ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

DeVoretz, Don J.

Working Paper

Profiling at the Canadian border: an economist's viewpoint

IZA Discussion Papers, No. 2536

Provided in Cooperation with:
IZA Network @ LISER, Luxembourg Institute of Socio-Economic Research (LISER)

Suggested Citation: DeVoretz, Don J. (2006) : Profiling at the Canadian border: an economist's viewpoint, IZA Discussion Papers, No. 2536, Institute for the Study of Labor (IZA), Bonn, https://nbn-resolving.de/urn:nbn:de:101:1-2008042946

This Version is available at:
https://hdl.handle.net/10419/33869

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

DISCUSSION PAPER SERIES

IZA DP No. 2536

Profiling at the Canadian Border: An Economist's Viewpoint

Don J. DeVoretz

December 2006

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

Profiling at the Canadian Border: An Economist's Viewpoint

Don J. DeVoretz
RIIM, Simon Fraser University and IZA

Discussion Paper No. 2536
December 2006

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

Any opinions expressed here are those of the author(s) and not those of the institute. Research disseminated by IZA may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit company supported by Deutsche Post World Net. The center is associated with the University of Bonn and offers a stimulating research environment through its research networks, research support, and visitors and doctoral programs. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

IZA Discussion Paper No. 2536
December 2006

ABSTRACT

Profiling at the Canadian Border: An Economist's Viewpoint*

Scrutiny at the Canadian border to heighten security and simultaneously reduce type one (false positives) and type two (false negatives) errors utilize substantial resources as well as imposing opportunity costs on Canada in terms of time and trade diversion. One maligned strategy to minimize these costs at the border has been group or racial profiling. This essay develops a pedigree system for Canadian border security which simultaneously reduces both type I and II errors while avoiding the more egregious costs inherent in racial or group profiling.

JEL Classification: J61, J68

Keywords: immigrants, borders, security

Corresponding author:

Don J. DeVoretz
RIIM
Simon Fraser University
Burnaby, BC V5A 1S6
Canada
E-mail: devoretz@sfu.ca

* The research assistance of Dr. D. Coulombe is noted with appreciation. Comments by Sergiy Pivnenko, Basil Golovetskky and Steve Globerman helped to sharpen my economic arguments. The views in this essay are the author's alone and do not represent the views of RIIM or the Metropolis Project.

"Trying to develop a comprehensive exit and entry control system to fight illegal immigration and discourage terrorism has in some ways been mission impossible."
R. Koslowski, architect of US Smart Program, New York Times Dec. 31st, 2005.

"Principiis obsta" - Beware the Beginnings
Ovid.

Introduction:

An economist rarely analyzes research or policy questions that are not amenable to a methodology based on optimization models of utility or profit maximization (DeVoretz, 2006). The economics literature on optimal law enforcement is no exception. This branch of the economics literature has largely addressed mundane questions concerning cross border tax avoidance or illegal cross border activities under various enforcement regimes (Globerman and Storer, 2006). The protagonists in economic enforcement models are faceless agents with no ethnic, racial or religious characteristics and, from an economist's viewpoint their cross border illegal actions are motivated solely by profit maximization. Hence, optimum enforcement of legal sanctions across borders does not involve racial, ethnic or religious profiling to either minimize enforcement costs or maximize conviction rates. This economics literature whilst not directly concerned with profiling however still provides us with a conceptual framework which will apply in this essay. First, there exist two types of economic costs arising from enforcement. First, the direct costs in terms of resources devoted to enforcement in terms of manpower, equipment and time. Next, there exist indirect costs as enforcement in one area creates shifts in illegal activities to other geographical domains imposing new costs on new players. Thus, before entering into this arena of enforcement with or without 'racial or group' profiling an economist must carefully construct a social welfare function to relate the enforcement costs to the preferred benefits in the social welfare function. For example, if a secure border was deemed more important than international trade than the least cost solution which insured a minimum of 'false negative' or admissions of terrorists would be preferred.

Once an economist moves into the world of immigration research to investigate the economic impact of immigrants on the receiving country, and the economic outcomes of immigrants after arrival, discrimination and racial profiling rise to the forefront (Pendakur and Pendakur, 1998) to explain labour market anomalies. Concepts such as labour market segmentation (Blinder, 1973) have been introduced to explain why two different immigrant groups with identical human capital characteristics but different racial, ethnic or religious compositions receive differential treatment in the labour market.

Jews, to name one religious or cultural immigrant group, which have been profiled by economists, have been cited as overachievers in the Canadian labour market owing to a combination of their intensive human capital acquisition and their "unobservable" positive labour market traits (Dean and DeVoretz, 2000). Economists have not carefully defined these "unobservable" traits which may contain elements of racial profiling. Binder (1974) and Oaxaca (1973), however, have suggested that these "unobservables" include the positive or negative discrimination inflicted on the profiled group by the majority group, as well as the profiled group's degree of energy, networking skills and other forms of group social capital (Borjas, 1994).

Theoretical work by Stark (1993) has extended the profiling of immigrants in economic contexts by suggesting that employers practice group profiling due to asymmetric information in the short run. In other words, as the first immigrant group enters the labour market the employer lacks information on the immigrant's work history and credentials and thus will pay the first arrivals less than other well known and older vintages of immigrants. Once employers have a history of the work experience and can properly value credentials, employers will no longer discriminate against this profiled group. In short, group profiling is the labour market's initial response to ignorance about individual characteristics (work history, certificates, etc.), but as information is obtained assessment of individual characteristics replace group profiling due to competitive forces.

This brief summary of economists' views of 'optimal' group profiling in the economy suggests that either the economist assumes away racial profiling by having faceless agents interact or if profiling exists, competitive forces will drive racial profiling away as more information is obtained. My tact now is to translate this standard economic screening paradigm into contemporary Canada circa 2006 and assess the efficacy of various screening devices at Canada's border. I first devise several regimes which avoid "group profiling" and rank them in terms of both there security and economic outcomes. I then offer my version of a screening technique based on an individual history's which will avoid "group profiling". Finally, armed with my explicit social welfare function I will choose an 'optimal screening' mechanism at the border.

Screening without "Group Profiling"

Can an economic case be made for optimal "group profiling" at Canada's border or at security sensitive points within Canada to insure that Canada realizes its goals of security and law enforcement at the border? In this context I replace "racial profiling" with the broader term of "group profiling" to cover the more common types of profiling that are based on race, ethnicity, religion, gender or citizenship. My earlier work suggests that any perceived optimal action taken to restrict a profiled group at the border (e.g., foreign students) has both intended and unintended consequences since every action at the border causes later deflection of potential entrants at the border (DeVoretz, 2005). Thus, the answer to the question will not be unambiguous.

Autarky at the Border

If Canada's foremost goal is to insure security at its border by excluding terrorists while not practicing "group profiling", it could practice autarky. In other words, Canada could exclude all non-Canadian citizens from crossing Canada's border.[1] This would occur at a heavy economic cost to Canada since trade requires the movement of people (Globerman and Storer, 2006). However, this large economic cost would not prove insurmountable. Even though forty percent of Canada's gross national product involves trade, Canada would not necessarily reduce its standard of living by that amount under autarky. Much of Canada's trade is in commodities which could still be transshipped at Canada's border, and Canada could substitute home production for imports.[2] Exports obviously could continue to leave Canada provided there is no retaliatory action by Canada's trade partners.

In short, an efficacious screening system without "group profiling" could be developed by practicing autarky. The cost of avoiding "group profiling" and insuring security would be the substantial decline in Canada's gross domestic product but no terrorists would enter Canada.

Random Screening

Autarky is one of two security regimes at the border which would insure the absence of "group profiling". The other position is now to allow non-Canadian citizens to approach the border and be randomly selected for more complete secondary scrutiny. This secondary scrutiny could result in rejection or admission at the border. This procedure has both security and economic costs which I outline below.

The fact that travelers or shippers are randomly selected makes Canada's border less than secure in three ways. First, a terrorist could bypass secondary screening and enter Canada and harm Canadians because she is not randomly selected. Secondly, a non-terrorist who is randomly selected for screening could be incarcerated. Finally, even if selected for secondary inspection a false negative could allow a terrorist to pass into Canada. Clearly, under a random selection system, all of these three errors are bad. In addition substantial economic costs which I outline below will arise under random screening. Nonetheless, under truly random screening there be no "group profiling".

The economic costs of random screening are substantial. Secondary screening could prove expensive and lead to deflection at the border. Goods and people could stop entering Canada or do so only at great cost to Canadian consumers. An example should suffice to illustrate my point although examples abound (DeVoretz, 2005). A potential

[1] I omit scrutiny of Canadian citizens at the border since presumably ascension to citizenship allows sufficient time for adequate internal scrutiny unlike scrutiny at the border which requires instant decisions with incomplete information.

[2] Under transshipment, goods would be offloaded within a security perimeter which would prevent foreign shippers actually entering Canada. Later this cargo could be reprocessed in the secure area by Canadians and shipped out of Canada.

shipper knows that there are three added cost components to moving cargo to Canada. First, time at the border is increased even if the shipper is not randomly selected due to congestions costs that arise as others in front of the queue are selected for further screening. Next, if a shipper is randomly selected more time is added to cross the border before her goods or services arrive in Canada. Finally, due to frequent false positive decisions under the random screening regime at the border the shipper could have her shipment rejected at the border. All of the time costs would then be passed on to the Canadian importer, or the shipper who would pass on costs to the Canadian consumer. Finally, the exporter could simply export to another country.

In sum, both Canadian taxpayers and consumers of importables would pay for this "non-profiling" random selection model. The problem of course is that we cannot compare the costs and benefits of this regime. Unlike autarky which did not allow any terrorists to enter Canada, the random selection technique will admit terrorists or terrorists' shipments with at least a small likelihood of catastrophic consequences. In addition, non-terrorists will be rejected.

Since both autarky and random "non-group" screenings appear non-optimal, I now offer a screening technique that both reduce the costs outlined above and the likelihood of a catastrophic terrorist act.[3]

Optimal Screening: A Pedigree System

The two extreme solutions to avoid "group profiling" at the Canadian border have led to non-optimal outcomes. The question at this point is does there exist a screening device which insures both greater security at a lower economic cost whilst avoiding "group profiling"? There are at least two alternative screening methods which will lead to an affirmative answer to this question and I explore both below.

We noted earlier that screening costs arise at the border due to two types of mistakes. The "false positive" type leads to time-related costs being passed on to others. The example of a safe trucker being delayed at the border ultimately implies that the Canadian consumer will pay for the time lost at the border. The second error is a "false negative" which allows a terrorist to enter Canada and inflict damage.

An optimal screening device at the border should simultaneously reduce the probabilities of both "false positive" and "false negative" decisions. I propose the introduction of a "pedigree system that relies on the number of times a non-Canadian citizen successfully crosses the Canadian border in both directions without incurring an infraction either while in Canada or during the act of crossing the border.[4] For the system to work, the initial entry into Canada would require both sponsorship and vetting by a certified source

[3] The autarky regime while effective is too expensive in terms of lost output and the random profiling while less expensive admits terrorists.

[4] Canada currently uses this system for foreign agricultural workers. The initial entry of a foreign temporary worker into Canada is sponsored and vetted, and returning to Canada in the next season is earned by good behaviour while in Canada including leaving in the previous year before her visa expires.

outside of Canada.[5] Sponsors would verify the information required for the initial applicant to cross the border. Of course, sponsors would have been previously vetted by the Canadian government and have a perfect track record. Canada would pay sponsors for their services and the proceeds from the initial visa entry cost borne by the applicant would defray Canada's sponsorship costs. In other words, the programme would operate like Canada's current immigration programme which involves a landing fee.

The initial entry of a foreigner would be monitored in two ways. First, the applicant would have to leave on or before the end date of the initial entry visa. Next, the applicant must report in person to the foreign sponsor upon return home at a mutually agreed upon time and place. Success in meeting these two requirements would lead to one point earned by the visitor. Each successful double crossing, that is, correctly and timely reported entry and exit, would lead to an additional point on the foreign visitor's pedigree scorecard.

The pedigree scorecard in turn will yield information on how Canada should conduct screening searches in a non-random way to minimize both false positives and false negative decisions. For example, a failure to meet the entry-exit requirements initially could either lead to being treated like an initial entry seeker or result in a lifetime entry ban. The decision would depend on the discretion of the border official given the nature and degree of abuse of the entry-exit reporting requirements. Examples of extreme dereliction in reporting would be, overstaying in Canada, leaving and returning without reporting during the approved stay, entry to a designated "terrorist producing" area during an illegal stay-leave period, etc.

In short, there would be no "group profiling" under the pedigree regime, and any adverse decision about further reentry would be a by-product of the <u>individual</u> foreign visitor's actions and not due to group attributes.

How would several successful return trips affect the traveler's pedigree? At some point the number of successful entry-exit occurrences by a foreigner would yield a pure enough pedigree to allow less scrutiny at Canada's border and longer stays within Canada. The key to this decision making process is two-fold. First, the foreign visitor in particular and all potential foreign visitors must be unaware of what constitutes a good pedigree. Next, the time allowed in for the foreign visitor's stay must be inversely related to the number of successful prior entry and exits.

Triage at the Border under a pedigree screening system

Canada could practice triage by grouping visitors into shorter queues at the border. This ranking at the border would be based on the pedigree holders' number of successful exit-entry occurrences, their type of entry visa (student, agricultural worker, visitor, religious

[5] Canada currently follows this procedure for issuing passports with a domestic Canadian sponsor. The application form must be signed by a recognized authority who verifies that the applicant is the person identified in the document.

worker, etc.) and similar pedigree information acquired from other countries which construct pedigrees on individual visitors.[6]

My pedigree system under triage would work as follows. Foreign visitors with no past history would have no pedigree and thus would be detained at the border to verify their identity. Then they would be subjected to secondary screening including verification of their sponsor's testimonial via a life teleconference ending with an iris imprint.
All other foreign entrants with a Canadian pedigree would enter a separate queue and would be given an initial screening to verify their identity and to determine what class of pedigree they hold and whether the appear on a daily updated documented "watch list" at time of arrival.

Any further action at the border now depends on their class of pedigree. A class 1 pedigree would imply no further screening while a class 2 pedigree would imply both a restricted stay in Canada in terms of time and place and the issuance of a surety bond by a "well known" third party. Class 3 pedigree holders would be refused entry to Canada. This result would arise because the visitor previously did not leave Canada on the agreed upon time and/or did not notify his home country sponsor upon return. A class 4 pedigree holder would be detained since this person would have multiple violations of entry-exit conditions in Canada or other countries with similar regimes.

The pedigree system could be made even more sophisticated to reduce the probability of type I or II errors and simultaneously avoid "group" profiling. Some of these extensions of the pedigree system based on personal history and voluntary actions are outlined below.

Modifying Pedigrees

Given a history of successful entry and exists from Canada other extenuating events can alter the foreign visitor's placement (i.e. Class 1 to 4) in the screening triage based on her original pedigree.

For example, the pedigree rating of an individual who voluntarily joins a group that espouses or supports violence would be altered. This decision would be based on this group's history or the average pedigree rating of its members. In other words, an individual with a class 1 pedigree rating- no screening at the border-who voluntarily joins a group whose members have a class 3 rating-detention at the border- would receive a class 2 rating. In this case a class 2 rating would imply a complete vetting at the border with a limited stay in Canada and a surety bond held by a well known third party.[7]

[6] Triage in this context refers to grouping people into queues based on their past history of entrances and exits. Those with the greatest number of successful entry and exits would be in the first queue and all others would follow in separate queues.

[7] A surety bond is purchased by the visitor from a third party well known to Canada in the home country. Failure to leave Canada in a timely fashion would mean that the third party who issued the surety bond would forfeit the bond to the Canadian government and presumably obtain the forfeited funds from the applicant.

In addition, if intelligence indicates an imminent security threat then the individual's pedigree ranking can be altered during the period of the perceived threat. In this case, a high alert would reduce everyone's pedigree level one step for an announced period of time. The individual could either accept this diminution in her pedigree or can wait for the threat to subside so that her pedigree status can be restored.[8]

The individual's pedigree can also be altered by the foreign sponsor reporting a criminal offense in the visitor's home country. For example, the criminal free record required under the initial successful vetting by the foreign sponsor would be updated if a crime was committed in the interim and the current pedigree level could be reduced depending on the severity of the crime as judged by Canadian officials. For example, a felony conviction of murder in Mexico would reduce a previously class 1 Mexican pedigree holder to class 4. On the other hand a felony conviction for marijuana possession by a Texan who held a class 1 Canadian pedigree may not alter the pedigree rating in the eyes of Canadian border officials. In short, alterations can occur in the pedigree levels of legacy foreign visitors to reduce the probability of type I and II errors without resorting to "group profiling".

In sum, in the economist's world several paradigms are available to insure the absence of "group profiling" at Canada's borders. Both autarky and random screening at the border would avoid "group profiling" but are deemed non-optimal. A pedigree system in which all the costs are internalized by the potential visitor based on individual records eliminates profiling, reduces both type I and I errors and minimizes the economic cost arising from queuing at Canada's border.

A Case for "Group Profiling" at the Border

Group profiling of potential foreign entrants while difficult to justify politically may still be acceptable under other criteria. My definition of group profiling is wide and much more encompassing than the standard racial profiling definition. Table 1 provides four alternative definitions of 'group profiling' by different political organizations. Seven markers are cited in Table 1 including; race, colour, ethnicity, ancestry, religion, place of origin or link to an identified group.

[8] Of course the period could be renewed and thus eliminate the possibility of gamesmanship under the alteration.

Table 1. Factors included in some definitions of "racial profiling"

	Factors						
	race	**colour**	**ethnicity**	**ancestry**	**religion**	**place of origin**	**link to a group**
Ontario Human Rights Commission	√	√	√	√	√	√	
Québec Commission des droits de la personne et des droits de la jeunesse	√	√	√		√	√	√
Amnesty International	√		√		√	√	√
American Civil Liberties Association	√		√		√	√	

In a static world with no learning by potential entrants "group profiling" could be justified on economic and security grounds. First I would isolate selected people at the border if they fulfilled a combination of criteria in Table 1 which I knew in advance would simultaneously reduce Type I and Type II screening errors and reduce trade distortions at the border owing to shorter queues.

A simple regime of "group profiling" could be instituted under a pedigree system by simply adding any one (or more) of the criteria in Table 1 to the pedigree assessment of the potential foreign-born entrant. For example, a class 1 entrant based on past entry-exist history could be moved to class 3 or 4 depending on the average exit-entry performance of a group which the potential entrant belonged to as identified in Table 1. In the short run, "group profiling" would decrease errors, reduce queuing time and would be preferred to any of the above regimes without "group profiling".

The efficacy of group profiling becomes less obvious once I introduce time and the possibility that potential terrorists at the border learn what groups are being profiled. Once terrorists learn of government "group profiling" these actions will become counter productive as terrorists choose to contract their work out to non-members of any of the seven groups identified in Table 1.

A mixed strategy of my pedigree screening device with and without "group profiling" may prove the most efficacious at the border as long as the "group profiling" strategy was turned on and off randomly. This would prohibit learning by terrorists whilst still enjoying the benefits of "group profiling".

<u>Beyond the Canadian Border</u>

Optimal border screening alone cannot guarantee security. Some bone fide terrorists will still gain entry to Canada and some innocent foreign entrants can be corrupted whilst in Canada and become terrorists.

The question now becomes; how do we scrutinize those that we have allowed to enter? Canada's first internal check is the declared date of departure. If a policy of no internal visa extensions is in place, then those who have not left by their set date according will lose their pedigree and be rejected if they try to re-enter Canada In addition, all relevant "third party" countries will be notified of this "overstay" status in Canada with a request for detention at the "third party" country's border if the individual attempts entry in the "third party" country. [9]

An overstaying pedigreed foreigner can either plot from within or takes action (e.g. laundering money) while in Canada on behalf of other terrorists or conduct an actual act of terrorism within Canada.

No pedigree system can effectively prevent the conversion of the pedigreed foreign visitor to a potential terrorist whilst in Canada. The pedigree system nonetheless, does allow the beginnings of solid police work to seek out the potential terrorist prior to any action or apprehend the foreigner after a terrorist act. In short, the search for potential terrorists would be in reverse order of their pedigree as well as their individual characteristics on file (language abilities, occupation, gender, etc.) to match the information on the potential or actual terrorists. These actions based on the pedigree system would aid the apprehension of overstaying pedigreed foreigners or actual terrorists.

Conclusions

This essay has attempted to shed light on the following question.

In short, what are the appropriate and inappropriate uses of race, national or ethnic origin, colour, and religion in a security context?

Answer: Group profiling based on a pedigree system

In sum, it should be noted that the use of my pedigree system is cumbersome, expensive for the foreign visitor and probably prone to administrative error. Thus, if this pedigree system failed for these reasons then as an economist who is extremely concerned about terrorism my social welfare function would lead me to choose autarky.

[9] A "third party country" in this case is any country which is not Canada or the foreigner's sending country. This "third party country" may have a reciprocal agreement with Canada to enforce Canada's pedigree class and vice-versa.

References

Blinder, A. (1974) Wage Discrimination: Reduced Form and Structural Estimates. *The Journal of Human Resources*, 8, 436-455.

George J. Borjas, (1994) "The Economics of Immigration," Journal of Economic Literature, American Economic Association, vol. 32(4), pages 1667-1717

Dean, J. and D. DeVoretz (2000) "The Economic Performance of Jewish Immigrants to Canada: A Case of Double Jeopardy? In D. Elazar and M. Weinfeld (eds.), Still *Moving*. London: Transaction Publishers.

DeVoretz, D. and D. Coulombe, (2005) "Labour Market Mobility between Canada and the United States: Quo Vadis? In T. Lemieux and R. Harris (eds.), *Social and Labour Market Aspects of North American Linkages.* Calgary: University of Calgary Press.

DeVoretz, D.J. (2005) "Deflection at the Border: Immigration and Security after 9/11.RIIM Working paper 05-02 Vancouver Centre of Excellence, Burnaby BC www.riim.metropolis.net

_____ (2006) "The Economics of Citizenship: A Common Intellectual Ground for Social Scientists" *Journal of Ethnic and Migration Studies.*

Globerman, S. and Paul Storer (2006), "The Impact of 9/11 on Canada-U.S. Trade", Bellingham: Western Washington University, mimeo.

Oaxaca, R. (1973) "Male-Female Wage Differentials in Urban Labor Markets", *International Economic Review* 14, 693–709.

Pendakur, K. and Pendakur, R. (1998) "The Colour of Money: Earnings Differentials Among Ethnic Groups in Canada", *Canadian Journal of Economics*, 1998, vol. 31, issue 3, pages 518-548

Stark, Oded. (1993) *The Migration of Labor*. Oxford and Cambridge, MA: Basil Blackwell.