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## **NATURE'S CONTRIBUTION TO CLIMATE CHANGE BY JASON P. BUTTIGIEG & THOMAS T. S. WATSON**

### ***ABSTRACT***

*What does the future hold for us with respect to Climate Change (CC) and can we control it? In answering these now common questions, one must not only consider the human factors that contribute to CC but the natural causes of CC. The following article addresses CC by considering what is meant by CC, and then explores some of the less reported natural contributors of CC.*

### **1 INTRODUCTION - DEFINING CLIMATE CHANGE**

Climate change refers to the ongoing changes in climate, changes determined by a range of natural and human factors (Wikipedia, 2006). Often the term CC is confused with global warming - the rise in average surface temperature, and is based on the presumption of human causation.

Climate change reflects variation to the earth's environment, natural processes going on around it, and the impact of human activity. The external factors that shape our climate often include processes like variations in solar radiation, the earth's orbit, and greenhouse gas concentrations (Ruddiman, 2005).

### **2 MISCONCEPTIONS ABOUT CLIMATE CHANGE**

Many CC scientists suggest that we have never experienced such climatic changes before, which, from a scientific perspective, naturally leads one to therefore question how accurate can scientists be when trying to predict future CC scenarios based on existing human accounts of previous CC events.

Evidence for climatic change is taken from a variety of sources that is often used to reconstruct past climates. The literature on CC suggests that most of the evidence on CC

is indirect, and inferred from changes in indicators that reflect climate, such as vegetation, dendrochronology, ice cores, sea level change, glacial retreat (Miller & Edwards, 2001). Many can argue that world-wide, the facts about CC are being inappropriately reported. A classic example of this is in the movie - *Inconvenient Truth*. Further, in Australia many CC scientists suggest that Australia is experiencing its worst drought in history and that global warming is the cause. This is not the case. Although global warming and human intervention has some effect on our climatic conditions, there is no scientific data available to accurately suggest that we humans are entirely responsible for climatic events like drought.

Overall, Australia is experiencing near normal rainfall, however, some regions such as the eastern states, are experiencing their worst drought in recent history whereas regions in central and northern Australia are experiencing near record rainfall (Australian Bureau of Meteorology, 2007). In particular, rainfall in Northern Australia has increased over the last 20 years (Australian Bureau of Meteorology, 2007). The records compiled by Associate Professor, Robert Baker, of the University of New England, are consistent with the 1923-1924 weather period patterns, which mirror image the 2006 to 2007 weather cycle. Baker claims that by July 2007, rains in the Eastern States of Australia will begin to be heavier, whereas Australia's summer season of 2008 will experience heavy rains.

There is much evidence to reveal how natural events have contributed to CC throughout the earth's history - far before humans existed. One such event was the switching of the sun's polarity, which happens on average every 11 years (Hieb, 2002). This event is well known within climatic science and is referred to as the Milankovitch Cycles. It relates to the earth's orbital variations, which over thousands of years, accumulate to produce the changes in climatic conditions that we witness today.

### 3 ORBITAL VARIATIONS AND GEOPHYSICS

Orbital variations or slight variations in the earth's orbit, leads to changes in seasonal distribution and sunlight across the earth's surface (Jackson, 2007). Such orbital variations - Milankovitch cycles - are a highly predictable consequence of basic physics due to the mutual interactions of the earth, its moon, and the other planets. It has been widely reported that such variations are considered the driving factors underlying the glacial and interglacial cycles of the present ice age (Ruddiman, 2003). Subtler variations are also present, such as the repeated advance and retreat of the Sahara desert in response to orbital precession. Furthermore, such cycles contribute to the melting of glaciers and, thus, weather patterns including cloud formation and the subsequent release of CO<sub>2</sub> into our atmosphere.

It is well known that CO<sub>2</sub> emissions from industry influence the climate by trapping heat

within our atmosphere and influence weather patterns. However, geophysical history of the earth also reveals that from the position of the earth's tectonic plates relative to the earth's poles, volcanic eruptions, and earthquakes all increase the level of CO<sub>2</sub> in our atmosphere (NASA News, 2005). As much as human activity undoubtedly contributes to global weather patterns and subsequent glacial activity, the impact of natural events on our climate can be compared to human's detonating one atomic bomb and flattening 20 square kilometers versus the sun releasing one solar blast that can produce energy equivalent to the detonation of one billion atomic bombs.

The influence of solar activity on the earth's orbit in 2003 is noted as the period of record-breaking solar flares (NASA News, 2005). The initial solar blast hit the earth's natural magnetic field, altering the earth's magnetic field emissions, thereby, is facilitating a change to our magnetic north from 10 degrees west by eight degrees, to two degrees west. This was followed by further blasts that have now stabilized to two degrees east, as of, 1 April 2007. In particular, these corrections have been recorded in the southern states of Australia. Another significant solar blast in 2001 (NASA News, 2005) reversed the sun's polarity - an event referred to in Watson's reversal topic of CC (2007b). These events impact on our earth's electromagnetic properties and contribute to alter orbital paths of the earth's axis. Sub-sequentially, this event, in combination with nature's continually evolving geophysical forces, produces notable variations to the sun's radiation, temperature, rainfall distribution and to the melting of ice sheets.

#### 4 THE MAGNETOSPHERE

A major natural cause of drought is arguably related to the sun's positive magnetosphere. Evidence of this is discussed in the following, which details the magnetosphere, extracted from the National Science Week, Aug 19, 2005 guide on The Atmosphere Atmos.

The magnetosphere is where the earth's magnetic field plays an important part in many of the processes that occur here. The earth's magnetic field extends out for at least 40,000 km on the dayside of the earth and many times that on the night side. The earth's magnetic field shields us from most of the high-energy (fast moving) particles known as cosmic rays. Without this life shield, life as we know it, would not be possible on earth. Some cosmic rays can penetrate down to a height of about 20 km., where they collide with molecules in the atmosphere. Some of the pieces from these collisions reach ground level.

The magnetosphere contains a huge amount of power from the particles and magnetic

field of the sun, up to one million million watts of power. In comparison, a large power station on earth generates about one hundred million watts, meaning the magnetosphere is equivalent in this sense to ten thousand power stations. Accordingly, for CC scientists to disregard the influence of such events on CC, including Global warming, serves only to overstate human's influence on natural environmental phenomenon.

Science has also long discovered that the earth's magnetic field is becoming generally weaker at an astonishing rate (Shpynev et al., 2005). When a French-Danish team compared Ørsted's - (Ørsted is the unit of magnetic field strength, named after Hans Ørsted, Fink, 1969) - results for 2000 with those from an American satellite, Magsat, 20 years earlier, the decline in the field's strength suggested that it might disappear completely in a thousand years or so. Some scientists question if our planet is preparing to swap its north and south magnetic poles, as it has often done before during the earth's long history (Shpynev et al., 2005). CC researcher, Tom Watson also writes on the magnetosphere in relation to CC.

Two recent books, "A Fresh Approach to Magnetism - Version 2" (Watson, 2006a), and "Why we are experiencing Global Warming" (Watson, 2007b), explore the effects of magnetism on our climate. Watson (2006a & 2007b) suggests that the electron is always active and never knows when to give up its internal and external struggle to survive. He extends this to the external sun's magnetosphere action in the form of magnetic waves: originally the Light Wave harmonic Magnetic Wave emission referred to in 2007b as well as the break down of the light wave and associated reactive angles and forms from within the light spectrum.

Watson also notes that in Australia, present research shows a reversal effect of our present Isobar readings, an event that one could argue is also closely linked to a partial reversal of our summer of 2006 to 2007. This is demonstrated by the fact that the highest Isobar reading over this period shows the entire Australian continent was between 1004 to 1024 Isobars. These were typical readings for winter prior to 2001, as being winter Highs. He states that rain clouds absorb CO<sub>2</sub> when the air pressure is low and when there are High Isobar readings, say 1036 Isobars: experienced during Australia's winter months of 2006, indicated that the air pressure is high. This does not permit total absorption of the CO<sub>2</sub> into the rain clouds of water vapour (H<sub>2</sub>O). This fact is not generally known. Because of this, conventional science claims that CO<sub>2</sub> is increasing in volume.

Watson's research into magnetism and its effect on the climate is gaining momentum amongst CC scientists and has been widely researched. Watson (2006 a) refers to the significance of magnetic effects on our earth's climate. Furthermore, Watson reports on the notable changes in the relative climatic conditions between summer and winter -

which could be assumed by some to be the beginnings of an eventual season reversal. According to Watson, the sun's magnetosphere equates to a significant contribution to the earth's long history of ever changing geophysical forces that help shape our environment today. In particular, especially within Australia, these events have materialised into record breaking heat, cold, flood and drought events over the last 6 years (Australian Bureau of Meteorology, 2007).

Watson also writes on the positive harmonic relationship between the electron's and their nucleus for all natural (103) atomic structures. From this connection, he developed a simple formula that determines the atomic gravity, as a relationship between its magnetic activity for all natural atomic structures (Watson, 2006a & 2007b). It is this activity that science will identify as being the possible connection between the magnetic fields from the earth to the sun's magnetosphere that also facilitate ongoing CC processes.

## 5 DEALING WITH CLIMATE CHANGE

Dealing with CC might be best achieved by simply accepting that CC is a natural ongoing earthly process. Learning to adapt to CC can only help human's better protect their immediate environment, the planet's green longevity and essentially improve the quality of life for all species.

Adapting to CC can be achieved in several ways. We can begin by considering the following five factors: industrial, technological, social and political adaptation factors as well as psychobiological adaptation processes that encourage communication and social cohesion, especially during times of severe storm, flood or drought activity. Addressing CC with a sense of rational and anticipation will help us accept the potential consequences of CC and therefore allow us to better prepare for new environmental challenges. Although evidence against the notion that severe weather conditions will persist is strong (Jackson, 2007), episodes of, for example, extreme drought and flood throughout time are inevitable. Anthropological science suggests that those communities who are better integrated and communicate their concerns are more likely to better manage themselves during times of crisis. These societies would be more resilient to CC stressors since they would have in place efficient mechanisms to access life saving resources during times of need.

Sociologically, we must reconsider how we design community developments, especially

with regard to coastal development projects. Commercial projects such as in-land city developments, as well as coastal developments will need to consider water-levy and canal systems to compensate for rising sea levels. Canal systems could also serve as a way of transporting water from wet land areas to drier regions to replenish drying river systems. In relation to rising sea levels, NASA based global maps show levels rising in some places and dropping in others, (University of Colorado - <http://sealevel.colorado.edu/maps.php> , 2007) with the probability of only a slight overall rise having occurred over the last 100 years. This is hardly surprising since other satellite data indicate that the total mass of ice held in the polar ice caps has not reduced. Changes to weather patterns will nonetheless make tidal surges a real threat for those communities where rising sea levels have become a serious issue - such as throughout the Pacific. Council could also invest in novel ways of collecting storm water for watering community parks and gardens as well as for fire-fighting purposes. Domestic technologies could focus on a greater use of solar technologies for all buildings, and the redesigning of insulating materials, garden and irrigation systems with the mandatory installation of water tanks. James J. Reidy, (<http://www.gizmag.com.au/go/2787/>) reports on his AirWater Machine, that extracts H<sub>2</sub>O from air. This invention when applying solar energy can produce up to 5,000 litres per day. Similar water extraction technologies exist world-wide.

Industrial adaptation procedures could adapt to CC by further investing in desalination plants and water recycling projects for those regions subject to drought. Industrial technologies could also see a greater reliance on tidal and wind power generation systems especially for coastal communities in which such resources are plentiful. Solar energy should be further developed to power conventional power stations. Nuclear energy technology has improved over the last 20 years in terms of safety and delivery costs. With fossil fuel resources naturally on the decline, not to mention problems associated in refinement and transportation of oil, nuclear energy is one option to supplement our energy needs. However, the challenges posed by oil production are offset by the removal of nuclear waste and higher energy costs to consumers with nuclear energy. Complimenting nuclear energy with other energies such as cleaner coal energies, solar, wind and tidal systems would marginally offset these high costs. In any case, all technologies present ongoing production, maintenance and delivery challenges. In addition, transport systems could become greener in the immediate future by advancing hydrogen fuel cell technologies, with electrical hybrid bus transport systems. Public transport systems especially within CBDs might encourage free transportation with added efficient electrical systems.

Finally, future atomic science will establish itself in such a way that man can exercise better control over its environment. For example, by investing more interest in fundamental physics, we will better learn how to modify energy systems at a nano (particle) level within all earthly systems from biological organisms to weather patterns

including the propagation of earthquake energy systems to Tsunamis. In theory, this is possible. In practice - this may not happen for a while.

## 6 CONCLUSION

The natural phenomenon discussed in this article includes the geophysical factors of the earth and the effects of magnetism on our Planet. Our message is that hopefully people, in particular CC scientists, should not consider CC solely as a human caused event. Credible CC scientists are responsible for detailing both the human and natural events that contributes to our earth's climate. It should not take an event like Global Warming for humanity to focus concern on looking after our earth's environment.

Political and Corporate direction regarding environmental economics should be determined by CC research that is inclusive of many factors of causation. Serving our planet's energy needs should be natural, eclectic, resourceful and responsible in terms of natural sustainability and global cleanliness/ecosystem protection, irrespective of the energy origins. Public commentators on climate change should accept that no hard evidence exists to suggest that human interference is solely responsible for our change in climate. There is the possibility that present extreme climatic variations will continue even if we immediately implement every green policy. This would highlight the extent of nature's contribution to CC and thus, eventually lead one to question the highly publicised actions of today's CC advocates. Further, the continued "moaning and regretful" reporting of CC and Global Warming might soon serve to desensitise people to the relevance of CC as we become exhausted of the never ending doom and gloom reporting of it.

Humans undoubtedly contribute to climate change factors. The concern, however, is that our level of contribution is largely based on speculation because science examining human's contribution to CC is limited by research that is largely erroneous. Such science offers no human base-line comparisons pertaining to previous CC scenarios of the magnitude we are witness to today. Accordingly, we should focus less on speculative science and more on looking after our environment by adapting to CC processes. This will essentially contribute to improve the quality of our air, water, land, flora and fauna and undoubtedly improve the quality of life for all species, including our very own. Any subsequent improvements to our overall weather patterns would also be welcome.

On a lighter note, CC will unveil more mysteries about the earth, such as what species once existed, as well as mysteries relating to crime and the like. CC will also offer us new opportunities. For example, pharmaceutical companies could prosper as they manufacture products that protect us from CC elements, such as melanin products that help shield us

from UV radiation. CC has motivated us to better ensure a world that is a cleaner, greener planet. The news is not all bad.

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## 9 BIOGRAPHIES



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T. S. Watson

Tom Watson served as a Sergeant Draftsman Instructor in the RAAF. He began his research into magnetism when he observed a UFO in 1981 in Ballarat, Australia. He researches the harmonic relationship between the electron and the nucleus of all atoms. He is now the author of physics books and formulates gravitational values.