
Carpe Diem and Slow Down

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The following address was given at the 2011 annual banquet of the Department of Biology, Queen's University, Kingston, Ontario, Canada, by faculty member Dr. Paul Grogan. The goal was to inspire all students, staff, and faculty in the audience, but most especially the 2011 undergraduate class who had just completed their programs and were about to embark out into the "real world."

Tonight, I want to talk about one piece of wisdom—the Latin phrase “Carpe diem.” The phrase means “seize the day”; make the most of this day in your life. As we say in Ireland, “You’ll be a long time in the grave.” The phrase does not mean go out and grab everything you can for your own benefit. No, this piece of wisdom encourages you to get up off the couch, to switch off those big and small electronic screens, and to go out there and live life to the fullest—to live life actively, rather than passively. To take on new challenges, and try out new opportunities. Tonight, I am going to propose that this piece of wisdom urgently needs amending. It should now be “Carpe diem (seize the day)—but not at the expense of others—other days and other people.”

Some of you may be familiar with the historian Ronald Wright’s book *The Short History of Progress* based on his CBC Massey lectures of a few years ago. I think this book should be required reading for *all* university undergraduates. Wright charts the history of “progress” within civilisations over time. In particular, he characterises the Sumerians who lived in modern-day Iraq, the Easter Island communities, the Romans, the Mayans, and now ourselves—the civilisation spawned by the Industrial Revolution that began in the 1870s. There were 1.3 billion people on the planet then; that number rose to 3 billion within a hundred years. Since then, it has more than doubled again. ... There are more than twice as many people on the planet today compared to when I was born. Most previous civilisations grew in size and complexity over time, peaked, and then declined. The decline phases are attributed to several complex and interacting factors, one of which is the depletion of resources necessary to support the growing populations and their increasingly varied activities. The Romans, for example, expanded out from central Italy and waged great wars across the Mediterranean to enlarge land resources to supply their food and fuel demands. In addition, they needed extra land to support their increasing desire for the finer things in life, such as wine and olives that had been introduced to them by the Greeks.

Our civilisation is using an unprecedented range of resources at an unparalleled rate, and at a global scale. New civilisations arose in earlier times in part because there were relatively untouched areas to expand into (e.g., North America in the 1800s). Now, there is almost no new area to expand into (except the Arctic for its fossil fuel reserves, for example). Our whole civilisation has been founded on our technological developments to harness cheap energy—coal, oil, and natural gas, all of which are finite and nonrenewable on our time scale. But we also need fertile land, clean water, clean air, and a whole range of other “ecosystem services,” as they are called. And our requirements are not just determined by the size of our population; the activities we undertake are just as important. Every adult across the planet

does not just want access to clean water, they also want an electric washing machine. That appliance requires a whole suite of resources for it to be manufactured and used, and produces a variety of wastes. At one level—the global level—it’s all unnervingly simple. The more people on the planet and the more intensive their lifestyles are, the more resources are required, and the more waste is produced. Waste: Carbon dioxide is a waste product from fossil fuel combustion that alters climate. But the use of carbon is only the tip of the iceberg; there’s nitrogen, phosphorus, the rare earth metals (used a lot in electronics), etc., all of which have impacts. In fact, climate change itself is only the tip of the iceberg in terms of the impacts of our activities on the planet. We have fished the oceans to the extent that major species such as cod are at risk of extinction. Even closer to us here, we live on the shores of Lake Ontario, one of the larger lakes in the world, and yet we generally do not eat the fish because of their contamination with heavy metals and other pollutants. Estimates suggest that we are currently in the midst of the sixth major extinction event in the history of life on earth; on average, 10% of all species on Earth are currently threatened. Of equal concern, our prolific movements around the planet are transporting a vast range of invasive species into new habitats, where they are causing all kinds of problems (e.g., the zebra/quagga mussel issue in the Great Lakes). Across the globe, land clearance, including tropical deforestation, and energy-intensive agriculture, are degrading soil health, literally eroding our ability to feed ourselves, and so global food security has become a major issue. We in the “developed world” have been able to feed most of our growing population, until now, because of the availability of cheap nitrogen-based synthetic fertilisers and pesticides, both manufactured using cheap fossil fuels. Biotechnology has helped, by the way—new hybrid rice varieties and GM crops in particular—but the availability and use of fertiliser has been the principal driver of the so called “green revolution.”

Wright entitled his book *A Short History of Progress* because he wanted to make the point that the key fundamental problem driving declines in civilisations is the human concept of progression, of growth. The population needs to stop growing. Lifestyle intensity (per capita resource consumption, which links directly to economic growth) needs to stop increasing, and both need to start declining. Canadians, for example, have one of the highest rates of energy consumption per capita in the world, and that rate has been unchanged over the past 30 years, despite all the energy efficiency measures that have been developed and introduced. Yes, we buy higher energy efficiency appliances now, but each household buys more of them, and there are more households. We need to abandon the concept of “growth”; this core concept within the human psyche. As biologists, you know that abandonment won’t be easy, since “growth” relates to a word that all of you have heard many, many times, “competition”: a force driving the selection of traits that have been fundamental to our evolution, and therefore that are deeply encoded within our genes.

Last year as part of my sabbatical, I spent seven months with my wife and three children living in India. The average Indian, African, South American, as well as the poor in the developed world aspire to the lifestyles that most of us in this room enjoy: physical comfort, good food, good health, and education. We have them, and we have the trimmings of life that should provide more free time. But instead of relishing that for exactly what it is, “free time,” time with no demands on it, time to sit passively, time to reflect, time to think in depth without interruptions. Instead, we frantically fill that time with other activities...movies, “tweets,” skiing trips to the other side of the country, quick holidays in the Tropics—*almost as if to avoid having to think*. There’s a saying “Don’t rest on your laurels” – but as a civilisation, that is exactly what some of us in the developed world should be doing, “resting on our

laurels.” ...slowing down ...doing less with less, and contemplating more. We need a new philosophy of life, based on slow, reflective living and doing more for others (especially the disadvantaged) than for ourselves.

The publishers of Wright’s book used a photo of a chimpanzee with his back turned on the front cover. Wright only mentions apes briefly, but of course there’s an evolutionary link, since we evolved (progressed) from apes. However, I think they were making a more subtle point, which is certainly implicit in Wright’s text. Apes don’t think in the sense we do. In comparison to humans, they are not conscious, and they certainly do not have conscience. We humans have extraordinary capacities to think, to understand our environment, and the impacts of our activities on it, and to plan accordingly. Wright’s point is that most of the population within a civilisation do not display these characteristics. They are carried along by a small minority of leaders, and to all intents and purposes, they are sheep.

I have painted a very gloomy picture of your future; my generation will probably escape the worst of it. Can I offer any hope? (Wright incidentally describes us as “a species doomed by hope”). Yes—it’s you—you right here in this room are the “cream of the crop” within Canada, and globally. You have had the opportunity to get a high-class education. You have been encouraged to develop your capacities to think for yourselves, to think independently and critically. The ultimate goal of undergraduate education (and graduate education by extension) is to foster independent learners, people who can go out from these hallowed halls into the world and make a positive difference. Remember, you’ve paid fees to Queen’s, but the overall cost is substantially supplemented by the government, by taxpayers. For every dollar you or your parents have contributed, Joe Average and John Doe, the guys working in Tim Horton’s across the way, have contributed collectively 1.3 dollars for you to be here (In the 1970s, the ratio was 1:5, and the quality of the education we provided was a whole lot better, but that’s another story.) Why does the taxpayer contribute? It is the perception that the investment will benefit society, that educated citizens will make a positive contribution that warrants the investment. You leave here, therefore, with a considerable responsibility: to live up to that expectation.

The message I am trying to convey tonight is that you, a group of biologists, have a very particular responsibility, an ecological one in addition to the moral and ethical ones. Over the next decade, you will be faced with many decisions or choices that have an ecological component. Should you pay more for carrots from Prince Edward County just down the road, or go with the cheaper Californian ones? Should you become vegetarian? Should you buy a car or rely on public transport? Should you pay extra for your electricity so that it is sourced from renewable resources? Should you “Reduce, Re-use, Recycle”? Of course, but remember that this sequence is ordered in terms of ecological value. Reduce is much more beneficial than Re-use, which is much more beneficial than Recycle. Note that in this series I started from choices that have relatively low ecological impact and am moving up toward bigger-impact choices. Furthermore, note that the economic aspect of many of these choices is in direct conflict with the ecological aspect. Should you vote? Absolutely—apathy is perhaps the greatest threat of all—but whom should you vote for? Should you take that quick holiday trip to Cancun in Mexico, or go to that moderately interesting conference in San Francisco? A lot of people don’t seem to realise that air travel can be a substantial component of their total contribution to global warming. Broadly speaking, for every hour of air travel you make, you are increasing your (i.e., the average Canadian or American) total annual CO₂ emissions by ~1%.* The biggest decision of them all? Should you have children? These are

a just a few of all the complex decisions you'll face, and there are NO easy answers. All I am asking or hoping for is that when you do make them, you are aware of and have thought about the ecological consequences...I am hoping that your example will be an influence on your neighbours, and maybe even that you will actively canvass for change. Carpe diem, but not at the expense of others—other days and other people. Thank you.

* A return trip from Toronto to Calgary by direct flight and accounting for the high-altitude climate forcing impact (which is twice the CO₂ emissions according to the *minimum* estimate <http://www.grida.no/publications/other/ipcc_sr/> releases 0.94 Mt CO₂e <<http://planetair.ca/modules/smartoffset/offset.php?formid=air>>, which is equivalent to 5.5% of the mean per capita CO₂ emissions for Canada (2007) = 16.9 Mt CO₂ <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC?cid=GPD_27>. For comparison, this one trip causes more global warming than the total annual emissions of an average citizen in more than 60 (i.e., one-third) of the world's countries <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC?cid=GPD_27>. The 5.5% increase due to seven hours flying time suggests that mean Canadian per capita annual CO₂ emissions (close to the highest in the world) are increased by 0.8% for each hour of flying. Note that the above calculations underestimate the total emissions associated with flying, because they do not include the infrastructure, manufacturing, and service components. Per capita total greenhouse gas emissions for Canada are ~23Mt CO₂e (Environment Canada 2008 Greenhouse Gas Inventory Report), a significant portion of which is due to energy extraction and mining activities.
