

Microeconomic Behavioural Parameters Across Canada

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Alternate Title

- ▶ Are people from Saskatchewan really that boring?

► Yes

What is Economics About?

- ▶ Understanding choices made by human beings.

What's the Point of Experimental Economics?

- ▶ Understand how real human beings behave in situations with meaningful incentives.
- ▶ Controlling for all the things that we can't control for outside the lab.

What's the Point of THIS Experiment?

- ▶ Is behaviour consistent across games?
- ▶ Why?
 - ▶ Are we measuring what we think we're measuring?
 - ▶ Inconsistent behaviour means either we don't understand the games themselves or our models for behaviour are really off.
- ▶ Is behaviour consistent across places?
- ▶ Why?
 - ▶ Maybe NL'ers are as crazy as people say. Maybe SK is that boring. This is really a culture and policy issue.
- ▶ Understand what drives the behaviour of individuals within the environments the games capture.
- ▶ Why?
 - ▶ Policy

The Games - Ultimatum Game



Section 1

In this decision task you will be either a *Proposer* or a *Responder*. You will submit your actions for both roles but the actual role you fulfill will be randomly determined at the end of the session when you will be randomly matched with a person of the opposite role.

The *Proposer* has \$10 LAB dollars and must select a whole number {\$0, \$1, \$2, \$3, \$4, \$5, \$6, \$7, \$8, \$9, \$10} to offer (call this *\$offer*) to the *Responder*.

If the *Responder* Accepts the offer, the *Proposer* earns $\$10 - \$offer$ and the *Responder* earns $\$offer$.

If the *Responder* Rejects the offer, the *Proposer* earns \$0 and the *Responder* earns \$0.

For this decision, \$1 LAB = \$0.25 CDN.

You do not know the identity of your counterpart. It is not likely to be a person you have been matched with before.

The outcome of your decision will be added to your total which will be revealed at the end of the session.

DECISION

1) As a *Proposer* I will offer the *Responder*

LAB dollars

2) As a *Responder*

Amount I am offered	Accept/Reject
\$0 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$1 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$2 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$3 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$4 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$5 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$6 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$7 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$8 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$9 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>
\$10 LAB dollars	<input type="button" value="Accept"/> <input type="button" value="Reject"/>

Please review your choices and click Submit

☒ Submit

The Games - Dictator Game



Section 2

In this decision task, you are *Person 1*

You have \$10 LAB dollars. You must decide upon a whole number {\$0, \$1, \$2, \$3, \$4, \$5, \$6, \$7, \$8, \$9, \$10} to give (call this *\$give*) to *Person 2*. *Person 2* will get *\$give* and you keep ($\$10 - \$give$) in LAB dollars.

For this decision, \$1 LAB = \$0.25 CDN.

You do not know the identity of your counterpart. It is not likely to be a person you have been matched with before.

The outcome of your decision will be added to your total which will be revealed at the end of the session.

DECISION

As *Person 1*, I will give *Person 2*

LAB dollars

Please review your choices and click Submit

✓ Submit

Sender-Receiver Game



Section 4

You and a randomly matched participant will receive one of two amounts for this portion of the experiment.

If Option A is selected you will receive \$15 Lab dollars and they will receive \$5 Lab dollars.

If Option B is selected you will receive \$5 Lab dollars and they will receive \$15 Lab dollars.

You do not select Option A or Option B Instead you must send one of two messages to the other participant who will then choose between the two options. The other participant will have no information about either Option A or Option B

Choose the message you will send to the other participant:

Option A will pay you more money.

Option B will pay you more money.

Next



Section 4

You and a randomly matched participant will receive one of two amounts for this portion of the experiment.

You and a randomly matched participant will receive one of two amounts for this portion of the experiment. There are two options – Option Red and Option Blue – which describe different distributions of money.

The other participant will see the distributions associated with Option Red and Option Blue. He or she will send you a single message advising you which option will pay you more. If you Accept their advice, the money is distributed according to the option they sent you. If you Reject their advice, the money is distributed according to the other option.

You can either:

Accept their advice

Reject their advice

Next

The Games - Prisoner's Dilemma



Section 3

DECISION

In this decision task, you are a *COLUMN* participant. Please choose between the strategies Left or Right by clicking on the appropriate column. The column will be highlighted. When you are satisfied with your decision, please click **SUBMIT** below.

For this decision task, 1 \$LAB = \$0.075 CDN.

		COLUMN	
		Left	Right
ROW	Up	R = 50 \$LAB	R = 10 \$LAB
		C = 50 \$LAB	C = 70 \$LAB
	Down	R = 70 \$LAB	R = 30 \$LAB
		C = 10 \$LAB	C = 30 \$LAB

Please review your choice and click **Submit**

✓ Submit

The Games- Risk Attitude



Section 5

In each of the cases below select which lottery you would prefer. At the end of the experiment one lottery will be chosen at random. You will then play that lottery and be paid based on the outcome of the lottery.

Option A	Option B
\$4.00 with probability = 0.1	\$7.70 with probability = 0.1
\$3.20 with probability = 0.9	\$0.20 with probability = 0.9
\$4.00 with probability = 0.2	\$7.70 with probability = 0.2
\$3.20 with probability = 0.8	\$0.20 with probability = 0.8
\$4.00 with probability = 0.3	\$7.70 with probability = 0.3
\$3.20 with probability = 0.7	\$0.20 with probability = 0.7
\$4.00 with probability = 0.4	\$7.70 with probability = 0.4
\$3.20 with probability = 0.6	\$0.20 with probability = 0.6
\$4.00 with probability = 0.5	\$7.70 with probability = 0.5
\$3.20 with probability = 0.5	\$0.20 with probability = 0.5
\$4.00 with probability = 0.6	\$7.70 with probability = 0.6
\$3.20 with probability = 0.4	\$0.20 with probability = 0.4
\$4.00 with probability = 0.7	\$7.70 with probability = 0.7
\$3.20 with probability = 0.3	\$0.20 with probability = 0.3
\$4.00 with probability = 0.8	\$7.70 with probability = 0.8
\$3.20 with probability = 0.2	\$0.20 with probability = 0.2
\$4.00 with probability = 0.9	\$7.70 with probability = 0.9
\$3.20 with probability = 0.1	\$0.20 with probability = 0.1
\$3.20 with probability = 1	\$7.70 with probability = 1

✓ Submit

Time Preference



Section 6

In each case below click on the option you prefer. At the end of the session ONE option will be selected at random and you will be paid your choice in that option. If you are to receive payment in one month, a post-dated cheque will be handed to you at the end of the experiment. The options are in Canadian dollars.

Would you rather have:

Option A	Option B
\$4 now	\$3.50 in one month
\$4 now	\$3.75 in one month
\$4 now	\$4.00 in one month
\$4 now	\$4.25 in one month
\$4 now	\$4.50 in one month
\$4 now	\$4.75 in one month
\$4 now	\$5.00 in one month
\$4 now	\$5.25 in one month
\$4 now	\$5.50 in one month
\$4 now	\$5.75 in one month
\$4 now	\$6.00 in one month
\$4 now	\$6.25 in one month
\$4 now	\$6.50 in one month
\$4 now	\$6.75 in one month
\$4 now	\$7.00 in one month

✓ Submit

Socio-demographics and Psych

- ▶ Sex, Age, Marital Status, Income, Job
- ▶ Cultural Background, Rural/Urban
- ▶ Faculty
- ▶ Happiness, Life Satisfaction
- ▶ Belonging (Campus, Province, Canada)
- ▶ Religious Importance
- ▶ Machiallevianism (Sabotage, Control, Wealth, Advantage)

Data Collection

- ▶ 255 subjects
- ▶ 3 Locations
 - ▶ Saskatoon, SK
 - ▶ St. John's, NL
 - ▶ Saint John, NB
- ▶ Minimum 80 subjects per location
- ▶ All used the same software.

Basic Results - Survey

Variable	Type and Range	Saskatchewan	New Brunswick	Newfoundland and Labrador	Aggregate
Sex	Binary, Male=1	45%	48%	48%	47%
Age	Continuous 17 to 50	24.1	24.7	23.4	24.1
Married	Binary Married=1	17.1%	19.6%	7.4%	14.9%
Income	Categorical	\$65,244	\$53,668	\$59,877	\$59,363
Employment Status	Binary Employed=1	54.9%	43.5%	35.8%	44.7%
From Away	Binary Not Local =1	54.9%	57.6%	76.5%	62.7%
Happiness	Likert 1 to 5 1 = very unhappy	3.17	3.15	3.08	3.14
Life Satisfaction	Likert 1 to 10 1 = very unsatisfied	7.59	7.49	7.40	7.49
Belonging to Campus	Likert 1 to 4 1 = very weak	2.79	2.98	2.77	2.85
Belonging to Province	Likert 1 to 4 1 = very weak	2.83	2.77	2.64	2.75
Belonging to Canada	Likert 1 to 4 1= very weak	3.28	3.30	3.06	3.22
Volunteer Hours	Continuous	2.53	2.68	2.86	2.69
Religious Importance	Likert 1 to 4 1 = not important	2.71	2.78	2.74	2.75
Willing to Sabotage Others	Likert 1 to 5 1 = strongly disagree	2.29	2.10	2.23	2.20
Enjoy Controlling Situations	Likert 1 to 5 1 = strongly disagree	4.06	3.92	4.12	4.03
Accumulating Wealth	Likert 1 to 5 1 = strongly disagree	3.87	3.82	4.02	3.90
Taking Advantage	Likert 1 to 5	2.93	2.97	2.91	2.94

Basic Results - Games

Action	Saskatchewan	New Brunswick	Newfoundland and Labrador	Aggregate
Ultimatum Offer \$ out of \$10	\$6.30	\$6.70	\$6.90	\$6.60
Minimum Acceptable Offer \$ out of \$10	\$3.40	\$4.40	\$3.10	\$3.70
Dictator Offer \$ out of \$10	\$4.90	\$5.20	\$5.50	\$5.20
Lied Inaccurate message = 1	NA	40%	56%	48%
Trust Accepted Advice = 1	78.0%	76.6%	95%	82.8%
Cooperator Socially Optimal Choice in Prisoner's Dilemma	51.2%	56.5%	55.6%	54.5%
Risk Attitude # of Safe Lotteries Selected out of a possible 10	4.4	4.0	3.7	4.0
Time Preference # of Immediate Payouts Selected out of a possible 15	6.9	6.6	6.6	6.7

A Lot of Data - Factor Analysis

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Income	-0.0608	0.0121	-0.0369	0.1776	0.7328
Happiness	0.7519	0.1285	-0.0617	-0.0445	0.0956
Belong to Campus	0.2248	0.6697	-0.0568	-0.0015	-0.2170
Belong to Province	0.1287	0.7737	0.1791	-0.0712	0.0767
Belong to Canada	0.1245	0.7821	-0.0369	0.0519	0.0616
Volunteer Hours	0.3773	-0.0059	-0.0757	0.2200	-0.2815
Religious Importance	0.4539	0.1130	0.1759	-0.0104	-0.3091
Control	-0.0503	0.0067	-0.0114	0.8558	0.0764
Wealth	-0.1323	0.0341	-0.2278	0.6946	0.1814
Advantage of Others	0.0566	-0.2182	0.0574	0.5109	-0.2530
Time Preference	0.1856	-0.0205	0.0917	0.0842	0.4688
Life Satisfaction	0.7929	0.2632	-0.0170	-0.1211	-0.0415
Ultimatum Offer	-0.0876	0.2382	0.8305	-0.0452	-0.0349
Dictator Offer	0.0377	-0.1322	0.8679	-0.0651	0.0105

A Lot of Data - Factor Analysis

Factor Name	Associated Variables
Goodlife	Happiness, Life Satisfaction, Religious Importance, Volunteer Hours
Belonging	Belonging to Campus, Belonging to Province, Belonging to Canada
Equitable	Ultimatum Offer, Dictator Offer
Machiavellian	Enjoy controlling situations, important to accumulate wealth, OK to take advantage of others
Money	Income, Time Preference

Ultimatum Game Offers - Complete

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Dictator Offer	0.5801***	0.5626***	0.5708***	0.5519***
Belonging	0.4426***	0.4420**	0.3454***	0.3429***
Goodlife	-0.1850*	-0.1870*	-0.1143**	-0.1167**
New Brunswick		-0.4926	-0.0227	
Newfoundland and Labrador		-0.4863	0.1092	
Come From Away	0.2926	0.2564	0.3520***	0.3688***
Cooperator				0.1581
R ² Adjusted	0.4318	0.4335	0.4020	0.4086

Ultimatum Game Offers - Locals

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Dictator Offer	0.6048***	0.6048***	0.6048***	0.6048***
Belonging	0.2352**	0.2352**	0.2352**	0.2352**
Minimum Acceptable Offer	0.2298**	0.2298**	0.2298**	0.2298**
Newfoundland and Labrador	0.3979*	0.3979*	0.3979*	0.3979*
Married	-0.3206	-0.3206	-0.3206	-0.3206
Risk Attitude	0.1231	0.1231	0.1231	0.1231
Goodlife	0.1220	0.1220	0.1220	0.1220
R ² Adjusted	0.3868	0.3868	0.3868	0.3868

Minimum Acceptable UG Offer - Complete

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Goodlife	-0.4022***	-0.4022***	-0.3571***	-0.3571***
Money	0.2594**	0.2594**	0.1375**	0.1297**
Risk Aversion	-0.2330*	-0.2330*	-0.1976***	-0.1882***
Cooperator	0.2841	0.2841	0.1051	
New Brunswick	0.2494	0.2494	0.3927***	0.4109***
Married				-0.2779
R ² Adjusted	0.1829	0.1829	0.1495	0.1563

Minimum Acceptable UG Offer - Locals Only

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Goodlife	-0.2823***	-0.2805***	-0.2805***	-0.2805***
Machiavellian	0.2593***	-0.2267**	-0.2267**	-0.2267**
New Brunswick	0.3906*	0.4001**	0.4001**	0.4001**
Money	0.1661*	0.1455	0.1455	0.1455
Risk Attitude	-0.1823*	-0.1729*	-0.1729*	-0.1729*
Dictator Offer		-0.2960	-0.2960	-0.2960
R ² Adjusted	0.1917	0.2004	0.2004	0.2004

Dictator Offer - Complete

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Goodlife	-0.2823***	-0.2805***	-0.2805***	-0.2805***
Machiavellian	-0.2593***	-0.2267**	-0.2267**	-0.2267**
New Brunswick	0.3906*	0.4001**	0.4001**	0.4001**
Money	0.1661*	0.1455	0.1455	0.1455
Risk Attitude	-0.1823*	-0.1729*	-0.1729*	-0.1729*
Dictator Offer		-0.2960	-0.2960	-0.2960
R ² Adjusted	0.1917	0.2004	0.2004	0.2004

Dictator Offer - Locals Only

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Ultimatum Offer	0.5397***	0.5397***	0.5397***	0.5397***
Belonging	-0.2983*-**	-0.2983*-**	-0.2983*-**	-0.2983*-**
Married	0.7199***	0.7199***	0.7199***	0.7199***
Cooperator	0.2884*	0.2884*	0.2884*	0.2884*
Machiavellian	-0.1266	-0.1266	-0.1266	-0.1266
Rural	0.2498	0.2498	0.2498	0.2498
Male	0.2480	0.2480	0.2480	0.2480
R ² Adjusted	0.4539	0.4539	0.4539	0.4539

Lying

Variable	Global Search - AIC	Global Search - BIC
Machiavellian	0.3427**	0.3311**
Money	0.3506**	
Canadian	-0.8546**	
Married	-0.9319**	
Probability > χ^2	0.0024	0.0181

Trust

Variable	Global Search - AIC	Global Search - BIC
Risk Attitude	0.2669*	
Newfoundland and Labrador	0.8592**	0.8693**
Equitable	0.5208***	0.3882**
Minimum Acceptable Offer	-0.2339	
Probability > χ^2	0.0024	0.0041

Prisoners' Dilemma - Complete

Variable	Global Search - AIC	Global Search - BIC
Equitable	0.4112***	0.2890**
Age	0.1736	
Probability > χ^2	0.0000	0.0459

Prisoners' Dilemma - Locals Only

Variable	Global Search - AIC	Global Search - BIC
Newfoundland and Labrador	-1.2109***	-0.8696**
Married	-1.4589**	
Age	0.8088**	
Equitable	0.3645**	0.3491**
Money	0.2917*	
Probability > x^2	0.0021	0.0078

Time Preference - Complete

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Goodlife	0.2442***	0.2442***	0.2442***	0.2445***
Minimum Acceptable Offer	0.1442**	0.1442**	0.1442**	0.1433**
Income	0.1158*	0.1158*	0.1158*	0.1330**
Male	0.3102**	0.3102**	0.3102**	0.2990**
Employed	0.1522	0.1522	0.1522	0.1769
Equitable	0.0849	0.0849	0.0849	
Come From Away	-0.1769	-0.1769	-0.1769	
New Brunswick	-0.1578	-0.1578	-0.1578	
Saskatchewan				0.2007
R ² Adjusted	0.0852	0.0852	0.0852	0.0863

Time Preference - Locals Only

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Minimum Acceptable Offer	0.3930***	0.3930***	0.3930***	0.3930***
Goodlife	0.3025**	0.3025**	0.3025**	0.3025**
Male	0.3560*	0.3560*	0.3560*	0.3560*
Employed	-0.2720	-0.2720	-0.2720	-0.2720
Cooperator	0.2266	0.2266	0.2266	0.2266
R ² Adjusted	0.1516	0.1516	0.1516	0.1516

Risk Attitude - Complete

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Married	0.9353***	0.8267***	0.3096*	0.3164*
Goodlife	-0.1730**	-0.2153**	-0.2520***	-0.2495***
Come From Away	-0.3095*	-0.3030	-0.2548*	-0.2401*
Strategy	0.1344*			
Equitable	-0.1179	-0.1028	-0.1319**	-0.1359**
Money	0.1057	0.1195	0.1195*	0.1208*
Employed		-0.2083	-0.0619	
Belonging		0.1060	0.1375**	0.1377**
R ² Adjusted	0.2022	0.1950	0.1381	0.1414

Risk Attitude - Locals Only

Variable	Forward Selection	Backward Selection	Furnival-Wilson	Global Search
Married	0.6381**	0.6381**	0.6381**	0.6381**
Goodlife	-0.2453**	-0.2453**	-0.2453**	-0.2453**
Machiavellian	0.1906*	0.1906*	0.1906*	0.1906*
Money	0.1547	0.1547	0.1547	0.1547
Minimum Acceptable Offer	-0.1831	-0.1831	-0.1831	-0.1831
New Brunswick	0.1954	0.1954	0.1954	0.1954
R ² Adjusted	0.1184	0.1184	0.1184	0.1184

Punch Lines

- ▶ Ultimatum and Dictator Games are linked. YAY!
- ▶ Other games are mostly independent.
- ▶ NL higher ultimatum offers, greater trust, and more cooperative
- ▶ NB more demanding.