by reference to wider economic and structural factors. In other words, there is evidence that the attractive effect of growth on 'talent' is considerably stronger than the effect that 'talent' has upon growth. The presence of a cultural sector in a city has no effect on the attraction of 'talent'.

These results demonstrate that there are no general rules that associate 'talent' with urban growth, or that associate the attraction of 'talent' with local cultural endowment. This does not mean that there are no examples, in Canada, of cities in

which the mechanisms described by Florida lead to growth. It simply means that these mechanisms do not operate everywhere and that the theory of the creative class – to the extent that it claims to be a general theory explaining urban growth – is false.

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