

Truth decay – Determining fact from fiction

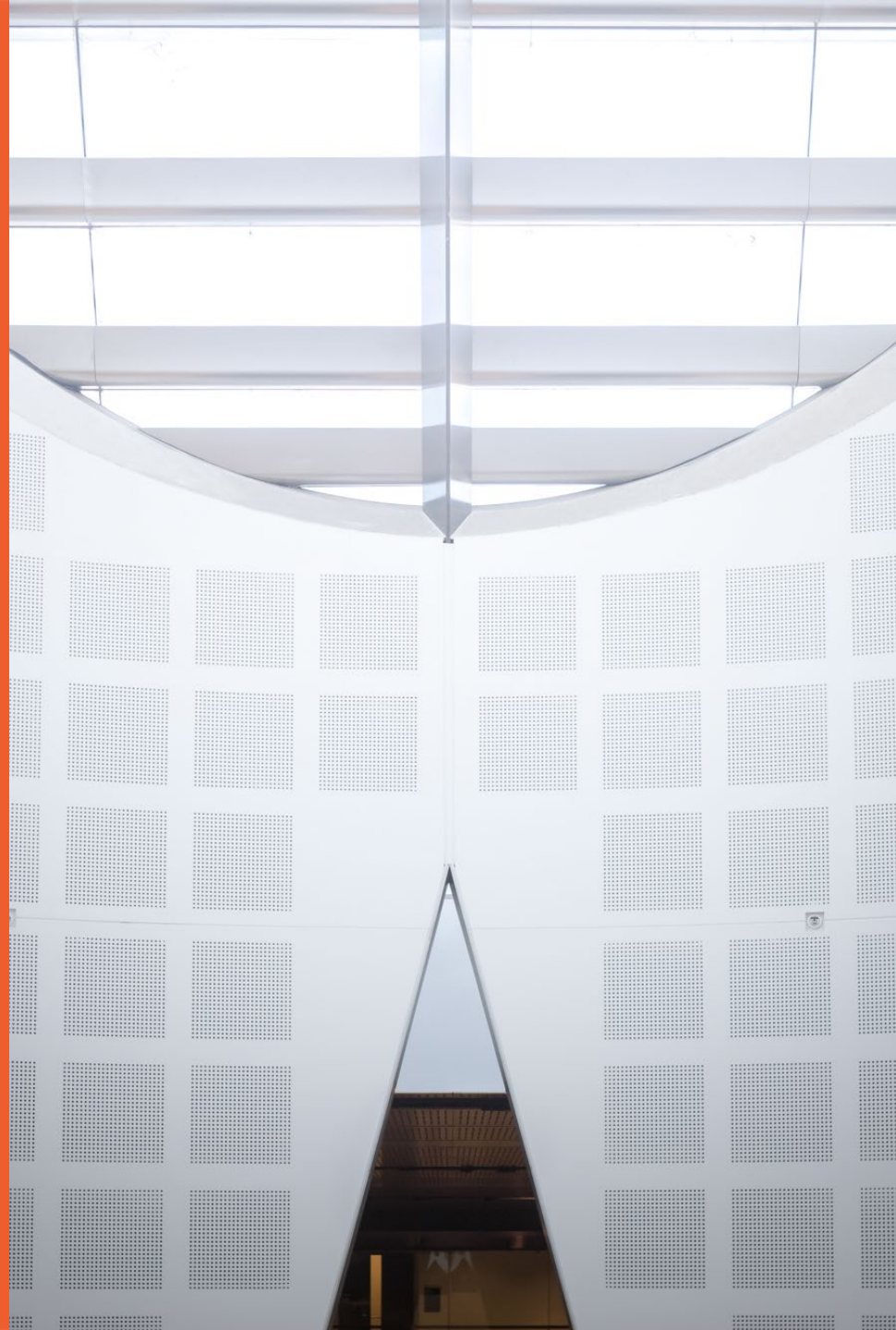
Nick Enfield

Sydney Initiative for
Truth (SIFT)

Sydney Social Sciences
and Humanities
Advanced Research Centre



THE UNIVERSITY OF
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Pope Francis bans sale of cigarettes at the Vatican on health grounds

'The motive is very simple: the Holy See cannot be cooperating with a practice that is clearly harming the people'

[Philip Pullella](#) | 5 days ago | [0 comments](#)





Nov 9 2017



WHO 
@WHO



WHO welcomes the Vatican's
decision to ban the sale of cigarettes
as of next year.

Tobacco kills more than 7 million
people every year [#NoTobacco](#)  



TOBACCO THREATENS US ALL

HEALTH &
ECONOMIC
IMPACTS

TOBACCO KILLS PEOPLE EVERY YEAR

MORE THAN

7

MILLION

TOBACCO THREATENS HEALTH, ECONOMIES AND DEVELOPMENT.



12% OF DEATHS OF ALL PEOPLE AGED **OVER 30** ARE DUE TO TOBACCO.



GLOBAL ANNUAL COSTS FROM TOBACCO USE ARE **US\$1.4 TRILLION** IN **HEALTHCARE** EXPENDITURE AND LOST PRODUCTIVITY FROM ILLNESS AND PREMATURE DEATH.

#NOTOBACCO



Nigel Farage ✓ @Nigel_Farage · 3d

The World Health Organisation is just another club of 'clever people' who want to bully and tell us what to do. Ignore.

WHO ✓ @WHO

WHO welcomes the Vatican's decision to ban the sale of cigarettes as of next year. Tobacco kills more than 7 million people every year #NoTobacco 🇻🇦



Michael Deacon ✓

@MichaelPDeacon

Follow



I ask Nigel Farage why he's taken up cigarettes again. Farage: "I think the doctors have got it wrong on smoking"



4:17 AM - 15 Jun 2016

The doctors have got it wrong on smoking.



Tobacco industry manipulation of research

Lisa A. Bero ⁽¹⁾



The primary motivation of the tobacco industry has been to generate controversy about the health risks of its products. The industry has used several strategies including:

1. funding and publishing research that supports its position;
2. suppressing and criticising research that does not support its position;
3. changing the standards for scientific research;
4. disseminating interest group data or interpretation of risks via the lay (non-academic) press and directly to policymakers.

Doubt is our product since it is the best means of competing with the
"body of fact" that exists in the mind of the general public. It is also
the means of establishing a controversy. Within the business we
recognize that a controversy exists. However, with the general public
the consensus is that cigarettes are in some way harmful to the health.

1969 memo from Brown & Williamson, a then-subsiidiary
of British American Tobacco



World Health
Organization

TOBACCO THREATENS US ALL

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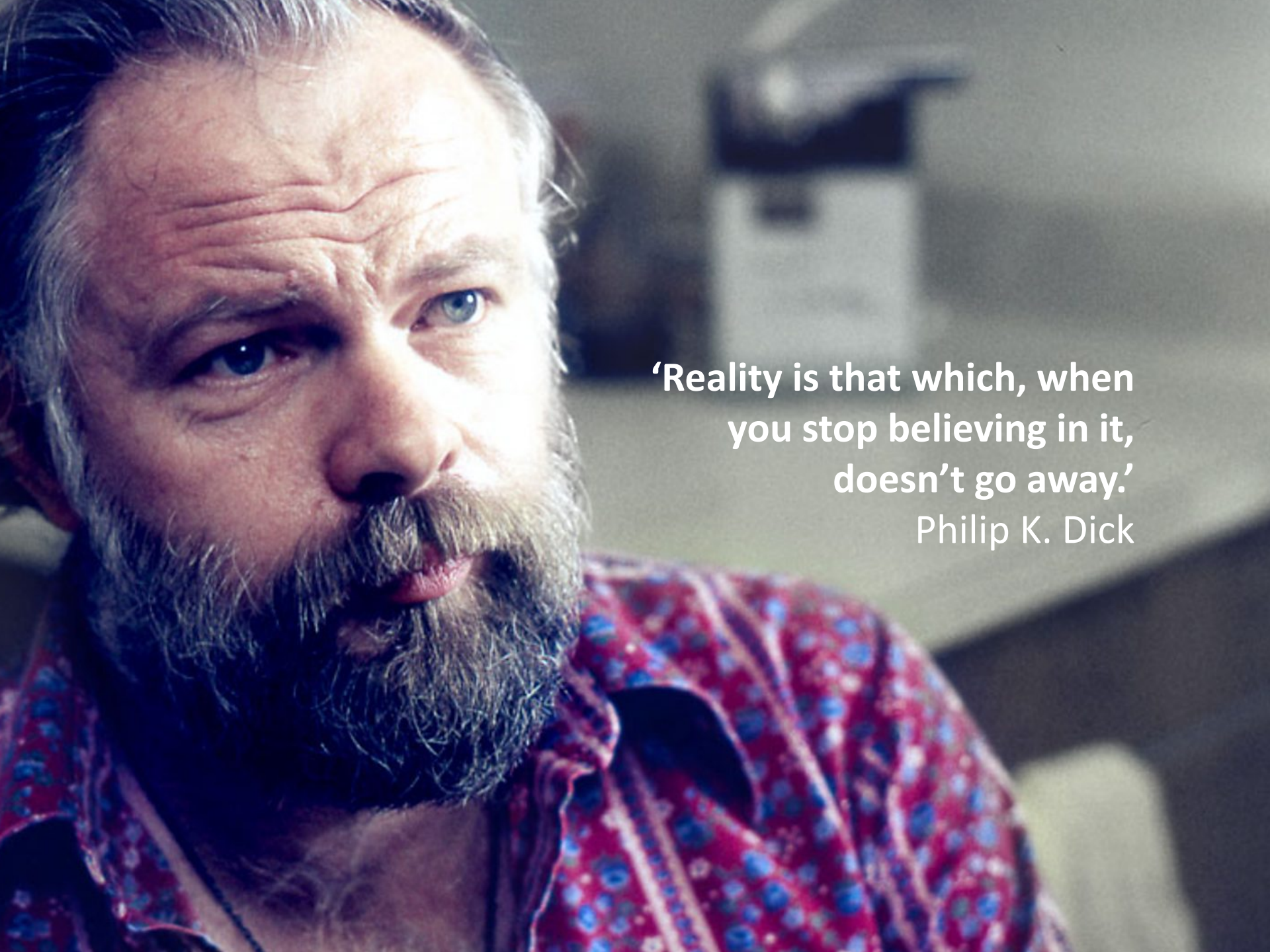
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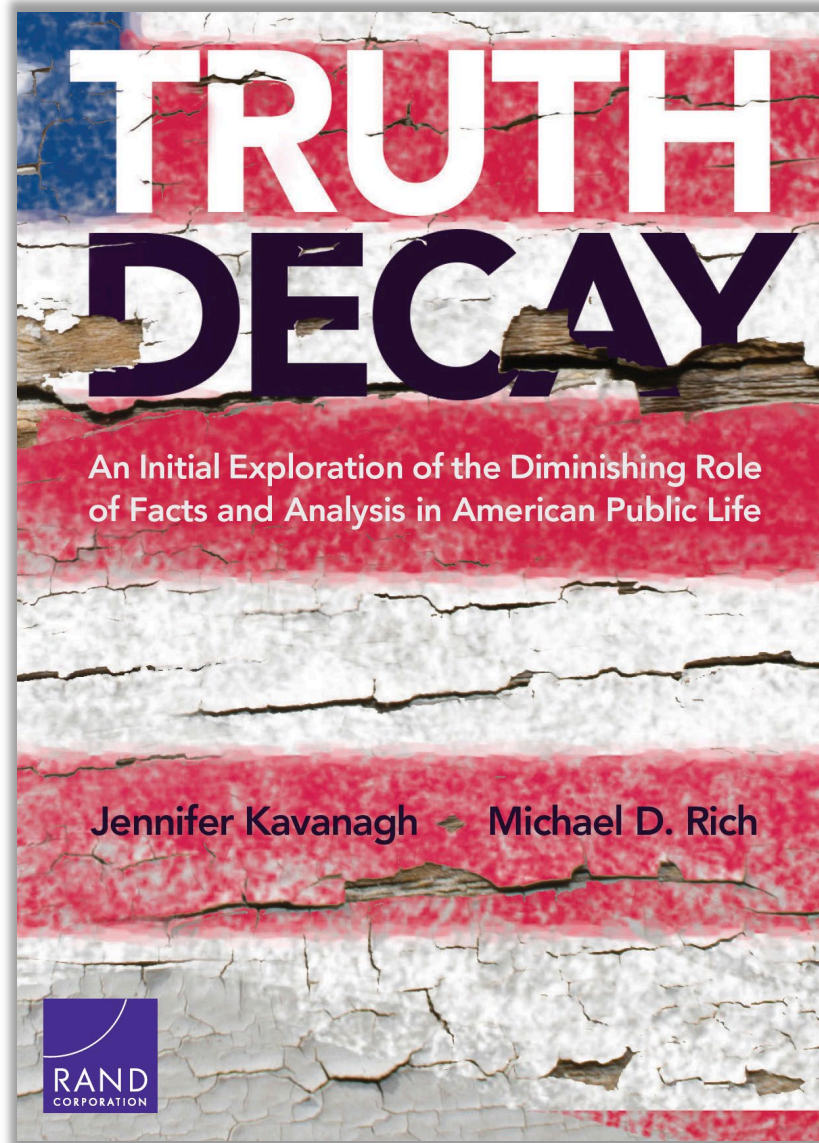
#NOTOBACCO

Around 400
people will have
died from
tobacco-related
illness during the
course of this
talk today.



**'Reality is that which, when
you stop believing in it,
doesn't go away.'**

Philip K. Dick



RAND Corporation 2018



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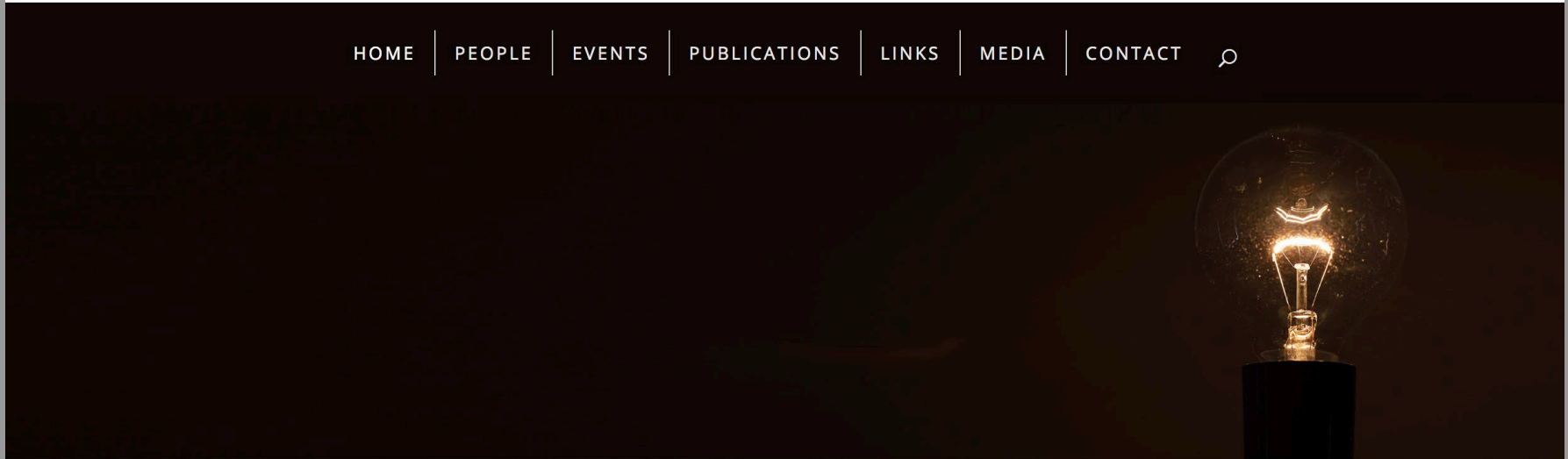
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The Sydney Initiative for Truth (SIFT) is concerned with the need for evidence, nuance, trust, and reason in today's ever-noisier infosphere.

SIFT's interdisciplinary researchers aim to understand and remedy the 'post truth' crisis. Through philosophy, linguistics, political science, public health, media, environmental science, and data science, we are investigating a range of issues around truth, including the quality of public discourse, commercial influence in research, historical trends in 'truth decay', cognitive biases, political and media spin, fake news, power and claims to truth, the role of language, and the decline of trust in expertise.

Principle 1.
Statements are sometimes
for informing, other times
for signaling allegiance

Sarah Palin, 2013
*Conservative
Political Action
Conference,
Maryland USA*





Tweet

Hey, GOVERNMENT, you can't take my AR-15, so what makes you think you can take my plastic straw? I don't need your permission, you are subordinate to me, and that's the world you're stuck living in.



@Armastrangelo
June 29, 2018



Telstra

05:32



Tweet



DailyException

@dailyexception



I think we've reached the "so what if he colluded" phase

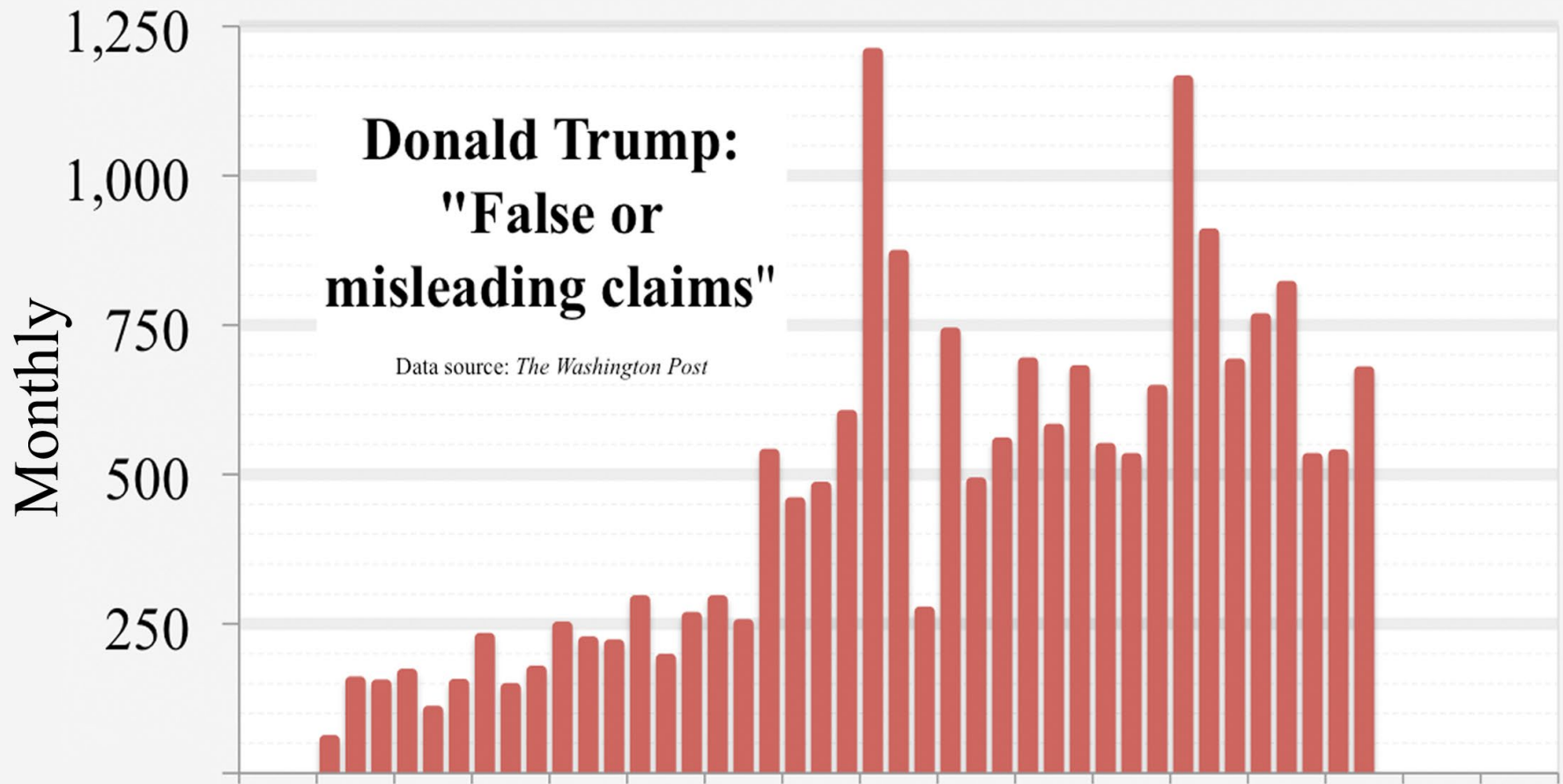


06/08/2018, 03:07

601 Retweets 1,308 Likes

Tweet your reply





Trump has now made more than 18,000 false statements during his presidency

(Washington Post, Toronto Star, factcheck.org)

US Black youth unemployment, 2016

Trump: “58%”

Bureau of Labor Statistics: “21%”

“The press takes him literally, but not seriously; his supporters take him seriously, but not literally.”

Salena Zito, *Atlantic* Sept 2016



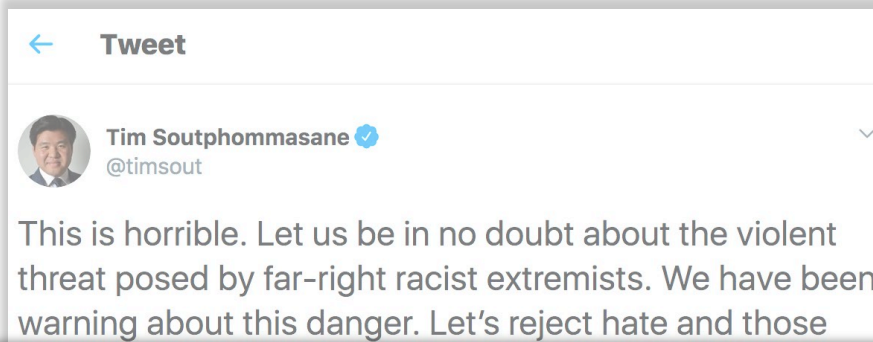




Christchurch terror attack: 49 dead, Australian man arrested
New Zealand police confirmed 49 people lost their lives in shootings at two
Christchurch mosques.

[sbs.com.au](https://www.sbs.com.au)

March 2019



Tim Soutphommasane ✓
@timsout Follows you

Following

Professor of Practice (Sociology and Political Theory) @Sydney_Uni. Former Race Discrimination Commissioner. Author. Latest book: On Hate (MUP, 2019)

Australia's former Race Discrimination Commissioner Dr Tim Soutphommasane told the BBC he had seen a "return of race politics" in the past five years.

He notes a "crucial" development was the government's attempts to weaken hate speech laws in 2014 and 2017.

"That encouraged far-right extremists and others to believe that free speech permitted hate speech - that they had a right to be bigots," he said.

New Zealand police confirmed 49 people lost their lives in shootings at two Christchurch mosques.
[sbs.com.au](https://www.sbs.com.au)

6:10 PM · Mar 15, 2019 · Twitter for iPhone

439 Retweets 1.2K Likes



Politicians rebuke Fraser Anning over comments after New Zealand mosque attack

● [New Zealand shooting - latest updates](#)

Press Association

Sat 16 Mar 2019 12.32
AEDT



7193



“The real cause of bloodshed on New Zealand streets today is the immigration program which allowed Muslim fanatics to migrate to New Zealand in the first place.”

▲ Fraser Anning tweeted: ‘Does anyone still dispute the link between Muslim immigration and violence?’
Photograph: David Clark/AAP

An Australian senator has been strongly criticised after he blamed the [New Zealand](#) shooting on Muslim immigration.

Following the attack, which [left 49 people dead](#) at two mosques in Christchurch, Fraser Anning tweeted: “Does anyone still dispute the link between Muslim immigration and violence?”

In a statement shared by an Australian journalist on Twitter, the [Queensland](#) senator also wrote: “As always, leftwing politicians and the media will rush to claim that the causes of today’s shootings lie with gun laws or those who hold nationalist views, but this is all cliched nonsense.

“The real cause of bloodshed on New Zealand streets today is the immigration program which allowed Muslim fanatics to migrate to New Zealand in the first place.”

Principle 1.
Statements are sometimes
for informing, other times
for signaling allegiance

Principle 2.
Our own cognitive
limitations play a role in
truth decay

Confirmation bias

2, 4, 6

8, 10, 12 ✓

20, 22, 24 ✓

Rule:



‘Start with n and
add 2 each time’?

2, 4, 6

3, 6, 9 ✓

20, 40, 60 ✓

Rule:



‘Start with n and
add n each time’?

2, 4, 6

Rule:

3, 4, 57 ✓

4, 3, 60 ✗



2, 4, 6

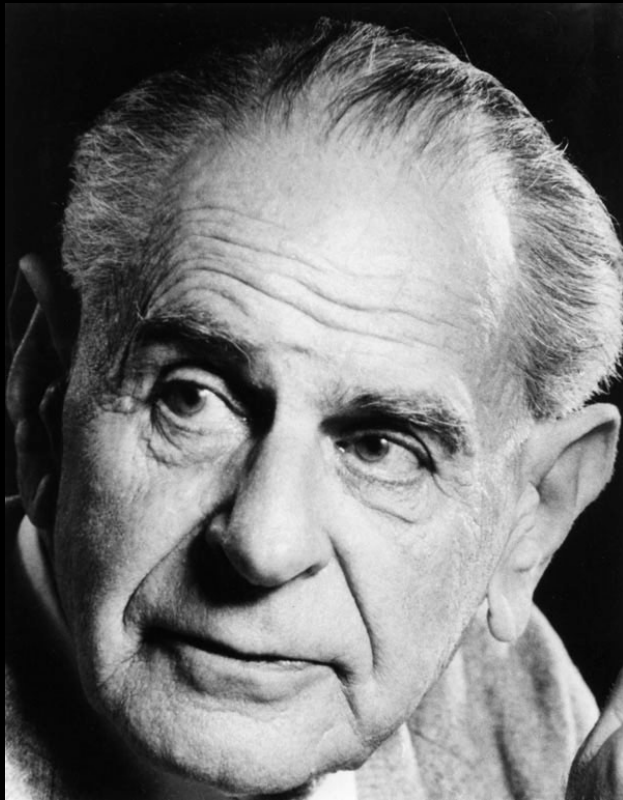
3, 4, 57 ✓

4, 3, 60 ✗

Rule:

'Start with n and
add a higher
number each time'.

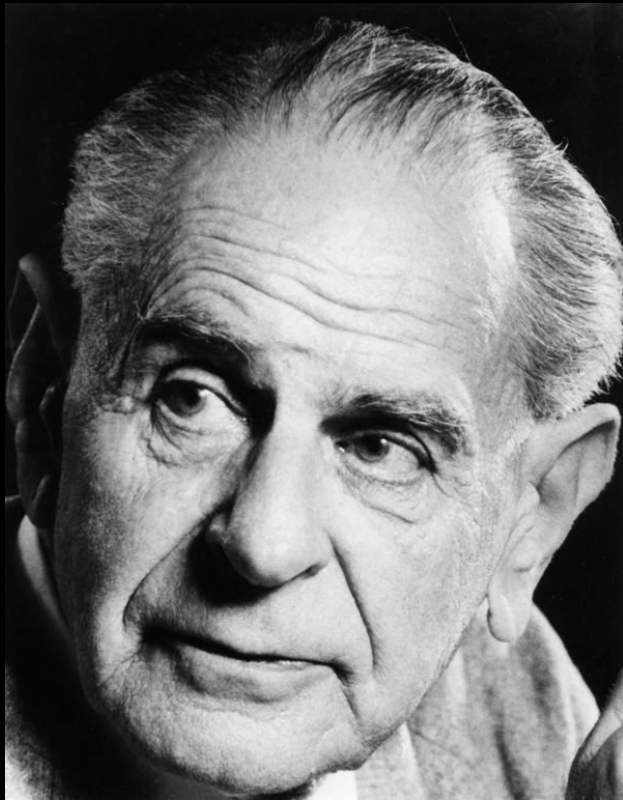
Confirmation Bias



We never confirm a hypothesis, we can only show that it has not been falsified.

Karl Popper

Confirmation Bias



We never confirm a hypothesis, we can only show that it has not been falsified.

Karl Popper

So we must always *try*
to find evidence
against our beliefs.



J.K. Rowling ✓

@jk_rowling

Trump imitated a disabled reporter. Now he pretends not to see a child in a wheelchair, as though frightened he might catch his condition.

1:08 PM - 28 Jul 2017

12,883 Retweets 52,240 Likes



3.1K



13K



52K



Video Clip 1

Video Clip 2

Principle 2.
Our own cognitive
limitations play a role in
truth decay

Principle 3.
The truth matters
because facts are
reasons for action







March 2003







Principle 3.
The truth matters
because facts are
reasons for action

Critical thinking about truth



*"These smug pilots have lost touch with regular passengers like us.
Who thinks I should fly the plane?"*

Critical thinking about truth

Our information is filtered through people

Critical thinking about truth

Our information is filtered through people

- What are their motivations and incentives?
- What do they say, and which words do they use?
- Do you want to believe it? Why (not)?
- What actions could their words be used to justify?
- What do they *not* say?

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Never doubt that reality is always there, to provide *sound* reasons for action

How Sydney cancer scientist Jennifer Byrne became a research fraud super sleuth

By [Kate Aubusson](#)

Updated 26 January 2017 —
2:23pm, first published 25
January 2017 — 1:22pm



It was a gut feeling that had Professor Jennifer Byrne flipping open her computer on a Saturday night and firing up the medical equivalent of a Google search.

What she found made her sick to her stomach.



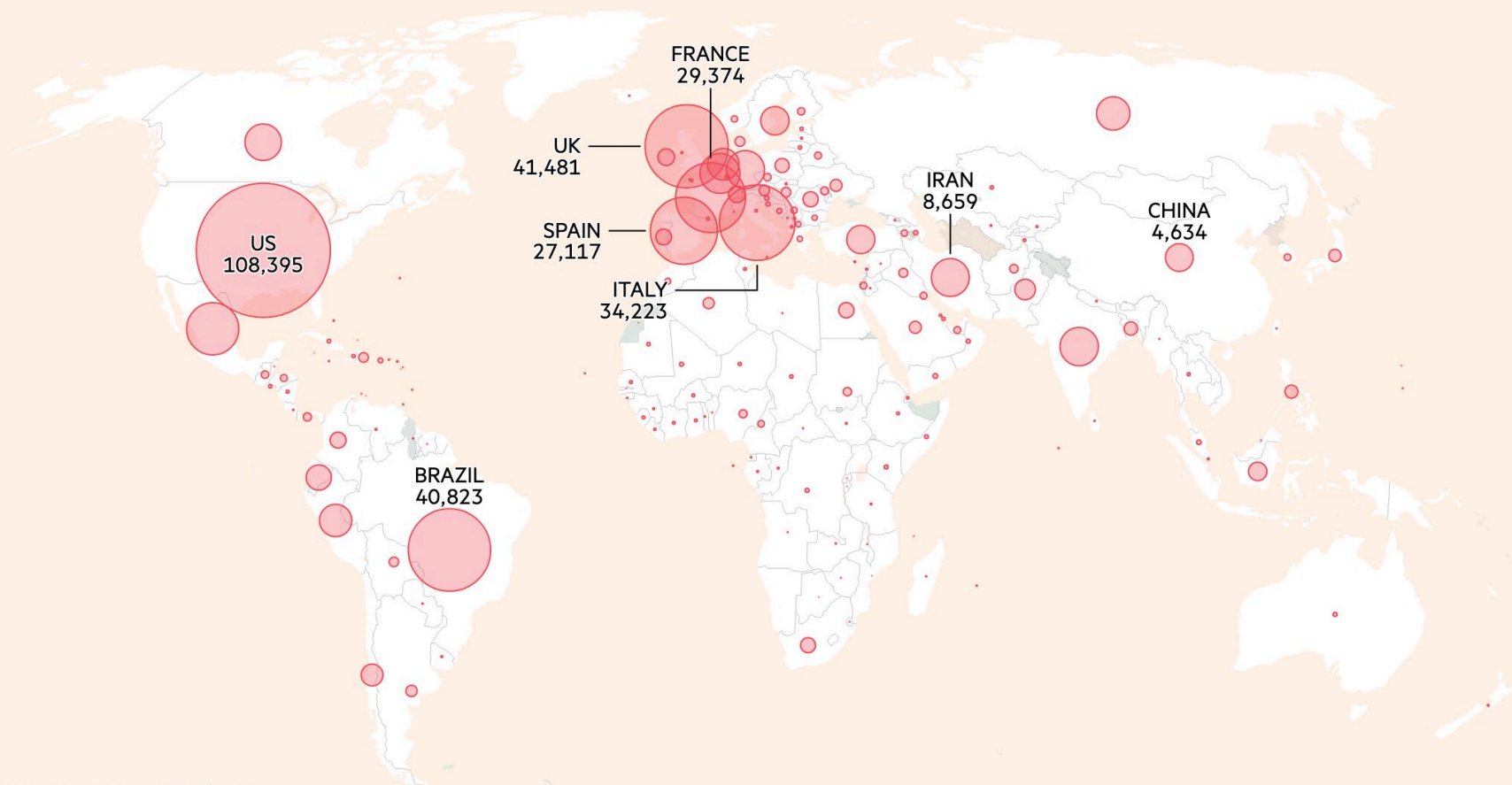
Professor Jennifer Byrne, Head of the Children's Cancer Research Unit at The Children's Hospital at Westmead, has uncovered alleged research fraud.

Mapping the coronavirus outbreak

As of 2.51pm June 13 BST

Confirmed cases
7,570,154

Deaths
418,622



Graphic: Steven Bernard and Cale Tilford
Sources: ECDC; Covid Tracking Project; FT research
© FT

CORRESPONDENCE

Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany

TO THE EDITOR: The novel coronavirus (2019-nCoV) from Wuhan is currently causing concern in the medical community as the virus is spreading around the world.¹ Since identification of the virus in late December 2019, the number of cases from China that have been imported into other countries is on the rise, and the epidemiologic picture is changing on a daily basis. We are reporting a case of 2019-nCoV infection acquired outside Asia in which transmission appears to have occurred during the incubation period in the index patient.

A 33-year-old otherwise healthy German businessman (Patient 1) became ill with a sore throat, chills, and myalgias on January 24, 2020. The following day, a fever of 39.1°C (102.4°F) developed, along with a productive cough. By the evening of the next day, he started feeling better and went back to work on January 27.

Before the onset of symptoms, he had attended meetings with a Chinese business partner at his company near Munich on January 20 and 21. The business partner, a Shanghai resident, had visited Germany between January 19 and 22. During her stay, she had been well with no signs or symptoms of infection but had become ill on her flight back to China, where she tested positive for 2019-nCoV on January 26 (index patient in Fig. 1) (see Supplementary Appendix, available at NEJM.org, for details on the timeline of symptom development leading to hospitalization).

On January 27, she informed the company about her illness. Contact tracing was started, and the above-mentioned colleague was sent to the Division of Infectious Diseases and Tropical Medicine in Munich for further assessment. At presentation, he was afebrile and well. He reported no previous or chronic illnesses and had no his-

Jan 2020

*Peer-reviewed in top journal, high media impact;
but flawed: conclusion accidentally true, never retracted*

16 March 2020

Imperial College COVID-19 Response Team

Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand

Neil M Ferguson, Daniel Laydon, Gemma Nedjati-Gilani, Natsuko Imai, Kylie Ainslie, Marc Baguelin, Sangeeta Bhatia, Adhiratha Boonyasiri, Zulma Cucunubá, Gina Cuomo-Dannenburg, Amy Dighe, Ilaria Dorigatti, Han Fu, Katy Gaythorpe, Will Green, Arran Hamlet, Wes Hinsley, Lucy C Okell, Sabine van Elsland, Hayley Thompson, Robert Verity, Erik Volz, Haowei Wang, Yuanrong Wang, Patrick GT Walker, Caroline Walters, Peter Winskill, Charles Whittaker, Christl A Donnelly, Steven Riley, Azra C Ghani.

On behalf of the Imperial College COVID-19 Response Team

WHO Collaborating Centre for Infectious Disease Modelling
MRC Centre for Global Infectious Disease Analysis
Abdul Latif Jameel Institute for Disease and Emergency Analytics
Imperial College London

Non-peer-reviewed preprint, huge media and policy impact

Uncanny similarity of unique inserts in the 2019-nCoV spike protein to HIV-1 gp120 and Gag

Prashant Pradhan^{\$1,2}, Ashutosh Kumar Pandey^{\$1}, Akhilesh Mishra^{\$1}, Parul Gupta¹, Praveen Kumar Tripathi¹, Manoj Balakrishnan Menon¹, James Gomes¹, Perumal Vivekanandan^{*1} and Bishwajit Kundu^{*1}

¹Kusuma School of biological sciences, Indian institute of technology, New Delhi-110016, India.

²Acharya Narendra Dev College, University of Delhi, New Delhi-110019, India

^{\$}Equal contribution

* Corresponding authors- email: bkundu@bioschool.iitd.ac.in

vperumal@bioschool.iitd.ac.in

Jan 2020

Non-peer-reviewed preprint, massive media impact, analysis flawed, quickly retracted

SARS-like WIV1-CoV poised for human emergence

Vineet D. Menachery^a, Boyd L. Yount Jr.^a, Amy C. Sims^a, Kari Debbink^{a,b}, Sudhakar S. Agnihothram^c, Lisa E. Gralinski^a, Rachel L. Graham^a, Trevor Scobey^a, Jessica A. Plante^a, Scott R. Royal^a, Jesica Swanstrom^a, Timothy P. Sheahan^a, Raymond J. Pickles^{c,d}, Davide Corti^{e,f,g}, Scott H. Randell^d, Antonio Lanzavecchia^{e,f}, Wayne A. Marasco^h, and Ralph S. Baric^{a,c,1}

^aDepartment of Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599; ^bDepartment of Microbiology and Immunology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599; ^cDivision of Microbiology, National Center for Toxicological Research, Food and Drug Administration, Jefferson, AR 72079; ^dDepartment of Cell Biology and Physiology and Marsico Lung Institute/Cystic Fibrosis Center, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599; ^eInstitute for Research in Biomedicine, Bellinzona, Switzerland; ^fInstitute of Microbiology, Eidgenössische Technische Hochschule Zurich, Zurich, Switzerland; ^gHumabs BioMed SA, Bellinzona; ^hDana-Farber Cancer Institute–Department of Medicine, Harvard Medical School,

Edited by Peter Palese, Icahn School of Medicine at Mount Sinai, New York, NY.

Outbreaks from zoonotic sources represent a threat to both human disease as well as the global economy. Despite a wealth of metagenomics studies, methods to leverage these datasets to identify future threats are underdeveloped. In this study, we describe an approach that combines existing metagenomics data with reverse genetics to engineer reagents to evaluate emergence and pathogenic potential of circulating zoonotic viruses. Focusing on the severe acute respiratory syndrome (SARS)-like viruses, the results indicate that the WIV1-coronavirus (CoV) cluster has the ability to directly infect and may undergo limited transmission in human populations. However, in vivo attenuation suggests additional adaptation is required for epidemic disease. Importantly, available SARS monoclonal antibodies offered success in limiting viral infection absent from available vaccine approaches. Together, the data highlight the utility of a platform to identify and prioritize prepandemic strains harbored in animal reservoirs and document the threat posed by WIV1-CoV for emergence in human populations.

SARS | CoV | emergence | Spike | WIV1



Identification of Diverse Alphacoronaviruses and Genomic Characterization of a Novel Severe Acute Respiratory Syndrome-Like Coronavirus from Bats in China

Biao He,^{a,d} Yuzhen Zhang,^b Lin Xu,^{a,d} Weihong Yang,^b Fanli Yang,^a Yun Feng,^b Lele Xia,^a Jihua Zhou,^b Weibin Zhen,^c Ye Feng,^{a,d} Huancheng Guo,^{a,d} Hailin Zhang,^b Changchun Tu^{a,d}

Key Laboratory of Jilin Province for Zoonosis Prevention and Control, Institute of Military Veterinary, Academy of Military Medical Sciences, Changchun, Jilin Province, China^a; Yunnan Institute of Endemic Diseases Control and Prevention, Dali, Yunnan Province, China^b; Baoshan Prefecture Center for Diseases Control and Prevention, Baoshan, Yunnan Province, China^c; Jiangsu Co-Innovation Center for Prevention and Control of Important Animal Infectious Diseases and Zoonoses, Yangzhou, Jiangsu Province, China^d

ABSTRACT

Although many severe acute respiratory syndrome-like coronaviruses (SARS-like CoVs) have been identified in bats in China, Europe, and Africa, most have a genetic organization significantly distinct from human/civet SARS CoVs in the receptor-binding domain (RBD), which mediates receptor binding and determines the host spectrum, resulting in their failure to cause human infections and making them unlikely progenitors of human/civet SARS CoVs. Here, a viral metagenomic analysis of 268 bat rectal swabs collected from four counties in Yunnan Province has identified hundreds of sequences relating to alpha- and betacoronaviruses. Phylogenetic analysis based on a conserved region of the RNA-dependent RNA polymerase gene revealed that alphacoronaviruses had diversities with some obvious differences from those reported previously. Full genomic analysis of a new SARS-like CoV from Baoshan (LYRa11) showed that it was 29,805 nucleotides (nt) in length with 13 open reading frames (ORFs), sharing 91% nucleotide identity with human/civet SARS CoVs and the most recently reported SARS-like CoV Rs3367, while sharing 89% with other bat SARS-like CoVs. Notably, it showed the highest sequence identity with the S gene of SARS CoVs and Rs3367, especially in the RBD region. Antigenic analysis showed that the S1 domain of LYRa11 could be efficiently recognized by SARS-convalescent human serum, indicating that LYRa11 is a novel virus antigenically close to SARS CoV. Recombination analyses indicate that LYRa11 is likely a recombinant descended from parental lineages that had evolved into a number of bat SARS-like CoVs.

2016

2016

Peer-reviewed in top journals, no impact, disastrous in hindsight

Critical thinking about truth

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- What would their words justify?
- What do they *not* say?

Never doubt that reality is always there, to provide *sound* reasons for action

An optimistic coda

We can be the gatekeepers

Thank you

N. J. Enfield

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and Humanities
Advanced Research Centre



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