What factors influence the direction of global brain circulation

The case of Chinese holders of Canada Research Chairs
In 2000, the Government of Canada created a permanent program to establish 2,000 research professorships (Canada Research Chairs) in Canadian universities.

The Canada Research Chairs program invests $300 million per year to “attract and retain some of the world’s most accomplished and promising minds.”

As of November 2010, a total of 1,845 Canada Research Chair positions were filled, among whom 546 chairholders were recruited from abroad, including 344 from the US.
Recruitment of Canada Research Chairs from Within and Outside Canada (as of November 2010)

- 70.4% Within Canada
- 15.7% International – not Canadian
- 13.9% International – Canadian

Source: CAUT Almanac of Post-Secondary Education in Canada 2011-2012, p. 49.
CRC Recruitment origin by year, 2000–08

Source: CRCP, 2009a
Canada Research Chair Program: a comparative view

- Presidential Young Investigator Award (CAREER) and Presidential Early Career Awards for Scientists and Engineers (PECASE) (USA, offering funding up to $640,000 over a 5-year period for junior researchers)
- Federation Fellowship Program (Australia, $221,261 annum)
- Marie Curie Program (EU, $410,161 annum)
- Humboldt Research Awards (Germany, valued at 60,000 EUR over 1-year period)
- One Hundred Talent Program ($450,000 over 3-year period)
  - Cheung Kong Scholar Program ($200,000 over 3-year period), Thousand Talent Program ($450,000 startup + $100,000 annum) (China)
## Research Design: the sample

<table>
<thead>
<tr>
<th>Province</th>
<th>Tier</th>
<th>Council</th>
<th>Gender</th>
<th>Total</th>
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<td>SSHRC</td>
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<tr>
<td>Total</td>
<td>13</td>
<td>17</td>
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Visible Minority Faculty in Canadian University by Group, 2006

- Chinese / Chinois 28.2%
- Multiple visible minorities / Groupes multiples de minorités visibles 2.9%
- South Asian / Asiatique du sud 21.9%
- Black / Noir 10.8%
- Somali / Somalie 7.2%
- South Asian / Asiatique du sud-ouest 3.9%
- Latin American / Latin-américain 6.0%
- Filipino / Philippin 1.7%
- Arab / Arabe 12.2%
- West Asian / Asiatique occidental 6.7%
- Korean / Coréen 2.9%
- Japanese / Japonais 3.5%
- Visible minority, n.i.e.¹ / Minorité visible, n.i.a.¹ 1.0%

Source: Statistics Canada / Statistique Canada
The Research Questions

- What elements are important in your decision making to work in Canadian universities?
- What factors do you appreciate most/least about your current position, your institution, and Canada?
- After the term of your current appointment, will you stay in your institution or in Canada?
- What can be done to improve CRCP?
Analytical Model

- The Push-Pull Theory
- Center-Periphery Framework
- Academic Capitalism
Model for Understanding Brain Circulation: the Case of Chinese CRCs

Socioeconomic Conditions/Living Standards/Personal Characteristics

Professional Advancement Prospects

Center-Periphery Equation
The Open and Inclusive Canadian Society Making a Big Draw

Ranking of the Most Reputable Countries in the World

Country RepTrak™ 2011 External G8 Scores

Top Tier

PISA 2009 Results

@ Qiang Zha 13/12/2012
Plus, Canadian university professors are among the best salaried in the world.
“In the US, researchers routinely spent 1/3 to 1/2 of their time to write proposals... Even though you get grants, you have little time to do research, but have to hire others to do it while you look more like a research manager... The Canadian approach helps to overcome downturns in one’s career. Everyone could experience ups and downs in research. If your area is not popular any more, it is hard for you to get any funding in the US.” (Interview with a Tier II CRC recruited from a US research institute)
More Notable Responses

“The core of Canadian values is about peace and sustainability (which I initially misinterpreted as mediocrity and attempting nothing). [Similarly] the current practice of CRC program works well to achieve the synergy between the individual and the institution. Research is a conversation between human and nature, and directed by heart, not just brain. Valuable breakthroughs often come from passionateness, not pressure. [In this sense], the American highly competitive environment works well for technological innovations, but not necessarily for discoveries in sciences.” (Interview with a Tier II CRC recruited from within Canada)
“CRC and NSERC programs encourage you have long term planning…This is particularly important for interdisciplinary research…It would be risky if you have to write a report every year as in the US, spend a lot of time writing proposals for one year ahead at a time.” (Interview with a Tier I CRC recruited from within university)

“The less competitive environment [in Canada] allows you to pick up those problems that require very deep thinking, while you have to rush in the States where people tend to have a utilitarian mentality…human ideas are hard to judge in their initial stage.” (Interview with a Tier I CRC recruited from within Canada)
Canada’s relative exception to academic capitalism finds expressions also with faculty compensation
“[My university] treats CRC very differently from other universities. CRCs are not distinctive from the rest of faculty – do not want to make two categories of faculty, and try not to differentiate and affect merit evaluations etc…[This practice] creates a lot of pressure when you have CRC – when you come to renewal, you are compared laterally with others who are only doing research, doing no teaching.” (Interview with a Tier I CRC recruited from within university)

“My university stipulates even a Tier I CRC holds this position for only two terms. This policy might serve to rotate the opportunity among more who are qualified.” “The CRC position is not sufficient to keep me here.” (Interview with a Tier I CRC recruited from the National Research Council of Canada)
“The Canadian relaxed environment is only good for the few geniuses [but most people would need pressure]…In the US, senior professors cannot go to sleep—feeling the threat that young scholars will overtake them…In Canada, there is no incentive or encouragement system—different from China, Japan, Korea and also the US. In the US, a major discovery, a paper in *Nature* or *Science*, will get a letter from the president [of the university], but here no recognition, sometimes even have to hide it…I have a sense of ceiling here—cannot go to a higher level” (Interview with a Tier I CRC recruited from a major US research university)
More Notable Responses (contd.)

“In the US, a successful professor has many sources of funding – EPA, NOVA, NASA, NSF, so many sources – and can maintain a very large research program, but not in Canada – only NSERC, no other source of funding…NSERC sprinkles money around, everyone gets some. [It] tries to support young and established, [adopting] the small and even funding policy, which is not that bad, but it means sources of funding are very limited compared with situation in the US – Canada has no such fertile source.” (Interview with a Tier I CRC recruited from within university)
CRC Allocation of Funds (CRCP, 2009a)

2002–03
- Salaries to students
- Salary and benefits of incumbent
- Equipment
- Administrative costs
- Research time stipends

2007–08
- Salaries to non-students
- Professional and technical services/contracts
- Materials and supplies
- Travel
Cf. CRC Experience at Large (Grant and Drakich, 2010, p.28)

<table>
<thead>
<tr>
<th>Experiences by Percentage</th>
<th>Tier 1</th>
<th>Tier 2</th>
</tr>
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<tbody>
<tr>
<td>Good</td>
<td>70%</td>
<td>78%</td>
</tr>
<tr>
<td>Bad</td>
<td>16%</td>
<td>22%</td>
</tr>
<tr>
<td>Ugly</td>
<td>14%</td>
<td>0%</td>
</tr>
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</table>
“Egalitarianism is overstressed in Canada. [As a result,] it doesn’t make a difference to perform well or not so well. Sometimes you even have to downgrade a bit your own pursuit and accomplishment…[For this reason] a colleague here, who is French and a Tier I CRC, has, however, chosen to leave.” (Interview with a Tier II CRC recruited from within university)

The CRC Program must maintain its criteria (when it comes to approve appointment or renewal. Now the successful rate is too high. As the result, there emerges a counter-CRC trend (in my university), which aims to exclude CRCs from obtaining regular resources, as they fail to outperform others. I see this as something illegal.” (Interview with a Tier II CRC recruited from a US public research university)
## Chairs Success Rate, since start to June 2009

<table>
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<th>Source</th>
<th>Approved</th>
<th>Not Approved</th>
<th>Success Rate</th>
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<tr>
<td>NSERC</td>
<td>1154</td>
<td>148</td>
<td>88.6%</td>
</tr>
<tr>
<td>CIHR</td>
<td>850</td>
<td>83</td>
<td>91.1%</td>
</tr>
<tr>
<td>SSHRC</td>
<td>567</td>
<td>70</td>
<td>89.0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2571</td>
<td>301</td>
<td>89.5%</td>
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</tbody>
</table>

Source: CRCP, 2009b
Canada’s advantage for global brain race seems to rest with a combination of the collectivist and multicultural ideologies, and their expressions in the academic arena.

A certain degree of exceptionalism to academic capitalism seems to warrant some attractiveness to top researchers, in particular the rising stars. Then, there need some careful efforts to address the emerging dilemma between the tradition in favor of less competition and the need for global competitiveness.
The egalitarian culture/approach in Canadian universities needs to integrate and tolerate elements of incentives and meritocracy when dealing with research stars. CRCP is elite *per se* and thus should carry some differentiated practices.

The expansion of Canada’s advantage stems from the healthy and organic interactions among these elements/factors in the environment where Canadian universities operate.
When competition is brought in and picks up intensity, efforts need to be made to retain the core of traditional value and support those who need support.

Success Rates for NSERC Discovery Grants
Last but not least...

- Population
- Research chairs
- Literary prize-winners
- Performing arts
References


- Canada Research Chairs Program (2009b). *Canada Research Chairs Information Session* [ppt]. Edmonton, AB: University of Alberta.

