Up to the Challenge: Does the National Disability Strategy do enough to address the twin crises of Climate Change and life post-COVID-19 pandemic?

Emerging Issues in Disability Law and Policy Series
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Oxford Disability Law and Policy Project

UNIVERSITY OF OXFORD

FACULTY OF LAW

ABOUT THE OXFORD UNIVERSITY DISABILITY LAW AND POLICY PROJECT

The Oxford University Disability Law and Policy Project (HM Government, 2021) develops initiatives to increase academic teaching and research on disability and related issues at its intersection with law and policy. In doing so, it aims to bring new perspectives to academic analyses of law and policy and to generate policy-relevant research which better engages with the issues faced by our diverse population of disabled people. This report was written by: Dr Marie Tidball (Editor), Co-ordinator of the Oxford University Disability Law and Policy Project; Kamran Mallick, CEO of Disability Rights UK; Professor Peter Beresford OBE, Visiting Professor at the University of East Anglia; Dr Sasha Kosanic, Lecturer at Liverpool John Moores University; Jumoke Abdullahi, Communications and Media Officer at Inclusion London; Jane Hatton, Founder of Evenbreak; Dr Kay Inckle, Campaigns and Policy Manager at Wheels for Wellbeing; and Phillip Wilcox, author and policy analyst. Dr Christos Kypraios, Programmes and Research Manager at the Bonavero Institute of Human Rights, was a co-Editor.

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ABOUT THE EMERGING ISSUES IN DISABILITY LAW AND POLICY SERIES

The *Emerging Issues in Disability Law and Policy Series* brings together academics, disabled people, Disabled People's Organisations, and practitioners to learn from the experiences and perspectives of disabled people and emerging issues in disability law and policy which require greater focus from policymakers and academics. This iterative process is designed to strengthen the interface between the professional and lived experience of disabled people and academia and public policy-making to engender further policy-relevant research. It is hoped this will bring the challenges faced by disabled people from emerging issues to the fore to help academics better frame their research objectives in a way that is sensitive to and relevant for our diverse population. Recommendations are designed to facilitate action to improve law and policy for disabled people.

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EXECUTIVE SUMMARY

Dr Marie Tidball, founding director and coordinator of the Oxford University Disability Law and Policy Project

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In November 2021, to mark COP26 and Disability History Month, the Oxford University Disability Law and Policy Project held a webinar on whether the National Disability Strategy (NDS) does enough to address the twin crises of climate change and the COVID-19 pandemic. This online panel discussion took place as part of the 2021 Herbert Smith Freehills Disability Mooting Championship, a mock court case competition designed to showcase the intellectually demanding study of disability and the law. The webinar saw seventy-five people from around the UK attend and was particularly aptly timed, as it took place in the week in which an Israeli Minister, excluded from COP26 due to wheelchair inaccessibility, placed the issue of the intersection between disability and climate change on the media agenda (Morris, 2021). In short, our discussants demonstrated that the NDS does not meet these urgent challenges. Their compelling presentations have been turned into a series of short papers to give an overview of the emerging issues at the intersection of disability, climate change and COVID-19.

The NDS contains three parts. The first focuses on *Practical steps now to improve disabled people's everyday lives*, covering rights and perceptions, housing, transport, jobs, education, shopping, leisure and public services. The second focuses on *Disabled People's everyday experience at the heart of government policymaking and service delivery*. The third part provides for *A cross-government effort to transform disabled people's everyday lives*.

There has been widespread criticism of the NDS' lack of ambition (Alexiou, 2021) and vision (MIND, 2021), large gaps in coverage (Wilkins, 2021), and absence of new funding (Pring, 2021a). On tackling climate change and the COVID-19 pandemic in a disability-inclusive way, it says very little. Whilst the Ministerial forewords point to various sections of the NDS which mention climate change and the COVID-19 pandemic, it does not integrate any kind of action plan to implement disability-inclusive climate policies which empower disabled people's full and effective participation in climate action and climate governance. Nor does it produce a cross-governmental plan to ensure an inclusive response to and recovery from the pandemic. This evinces a failure to meet the recommendations of the Committee on the Rights of Persons with Disabilities (OHCHR, 2020: 9; see CRPD/C/GTM/CO/1, CRPD/C/HND/CO/1 and CRPD/C/PAN/CO/1), namely, that States incorporate and mainstream disability inclusion in their policies and programmes on climate change. The NDS should have cross-referenced with its policy-making (Dray, 2021) on climate change action to meet 'net zero' targets by 2050, as set out in the 2008 Climate Change Act, as amended in 2019.

Our discussion showed that many disabled people across the country (Inclusion Scotland and The Environmental Rights Centre for Scotland, 2021) are excluded from the important work to tackle climate change (Bond Disability and Development Group and Climate Action Network UK, 2021). There is a widespread failure to ensure these measures are inclusive and to build on the strategic work done by other government departments on Disability Inclusive Development (DFID and FCDO, 2018) and in recognising the impacts of emergencies (DFID and FCO, 2020), including the climate crisis, on the wellbeing of disabled people.

The NDS was also an opportunity to set out a strategic approach to using green investment to design inclusive and innovative infrastructure across our towns and cities, and for the green economy to provide sustainable employment for disabled people as a way to help close the employment gap (Powell, 2021), we face.

Inclusive climate governance (Jodoin *et al*, 2020) is needed now more than ever, as the twin crises of COVID-19 and climate change interact and exponentially lead to an increase in inequalities facing the 14.1 million (DWP, 2021; Scope, 2021) disabled people in the UK. In light of growing international policy-making and research (Gutnik and Roth, 2018) on the need for inclusive climate action, this oversight in the recent NDS is striking and an abrogation of the UK's international human rights obligations.

The United Nations Framework Convention on Climate Change (UNFCCC) (UN, 1992), in the preamble to the Paris Agreement (UN, 2015), obliges State Parties, of which the UK is one, to respect, promote and consider their respective obligations in relation to human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations (UN, 2015: 2). The Office of the United Nations High Commissioner for Human Rights (OHCHR, 2020), produced a detailed analytical study, in consultation with relevant stakeholders, on the promotion and protection of the rights of persons with disabilities in the context of climate change. This was for the Forty-fourth session of the UN General Assembly’s Human Rights Council and provides a helpful overview of the impacts of climate change on persons with disabilities. It does so by outlining such impacts on disabled people’s access to health, food security, adequate housing, water and sanitation, livelihoods and decent work, and human mobility. The evidence is stark: sudden-onset natural disasters and slow-onset events arising from climate change can seriously disabled people across all these areas. Persons with disabilities are disproportionately affected by the adverse impacts of disasters and are at greater risk of death, injury and additional impairments, owing to their general exclusion from disaster risk reduction policies, plans and programmes (UN Department for Economic and Social Affairs, 2018). However, as the OHCHR argues, meaningful participation of disabled people in policy-making at all levels leads to tailored climate action, which would enable better identification of risk reduction and adaptation measures to mitigate and minimise the adverse impacts of climate change on disabled people. The OHCHR's analysis reminds States of their legal obligations, including under international human rights law, to implement disability-inclusive climate policies and empower disabled people's full and effective participation in climate action.

The 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs) it sets out provides a blueprint to achieve a better and more sustainable future for all in addressing the global challenges we face (UN Department of Economic and Social Affairs 2015). However, despite the UK being central to the development of these goals, there are 'critical gaps' in policy, programming and political commitment to implementing these goals, compared to other countries' (Bond, 2019: 4). Sadly, this finding is also borne out in the NDS which fails to mention SDGs anywhere in the 2021 document. This is particularly worrying as disabled people are given special attention under several of the goals relevant to the topics in the government's NDS, including Goal 4 (quality education), Goal 8 (decent work and economic growth), Goal 10 (reduced inequalities), and Goal 11 (sustainable cities and communities). SDGs are interdependent and the achievement of any particular goal requires effective climate action under Goal 13. The NDS fails to explicitly integrate any of these goals, or indeed to mention the 2030 agenda. Consequently, with the UK imminently facing the UN Disability Committee's examination of the UK's progress towards implementing the UN Convention on the Rights of Persons with Disabilities, we wanted to highlight the need for policy-makers and legislators to take action in this area. This Report No. 01/22 (February 2022) is the first of the *Emerging Issues in Disability Law and Policy Series* produced by the Oxford University Disability Law and Policy Project. This report asked our expert panellists to extend their presentations into short policy papers and we have worked collaboratively to produce a series of practical recommendations for government and beyond.

In a previous joint report *An Affront to Dignity* with ODLPP and the Bonavero Institute of Human Rights (Bonavero Report No.4/2020) we examined the unequal impact of the coronavirus pandemic on disabled people in the United Kingdom. Consequently, although there is some natural overlap, the present report is structured around the following discussion points:

- Creating a stronger vision to meet the challenges disabled people now face;
- Resolving potential tensions between disability rights and evolving climate and environmental change policies;
- Recognising our intersectional identities and tackling the multiple inequalities and discrimination we face;
- Designing more inclusive employment and transport to enable us to live and work differently to meet the challenges of climate change and COVID-19.

In bringing disabled experts and academics together to highlight the emerging and pressing issues in this fast-moving area, this report makes a series of recommendations to government and policy-makers at national and local levels. These recommendations draw on the eight key principles of a disability-inclusive, human rights-based approach to climate change and key requirements for disability-inclusive climate action (OHCHR, 2020). These derive from international human rights law, especially the Universal Declaration of Human Rights, (UN, 1948) the Convention on the Rights of Persons with Disabilities (UNCRPD, 2006) and other core human rights treaties, and the Declaration on the Right to Development (UN General Assembly, 1986). In particular, our recommendations are designed to create '[e]nhanced awareness of policy-makers and the climate movement of the requirements and capacities' (OHCHR, 2020: 12) of disabled people as agents of change in addressing the harmful impacts of climate change and COVID-19 in our day-to-day lives.

Thus, the twin crises we now face require active and meaningful participation of disabled people and our diverse representative organisations, at all levels of decision-making. This will enable innovation and inclusion which benefits all of us.

In his Keynote Address, Kamran Mallick, CEO of Disability Rights UK, highlights that the NDS does not address the disproportionate impact on disabled people of either the climate crisis (Saxton and Ghenis, 2018) or COVID-19 pandemic (Shakespeare *et al*, 2022). Nor does it address the role that disabled people can play in shaping our response to these crises as a community, a community representing 20% of the working-age population (Powell, 2021) in the UK. The strategy has *not* put disabled people at its heart, because we were not involved in it. There is no attempt at laying out an inclusive response and recovery (UN, 2020) which will close the inequality gap disabled people face over the next decade. Moving forward, disabled people must be empowered to lead and promote universally accessible approaches to response, recovery, rehabilitation and reconstruction (United Nations Office for Disaster Risk Reduction, 2015) as our society tries to "build back better" through the ongoing pandemic and climate crisis.

Recommendations:

1. The government needs to go beyond the confines of the existing National Disability Strategy and work to embed a disability rights approach (Jodoin, 2020) in all aspects of climate governance and in developing an inclusive response and recovery to the COVID-19 pandemic (see also Recommendation 5 of *An Affront to Dignity* (Tidball *et al*, 2020)), which asks government to produce a disability inclusive Covid-19 response and recovery action plan, with this Group and the Equality and Human Rights Commission, which reflects the multiple and intersecting identities of, and forms of discrimination faced by, persons with disabilities, in line with the United Nation's guidance).

2. The government must also set out a legislative programme to make the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006) directly enforceable in UK law and to harmonise pre-existing legislation with it.

3. This legislative programme must include the integration of a statutory duty to pay due regard to the rights of disabled people in environmental and climate change law, policy and climate action.

4. In order to secure a seat at the table for disabled people, all those involved in climate governance and action must ensure that reasonable adjustments are made to decision-making processes as well as the spaces, meeting venues and digital or remote meeting platforms utilised in engagement and policy-making on climate governance and action.

Professor Peter Beresford OBE, Visiting Professor at the University of East Anglia, critiques the NDS for having no clear programme of change and for being accompanied by only 28p of new funding (Pring, 2021a; Work and Pensions Committee, 2021) for every disabled person in the UK. The current NDS should be abandoned and replaced by a strategy which includes a transformational vision built on three elements. Firstly, he argues, we must learn from the Independent Living Strategy (Office for Disability Issues, 2008) set up by New Labour, scrapped by the Coalition government, which brought together different government departments to have a co-ordinated and holistic focus. Secondly, the vision must extend support and explicit provisions and requirements for the inclusive involvement of disabled people and their own organisations in the development of policy and practice, building the potential of genuine co-production. Thirdly, the philosophy of independent living based on the social model of disability, developed by disabled people, should be the principle underpinning future disability policy and practice. The idea of 'progressive realisation' developed in the UNCRPD should also be adopted to identify the resources that will be needed and to make possible their gradual allocation (Slasberg and Beresford, 2020). Strategies fit for the future challenges we face will be those that bring everyone together in our different struggles, nationally and globally, giving us strength and reinforcing commitments to humane and sustainable ways of living, connecting and working collectively.

Recommendations:

1. Bring together different government departments to have a co-ordinated and holistic focus, involving disabled people centrally in this process.

2. Extend support and explicit provisions and requirements for the inclusive involvement of disabled people and their own organisations in the development of policy and practice at all levels.

3. Apply the philosophy of independent living, based on the social model of disability, developed by disabled people as the principle underpinning future disability policy and practice; ensuring that the UNCRPD is at the heart of any new disability strategy.

Dr Sasha Kosanic, Lecturer at Liverpool John Moores University, draws attention to the fact that humanity is faced with two emergencies arising from the climate change crisis: a) impacting global temperature and precipitation, and b) unprecedented biodiversity loss. The Human Rights Council at the United Nations recognised the right to a clean, healthy and sustainable environment (2021). This is an important step forward, as by passing the resolution, the UN ensures the empowerment of local and vulnerable (i.e. disabled and Indigenous) communities to actively defend their human rights. A development which is imperative for disabled and Indigenous people because their livelihoods, values, social norms and cultural identity are so interconnected with nature and these natural resources. It also compels governments to develop strong, equitable and sustainable environmental protection policies as well as risk management strategies in responding to these dual emergencies. In order to achieve this protection and better understand how this will affect marginalised populations, we need to address these questions through an environmental justice framework.

Firstly, we need to understand how climate and environmental change impacts disabled populations through the 'distributional dimension' of environmental justice. Secondly, we need to examine to what extent people with disabilities are recognised in the research and policy of climate and environmental change. This is referred to as the 'recognitional dimension' of environmental justice. Thirdly, we must analyse the 'procedural dimension' – i.e. to what extent are disabled populations included in decision-making and policy-making on climate and environmental change.

Recommendations:

1. More research is needed on the impact of climate change and environmental change policies on disabled populations, particularly those in developing countries, and those disabled people facing intersectional inequalities.

2. Countries should apply the following environmental justice framework in decision-making and policymaking on climate and environmental change policies to ensure sustainable futures: a) Conduct research to gather the data on environmental change impact for disabled populations; b) Connect with disabled communities, advocates and researchers; c) Create equitable risk assessments for different timelines: Pre- climatic events, During climatic events; Post-climatic events (Kosanic et al, In Review).

Dr Sarah Bell, a critical disability and health geographer at the University of Exeter, describes how disabled people have experienced a 'triple jeopardy' since the onset of the COVID-19 pandemic. They have faced increased risk of severe illness, compromised access to health care and rehabilitation, and adverse social consequences of pandemic mitigation strategies. With accelerating climate change and biodiversity loss, pandemics are predicted to become more frequent and widespread. Climate change itself poses major and socially uneven risks to human health and livelihoods.

Growing awareness of these risks has instigated calls for a 'green recovery' from COVID-19, shaped by transformative decision-making to create a healthier, fairer and greener world. Such ambitions have the potential to make life better and more socially inclusive in the wake of a pandemic that has severely eroded the rights, wellbeing and quality of life of disabled people. At present, however, the pathways towards a disability-inclusive green recovery remain under-researched and under-acknowledged. Without taking the time to apply a disability lens in this work or to think through the differential impacts, outcomes and solutions for disabled people in this work, there is a risk that disabled people – comprising 15% of the global population – will remain at the margins of the green recovery policy-making.

Recommendations:

1. **Embed an enforceable, universal right to a safe climate in all green recovery policy-making (see, for example, the work of the Environmental Rights Centre for Scotland).**
2. **Engage with Disabled People's Organisations to bring disability knowledge, rights, representation and leadership to the heart of green recovery decision-making.**
3. **Develop links with existing disability-led networks working on priorities pertaining to disability and climate change, such as the Disability Inclusive Climate Action Research Program and the Disability Inclusive Disaster Risk Reduction Network.**

Jumoke Abdullahi, Media and Communications Officer at Inclusion London, sets out the imperative of intersectional lenses in discourse and policy-making on climate change. She shows that the government has demonstrated a disregard for the spirit of the recommendation made by the United Nations Disability Committee in relation to Article 15 of the UNCRPD, in failing to incorporate explicit action to protect disabled people from multiple and intersectional discrimination on the basis of gender, age, race, disability, migrant, refugee and/or other status. This means, the strategy is also out of step with Goal 10 (Reduced Inequalities) and targets 10.2 and 10.3 of the UN 2030 Sustainable Development Goals (UN, 2015).

Recommendations:

1. **Disability is an identity that is present in every other protected characteristic. All policy-making on disability must, therefore, employ the use of an intersectional lens to perceive the ways in which multiple marginalisation compounds one another and take strategic action to prevent multiple and intersectional discrimination.**

2. **A Future Accessibility Impact Board (made up of different Disabled people) must be established to investigate the disability impact of policies and decisions on current and future generations of Disabled people to meet their needs.**

The final three contributions focus on issues relating to Goal 11 (Sustainable Cities and Communities) of the UN's SDGs, which includes ensuring access to decent housing, services and transport, and providing universal access to green and public spaces, in particular for persons with disabilities.

Jane Hatton FRSA, a disabled social entrepreneur and Director of Evenbreak, emphasises the opportunities that the climate crisis and the COVID-19 pandemic have presented in terms of extending the use of flexible working patterns, home and hybrid-working. The impacts of climate change 'exacerbate the barriers faced by persons with disabilities in the world of work' (OHCHR, 2020: 7), such as the loss of job opportunities because of environmental degradation, the economic impacts of climate disasters and the increased hazards of temperature rises on manual labour (ILO, 2018). Consequently, much more needs to be done to ensure that existing schemes aimed at raising and maintaining employment, such as Access to Work and Disability Confident, do far more to ensure disabled people experience a just transition to a low carbon economy. Jane powerfully sets out why disabled people are 'premium candidates' and bring particular skills and expertise to the workplace. Our problem-solving abilities make us exceptionally well-placed to lead and promote universally accessible approaches to response, recovery, rehabilitation and reconstruction, (OHCR, 2020; see United Nations Office for Disaster Risk Reduction, 2015) not only in policy-making at all levels, but across the UK's employment sectors.

Recommendations:

1. The government must produce a comprehensive strategy which promotes disability inclusion in green employment and a just transition to a low-carbon economy. This must involve a review of Disability Confident and Access to Work schemes, and other labour force policies in relation to disability, to set out changes needed to these schemes to meet the twin crises of COVID-19 and Climate Change. This strategy should include a comprehensive action plan in relation to promoting disability inclusion in home- and hybrid- working, along with the development of green skills, green job employment services, green contracts and jobs.

2. The government must establish an Inclusive Futures Scheme, to build skills, voice and confidence of young disabled people on issues related to sustainable development, environmental degradation and climate change, which encourages the development of their problem solving, entrepreneurial and vocational skills in this area.

Dr Kay Inckle, Campaigns and Policy Manager at Wheels for Wellbeing, highlights how crucial cycling is for disabled people in addressing sustainability goals, as well as physical and mental health inequalities and the barriers to transport and mobility, and social and leisure participation. Unfortunately, barriers to cycling include: cost, infrastructure, attitudes, and exclusionary policies and policy-making. Sadly, the NDS does nothing to address these barriers to cycling and active travel for disabled people. There is a missed opportunity for the NDS to learn valuable lessons from the pandemic. Respondents in Wheels for Wellbeing's 2021 (forthcoming) annual survey reported a range of experiences of policies implemented during the pandemic. Quiet streets enabled some disabled people to begin cycling for the first time or with increased frequency and confidence, whilst others found that the new measures obstructed their access to roads and cycle ways. The failure to address Active Travel in the NDS also contrasts with current Department of Transport workstreams which are proactively promoting accessibility in active travel in policies, such as *LTN1/20 Cycle infrastructure design* (2020) and *Gear Change* (2020).

Recommendations:

1. Put active travel for disabled people at the heart of the NDS and COVID-19 recovery and sustainability policies.

2. Remove the barriers to cycling and active travel for disabled people, especially infrastructure, costs and attitudes.

3. Ensure disability benefits enable a decent quality of life, incorporating active travel and mobility equipment.

Phillip Wilcox, author and policy analyst, sets out the potential of Autonomous Vehicles (AVs) to deliver transformative changes to the lives of disabled people and reduce vehicle emissions. The UK's Centre for Connected and Autonomous Vehicles (CCAV) has many different pilot projects (Pennsylvania Turnpike Commission, 2017) related to AV testing and deployment around the UK. AVs can also be used for first mile-last mile transportation needs or other goods delivery, connecting local shopping centres or essential facilities. Autonomous drones can be used for delivery of food and other supplies. However, there are still significant technological, policy, liability and regulatory issues which need to be resolved to reach this potential.

Recommendations:

1. The potential of AVs should be encouraged by policymakers to maximise its inclusive design and ability to provide innovation in compact and accessible green transport.

2. Policy-makers, regulators and product developers must learn the lessons of the risk of discrimination through algorithmic bias and ensure that AV and CCAV testing identify the 'edge cases' which positively recognise the movement, speed, silhouette and outline of disabled pedestrians in their path planning algorithms.

Conclusion

Last week, the High Court declared that the Government's National Disability Strategy is unlawful due to inadequate consultation with disabled people in *Binder, Eveleigh and Paulley v Secretary of State for Work and Pensions* ([2022] EWHC 105 (Admin)). A claim to quash the Strategy was not pursued. However, the claimants expected that if the court did declare it unlawful, the defendant, the Secretary of State for Work and Pensions, 'will carry out further appropriate consultation with a view to revising the Strategy, if appropriate' ([2022] EWHC 105 (Admin): para 3). There is now, therefore, a further opportunity for the government to revise the National Disability Strategy, placing the voice of disabled people at its centre and significantly extending its substantive contents to address the issues raised in this report.

PART I: CREATING A STRONGER VISION TO MEET THE CHALLENGES DISABLED PEOPLE NOW FACE

A. Keynote Address: Does the National Disability Strategy do enough to address the twin crises of Climate Change and life post-COVID-19 Pandemic?

Kamran Mallick, CEO of Disability Rights UK

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In responding to the question of whether the National Disability Strategy (NDS) (HM Government, 2021) does enough to address the twin crises of climate change and life post-COVID-19, I could just give a very simple answer and say: ‘No, it does not’, end it there and then pass on to the next contributor to this report. But such an important question requires more of an answer than that.

On both accounts – climate change and life post-COVID-19 pandemic – the NDS does not address the disproportionate impact on disabled people of either of these crises. Nor does it address the role that disabled people can play in shaping our response to these crises as a community or as a significant portion of the population within our nation. The strategy has *not* put disabled people at its heart, because we were not involved in it. This sentiment is reflected in the contributions of many of the other papers set out below, in particular those by Professor Peter Beresford OBE, Jumoke Abdullahi, Jane Hatton and Dr Kay Inckle.

Indeed, the NDS is not a strategy. It is a list of policy ideas that have been pulled together and inserted at the end of each section of the document. Disabled people have been waiting a long time for a *strategy* and we need much more substance than this one included – more meat on its bones. Despite it being 120 pages long, this strategy or ‘list’ of ideas is disappointingly thin on immediate actions, medium-term plans and details of longer-term investment.

It has insufficient concrete measures to address current inequalities (Office for National Statistics (ONS), 2021) that we as disabled people experience in living standards and life chances. It does not address the structural inequalities that the pandemic has highlighted (Shakespeare et al, 2021). There are scant plans and timescales on how to bring about desperately needed improvements to the benefit system, housing, social care, jobs, education, transport, and equitable participation in our society. Thus, there is no attempt at laying out an inclusive response and recovery (UN, 2020) which will close the inequality gap disabled people face over the next decade.

Disabled people are not being included in the climate emergency conversation; as was proved in Glasgow during COP26. We cannot even get in the room where the conversation is taking place, as was highlighted by the Israeli Minister, Karine Elharrar, who is a wheelchair user, and was prevented from attending COP 26 because the entrance was not wheelchair accessible. She tweeted that it was sad the UN does not provide accessibility to its events but it was the UK Secretary of State for Environment, George Eustice, who implied that it was the Israeli Minister's fault (Cowburn, 2021) for not informing the organisers of her access needs, and turning up at the 'wrong' entrance, which is both offensive and misses the point. The Minister was denied entry, denied the microphone and, therefore, denied a seat at the decision-making table.

The 2020 UN's OHCHR Study on the promotion and protection of the rights of persons with disabilities in the context of climate change stated that the inclusion of disabled people in climate planning is essential not just to ensure the safety of disabled people, but the success of measures to avert a climate disaster (OHCHR, 2020). However, the NDS does not address the climate crisis in relation to disabled people at all. Nor does it invite disabled people and our organisations to share our lived experience and discuss solutions together. A disability-inclusive human rights-based approach to climate change entails climate action that is inclusive of and accountable to disabled people at *all* stages. This would be facilitated, as Sasha Kosanic's piece below emphasises, through a framework for fostering action towards inclusive, sustainable futures for disabled populations (Kosanic *et al*, In Review). Effective climate change action relies on approaches by the whole society in order to be successful; therefore, such action needs to be inclusive of the whole society in the developments of this action too.

Poor access has become the background noise of our lives as disabled people. We need to turn up the volume, turn it up loud enough so that non-disabled people can hear it. Not just when it happens to a disabled minister or a Paralympian, but *every* time it happens. In fact, we have to stop talking about poor access and talk about the truth of being denied access. No-one dares put up a sign that says 'no disabled people' over the door. But that, in effect, is what they mean when they say: "oh no how awful. We want this to be an inclusive event for everyone. We just can't be bothered to make it happen."

We urgently need the government to integrate a disability rights approach (Jodoin *et al*, 2020) into all aspects of its climate governance work and the inclusive response and recovery plan to COVID-19 which it is yet to produce (Tidball *et al*, 2020).

When we are excluded from the conversation, public policy and decision-making suffer because the government does not value consultation with us or ensuring that entry to the building is accessible to us. The result is the same. Disability discrimination is amplified. If disabled people are not at the table when the climate crisis is discussed, many (see Baker,

2021) of us will die (Schmitt, 2019). If disabled people are not engaged in the changes that need to happen in our country, then those changes will fail. Include us. You need us.

Recommendations:

1. The government needs to go beyond the confines of the existing NDS and work to embed a disability rights approach in all aspects of climate governance and in developing an inclusive response and recovery to the COVID-19 pandemic.

2. The government must also set out a legislative programme to make the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD 2006) directly enforceable in UK law and to harmonise pre-existing legislation with it.

3. This programme must include the integration of a statutory duty to pay due regard to the rights of disabled people in environmental and climate change law, policy and climate action.

4. In order to secure a seat at the table for disabled people, all those involved in climate governance and action must ensure that reasonable adjustments are made to decision-making spaces, meeting venues, processes and remote access of venues utilised in engagement and policy-making on climate governance and action.

B. Where's the vision in the National Disability Strategy to meet the challenges disabled people now face? Professor Peter Beresford, Visiting Professor at the University of East Anglia and Co-Chair of Shaping Our Lives

Follow @BeresfordPeter

We are seeking to address major and related questions about climate change and pandemics as they affect disabled people. However, starting this discussion from the National Disability Strategy (NDS) frames it rather like the answer in the joke about the lost traveller after they asked a stranger for directions – "If I wanted to get to where you want to go, then I wouldn't start from here!"

Let me explain by looking a little more closely at the NDS - not just as it has been presented by the government, but as it has been received by disabled people and reported by the widely respected Disability News Service. As it told us:

> 'The prime minister, Boris Johnson, said in August 2021 that the strategy would be a "down payment" on the promise to "build back better and fairer, for all our disabled people"'.

But analysis of the strategy by the *Disability News Service* (Pring, 2021a) showed it was accompanied by only £3.95 million in new funding, or just 28p for every disabled person in the UK. The remainder of the funding was old money re-announced. Where is the transformational vision in that?

Yet, when challenged about this lack of new funding by the Commons Work and Pensions Committee (2021), the then minister for disabled people, Justin Tomlinson – later sacked and replaced by Chloe Smith – suggested that new funding was likely to be announced soon.

At the time, Tomlinson told the committee that a "huge amount" of the work of the government's Disability Unit in the following few weeks would be to provide evidence for individual government departments that would "strengthen the likelihood" of disability-focused funding bids being successful in the spending review (Pring, 2021c), which sets departmental budgets up to 2024-25.

Despite this pledge, budget and spending review documents (HM Treasury, 2021) published in late October last appear to include no details of any such funding being agreed by the chancellor, other than for education and the Department for Work and Pensions (DWP) (Pring, 2021c).

All the appropriate rhetoric is there in the lengthy NDS document: it talks about the problems for disabled people, the effects of COVID-19, and the importance of lived experience. So, the government cannot be excused on the ground that they are ignorant of what disabled people need and deserve in order to live with dignity and to participate in our society. However, there is still no clear programme for change beyond promises and annual reports, promises and annual reports, and there is still no funding. I certainly could not find any mention of climate change or specific proposals to ensure that disabled people are not, yet again, the main victims of another pandemic, or the ones who continue to bear the brunt of the present one.

So, like the traveller, I would not start from here either. The strategy not so much fails, as it not even address the questions we have been asked to consider today. Nor would I start from the strategies of governance towards disabled people that this government and its Conservative and Coalition predecessors have implemented through their day-to-day policy-making over the last decade. These have seen the oppression and victimisation of disabled people with cruel and arbitrary welfare reform policy (Clifford and Dunk, 2021) and cutting social care support (The Secret Welfare Rights Worker, 2021; Beresford et al, 2021) to the point of making it increasingly inadequate, especially for working-age disabled people. Indeed government-funded (Pring, 2021d) research has linked post-2010 cuts to spending on social care and health by the Conservative-led coalition to more than 57,000 deaths in England in just four years (Martin *et al*, 2021). To add insult to injury to the NDS has almost nothing to say about how it is going to improve social care for working-age disabled people, the recent legislative reform (Cabinet Office, DHSC and Prime Minister's Office, 2021) in social care only focuses on better off older disabled people who live in more affluent parts of the country where house prices are higher. As such, it does not adequately address the circumstances of working-age disabled people and lower income older people living in lower value homes.

Thus, the NDS ignores the views of disabled people in taking forward some of its most fundamental policies and provisions. As recently as last September, the government invited sector leaders to a summit on health and social care without including any disabled people's organisation and with not one disabled person representative present (Pring, 2021e).

Finally, disabled people are not a homogenous group, but the NDS treats us as just that. It overlooks our rich diversity – as people with physical, sensory and intellectual impairments, with long term conditions, as mental health service users, as people who identify as diverse in terms of gender, ethnicity, age, sexual orientation, and belief. There is not one mention of our multiple identities or the relevance of our intersecting protected characteristics anywhere in the document. In 21st century Britain, this matters now more than ever, as Jumoke Abdullahi's essay below shows.

If we want to make progress in relation to the present COVID-19 pandemic and future pandemics, as well as taking inclusive action to tackle climate change, then there are at least three essential well-evidenced steps we can take.

Firstly, we must learn from the Independent Living Strategy (Office for Disability Issues, 2008) set up by New Labour, sadly scrapped by the Coalition government. This brought together different government departments to have a co-ordinated and holistic focus, involved disabled people themselves centrally, and was committed to developing a network of disabled people's own organisations (Morris for the JRF, 2011). That approach goes far beyond the lists of siloed commitments in the 'cross-government effort' in Part 3 of the NDS.

Secondly, we must extend support and explicit provisions and requirements for the inclusive involvement of disabled people and their own organisations in the development of policy and practice, building the potential of genuine co-production. For example, disabled people had much valuable experience to contribute from their own day-to-day experience of isolation, 'lock down' and inaccessible transport, but minimal effort has been made to learn from this expertise and lived experience under COVID-19. The NDS says that its programme of engagement included '11 roundtable discussions with a total of 98 disabled people about their experiences in daily life' (HM Government, 2021: 12). This amounts to a tiny sample given there 14.1 million disabled people in the UK (Scope, 2021) and does not appear to have focussed on the lessons of the pandemic, learned through disabled people's lived experience. Social work education is a well evidenced exemplar (Beresford *et al*, 2021) of how helpful and workable involving such lived experience is, with benefits of such involvement operating and being mandatory at every stage and in every aspect of such learning.

Thirdly, the philosophy of independent living based on the social model of disability (UPIAS, 1976) developed by disabled people should be the principle underpinning future disability policy and practice. It is embodied in the United Nations Convention on the Rights of People with Disabilities (UNCRPD, 2006), to which the UK is a signatory. The UNCRPD should be the centrepiece of any new disability strategy. The idea of 'progressive realisation' developed in the UNCRPD should also be adopted, with the unmet needs of disabled people being recorded in social care and beyond to identify the resources that will be needed and to make possible their gradual allocation (Slasberg and Beresford, 2020).

Returning to the central question of this report, there ought to be no conflicts between the rights of disabled people and the sustainability of our planet. Indeed, climate justice requires that there be no such friction. Consequently, it was really encouraging to see that the Scottish Disabled People's Organisation (DPO), Inclusion Scotland, helped to secure an event at COP26 focused on disabled people and climate change for the first time in the 30-year history (Jones, 2021) of the UN climate change treaty (1992).

Like other disadvantaged groups and groups facing discrimination, we as disabled people bear the brunt of public policy and politics that increasingly divide and damage both individuals and communities, nations and states. The disabled people's movement internationally has pioneered accessible approaches to ensuring real and inclusive change, as well as democratic processes that challenge marginalisation in relation to protected characteristics and other discriminations and oppressions. We have been knocking hard on political and policy doors for years. Strategies fit for the future challenges we face will be those that bring everyone together in our different struggles nationally and globally, giving us strength and reinforcing commitments to humane and sustainable ways of living, connecting and working together.

Recommendations:

1. Bring together different government departments to have a coordinated and holistic focus, involving disabled people themselves centrally in this process.

2. Extend support and explicit provisions and requirements for the inclusive involvement of disabled people and their own organisations in the development of policy and practice at all levels.

3. Apply the philosophy of independent living, based on the social model of disability, developed by disabled people as the principle underpinning future disability policy and practice; ensuring the UNCRPD is at the heart of any new disability strategy.

PART II: RESOLVING POTENTIAL TENSIONS BETWEEN DISABILITY RIGHTS AND EVOLVING CLIMATE AND ENVIRONMENTAL CHANGE POLICIES

A. What tensions exist between disability rights and climate change and environmental policy? Dr Sasha Kosanic, Lecturer at Liverpool John Moores University

Follow @SashaKosanic

I am a climate change researcher looking at both climate and environmental change impacts on vulnerable populations such as Indigenous and disabled populations. It is very important to understand that humanity is faced with two emergencies arising from the climate change crisis: a) changes in global temperature and precipitation, and b) unprecedented biodiversity loss that will impact disabled populations in terms of nature benefits (e.g. material, non-material regulation) and their connectedness to nature (e.g. proximity or access to nature, values and valuation of nature). This year the Human Rights Council at the United Nations recognised the right to a clean, healthy and sustainable environment. This is an important step forward, as by passing the resolution the UN ensures the empowerment of local and vulnerable (i.e. disabled and Indigenous) communities, whose livelihoods and wellbeing closely depend on nature, to actively defend their human rights. It also compels governments to develop strong, equitable and sustainable environmental protection policies as well as risk management strategies.

While conducting our research in Madagascar, on climate and environmental change impacts on Indigenous communities (including its disabled members), we discovered that there was a gap in global scientific literature that looks at the impacts of these changes on disabled populations in particular. Shortly after this realisation we published a letter in *Science* (Kosanic *et al*, 2019), highlighting that currently, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Intergovernmental Panel on Climate Change (IPCC) reports do not take into account the effects of climate and environmental change on disabled populations. The main objective of IPBES is to provide a timely and detailed assessment of knowledge on biodiversity and ecosystem services to inform Governments to improve policies, decisions and action at the local, national, regional and global levels. Similarly, the IPPC’s main objective is to assess the scientific findings on climate change impacts in order to inform Governments to minimise the risk through adequate mitigation and adaptation of policies.

Climate and environmental change are highly spatially and temporally variable and the impacts will differ globally. Climate change impact is visible through increased intensity and frequency of extreme events, such as hurricanes, cyclones, floods, heat waves, and non-extreme events. The latter include sea level rise, sea ice loss, biodiversity loss and invasive species intrusions. In order to better understand how these extreme events will affect marginalised populations, we need to address these questions through an environmental justice framework.

Firstly, we need to understand how climate and environmental change impacts upon disabled populations through the 'distributional dimension' of environmental justice. Secondly, we need to examine to what extent people with disabilities are recognised in the research and policy of climate and environmental change. This is referred to as the 'recognitional dimension' of environmental justice. Thirdly, we must analyse the 'procedural dimension' – i.e. to what extent are disabled populations included in decision-making and policy-making on climate and environmental change.

Our systematic review, *'An inclusive future: Disabled populations in the context of climate and environmental change Current Opinion in Environmental Sustainability'* (Kosanic, Petzold, Martín-López and Razanajatovo, In Review) analysed existing scientific literature from around the world on climate and environmental change impacts on disabled populations. We aimed to understand the impacts in a context of environmental justice (i.e. distributional, how impacts are allocated; recognitional, whose voices are recognised; and procedural, who is involved in the decision making process). We found that most of the research is concentrated in North America (i.e. the United States of America) and Europe.

There is no research on this topic in Latin America and research in other parts of the world is very scarce (distributional dimension). Research on recognitional and procedural dimensions of environmental justice for this group is even more insufficient.

Furthermore, we need to take into account intersectionality when understanding the impacts of climate and environmental change (as Jumoke Abdullahi effectively highlights in her paper below). Indigenous disabled people will experience an even higher impact of climate and environmental change as the way of life of indigenous populations and their livelihoods are closely connected to nature. For example, the impacts of these changes have particularly affected certain Indigenous populations who have found it increasingly difficult to fish through the ice, reducing their food supplies and traditional ways of living. This can lead to deterioration of physical and mental wellbeing (Cunsolo and Ellis, 2018).

However, there is still a way to minimise climate and environmental change impacts and improve the resilience of disabled populations. This can be achieved through applying the UN's 2030 Sustainable Development Goals (SDGs) (UN, 2015) and their attendant targets. As the main commitment of the UN Agenda 2030 is to 'leave no one behind', inclusive and equitable approaches are essential to achieve a sustainable future and climate justice long-term. In order to make progress on SDGs, in particular on Climate Action (SDG 13), Life Below Water (SDG 14) and Life on Land (SDG 15), we need engagement with, and support of, disabled populations. In order for environmental change policy to properly address the intersection between disability and other multiple and intersecting protected characteristics, it is essential that it includes the goals on: No Poverty (SDG 1), Equality Education (SDG 4) and Gender Equality (SDG 5), Reduce Inequalities (SDG 10) are met. Meeting SDGs leads towards transformative change in institution and governance, helping to maintain environmental resources and human well-being (Diaz et al. 2019).

Solutions to the climate crisis we face, and its dual emergencies of rising global temperature and precipitation and the unprecedented biodiversity loss, must involve the active inclusion of disabled populations around the world. Their involvement will allow scientists, policy-makers and politicians alike to develop inclusive risk management and adaptation strategies and conservation policies.

Recommendations:

1. More research is needed on the impact of climate change and environmental change policies on disabled populations, particularly those in developing countries, and those disabled people facing intersectional inequalities.

2. Countries should apply the following environmental justice framework in decision-making and policymaking on climate and environmental change policies to ensure sustainable futures: a) Conduct research to gather the data on environmental change impact for disabled populations; b) Connect with disabled communities, advocates and researchers; c) Create equitable risk assessments for different timelines: Pre-climatic events, During climatic events; Post-climatic events (Kosanic *et al*, In Review).

B. A ‘just and green recovery’ from COVID-19, but for who? Dr Sarah Bell, Lecturer at University of Exeter

Follow @SarahBell85

The COVID-19 pandemic has had far-reaching consequences (Suleman et al, 2021) for health and wellbeing, including loss of life and bereavement, chronic illness amongst survivors, and widespread anxiety and isolation. Contrary to early suggestions of COVID-19 as a ‘great leveller’, the pandemic has compounded health inequalities (Marmot and Alen, 2020) both within and beyond the UK. Many disabled people have experienced a ‘triple jeopardy’, (Shakespeare *et al,* 2021b) with greater risk of severe illness if exposed to COVID-19, social stigma and isolation, and compromised access to routine health care and rehabilitation.

Pandemics like COVID-19 are predicted (IPBES, 2020) to occur more frequently with climate change and biodiversity loss. Through sudden onset extreme weather events and slower onset ecosystem degradation, climate change itself poses major risks (Romanello et al, 2021) to human health and livelihoods (see also Sasha Kosanic’s contribution above), in ways that are also deepening social health inequalities. Growing awareness of these risks has instigated calls for a ‘green recovery’ from COVID-19; a recovery shaped by transformative decision-making to create ‘a healthier, fairer and greener world’ (WHO, 2020: 3).

If developed in close and genuine collaboration with disabled people, such ambitions have the potential to make life better and more socially inclusive. At present, however, the pathways towards a disability-inclusive green recovery remain under-researched and under-acknowledged. As others in this report have pointed out (see contributions from Professor Peter Beresford, Kamran Mallick and Dr Kay Inckle), climate change is barely recognised in the National Disability Strategy (NDS). Disability is also overlooked within national ambitions to progress a ‘green recovery’ from COVID-19, creating healthy, climate-resilient ‘nature-rich, accessible and characterful places to live and work’ (Natural England, 2021: 3).

Without embedding the knowledge and priorities of disabled people at the heart of national and international climate action, there is a risk that disabled people – comprising 15% of the global population (WHO, 2021) – will remain at the margins of the green recovery. Beyond the moral imperative to ‘leave no-one behind’ (United Nations System Chief Executives Board for Coordination, 2017), an inaccessible approach to green recovery will undermine the number of people who can facilitate such transformations. If we examine the three key tenets of green recovery policy, we come across problematic barriers to forging disability-inclusive pathways to this recovery within the UK’s current socio-economic and political systems.

A first tenet is a commitment to building a zero-carbon economy and zero-carbon communities, for example through green jobs, pro-environmental behaviours and wider forms of environmental citizenship. Yet, the priorities and experiences of disabled people are often overlooked in mainstream environmental movements (Fenney, 2017). Advocates of individual pro-environmental behaviour often fail to acknowledge the inaccessible structures (Imrie and Thomas, 2008) that limit opportunities for sustainable lifestyles (Bråten, 2021). This includes, for example, the exclusionary repercussions of removing disabled parking bays to make space for cycleways, and the prohibitive costs of adapted bicycles. More broadly, there are concerns about the lack of diversity (Young People's Collective, 2021) within the environmental sector across intersecting axes of social inequality, including disability, as well as calls to embed disability inclusion (ILO, 2019) within the 'greening' of existing jobs and in the education/skills training pathways to support 'green' jobs (see the recommendations in Jane Hatton's piece below).

A second tenet is the creation of a 'natural health service'(Brotherton et al, 2021), with the aim of improving human health and wellbeing through protecting, restoring, improving and promoting access to high quality nature-based settings, such as parks, gardens, woodlands and countryside areas. There have long been moves to (re)connect people with nature in the name of health (Natural England, 2016), alongside efforts to identify and distil a so-called 'healthy dose' (White et al, 2019) of nature for people to integrate into their daily lives. Nature connection initiatives are typically designed to promote enjoyment, care and kinship with nature, alongside opportunities for physical activity, social interaction, stress relief and relaxation.

Although well intended, such efforts largely fail to engage with (Bell *et al*, 2018) the disabling social and physical barriers (Bell, 2021) that prevent people from being able to 'adhere' to such dose recommendations. Since the onset of COVID-19, these access barriers have been compounded further by instructions to shield, closure of public bathroom facilities, and concerns about crowding. Such restrictions have undermined opportunities to engage with the nature-based environments that many people have otherwise turned to (Armstrong *et al*, 2021) for health and wellbeing through the most acute periods of the pandemic.

A third tenet of green recovery is the use of nature-based solutions (Osaka *et al*, 2021) for climate adaptation to reduce risks of flooding and overheating. Much of this work focuses on the climate vulnerability (Keogh et al, 2019) of disabled people. For example, risks of mortality and severe injury (Kett and Cole, 2018) are higher amongst disabled people than non-disabled people during extreme weather events and environmental disasters. People with mobility impairments are more likely (Inclusion Scotland, 2021) to live in flood-prone, level access, ground floor properties and/or in social housing, which is at higher risk (Lupo, 2020) of overheating. In the UK, for example, 24.7% disabled people aged 16-64 years (ONS, 2019) live in rented social housing compared to 8.2% of non-disabled people. Such risks are exacerbated by widespread access barriers (Twigg *et al*, 2017) to evacuation warnings, emergency transport, shelter and health care in the face of disaster.

This vulnerability is not an inevitable consequence of life with an impairment. Rather, it is an outcome of entrenched disabling socio-cultural and political structures and processes (International Disability Alliance, 2021) that undermine people's adaptive capacity and create unnecessary situations of vulnerability amongst disabled people. There are growing concerns about such marginalisation, alongside 'eco-ableist' responses to climate change (Inclusion Scotland and Environmental Rights Centre for Scotland, 2021); that is, the failure to include disability knowledge in climate action, or to recognise that many of the actions promoted to address climate change will create new challenges for disabled people.

Yet, there are also hopeful examples of disability-led community responses to climate change. For example, Bristol City Council was the first local authority in the UK to declare a 'climate emergency' in November 2018. Facilitating progress towards Bristol's One City Climate Strategy (2020) is the Bristol Green Capital Partnership (BGCP), a unique partnership of over 1000 member organisations with a commitment to developing Bristol as a sustainable city. In October 2020, Bristol City Council launched an innovative Community Climate Action (2020) project with BGCP and the Centre for Sustainable Energy, co-producing community-level climate action plans with six community partners, including the Bristol Disability Equality Forum (BDEF). The action plans seek to both mitigate further climate change and help Bristol adapt to its effects, in ways that embed quality of life, disability inclusion and social justice. BDEF have produced a short film to raise awareness of the project, and have been working with people with varied experiences of disability across Bristol to develop a draft plan (2021), including both 'city owned' and 'community owned' actions.

Such collaborative activities are essential to create meaningful participation pathways and possibilities for disability knowledge, rights, (Jodoin, Ananthamoorthy and Lofts, 2020) representation and leadership within and beyond the growing momentum behind the green and just recovery agenda. They demonstrate the importance of working with disabled people as valuable and valued human beings (Abbott and Porter, 2013), with much to contribute to generate innovative and inclusive responses to both COVID-19 and climate change. In the last two years, we have seen rapid mobilisation and societal innovation in response to the pandemic. Many of these transformations include 'reasonable adjustments' that have been advocated for and identified as essential by disabled people for decades. Only by valuing the 'normality' of doing things differently – and embedding the priorities of disabled people before the point of a crisis (climate, pandemic or otherwise) – will systems, policies and practices be designed and implemented that are more flexible, resilient, and responsive for all.

Recommendations:

1. **Embed an enforceable, universal right to a safe climate in all green recovery policy making (see, for example, the work of the Environmental Rights Centre for Scotland (2021)).**

2. **Engage with Disabled People’s Organisations to bring disability knowledge, rights, representation and leadership to the heart of green recovery decision-making.**

3. **Develop links with existing disability-led networks working on priorities pertaining to disability and climate change, such as the Disability Inclusive Climate Action Research Program and the Disability Inclusive Disaster Risk Reduction Network.**

PART III: RECOGNISING OUR INTERSECTIONAL IDENTITIES AND TACKLING THE MULTIPLE INEQUALITIES AND DISCRIMINATION WE FACE

A. The National Disability Strategy and Multiple Marginalisation, Jumoke Abdullahi, Co-Founder of The Triple Cripples and Media and Communications Officer at Inclusion London

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I am a Black, Disabled woman. Within a UK context, this means that I am triply marginalised and experience oppression through my gender, my race and, also through my disability. The Women and Equalities Committee's inquiry (Women and Equality Committee, 2020) examined the unequal impact of COVID-19 on women like me, and the Joint Committee on Human Rights (2020) found 'disproportionate' human rights implications of the government's response to the pandemic. In this context, my expectations of the National Disability Strategy (NDS) taking an intersectional approach and tackling the multiple exclusions women like me face, through increased funding and resources, was high. So, imagine my frustration and anger when, earlier in the summer, *Disability News Service* journalist John Pring reported that most of the £1.6 billion investment in the NDS had either already been announced or allocated in 'at last November's spending review, or even earlier' before the strategy was even published (2021a; see also Peter Beresford's piece above). The strategy was padded out with promises to do more research and consider further action, but the government's previous record on disability issues (see UN, 2017) means many of us do not trust these actions will be delivered.

Indeed, the exclusion from COP26 of the Disabled Israeli Minister (Davies, 2021), Karine Elharrar, as discussed in Kamran Mallick's keynote address above, is disturbingly indicative of the government's approach towards the inclusion of Disabled people in practice. The twin crises of climate change and life during a global pandemic has shown how often Disabled people are at risk of harm due to, for example, flooding, dehydration and heatstroke (Baker, 2021), as well as poorer than average wellbeing (Office for National Statistics (ONS), 2021) and death involving COVID-19 (ONS, 2020). The individual and combined effect of both crises means that there will be an increasing number of people with acquired disabilities over the next decade.

ONS data shows that six in every ten persons, or 59.5% of people, who lost their lives due to COVID-19 were disabled. Those with learning disabilities were impacted at a much higher rate (Public Health England, 2020): 4.1 times higher than the general population after adjusting for other factors such as age and sex. We also know that there is a disproportionate COVID-19 death rate among people from Black, Asian and minority ethnic backgrounds as well as that Disabled women with limiting disabilities aged under 65 are 11.3 times more likely to die than non-Disabled females (ONS, 2020; Disability Rights UK, 2020).

However, whilst there is a delineation between the statistics for Black people, for Disabled people, and for women, data does not exist for people that encompass the intersection of all these identities.

With this backdrop, never has it been more important for the government to address the multiple inequalities we face and to understand and celebrate our intersectional identities in meeting our needs and aspirations. But, on intersectionality and on tackling the multiple exclusion we face, the NDS contains no strategy at all. Indeed, the issue is not mentioned anywhere in the document. Disabled people are not a homogenous group; nor are the issues which affect our participation in society. Yet, the NDS treats us as such, and the strategy was not developed with Disabled people or our organisations in mind. Consequently, it does not address the problems we face nor Disabled people's priorities in solving them. The global pandemic and climate change have illustrated that the needs of Disabled people are not considered until it is too late.

The NDS does not look at the oppressions of those who are multiply marginalised due to their race, gender, sexuality, or any other protected characteristics, such as the socio-economic barriers and material disadvantages (ONS, 2021) that are present in people's lives. As a Black, Disabled woman in the UK, I am, unfortunately, consistently dealing with the issues of ableism, racism, and sexism which

proliferate unaddressed by government policy-making. It is not just that the NDS fails to examine intersectionality and tackle multiple discrimination (UNCRPD, 2006), but also that it does not address any of the problems that Disabled people like me face with an intersectional lens. For example, in its section on *Jobs: making the world of work more inclusive and accessible*, there are no government actions to reduce the disability pay gap, let alone tackling that pay gap for Black Disabled women like me. This one example shows that the NDS fails to respond to the fact that for those that are multiply marginalised, it is not just that on one day we will have to deal with racism and then, on a different day, might have to face tackling the sexism that permeates our lives and, finally, on the third day, perhaps having to consider ableism. I am experiencing all three at once, all at the same time, to varying degrees.

What about Disabled people that are part of the queer community? How does queerphobia engage with, interact, and impact queer Disabled people's lives? What about their migration status? These are all things that should have been investigated but were not deemed important enough to be included in the NDS. It is imperative that the government reflects on this 'multiple and aggravated discrimination' (UNCRPD, 2006) not only when looking at the urgent changes which are needed to the current NDS, but across all its policies more generally.

The UK’s colonial history means it is a nation which is not just made up of white, non-Disabled men, but also that its laws and policies too often reflect the ‘subjectivity of the dominant white, affluent, adult, male’ (Hudson, 2006). This is evident in the NDS as it is currently drafted. This is unacceptable in the context of the COVID-19 pandemic which has, sadly, brought to the fore situations where Black and non-Black people of colour are put into situations where we are at the closest point of harm with a devastating effect.

The death of Belly Mujinga, a London transport worker who died from COVID-19 after allegedly being spat and coughed at while on duty (Campbell, 2021), is one such example. Belly was a Black woman that had a job in a position that meant that she had to be in a public facing role, even though she had advised her employers that it was not safe for her to do so (Croxford, 2020) because of her underlying health conditions. Owing to the callous, racist, and ultimately fatal actions of another person (Croxford, 2021), Belly died.

Unfortunately, this tragic situation is not isolated. The role of systemic racism exacerbating the COVID-19 health inequalities (Razai, Majeed and Esmail, 2021) faced by Black and non-Black People of Colour has been examined in both the US and the UK. The material imbalances of varying socio-economic factors mean that they do not have access to the same things as their white counterparts.

Nothing, including people's lives, exists in a vacuum. Having little to no access to good and accessible housing, limited job opportunities, or impaired access to medical treatment, all have a negative impact on Disabled people. It is difficult to challenge or even hope to change people's current situations because they are literally trapped within their homes (Shakespeare et al, 2021) and systemically excluded. It is difficult for a critical mass of Disabled people to mount the fight which is needed for structural change in the laws and policies that affect us, because most of us are caught up in the daily challenges we face to work out how we are going to heat our homes or put food on the table.

These lived realities often put Disabled people at risk of harm and danger in other ways, which the NDS has also failed to address. The Disabled People’s Organisation, Stay Safe East, commented that the NDS does not address the specific needs of Disabled women, highlighting that:

> “there is not a single concrete proposal to address domestic abuse of Disabled women (and men) by partners or family members, or wider VAWG [(Violence Against Women and Girls)] issues such as the disproportionately high rates of rape against Disabled women and girls, sexual harassment of Disabled girls in education, or gender-based violence against Disabled women in institutions” (Stay Safe East, 2021).

That the NDS does not consider these compounding and overlapping issues is disappointing, but not surprising. Further, there is no mention of the ways in which these varying marginalisations intersect, interact, enable, and uphold one another. There has been consistent evidence that the government's policies do not factor in the needs of those that are multiply marginalised, as the UN found in its examination of the UK in 2017. There are concrete things that the government could have and should have done to engage with the Disabled community in ensuring that the NDS reflected our multiple identities and in taking action to respond to the multiple discrimination we face. They failed to do so.

Acquiring lessons from the Well-being of Future Generations (Wales) Act 2015 would be a good place to start. It establishes the position of a Future Generations Commissioner with a general duty (Section 18) to promote the sustainable development principle in acting as a guardian of the ability of future generations to meet their needs, and to encourage public bodies to take greater account of the long-term impact of the things that they do. In doing so, they are to monitor the extent to which well-being objectives set by public bodies are being met.

The Government should learn from this general duty of the Future Generations Commissioner for Wales, and establish a Future Accessibility Impact Board (made up of different Disabled people) to investigate the disability impact of policies and decisions on current and future generations of Disabled people to meet their needs. This board must encourage public bodies to take greater account of the long-term impact of the things they do in carrying out more effectively their Public Sector Equality Duty under Section 149 of the Equality Act 2010. Such a board would facilitate better integration of Environmental Impact Assessments with Equality Impact Assessments, and ensure that disability inclusion is central to policy-making and that Disabled people are no longer excluded from having an active role in achieving climate justice in the UK.

Like the late Audre Lorde said: "There is no thing as a single-issue struggle because we do not live single-issue lives." The continued failure of the government to see Disabled people as more than a group of impairments or conditions, means the NDS is really not a strategy at all.

Recommendations:

1. Disability is an identity that is present in every other protected characteristic. All policy-making on disability must, therefore, employ the use of an intersectional lens to perceive the ways in which multiple marginalisations compound one another, and take strategic action to prevent multiple and intersectional discrimination.

2. A Future Accessibility Impact Board (made up of different Disabled people) must be established to investigate the disability impact of policies and decisions on current and future generations of Disabled people to meet their needs.

PART IV: DESIGNING MORE INCLUSIVE EMPLOYMENT AND TRANSPORT TO ENABLE US TO LIVE AND WORK DIFFERENTLY TO MEET THE CHALLENGES OF CLIMATE CHANGE AND COVID-19

A. Utilising the challenges of COVID-19 and Climate Change to design more inclusive employment, Jane Hatton MSc FCIPD FRSA, Director, Evenbreak

Follow @Evenbreak

Disabled people are disproportionately impacted by the effects of climate change (Gutnik and Roth, 2020) and our exclusion from the decision-making table on climate action (see Kamran Mallick and Peter Beresford's pieces above). Disabled people have been disproportionately impacted by the pandemic too, in terms of deaths from COVID-19, adverse effects on our mental health (ONS, 2021) and the negative impact of restrictions on our lives (Sayce, 2021), as well as through barriers to gaining adequate access to care and support (Joint Committee on Human Rights, 2020). In terms of employment, disabled people were also more likely to be made redundant (Work and Pensions Committee, 2020), furloughed (Citizens Advice, 2020), face a widening pay gap, or lose their jobs altogether (Powell, 2021). During the pandemic, the important Black Lives Matter movement protests drew attention to the impact that COVID-19 had on different parts of the community, raising this up the political and media agenda.

So, although the pandemic has been horrific for disabled people in particular, and the inequality disabled people have faced has been very starkly exposed (Women and Equalities Committee, 2020), here have been some positive developments which have emerged.

In the context of employment, we have discovered that remote working was eminently possible and could be easily embedded for employees by a vast majority of employers to one extent or another. Homeworking did not have to just be a reasonable adjustment which only benefitted disabled employees. This came as no surprise to disabled people, who have advocated for its benefits to well-being and work-life balance for some decades. And so, as many of us had argued pre-pandemic, employers finally discovered that people working from home were just as productive (ONS, 2021a) if not more so, than people who are working in the office, even though there are complex factors (ONS, 2021b) involved in enabling employees to sustain their productivity. Research (Unison, 2020) has also shown the particular benefits of homeworking, through the pandemic and beyond, for disabled people.

Brexit has coincided with the pandemic and has led to the UK's huge skill shortages (CIPD, 2018; 2020) across all sectors of the economy. However, while there are worrying effects of such shortages, employers are going to have to look to new markets and pools of talent that they have not looked at previously. This ought to present an opportunity for disabled people, whose skills and underemployment mean that they are well-placed to form part of that pool of talent.

This is an opportunity that employers should seize. I am a disabled social entrepreneur; I run a social enterprise that is populated entirely by disabled people. We exist to help disabled people find work with inclusive employers. We have always known that disabled candidates are premium candidates. Nevertheless, disabled people are too often seen as ‘pity hires’ by employers where “poor disabled people” are hired to “give them a chance”. My organisation and disabled leaders in business still have to constantly push back on that narrative. Closing the employment gap (Powell, 2021) for disabled people is not about pity. It is not about charity. This is about talent. It is about the particular skills and expertise we bring to the workplace.

The social model of disability (UPIAS, 1975) tells us that as disabled people, we face barriers in society that other people do not face. This lived experience means that we have to develop skills around things like creative problem solving. For example, if we travel somewhere, we have to plan it like a military exercise. Are the stations going to be accessible for me? What happens if I go to my normal tube station, and the lift is not working? I am going to have to find another way to get to where I am going. When I do finally get to my destination, is it going to be accessible?

This process means we have to plan ahead, we have to do contingency planning, we have to be creative and exceptional project managers. We have to be resilient. All of these additional skills mean we are premium candidates. Employers need people who are not going to run away at the first sign of a problem but, instead, are going to look at different ways and solutions to that problem.

As the pandemic has gone on and approaches its third year, we have seen the emergence of a range of hybrid working and a greater understanding of lots of different ways of working, which are all effective. People do not have to be full-time, working 40 hours a week, from nine to five on Monday to Friday, and based in the office. That model is looking increasingly outmoded and is not the only one that works in the workplace. Employees can work part-time, they can work at night. They can work on weekends, if it suits them to do so. They might have childcare responsibilities during the week and wish to manage their working hours around them and support with care-giving from a wider family network. It might be that some people in an organisation want to work from home all of the time or others want to work remotely occasionally; regardless of what their preferences are, we have the technology to make that possible now.

All of these more nuanced ways of working and achieving a work-life balance are not necessarily to do with disability. They are about people. And lots of people in the pandemic have said: "actually, I much prefer working from home and not having to do that two hour commute every day, a commute which is shovelling emissions into the atmosphere and affecting climate change". A greater number of the labour force are actually choosing to work from home.

Conversely, there are some disabled people (and non-disabled people) who cannot wait to get back to the office because they miss the company of work colleagues. Now, people have the choice; and we need to ensure that the greater opportunities around hybrid, remote and flexible working are sustained, and that disabled people are supported to benefit from them like everyone else.

I think what we have learned through this dreadful pandemic is that the way of working has changed and will continue to change. You cannot return to pre-pandemic practices because you cannot put the genie back in the bottle. People who have now discovered that you can work from home effectively will not accept being told by their employer that this is not possible – we have all proved that it is possible. People are also becoming increasingly aware of the impact of their lifestyle choices, especially in relation to where and how they work (Hook *et al*, 2020), on carbon emissions and climate change. New ways of working will and should proliferate – people working different numbers of hours, in different locations, and using different kinds of technology.

The ideal people to work in these new kinds of ways are disabled people, because we have always been doing things differently. Disabled people need to be leading on this because we are the experts. It is something we have been doing every day of our lives. We are no longer just premium candidates; we are absolutely essential in the new world of work. It is really important for us to get employers on board and enable them to better understand that the narrative has nothing to do with pity, and everything to do with what they can gain. Even now, early on in these new ways of working, those organisations who have not taken this on board, who have said everyone has got to go back to the office and start commuting again, are going to be left behind very, very quickly. Because nobody will want to work for them, let alone disabled people.

The Government's NDS could have harnessed this energy, this innovation to enable disabled people to experience lasting benefits of employment. But, just as earlier contributions in this report note in other areas, the NDS does not go far enough to enable disabled people to access these new ways of working. Rather than the government accepting these new ways of working, their strategy starts from the wrong premise. For example, work capability assessments are based on the assumption that disabled people do not really want to work and would rather claim benefits. Maybe there are disabled people like that, but I certainly have not met any. The disabled people I know really want to work, if they are able to do so. If disabled people cannot work for whatever reason, they need to be supported, not to be hounded by an outmoded benefits process. The work capability assessments and sanctions - which amount to an attempt to starve people into working through financial deprivation - is never going to work. It focuses on the wrong problem and does not reflect the social model of disability. The problem is not disabled people, the problem is the barriers that disabled people face when they *are* looking for work.

Nevertheless, some of the things that the Government does are based on the right premise. The Disability Confident employer scheme is one such example, based on the idea that it is employers who need to change, to do better for disabled people. It is employers who need to remove the barriers preventing many disabled people from participating in the workplace. Whilst the premise is the right one, the implementation of the scheme is poor (Pring, 2019).

Access to Work was also based on the right premise, the premise inherent in the social model of disability: i.e. that sometimes disabled people need support in removing the barriers in front of them and employers should not have to bear the whole cost of that, because employers should not be deterred from employing disabled people as our increased employment benefits all of society. Sadly, however, the implementation of this scheme has also been poor. It can take a long time; you cannot claim online, you still have to send everything by post, so it is very bureaucratic (YouGov/Centre for Social Justice Committee, 2020) and the cap on financial support (introduced in 2015) blocks access to and progress in work (Centre for Social Justice, 2021).

We know that the disability employment gap is at almost 30% (DWP and DHSC, 2021); and if you look closely at the data, this figure has been consistent for almost a decade, reducing by only five percentage-points since 2013 (Work and Pensions Committee, 2021). It has not shifted significantly enough by anything the government has done over the last ten years.

As Jumoke Adullahi's piece above highlights, there is a paucity of material in the NDS to reflect our intersectional identities – disabled people can be black, people of colour, LGBTQ+, and observe an array of religions or none. We cannot put people into boxes. We are people-shaped, not box-shaped. And this matters in how we really get to grips with closing the employment and pay gap for disabled people.

If the government really wanted to make the 'world of work more inclusive and accessible', it would have put in place a much more comprehensive set of actions to resolve these long-standing issues than the NDS's circumspect list of actions set out in its section on jobs. Disability still comes too far down the Government's list of priorities and needs to be given more prominence in their agenda.

It is imperative that this Government puts disability firmly on the agenda, both in terms of climate change and in terms of employment of disabled people during

COVID-19 and beyond. We need to be there at the table, so our lived experience can inform better and more equitable policies.

Recommendations:

1. Government must produce a comprehensive strategy which promotes disability inclusion in green employment and a just transition to a low-carbon economy. This must involve a review of Disability Confident and Access to Work, as well as other labour force policies in relation to disability, to set out changes needed to these schemes to meet the twin crises of COVID-19 and Climate Change. This strategy should also include a comprehensive action plan in relation to promoting disability inclusion in home- and hybrid working, along with the development of green skills, green job employment services, green contracts and jobs. Lastly, this strategy should be in addition to the implementation of recommendations made by the Centre for Social Justice on closing the disability employment and disability pay gaps.

2. Government must establish an Inclusive Futures Scheme, to build skills, voice and confidence of young disabled people on issues related to sustainable development, environmental degradation and climate change, which encourages the development of their problem solving, entrepreneurial and vocational skills in this area. This capacity building programme would put young disabled people at the forefront of being agents of change on climate action in the workplace. Akin to the now defunct Aimhigher scheme, it would also address the high rates of unemployment among persons with disabilities by connecting young disabled people with Higher Education and employers.

B. A Spoke in the Wheel? The National Disability Strategy and Active Travel, Dr Kay Inckle, Campaigns and Policy Manager at Wheels for Wellbeing

Follow @KayInckle

Wheels for Wellbeing is a disabled people's organisation who provide access to cycling at three off-road centres in London. Nationwide, we campaign for and produce guidance around accessibility in cycling and active travel across a range of organisations, from national and local government to public and private bodies. Cycling is crucial for disabled people, not just in terms of wider sustainability goals, but also in addressing barriers to transport and mobility, tackling physical and mental health inequalities, and improving social and leisure participation. Unfortunately, there are significant barriers to cycling including: cost, infrastructure, attitudes, and exclusionary policies and policy-making. Sadly, the National Disability Strategy (NDS) does nothing to address these barriers to cycling and active travel for disabled people. This section, therefore, offers some recommendations for centering access to cycling and active travel within the wider and urgently needed expansion of the NDS.

Why Cycling and Disability?

Disabled people in the UK currently face significant inequalities in access to transport and mobility. Large sections of the public transport network are either completely inaccessible or unreliable for disabled people. Over 40% of the UK's train stations remain inaccessible and train travel comes with additional barriers (Leonard Cheshire, 2018), including having to pre-book accessible space and assistance, and uncertainty as to whether the assistance will arrive and/or whether the pre-booked space is occupied by baggage, buggies, bicycles and so on (Leonard Cheshire, 2018). Similarly, access to buses can be unreliable and, outside London, not being able to board a bus because of a broken ramp or an already occupied mobility space might mean having to wait over an hour for another service. Moreover, trains and buses usually only accommodate one disabled person at a time and permit only a very limited range of mobility equipment on board, excluding some types of wheelchair and mobility scooters.

Disabled people also face huge health inequalities and have the worst mental and physical health outcomes of any population group in the UK (Inckle, 2020). It is often presumed that there is a direct correlation between impairment and poor health outcomes. In fact, many of the health burdens that disabled people endure result from enforced immobility. Lack of access to mobility, transport, exercise and physical activity result in many of the secondary mental and physical health conditions that are known to have long term impacts on disabled people. The structural nature of the health inequalities faced by disabled people was also evident during the pandemic where 60% of the COVID deaths in England were disabled people

(The Health Foundation, 2021), many of which are explained by the additional vulnerabilities that emerge from secondary health conditions, poverty or living in care homes.

Barriers to mobility and poor health outcomes compound pre-existing social exclusion from culture, recreation, leisure and social spaces which, in turn, exacerbate health inequalities. This occurs in a wider economic context where the disability pay and employment gaps, coupled with the additional costs of being disabled, mean that households which contain a disabled person are most likely to experience poverty and material deprivation (EHRC, 2018). The links between poverty and poor health are widely known and this, yet again, compounds the chronic disadvantages disabled people already face.

It is evident that disabled people experience a range of mutually reinforcing disadvantages and inequalities. Cycling can redress many of these: it is a form of transport and mobility, it promotes physical and mental health, it provides a means of participation in social, leisure and recreational activities, and it also potentially increases people’s economic opportunities via increased independence to access education and employment. However, there are huge barriers to disabled people cycling.

Barriers to Cycling

Historically, disabled cyclists have been designed out of cycle infrastructure whether they use a standard two-wheeled bike or a larger non-standard cycle such as a trike, recumbent or handcycle (WfW, 2020). Disabled cyclists using non-standard cycles are often confronted with narrow cycle paths, bollards, barriers and sharp corners, or turning circles which they cannot traverse. Other disabled cyclists use a two-wheeled bike as their primary mobility aid, but they are frequently prevented from doing so in public spaces, often encountering hostility when trying to access accessible spaces and resources with their bicycle. Likewise, stepped access, poor surface quality, camber and expectations to dismount, push or lift a cycle either around a barrier or into a parking space exclude disabled cyclists whatever type of cycle they use.

Cost is also a significant barrier for disabled people; non-standard cycles are incredibly expensive. An e-assist handcycle or tricycle costs around five thousand pounds, the same price as a second-hand car. Given the disability income/poverty gap this creates a double barrier: the people with least income face the highest costs to cycling, along with the health consequences of not being able to do so. The lack of nationwide share or hire schemes for non-standard cycles acts as a further barrier to those with least access to cycling.

Attitudinal and policy barriers are also significant. Given the punitive benefits system, many disabled people fear they will lose their benefits if they cycle because they will be deemed ‘too active’ to be disabled. Likewise, the ‘bedroom tax’ (see Pring, 2014; Work and Pensions

Committee), which imposes a benefit penalty for any unoccupied bedroom even if it is being used for the storage of medical and/or mobility equipment, means that many disabled people have nowhere to store a cycle of their own.

The National Disability Strategy, Cycling and Active Travel

What, then, has the NDS done to address these barriers and promote health, sustainability and active travel for disabled people? In short, nothing - none of these barriers are addressed. In fact, the NDS does not mention active travel at all. It contains only a few, very general, aspirations about improving the accessibility of public transport, but without any firm commitments; there are no dates, budgets or plans for when public transport will be fully accessible. This contrasts with current Department for Transport (DfT) workstreams which are proactively promoting accessibility to active travel in policies such as *LTN1/20 Cycle infrastructure design* (2020) and *Gear Change* (2020).

The NDS also fails to address the barriers to active travel created by the DWP benefit assessments and the punitive structure in which they occur. The NDS offers some broad suggestions around improving communications about benefits and assessments, but nothing about the increase in financial support and other resources required to redress the poverty and material deprivation that disabled people experience, or to create access to active travel and the health and social benefits it provides.

Conclusion

In the context of climate breakdown and post-pandemic recovery, it is especially disappointing that the NDS offers nothing in regard to active travel for disabled people. It has missed a vital opportunity to redress the health, mobility and income inequalities that disabled people endure. It also fails to resolve the contradictions between different government departments (e.g. DfT and DWP), which have so much impact on the lives of disabled people and their opportunities for healthy, active and sustainable lives.

Recommendations:

1. Put active travel for disabled people at the heart of the NDS and COVID-19 recovery and sustainability policies.

2. Remove the barriers to cycling and active travel for disabled people, especially those related to infrastructure, costs and attitudes.

3. Ensure that disability benefits enable a decent quality of life, incorporating active travel and mobility equipment.

C. A Promising Future: What Autonomous Vehicles Could Offer Disabled People, Phillip Wilcox, Author

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In 2012, while I was studying for my MA in International Relations, I suffered near fatal injuries as the result of an accident. Those injuries left me legally blind. Among other limitations that I have had to learn to cope with, becoming legally blind means that I cannot drive a car or safely ride a bike.

I now appreciate just how vital transport is for everything in my life; for educational opportunities, work, social engagements, and even getting food from a grocery store. These things all need some form of vehicular transport – whether by private or public transport – which is not always accessible or affordable to people with disabilities. Therefore, a person can either wait for a long time for a bus or Paratransit vehicle (or Dial-a-Ride as it is known in the UK) or pay a lot of money to travel somewhere by taxi. E-bikes or scooters are not an option for someone with a sight impairment either. The alternative is to have a carer or personal assistant to drive you to your destination. Accessing this kind of support is also wrought with barriers.

This lack of access to transport that I can use independently led me to follow closely the development of the self-driving car or the autonomous vehicle (AV). Such vehicles have the potential to make transportation both more accessible and more affordable for blind, elderly, and disabled people. In turn, they could create opportunities to dramatically improve our quality of life. So, whilst my background is in policy and I am not an engineer or a computer scientist, I have conducted extensive research on AV technology and have spoken to several engineers in the AV industry which has led to my expertise in this area. However, it was becoming blind which gave me insight into what this technology could provide disabled people and inspired me to write *The Future is Autonomous: The U.S. and China Race to Develop the Driverless Car* (2020).

In understanding the opportunities AVs present to facilitate our inclusion in society, it is important to explain what the technology looks like and how it functions. AVs have GPS, many cameras, radar, and other sensors that allow them to perceive the world around the vehicle while it is driving. This technology allows the AV to know how fast it is going and where it is in the world. It can also detect how far away other objects are from the vehicle, how fast they are travelling and in what direction.

All that sensory data from the various cameras and sensors is sent to a central computer in the vehicle. In that central computer there are already programmed path planning algorithms (see Ryabchuk, 2018). These path planning algorithms allow the AV to plan a path or decide what action to take to avoid an obstacle and prevent an accident.

The computer then sends the path planning data to the vehicle operators such as steering, brakes, accelerator, and so on, to perform whatever driving operation is necessary to avoid an obstacle and prevent an accident. These three stages – perception, path planning, and sending that information to the vehicle operators – need to happen at the same time, or as fast as possible while the vehicle is driving down the road, to avoid an accident.

The world is incredibly complex and driving a vehicle is one of, if not the, most difficult and potentially dangerous things a person does on a regular basis. Computer engineers in AVs must program solutions to innumerable different ‘edge cases’ to prevent an accident. Edge cases are unusual or irrational events, which range from more common occurrences (such as a person jaywalking at an intersection of a road) to rare things (like a dog running in front of the vehicle).

Policy-makers, regulators and product developers must learn the lessons of the risk of discrimination through algorithmic bias (Wachter, Mittelstadt and Russell, 2021) and ensure that AV and Centre for Connected and Autonomous Vehicles (CCAV) testing identifies the ‘edge cases’, which positively recognise the movement, speed, silhouette and outline of disabled pedestrians in their path planning algorithm. Disabled people should also work with the AV companies to develop testing which identifies this particular ‘edge case’.

Vehicle emissions are a huge part of the problem of Greenhouse Gas (GHG) emissions for every country and, based on 2019 data, transportation produced 27% of the UK’s total GHG emissions, a direct contributor to climate change (Department for Transport, 2021).

From the earliest stages of their testing and development, AVs were hybrid vehicles. This makes sense because all of the data would need to be electric to communicate with the computer driving the vehicle. The gearshift, steering, accelerator and other remote functions would all need to be electric.

This means that AVs and the technology that allows them to drive without a human are exceptionally well placed to be at the forefront of tackling climate change. They also present the opportunity to enable countries to design more inclusive infrastructure and modes of transport in their response to, and recovery from, the COVID-19 pandemic. Indeed, the companies in the AV industry have said that their initial roll-out for AV passenger vehicles will be to serve as a ride-hailing service, like Uber. This would mean fewer total vehicles on the road, particularly with shared rides, which would produce fewer total vehicle emissions. Right now, Waymo in the US operates a completely driverless taxi service, Waymo One, in Chandler, Arizona. The service only operates in a small area, but it has been operating successfully for over one year and the area of operation could expand to other areas or in other parts of the country as the technology matures. This is a service that a company could operate in the UK as well.

It is also in the AV companies' interest to make their vehicles electric in their respective AV ride-hailing fleets. Electric vehicles (EVs) are cheaper to produce, other than the batteries, and last longer on average than internal combustion engine (ICE) vehicles. There is significantly less wear and tear with EVs, which would drastically reduce upkeep costs for the fleet of vehicles.

The AVs themselves would still need to be accessible for people with sensory, mobility, or cognitive disabilities to provide effective, affordable, and efficient improvements for their mobility needs. Tax incentives or other regulation would likely be necessary to ensure that AVs live up to their potential to provide transportation benefits to disabled people and elderly populations.

How will AVs fit into the current city transportation system? The technology itself is not limited to regular-sized vehicles. It can be used for any mobility service or product to benefit the lives of disabled people. In the US there are small delivery robots that operate in enclosed spaces in places like university campuses (Hawkins, 2019)and hospitals (Melanson, 2018). These robots provide a near-contactless delivery option to deliver things like food from local restaurants or medical supplies to doctors.

Autonomous drones can also be used for delivery of food and other supplies. In the UK, the CCAV has many different pilot projects related to AV testing and deployment around the country (Pennsylvania Turnpike Commission, 2017). One of these pilot projects is a project to use drones to deliver NHS supplies to the Isle of Wight (*BBC News*, 2020).

The use of these different types of AV technology could be a great way to have food or other resources delivered to a disabled person with greater flexibility and limited exposure to COVID-19 infection at reduced costs. Whilst we also need to ensure such technology does not increase the risk of loneliness and isolation, which has risen during the pandemic (ONS, 2022), it may help to facilitate their ability to live *interdependently*.

AVs can also be used for first mile-last mile transportation needs or other goods delivery, connecting local shopping centres or essential facilities. This kind of AV bus or shuttle services are particularly useful for disabled people; and so they should be designed for wheelchairs and equipped with other accessibility products or wayfinding services for people with sensory or cognitive disabilities.

In the US, there is a company called Nuro that delivers both Domino's pizza and groceries (Sumagaysay, 2020) from local grocery stores in Houston, Texas, and parts of California: a business model which could be replicated in the UK and elsewhere.

AVs have the potential to deliver transformative changes to the lives of disabled people and reduce vehicle emissions. However, there are still significant technological, policy, liability and regulatory issues that need to be resolved to reach this potential. Public trust is also difficult to gain and easily lost following a fatal crash. The potential of AVs must be encouraged by policy-makers for its inclusive and green potential. The future of a safer, more accessible, and more equitable transportation and goods delivery system depends on it.

Recommendations:

1. The potential of AVs should be encouraged by policy-makers to maximise its inclusive design and ability to provide innovation in compact and accessible green transport.

2. Policy-makers, regulators and product developers must learn the lessons of the risk of discrimination through algorithmic bias and ensure that AV and CCAV testing identifies the 'edge cases', which positively recognise the movement, speed, silhouette and outline of disabled pedestrians in their path planning algorithms.

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