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Discussion of climate variability in south-eastern Australia over the last 1500 years inferred from the high-resolution diatom records of two crater lakes

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The recent paper by Barr et al (2014) highlights the existence of natural multi-decadal oscillation affecting the rainfall of South Eastern Australia. The multi-decadal oscillations are an important feature of the Australian and the global climate that are very well known. They are present in all the climate parameters, including temperatures, sea levels and rainfalls. Not predicted by the recent climate models, these oscillations are very often misused by looking at just part of the record, moving from valley to peak of an oscillation (Parker, 2013; 2014a) to use a partial record to show what is not true in the complete record. In recent years this false technique, a variety of cherry picking, has been mainly used to find signs of catastrophic man made global warming (AGW).

As reported by co2science. org (2014), the paper by Barr et al (2014) show a multi-decadal variability for the climate in south eastern Australia over the last 1500 years inferred from proxies, in this case diatom records of two crater lakes. Figure 1 shows direct measurements of rainfall for Australia over the last century. The pattern of variability is already evident in these data.

Figure 1.a) is the total yearly rainfall and the decadal and linear trend lines and Figure 1.b) is the periodogram of the total yearly rainfall. The total rainfall is increasing and the rainfall has oscillations of quasi-20 and quasi-60 years.

Figures 1.c) & d) are the 10, 20, 30 and 60 years trends. Short time windows may permit claims of rainfall sharply increasing or reducing.

Figures 1.e) & f) are the trend maps 1910 to 2013 and 1960 to 2013. Globally the rainfall is increasing, with the exception of very few areas.

Figures 1.g) & h) are the trend maps for the rainfall of the decades 1996-2005 and 1936-1945. Contour lines are relatively close, and the rainfall does not seem reduced in the decade 1996-2005 vs. 1936-1945.

Figures 1.i) and j) are the yearly total rainfall and average maximum temperature in Robe, a rural location of South Eastern Australia. The rainfall is oscillating as it is the temperature, with in this latter case warming trends started in 1910 and not certainly in 1950.

Similar to all the other long term rural stations of Australia (Parker, 2014b), the temperatures were reducing until 1910 and are increasing since then. Superimposed on this longer term movement is a quasi-60 year's oscillation. Temperatures were higher in the last part of the 1800s than presently.

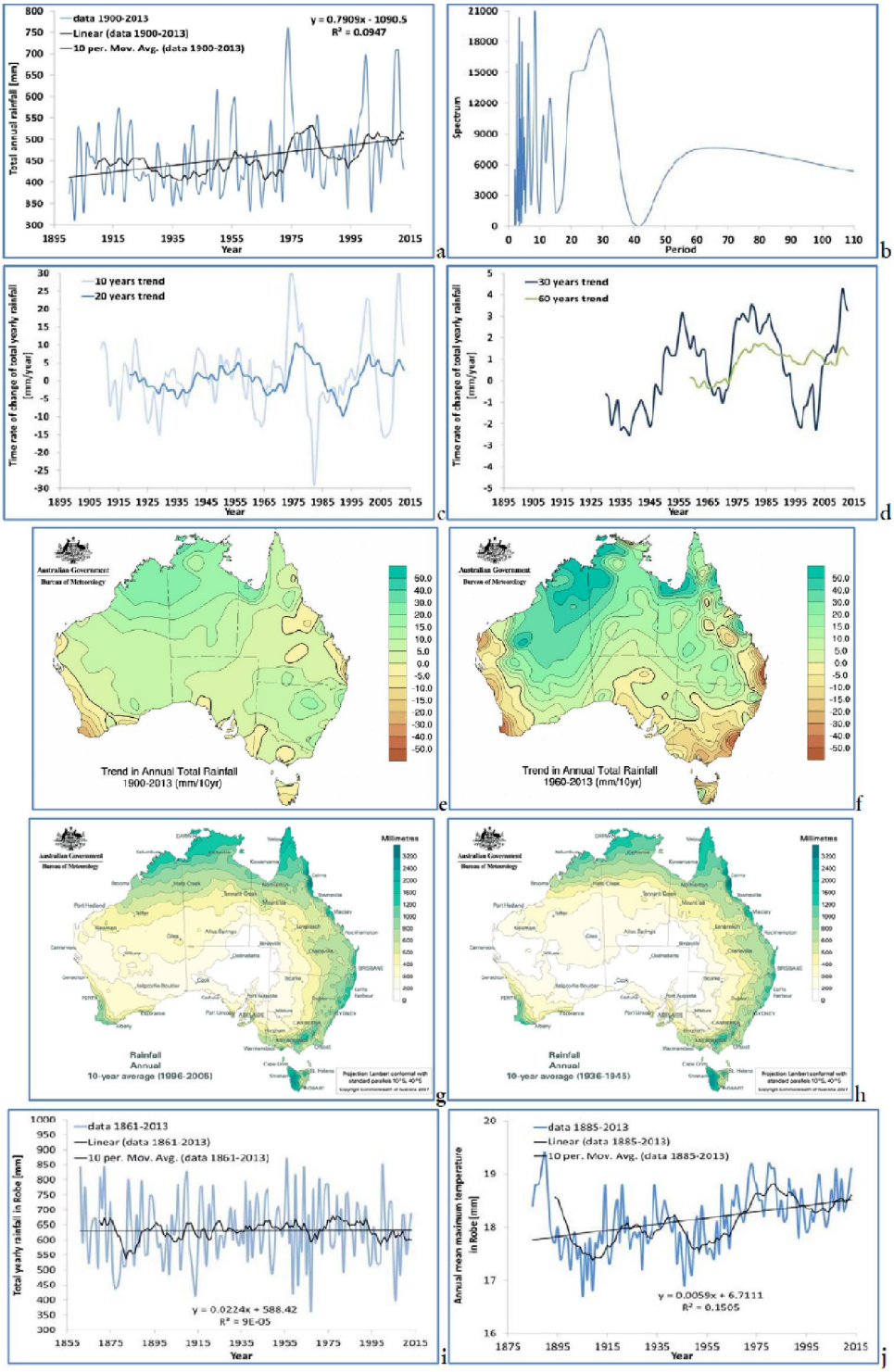

Figure 1 : a) Total yearly rainfall, trend line; b) Total yearly rainfall, periodogram. The total rainfall is increasing and the rainfall has oscillations of quasi-20 and quasi-60 years; c)& d)10, 20, 30 and 60 years trends. Short time windows may permit claims of rainfall sharply increasing or reducing;e) & f) Trend maps 1910 to 2013 and 1960 to 2013. Globally the rainfall is increasing, with the exception of very few areas; g) & h) Trend maps for the rainfall of the decades 1996-2005 and 1936-1945. Contour lines are relatively close, and the rainfall does not seem reduced in the decade 1996-2005 vs. 1936-1945; i) and j) yearly total rainfall and average maximum temperature in Robe. The "millennium draught" in South Eastern Australia does not seem that far from the conditions experienced only 60 years before. Maps and data from Australian Government Bureau of Meteorology (BOM) 2014a, b, dataanalysis performed in this work.

"Global warming" started in 1910. The rainfall is slightly increasing and subject to oscillations.

The South Eastern Australia drought between 1997 and 2009 has been presented as the "big dray" (Ummenhofer et al, 2009), the "millennium drought" (Bond et al, 2008), the "protracted dry spell" (Gergis et al, 2011) or the "reduced rainfall exacerbated by elevated temperatures" (Nicholls, 2004; Murphy and Timbal, 2008). The multi-decadal variability of Barr et al (2014) or Figure 1 demonstrates that theseclaims were gross exaggerations based onthe valley to peak exercise described above.The "millennium draught" in South Eastern Australia does not seem that far from the conditions experienced only 60 years before.

Thedistorted information was used to claim that the rainfall decline across this part of the Australian continent was caused by the carbon dioxide emission, which cannot possibly be responsible for the oscillations.

According to Barr et al (2014) there is a multi-decadal drought commencing ca 650 AD suggesting "the Big Dry"of 1997 to 2009 wassimilar to many events over the last 1500 years, when the atmospheric CO_2 concentrations had nothing to do with these oscillations.

As shown in Parker and Ollier (2014), the measured rainfall pattern of Australia since 1900 shows increasing rainfall, and relatively stable spatially despite the drastic changes in land use, urbanization and water catchment and distribution, all anthropogenic factors having nothing to do with the increased CO_2 content in the atmosphere.

According to Blainey (2009) commenting the "millennium draught": We are told, again and again, that Australia's annual rainfall is now the lowest in its history. This is nonsense. Reliable nation-wide rainfall records only go back to 1900. What was Australia's worst year for rainfall since then? The worst year was 1902, followed by 1905. Victoria suffered severely from that Federation Drought, prevailing from about 1894 to 1902…In Victoria, the whole era from 1890 to 1945 was relatively dry. It was then followed by a wetter era running for at least 30 years".

As the climate parameters oscillate with up to quasi-60 year's periodicity (Parker, 2013; 2014a)it makes sense is to compare the patterns timeswith 60 years periodicities, rather than compare a peak with a valley in the same oscillation.

Not surprisingly, nobody blames anthropogenic carbon dioxide emissions for the regional and sub-regional increased rainfalls, but even in the context is of increasing rainfall over the century, the anthropogenic carbon dioxide is blamed for periodic droughts in selected locations.

In addition of putting the "millennium draught" of 1996 to 2009 in the right historical perspective, Blainey (2009) also commented on the failure of politics to manage the dramatically increased population and water use "By 1980, we had inherited a great network of reservoirs. After that we rarely added to them, though the population grew and the irrigated acres expanded. The severity of the drought, in short the scarcity of reservoir water, is partly our own fault… In the last quarter century, for the first time in Australia's history, dam-building has often been regarded as a sin".

Ancient Sanskrit scripts were showing the existence of quasi-60 year's oscillations in rainfalls and temperatures well before the anthropogenic global warming theory was conceived. Nevertheless, upwards phases of an oscillation have often been used to claim much stronger changes in the climate than are actually occurring. As the Australian draughts are periodic, the inability to cope with the reduced rainfalls in a changing pattern of water use is more a localised political issue than the result of the global carbon dioxide emission.

The work by Barr et al (2014) is certainly interesting, but it delivers same conclusions of the simple analysis of Figure 1. The result of the analysis of two diatom records should have been compared with the direct rainfall measurements, and the references to an anthropogenic global warming would have been better omitted.

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