



The ChronicleHerald.ca

Halifax currently  18°C
Latest Observation 

Print | E-Mail | Digg this | Share on Facebook | Report a Problem | Text + -

Search: Today 7 Days Web

Global warming game shows importance of public pressure

Jason I. Brown
Sat. Apr 17 - 4:53 AM



THERE ARE detractors who disbelieve our world is experiencing global warming, but there is an ever-growing body of empirical evidence of a worldwide warming trend.

So why can't governments get their acts together and do something about it? The problem is harder than you think.

» [SEE graphic](#)

From a mathematical point of view, imagine that all countries play a game called Who Will Fix Global Warming? Every country decides whether to reduce greenhouse gas emissions. There are mutual benefits to be had, but also some individual costs.

To simplify things, let's just imagine there are only two countries, Country A and Country B, which need to decide on gas reductions (the extension to multi-country involvement is not so different).

The big question is: should each government legislate its individuals and corporations to reduce emissions?

When considering costs and benefits, it's often better to assign some sort of number indicating the relative worth of each choice.

Mathematicians call these numbers utilities; positive numbers indicate something that is deemed worthwhile, while choices with negative values are to be avoided, if possible.

The graphic shows what I see as some reasonable values for each country's choice:

It would be good for both countries, and indeed the world, if they jointly reduced emissions.

But here is the problem: if a country realizes this, then there is an incentive to change its mind (provided the other country doesn't change its mind) and not reduce emissions, as it will benefit economically by not having to invest in reducing greenhouse gas emissions (and hence having a higher value).

The country that remains determined to reduce emissions will actually pay a steep price by doing so, as it will pay higher costs while the other country continues to emit.

So what inevitably happens? Both countries continue to emit greenhouse gases, a choice that hurts everyone (the value of doing so for each country is far lower than if they both reduce emissions).

We are stuck in what is known mathematically as the prisoner's dilemma. Negotiations make no difference, as long as each country acts in its own self-interest. Although there may be long-term agreements to cut greenhouse gas emissions, if the contracts are not


MULTIMEDIA CENTRE

TOP VIDEO



PLAY VIDEO ▶
Jaffer denies drug use, lobbying

TOP VIDEO



PLAY VIDEO ▶
Watch champion SMU dance team

TOP SLIDESHOW



PLAY SLIDE ▶
Pictures of the Week
April 11-17

ANNOUNCEMENTS: [Obituaries](#) | [Births](#) | [Cards](#) | [InMemoriams](#) | [Milestones](#)

RECOMMENDED | EMAILED | COMMENTED | READ

TOP 10:

1. [Victims fight off assailants in pair of attacks](#) (94 votes)
2. [Former caucus colleagues turn backs on Jaffer](#) (80 votes)
3. [Expense claim slammed for premier's new clothes](#) (63 votes)
4. [A page from Ellen](#) (59 votes)
5. [Water hogs](#) (59 votes)
6. [Jaffer denies lobbying, drug use](#) (56 votes)
7. [Seconds, Mr. Zinck?](#) (43 votes)
8. [Oil rig explosion survivors brought to shore](#) (41 votes)
9. [Lack of witnesses kills another shooting case](#) (39 votes)
10. [HRM looks to wage freeze, council cut](#) (34 votes)

enforceable, both countries will cheat.

Recognizing the inherent issues is one thing, but does this help us find a way out of our global-warming problem?

One answer may lie in changing the values of the choices.

Government leaders love one thing even more than money — staying in power. Imagine if the public could be organized so that reducing emissions were a make-or-break issue for a government.

We would have to let our leaders know that we highly value reducing greenhouse gas emissions, no matter what, even in the face of other countries that continue to pollute.

If governments sense the values of their choices have changed, then what can result is a stable solution, namely for both countries to reduce emissions.

Neither country would have any incentive to switch to cheat.

Defeating global warming would not only be the right decision, but the rational one as well.

Jason I. Brown is a mathematics professor at Dalhousie University in Halifax. His research that used mathematics to uncover how the Beatles played the opening chord of A Hard Day's Night has garnered worldwide attention. He is also the author of Our Days Are Numbered: How Mathematics Orders Our Lives. (jbrown@herald.ca)

 RECOMMEND THIS STORY? 4 votes

[Back](#)

The
ChronicleHerald.ca

NEWS

- Front Page
- Metro
- Nova Scotia
- Canada
- World
- Business
- Sports
- Arts & Life
- Travel
- Books
- Religion
- Science
- The Nova Scotian

COMMUNITY

- Community News
- NS Communities

OPINIONS

- Editorials
- Columnists
- News Columns
- Business Columns
- Sports Columns
- Arts & Life Columns
- Community Blogs
- Community Reviews
- Posting Up Blog
- MacKinnon Cartoon

ANNOUNCEMENTS

- Obituaries
- Births
- Cards
- InMemoriams
- Milestones
- Contact us to place an Announcement

MULTIMEDIA

- Photos
- Videos
- Community Photos

JOBSPRESS

- JobsPress
- News & Resources
- Advertising
- Post a Job

WHEELSPRESS

- WheelsPress
- Search
- Sell Your Vehicle
- Dealers
- Advertising

NEWSPAPER

- Today's E-Paper
- Classifieds
- Place a Classified Ad
- Subscribe
- NIE
- Professional Directory
- South Shore Calendar

ABOUT THE HERALD

- About Us
- Contact Us
- Work @ The Herald
- F.A.Q
- Library Services
- Privacy Policy
- Terms of Use

ADVERTISING

- Advertising Sales
- Web Advertising
- Media Kits, Rates, Etc.
- Place a Classified Ad
- Pay Your Account

CLIENTS

- Print Upload
- Web Upload
- Real Estate Portal
- Media Kits, Rates, Etc.

FUN & GAMES

- Lotteries
- Sudoku
- Crossword
- Comics
- Contests

CHARITIES

- Chronicle Herald Charities
- Bill Lynch Memorial Fund
- Rainbow Haven Opportunities Fund
- The Goodfellows' Club

USEFUL INFORMATION

- E-Flyers
- Eye on Nova Scotia
- N.S. Highway Cams
- Horoscope
- Lotteries
- Tides
- Weather
- Movie Times
- What's Happening
- Mayflower TV Guide
- Herald Archive