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***Contents of this Issue***

There is one poem, three papers and one book review in this issue. In addition to a poem for and paper from Roy Carr-Hill (see below), Zohreen Badruddin worked with Diana Kornbrot to convert Diana's RadStats conference paper on the infrastructure needed for Universal Basic Income (UBI) into the one published here. This is followed by a paper by Sean Demack on HE equality analyses involving ethnicity which reveals several (onion) layers of problematic statistical practice. Finally, Irina Motoc reviews a book on data visualization by Maarten Boers.

***Roy Carr-Hill 1943-1922***

A founding member of Radical Statistics and, for the last decade, lead editor of this RadStats journal / newsletter, Roy died suddenly in November 2022. Family and friends gathered to remember Roy at a humanist funeral in York crematorium on a frozen Friday 9<sup>th</sup> December. The music of Paul Simon, Bob Marley and from The Blues Brothers accompanied moving memories of Roy's life from four daughters and a grandson (and others later in The Woodman pub). To mark the death of Roy, this issue includes the John Dryden poem that was read at his funeral and a re-print of one of his RadStats articles in which he wryly summarised the rich and radical life he had lived up to 1999 when it was first published (RadStats Issue 71). I assume that Roy celebrated his 16<sup>th</sup> election of not voting in 2019!

***RadStats Journal / Newsletter***

For the last few years, I have helped Roy to put this journal / newsletter together. Irina Motoc joined us more recently to focus on increasing the volume of book reviews submitted & published. With the help of Eileen Magnello (copy editor) and Alastair Cairns (administrator), we have published 3-4 editions of the journal each year. The future of the RadStats journal is dependent on submissions from members and other interested parties. In addition to articles (and other submissions), if you are interested in becoming part of the editorial team, please contact us using the details below.

***Radical Statistics Conference 2023***

The conference will be held on March 25<sup>th</sup> in Sheffield and the first in person RadStats event for three years. The conference has a broad theme of 'Radical Statistics in an Age of Uncertainty' and will include presentations on hidden unemployment, civic statistics, and pupil

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segregation. Please visit <https://www.radstats.org.uk/conference/Sheffield2023/> for more detail.

### **Getting Involved**

The RadStats group is as strong as its membership and we welcome offers of help. If you are interested in becoming involved with the journal, a future conference or event or other ideas to advance the Radical Statistics aim of building a more free, democratic, and egalitarian society, please contact [editors@radstats.org.uk](mailto:editors@radstats.org.uk).

RadStats are particularly concerned about

- Mystifying use of technical language to disguise social problems
- Lack of control by the community over what & how statistical investigations are conducted and interpreted.
- Power structures within which statistical and research workers are employed.
- Fragmentation of social problems into specialist fields, obscuring connectedness.

“We believe that statistics can be used to support radical campaigns for progressive social change. Statistics should inform, not drive policies. Social problems should not be disguised by technical language”

We currently have no proposed articles for the next issue (RS 135); We encourage presenters at the conference in Sheffield to submit an article for consideration. Our review editor, Irina Motoc has several books for review, and is seeking volunteers.

Please

### **Administrative Issues**

Please make sure you have updated your subscription, *or make a donation!* - by going to [www.radstats.org.uk/membership/](http://www.radstats.org.uk/membership/) where you can pay by cheque, standing order, PayPal - or by filling in your details on page 45.

### **Editorial Team ([editors@radstats.org.uk](mailto:editors@radstats.org.uk))**

Sean DEMACK

Please email if interested in joining this team.

### **Review Editor**

Irina MOTOC ([irinamotoc@gmx.com](mailto:irinamotoc@gmx.com))

## Happy the Man

*John Dryden*

Happy the man, and happy he alone  
He who can call today his own:  
He who, secure within, can say,  
Tomorrow do thy worst, for I have lived today.  
Be fair or foul or rain or shine,  
The joys I have possessed, in spite of fate, are mine.  
Nothing upon the past has power,  
But what has been, has been, and I have had my hour.

## Compromises of the Fourth Kind with Statistical "Radicalism"

*Roy Carr-Hill*

Brought up in a middle class Tory household, I was a 'natural' for the so called 'excesses' of the sixties: arrested for playing bridge on a parking meter with the Provo's in 1962 in Amsterdam; anarchist elected to first ever student union at Cambridge (you see the contradictions started early); Berkeley 1966-1967 including Monterey with Janice Joplin, draft card burning and blocking of Oakland recruiting office; 'writing a thesis' in Paris Jan-August 1968 (someone had to be the other foreign agitator); bit of realism when on holiday in Prague as the tanks rolled in; and so 'retired' to do D.Phil in Penology at Nuffield College, Oxford in September 1968 for three years.

Kept head down - apart from persuading college chaplain to baptise half a dozen collective pink bicycles in college pond (to delight of local journalists) and demonstrating that variations in police practice were mainly responsible for variation both geographically and over time in recorded crime statistics (Carr-Hill and Stern 1978) - until heard rumour that the 'movement' was looking for a 'radical statistician' (clearly a contradiction in terms) to help defend a group accused of a conspiracy to plant bombs. An important part of the evidence against them was a statistical argument along the lines that, among all bomb incidents that had been recorded during 1968-1971 (some 1000

apparently), the 25 which were the subject of the conspiracy charge were "statistically different" (using a chi square test) on a number of criteria (composition, modus operandi, size, type of target, etc); so that if each one of the group being charged could be linked (with circumstantial evidence) to just one of the incidents, they were 'therefore' guilty of the conspiracy charge of the whole group of incidents. Apparently the same nonsense had already been deployed, successfully, against another person (who had receive a sentence of 25 years), and several gangs of safe-breakers. I agreed to give evidence and, in fact, helped their defence in court, in what turned out to be the longest running criminal proceedings in 1972, not only in respect of the statistical 'argument' but also in combating the scientific (mostly chemical) and pseudo-scientific (graphological) prosecution evidence.

The main outcome measures (as we would say these days) is that 4 of the 8 were found not guilty and the other four received 'only' ten year sentences (which led to the reduction of the previous 25 year sentence handed down). However, as a sideline, together with a recently recruited programmer, I explored whether or not there was actually any clustering at all in the 1,000 incidents and submitted a paper to the JRSS Applied Statistics Conference held in the Summer of 1973 at Hull (Carr-Hill and Hopkins 1973). I learnt at this meeting (27.02.99) that the submission of the paper had caused some consternation (which I knew nothing about); the first I knew that anything was amiss was half way through my presentation when I was explaining that the Home Office Statistician giving evidence for the prosecution was either so obviously incompetent that he shouldn't have the job, or being distinctly economical with the truth (though I doubt if I was that polite). I was asked by the Chairman to 'cease and desist'. To qualify what ensued as uproar would be a gross exaggeration: statisticians of all kinds are still far too polite to raise their voice. But there were audible mutterings led, especially, by John Bibby to the effect that we should devise a code of good practice for statisticians and especially for those employed on public service; and this was one of the triggers for the founding meetings of Radical Statistics, the following year.

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Personally, however, it became clear that I was very unlikely to be granted access in the future to any sensible data (I had by now finished the data collection for my D.Phil showing very significant variations in sentencing between judges at Quarter Sessions) and so I abandoned both criminology and penology as a career. Equally my probationary period at the University of Sussex (a very respectable establishment Marxist University at the time) was not renewed, partly I suspect because of the above, partly because I organised the opposition to a talk being given by Huntington (architect of the forced draft urbanisation policy in Vietnam), but partly because I had attempted to organise the compulsory Arts - wide Elementary Statistics course around the useful skills of interpretation rather than desperately trying to inculcate t tests etc. to students, many of whom had 'chosen' to do social sciences' because they didn't like or couldn't do mathematics. My 'compromise' had been decided for me.

Amidst all this mayhem, I was invited to what looked like an interview with the OECD in Paris, was offered a job, and accepted to work on the development of Social Indicators of Well Being (seen as a counterpoint to the then - discredited GNP measure). It later transpired this was a version of being kicked upstairs; but for three years I speculated with many like-minded young civil servants from around OECD as to what a useful statistical system would look like, writing in the process one of the first Rad Stats pamphlets Social Indicators for Individual Well Being or for Social Control (Anon 1978) perforce anonymously given our position. The Rad Stats pseudo-liberals of the time - not having yet encountered the cutting edge - thought this was awfully conspiratorial.

Got sacked from that job in 1977 - almost certainly not because of the above, but for other political adventures - and became an unemployed housebuilder in the South of France. Together with French wife decided to volunteer for Mozambique and on the strength of her paediatric qualification, we were accepted for a 2 year contract. In Mozambique found myself teaching statistics in Portuguese, across a very wide range of faculties; but my attempts to report on the oppressive nature of the Marxist Leninism regime was dismissed as Right Wing anarchist nonsense by the politically correct bureaucrats then holding sway on the so-called left in England.

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Returned in 1981 to provide 'proper' skool education for children, to controlled statistical environment at the MRC Medical Sociology Unit in Aberdeen. Began to understand the complexities of the inequalities in health debate through the demonstration that a woman's height was more predictive of her outcomes than her partner's social class (Carr-Hill and Pritchard 1989). This meant that politically attractive notions of a class divide in health being reproduced through an easily manipulable social process - such as education - would not do.

But that was only temporary and so moved to what I saw as the eye of the monetarist storms (in health) - the Centre for Health Economics in York on contract from 1984-91. Meanwhile, began to develop interest in planning for basic education and adult literacy in Africa and so, for example, got involved in designing a survey of adult literacy in Tanzania where the charismatic Nyerere had generated a policy of self-reliance and a corresponding education policy aim of terminal education for all. I found that the donors had been conned by the Department of Adult Education in Tanzania, as there was no programme. Yet they were clearly the deserving poor. What would you do? I told the truth and funding was stopped.

During that same period realised that there needed to be an update of a very successful Rad Stats publication of the 1970s, viz Britain's Black Population (Runnymede Trust and Radical Statistics 1980) and set out to edit a revised edition with two non Rad Stats members (Ashok Bhat and Sushel Ohri). This proved to involve innumerable compromises between political correctness and statistical accuracy.

Because I refused to be a tame epidemiologist for the health care cost accountants, I was cast completely loose from secure funding in 1991 to be totally self financing and survived by winning contracts on what was seen as almost undoable tasks: e.g. identifying a relationship between the mix of nursing skills in hospitals and the outcomes of care (and later similarly in primary care). Nevertheless despite winning that kind of contract, the extent of my salary cover was being steadily eroded so it looked as though I would have to prostitute any statistical integrity to dabble in pharmaco-cost-accounting.

However, at the last minute, won tender to review resource allocation formula for Hospital and Community Health Services, which set me

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off on a trail of simultaneous equation estimation combined with multi level modelling - all in the apparent interest of accuracy but more mystifying than transparent. The outcome, however, was a substantial shift of resources (c£350 million) from the shires to the northern inner cities, even under the Tories. As a result of a subsequent similar exercise with the SSA for Children's Services, proposed a shift of £100m from London to the Northern cities which was fought tooth and nail, but eventually the technical case was conceded. Both of these illustrate the potential impact of statistical analyses - someone loses.

In 1997 celebrated proud records of 10th election not voting for the government and, at the same time, improving my pension fund through ante-post, statistically based, betting. And just now have had final agreement to publish obscure anarchist tract on why mass unemployment is a Very Good Thing.

**Lessons**

- A monolith - whether left or right - is a bad idea. It stifles debate - leads to Third Way nonsense.
- Whilst telling unpleasant truths often gets you into hot water, it is healthier for the soul.
- What matters is who is measuring, in whose interest and for what purpose.

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# According to Needs and Abilities, Universal Basic Income Requires Universal Basic Infrastructure

*Diana Kornbrot<sup>1</sup> & Zohreen Badruddin<sup>2</sup>*

## **Abstract**

This paper considers Universal Basic Income (UBI) as a method for establishing a good society that fulfils the needs of all its members without coercion. It starts with a brief description of UBI and of the good society it aims to create. Various models of basic human needs are considered. Next, we consider non-human and human resources available to create a good society and how they are or might be distributed. This leads to consideration of the types of infrastructure that might be available and how they impact on the level of UBI. An example of how health infrastructure contributes to life expectancy and excess deaths during the covid19 pandemic is included. Some current examples of UBI are discussed together with an evaluation of their efficacy. Measurement is clearly key to evaluation and available and desirable measures are described with special attention to the “Our World in Data” web site. The pros and cons of UBI are discussed. Finally, we conclude that UBI is a useful radical starting point, but that serious progress requires consideration of generations of resources and of allocation of those resources between universal infrastructure and universal individual basic income.

**Keywords.** Universal Basic Income, human needs, abilities, infrastructure, Sustainable Development Goals, good society, national service..

## **Introduction**

Universal Basic Income (UBI) has been suggested as a mechanism to enable a ‘good society’, i.e., fairly ensure that every member of that good society has their basic needs satisfied without coercion of any kind. BIEN<sup>3</sup> supplies a good introduction. It includes basic definitions and history starting with renaissance work of Thomas More and spanning 18th and 19th century social reformers in Europe and North America and several 20thcentruy movements.

### Definitions

There are several organisations recommending UBI, with slightly different definitions. The Basic Income Earth network<sup>4</sup> is one of the best. A Basic Income is a periodic cash payment unconditionally delivered to all on an individual basis, without means-test or work requirement. There are 5 characteristics:

1. **Periodic** Paid at regular intervals (e.g., every month), not a one-off grant.
2. **Cash payment** Paid in an appropriate medium of exchange, allowing those who receive it to decide what they spend it on. It is not, therefore, paid either in-kind (such as food or services) or in vouchers dedicated to a specific use.
3. **Individual** Paid on an individual basis—and not, for instance, to households.
4. **Universal** PAID to all, without means test.
5. **Unconditional** Paid without a requirement to work or to demonstrate willingness-to-work.

It is argued that Universal Basic Income as a mechanism to achieve a good society is meaningless if a society's basic infrastructure is not also included. For example, the UBI required to ensure basic wellbeing will be different for societies with universal health care, like the UK's National Health Service (NHS), than for societies without basic health care like the USA and different again for the many societies (e.g., in EU) that have a National Insurance system, but may require some contribution from patients. Current UBI versions appear to combine egalitarianism (typically 'left') with individualistic libertarianism (typically 'right').

### The 'Good' Society

A major criterion of a good society is the satisfaction of basic human needs as variously defined by psychology and/or philosophy. This requires the generation and distribution of both material and human resources/abilities. Progress can only be evaluated if there are good measurement tools for both needs and resources.

### Basic Human Needs

Influential early work includes Maslow's Hierarchy of Needs, which, contrary to common experience, views needs as a hierarchy. Nussbaum (Nussbaum, 2000) has a more thoughtful view. She describes 10 Core

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Capabilities for well-being to establish a set of human needs that include a right to dignity, allowing all individuals to have the freedom and opportunity to choose the life that they want for themselves. She focusses on making good use of all peoples' abilities. Here are her 10 core capabilities<sup>5</sup> (slightly abridged):

- **Life:** Referring to life expectancy, this allows an individual to live a human life of normal length, not ending prematurely or becoming unlivable.
- **Bodily Health:** Critical to child and maternal mortality and cancer, this ensures good health, including reproductive health, adequate nourishment, and shelter.
- **Bodily Integrity:** Referencing human rights, this allows free movement from one place to another, security against violence, including sexual assault and domestic violence, and sexual satisfaction and reproductive choice.
- **Senses, Imagination, and Thought:** Based on the provision of an adequate education, this promotes an individual's use of their senses, to imagine, to think, and to reason in a "truly human" way, informed and nurtured by adequate education including a minimum of literacy, basic mathematics, and scientific training. This includes the use of imagination and thought based on choice for religious, literary, and musical purposes, etc. It ensures freedom of expression and political, religious, and artistic expression, via both speech and action. It includes pleasurable experiences and the avoidance of nonbeneficial pain.
- **Emotions:** Crucial to democracy, these allow individuals to develop attachments to things and people and to love those who love or care for them and grieve in their absence. It protects the abilities to love, grieve, experience longing, gratitude, and justified anger. It promotes emotional development free from fear and anxiety, supporting critical forms of human association.
- **Practical Reason:** Fundamental to human rights and democracies, this encourages individuals to form a conception of good and evil and critically reflect on life planning. It includes protection of liberty of conscience and religious observance.
- **Affiliation:** This upholds an individual's ability to love with and toward others, and to recognise, show concern, and imagine other's situations. By engaging in social interaction, it protects the freedom of assembly and political speech. It includes self-respect and non-humiliation and being treated with dignity as one whose worth is equal to others. It extends to non-discrimination by race, sex, sexual orientation, ethnicity, caste, religion, nation, or species.

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- **Other Species:** This capability promotes living with concern for other species, including animals, plants, and the natural world.
  - **Play:** This capability encourages being able to laugh, to play, and to enjoy recreational activities.
  - **Control Over One's Environment:** Regarding the political environment, this capability protects the right of political participation with the protection of free speech and association. For the material environment, this capability allows for individuals to hold property rights on an equal basis with others and to seek employment on an equal basis with others. It also includes the freedom from unwanted search and seizure and the ability to work while exercising practical reason, while maintaining meaningful relationships with other workers.

### **Sustainable Development Goals<sup>6</sup>**

Another classification of general human needs includes those outlined by the Sustainable Development Goal team. Established by the UN in 2015 after the Millennium Development Goals elapsed, the SDGs were expanded to include 17 goals, broken down into targets and indicators for member states to use to achieve global development. These include:

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry Innovation and Infrastructure
10. Reduced Inequality
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life On Land
16. Peace Justice and Strong Institutions
17. Partnerships for the Goals

These goals are monitored, so progress can be compared with resources per capita (e.g., GDP) and commitment to infrastructure.

**Special needs**

We all need food and shelter. Most of us will need spectacles at some time, a few need wheelchairs. Are these special needs to be paid for from a UBI?

**Darker side of human motivation and needs**

Both Nussbaum and the SDGs, and indeed most needs discussions we found, ignore motivation from darker human desires. What about the desire to 'keep up with' or even 'supersede' the Joneses? Or the need for status, power, or dominance? UBI disregards such motivations at its peril; Attaining the good society needs to consider dark desires as well basic needs.

**Advantages of Basic Infrastructure**

There is a massive amount of data available relevant to satisfying human needs. Here as an example of benefits of basic infrastructure we look at health outcomes, specifically excess deaths since the Covid19 pandemic. How are these deaths related to public and private spending on health & more specifically numbers of health professionals per capita.

**Resources****Material resources**

On-going resources include food that can be gathered, hunted, harvested, or farmed or even manufactured, and materials that can be gathered, mined, or recycled and objects that can be created. But much, perhaps most, of the available resources are in the form of stored wealth: buildings and artefacts. Governments have access to such resources via taxation as well as accumulated wealth.

Another major source of resources is borrowing. State or private debt - either way, the richer you are the more you can borrow. Modern monetary theory argues that countries that use a fiat currency are monopoly issuers of the currency. Because of this, they do not need to rely on taxation revenue or be concerned about growing national debt because they have the possibility of printing more of their currency to be able to increase federal government spending and hence provide public services without fear of inflation. Obviously, this is controversial.

**State distribution and redistribution of resources**

Current state wealth redistribution is mainly done via the taxation system, local, national, or international. VAT, for example, is a national tax which all pay, but is percentage-based and hence is a greater burden on those who are poor. Income is similarly taxed nationally, a system that likely favours unearned income earners whose passive income is in investments and stocks, etc. Property taxes occur at the local and national level, where richer areas retain a higher disposable amount given that their property tax rates are usually much lower than poorer neighbourhoods. Asset revenue is taxed nationally, with intellectual property rights, services, and products falling into this category. Inheritance is also taxed, though the threshold and deals available can be argued to be inequitable. Businesses are taxed nationally, though local rates usually apply. Fines and penalties can also be considered taxes at the local and national level. Imports, exports, and multinational corporations are all taxed based on international rates. All of these taxes are a mechanism for the state to earn revenue and then redistribute it through public spending.

**People as a Resource**

People power is a key resource, and on depends on people's capabilities. These in turn depend on current technology (commute: 30 minutes, car, 90, public transport, or 8 hours, foot), current infrastructure (used road network), and training (passed driving test). Clearly, the wealth that can be produced depends on population demography (age, immigration & emigration) and on education. UBI will affect human resources in many ways, known and unknown.

**Infrastructure**

Infrastructure provision falls to a combination of actors: the state employees as well as the ownership or outsourcing body. Consumers may not care who owns the infrastructure, they care that it operates effectively and punctually. a point that ideologues on both the left and right need to note.

Infrastructure is of different kinds. Global infrastructure benefits everyone in a jurisdiction, e.g.: sewage, protection (army, police, criminal courts), disaster provision and reserves, environmental protection (e.g., against climate change). Infrastructure at the individual

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level is available to all. Although any given service may only be used by some, e.g.: health, education, leisure facilities, pensions, and social care. Infrastructure may be means tested, e.g., free school meals, uniforms, trips, dental- and eye-care Much infrastructure is composite. The state or private companies provides basic infrastructure and possibly subsidies, but individuals pay according to usage, e.g.: energy (gas, electricity, fuel, transport, communications). What should be blindingly obvious is:

- Level of UBI is critically dependent on what infrastructure is available for free

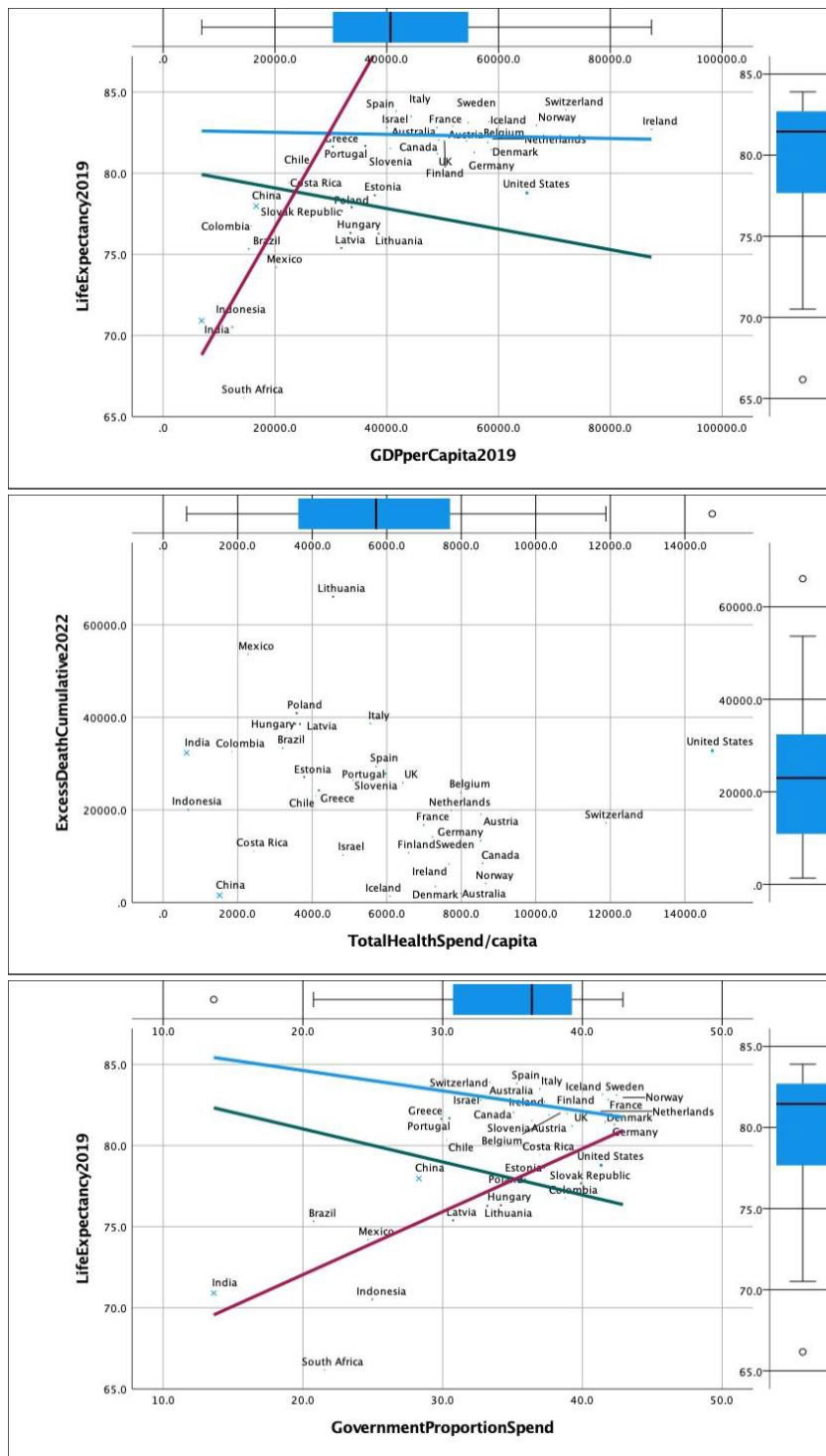
### **Health Infrastructure: an example**

1. Free at the point of delivery.
2. Available at the time of need.

The UK is unique in achieving 1 (except for eyes and teeth as originally planned by Bevin), but dire at 2. Many insurance-based system in rich countries of Europe and UK Commonwealth are good on 2 and achieve greater spend and more health professionals per capita. USA is dire on 1 and 2.

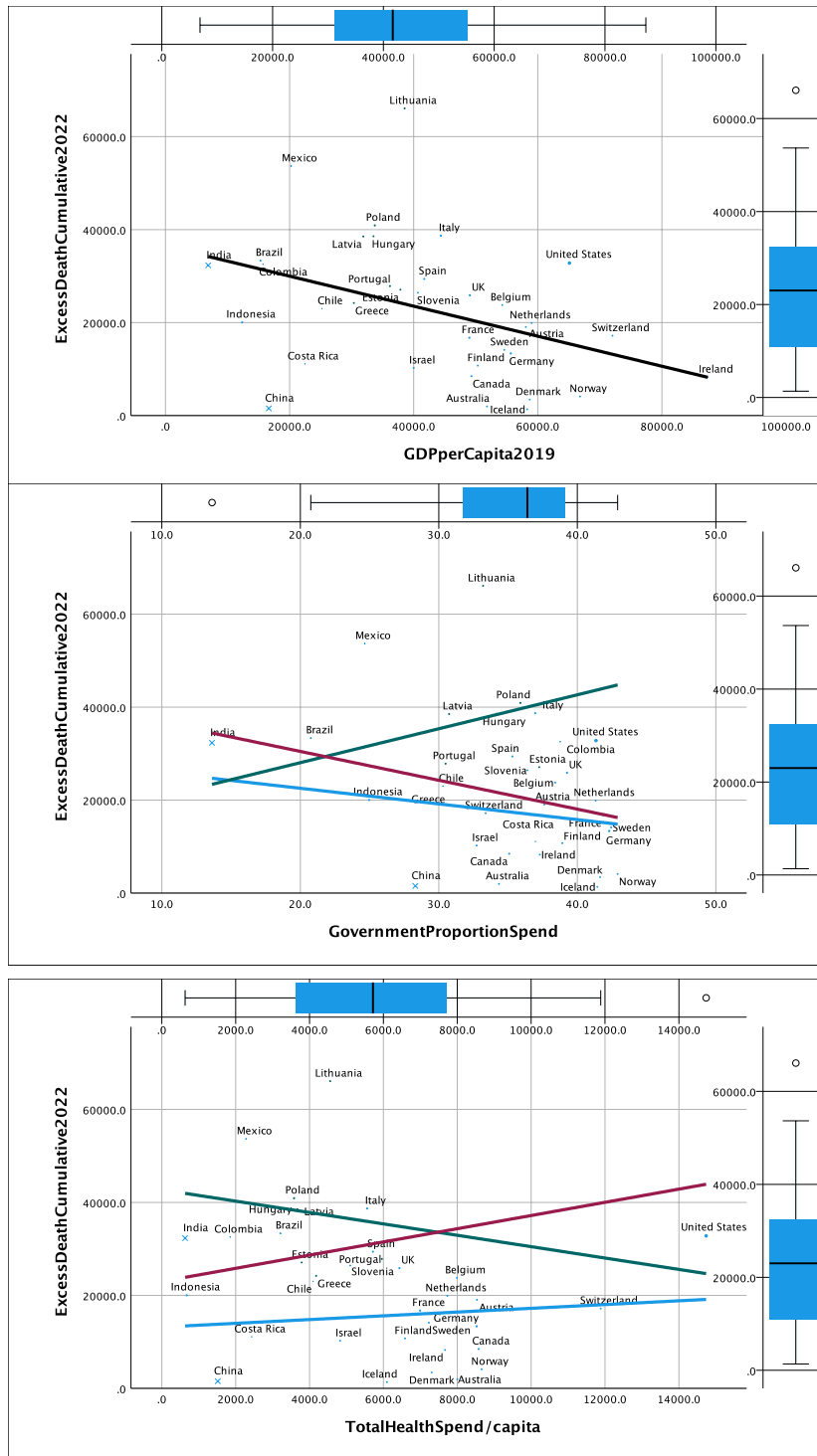
Obviously, predictors are correlated and may be different according to (crude) wealth of country. Figures 1 and 2, using data from 37 countries, enable us to see which ones over or underperform. For life expectancy (Figure1), the USA with a private health insurance system that the government reimburses has a very high total spend, with poor life expectancy and high excess pandemic deaths for a wealthy country with high total spend. The USA is not particularly low in proportion of public spend, so this does not account for poor performance, Switzerland is similar to USA. The UK performs worse than the EU generally, but not massively so. Figure 2 illustrates that only GDP affects excess deaths.

Multiple regression for life expectancy with backward selection of variables gave a moderate effect for GDP/capita effect size standardized beta = 0.45;  $p = 0.005$ ; and for proportion of spend by government, effect size standardized beta = 0.38;  $p = 0.020$ . Multiple regression for cumulative excess deaths showed that only GDP/capita was reliable, standardized beta =0.40;  $p = 0.017$ .



**Figure 1.** Life expectancy as function GDP/ capita(top), proportion government spend (middle), total health spend/ capita for rich (blue), medium (green), and poor (red)countries.





**Figure 2.** Excess deaths as function GDP/ capita(top), proportion government spend (middle), total health spend/ capita for rich (blue), medium (green), and poor (red) countries.

### Examples of Basic Income

To date, trials of UBI have mainly been small scale, short-term, and dependent on windfall, see Table 1. Pilot programmes have taken place, or are currently ongoing, in the following countries: Kenya, Namibia, Canada, Brazil, Iceland, Finland, Germany, the Netherlands, Spain, Iran, India, Hong Kong, Macau, and Japan. In the USA, various states have tried UBI pilots, including Alaska, New Jersey, Pennsylvania, Iowa, North Carolina, California, and members of the East Band of Cherokee Indians.

**Table 1.** Current UBI Pilot Programmes

| Location                               | Start | End  | Amount        | Source                      | Outcome                             |
|--|-------|------|---------------|-----------------------------|-------------------------------------|
| <a href="#">Kenya rural</a>            | 2016  |      | 75¢/day       | Givedirectly                | Economy boost                       |
| <a href="#">Namibia</a>                | 2008  | 2009 | \$6.75/month  | Private donor               | Poverty fell, not rolled out        |
| <a href="#">India village</a>          | 2011  | 2012 | \$2.80/month  | women charity               | poverty fell, sanitation etc        |
| <a href="#">Brazil Quatinga Velho</a>  | 2008  | 2014 | \$8/month     | Philanthropy                |                                     |
| <a href="#">Brazil Quatinga Marica</a> | 2021  |      | \$35/month    | City, oil                   | Open                                |
| <a href="#">Alaska</a>                 | 1982  |      | \$1000+       | Oil windfall                | FertilityUp Political \$ decision   |
| <a href="#">Cherokee</a>               | 1997  |      | \$4000-\$6000 | Casino                      | Education, mental health, addiction |
| <a href="#">Canada Manitoba</a>        | 1974  | 1979 | ?             | ?                           | ? Political cancel                  |
| <a href="#">Canada Ontario</a>         | 2017  |      | ?             | ?                           | ? Political cancel                  |
| <a href="#">Finland</a>                | 2017  | 2018 | €560/month    | government surplus          | Canceled, reopen possible           |
| <a href="#">Germany, raffle</a>        | 2014  | 2019 | \$110/month   | Crowd, raffle               | Positive survey                     |
| <a href="#">Germany nonprofit</a>      | 2019  | 2022 | \$465/month   | RCTcharity 2x250            | Survey                              |
| <a href="#">Germany covid</a>          | 2020  | 2023 | €1200/month   | RCTcharity 2x250            | Survey                              |
| <a href="#">Spain Barcelona</a>        | 2020  |      | €1675/month   | RCT conditions >poor        | unknown                             |
| <a href="#">Spain covid</a>            | 2020  | ?    | €1050/month   | 853,999>poor                | unknown                             |
| <a href="#">Netherlands Utrecht</a>    | 2017  |      | €1015/month   | RCT 250unconition/volunteer |                                     |
| <a href="#">Iran</a>                   | 2011  |      | 29%median     | replace subs, labour same   | scaled back                         |
| <a href="#">Hongkong</a>               | 2016  | 2018 | \$772 1 off   | government surplus          | complaints                          |
| <a href="#">Macau</a>                  | 2008  |      | \$1128/year   |                             | too smal for effects                |
| <a href="#">Japan</a>                  | 2021  |      | \$9000 1 off  | millkionaire>1000twitter    | survey: business↓divorce↑ happier   |
| <a href="#">USA various</a>            |       |      |               |                             |                                     |

### Features of UBI Projects

The sponsors have been varied, from state governments to philanthropic organisations to research institutions and only 11 of the 20 programmes listed in Table 1 are still ongoing. A vital question to the success of any UBI programme is to determine if the cash transfer provided is enough for recipients to live on, without working – most were not. Pilots for members of the East Band of Cherokee Indians and in Kenya seem to demonstrate that while employment did not decrease, there did not seem to be a continued need to do paid work. These people mostly lived in households close-to subsistence levels, which could imply that there is a greater burden on women on the

running of these households as their unpaid work requirements did not reduce with the UBI transfer.

### **UK examples: importance of location**

Location is very important to equity within a basic income project. Consider this example of a basic income equity project at 3 different sites in the UK. The first site, Quantock, Scotland, is described as being unexciting and a long distance from the capital. The second site, Trellech, Wales, is known for its exciting tourism that provide a useful windfall. The third site is in Grimley, England, which has been struck by floods and disaster windstorms; this town is also known for its good train service infrastructure. A key question to determine the impact of each UBI project will be to see if all recipients gain the same benefit from the same cash transfer. For residents of Grimley, potential benefits could include disaster relief for the floods and may later impact their insurance and house values. In Trellech, the benefit may be seen in tourism income and house values, while in Quantock, the value may be in travel with impacts on schooling, the arts and retail consumption.

Another reason that location is important is that the housing available to an individual is determined both by what is provided by the available infrastructure and by commercial prices. Consequently, UBI value will depend critically on location.

### **Wales a new example**

A current example of a basic income project is one in Wales that offers £1,600 per month (or £19,200 per year) to 500 youth leaving care once they turn 18 years of age. This basic income is to be provided monthly for a total of 24 months, will be taxed, and can be used to pay for an individual's food, housing, clothing, leisure, internet, and travel, irrespective of their employment status. Calls for additional support to care leavers have been made and could include the provision of free apprenticeships and student loans.

### **Outcomes**

The outcomes of these UBI pilots are varied, but across the board there is no evidence of the introduction of a UBI programme leading to a decrease in employment. There is some evidence of a boost in the

economy. Other impacts can be seen in Table 1 and vary from increased fertility to increased divorce. Some pilots have been limited term with limited cash transfer in developing countries. They may not generalize to higher-class individuals in developed countries. Given the lack of access to relevant data, performing a literature review of UBI sources is incredibly challenging and not present here.

### **Measurement: requirement of data to evaluate progress, UBI or other**

Table 2 demonstrates some of the available data that might be used to determine the impact of a UBI pilot as linked to the SDGs.

**Table 2.** Predictors of progress towards Sustainable Development Goals

| Predictors 1     | Predictors 2      | SDG | Outcomes 1             | SDG | Outcomes 2             |
|------------------|-------------------|-----|------------------------|-----|------------------------|
| Population       | State Procurement | 1   | Life Expectancy        | 5   | Land ownership         |
| GDP              | GDP% tax          | 2   | Zero Hunger            | 5   | Mobile ownership       |
| Health/capita    | Health GDP%       | 1   | Infant Mortality       | 5   | Female domestic hours  |
| Physician/capita | Education GDP%    | 2   | Extreme Poverty        | 7   | Energy Intensity       |
| Nurses/capita    | Defence GDP%      | 3   | Cancer                 | 8   | Footprint              |
| Community/capita | Research GDP%     | 3   | Heart                  | 9   | Internet subscriptions |
| Beds/capita      | RandD spend       | 3   | Communicable           | 9   | Mobile phones/100      |
| Health Public    | Democracy         | 3   | Mental Health          | 9   | Manufacturing value    |
| Health Private   | Human Rights      | 3   | Drugs                  | 16  | Disaster               |
| Health Insurance | R&D spend         | 3   | Suicide                | 16  | War                    |
| Education Spend  | Renewable %       | 3   | Homicide               | 16  | Terrorism              |
|                  |                   | 3   | Uncommunicable disease | 16  | Trafficking            |
|                  |                   | 4   | Tertiary Education     | 16  | Violence to females    |
|                  |                   | 4   | Primary Education      | 16  | Economic freedom       |
|                  |                   | 4   | IT skills              | 16  | Human rights violation |

Such data might be used to answer key questions, including what resources are necessary to support a UBI; and the relative importance of overall spend and spend on particular domains (health, education, security, democracy, etc.)

Existing literature is diverse targeting individual health goals and specifying predictors in economic, political and welfare regime terms<sup>7</sup>.

, for example: (Bambra et al., 2021; Chaudhry et al., 2020; Freeman et al., 2020; Guglielmin et al., 2018; Rinaldi & Bekker, 2021).

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## Evaluation of Universal Basic Income

### Advantages

There are **NO means tests**. UBI would not leave individuals who are most in need of support to fall through the cracks of the system because of administrative problems and costs. With universal transfer, there are no complicated application processes, time delays in receiving benefits, or work requirements that can be challenging or costly to prove. UBI may eliminate the ‘poverty trap’ associated with thresholds required to qualify for means-tested benefits that act as disincentives for individuals to work longer hours or get better paying jobs.

UBI enhances **individual freedom**. There is no compulsion to work. UBI may encourage the voluntary participation of individuals in the economy as opposed to mandatory participation that is effectively required when individuals must perform, possibly aversive, work to be able to afford their basic needs. UBI leaves people totally free to spend their resources exactly as they wish: gambling, drink, high carbon aeroplanes; charity, sports, arts, material goods, service, etc. Advocates hypothesize that UBI would immediately reduce poverty, hunger, homelessness, and income inequality. A direct transfer has the potential to make instantaneous progress on nearly all of Nussbaum’s Core Capabilities and most of the Sustainable Development Goals.

UBI is also argued to act as a positive incentive for **socially beneficial work** that is not very well paid, including jobs in the education and elder- and childcare sectors. A basic income provides a safety net that encourages risk-taking, **entrepreneurship**, and innovation. Similarly, UBI encourages further **education and vocational training**. There is potential for economic incentive and a multiplier effect in the local economy. Individuals may spend more on goods and services from local businesses and also create jobs at scale.

There is some evidence for these benefits based on a variety of UBI trials that have taken place internationally, see Table 2. A direct income leads to decreases in spending on drugs and alcohol, hospitalisation rates, childhood obesity, crime rates, education drop-

out rates, and incidences of domestic violence. This is accompanied by improvements in new-born health along with increased graduation rates, home ownership rates, food security, cognitive functioning, and social cohesion with greater trust in politicians and in others. As to be expected, a UBI also sees increases in savings and decreases in debt.

### **Disadvantages**

Ensuring **adequate resources** to fund UBI and basic infrastructure is essential. One major problem is that people may simply choose not to work. Then how are essential services to be maintained and how may innovations arise? Who will do the 'nasty' work? How about continuity? Can a teacher or doctor decide it's a sunny day and head for the beach? Who will teach the children or treat the sick? A related problem is that too few people will train for essential jobs.

Wealth distribution from UBI may not benefit the poor. The tax system has to be carefully thought out to ensure that redistribution that ultimately increases inequality, does not happen. It might be that implementing a meaningful basic income programme would be more expensive than current targeted programmes, e.g., food assistance and unemployment benefits.

**Children** need to be considered. Presumably there will be some UBI, possibly dependent on age. Clearly, it will be parents or guardians who receive the UBI, at least for youngest children. What stops guardian buying a sports car and leaving kids to starve or freeze? How about older children 10-18, would they have any freedom over their UBI spend?

### **Ensuring the good life**

Work is necessary to ensure a good life, some of it unpalatable. UBI advocates believe people will be motivated to have living standards above the minimum, so wages will rise, and education will increase. UBI advocates are often egalitarian (left), but free market libertarians (right). They believe the 'market' will solve everything and ensure all necessary jobs get done. In our view, pigs might fly, leading to an unpalatable and controversial conclusion; that **compulsory National Service may be needed to support UBI.**

Such service should be **universal** and be democratically agreed to apply to every one. For example, 1 continuous year before age 25 to allow for training, and a further 24 months during working life in stints of 1 month minimum. There might also be option to substitute 'on call periods' and possibly some incentives for high quality training, e.g., lower annual commitment. Inequitable compulsory work is to be avoided at all costs! National service would NOT be a condition for universal basic income, as it would be universal for all citizens UBI advocates would be horrified. Discussion of what to do if too few people chose essential infrastructure work is not much discussed.

### **Evidence**

Looking at the results of UBI pilots (Table 2) does not show a decrease in full-time employment and may lead to an increase in self-employment and part-time employment. There is no evidence for less flexible labour markets or a reduced supply of full- and part-time workers.

### **Infrastructure or income?**

The source of UBI is obviously the government: from taxes, borrowing, natural resources and accumulated wealth. Some minimum is allocated to basic services in any country: sewage, police, army, civil service pay, etc. Countries vary on how much they allocate to infrastructure such as education, health, transport, etc., and whether that infrastructure is available without means tests. The remainder can then be divided equally among all as UBI. We could not find much research about how resources should be balanced between communal NOT means tested services and individual NOT means tested basic income. The elephant in the room? Advantages of universal coverage over means test apply just as much to infrastructure as to income. The unaddressed problem is the balance between communal and individual allocations.

### **Health Example**

This very simple example illustrates the important role of infrastructure. Life expectancy is dependent not only on GDP/capita but also on the proportion of health spending that comes from government. The USA that relies on a private not universal insurance

structure performs particularly badly. UK performance is slightly below countries with a government insurance structure

### **Summary**

UBI is attractive because it emphasises satisfying basic needs and increasing individual freedom without coercion to work. The creation of a UBI scheme allows for a restructuring of how the state uses its resources in order to fulfil its goals and responsibilities. UBI is in our view profoundly individualistic.

Current schemes advocate the allocation of some portion of .existing resources to UBI. The continuation of such resources is assumed. There is little discussion of resource generation or indeed ownership (state or private). Current schemes gloss over the amount of UBI and provision for children and people with special needs.

Most UBI schemes pay little or no attention to the balance between universal state infrastructure and universal basic income and in our view, this is a problem that needs to be seriously addressed.

### **Conclusion**

Equity requires resources and balance between universal infrastructure, universal income, and universal citizen service. Better measurement of all relevant variables is a prerequisite for progress.

### **Notes,**

1. Diana Kornbrot, University of Hertfordshire, [d.e.kornbrot@herts.ac.uk](mailto:d.e.kornbrot@herts.ac.uk)
2. Zohreen Badruddin, [zohreen.badruddin@gmail.com](mailto:zohreen.badruddin@gmail.com)
3. BEIN - <https://basicincome.org/history/>
4. Basic Income Earth network <https://basicincome.org/about-basic-income/>
5. Nussbaum's 10 core capabilities [https://en.wikipedia.org/wiki/Capability\\_approach#Nussbaum's\\_central\\_capabilities](https://en.wikipedia.org/wiki/Capability_approach#Nussbaum's_central_capabilities)
6. Sustainable Development Goals, see <https://sdg-tracker.org/>
7. For extensive Bibliography of UBI literature with URLs, please see the online version of this article.



### **Data Sources**

Our World in Data website: <https://ourworldindata.org/>

Example, excess deaths from Covid

[https://ourworldindata.org/grapher/excess-deaths-cumulative-per-100k-economist?country=OWID\\_WRL~CHN~IND~USA~IDN~BRA](https://ourworldindata.org/grapher/excess-deaths-cumulative-per-100k-economist?country=OWID_WRL~CHN~IND~USA~IDN~BRA)

Supplementary: Raw data and PowerPoint, <https://osf.io/mnzku/>

There are .csv, |EXCEL and SPSS versions of raw data. Some variables were not used, but may be useful for others.

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# **An Onion of White Advantage? (in UK HE degree attainment)**

*Sean Demack<sup>1</sup>*

This paper draws on projects I have worked on over the last few years around differences in UK degree attainment across student ethnic groups. I began this work in 2015 with an analysis of four years of data at the UK and HEI levels. This was preceded by over 20 years examining the relationship between educational success and ethnicity at educational levels leading up to and including participation in /access to HE. Since 2015, the schisms between statistical practices within UK HE and all other educational levels have become increasingly apparent. This began with shock at the widespread use of a binary classification of ethnicity (White / not White or BAME or BME) but as time progressed, further problems with statistical practice in UK HE equality analyses were revealed one by one, like peeling way layers of an onion.

In this paper, the 'problems' with current HE statistical practice in UK equality analyses are presented as 'onion layers'. For each layer, the problem is described and the methodological implications discussed. This is followed by discussion of the substantive implications brought by the 'onion layers' that draws on the principles of a Critical Race Theory (CRT) of statistics (QuantCrit) as set out by Gillborn et al. (2018) and Garcia et al. (2018).

The paper highlights notable statistical schisms between the statistical practice in UK HE with all other educational levels and illustrations to suggest that UK HE equality analyses that are at best inaccurate/misleading and at worst serving White racial interests.

In an educational world with increasing data and data-linkages it seems useful to be able to place ethnic differences within HE in context with what is observed at other educational levels (i.e. FE/6th Form/A levels; GCSE/KS4; KS3; KS2; KS1 and the Early Years Foundation Stage Profile). However, currently the statistical schisms between HE and other educational levels serve to thwart this.

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The focus in this paper is on degree attainment but similar methodological and statistical problems will also apply for analyses of access to and progression through HE courses and onto postgraduate study and employment.

### **QuantCrit**

Gillborn et al. (2018) summarise the five principles for QuantCrit as:

- The centrality of racism as a complex and deeply rooted aspect of society that is not readily amenable to quantification.
- Numbers are not neutral and should be interrogated for their role in promoting deficit analyses that serve White racial interests.
- Categories are neither 'natural' nor given and so the units and forms of analysis must be critically evaluated.
- Voice and insight are vital: data cannot 'speak for itself' and critical analyses should be informed by the experiential knowledge of marginalized groups.
- Statistical analyses have no inherent value but can play a role in struggles for social justice.

Stemming from legal studies in the USA and from an essentially qualitative methodological paradigm, CRT scholars have long critiqued the inability of statistical methods to capture the nuances of everyday experiences of racism. However, in recent years there has been a growing attention on how statistics can assist in progress towards a racially equitable society, system or institution. Quantitative methods will never be able to match qualitative approaches in helping to understand the nuances of the numerous social processes that shape and legitimate race inequity. Instead, quantitative methods are suited to mapping the wider structures and highlighting structural barriers and inequalities that different racialised groups must navigate. However, at the same time, statistics can be (and are) mobilised to obfuscate, camouflage and further legitimate racial inequities.

Given this background, the starting point for QuantCrit is the adoption of a 'principled ambivalence' to number. This is not a paradigmatic anti-statistics position but is an anti- (or post) positivist, critically realist one that has a central focus on racism.

QuantCrit principles align reasonably closely with those expressed by Radical Statistics such as “(the lack of) control by the community over what & how statistical investigations are conducted and interpreted” and “the power structures within which statistical and research workers are employed” and belief that “statistics can be used to support radical campaigns for progressive social change. Statistics should inform, not drive policies. Social problems should not be disguised by technical language”.

**Layer 1 (Surface):                    A problematic starting point**

"Across UK HEIs, in 2019, 68% of the 76,610 UK domiciled graduates classified as "BAME" attained a 'good degree' compared with 81% of graduates classified as 'White'" (AdvanceHE, 2020). A 'good degree' is defined as a degree passed at either first or upper second class.

In absolute terms, this is a degree attainment gap of 13.4 percentage points. In relative terms, two perspectives can be taken using odds-ratios<sup>2</sup>:

- The extent of White advantage can be obtained by dividing the odds of attaining a 'good degree' for White graduates (4.38) with the odds for graduates classed as 'BAME' (2.13) = 2.06; in terms of odds, White graduates are over twice as likely to attain a good degree compared with graduates classified as BAME.
- The extent of disadvantage experienced by graduates classed as 'BAME' compared with White graduates is the reciprocal of this = 0.49. Graduates classed as BAME are less than half as likely to attain a good degree compared with graduates classified as White.

The surface of the onion seems to hog the Key Performance Indicator (KPI) spotlight at both national and HEI levels - although the language might vary to be the 'BAME' disadvantage gap (or degree awarding gap). There are three fundamental problems summarised at the surface, each of which will be 'peeled away':

- Measurement of ethnicity (not valid & prone to statistical inaccuracy)
- Measurement of degree attainment (statistical inaccuracy, and misses a key story)

- 
- Exclusion (off-rolling?) of non-UK domiciled graduates from equality analyses involving student ethnicity.

Methodologically, the statistical problems can be classified as relating to the validity and reliability of measurement and/or sampling/population representation. Substantive implications for HE analyses of equality analyses involving student ethnicity are discussed within a QuantCrit analytical framework.

**Layer 2:            *Measuring student ethnicity.***

There are several problems with the use of a binary classification of ethnicity but before these are discussed, it should be highlighted that, in HE, the White group is not unpacked. The Office for National Statistics (ONS) ethnicity classification commonly has five groups within the broad 'White' ethnicity classification: White British; White Irish; White Gypsy/Roma; White Traveller of Irish Heritage and White other<sup>3</sup>. At all other educational levels, White British students/pupils are used to compare the relative educational success of other (minoritised) ethnic groups. This means that in UK HE, the degree attainment of White British and White minoritised groups are hidden behind the aggregated White classification. Whilst in recent times White Irish students/pupils have tended to have higher levels of educational success when compared with White British students/pupils, the other three minoritised White groups tend to have lower levels of educational success. This suggests that the extent of White (British) advantage in UK HE degree attainment may currently be understated through the practice of using the aggregated 'White' ethnicity classification.

Away from the White group, the 'BAME' classification is drawing growing criticism that tends to focus on the problematic assumptions of homogeneity. In 2015, ONS produced guidance on terminology around ethnicity and specifically state "Do not use the terms or acronyms Black, Asian and minority ethnic (BAME) or Black and minority ethnic (BME)" ONS, 2015<sup>4</sup>. However, this does not seem to have stopped the increased use of this in UK HE (although outside HE it continues not to be used).

Setting aside the fact that, in UK HE, minority groups remain hidden behind the White classification, the BAME classification could be unpacked into the actual categories that individual students select as the ethnic group with which they identify. It is critically important to understand the top-down application of the BAME classification. An analyst needs to combine more defined ethnic classifications into the two groups. Ethnicity is a social not a biological construct and has no objective measure. For example, it is possible for an individual to change their ethnicity over time. At age 13, a young person with a Black Caribbean and White British parent/guardian might identify as 'Mixed Black Caribbean and White' but change to identify as 'Black Caribbean' at age 16 and perhaps as 'White British' at another age (e.g. in an attempt to circumnavigate perceived/actual discriminatory administrative practices). No single response is an 'objective' or 'accurate' ethnicity, which highlights how ethnicity (and racism) is something that is not readily amenable to quantification.

The ethnic group that an individual identifies with is usually restricted to a list of closed categories with options for respondents to provide detail if none of the categories fit (or, of course, to refuse to respond). The UK Census first collected ethnicity details in 1991 (following 20 years of discussion). Since 1991, the categories used by ONS have expanded following lobbying from some minority groups who wanted to become statistically visible to help provide evidence of their (disadvantaged) structural position (in terms of education, health, wealth etc) - see Williams & Husk, 2013. The BAME (or BME) classification is a post-hoc / top-down measure that breaks the 'self-identified' definition - so, cannot really be seen as a measure of ethnicity. Methodologically it can be seen as an approximation of ethnicity with absolute minimum measurement validity (because it is difficult to be less valid than a binary classification).

The validity, false homogeneity, and language problems that BAME/BME bring are quite obvious - but have not yet resulted in 'reigning in' the practice of using this classification in UK HE. A second problem that is brought by BAME/BME is statistical inaccuracy due to a phenomenon known about for over a century; Simpsons Paradox (Demack, 2020). In summary, it is possible for analyses of aggregated data to contradict analyses of disaggregated data,



meaning that BME classification can be used to (inaccurately) show a declining pattern of White advantage when, in reality, across more defined groups, White advantage increases. The paradox problem intensifies when comparisons are made (over time, between institutions, types of institutions, degree courses, modules etc). For more detail on this statistical phenomenon, please email me for a copy of a worksheet that illustrates it.

I am assuming that HEI analyses that seek to provide evidence on entrenched White advantage in UK degree attainment does not aim to provide false/misleading statistics. After all, from inaccurate analyses comes mis-targeted policy that cannot really hope to address or assess current problems.

ONS have two commonly used ethnic classifications - major and minor - which are set out in Table 1 below.

There are six categories in the ONS ethnicity major grouping classification. The Chinese group are sometimes grouped with ethnicities in the Asian classification but are more commonly kept distinct. This is one oddity of the ONS major grouping - the Chinese are a more defined ethnic group than any of the other 'major' groups. They also happen to be one of the smallest defined ethnic groups and notably smaller than all the defined groups that are hidden behind the aggregated 'Black' and 'Asian' and 'Mixed' groupings. In terms of education, Chinese students/pupils have relatively high levels of educational success. Prior to HE, Chinese students/pupils are (easily) the highest attaining group at every key stage and this has been the case for over a decade and found across language, humanities, maths and science subject areas. In HE, at degree level, Chinese graduates are less likely to attain a good degree compared with White graduates but more likely to do so than any other (non- White) ethnic group.

**Table 1: ONS ethnic classifications (major & minor)**

| <b>Ethnicity Minor Categories</b> | <b>Major Categories</b> |
|-----------------------------------|-------------------------|
| White British                     | White                   |
| White Irish                       |                         |
| White Gypsy/Roma                  |                         |
| White Traveller of Irish heritage |                         |
| White other                       |                         |
| Black African                     | Black                   |
| Black Caribbean                   |                         |
| Black other                       |                         |
| Indian                            | Asian                   |
| Pakistani                         |                         |
| Bangladeshi                       |                         |
| Asian other                       |                         |
| Chinese                           | Chinese                 |
| Arab                              | Other                   |
| Other other                       |                         |
| Mixed Black Caribbean & White     | Mixed                   |
| Mixed Black African & White       |                         |
| Mixed Asian & White               |                         |
| Mixed other                       |                         |

Notes & Source; There are also commonly 'missing' and 'prefer not to say' categories.

<https://www.ons.gov.uk/methodology/classificationsandstandards/measuringequality/ethnicgroupnationalidentityandreligion>

Given the size of the Chinese ethnic group, they provide a useful reference point for evaluating whether it is feasible to show other defined ethnic groups - if issues with small samples (e.g. statistical disclosure<sup>5</sup>) are not deemed to be problematic for Chinese HE students, the same must be the case for Black African, Black Caribbean, Indian, Pakistani, Bangladeshi, Mixed Black Caribbean & White, Mixed Black African & White and Mixed Asian & White (i.e. all defined ethnic groups except the Arab group, which is smaller than the Chinese group). This is something that urgently needs to be addressed in the UK HE equality analyses.

Unpacking the BAME classification to show more defined (self-selected) ethnic classifications reveals the problems brought by aggregation. First, disaggregating BAME into the six major groupings

reveals large differences. Table 2a does this to show the percentage attaining a 'good degree' across the six ONS 'Major' groups. Alongside the percentages are two measures that capture the extent of White advantage; the absolute gap (in percentage points) and the relative gap (as odds-ratios).

**Table 2a: % attaining a 'good degree' by aggregated ethnic groups, UK domiciled Graduates 2019**

| Group           | % with Good Degree | White Advantage*                |                          |
|-----------------|--------------------|---------------------------------|--------------------------|
|                 |                    | Absolute<br>(Percentage Points) | Relative<br>(odds-ratio) |
| All graduates   | 78.2               | -                               | -                        |
| White           | 81.4               | -                               | -                        |
| BAME / BME      | 68.0               | 13.4                            | 2.06                     |
| Black           | 58.8               | 22.6                            | 3.07                     |
| Asian           | 70.0               | 11.4                            | 1.88                     |
| Chinese         | 76.9               | 4.5                             | 1.31                     |
| Mixed ethnicity | 76.6               | 4.8                             | 1.34                     |
| Other ethnicity | 67.4               | 14.0                            | 2.12                     |

**Source:** AdvanceHE 2020 student equality report (for 2019 academic year), Table 3.13

\* Because the pattern is so clear in UK HE, it is accurate to describe ethnic differences as 'White advantage'. This would not be appropriate at any other level of education (in England) because, unlike HE, at all other levels (and subject areas) White (or White British) students/pupils are NOT the highest attaining ethnic group.

Table 2a highlights how the BAME classification leads to statistics that understate the extent of White advantage with respect to Black graduates and overstate it for Chinese and Mixed ethnicity graduates.

The aggregated groupings bring similar problems of validity, homogeneity assumption and Simpsons Paradox seen with the BAME classification. In HE, this is most evident with the Asian category because the degree attainment of the more defined ethnic groups included in the Asian category are very different. This is not the case for Black graduates and this is (another) thing about educational success in HE that appears out of step with what is seen at all other

educational levels in England. Between ages 4 and 18 (from early years foundation up to A level), Black Caribbean pupils are commonly observed as having relatively low levels of educational success (in terms of attainment) whilst Black African pupils tend to attain similarly to White British pupils. This difference within the Black grouping is not found in HE with degree attainment - where both Black Caribbean and Black African pupils have similarly relatively low levels of success.

Unfortunately, the mixed ethnicity has yet to be unpacked in HE statistics and so remains a very generic category with little validity<sup>6</sup>. Of particular interest within the mixed ethnicity grouping are Black Caribbean & White and Black African & White groups because these tend to experience similar levels of educational success as Black Caribbean and Black African groups respectively.

Before examining % good degrees across defined ethnic groups, this 'measuring ethnicity' layer has highlighted two substantive patterns that, in the UK, are solely found in HE:

- Chinese educational success has been a perennial feature of the education system in England for as long as data was available - however, this long-standing pattern is broken in HE - where a clear White advantage seems to have always reigned.
- The Black African and Black Caribbean groups experience very different levels of educational success across the English education system ... until HE - where both groups are found as having the lowest success at degree level.

Which leads to three questions:

- What is it about UK HE that results in such clear White advantage not seen anywhere else in the education system?
- What happens to Chinese students?
- What happens to Black African students?

Table 2b shows the %good degree statistic across defined ethnic groups.

**Table 2b: % attaining a 'good degree' by defined ethnic groups, UK domiciled Graduates 201**

| Group           | % with Good Degree | White Advantage*             |                       |
|-----------------|--------------------|------------------------------|-----------------------|
|                 |                    | Absolute (Percentage Points) | Relative (odds-ratio) |
| All graduates   | 78.2               | -                            | -                     |
| White           | 81.4               | -                            | -                     |
| BAME / BME      | 68.0               | 13.4                         | 2.06                  |
| Black           | 58.8               | 22.6                         | 3.07                  |
| Black Caribbean | 62.1               | 19.3                         | 2.67                  |
| Black African   | 58.0               | 23.4                         | 3.17                  |
| Black Other     | 57.0               | 24.4                         | 3.30                  |
| Asian           | 70.0               | 11.4                         | 1.88                  |
| Indian          | 76.6               | 4.8                          | 1.34                  |
| Pakistani       | 66.4               | 15.0                         | 2.21                  |
| Bangladeshi     | 65.7               | 15.7                         | 2.28                  |
| Asian Other     | 67.7               | 13.7                         | 2.09                  |
| Chinese         | 76.9               | 4.5                          | 1.31                  |
| Mixed ethnicity | 76.6               | 4.8                          | 1.34                  |
| Other ethnicity | 67.4               | 14.0                         | 2.12                  |
| Arab            | 68.1               | 13.3                         | 2.05                  |
| Other ethnicity | 67.0               | 14.4                         | 2.16                  |

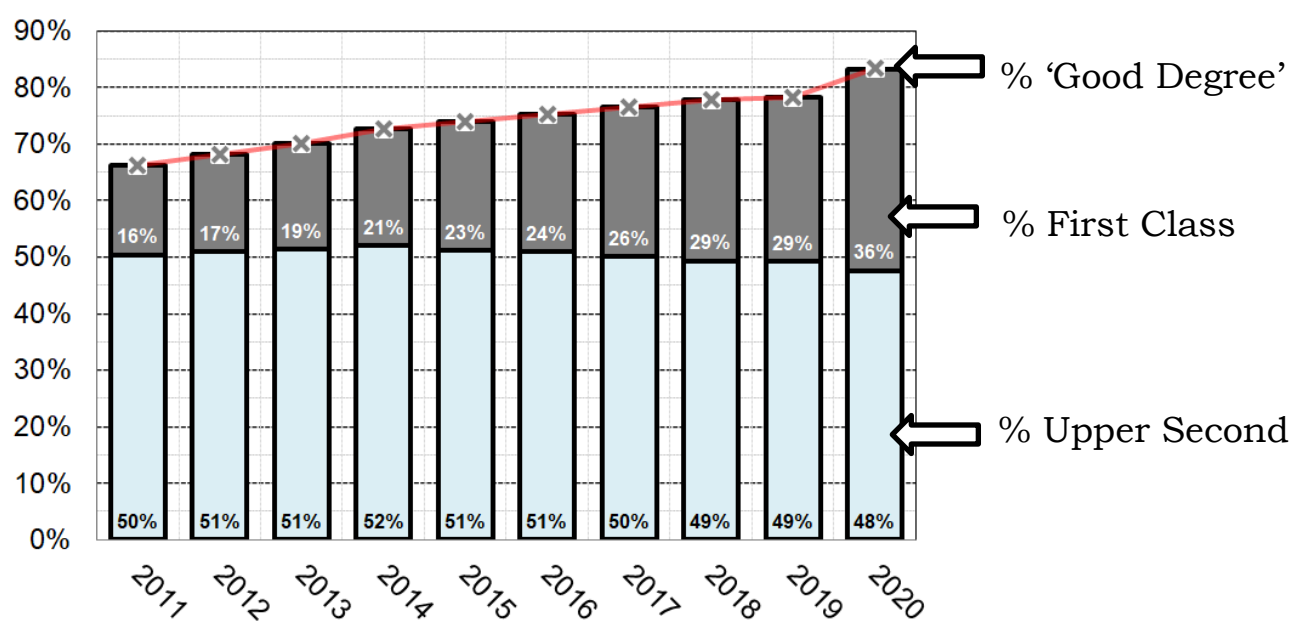
**Source:** AdvanceHE 2020 student equality report (for 2019 academic year), Table 3.13

In summary - the BAME classification serves to understate the extent of White advantage in UK HE and the use of this classification will result in statistically inaccurate analyses and possibly to mis-targeted policy. The aggregated (6 category) measure of ethnicity suffers similar problems to the BAME classification - most strikingly within the Asian group. Finally, there are numerous examples where UK HE is out-of-step with the rest of the education system and this is evidence for institutional racism (within UK HE) being a key cause of differential degree attainment across student ethnic groups.

**Layer 3: Measuring degree attainment:**

The focus of national and HEI KPIs has been on 'good degrees'. That is the proportion of graduates who attain a degree at first or upper second class levels. Of course, with KPIs, there is always a risk of meeting 'Goodharts Law'<sup>7</sup> and this does seem to have happened in the UK with the 'good degree' measure. Consider Figure 1. This unpacks the 'good degree' measure to show both first class and upper second components for 10 cohorts of UK domiciled graduates between 2011 and 2020.

**Figure 1: % attaining a 'good degree', UK-domiciled graduates at UK Universities 2011 to 2020**



**Source:** ECU / AdvanceHE student equality reports 2012 to 2021.

The proportion of graduates attaining a first class degree more than doubled between 2011 and 2020 – a time period that included the introduction of a £9k/year degree course fee. At the same time, the proportion attaining upper second class degrees is seen to peak in 2014 at 52% before falling to 48% by 2020. Therefore, the increase in % 'good degrees' is seen to be driven entirely by the increases at first class [16% in 2011; 29% in 2019 and then 36% in the first year of Covid, 2020]. There seems to have been a 'surge' in first class degrees during the first summer of Covid in 2020 that came following years of a growing 'swell' between 2011 and 2019.

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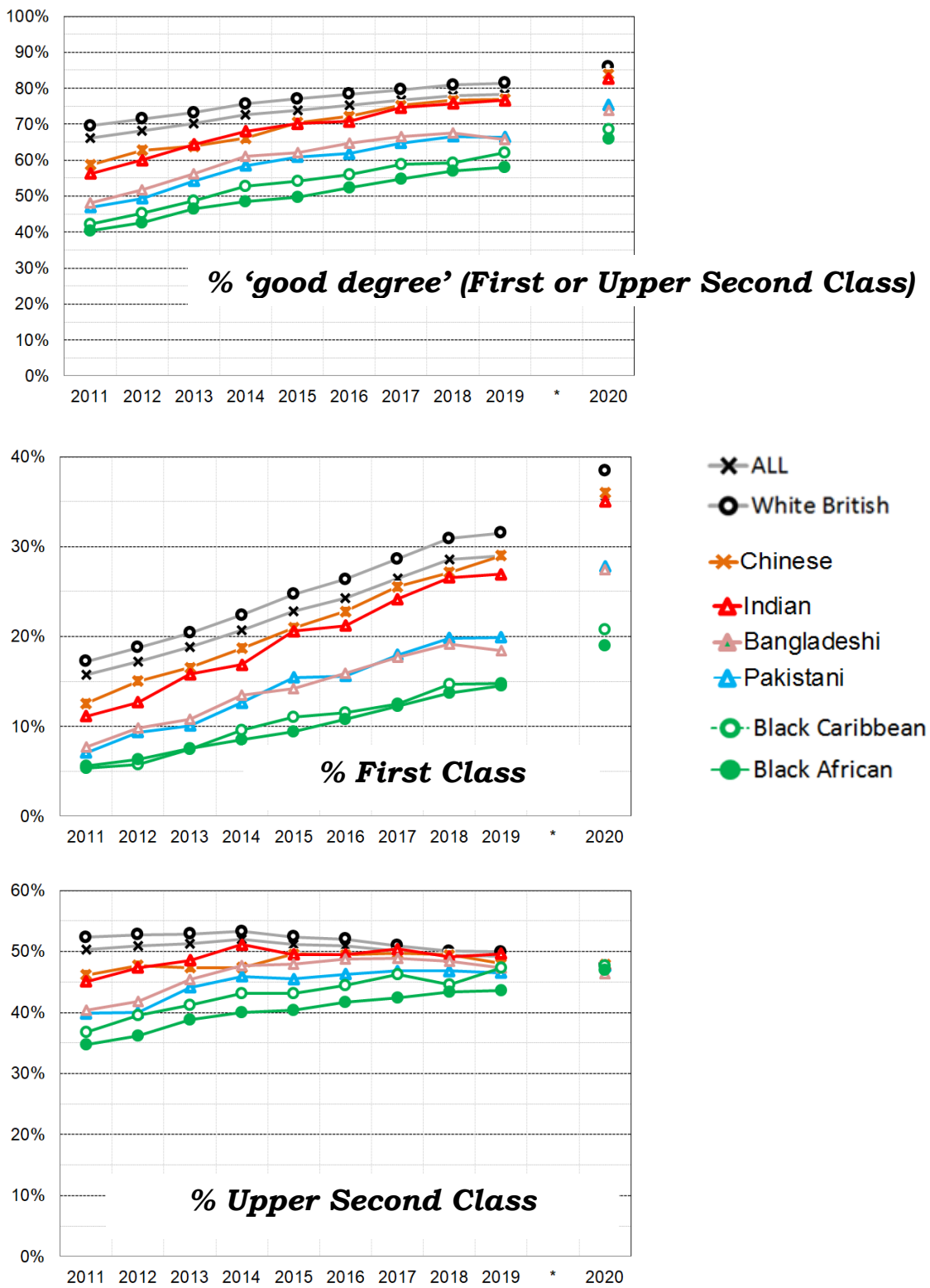
This context highlights that by focusing on ‘good degrees’, important detail is missed but does not illustrate what this means for HE ethnicity equality analyses. Figure 2 presents ethnic differences in degree attainment using the ‘good degree’ KPI and its two (first & upper second class) components.

The first graph in Figure 2 illustrates a relatively static picture in the ‘good degree’ KPI chart – one of entrenched White advantage with little evidence for this increasing or decreasing. The 2020 statistics are shown separately from the 2011 to 2019 statistics to acknowledge the arrival of Covid19 in March 2020 which may account for the notable ‘surge’ upwards seen in the first graph of Figure 2.

Below, the ‘good degree’ graph, a graph shows ethnic differences at first and upper second class levels. These charts are more dynamic compared with the ‘good degree’ one.

At first class, in the second graph of Figure 2, there is clear evidence of an increase in White advantage between 2011 and 2019. This is seen in Figure 2 by the diverging lines. Increases in % first class are sharper for some groups (White; Chinese, Indian) compared with others (Bangladeshi, Pakistani, Black African, Black Caribbean). White advantage remained relatively static with respect to the former but clearly increased with respect to the latter. As with ‘good degrees’ a notable ‘surge’ upwards is seen in 2020 but at first class this is sharper – but does not seem to have altered the relative attainment differences across student ethnic groups (so perhaps the early-Covid upward ‘surge’ in first class degrees was experienced for students from all ethnicities).

**Figure 2: Degree attainment & ethnicity - three thresholds (UK-domiciled graduates)**



Source: ECU / AdvanceHE student equality reports 2012 to 2021.



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At upper second, there is clear evidence of a decrease in White advantage between 2011 and 2019. This is seen in Figure 2 by the converging lines – and, in 2020 they are observed to all come to a similar point of around 47-48%.

When these two components are combined to form the 'good degree' KPI, they cancel each other out - and construct a 'static' picture illustrated in the first graph of Figure 2.

In other words, whilst KPIs might focus on the (static) patterns relating to 'good degrees', White advantage has intensified at the higher threshold of 'first class' degrees –seemingly with little attention.

#### **Layer 4: UK and non-UK domiciled students**

Currently student equality analyses that focus on ethnicity are restricted to UK-domiciled students. When I queried this with AdvanceHE, the reason given was around complexity of classifying the ethnicity of non-UK domiciled students. Within this discussion, I reflected on my experiences with data from the European Social Survey (ESS<sup>8</sup>) and the measure 'ethnicity' across many European countries<sup>9</sup>. The ESS measure revolves around nationality of respondents and parents and is not something that could be considered as 'ethnicity'. This made the response from AdvanceHE seem reasonable and that, therefore, work needed to be done before non-UK domiciled students could be included into future equality analyses. However, this discussion took place before I had spent time looking at AdvanceHE equality analyses involving UK HE staff - in which both non-UK and UK staff are included in ethnicity analyses (using the defined classification<sup>10</sup>). Why is it that non-UK staff are included but non-UK students are excluded; if it is possible to measure the ethnicity of non-UK staff, why not non-UK students?

To examine the size of the UK / non-UK domiciled issue, equality analyses across other dimensions (I have selected gender) can be compared with equality analyses relating to ethnicity. Equality analyses relating to these dimensions cover all UK and non-UK domiciled graduates. On doing this comparison, the proportion of non-UK domiciled graduates across all UK universities is observed to increase from 17.9% (n=67.9K) in 2013 to 20.2% (n=79.8K) in 2020. In other

words, around a fifth of graduates are systematically excluded from student HE equality analyses involving ethnicity, and this hidden population is growing.

Further, from detail on total student numbers across HEI 'mission groups', the proportion of non-UK domiciled students at Russell Group HEIs is observed to increase from 29.2% in 2013 (n=165,680) to 35.2% in 2020 (n=238,800). In other words, over a third of students are systematically excluded from Russell Group student HE equality analyses involving ethnicity, and this hidden population is growing.

Whilst no ethnicity details on non-UK domiciled undergraduate student attainment is available, the overall degree attainment of non-UK students is. This highlights relatively lower rates of success of non-UK domiciled students. This is seen with % attaining a 'good degree' for non-UK domiciled students (increased from 54% in 2011 to 71% in 2019, lurching to 78% in 2020) compared with UK-domiciled students (increased from 66% in 2011 to 78% in 2019, surging to 83% in 2020). The lower rates of success are also seen with First Class degrees when non-UK domiciled students (increased from 14% in 2011 to 26% in 2019, surging to 32% in 2020) are compared with UK-domiciled students (increased from 16% in 2011 to 29% in 2019, surging to 36% in 2020).

Non-UK students are a lucrative market for UK HE, and one that will be expanding in many HEI's to help to address the financial impact of fixed undergraduate fees imposed by UK Government for the last decade. The lucrative nature of educational market for non-UK students may account for Russell Group HEIs having a larger share (percentage of all non-UK domiciled students at Russell Group HEIs increased from 36% in 2011 to 42% in 2020) when compared with the market for UK-domiciled students (percentage of all UK-domiciled students at Russell Group HEIs increased from 21% in 2011 to 23% in 2020). As noted above, whilst non-UK staff are included in ethnicity equality analyses, non-UK students are systematically excluded from ethnicity equality analyses. Another term for such systematic exclusion that has become popular parlance in the marketised world of UK education is 'off-rolled' (students/pupils who are systematically

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excluded from statistics used to represent/evaluate an institution). So, currently non-UK domiciled students are off-rolled from equality analyses. This seems risky. This is a hidden population and a growing lucrative market. Groups that are 'off-rolled' are particularly vulnerable to experiences of segregation, marginalisation and discrimination - because they are hidden from scrutiny. Until non-UK students are included in equality analyses (as they are for gender, disability and age analyses for students and for ethnicity analyses for staff), the analyses will remain inaccurate in helping to understand the structural realities of White advantage in UK HE.

### **Discussion**

The analyses presented under the four onion layers of White advantage in UK HE drew heavily on the second and third principle of QuantCrit:

- 2) Numbers are not neutral and should be interrogated for their role in promoting deficit analyses that serve White racial interests.
- 3) Categories are neither 'natural' nor given and so the units and forms of analysis must be critically evaluated.

The first two layers illustrated how post-hoc top-down measurement of ethnicity results in analyses that understate the extent of White advantage in UK degree attainment. This problem is compounded by the known problem of statistical inaccuracy ('Simpsons Paradox'<sup>11</sup>) brought by aggregated data. The use of an aggregated 'White' category in UK HE rather than unpacking this to show the White British and other White groups (seen at all other levels) serves to cloud things further. The first two layers, therefore, reveal that current practice both serves to downplay White advantage in UK HE attainment and to provide researchers and policy makers with false / misleading statistical evidence. It seems likely that this statistical inaccuracy will lead into inaccurate / mistargeted policy and diminished potential for positive change. A diminished potential for positive change risks the perpetuation of an entrenched 'status quo'. In the context of UK HE, maintaining the 'status quo' means preserving White advantage in degree attainment.

The third layer illustrated how the focus on a narrowly defined outcome (good degrees) misses an interesting and important story - where White advantage in degree attainment has increased at first class with little / no attention. A decline in White advantage at upper second is also rarely commented on. Instead, the composite 'good degree' is used to show a largely static (entrenched) pattern of White advantage - constructed by widening differences at first class and decreases at upper second class. Once again, the practice of focusing on good degrees results in analyses that downplay the size/extent of White advantage in degree attainment.

The final layer considered the student population and systematic exclusion of a fifth (and over a third of Russell Group students) from equality analyses by focusing solely on UK-domiciled students. The reasons for excluding non-UK domiciled students are unclear. However, what is clear is that until these students are included, student equality analyses relating to ethnicity will be inaccurate/incomplete. Statistical inaccuracy is just one concern here. With between 20 and 35% of students 'off-rolled' in terms of equality scrutiny, there is a risk that these students will face greater levels of segregation, marginalisation and discrimination (i.e. racism) because they are not in the statistical spotlight.

Looking at the remaining three QuantCrit principles:

- 1) The centrality of racism as a complex and deeply rooted aspect of society that is not readily amenable to quantification.
- 4) Voice and insight are vital: data cannot 'speak for itself' and critical analyses should be informed by the experiential knowledge of marginalized groups.
- 5) Statistical analyses have no inherent value but can play a role in struggles for social justice.

The paper highlights the first and fifth of these principles - in how quantification can result in statistical obfuscation and inaccuracy that does seem to serve White racial interests (e.g. downplaying the extent of White advantage, diminished potential for positive change, maintaining the status quo).

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The fourth principle, 'voice and insight' is admittedly largely absent in this paper - in which there is a single statistician's voice (who is a middle class state educated White British male). The 'voice and insight' QuantCrit principle encourages researchers to draw on both quantitative and qualitative research when researching issues of racism. This might be to enrich the sparse structural evidence that statistics can provide using qualitative details on individual lived experiences, attitudes and perceptions. Alternatively (or in addition), qualitative work might be used to provide critical input for planned statistical analyses or to help interpret the statistical findings through lenses of different ethnic groups that are included in analyses

As noted earlier, QuantCrit assumes a 'principled ambivalence to number'. This is to acknowledge that ethnicity and racism are not readily amenable to statistical enquiry and reject beliefs of quantitative 'objectivity'. In other words, numbers cannot speak for themselves. As with other dimensions of social inequity (sexism, ableism, ageism etc), statistical enquiry can be deployed to both illuminate and/or obscure understanding about structural racism; and therefore, to help or hinder attempts at 'progressive' change. Research does not have to support racist ideologies or theories to act as a hindrance, a lack of critical consideration within statistical enquiry can suffice. Whether the hindrance is ideologically driven or a result of naïve empiricism, it seems relatively easy for numerical evidence to politically 'out-shout' more subtle methodological concerns. In this paper I have used the QuantCrit critical framework to try to provide some theoretical transparency on how the analyses have been interpreted to try and avoid the pitfalls of naïve empiricism.

Policy aiming to address differences in UK HE access / success across student ethnic groups needs to focus on developing a robust and accurate evidence base. This paper has illustrated some sizable problems of measurement and group representation with current statistical practice in UK HE equality analyses. The evidence base needs to draw on a synthesis of quantitative and qualitative research if it is to provide an accurate and comprehensive perspective on current patterns and how they change over time (or not). Initial steps might critically review current statistical practice in UK HE and

how/if these could be developed to facilitate accurate comparisons with other educational levels in England, Scotland, Wales and Northern Ireland. Following the critical review of HE statistical practice, qualitative data will need to be gathered routinely to synthesise with the statistics. Analyses of this qualitative data could help to direct, enrich and/or interpret statistical analyses / findings whilst acknowledging the strengths and limitations of both paradigms. This could provide a post paradigm-war 21st century exemplar of a critical analytical framework for UK HE that could reliably and validly capture ‘change’ at UK, national, institutional, discipline and individual student levels (should change happen). However, at the time of writing in Autumn 2022, such a rich, accurate and synthesised evidence base seems a long way off for UK HE. Instead, UK HE equality analyses continue to be hindered by poor statistical practice with limited attempts to inter-relate quantitative and qualitative research paradigms.

### ***References and Notes in the Text***

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- 1.** Sean Demack; [s.demack@shu.ac.uk](mailto:s.demack@shu.ac.uk)
- 2.** Odds-ratio - the ratio of odds for one group to the odds of a second group
- 3.** In some cases, the White British group is also unpacked (e.g. White English; White Scottish etc) but the aggregated ‘White British’ group is more common.

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4. See <https://style.ons.gov.uk/house-style/race-and-ethnicity/>
  5. Statistical disclosure is when data can be used to identify an individual.
  6. Whilst it is common for the mixed ethnicity group to be aggregated, prior to 2017 the mixed ethnicity was unpacked in HE staff equality analyses.
  7. Goodharts Law: When a measure becomes a target, it ceases to be a useful measure.
  8. European Social Survey (ESS), <https://www.europeansocialsurvey.org/>
  9. These include at least one country where no ethnicity data is gathered because it is constitutionally illegal; France. “According to the French law which originated in the Revolution of 1789 and reaffirmed in the French Constitution of 1958, it makes it illegal for the government to collect data on ancestry and ethnicity of the citizens” see <https://www.worldatlas.com/articles/what-is-the-ethnic-composition-of-france.html>
  10. See Table 3.2 in AdvanceHE Staff Equality report <https://www.advance-he.ac.uk/guidance/equality-diversity-and-inclusion/using-data-and-evidence/statistics-reports> which shows UK and non-UK national staff numbers for seven defined ethnic groups (Black African, Black Caribbean, Indian, Pakistani, Bangladeshi, Chinese and Arab).
  11. Please email me for a worksheet that explains the statistical inaccuracy brought by analyses of aggregated data using the HE example - [s.demack@shu.ac.uk](mailto:s.demack@shu.ac.uk)

**BOOK REVIEW Maarten Boers (2022) *Data Visualization for Biomedical Scientists: Creating Tables and Graphs That Work****Irina Motoc*

A few years ago, as a PhD student at the Vrije University Medical Center in Amsterdam, I attended a workshop led by Maarten Boers on the topic of his latest publication: *Data visualization for Biomedical Scientists - Creating Tables and Graphs That Work*. After working through some examples, we worked on our own tables and figures using Prism (a software for graphing that was available at my institution). The most important point I took away was that the tables and graphs I was creating, up to that point, were perhaps adequate but they could be improved substantially. I have been on the hunt since for materials that expand on this topic, to improve my own work and to be able to better mentor students. I was delighted to find out that Boers created a guide using a hands-on, step-by-step approach for visualization of data in the biomedical sciences. Professor Boers has recently retired after an illustrious career in clinical epidemiology. What I understood from the workshop is that he has spent the last part of his career in thinking about and improving the visualization of data, therefore this book is a culmination of years of working on this task and it hits the mark.

This book is succinct given the large amount of ground covered. The book is accompanied by online material (files, videos) that further illustrate approaches, processes, and examples. After a brief introduction, chapter 2 focuses on tables. To some of us designing tables containing results might be intuitive by now, would we even need a chapter on this? However, are students and researchers given guidelines on how to design good tables and figures in the first place? The deepness of the materials indicates that creating tables is a skill that one could work on. Boers discusses layout, how to optimize it to create groupings and direct the reader to the main message of the table. This is crafted, among others, by making use of white space, including how to manipulate row height in Excel or in Word in a strategic way. Chapters 3 and 4 are dedicated to graphs. Chapter 3 presents an overview of the main graph types and their purpose. The ‘construction of graphs’ section takes the reader through everything: how to determine a clear understanding of what the graph must convey, placing information that is considered non-data ink (everything on the graph except data) and maximizing and optimize data ink. Some space is dedicated to explaining



why some graph types should not be used. It is a fun and informative section. Overlaying of plots and summary data and improving forests plots are also covered in-depth. The chapter on matrix graphs covers a difficult topic with ease. A complex matrix graph is presented, each mini graph is investigated, and improvements generated. Every element of design is considered and the re-worked graph is presented and discussed. The dense biomedical data used in this example might be at first a bit confusing for scientists working in other fields, but anyone working with data would be able to work through it. Lastly, the chapter on ‘publishing and presenting’ offers insight into making the process of manuscript submission easier. It is good insight that might save hours of tedious work. Coming full circle, Boers ends with guidelines for tables used in oral presentations and poster presentations. I think this information is useful for researchers at various levels and applicable across disciplines that analyse and interpret data.

One of the many strengths of this book is the availability of the Prism files used to create the figures presented and discussed. This is part of the book’s practical, step-by-step approach to learning how to visualize data. Given that one has access to Prism (at my institute it is offered for free for), it is easy and fun for the reader to access the files, play around and understand the construction of these figures. You can jump right in and adapt the figures using own data. Prism is widely offered at institutions and pricing seems reasonable for individual academics (under 200 USD per year). It is less affordable for students (142 USD), but students are resourceful. Hopefully in the future, a group will create an open-source free software, such as R, with the same capabilities. Although written for scientists, the language that Boers uses is straightforward. He is honest and relatable. Sharing a complex matrix graph, Boers states his initial reaction: ‘even I am intimidated by this graph... they must be smarter than me (p 146).’ With meticulous detail (examples), he challenges the paradigm that complicated graphs are the best and carves a way forward to making complex graph more understandable and powerful. Coming back to the workshop I mentioned, I remember Boers’ enthusiasm to share his knowledge with us and have us work with our own data. I am pleased that the style of the book contains this energy.

Making tables and graphs have taken me countless hours, trying to make design decisions which, while informed by the scientific content, lacked a deeper understanding of the process of visualizing data.

Although aimed at the biomedical sciences, I believe that anyone who works with data would benefit from the insight and hands-on material contained in this book. I encourage everyone to check out short tutorials and access the online material at [www.vuuniversitypress.com/data-visualization](http://www.vuuniversitypress.com/data-visualization).

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