Paper title:

'*Nature Remade*' -

A critical review of the history of the Polymerase Chain Reaction and its erroneous use.

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4th June 2023

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Dr Kary Mullis[1]

Interviewer: " *..how did they misuse PCR to estimate all these supposed free viral RNAs that may or may not be there..?*

Dr Kary Mullis: "*..with PCR if you do it well you can find almost anything in anybody..it allows you to take a very miniscule amount of anything and make it measurable..and talk about it..as if it is important..that's not a misuse that's sort of a misinterpretation..PCR..is just a process that's used to make a whole lot of something out of something..*"

Professor Paul Feyerabend[2]

"Scientific laws can be revised, they often turn out to be not just locally incorrect but entirely false, making assertions about entities that never existed."

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1 Dr Kary Mullis: https://archive.org/details/kary-mullis-explains-pcr-test-clip; above quote transcribed by the author.
2 Feyerabend (1975, p.188).

ABSTRACT

A critical review is undertaken of the historical development of the Polymerase Chain Reaction. The aim is to help further public understanding of its erroneous use. This misuse is evident to a greater or lesser degree in the (false) claims made over the PCR's ability to detect allegedly 'viral' genetic material, 'isolating' alleged 'viruses' and 'staging' disease / illness ('viral load'). Based on analysing the genesis and development of the original patented invention by Dr Kary Mullis, and drawing on critical literature from both inside / outside the mainstream, various explanations are suggested for the erroneous use. Concluding reflections focus on the current strength of non-mainstream sources.

CRITICAL REVIEW

Whether it is portrayed heroically[3] or realistically[4] the historical development of the Polymerase Chain Reaction (PCR) is also a story about "biotechnology" and its ascendancy within the fields of Molecular Biology and Virology. A critical review of the historical development of PCR[5] may aid our understanding of how it came to be misused and misinterpreted[6]. To a greater or lesser degree this erroneous use is evident in the (false) claims made over its utility for detecting 'viral' genetic material, 'isolating' alleged 'viruses' and 'staging' disease / illness ('PCR viral load').

The Polymerase Chain Reaction uses a variety of genetic engineering techniques[7]. It is now used worldwide in commercially-manufactured kits and PCR-machines. Since the 1980s, the conceptual and commercial development of PCR has enabled widespread and mistaken claims, many of which are fraudulent[8], fear-inducing[9] and have proven to be devastating to both our bodily sovereignty[10] and our national economies[11].

The recent intense focus on the PCR without any associated critique of its controversial biotechnological origin has directed people towards a *downstream*[12] debate on how well (or not) the PCR 'detects' what it is designed to detect. This popular focus has helped to

3 Mullis (1998).
4 Rabinow (1996).
5 The term 'PCR' is used here 'generically' to refer to PCR and 'offshoot' methods, Reverse Transcription-qPCR etc.
6 For a chronology of 'Covid-19' in which PCR features see Coppolino (2023).
7 Mai-Wan Ho, a British scientist (and critic) of biotechnology, described PCR as one of four genetic engineering *techniques* used in "modifying" and "recombining" genes (recombinant rDNA) technologies). The polymerase chain reaction technique:*"..allows specific gene sequences in a mixture to be rapidly replicated many tens of thousands or hundreds of thousands of times"* (Ho 1999, p.50).
8 For example, the explicit/tacit claims in publications post-2020 that 'identification of RNA' equates to 'viral isolation' given mainstream consensus has rebutted this claim (Calisher et al 2001, p.757).
9 Apart from the government-induced fear inculcated since 2020 (Corbett 2020a) aided by widespread PCR testing (Pollock 2022; Deeks et al 2020) soon after the clinical use of PCR in health services PCR became a tool in fearful legal actions levied against citizens (e.g. Corbett 2000) and pseudo-diagnosis (e.g. Dartmouth Medicine 2007; Hearn 2020).
10 Corbett (2009).
11 The official estimates of the total cost of UK government covid-19 measures (including 'NHS Test and Trace' 'PCR tests') are £310-410 billion for 2020/21 (House of Commons Library 2023); >£7 billion in contracts for testing in England alone (National Audit Office 2021, Figure 9 p.37).
12 A 'downstream' analysis of the PCR focuses solely on how well or not the PCR detects ('false' v true positives' and the manipulation of cycle thresholds (Cq) etc) and not the provenance (origin) of the amplicon. Despite MIQE guidelines (e.g. Bustin et al 2009; Bustin 2010) problematic downstream events are reported as at Dartmouth-Hitchcock Medical Center (Dartmouth Medicine, 2007; Hearn, 2020) and what investigative journalism (Engelbrecht and Demeter 2020) has revealed over the manipulation potential of PCR cycle thresholds (Ct) to inflate / deflate positivity or negativity, and *vice versa*.

conceal the arguably more prescient *upstream*[13] debate over the essential origin ('provenance') of what is actually detected. The axiom being critically reviewed here is the assumption that the cDNA[14] which is *manufactured* and *amplified* in the RT-qPCR for 'SARS-CoV-2' PCR is from a 'virus'. Since the 2020 development of the PCR offshoot (RT-qPCR) for 'SARS-CoV-2', the key issue should not be how well (or not) PCR 'works' in terms of its detection capability, but rather, what is the *origin* or *provenance* of the amplicon[15] which is reportedly detected and amplified a billionfold[16].

From the various scientific exposés of the field of Virology pre-[17] and post-Covid[18], it is clear that the answer to this *provenance* question is that, whatever it is, this amplicon cannot have a viral origin.

In 1919 the Hungarian Karl Ereky used the word *"biotechnology"* to describe a technology which incorporated aspects of agricultural engineering[19] in order to convert natural raw materials into commercial products[20]. Thus, from its inception the original concept of biotechnology was defined in commercial terms - those of *manufacture*: Ereky was manufacturing saleable products based on abstractions from Nature in order to make financial profits. Unlike the nineteenth century, today's biotechnology has had Molecular

13 This use of the term 'upstream' differs to Wilsdon (2005) by signifying efforts to bring into critical view 'black-boxed' axioms of a technology (as opposed to just focusing on its 'downstream' applications) irrespective of its well established R&D trajectories.

14 "After elongation from the primer, a double-stranded hybrid of RNA and DNA, called cDNA, is produced. cDNA is then the perfect template for PCR, and relative quantities of specific templates could be determined by carefully controlling the amplification in a process of semiquantitative PCR or qPCR.." (Nolan et al 2010, p.144). "Quantitative reverse transcription polymerase chain reaction, also called RT-qPCR, is used to detect and quantify RNA. Total RNA or mRNA is first transcribed into **complementary DNA** (cDNA). The cDNA is then used as the template for the quantitative PCR or real-time PCR reaction (qPCR)." (Thermofisher Scientific 2023, emphasis original).

15 See PCR reportage by investigative journalists: Farber (2020a, 2020b); Rappoport (2020); and Coppolino (2021, 2023).

16 "Beginning with a single molecule of genetic material DNA, the PCR can generate 100 billion similar molecules in an afternoon" (Mullis 1990, p.56).

17 Papadopulos-Eleopulos et al (2012)(www.theperthgroup.com) show how 'viral provenance' was never established for what are popularly termed 'HIV genes' in the absence of scientific proof of HIV isolation / ontology. A parallel critique of the intentions and bias in virology is by virologist Professor Peter Duesberg, see chapter 1 of 'Inventing The AIDS Virus'; featuring SMON, a prospective episode of Japanese population-wide poisoning due to the pharmaceutical clioquinol initially claimed by virologists to be 'viral disease'; (Duesberg and Ellison 1996,pp.11-29)(www.duesberg.com).

18 See Bailey & Bevan-Smith (2021), and especially Bailey (2022), and Stone's www.viroliegy.com. The non-purification of 'SARS-CoV-2' was crucially acknowledged in 2020 by four leading 'Covid' research teams (Engelbrecht and Demeter 2020); thus material 'detected' by those teams using PCR could not be 'viral' by definition. Human cellular material acts to conflate 'viral identification' (e.g. extracellular vesicles, see Giannessi et al 2020) yet purification is reportedly canonical; *de rigeur:* "an essential prerequisite for the chemical analysis of viruses" (e.g. White & Fenner 1986, p.9). Herein lies a conundrum..

19 Fári and Kralovánszky (2016).

20 Fiechter (2000).

Biology as its core discipline. This relatively new form of biology started to eclipse the field of biochemistry in the 1930s as Warren Weaver[21] – a mathematical physicist directing the Rockefeller Foundation – fundamentally impacted Biology with the highly reductive methods and techniques drawn from the fields of both physics and chemistry[22].

The English sociologist Edward Yoxen described how Weaver transplanted the methods of experimental manipulation into Biology:“exact, analytic, vigorously formulated, *reductive* experimentation based on the methods of physics and chemistry”[23]. This move enabled Weaver to further extend a reductive paradigm through the Rockefeller grant system[24] in order to establish relatively large-scale and prospective research programmes across academia and industry; favouring the interests of a *highly* reductive form of biology – *Molecular Biology.*

The 1980s invention of the PCR by Dr Kary Mullis was premised on the reductive methods of molecular biology concerned with abstraction and manipulation[25]. Some mythic points in the historical timeline include:-,

- In 1953 James Watson and Francis Crick together with their team claimed to unravel the structure of DNA at Cambridge University, hypothesising that it would soon be possible to copy genetic material.

- In 1956 Arthur Kornberg claimed to identify and isolate DNA polymerase, which is an enzyme thought of as essential for DNA cellular replication. In the 1960s Gobind Kohrana claimed to synthesise DNA oligonucleotides (purportedly short DNA / RNA molecules - nucleic acids) thought to be associated with artificial gene synthesis.

- In 1971 Kjell Kleppe invented what is considered a key axiom for PCR by suggesting the bracketing of a targeted DNA sequence using a pair of primers,

21 Kay (1993) shows how Weaver (1970) popularised from the 1930s onwards a reductive form of molecular biology.
22 Kenney (1986, p.11).
23 Yoxen (1981, p.89 emphasis added).
24 Kenney (1986, p.11).
25 Kay (1993).

strands of nucleic acids which are said to serve as the starting point for DNA synthesis, and then reportedly copying this sequence using DNA polymerase.

- In 1977 the use of primers was claimed to have been made easier with the development of techniques to sequence DNA by Frederick Sanger at Cambridge University.

Today's PCR is a biotechnology which 'black-boxes[26]' this complex history of technical succession inside test-kits and laboratory machines, thereby ostensibly removing the need for anyone to question the science which orders and underpins those materials contained therein[27].

The term 'biotechnology' was further extended in the 1980s. In Martin Kenney's 1986 analysis of the 'biotechnology-industrial complex', biotechnology was defined as:"New biological techniques that found commercial applications during the 1970s and 1980s*."*[28] In 1996, Paul Rabinow's critical ethnography of the organisational development of PCR noted how biotechnology's *'hallmark'*:

> *"..*lies in its potential to *get away from nature*, to construct artificial conditions in which specific variables can be known in such a way that they can be *manipulated.* This knowledge then becomes the basis for *remaking nature* according to our norms.*"* [29].

The above definitions show that biotechnologies like PCR produce outputs or 'products' which are subsequently claimed to be *copies* or *simulacra* of 'naturally occurring' phenomena (DNA / RNA)."Casual discussions of DNA molecules sometimes make them sound like easily obtained objects. The truth is that in practice it is difficult to get a well-defined molecule of natural DNA from any organism.."[30]. These 'outputs' are thus

26 Other biotechnologies are 'black-boxed' in terms of their antecedent histories. For example, 'HIV antibody-tests'; see Corbett (2006).
27 Collins et al (2023) suggest the axioms of techniques like PCR are so unquestionably accepted they have become uncontested so helping to galvanise a 'hypernormal' image for molecular biology.
28 Kenney (1986, p.6).
29 Rabinow (1996, p.20 emphasis added).
30 Mullis (1990, p.56).

manipulated, highly reductive[31] artefacts of engineering, *fashioned by* and *refracted through* corporate intentions, and more crucially, refracted through today's paradigmatic mindsets (cf. 'germ theory', 'virology' etc.)

All of this implies that PCR outputs by definition cannot be *natural but are Nature Remade, and remade in our current era according to the axioms and postulates of contagion (viral) theory.*

By the mid 20th century, molecular biology and its spin off biotechnology start-up companies began to make links between academia, venture capital and multinational corporations. The genesis and historical development of this burgeoning industrial-complex has been critically researched since the 1970s by scholars such as Lily E Kay[32], Martin Kenney[33], Robert Kohler[34], Paul Rabinow[35], Edward Yoxen[36] and others.

Dr Kary Mullis was officially credited in 1993 for the invention of PCR by the award of a shared Nobel Prize[37]. However, it was actually his employer, the Cetus Corporation[38] (Emeryville, CA), which provided the particular organisational culture[39] which enabled both the PCR invention and overseeing of its strategic direction.

Given the current hegemony of PCR inside Molecular Biology (and Virology) it is highly significant that Cetus Corporation's 1982 Annual Report committed Cetus to developing and exploiting new methods for:

> "..diagnosing disease at the nucleic acid level without the need for culturing often dangerous micro-organisms.."[40]

31 Like many others (e.g. Mae-Wan Ho, 2000) Professor Richard Strohman (2000, 2003) wrote about the problems with the reductionism associated with genetic manipulation.
32 Kay (1993).
33 Kenney (1986).
34 Kohler (1982).
35 Rabinow (1996).
36 Yoxen (1981).
37 Mullis (1993).
38 In 1979 the Cetus Corporation in Emeryville, California hired Dr Kary Mullis to synthesize oligonucleotide probes (Mullis 1990).
39 Rabinow (1996).
40 Cetus Corporation Annual Report (1982), cited in Rabinow (1996, pp.48-49).

The biotechnological intention was thus to *reduce* 'diagnosis' and 'isolation' (of putative 'dangerous micro-organisms') down to the nucleic acid level; further *diminishing* and arguably *bastardising* whether intentionally or not the classical canonical[41] methods of diagnosis and 'isolation'. This was no doubt further accelerated by the anticipation of financial profits yet to be gained from ubiquitous entry into the global commercial markets for quicker and cheaper techniques in successive generations of PCR technology. Today this is exemplified by an increasing range of more sophisticated machinery capable of multiple PCR offshoots (e.g. RT-qPCR).

Thus the Polymerase Chain Reaction is both a concept and technique essentially defined in terms of *reductive manipulation and corporate profits*.

The PCR '*science narrative*' betrays this reductive abstraction from Nature's elements in its almost lyrical fusion of chemical and engineering discourse[42]:-,

> *'Polymerase' is a 'naturally occurring' enzyme (a biological macromolecule or polymer) which is thought to catalyse the formation and repair of DNA / RNA. 'Chain reaction' is an exponentially repetitive process whereby PCR amplifies a segment of DNA ['target' / 'amplicon']. PCR is very 'sensitive', given the presence of a designated DNA target, reportedly it will almost invariably detect its target even if only one target molecule is present. The PCR process is described as a "cyclic, 3-step process" involving: denaturation, primer annealing and extension of the DNA fragment[43]. In the first step, double-stranded DNA is said to be denatured into single strands by heating to 95 degrees Centigrade. In the second step, short DNA fragments called primers are purportedly manipulated through heating and cooling (annealed) of these DNA strands at 35-40C. In the third step primers are described as being extended by DNA polymerase at 72 degrees Centigrade by adding complementary nucleotides to the three (3) prime end (3' end) of the primers. Starting from a single target DNA or ribonucleic acid (RNA) sequence, theoretically more than one billion product sequences can routinely be synthesised by a PCR in one run[44]. The PCR process reportedly has to be modified in reverse transcription quantitative PCR (RT-qPCR) in order to detect single-stranded RNA because PCR can only amplify DNA[45].*

41 Canonical means standard, common, normative or archetypal; non-canonical refers to something that is not considered to be part of the accepted or standard understanding; non-mainstream: https://www.quora.com/What-does-non-canonical-mean-in-biology. For example, Giannessi et al (2020, p.4) cites 'canonical isolation' methods like "differential ultracentrifugation".

42 See Bustin (2009) and Bustin (2010).

43 Rakshit (2010, p.14)

44 Rakshit (2010, p.14)

45 Nolan et al (2010).

Omitted from the above idealised problem-free narrative are the downstream realities, such as indeterminacies, false readings[46](+/-) and ubiquitous contamination[47].

The Nobel-winning PCR invention has been critiqued[48]. Such analyses are *downstream* critiques in the sense of calling into question the veracity of the applications stemming from the original process methodology, as well as the steps in the process, which are now embodied in today's kits and machines. The PCR process is claimed to only work once the material to be amplified – the amplicon or 'target sequence' - is *already known*. Following on from the Cetus era, proponents of PCR have argued how this billionfold amplification process is of enormous value in Molecular Biology in arguably diminishing (or even eliminating) the need for the extraction of large amounts of alleged genetic material. This assumption is part of the reductive thinking behind the erroneous use of PCR. Its uncritical acceptance has enabled the current substitution of the virtual (*in silico)* gene sequence for the (real) material biological entity eschewed by today's post-modern virologists.

A greater appreciation of the original intention of the Cetus Corporation to use PCR as a novel leverage for developing quicker / cheaper 'methods' for 'diagnosing at the nucleotide level' may help to partly explain why erroneous claims are made over PCR; such as its identification of genetic material (DNA or RNA) as somehow equating to 'viral isolation'[49].

These claims are incorrect because they assert that identification and amplification of genetic material is actually equivalent to 'isolation'. This is known to be invalid from the literature[50]. Furthermore claiming that PCR identifies and amplifies allegedly 'viral' material is also wrong. Such a claim means that a 'viral' origin for the amplicon would need to have been scientifically proven at the outset in an ordered process which upholds canonical isolation (purification) methods[51]. Derivation of a sample from a real person should be subject to chemical isolation and purification[52], morphological, characterisation, electron

46 For example, Pollock (2022); Deeks et al (2020).
47 For example, Romero & Angel (2014); Romero (2018).
48 For example, Serpieri & Franchi (2021).
49 Publications after 2020 claim 'SARS-CoV-2 isolation' conflated with PCR identification e.g. "..**Isolation of Viruses.**.cells were monitored with..RT-PCR, for the presence of viral nucleic acid in the supernatant" Zhu et al (2020, p.728 emphasis original). Often there is +/- ultracentrifugation, +/- multiple sample exposures to other confounding variables like Vero cells, cell culture chemicals, antibiotics and other adjuncts to foster 'propagation' etc.
50 For example, Calisher et al (2001).
51 See Cowan et al (2022).
52 Engelbrecht and Demeter (2020) published admissions by leading Covid research teams of their failure to purify 'SARS-CoV-2'.

microscopy and photography; and any whole unique genome would need to have been genetically sequenced prior to any subsequent use of PCR amplification[53].

The generative power of the PCR amplification process is well established:"Beginning with a single molecule PCR can generate 100 billion similar molecules in an afternoon"[54].

A great deal has been made of this characteristic. The popular impact of this performance claim is akin to that of Henry Ford's production line, where higher volumes of product are manufactured more *quickly and cheaply so* eliding previous efforts. The effect of these metrics actually bamboozle and obfuscate a key question which remains: *what is it that the PCR amplifies? How do we know what it is from – what is the true origin of the allegedly detected RNA/DNA?* Is it from a 'virus' or from the human being whose bodily fluids are being 'tested' *away from Nature* (in the lab)? These questions over the origin of that which the PCR detects in any alleged 'viral disease' are the key *upstream* questions to be asked in relation to any discussion of the PCR; they are the essential key questions to ask about the *'provenance factor'*[55].

From the 1980s onwards, the work of The Perth Group led by Eleni Papadopulos-Eleopulos[56] was unique in falsifying the original claims by Robert Gallo and Luc Montagnier over 'HIV' isolation. The Perth Group[57] showed how there was no scientific proof of either the existence of a unique, exogenously acquired retrovirus called 'HIV' or of the alleged "HIV genome", (RNA or DNA) ever originating in a unique, exogenously acquired infectious retroviral particle (ontology unproven[58]). The Perth Group[59] also showed how the origin (or provenance) of the starting target sequence for so-called 'HIV' was never scientifically proven to be 'viral'.

53 Papadopulos-Eleopulos et al (2012) explain how establishing 'viral provenance' was never achieved in the case of 'HIV genes'. See also Bailey (2022) and Bailey & Bevan-Smith (2021, pp.22-27).

54 Mullis (1990, pp.36-43).

55 This point was adeptly made by US investigative journalist Eric Coppolino in December 2022 during a Q&A (Medical Doctors For Covid Ethics, MD4CE) with Kevin McKernan, who was a co-author of the 'Retraction Paper' (Borger et al 2020) and is the CSO of Medicinal Genomics; see 08:55 into this video from Dr Sam Bailey (Bailey S, 2022)(NZ): https://drsambailey.substack.com/p/baileys-and-cowan-respond-to-kevin

56 'The Perth Group' website: www.theperthgroup.com

57 Papadopulos-Eleopulos et al (2017).

58 The non-existence of the alleged 'HIV' is commonly (rhetorically) implied from Papadopulos-Eleopulos et al (2107): www.theperthgroup.com. The essence of the Perth Group's analysis could be extrapolated to any and all allegedly human-disease causing 'viruses', such as the so-called 'SARS-CoV-2'. Recent critiques of virology cite Papadopulos-Eleopulos et al ('The Perth Group') e.g. Bailey (2022); and the scientific legacy of Papadopulos-Eleopulos (e.g. Stone 2022); Dr Sam Bailey's (NZ) video series (since 2020) is extensive and covers many (if not all) of the issues discussed here; see 'Illuminating Health' website https://drsambailey.com/. Like Dr Mark Bailey, Dr Sam Bailey cites The Perth Group (Eleni Papadopulos-Eleopulos) as antecedent to her critique of virology.

59 'The Perth Group' website: www.theperthgroup.com

The very existence of a 'provenance factor' should preclude (or at least postpone) any normative discussion of Bayes' Theorem applied to the 'PCR testing' as a 'screening test'[60] – how well it performs in terms of 'false' and 'true' positives etc – because the underlying viral origin (provenance) of the target amplicon has not (yet) been scientifically proven[61]. It therefore follows that irrespective of the historical intentions of the biotechnology sector (e.g. the 1980s Cetus Corporation), PCR cannot be used as a diagnostic 'virus test' in the absence of conclusive scientific proof showing that the provenance of the target amplicon is viral.

Since the late 1980s, mainstream ignorance of The Perth Group's work coincided with mainstream scientists signifying major problems with the emerging fashion of conflating genetic identification, tissue culture propagation and purification of micro-organisms, including alleged 'viruses'. For example, a 1996 review on the causation of human microbial ('viral') disease in light of (genetic) sequence-based approaches argued for further dilution of the Koch criteria for disease-causation. The review stated that:

> "Sequence-based approaches to microbial identification and disease causation share some problems with more traditional approaches but also generate some additional problems. Perhaps the most obvious and perplexing issue raised by sequence-based approaches is the *absence of a viable or even intact microorganism* with which to reproduce disease. Strict adherence to the principle behind Koch's third postulate poses a major difficulty for the evaluation of microorganisms that have *not yet been purified* or propagated in the laboratory."[62]

The above mention of "micro-organisms.. not yet..purified" was historically ominous and now appears even more prescient. This is where we are today with 'viruses' after nearly forty years since the patented invention of PCR[63]. Several leaders and associates of the original 'viral' discovery teams have already admitted on record that their original 'viral' samples were never purified[64]. Thus viral ontology is arguably unproven, and likely invalid

60 Bayes' Theorem (Stanford Encyclopedia of Philosophy 2003) is a mathematical formula used for calculating conditional probabilities applied in screening (medical testing) of populations to aid calculation of the rate of false and true positives (e.g. Weiss et al, 1985). Several 'downstream' critiques have indicated how this calculation has never been adequately undertaken in screening / testing for 'SARS-CoV-2' e.g. Pollock (2022); Deeks et al (2020).

61 This could be read as somewhat tacitly referred to within the critique by Borger et al (2020)(reference to: 'in silico' sequences in the absence of live virus or viral isolates). Lack of isolation proof was explicitly referred to by Bailey (2022).

62 Fredricks and Relman (1996 emphasis added).

63 Mullis et al (1987).

64 The roll call of self-rebuttals include: in 1997 Professor Luc Montagnier (see: Tahi 1997); in 1984 Robert Gallo's colleague, Matthew Gonda Head of Electron Microscopy, National Cancer Institute, ahead of Gallo's four back-to-back *Science* papers announcing 'AIDS retrovirus isolated' Gonda admitted the EM particles were too small for a retrovirus (see: Roberts 2009, p.143); and reportedly for 'SARS-CoV-2', Leo L. M. Poon; Malik Peiris; Myung-

(falsified), given the problematic[65] of purification[66]never canonically attempted. Citizen scientist Mike Stone suggests the ongoing problematic of 'virus purification' represents the "end of Virology" as a science. "Without purification/isolation of particles believed to be "viruses", there never was any valid independent variable to manipulate in order to show that any particles were actual causes of disease"[67]

In 1999, three years after the above statement on 'sequence-based approaches' and following the UK's promotion of 'HIV testing' to pregnant women, it was further stated by Harrison & Corbett:

> "PCR is a technique that amplifies small amounts of DNA or RNA but the same fundamental problem exists..Unless you can isolate the virus *free of cellular contamination*, you cannot be certain that the DNA RNA fragments are viral and not cellular." (emphasis added)[68]

The above *upstream* statement highlighted the provenance factor in relation to PCR thus addressing the key factor underlying a misuse of the technology. This key PCR caveat was completely ignored by a plethora of virologists and associated public health zealots, who proceeded *downstream* to protect their PCR 'tests' by *ad hominem* infused accusations of 'errors' and 'damage to public health' levied against those who contradicted the received wisdom[69].

In 2001, two years later, there was a further acknowledgement from within the science mainstream about the problems of trying to reduce everything down to the nucleic acid level. In a mainstream consensus statement on how '*new technologies create new problems*' it was simply stated that:

Guk Han; Wan Beom Park; and Wenjie Tan (see: Engelbrecht and Demeter 2020).

65 Giannessi et al (2020, p.4) state: "Nowadays, it is an almost impossible mission to separate EVs [extracellular vesicles] and viruses by means of canonical vesicle isolation methods, such as differential ultracentrifugation, because they are frequently co-pelleted due to their similar dimension..To overcome this problem, different studies have proposed the separation of EVs from virus particles by exploiting their different migration velocity in a density gradient or using the presence of specific markers that distinguish viruses from EVs..However, to date, a reliable method that can actually guarantee a complete separation does not exist".

66 "Purification is an essential prerequisite for the chemical analysis of viruses"; but there are "close associations of viruses" with the cells they "parasitize" it is "not an easy matter to free virions of associated cell debris, or even from viral proteins synthesized in excess of the infected cell" White and Fenner (1986, p.9) and (White and Fenner 1996, pp.9-17); Fields (1996a, pp.401-430) only cites "concentration" for EM analysis; and cites density gradient centrifugation, ion transfer purification and cell culture purification.

67 Stone (2021).

68 Harrison and Corbett (1999, p.25).

69 For example, Brett, Kennedy, Sunderland et al (1999).

"Detection of viral nucleic acid is not equivalent to isolating a virus."[70]

The above is also an *upstream* statement and one which represented the 2001 consensus view of the American Committee on Arthropod-borne Viruses. It succinctly encapsulates the essential problem of conflating detection of nucleic acid with 'viral isolation'.

In 2009 the routine use of PCR 'viral load' technology purportedly applied for clinical staging of 'HIV disease' was shown to have undermined bodily sovereignty[71]. The viral load focuses individuals away from asserting their own bodily autonomy onto a virtual (virological, numerical and statistical) notion of well being. This is the virologists Holy Grail, a metric known as 'undetectable HIV'. PCR "viral load" was originally licensed only as an 'aid' and not a diagnostic yet was used as a surrogate diagnostic[72].This practice is similar to that of the other surrogate markers, like 'HIV antibodies' (ELISA, Western blot); all of whose metrics are translatable into vastly contradictory interpretations of positive, indeterminate and negative[73].

All of the above show how slippage has therefore historically occurred between 'identifying' and 'diagnosing' as well as between 'identifying' and 'isolation' since the 1982 declared intention of the Cetus Corporation to elide canonical diagnostics in favour of targetting (amplifying) nucleic acids.

By the late 1990s and early 2000s the PCR technology had become thoroughly embedded in the laboratory and the clinic. The mainstream science goal was to use the 'PCR viral load' as an elusive metric in the minds of patients in order for them to keep trying to achieve "undetectable levels of HIV". This became the mantra for the "statistical / epidemiological reasoning"[74]. HIV patients reportedly experience this target-chasing set up by the virologists as akin to trying to reach unobtainable goals which subsequently devalues their own bodily responses. *Chasing 'HIV undetectability' becomes a free floating virtual target undermining one's own bodily autonomy.* All of these data show how the expectation of undetectable PCR 'viral load' (like those seeded for all 'HIV' surrogate markers) is unfulfilled in patients' experience[75]. Adherence to such a 'viral model of health'

70 Calisher et al (2001, p.757).
71 Corbett (2009) available online 2007.
72 Corbett (2009) available online 2007.
73 Corbett (2009, p.116) available online 2007.
74 Corbett (2009, p.114).
75 Corbett (2001).

creates increasing dependency on ever more PCR readings, leading to a devaluation of trust in one's own bodily integrity and a biomedical ('viral') lifestyle[76].

In January 2020 the European fabricators of the first PCR (RT-qPCR) 'workflow' methodology for identifying the alleged 'SARS-CoV-2' ('PCR test') stated in their original *Eurosurveillance* paper[77] how no isolated 'SARS-CoV-2' was available, and that their 'test' was developed using artificially generated primers, *in silico* genetic sequences[78]. "A viral genome sequence was released for immediate public health support via the community online resource virological.org on 10 January (Wuhan-Hu-1, GenBank accession number MN908947..followed by four other genomes....virus isolates or samples from infected patients have so far not become available..[the PCR was] ..designed in absence of available virus isolates or original patient samples" specimens..Design and validation were enabled..[by] the use of synthetic nucleic acid technology."[79]

In 2020, the PCR fabricators in the United States similarly acknowledged there was 'no virus':"Since no quantified virus isolates..are currently available, assays designed for detection of the 2019-nCoV RNA were tested with characterized stocks of in vitro transcribed full length RNA (N gene; GenBank accession: MN908947.2) of known titer (RNA copies/µL) spiked into a diluent consisting of a suspension of human A549 cells and viral transport medium (VTM) to mimic clinical specimen"[80]. *Synthetic transcripts* were used to *mimic real specimens because no viral isolates existed.*

In April / May 2020 the lead UK scientist for PCR was Professor Maria Zambon at Imperial College London, one of the European PCR fabricators and co-author of the original *Eurosurveillance* paper[81]. Professor Zambon acknowledged[82] how the development of the RT-PCR did not use virus isolation as the gold standard and employed synthetic transcripts.(The author was cognisant of this caveat from 1990s PhD[83] research and publication[84].) There was simply no gold standard that used viral isolation to validate this

76 See Race (2001) for subordination of individuals within a medicalised 'HIV' lifestyle.
77 Corman et al (2020).
78 See Farber (2020), Rappoport (2020) and Coppolino (2021).
79 Corman et al (2020).
80 CDC (2020); Lu et al (2020). The effective take up of these highly revealing official statements by alternative media channels resulted in strong rebuttals by so-called 'fact-checkers' like Reuters (2020) and Full Fact (2020).
81 Corman et al (2020).
82 E-mail dialogue between author and Professor Zambon published online, see Corbett (2020c).
83 Corbett (2001).
84 Corbett (1998).

'PCR test'[85]: what the PCR targeted was assumed to be 'viral' by virtue of the target's resemblance to uploaded templates. The British Prime Minister was written to in 2020 about this 'scientific black hole' in the RT-PCR[86] and a nationwide public campaign was also launched online[87]. Because of the so-called 'pandemic' there was a huge 'rush to judgement'[88] (fuelled by competition for publication, esteem and grants) by all of the PCR fabricators. It appears that they were all working with the same paradigmatic mindset whereby canonical studies (reporting on centrifugation (purification), electron microscopy or morphology etc) were all now unnecessary because of the panacea, aka the PCR.

In 2020 contemporaneously, health scientists[89]and clinical trial scientists reported on these fatal caveats:"There is no gold standard for COVID-19 since this specific virus has never been properly purified and visualized"[90].

The fatal omission of any gold standard validation using viral isolation is fully congruent with the strategic direction of the PCR-era since the 1980s which aims to reduce diagnostics to the nucleic acid level. RNA detection was the goal. It is reliably reported by virology critics Drs Sam and Mark Bailey (NZ) in the 2020-2023 period of their extensive papers and in-depth videos that to date no study[91] has scientifically proven a viral origin for this amplicon using canonical methods with robust controls. Thus, in the absence of any gold standard of viral isolation the misnamed 'PCR test' is scientifically "meaningless"[92] having no scientifically proven specificity or specificity based on an actual virus as opposed to nucleic acids.

By November 2020, the European fabricated PCR for 'SARS-CoV-2' was critically reviewed in a Retraction Paper[93]. The *Eurosurveillance* journal was asked by the authors of the Retraction Paper to *formally withdraw* the original paper fabricating the test. The

85 Some of the above critiques re: lack of gold standard appear tacitly acknowledged in mainstream statements like those in the British Medical Journal by Watson et al (2020) and in videos uploaded onto the internet.
86 See Corbett (2020d); apart from the author, other signatories to the letter to PM Boris Johnson included: Mr Piers Corbyn (UK); Mr David Crowe (Canada); Dr David Rasnick (USA); Dr Andrew Kaufman (USA); and Professor Roger Watson (UK). Several notable European AIDS Dissidents refused to sign this letter. Subsequently Professor Watson came to disagree with us that there was 'no proof' for isolation of 'SARS-CoV-2' yet in a gentlemanly spirit has not insisted on his name being removed retrospectively from what is now an historical artefact.
87 Corbett (2020e).
88 Ioannidis et al (2022); Clark (2023).
89 Corbett (2020b); Kaufman (2020a, 2000b).
90 Ogenstad et al (2020).
91 See Bailey & Bevan Smith (2021), Bailey (2022) and Massey (2023).
92 See Torsten & Engrlbrecht (2020).
93 Borger et al (2020).

Retraction Paper reported ten fatal flaws in the PCR for 'SARS-CoV-2'."The first and major one is that the novel Coronavirus SARS-CoV-2..is based on *in silico* (theoretical) sequences.. no validation has been performed..based on isolated SARS-CoV-2 viruses or full length RNA thereof."[94]

Significant reportage throughout 2020 on the erroneous use of PCR came from North American AIDS- and Covid-era investigative journalists. The AIDS-era voices were sensitised ahead of the Covid-era through their critical and award-winning coverage of AIDS and the problematic of the 'virus/AIDS' hypothesis.

Jon Rappoport wrote his first book '*AIDS INC*'[95] in 1988 which severely critiqued the *HIV/AIDS Industrial Complex, the axioms of* virology and the toxic antiretrovirals like AZT and other similarly toxic pharmaceuticals. In a series of articles throughout 2020, and in postings on *Jon Rappoport's Blog / NoMoreFakeNews.com,* Rappoport highlighted both the lack of scientific evidence for 'SARS-CoV-2' and the multiple misuses of the PCR. For example, Rappoport's March 30th 2020 article[96] covered the misuse of PCR to create fake case numbers, the problems of deficient regulatory oversight, and the scientific uncertainties of PCR misused as a fake diagnostic.

Celia Farber first covered PCR in her 1994 article for SPIN Magazine, interviewing the Nobel Laureate winning PCR-inventor, Dr Kary Mullis. This celebrated interview was later included as a chapter in her 2006 book, *Serious Adverse Events, An Uncensored History of AIDS*[97]*,* reissued in 2023[98]. By 2006, Farber had scored a major scientific bulls eye taking down the *AIDS Industry* with her front-page H*arper's* article, *Out Of Control: AIDS and the corruption of medical science*[99]*.* This astounding piece criticized what little ethics then existed inside the antiretroviral drug industry. Farber's book examined the arguments of Professor Peter Duesberg on the dearth of evidence for the 'virus/AIDS' hypothesis. Another chapter examined the work of the Perth Group, detailing how Papadopulos-Eleopulos and her team showed 'HIV' had not been isolated, and that the ELISA / Western blot surrogate marker 'tests' for 'HIV' were fundamentally flawed by their use of non-specific proteins.

94 Borger et al (2021).
95 Rappoport (1988).
96 Rappoport (2020).
97 Farber (2006a).
98 Farber (2023a).
99 Farber (2006b)

Reading Celia Farber's book today in its newly published second edition from Chelsea Green is like having in one's hands a health activists' 'covid-primer'. The issues Farber expounded on in the AIDS era closely resemble those of today: 'non-specific PCRs / ELISAs / Western blot's'; 'no proof of virus isolation' and widespread toxicity due to fast-tracked pharma, causing morbidity/mortality; all mixed up with censorship, vilification and gross suppression of those speaking against received wisdom[100].

Two of Farber's 2020 articles for *UNDERCOVERDC* magazine specifically focused on the science of the PCR; one in April, and a subsequent one in December[101]. The December article was a *tour de force* with in-depth coverage of the controversial science issues raised by the Retraction Paper, including the lack of scientific evidence for any 'SARS-CoV-2', the misuse of *in silico* gene sequences and coverage of the ten major PCR-test flaws in the *Eurosurveillance* paper published by the European PCR-test fabricators.

Towards the close of 2020 and all through 2021 onwards, Eric Coppolino critically covered the caveats of the PCR and its closely associated issues of great significance (e.g. lack of evidence for 'SARS-CoV-2') all of which were raised by the Retraction Paper. Several of these were specially featured by Coppolino in a two-part in-depth interview with two key co-authors of the Retraction Paper[102]. In 2020, Coppolino instituted (with assistance from Cindy Ragusa and others) a unique rolling, *Chronology for Covid & SARS-CoV-2 PCR and Metagenomics*[103] updated online.

The work of citizen scientist Mike Stone in uncovering the 'lies' of virology in his aptly spelt website Viroliegy.com has been continuing from 2020 onwards. Stone covers topics like PCR, virus purification[104], isolation and many others. In Stone's introduction to his journey of uncovering lies, explicit tributes are respectfully paid to those inspirational scientists and investigative journalists who gave Stone a lead e.g."David Crowe, Stefan Lanka, Roberto Giraldo, The Perth Group, Liam Scheff, Celia Farber.."[105].

In 2020, Christine Massey, a Canadian biostatistician, originated and collated Freedom of Information (FOI) requests to national and global public health agencies around the world.

100 These legal admissions by Kuritzky heavily suggest both Farber and Duesberg were on the receiving end of an undercover dirty tricks campaign chronically waged by often unseen forces 'at distance' by proxy (Kuritzky 2014).
101 Farber (2020b).
102 Coppolino (2021).
103 Coppolino (2023)
104 For example, Stone (2021).
105 Stone (2023).

These FOIs captured these agencies' lack of evidence for 'SARS-CoV-2' and other alleged viruses. These citizen science efforts of Massey most often reflect the erroneous uses of the PCR. These salutary *Roman efforts* of Massey's[106] have also resulted in a growing evidence base of utility to critical health science detailing the global dearth of evidence for viral isolation and for viral ontology *per se*.

By the end of 2020, the above situation with the PCR was the historical end result of using manufactured techniques of gene manipulation; reductive methods to reorient biology away from the physical and the material in Nature, and towards artificial manipulation of abstracted, simulated elements: this is *Nature Remade* to conform to the virologists' / molecular biologists' virtual construct of the 'virus'.

In 2023, three authors (Kammerer, Klement, Borger) from the original twenty-two co-authors of the Retraction Paper together with Leuwen, Pekova and Steger claimed to have overcome the caveats of the original PCR[107]. This relatively new PCR was claimed to detect the alleged virus 'SARS-CoV2' with "high sensitivity and specificity" and with "no false positives". The claim appears contradictory; echoing those in the original Retraction Paper that refuted the original PCR in terms of the fallibility of 'viral' diagnostics whilst simultaneously bolstering the concept of RNA identification as being equivalent to viral identification ; all were cited in the absence of any prior isolation/purification, electron microscopy and morphological analysis; none of which are discussed[108].

The claim to have originated a 'better test' rests on the assumptions of genomic modelling and the identification by the authors of a "unique consensus region"[109] located in the 5'-UTR [5' untranslated region] as representing both a "specific and sensitive target for RT-PCR". This "unique consensus region" was reportedly selected due to its genetic alignment with Bat/SARS/nCOV-19 coronaviruses and in relation to what is also claimed to be the "inter-individual genomic heterogeneity" of the alleged strains of 'SARS-CoV-2'.

The above are asserted in the absence of any scientific proof establishing the prior existence of any particle meeting the definition of a disease-causing virus. The gene bank

106 Massey (2023).
107 Kammerer et al (2023).
108 Kammerer et al (2023).
109 A 'consensus region' is a model of reality and as such embdies many problems in terms of its biological basis (Schneider 2001).

alignment with pre-existing genomic sequences is the only validation used to assert the viral provenance of the “unique consensus region”.

Because this new PCR was engineered relative to *in silico* sequences it serves to illustrate, as did its much criticised predecessor, the biotechnological potential to get away from Nature and for constructing artificial conditions allowing manipulation of specific variables. “Consensus genomic regions” *per se* do not equate to regions with unchanging proteins because such regions are only models of which proteins could be present. How this model corresponds to reality is not clear. “Authentic asymptomatic samples” were simply assumed to contain ‘virus’ *a priori*. As above, this issue alone must be addressed: *How do Kammerer et al know their ‘unique consensus region’ of 5’-UTR is 'viral'?* Kammerer et al (2023) fail to address this fundamental issue.

CONCLUSION

Several issues emerge from the above critical review. First, the remaking of Nature into man-made products according to the axioms and postulates of contagion (viral) theory is evident. Second, despite the earlier ambitious diagnostic intentions of the 1980s Cetus Corporation, PCR cannot be scientifically used to detect a 'virus' unless it could be first scientifically proven that what is detected is of viral origin. Third, PCR can only be used to amplify specific known nucleotide sequences with the proviso that detection of such is not equivalent to 'isolation'. Fourth, PCR cannot be used to determine the origin ('provenance') or the significance of any particular nucleic acid. Fifth, the analytical specificity of the PCR is not equivalent to diagnostic specificity for any clinical condition.

Finally, all of the above appear to have arisen because of the intrinsic nature of the PCR as a process of *manufacture,* as well as the scientific context of its deployment within Molecular Biology, which is now in ascendance as a core discipline of Virology. The ways in which the PCR process and its outputs have been erroneously interpreted are undoubtedly due in part to having been an instrument created by the mainstream paradigm comprising germ / contagion/ viral hypotheticals.

What exactly the above issues imply is a matter of some conjecture for the majority of mainstream publications and the current plethora of agencies, many of which work under a thinly-veiled patina of 'health freedom'; yet actually assert and seem to enforce the 'offical' view whilst censoring or aggressively decrying any alternative.

It is also becoming increasingly evident that the 'mainstream' assertions appear more akin to a fixed dogma, or ideology, whilst all that lie outside bear a hallmark of truth. These include not just the contributions of credentialed scientists, and those who are science trained, but also newly emerging citizen scientists and successive waves of investigative journalists.

The exclusion from the mainstream, perhaps, has been one of the hardest trials to weather for those whose prior work was once openly embraced but is now rejected or even suppressed. Self-exclusion is another matter altogether. It could imply the possibility of flipping the current mainstream / non-mainstream binary into a new binary, a new mainstream / non-mainstream. However, this begs the question: what else can be done

now about ameliorating this rather entrenched and somewhat sectrarian situation? As Feyerabend’s opening quote hopefully suggests (and as Galileo seems to have proved), science often readjusts, or refocuses, such that, truths once firmly established are redetermined over time to be false or purely imaginary.

Only time will tell.

REFERENCES

Bailey, M. and Bevan-Smith, J. (2021) 'The COVID-19 Fraud & War On Humanity'. 11th November. Available at: The_Covid_19_Fraud_and_War_On_Humanity-1.pdf

Bailey, M.(2022) 'A Farewell To Virology (Expert Edition)', 15th September. Available at: https://drsambailey.com/a-farewell-to-virology-expert-edition/

Bailey, S. (2022) 'Viruses & Kevin McKernan. Baileys & Cowan Respond to Kevin McKernan [including Eric Coppolino]', Dr Sam Bailey Substack, 13th December. Available at: https://drsambailey.substack.com/p/baileys-and-cowan-respond-to-kevin

Borger, P. Malhorta, BS. Yeadon, M. et al (2020) 'External peer review of the RTPCR test to detect SARS-CoV-2 reveals 10 major scientific flaws at the molecular and methodological level: consequences for false positive results'. Available at: http://dx.doi.org/10.5281/zenodo.4298004

Brett, P. Kennedy, J. Sunderland, J. Ward, C. and Clayton, F. (1999) The screening of pregnant women the case against (2). *The Practising Midwife*, September 2 (8) p.39. Letters. Available at: https://www.immunity.org.uk/wp-content/uploads/2022/11/Harrison-and-Corbett-1999.pdf

Bustin, S. Benes, V. and Garson, JA. et al (2009) 'The MIQE Guidelines: *M*inimum *I*nformation for Publication of *Q*uantitative Real-Time PCR *E*xperiments', *Clinical Chemistry*, 55 (4), pp. 611–622, https://doi.org/10.1373/clinchem.2008.112797

Bustin, S. (Ed) (2010) *The PCR Revolution. Basic Technologies and Applications*. Cambridge: Cambridge University Press.

Calisher, CH. Blair, CD. and Bowen, MD et al (2001) 'Identification of Arboviruses and Certain Rodent-Borne Viruses: Reevaluation of the Paradigm', *Emerging Infectious Disease*, 7 (4), July–August, pp.756-758.

Centers For Disease Control (2020) *CDC 2019-Novel Coronavirus (2019-nCoV) Real-Time RT-PCR Diagnostic Panel*. Atlanta, GA: Centers for Disease Control and Prevention. [date stamp 2020] file:///C:/Users/User/Documents/ZECK/EUA-CDC-Panel-IFU_0_0.pdf

Clark, J. (2023) 'How covid-19 bolstered an already perverse publishing system' B*ritish Medical Journal*, 380, pp.689-690. Available at: https://www.bmj.com/content/bmj/380/bmj.p689.full.pdf

Collins, H, Shrager, J. and Bartlett, A et al (2023) 'Hypernormal science and its significance', *Perspectives on Science* 31 (2), pp. 262-292. https://doi.org/10.1162/posc_a_00572

Coppolino, EF. (2021) ‘Interview with American PCR master Kevin McKernan and digital artist Bobby Rajesh Malhotra’, Parts 1 & 2. February 12th. Available at: https://planetwaves.fm/interview-with-american-pcr-master-kevin-mckernan-and-digital-artist-bobby-rajesh-malhotra/

Coppolino, EF. (2023) ‘Chronology for Covid & SARS-CoV-2 PCR and Metagenomics’, *Chiron Return.* Accessed 04/06/2023. Available at: https://audio.pwfm.tech/documents/covid-chronology-5.2.0.pdf

Corbett, K (1998) ‘‘The problematic for empowerment: the surrogacy of antibody tests and the erosion of the ‘medical gold standard’’, *Continuum,* 5 (4), pp. 51-56. Available at: http://www.altheal.org/continuum/Vol5no4.pdf

Corbett, K. (2000) ‘Camden Fallout’, *Agenda,* 22. Available at: https://eprints.mdx.ac.uk/17779/1/Corbett%202000.pdf

Corbett, K. (2001) ‘Contesting AIDS/HIV: the lay reception of biomedical knowledge’. Unpublished PhD thesis. London; London South Bank University. Available at: https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.288106

Corbett, K. (2006) ‘Inside the “black box” of the antibody test: deconstructing the official classification of “risk” in test algorithms used for identifying the Human Immunodeficiency Virus’*,* in *XVI World Congress of Sociology*, Durban, South Africa. Available at: https://eprints.mdx.ac.uk/18280/1/Inside%20the%20black%20box%20%20Durban%202006.pdf

Corbett, K. (2009) ‘*"You've got it, you may have it, you haven't got it":* multiplicity, heterogeneity, and the unintended consequences of HIV-related tests’, *Science, Technology and Human Values*, 34 (1), pp.102-125.doi:10.1177/0162243907310376

Corbett K (2020a) ‘Monograph Two. An Interactive ‘Anti-Coronavirus Toolkit. The Coronahysteria Series: ‘SARS-CoV-2’, the ‘novel Coronavirus’. London, KPC Research and Consultancy Limited, May.ISBN 978-1-5272-6229-4. Available at: https://www.academia.edu/89270777/An_Interactive_Anti_Coronavirus_Toolkit

Corbett, K. (2020b) ‘Monograph One. Where is the Evidence For The Existence of The ‘novel Coronavirus’, SARS-CoV-2?’ London: KPC Research and Consultancy Limited. April. ISBN 978-1-5272 6214-0 Available at: https://www.academia.edu/s/85be1c2199 and https://www.immunity.org.uk/wp-content/uploads/2020/04/WHERE-IS-THE-EVIDENCE-FOR-THE-EXISTENCE-OF-THE-CORONAVIRUS-FINAL.pdf

Corbett, K. (2020c) ‘Kevin Corbett e-mail trail with Professor Maria Zambon’, April/May. Published online by Christine Massey (with Christine Massey’s own analysis)(Canada) November 26th: ‘Public Health England admits using fake virus material to evaluate “COVID-19” tests, the gold standard is not isolated virus, and more’. Available at: https://www.fluoridefreepeel.ca/public-health-englands-answers-to-covid-19-testing-questions/

Corbett, K. (2020d) ‘Letter to Prime Minister Rt Hon Boris Johnson MP signed by Dr Kevin Corbett (UK), Mr Piers Corbyn (UK), Mr David Crowe (Canada), Dr David Rasnick (USA), Dr Andrew Kaufman (USA) and Professor Roger Watson (UK)’, on behalf of the *StandUpX Science Committee*. London SE1: StandUpX Science Committee. 22nd June. Available at: https://kevinpcorbett.com/coronahysteria/viral-challenge-letter-to-british-prime-minister.html and https://kevinpcorbett.com/onewebmedia/Signed%20StandUpX%20definitive.pdf

Corbett, K. (2020e) ’If there's no proof the virus exists end all Lockdowns/Masks/Trax/Vax actions’, *Go Petition*, 31st July. Available at: https://www.gopetition.com/petitions/if-theres-no-proof-the-virus-exists-end-all-lockdownsmaskstraxvax-actions-2.html

Corman, VM. Landt, O. Marco, K. et al (2020).‘Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR’, *Eurosurveillance*, 25(3):pii=2000045. https://doi.org/10.2807/1560-7917.ES.2020.25.3.2000045

Cowan, T. et al (2022) ‘Settling The Virus Debate’, July 14th. Available at: https://drsambailey.com/resources/settling-the-virus-debate/

Dartmouth Medicine (2007) ‘A rough, tough cough: Was it, or wasn't it, the whooping kind?’ Dartmouth Medicine Online, Spring. Available at https://dartmed.dartmouth.edu/spring07/pdf/vs_cough.pdf

Deeks, J. Brooks, AJ. and Pollock, AM. (2020) ‘Operation Moonshot Proposals Are Scientifically Unsound’, British Medical Journal, 370:m3699, September 22nd. Available at: https://www.bmj.com/content/370/bmj.m3699.long

Duesberg, PH. and Ellison, BJ. (1996) ‘Chapter 1. Losing The War on AIDS. The SMON Fiasco’, in *Inventing The AIDS Virus.* Washington DC: Regenery Publishing.

Engelbrecht, T. and Demeter, K. (2020) ‘COVID19 PCR Tests are Scientifically Meaningless. Though the whole world relies on RT-PCR to “diagnose” Sars-Cov-2 infection, the science is clear: they are not fit for purpose’ *OffGuardian* June 27th. Available at: https://off-guardian.org/2020/06/27/covid19-pcr-tests-are-scientifically-meaningless/

Farber, C. (2006a) *‘Serious Adverse Events. An Uncensored History of AIDS*’, Hoboken, NJ: Melville House Publishing. 1st Edition.

Farber, C. (2006b) ‘Out Of Control: AIDS and the corruption of medical science’. *Harpers,* March, pp.11-52. Available at: https://www.immunity.org.uk/wp-content/uploads/2013/07/Harpers_Celia.pdf

Farber, C. (2020a) ‘Was the COVID-19 Test Meant to Detect a Virus?’ April 7th, UndercoverDC. Available at: https://www.uncoverdc.com/2020/04/07/was-the-covid-19-test-meant-to-detect-a-virus/

Farber, C. (2020b) ‘Ten Fatal Errors: Scientists Attack Paper That Established Global PCR Driven Lockdown’, *UNDERCOVERDC*, 1st December. Available at: https://www.uncoverdc.com/2020/12/03/ten-fatal-errors-scientists-attack-paper-that-established-global-pcr-driven-lockdown/

Farber, C. (2023) *'Serious Adverse Events. An Uncensored History of AIDS*', White River Junction, Vermont: Chelsea Green Publishing.

Fári, MG. and Kralovánszky, UP. (2006) 'The founding father of biotechnology: Károly (Karl) Ereky', *International Journal of Horticultural Science*, 12 (1), pp. 9–12. Available at: https://core.ac.uk/download/pdf/160939234.pdf

Feyerabend, P. (1975) A*gainst Method. Outline of an anarchistic theory of knowledge*. New York NY: Verso.

Fiechter, A. (2000) 'History of Modern Biotechnology', 1:69 (*Advances In Biochemical Engineering/Biotechnology*, 69). London: Springer.

Fields, B (Ed)(1996) *Virology Volume 1*. Philadelphia, Lippincott 3rd ed. pp.401-430.

Fredricks, DN. and Relman, DA. (1996) 'Sequence-based identification of microbial pathogens: a reconsideration of Koch's postulates', *Clinical Microbiological Review*, 9(1), 18-33. DOI: 10.1128/CMR.9.1.18. Available at: https://pubmed.ncbi.nlm.nih.gov/8665474/

Full Fact (2020) '*CDC has not said SARS-CoV-2 has never been isolated',* 29th September. Available at: https://fullfact.org/health/CDC-document-viral-isolates/

Giannessi, F. Aiello, A. Franchi, F. Percario, ZA. and Affabris, E. (2020) 'The Role of Extracellular Vesicles as Allies of HIV, HCV and SARS Viruses', *Viruses*. May 22, 12(5), pp.571. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7291340/pdf/viruses-12-00571.pdf

Harrison, R. and Corbett, K. (1999) 'Screening of pregnant women for HIV. The screening of pregnant women the case against', *The Practising Midwife*, September 2 (7), pp.24-29. Available at: https://www.immunity.org.uk/wp-content/uploads/2022/11/Harrison-and-Corbett-1999.pdf

Hearn, M. (2020) 'Pseudo-epidemics. Why COVID-19 is guaranteed to never end', 26th July, *Medium*. Available at: https://blog.plan99.net/pseudo-epidemics-7603b2da839

Ho, Mae-Wan (2000) *Genetic engineering: dream or nightmare? Turning the tide on the brave new world of bad science and big business*, New York, NY: Continuum.

House of Commons Library (2023) 'Public spending during the Covid-19 pandemic'. House of Commons Library Research Briefing, No 09309, 26th April. Available at: https://researchbriefings.files.parliament.uk/documents/CBP-9309/CBP-9309.pdf

Ioannidis, JPA. Bendavid, E. Salholz-Hillel, M. Boyack, KW, and Baas J. (2022) 'Massive covidization of research citations and the citation elite', *Proceedings Of The National Academy of Sciences Of The United States of America*, 119:e2204074119. Available at: https://www.pnas.org/doi/10.1073/pnas.2204074119

Kammerer, U. Pekova S., Klement, R. et al (2023) ‘RT-PCR Test Targeting the Conserved 5'-UTR of SARS-CoV-2 Overcomes Shortcomings of the First WHO-Recommended RT-PCR Test’, *International Journal of Vaccine Theory, Practice, and Research*, 3(1) April 4, pp. 818-846. https://doi.org/10.56098/ijvtpr.v3i1.71

Kaufman, A. (2020a) ‘Dr Andrew Kaufman exposing the 'Covid-19' magic trick - the sleight of hand that transformed society’, 21st April. Available at: https://archive.org/details/BitChute-TXargSbVp7E

Kaufman, A. (2020b) ‘Dr Andrew Kaufman - Unmasking The Lies Around COVID-19: Facts vs Fiction Of The Coronavirus Pandemic’, April. Available at: https://youtu.be/y6ok8CwBqYc

Kay, LE. (1993) *The molecular vision of life Caltech, the Rockefeller Foundation, and the rise of the new biology*. New York, NY: Oxford University Press.

Kenney, M. (1986) *Biotechnology. The University-Industrial Complex*. New Haven and London: Yale University Press.

Kohler, R. (1982) *From Medical Chemistry to BiochemistryThe Making of a Biomedical Discipline*. Cambridge, Cambs: Cambridge University Press.

Kuritzky, D. (2014) ‘Declaraton’. 8th October. Available at: file:///C:/Users/User/Downloads/Telegram%20Desktop/Kuritzky%20REDACTED%20(2).pdf

Lu, X., Wang, L., Sakthivel, K.S., et al (2020) ‘US CDC Real-Time Reverse Transcription PCR Panel for Detection of Severe Acute Respiratory Syndrome Coronavirus 2’, *Emerging Infectious Diseases*, 26 (8) August, pp.1654–1665. Available at: https://pubmed.ncbi.nlm.nih.gov/32396505/

Massey, C. (2023) ‘FOIs reveal that health/science institutions around the world (215 and counting!) have no record of SARS-COV-2 isolation/purification, anywhere, ever’. Available at: https://www.fluoridefreepeel.ca/fois-reveal-that-health-science-institutions-around-the-world-have-no-record-of-sars-cov-2-isolation-purification/

Mullis, K., Erlich, H.A., Arnheim, N., Saiki, R.K., and Scharf, S.J. (1987) *‘US Patent. Mullis et al.* Patent Number 4,683,185 Date of Patent, 28th July. Available at: https://patentimages.storage.googleapis.com/ec/14/bf/0a414f77b2d203/US4683195.pdf

Mullis, K.B. (1990) ‘The unusual origin of the polymerase chain reaction’, *Scientific American* 262, 36-43.

Mullis, K.B. (1993) ‘Nobel Lecture. The Polymerase Chain Reaction’. 8th December. Available at: https://www.nobelprize.org/prizes/chemistry/1993/mullis/lecture/
Mullis, K.B. (1998) *Dancing Naked In The Mind Field*. New York NY: Pantheon Books.

National Audit Office (2021) 'Test and Trace in England'. Report by the Comptroller and Auditor General'. HMSO: Department of Health & Social Care. ISBN: 978-1-78604-377-1 Available at: https://www.nao.org.uk/wp-content/uploads/2021/06/Test-and-trace-in-England-progress-update.pdf

Nolan, T. Novak, T. and Huggett, J. (2010) 'Taking control of the polymerase chain reaction', in Bustin S (Ed) (2010) *The PCR Revolution. Basic Technologies and Applications*. Cambridge, Cambridge University Press, pp129-152.

Ogenstad, S. Peace, K. and Liu, L. (2020) 'Statistical Considerations for Clinical Trials During COVID-19: Accurate COVID-19 Testing in Clinical Trials', Available at: https://digitalcommons.georgiasouthern.edu/bee-facpubs/160/ and https://www.linkedin.com/pulse/statistical-considerations-clinical-trials-during-asa-fellow-3e/?trackingId=gbPDLnblTmWFq%2BXr8zrMzg%3D%3D

Papadopulos-Eleopulos, E. Turner, VF, Papadimitriou, JM, Page, BAP. Causer, D. (2017) 'HIV – A virus like no other'. 12th July. Available at: www.theperthgroup.com/HIV/TPGVirusLikeNoOther.pdf

Pollock, A. (2022) 'Mass Testing: Expensive, Chaotic, and Wasteful. Professor of Public Health Allyson Pollock discusses the pitfalls of mass PCR testing', 22nd February, *Global Collateral*. Available at: https://collateralglobal.org/article/mass-testing-expensive-chaotic-and-wasteful/

Rabinow, P. (1996) *Making PCR. A Story of Biotechnology*. Chicago, University of Chicago Press.

Race, K. (2001) 'The Undetectable Crisis: Changing Technologies of Risk', *Sexualities*, 4(2), 167–189. https://doi.org/10.1177/136346001004002004

Rakshit, S. (2010) 'Thermostable enzymes used in polymerase chain reaction', in Bustin S (Ed) (2010) *The PCR Revolution. Basic Technologies and Applications*. Cambridge, Cambridge University Press, pp12-18.

Rappoport, J. (1988) *AIDS INC. Scandal Of The Century*. San Bruno CA: Human Energy Press.

Rappoport, J. (2020) 'Corona: creating the illusion of a pandemic through diagnostic tests', 1st May. Available at: https://blog.nomorefakenews.com/2023/05/01/corona-creating-the-illusion-of-a-pandemic-through-diagnostic-tests-2/

Reuters (2020) 'Fact check: This CDC document does not say that that SARS-CoV-2 doesn't exist', 31st October. Available at: https://www.reuters.com/article/uk-factcheck-cdc-idUSKBN27633R

Roberts, J. (2009) *Fear Of The Invisible*. Bristol: Impact. 2nd edition.

Romero, M. and Angel, M. (2014) 'Contamination of genomic databases by HIV-1 and its possible consequences. A study in Bioinformatics', *Universitat Obert de Catalunya*, 17th March. Available at: https://openaccess.uoc.edu/handle/10609/31361

Romero, M.(2018) ‘Less than half of women are diagnosed with ovarian cancer within a month of seeing a doctor, finds survey’, British Medical Journal, 363:k4419, 18th October. Available at: https://www.bmj.com/content/363/bmj.k4419/rr

Schneider, T.D.(2002) ‘Consensus sequence Zen’. *Applied Bioinformatics*, 1(3), pp.111-119. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1852464/

Serpieri, R. Franchi, F. (2021) ‘Is polymerase chain reaction fully reliable? A critical review in the light of published evidence from the golden decades of molecular genetics’, *BioRix* *http://dx.doi.org/10.13140/RG.2.2.32228.91522*

Stanford Encyclopedia of Philosophy (2003) ‘Bayes’ Theorem’. *Stanford Encyclopedia of Philosophy.* Accessed 04/06/2023. Available at: https://plato.stanford.edu/entries/bayes-theorem/

Stone, M. (2021) ‘The Purification Problem’. *Viroliegy,* 21st September. Accessed 04/06/2023. Available at: https://viroliegy.com/2021/09/21/the-purification-problem/

Stone, M. (2022) ‘Remember the Titans: R.I.P. Eleni Papadopulos-Eleopulos’. *Viroliegy,* March 20th. Available at: https://viroliegy.com/2022/03/20/remember-the-titans-r-i-p-eleni-papadopulos-eleopulos/

Stone, M. (2023) ‘My Journey Into Uncovering germ Theory Lies’. *Viroliegy,* 21st September. Accessed 04/06/2023. Available at: https://viroliegy.com/

Strohman, RC. (2000) ‘Genetic Determinism as a Failing Paradigm in Medicine: Implications for Health and Wellness’, in M. S. Jamner and D. Stokols (Eds) *Promoting Human Wellness: Frontiers for Research, Practice and Policy.* Berkeley and Los Angeles CA: University of California Press, pp.99-130.

Strohman, R.C. (2003) ‘Genetic Determinism as a Failing Paradigm in Medicine: Implications for Health and Wellness’, *Journal of Social Work Education*, 39 (2), pp.169-191.

Tahi, D. (1997) ‘Did Luc Montagnier Discover HIV? “I repeat, we did not purify!”’ *CONTINUUM*, 5(2), Winter 1997/8, pp.31-35.

Thermofisher Scientific (2023) ‘Basic Principles of RT-qPCR’. *Thermofisher Scientific*. Accessed 04/06/2023. Available at: https://www.thermofisher.com/uk/en/home/brands/thermo-scientific/molecular-biology/molecular-biology-learning-center/molecular-biology-resource-library/spotlight-articles/basic-principles-rt-qpcr.html

Watson, J. Whiting, PF. Brush, JE. (2020) ‘Interpreting a covid-19 test result’, *British Medical Journal*, 369: m1808. Available at: https://www.bmj.com/content/369/bmj.m1808

Weaver, W. (1970) ‘Molecular Biology: Origin of the Term’, *Science,* 170 (3958), pp. 581-582.

Weiss, SH. Goedert, JJ. Sarngadharan, MG. and Bodner, AJ. The AIDS Seroepidemiology Collaborative Working Group; R.C. Gallo, & W.A. Blattner (1985) 'Screening Test for HTLV-III (AIDS Agent) Antibodies: Specificity, Sensitivity, and Applications', *Journal of the American Medical Association*, 253 (2), pp.221–225. Available at: https://jamanetwork.com/journals/jama/article-abstract/396195 doi:10.1001/jama.1985.03350260073029

White, DO. Fenner, FJ.(1986) *Medical Virology*. San Diego CA: Academic Publishers (Harcourt Brace). pp.9-17.

Wilsdon, J. (2005) 'Paddling Upstream: New Currents in European Technology Assessment', in M. Rodemeyer, D. Sarewitz, & J. Wilsdon (eds), *The Future of Technology Assessment.* Washington, DC: Woodrow Wilson International Center for Scholars, pp.22-29.

Yoxen, E. (1981) 'Life as a Productive Source: Capitalising the Science and Technology of Molecular Biology', in Levidow L, Young B (Eds)(1981) *Science, Technology and the Labour Process: Marxist Studies* ,Volume 1. New Jersey: Humanities Press, pp. 66-122.

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ACKNOWLEDGEMENTS

The author gratefully acknowledges the valuable feedback received from the reviewers during preparation of the manuscript and its revision prior to publication. Monograph design by the author. Sub editing and proof reading by Mr Gerard J Egan.

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