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Column Name: Being the change

Date: October 27th 2007 Cord Opinion Article

Article Title: Global dimming and my face mask.

I spent most of my summer on the west coast of Canada where I was conducting my Master's thesis research in the cities of Victoria, Vancouver, and Whistler. Over the summer I received about 25 emails from Ontario's Ministry of the Environment notifying me of an impending smog day.

According to Waterloo Region's web page on air quality smog is defined as: "Ground level ozone and inhalable particulate matter are the major components of smog." I will get back to the inhalable part of that later on.

I grinned at most of the messages as I thought of my partner working outside everyday back in Ontario and her freaking out due to the intense humidity and dirty air. I was sure happy to be on the coast where the pollution gets blown inland.

It is not just that Vancouver, Victoria and Whistler send all their pollution inland via the trade wind that makes the air cleaner, it is the attitude of the residents in these cities. Reports from the Vital Signs community foundation projects show that K-Ws per capita emissions from transport are among the highest in the country. On many statistics only Toronto matched our consumption/creation levels.

While I was on the coast I observed that the residents of these three western cities have embraced mass transit, higher concentrations of population (building up instead of out to reduce sprawl and therefore, reduce emissions from travel), and using the bicycle as a mode of transportation instead of just a leisure activity.

It is not all bliss out there, populations are still rising and there are proponents who are fighting for bridge construction to ease traffic congestion, but while I was in these cities, I observed high amounts of non-motorized traffic sharing the roads with their polluting counter-parts and the level of outdoor activity was truly encouraging.

Just like here in Waterloo, there are Critical Mass bike rides where the cyclists take over the streets entirely reminding motorists that cycle-commuting is a viable option. During the annual naked bike ride in Victoria, it is easy to keep motorists from becoming enraged that they have to drive slower than usual on their race to or from work.

When I returned to Ontario and went for my first ride, I hopped out onto Erb St. and immediately found myself surrounded with automobile traffic that was not only inhospitable but at times, fully hostile with drivers honking and yelling at me, and saluting me (with their middle fingers). I also had a wave a nausea flow through my nose, mouth, throat, and body from the exhaust fumes I had been blanketed in, I almost passed out, I nearly puked.

Maybe the exhaust only seemed worse here as it is compounded with local industrial emissions and the pollution coming up from the Ohio Valley.

Days after this re-awakening of the truly choking effects of heavy smog and vehicular emissions, I watched a documentary from BBC – Horizon called *Global Dimming*. The documentary argued through scientific studies that particulate matter, industrial emissions and Vapour trails from jetliners were reflecting mass amount of solar radiation back into space.

For example, on the 3 days when air traffic was virtually banned in America following the attacks of September 11th, average temperature ranges across the country increased more than 1 degree Celsius, which is considered remarkable.

Other research showed that two methodologically different and completely independent sets of tests concluded that there was a significant reduction in solar radiation hitting the ground in the past century, up to 22% less.

The question that now popped up was why the planet was not cooling from this decrease in solar radiation; well the greenhouse effect could still answer that. Particulate matter, water and gas vapour, and other combustive emissions are staying the atmosphere and counteracting the warming effects of climate change by actually blocking out the sun before it could reach the biosphere. This was an idea that the U.S. government considered to fight climate change in their response to the IPCC February 2007 report: pollute to combat warming.

The documentary went on to review the European efforts to clean up their emissions through 'clean coal', chimney scrubbers and tougher standards on fuel. The results have been remarkably cleaner air, but they have not significantly reduced the greenhouse gas emissions and are now feeling the full effects of climate change: no snow in the winter and deadly heat waves in the summer.

The message was that we not only require tougher restrictions as to what we emit, but we also need tougher restriction on how much we emit. Reduce is the first 'R' of the three.

At this point I realized the harmful effects of particulate matter which surrounds me as I bike through traffic: if it can block out the sun than surely it can block my lungs. I adopted wearing a face mask that filters the air I am deeply breathing in as I bike.

Bike lanes, mass transit, and more compact communities will allow us to reduce our impact on the world and will help lead us to a sustainable future. Proper planning and development initiatives must reflect this.

To the drivers out there: respect the rights of bikes to be on the road. Not only is biking a great way to stay active, for many people it is a way of reducing their impacts on the earth. Instead of waving your middle finger, wave your full hand and smile, bring some humanity back to the roads.