

VWSM Weekly *

Gordon Burt **

No. 6

Tuesday 13 October 2020

VWSM Weekly provides brief notes on, and provides links to, a selection of items that appeared in the past week, Monday to Sunday. The topics covered (not all of them in this issue) are listed below. See page 6 for General Background on the project.

VALUES

Truth

Power

WORLD

SOCIETY

Environment

Economy

Politics, Law

Military

Crime

Social

Technology

Science

Mathematics

MODELLING

USA election

Trump

* This is linked to the monthly ANA Commentary

<https://sites.google.com/site/gordonburtmathsocsci/home/a-new-agenda>;

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Nobel Prize for Physics: Roger Penrose

Interview: <https://www.youtube.com/watch?v=5bmJalWKTj8>

The power of positive thinking. Norman Vincent Peale, 1952. [Trump's pastor]

https://en.wikipedia.org/wiki/The_Power_of_Positive_Thinking

Bright-Sided. How the Relentless Promotion of Positive Thinking Has Undermined America. Barbara Ehrenreich, 2009.

<https://www.nytimes.com/2009/11/08/books/review/Rosin-t.html>

The 2020 Nobel Physics Prize ... Roger Penrose

I was delighted to see that Roger Penrose had been awarded the Nobel Prize for Physics for his work on black holes. When I retired ten years ago my mathematical friends gave me his book *The Road to Reality*¹ which showed how mathematics leads to an understanding of physical reality. It inspired me to take up the notion that mathematics could also lead to an understanding of social reality.

Towards the end of this section I shall look at Penrose's work in physics – in particular his recent work which I rather fancifully invoke with the phrase, 'do all universes fail?'. First, though, the following extract from my 2014 Yearbook expresses my own personal thoughts in relation to Roger Penrose and other members of his family.

Mathematical modelling plays a key role in this book and the intellectual heritage for my work in this area can be indicated by the following narrative that links Lewis Fry Richardson (1881-1953), Lionel Penrose (1898-1972) and Cedric Smith (1917-2002) ...

I was given my day visitor ticket and halfway up the winding stairs was the exhibit, *Art and Honour: Contemporary Impressions of the First World War*. Studying the many interesting items my eye caught the name Lionel Sharples Penrose. There was his journal and Personal Sketchbook. It was open at a page with a map sketching northern France and Belgium and a record of the places he was stationed at during 1918, headed "All over the shop". Two of his sketches were there, one of a hospital train at Rouen, dated 7.8.18.²

On leaving school in 1916, Lionel Penrose served, as a conscientious objector, with the Friends' Ambulance Unit/ British Red Cross in France until the end of the First World War - an experience he shared with Lewis Fry Richardson.³

From 1945 to 1965 Lionel Penrose occupied the Galton Chair at the Galton Laboratory at University College London. For these two decades he was a colleague of Cedric Smith. In 1946 Cedric Smith was appointed Assistant Lecturer at the Galton Laboratory at University College London. He remained at UCL for the rest of his career, becoming successively Lecturer and Reader, before appointment as Weldon Professor of Biometry in 1964.⁴

Thus Lionel Penrose had strong links with two of the central figures associated with the Conflict Research Society: Cedric Smith, a founding member and prime mover; and Lewis Fry Richardson whose earlier work inspired the Society and after whom the Richardson Institute was named. (Somewhere in this cupboard on my left are the CRS Archives. I suspect Lionel Penrose may have been an early member of the Society).

The final chapter in this book, in its discussion of the Big Bang, will cite Roger Penrose, a son of Lionel Penrose. On a more personal note I was an Open University colleague of another son, Oliver Penrose. In 1985 Oliver chaired the course U235 *The Nuclear Debate* – and I was a member of the course team. Finally as a schoolboy and enthusiastic chess player I knew about the then British Chess Champion, Jonathan Penrose, the third son.⁵

¹ Penrose, Roger. *The road to reality. A complete guide to the laws of the universe*. London: Jonathan Cape, 2004.

https://www.researchgate.net/publication/226597688_The_Road_to_Reality_A_Complete_Guide_to_the_Laws_of_the_Universe

Interview: <https://www.youtube.com/watch?v=5bmJalWKTj8>

² UCL. "Art and Honour: contemporary impressions of WWI." Accessed 1 June 2015. <http://www.ucl.ac.uk/library/exhibitions/ww1/>.

³ Wikipedia. "Lionel Penrose." Accessed 1 June 2015. http://en.wikipedia.org/wiki/Lionel_Penrose.

Wikipedia. "Lewis Fry Richardson." Accessed 1 June 2015. http://en.wikipedia.org/wiki/Lewis_Fry_Richardson.

⁴ Wikipedia. "Cedric Smith (statistician)." Accessed 1 June 2015. [http://en.wikipedia.org/wiki/Cedric_Smith_\(statistician\)](http://en.wikipedia.org/wiki/Cedric_Smith_(statistician)).

⁵ Wikipedia. "Roger Penrose." Accessed 1 June 2015. http://en.wikipedia.org/wiki/Roger_Penrose.

Wikipedia. "Oliver Penrose." Accessed 1 June 2015. http://en.wikipedia.org/wiki/Oliver_Penrose.

Wikipedia. "Johnathan Penrose." Accessed 1 June 2015. http://en.wikipedia.org/wiki/Johnathan_Penrose.

Given the debate between Arts and Science it is appropriate to ask whether the scientific approaches of Richardson and the Galton Laboratory colleagues Penrose and Smith have any links with the humanities. It turns out they do – in a very direct manner. For our Christmas 2014 festive reading Catherine and I selected books by the two sisters A. S. Byatt and Margaret Drabble. Quite unexpectedly the name of Lionel Penrose appeared in the text – this was in Margaret Drabble’s *The Pure Golden Baby* which refers to Penrose’s “Colchester Survey” of 1938, the earliest serious attempt to study the genetics of mental retardation. Then, reading A. S. Byatt’s *The Biographer’s Tale*, I found it is partly about Francis Galton who inspired and financed Karl Pearson’s work at UCL and the book refers to The Biometric Laboratory.⁶

Another link is a recent exhibition at the Scottish National Gallery of Modern Art in Edinburgh, *The Amazing World of M C Escher*, “arguably the greatest 20th century artist to be locked out of the world of art”. Roger Penrose first encountered the artist in 1954 and was inspired to devise the tribar, a two-dimensional pattern that seems to be in three dimensions. He and his father Lionel Penrose published an article on the tribar in the *British Journal of Psychology* in 1958 – and Escher incorporated the tribar into some of his later work. Roger Penrose was asked whether he approached the exhibition as an art lover or as a mathematician.

“For those who do pure mathematic for its own sake, it’s the aesthetic, the joy, the beauty in the subject itself, that elegance which lies in a proof or a result. Artistry in some form is so important in mathematics. I’m not sure you can distinguish between the two.”⁷

At 89 Roger Penrose continues his research and in recent years has offered “an extraordinary new view of the universe”: conformal cyclic cosmology. This is almost impossible for mere mortals like myself to understand. Each cycle of time starts with a big bang and the universe has infinite expansion which sets up the next big bang and the next universe and so on/ (In this rather limited sense the answer to my question do all universes fail? is yes). It all seems to relate to conformal mappings (I think!) - for Roger Penrose, thinking geometrically is fundamental.⁸ A recent headline in the *Daily Telegraph* was:

“An earlier universe existed before the Big Bang, and can still be observed today, says Nobel winner.”

Apparent evidence for Hawking points in the CMB Sky

[Daniel An](#), [Krzysztof A Meissner](#), [Paweł Nurowski](#), [Roger Penrose](#)

Monthly Notices of the Royal Astronomical Society, Volume 495, Issue 3, July 2020, Pages 3403–3408, <https://doi.org/10.1093/mnras/staa1343>

<https://academic.oup.com/mnras/article-abstract/495/3/3403/5838759>

Published: 18 May 2020

ABSTRACT

This paper presents strong observational evidence of numerous previously unobserved anomalous circular spots, of significantly raised temperature, in the cosmic microwave background sky. The spots have angular radii between 0.03 and 0.04 rad

⁶ Wikipedia. “A. S. Byatt.” Accessed 1 June 2015. http://en.wikipedia.org/wiki/A._S._Byatt.

Wikipedia. “Margaret Drabble.” Accessed 1 June 2015. http://en.wikipedia.org/wiki/Margaret_Drabble.

Drabble, Margaret. *The Pure Golden Baby*. Edinburgh: Canongate, 2013.

Byatt, Antonia S. *The Biographer’s Tale*. London: Chatto & Windus, 2001.

⁷ Wade, Mike. “I went to his house expecting staircases coming out of windows.” *The Times*, Times 2. June 24, 2015: 8-9.

⁸ Penrose, R. *Cycles of Time: An Extraordinary New View of the Universe*. Bodley Head. 2010.

https://en.wikipedia.org/wiki/Cycles_of_Time

https://en.wikipedia.org/wiki/Conformal_cyclic_cosmology

The basic ideas of conformal cyclic cosmology Cite as: AIP Conference Proceedings 1446, 233 (2012); <https://doi.org/10.1063/1.4727997> Published Online: 21 June 2012 Roger Penrose.

(i.e. angular diameters between about 3° and 4°). There is a clear cut-off at that size, indicating that each anomalous spot would have originated from a highly energetic point-like source, located at the end of inflation – or else point-like at the conformally expanded Big Bang, if it is considered that there was no inflationary phase. The significant presence of these anomalous spots, was initially noticed in the *Planck* 70 GHz satellite data by comparison with 1000 standard simulations, and then confirmed by extending the comparison to 10 000 simulations. Such anomalous points were then found at precisely the same locations in the *WMAP* (*Wilkinson Microwave Anisotropy Probe*) data, their significance was confirmed by comparison with 1000 *WMAP* simulations. *Planck* and *WMAP* have very different noise properties and it seems exceedingly unlikely that the observed presence of anomalous points in the same directions on both maps may come entirely from the noise. Subsequently, further confirmation was found in the *Planck* data by comparison with 1000 FFP8.1 MC simulations (with $l \leq 1500$). The existence of such anomalous regions, resulting from point-like sources at the conformally stretched-out big bang, is a predicted consequence of conformal cyclic cosmology, these sources being the Hawking points of the theory, resulting from the Hawking radiation from supermassive black holes in a cosmic aeon prior to our own.

[cosmic background radiation](#)

[04.20.Ha](#), [04.70.Dy](#), [98.80.Bp](#), [98.80.Ft](#)

Issue Section:

[Article](#)

Francis Penrose 1904 Monthly notices of the royal astronomical society

<https://academic.oup.com/mnras/article/64/4/290/962490>

Other gods: positive thinking

The power of positive thinking. Norman Vincent Peale, 1952. [Trump's pastor]
https://en.wikipedia.org/wiki/The_Power_of_Positive_Thinking

Bright-Sided. How the Relentless Promotion of Positive Thinking Has Undermined America. Barbara Ehrenreich, 2009.
<https://www.nytimes.com/2009/11/08/books/review/Rosin-t.html>

“Trump shows the perils of positive thinking.
The president's self-belief is legendary but, taken to extremes, the ideas that inspired him are as dangerous as fatalism.”
Aaronovitch, David. *The Times*, October 8, 2020: 25

Last week David Aaronovitch discussed the ideas that inspired Donald Trump, the belief system of positive thinking. On the previous Saturday Trump's doctor had reported that the president was doing great. The following day he admitted that the president had had a fever and needed oxygen. Explaining the discrepancy, the doctor said he had been “trying to reflect the upbeat attitude that the team, the president, this course of illness has had ... [I] did not want to give any information that might steer the course of illness in another direction ...”

The notion here is that positive thinking, “an upbeat attitude”, can bring about success, thus constituting “a mentality of success”. Mental attitude determines success or failure. Hence success or failure is explained by mental attitude.
[Some related notions are expectation of the best, hopefulness etc.; somewhat different is determination, relentlessness, fighting spirit – as opposed to a ‘loser’ attitude; ‘mind over matter’ myths]

For a hypothesised relationship between positive thinking and success there are a number of possibilities in practice. At the extremes there can be a perfect relationship or none at all – or there may be a partial relationship with the outcome dependent also on other factors; the relationship may vary depending on the context; and different individual may have different experiences. Advocates and critics may be at opposing extremes, leaving others believing in a partial relationship.

Aaronovitch talks about the action consequences of belief systems: “belief systems that undermine an appreciation of reality are, I think, usually bad. That can be true of fatalism and of conspiracism.” An action can be little or large ... too little or too much ... the correct action or the wrong action. There may be social consequences ... saccharine terrorism, mandatory optimism, exclusion of non-optimists.

General Background on the Project

Ten years ago I wrote a book on mathematical social science entitled *Conflict, Complexity and Mathematical Social Science*,⁹ and in recent years I have produced a number of yearbooks on *Values, World Society and Modelling*¹⁰ which have received favourable comment¹¹, including a review of the 2017 Yearbook in the *Journal of Peace Research Book Notes*.¹²

I have now turned my attention to specific topics. In 2018 I wrote *Football and Mathematics*.¹³ In 2019 I looked at the Brexit debate in the UK¹⁴, and now in 2020 I have been looking at politics in the USA (see below).

This Autumn has seen new developments, with the start of *VWSM Weekly* and also the drawing together of previous work into two volumes, *Humanities and Mathematics*¹⁵ and *Religion and Mathematics*¹⁶, both only in early draft form.

Trump, America and Mathematics (forthcoming)

In June I produced a report on the racism protests in the USA following the killing of George Floyd. Over the summer I have produced two reports, one on the 2016 Presidential election;¹⁷ and a second also about USA Presidential elections, but this

⁹ Burt, Gordon. *Conflict, Complexity and Mathematical Social Science*. Bingley: Emerald. 2010.

¹⁰ Burt, Gordon. *Values, World Society and Modelling Yearbook, 2014*. Newcastle: Cambridge Scholars, 2016.

Burt, Gordon. *Values, World Society and Modelling Yearbook, 2015*. Newcastle: Cambridge Scholars, 2017.

Burt, Gordon. *Values, World Society and Modelling Yearbook, 2017*. Newcastle: Cambridge Scholars, 2018.

¹¹ 2014 Yearbook, reviews by Professors Oliver Ramsbotham, Kristian Gleditsch and Christopher Mitchell:

<http://www.cambridgescholars.com/productreviews/61006>.

2015 Yearbook, reviews by Professors Ken Avruch and Glenn Palmer:

<http://www.cambridgescholars.com/productreviews/61934>.

2017 Yearbook, reviews by Professors Peter Abell and Lars-Erik Cederman:

<https://www.cambridgescholars.com/productreviews/62623>.

¹² *Journal of Peace Research*, Book Notes. [Review of Gordon Burt \(2018\) Values, World Society and Modelling Yearbook 2017](https://www.prio.org/JPR/BookNotes/?x=1208), by Peter Abell. Published online 2 August 2018. <https://www.prio.org/JPR/BookNotes/?x=1208>.

¹³ Burt, Gordon. *Football and Mathematics. Premier League and World Cup*. Newport Pagnell: Mathematical Social Science Publishing. 2018.

¹⁴ Burt, Gordon. *Brexit website*, January 2020. <https://sites.google.com/site/gordonburtmathsocsci/central>.

¹⁵ Burt, Gordon. *Humanities and Mathematics*.

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDozM2RkZTQ3NDVmMTQyYzMy>.

¹⁶ Burt, Gordon. *Religion and Mathematics*.

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDozZDNkZGFkMGE4YTg1MjRh>.

¹⁷ USA presidential elections, 1789-2020

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDo0NzI5ODA4MTI0YWZkYzYz>

USA presidential elections, 2016 and 2020

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDozMjI1MDEzZWwMzEz>

The USA racism protests ... the abstract structure of public opinion

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDozMjI1MDEzZWwMzEz>

Police homicides ... gun culture, population density and ethnic density? Some thoughts on a study by Edwards, Esposito and Lee.

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDozOTMzY2Y1MDEzZWwMzEz>

Trump and the USA: the distribution of people and countries on the hate-love continuum worldwide.

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmxb3Jkb25idXJ0bWF0aHNvY3NjaXxneDozOTMzY2Y1MDEzZWwMzEz>.

time their history since 1789.¹⁸ Further reports are planned and I am hoping to put them together to produce a book with the following chapters:

Discourse in the USA: nice and true?
USA, 1789 to 2020, and world history
USA presidential elections, 1789-2020
USA presidential elections, 2016 ...
... and 2020
The USA: violent culture and ethnic structure ...
... the abstract structure of public opinion
Trump and the USA: the distribution of people and countries on the hate-love continuum worldwide
COVID-19

Values

‘Values’ is the first word in the title of my ‘Values, World Society and Modelling Yearbooks’. It is the first word for a very good reason: values are central. Many of the chapters in my books are explicitly about values.

Table 1 The chapters on values in my books

in *Conflict, Complexity and Mathematical Social Science*

...
4 Possibility and probability: value, conflict and choice
5 Theory, evidence and reality: the mean and median of competing groups
6 Social design, ethics and the amount of value
...

in *Values, World Society & Modelling Yearbook, 2014*

...
2 Individuals and Societies, Needs and Cultures
3 Individuals: Activities, Happiness and Other Values, Emotion, Personality
4 Relationships: Family and Friends, Care and Therapy, Nurturing Flourishing
5 The Life of an Individual ... Feeling at Home in the World
6 ‘Our Values’: Unanimous? Universal? Exceptional? Good? Safe?
...

in *Values, World Society & Modelling Yearbook, 2015*

...
2 Transcending adversarialism: The John Burton Memorial Lecture 2015
3 Life as a journey
4 ‘Our values’: the Enlightenment ... the Prophet
...

in *Values, World Society & Modelling Yearbook, 2017*

...
6 Cultural Trajectories: Languages, Religions and Political Cultures
7 Value Trajectories: Wellbeing, Wealth, Health, Peace and the Environment

Sources

The initial sources of information for the VWSM Weekly are The Times, New York Times and the Observer (Sunday). I am grateful for the work of their journalists.

VWSM Weekly Website

This issue and past and future issues can be accessed via:

<https://sites.google.com/site/gordonburmathsocsci/home/a-new-agenda>;

¹⁸<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbXnb3Jkb25idXJ0bWF0aHNvY3NjaXxneDo0NzI5ODA4MTI0YWZkYzYz>