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NEWS REVIEW

Arguably the most consequential meeting in recent British political history took place on Saturday March 14, 2020, in the prime minister's office in Downing Street. Dominic Cummings, then the prime minister's chief adviser, and two brothers with a background in science – Ben and Marc Warner – confronted Boris Johnson over the government's herd immunity strategy. Cummings later likened it to a scene in the film *Independence Day* in which the scientist played by Jeff Goldblum tells the US president: "The aliens are here, and your whole plan is broken, and you need a new plan."

The alien invasion in this instance was Covid-19, and the government's plan at the time was to "squash the sombrero", or, more technically, "contain, delay, research, mitigate". The idea was to lower the peak of the first wave of the pandemic, but not to crush the curve completely, so as to build up immunity in the population. The fear of the Warner brothers was that procrastination over lockdown could lead to hundreds of thousands of deaths.

Ben Warner, 35, a former postdoctoral research fellow in quantum physics and, in Cummings's account, the Goldblum in the room, had worked in Downing Street for months and was a familiar presence to the prime minister, having been hired by Cummings to "build a proper data and analytical office" in No 10. "One of the great problems that No 10 had in 2019 when I was there was a huge lack of those kinds of skills," Cummings told the joint inquiry by the health and social care committee and science and technology committee in May into the handling of the pandemic.

Ben's brother, Marc, 37, also a former physicist, and an artificial intelligence entrepreneur, was a less familiar figure to the prime minister, but his company, Faculty, had provided computer modelling to the successful Vote Leave campaign during the 2016 Brexit referendum. Ben had worked at Faculty too, before being snapped up by Cummings. Since the beginning of the pandemic Marc had been working at the NHS, one of Faculty's clients, helping to build a dashboard – a clear way of displaying relevant statistics – to assist policy-making.

Working at NHS England's head office in Elephant and Castle, southeast London, Marc had become increasingly alarmed. As he looked at the trajectory of infections, he realised that the capacity of the NHS would be overwhelmed many times over. On March 7 he sent a text to Cummings saying that the herd immunity plan could lead to deaths on a huge scale. "We were driving off the edge of a cliff," Marc tells me when we meet in his office in Marylebone.

Early on March 12 Warner texted Cummings again. "I said, 'This is a code red emergency and it's clear the system has f***ed it,'" he tells me. On the morning of Friday March 13 Sir Patrick Vallance, the government's chief scientific adviser, revealed on the Radio 4 *Today* programme that England would be following a herd immunity strategy.

"We spoke on the evening of the 13th and Dom later said that this was the most angry he had ever heard me," Marc says. "I wasn't angry with him specifically but with the government and the situation. Dom said, 'Come in and brief us tomorrow morning. We now agree with you: we take your point. We think this is going to be a disaster – we are going to have to change course. Come in and make sure we have all the information and we will go in and see the PM.'"

"The next morning we stood by the famous whiteboard, with him and Ben asking whatever questions they had. Then they went to see the PM and dragged me in too. The whole situation was totally surreal. The prime minister looked at me and said, 'Who are you?' They said, 'Don't worry, prime minister.' They then took him through the numbers. That was the meeting that changed his mind." The only other people in the room were assorted advisers and civil servants, but not Chris Whitty, the chief

DAVID VINTNER; ANDREW PARSONS/10 DOWNING STREET



THE GENIUS WHO FINALLY PERSUADED THE PM TO LOCK

DOWN

A report by MPs has condemned the government's early response to Covid as a deadly failure. It could have been even worse if not for the dramatic intervention of a little-known data scientist.

Matthew Syed meets Marc Warner

medical officer for England, or Vallance. It still took until March 23 for the national lockdown to be officially announced.

Cummings was sacked as the prime minister's chief adviser in November and Ben Warner left Downing Street in May, as part of what sources were calling a "clear-out of anyone linked with Dom". Last week a damning parliamentary report on the handling of the pandemic said the government made "a serious early error" in adopting the "fatalistic approach" of herd immunity. It also noted that "a country with a world-class expertise in data analysis" should not have faced "the biggest health crisis in 100 years with virtually no data to analyse".

In his testimony to the select committee in May, Cummings credited Marc Warner with being a hero of the pan-

demical and with saving "thousands of lives". He said he should have been given authority to run the Covid response but it was refused by the prime minister.

"Marc Warner is one of the most ethical people I've met," Cummings said. "If I'd been prime minister I would have said, 'Marc Warner is in charge of this whole thing.'"

So who is this man? Warner comes across as bright and engaging. He grew up in Bedford and attended state school until the age of 13 before his family paid for him to go private. He was inspired by his grandfather, a physics teacher, to study the subject at Imperial College London, after which he completed a PhD in quantum computing at University College London. He then went to Harvard to do postgraduate work in quantum sensing, before moving into the area that had come to fascinate him: AI.

From there he started his company, originally called ASI Data Science, which has grown to a staff of more than 100 and advises the BBC, Siemens and the Natural History Museum, among other organisations. The company also gained contracts with the NHS, which is why he offered to work full-time at Skipton House, the headquarters, when the pandemic hit, giving him a front-row seat on government policy.

"There was a phone call I made to my grandad in early March telling him that the government is going to say that you can go out and stuff but you can't," Warner says. "There was a time when I really thought he was going to be left alone to die in his bed. He is over 80, and so I thought, 'I can't let this happen. This can't be the right course of action.'"

"And it was clear, from what I was picking up from people across government,

The AI entrepreneur Marc Warner and, top left, his brother Ben in No 10. Dominic Cummings compared Marc Warner to Jeff Goldblum's character in the alien-invasion film *Independence Day*, below, in check shirt



Cummings told me: 'We now agree with you. We think this is going to be a disaster'

that the senior people had decided herd immunity was the only way. And I was thinking, 'No, there are thousands of other possible plans here.' It was as if they had become fixated on one particular plan and were incapable of considering alternatives."

Warner's time at Skipton House didn't just raise alarm bells about pandemic policy but also about the capacity of the NHS to deal with a crisis. "The system the NHS was using was completely dysfunctional in a fast-moving crisis. Thousands of spreadsheets a day were bombarding NHS headquarters and then being manually integrated in Microsoft Excel, through copying and pasting."

Warner's contribution was to help build an early-warning system, effectively a predictive model that took anonymised patient data, 111 call information and hospital admissions records to forecast how many patients, and in what areas, the NHS was likely to see.

"It enabled every single hospital in the country to predict the number of Covid patients coming in over the next few weeks," he says. "So for the upswings you can have the resources in place. But, equally important, on the downswings you need to reopen elective care as fast as possible because people are dying from not getting regular treatment. It became the best system of its kind in the world. I can say this because it was the team that built it, not me."

Warner's experience in helping to put together the NHS early-warning system transformed his view of the potential role of AI in society. To use an analogy, when you are walking to the railway station, you do not use your conscious mind to determine the motion of your feet, angle of your heel and so on. It is all handled unconsciously. This frees the conscious mind to focus on higher-value things such as a problem at work or what birthday present to buy your spouse.

Warner sees AI as a kind of unconscious facilitator for businesses, doing all the grunt work. "Why would you want frontline staff to spend all their time copying and pasting Excel spreadsheets or wading through mountains of data? That should all be done by AI. This frees staff to think about the value-added stuff."

"AI is effectively making all the routine decisions for you. Then, for the hard decisions, it surfaces the best possible information so that you can focus on what matters."

After the news of Faculty's role in Vote Leave broke, Warner decided to get his company out of politics. "We think AI is one of the transformative technologies of our time and we think it is incredibly important that this science impacts people's lives in a positive way," he tells me. "We don't want to be distracted by the noise that comes with politics, where 50 per cent of people hate you." Warner says all Faculty's government contracts have been awarded in line with proper procurement rules – not through a cosy Cummings connection.

Does he aspire to become a tech billionaire? "Money isn't a motivator," he says, and I believe him. "I want to be comfortable, but really I want to solve problems that might help people. I love AI. I think it has a bunch of repercussions of how we understand ourselves. The best way you understand something is if you build it, and intelligence is so fundamental to humanity. More than anything else, it is great fun."