

## Amen to Climate Change

Contraction and Convergence (C&C) is like a perfect cadence in music.

C&C is the name given by GCI to the formal response we gave to the United Nations Framework Convention on Climate Change (UNFCCC) in 1995. To prevent dangerous rates of climate change, the objective of the UNFCCC is the stabilisation of greenhouse gas (ghg) concentration in the global atmosphere and the principles are precaution and equity. The UNFCCC Secretariat took the position in 2002 that 'C&C is inevitably required to achieve the Convention's objective'.

The C&C position is defined as the integral of 'cognitive resonance'. It makes it possible to demonstrate how we can solve the climate change problem at a rate that is faster than the rate at which we are creating it. Counting out under the global emissions limit that achieves the objective of the UNFCCC [contraction], the international sharing of the entitlements to these emissions is that in principle they shall be counted as equal per head to all persons, but achieved by smooth transition [convergence]. Where the Kyoto Protocol picks a few numbers out of a hat, C&C is globally rational, transparent, and rooted 'full-term' in the objective of the UNFCCC. Unlike a lottery and as in music, the parts are referenced and sum to the whole.

Like Occam's Razor, C&C is not necessarily the only way to resolve the potentially endless international arguments about who is to blame for climate change. It is the least worst and the most transparent way of defining our responsibilities jointly and severally, fairly and effectively under the terms of the UNFCCC.

We all now live in the 'double-jeopardy' of climate change. For decades, the globally asymmetric development of expansion and divergence has been growing at an average of 3% per annum. The jeopardy is doubled because the climate damages this growth has been causing, have been growing at twice that rate, at an average of 6% per annum. Quite simply we have been causing this problem much faster than we have been responding – say with the Kyoto Protocol – to avoid it. Worse, two thirds of the world's population survive on a mere 6% of global income and now also face climate damages and death caused by the cumulative ghg pollution of the wealthy one third. Knowingly or even unwittingly continuing with a half-hearted response to this, is not just 'dissonant'. It defaults to being what politicians have called the 'economics of genocide', where none of us will be able to avoid its awful downstream consequences.

C&C takes this head on saying that securing the objective of the UNFCCC is paramount. It also recognises that globally endemic poverty and the now dangerous rates of climate change are two sides of the same coin. C&C shows how we can take this two-sided problem and turn it into one solution that guides us to deal with both while ensuring we do enough soon enough to avoid dangerous runaway climate change.

As there is great acrimony about this double jeopardy already feeding the politics, I think it helps us to get beyond this by linking the solution to the timeless and universal rationale of music. We can say that correcting the past and present discord of 'expansion and divergence' with the future concord of contraction and convergence, is quite literally like an 'Amen' or 'perfect cadence' in music.

In essence musicians have to do two things: one [especially if you are a string player] is to play 'in-tune' and the other [especially if you are playing with others in an orchestra] is to play 'in-time'. Doing this is what the churches once called 'just' or 'perfect' time management. The hertz [or frequency] value of 'pitch' is embedded in the 'perfection' of the given 'intervals' of the overtone series and this is incontestable and irreducible.

For example an orchestra tunes today to 'A' 440 cycles a second and a precise doubling of that is 'A' 880 cycles that gives the 'perfect' octave above A 440. These are the 'tonic' values, between which lies the also perfect mid-division value of 660 cycles which gives the 'perfect' fifth value at the 'dominant' note 'E'. The 'cadential' progression from the dominant to the tonic is, in music, literally the 'perfect unity' of an 'Amen' cadence.

All life is captive to this 'consonance' whether it is self-aware [cognitively resonant] or not. It is the fundamental reference signal of concord, against which all degrees of deviation into the even more complex intervals of 'discord' are measurable.

In religious language it is 'logos'; self-referentially cognitive and perfect. It is indestructible and so 'true'. It is the source of all proportionality, unavoidable and free.

This numeraire resonates at the heart of C&C. It attracts a globally divided whole back through equity in diversity 'cadentially' to the unity we need to experience to survive climate change. Of course there are ideological reactions to this, but they simply reinforce what C&C is – a logical proposition. If there is something better, we'd better find it soon. Reference: - [www.gci.org.uk/briefings/ICE.pdf](http://www.gci.org.uk/briefings/ICE.pdf)

