should be carrying out far more tests to ensure those with the virus do not spread it as much. 18

I cannot help to emphasise one area where the UK is in a good position. The ONS has been collecting wellbeing data since 2011 and this will allow us to monitor how the virus and varying degrees of lockdown are affecting people's wellbeing. Since the virus has health, social and economic impacts, measures like wellbeing which give us an idea how the combination of these factors are affecting how people are feeling, are particularly useful. I argue that while the government may be alert to the endemic problems of loneliness, anxiety and so on, it is not using this evidence systematically, as part of a coherent framework. If it were to, we could be worldleading in our ability to monitor the three key dynamics of pandemic impact that I have identified. Moreover, given the clusters of data and research excellence in this area in the UK, we would be well-placed to enhance cross-national dialogue between behavioural experts and governments on this key issue.¹⁹ In 2008 Gordon Brown asked me to assemble the best economists in the world to advise him on how to handle the banks during the global financial crisis. Perhaps we should have used Zoom to foster dialogue between the world's leading behavioural specialists to advise governments how to deliver changes in behaviour that would reduce the risks of reinfection at the lowest economic and social costs.

2.2 Structures and processes

This is where it seems that the government made a key error. All the attention was focussed on Sage as a group of scientists providing expert advice to allow Ministers to say they were "following the science". My experience with Sage-like bodies was that they were extremely useful in answering specific questions. The makeup of Sage was at first dominated by medical professionals.²⁰ Therefore, they were probably expert at answering questions specific to the medical sciences. However, and crucially, this was a "mixed" crisis involving health issues and economic and

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¹⁸ Jasmina Panovska-Griffiths et al., 'Determining the Optimal Strategy for Reopening Schools, the Impact of Test and Trace Interventions, and the Risk of Occurrence of a Second COVID-19 Epidemic Wave in the UK: A Modelling Study', *The Lancet Child & Adolescent Health*, August 2020, S2352464220302509, https://doi.org/10.1016/S2352-4642(20)30250-9.

¹⁹ A recent study by Krekel et al. shows that happier people are more likely to conform to lockdowns. While the reasons for this can be debated, it seems plausible that people with higher life satisfaction are more motivated to behave pro-socially. These initial findings should be informing government policy about how best to ensure compliance in local (or future national) lockdowns. For example, government messaging that blames young people for irresponsible behaviour may be inaccurate and/or counterproductive. Christian Krekel et al., 'Are Happier People More Compliant? Global Evidence From Three Large-Scale Surveys During Covid-19 Lockdowns', Discussion Paper Series (Bonn: IZA Institute of Labor Economics, September 2020), https://doi.org/10.31234/osf.io/65df4.

²⁰ Ian Sample, 'Who's Who on Secret Scientific Group Advising UK Government?', *The Guardian*, 24 April 2020, https://www.theguardian.com/world/2020/apr/24/coronavirus-whos-who-on-secret-scientific-group-advising-uk-government-sage.

social factors arising from decisions made to reduce the COVID death count. Medical scientists were likely to have certain priors, for example that the coronavirus would be experienced as a flu-like "wave". Sage does not seem to have been willing to investigate alternative suppression measures, which found success in places like South Korea. Its work also appears to have been laced with assumptions about human behaviour. The size and scientific representation of Sage has since expanded, and collectively the various Sage groups now number upwards of 200 experts. Today the issue is likely that such a group is too big to be effective, and the time and accountability gaps between advice and implementation will continue to suffer.

To contain the virus, you needed to know the impact of each lockdown measure on the spread of the disease. But you also needed to know the other effects of such measures. For example, closing schools is a step that carries profound consequences: it affects the quality of education, it has huge impacts on parents who are trying to work from home, and it affects the wellbeing of children deprived of social interaction and learning. So multiple analytical approaches need to feed into such advice as goes to ministers. And ministers need guidance about the nature of the trade-offs involved, as well as how to make consistent decisions as part of an overarching strategy.

How can politicians decide on the right mix of policies without knowing the costs and benefits of each measure? The answer is that these are tough choices and will inevitably be made with very limited information. But that is the nature of many decisions put to prime ministers: decision-making under uncertainty is the lot of government. Officials can help by spelling out the costs and benefits of each measure, accepting that all the estimates are uncertain. But to do so effectively you need some form of common currency which can be used to help decide on the inevitable trade-offs. Richard Layard et al, and I am one of the "al", laid out a framework for handling such decisions based around the impact of each measure on individuals' subjective wellbeing.²² An updated version of the paper is being published in the *BMJ*.²³ One stark result of the early work was to show that the lockdown measures appeared to be consistent with the government placing an extremely high value on extra years of life, considerably in excess of the figures usually used by government in similar circumstances.

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²¹ The source of the notorious concept of "behavioural fatigue", like the "herd immunity" strategy, has not been fully identified. Kamran Abbasi, executive editor of the BMJ, has written on this elusive concept and its possible role at a key point of the government's response to the crisis. See Kamran Abbasi, 'Behavioural Fatigue: A Flawed Idea Central to a Flawed Pandemic Response', *BMJ*, 6 August 2020, https://doi.org/10.1136/bmj.m3093.

Richard Layard et al., 'When to Release the Lockdown: A Wellbeing Framework for Analysing Costs and Benefits', Occasional Paper (London: Centre for Economic Performance, April 2020), http://cep.lse.ac.uk/pubs/download/occasional/op049.pdf.

²³ Richard Layard et al., 'Taking a Wellbeing-Years Approach to Policy Choice', BMJ, forthcoming.

that this is 2020 and we have a track and trace system in place but—at least until its launch today—no app.

Of course, we should not forget that there are also many success stories where departments have risen to the challenge. I have already noted the Treasury and HMRC's furlough scheme. Over at DWP, by April, 4.2 million people were in receipt of universal credit, a rise of 1.2 million cases in the course of a month.⁴³ When I look back at my now very dated capability reviews it does not surprise me that it is these departments that have done well. Over the years the need to respond to major policy changes usually made in budgets, like the introduction of various tax credits and a minimum wage, has required them to be good at implementing radical changes very quickly. Meanwhile, those institutions like PHE which should come into their own in a "what if" scenario have generally failed. Is this because ministers failed to uphold the mandate of these institutions when crisis struck; or because agencies failed to do the necessary preparatory work? Answering these questions can inform how we should build more effective and resilient public institutions in the future.

Winter is Coming: Challenges and Opportunities Ahead

There has been a lot of debate about the long-term societal changes that might result from the crisis. My own view is that such changes will be quite limited, but that some learning has taken place during lockdown that has formed new behaviours and modes of human cooperation. As policymakers, we must study these intently. The shift to virtual working will not be universal, but many have realised that it can be quite effective and avoids the slog of daily commuting. Some will have discovered the joys of volunteering and helping neighbours. Many will have experienced doing without various activities and products. But, if and when a successful vaccine is found and rolled out, will any of these changes stick? I hope so, but expect a return to the status quo ante in most cases.

There is here a clear place for government, which must decide on the role that it plays in guiding recovery, or how to "Build Back Better", as both politicians and campaign groups refer to this unique challenge. Recently I had the honour of launching the Law Family Commission on Civil Society, which is to generate new approaches to making the most of the UK's civil society over the course of the 2020s. The need for such thinking is clear and there appears to be appetite in government too, with a more limited government review currently being conducted by Danny Kruger at the request of the prime minister. I hope that the

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⁴³ Kevin Peachey, 'Coronavirus: Universal Credit Claims Hit Monthly Record', *BBC*, 20 May 2020, https://www.bbc.co.uk/news/business-52721657.

government takes seriously both reports in the context of the building back and levelling up agendas.

Mapping civil society and building social capital serve both our longer-term but also immediate interests as a nation. As winter approaches, the challenge will be to prepare for the possibility of an upsurge in coronavirus, a downturn in the economy, and the fallout of a no-deal Brexit. Without adequate preparation, these events—yet again—hold the potential to fall hardest on those who can least afford it.

As it has already, the social sector will play a vital part in mitigating hardship. But this is to undervalue its role. Civil society is home to a mine of data about local communities, which remains woefully absent in central government understandings about social and civic ties, including the role they served during lockdown. It seems obvious that it is these networks that government would best tap into to confront some of the challenges we collectively face: explaining the health implications of obesity, the benefits of more exercise, or combatting endemic levels of loneliness. Here much of the work is about making implicit data explicit and more utile for public policy—not with the intention of rolling back the state, but to allow government to allocate resources in ways that will most enhance the wellbeing of those worse affected by this crisis. For example, this data can help us understand what the best incentives and systems are to get individuals to self-isolate. If those testing positive ignore the result because they cannot afford to self-isolate, not even a genuinely world-beating test and trace system can succeed.

Making better use of highly decentralised and implicit civic data brings us to the opposite issue: cases where the UK's centralised form of government has not allowed us to reap the touted benefits of centrally pooled data. This, for example, should have brought advantages to our early understanding of the pandemic: many countries around the world envy our NHS because it generates really useful data that can quickly be used to improve health outcomes. It remains uncertain where in fact this centralisation has helped. Germany, rightly held up as the most successful example of coronavirus response of the major European economies, has a healthcare system with many decentralised features, such as town hospitals that are often controlled by local mayors and a regionally-empowered laboratory infrastructure.

That is not to say that regionalisation and decentralisation will always be an asset. At the other extreme, Spain, whose regions have ten times the health budget of the central government and whose national health ministry has only 500 staff,

shows how federalisation can cause serious problems for pandemic response.⁴⁴ And here it feels appropriate to mention the UK's own political makeup. While regional decision-making is going to be a vital tool of the policy kit in the coming months, it is already the case that devolved authority in the UK nations has helped to exacerbate the tensions held between different centres of power. Germany illustrates that this does not need to be so, and that it is possible to follow the science while working within and respecting existing contours of central and regional authority. But looking from Spain to the United States to Brazil, it seems unavoidable that working through our own various political divisions as a union of nations is part and parcel of any agenda to build back better. We should cast aside ideas of British exceptionalism and look to the likes of New Zealand, Singapore and Korea on how we can do things better.

Global Governance and the UK's Role

And finally, I am conscious that as I deliver this lecture parts of the world, and perhaps soon this country, are facing record upticks in daily coronavirus infections, which show little sign of abating. Even more than in 2008, it is clear that the fortunes of the UK are bound up with those of the global community. Unlike 2008, the G-20 and the G-7 currently lack the wherewithal to provide leadership on the cross-cutting issues this pandemic brings. There is perhaps no more fitting contrast between London's ExCeL Centre in 2009, when Gordon Brown hosted the G20 London Summit—the largest gathering of world leaders in London since 1946—and 2020, when it was home to a largely unused Nightingale Hospital. Lamentably, the World Health Organization lacks the support of the United States, which until President Trump cut funding provided more than double the contributions of the next biggest funder. 45 It is not clear that the WHO has the legitimacy or expertise to deal with the attendant non-medical issues that this lecture has paid attention to. The need for global governance reform that allows for better engagement between the various branches of scientific knowledge is palpable, but it is unlikely anything will happen until after the US election. Even then, such reform remains a hope and not an expectation.46

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⁴⁴ Daniel Dombey, 'Covid: Why Spain Is Hit Worse than the Rest of Europe', *Financial Times*, 10 September 2020, https://www.ft.com/content/6a5e61f5-7a35-4ad9-b57d-98f1dfa107ad; Daniel Dombey, 'Pedro Sánchez Throws Covid Gauntlet down to Spain's Regions', *Financial Times*, 30 August 2020, https://www.ft.com/content/947d94aa-abdd-456d-85bc-363d64520869.

⁴⁵ 'World Health Organization Funding in One Map: How Much Each Country Contributes', howmuch.net, 28 April 2020, https://howmuch.net/articles/who-contribution.

⁴⁶ The collaboration between Gavi (the Vaccine Alliance), The Coalition for Epidemic Preparedness (CEPI) and the World Health Organization is a promising signal of international collaboration. However, considerable uncertainties remain around this programme, and key countries like the United States and China are not currently backing the initiative. See Seth Berkley, 'COVAX Explained', Gavi: The Vaccine Alliance, 3 September 2020, https://www.gavi.org/vaccineswork/covax-explained.