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'What else can you expect from class-ridden Britain?': the Whitehall studies and health inequalities, 1968 to c.2010

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ABSTRACT

The Whitehall studies of British civil servants, running from 1968 until the present day, are some of the most influential in twentieth century public health. Believing that the stratification that they observed among civil servants was replicated in wider society through the class system, the Whitehall researchers argued that inequality was a powerful force in society, literally embodied by incidence of disease. But as politicians and sociologists questioned the continuing relevance of class, this article explores how these studies reflected and were in conversation with prevailing social attitudes about inequality in end-of-century Britain.

KEYWORDS

Health inequalities; Whitehall studies; class; stress; heart disease

Introduction

In 1996, *The Great Leveller*, a documentary screened on Channel 4, opened with Richard Campbell, a 43-year-old fire safety inspector at the Home Office, describing his recent and sudden heart attack. 'Until then, like most of us', the narrator intoned, 'he thought that his health depended mainly on diet, exercise and smoking'. Setting up the rest of the programme, which would explore epidemiological research conducted on civil servants such as Campbell, the narrator rhetorically asked 'But is that true?' before replying: 'Some scientists now think it isn't'. Campbell's health scare was contrasted with the happy old age of another Richard; Sir Richard Way, at 83, a former permanent secretary in the Ministry of Aviation, and apparently, 'as fit as a fiddle'. Their lifestyles were compared—neither smoked, both exercised moderately, and had equally 'hearty appetites'—before concluding that the major difference between the two men—and by extension the clue to their divergent health states—was their relative positions in the Whitehall hierarchy.[1]

This televisual conceit was manufactured to explain the Whitehall studies which had similarly explored the health and habits of British civil servants, albeit at a population rather than an individual level. These two longitudinal studies count amongst the most influential epidemiological research in post-war public health, both in Britain and globally. At the time of writing, the key papers from each had been referenced by other peer-reviewed papers 1,280 times and 2,275 times respectively.[2] The first Whitehall study, started in 1968, involved a simple, one-off screening examination of 18,043 men from all grades of the civil service working in central London, before remote follow-up via death

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certification and NHS records. The second Whitehall study, initiated in 1985, was a comparatively more sophisticated and involved enterprise, regularly surveilling 6,895 men and 3,413 women aged between 35 and 55 years working in the London offices of 20 Whitehall departments. Both studies found that there was a significant gradient to morbidity and mortality from heart disease between all levels of the civil service hierarchy. This difference—which in the first study meant that the lowliest employees suffered three times the rate of heart disease for those at the top—was only partially explained by known risk factors, such as diet, exercise and smoking.[3]

The Great Leveller was interesting for its presentation of prevailing attitudes towards health and disease, and Whitehall's role in challenging these. In this telling, lifestyle explanations were by this point dominant and widely accepted; 'most of us' thought that diet, exercise or smoking were the most important influences on health.[4] It then cast doubt upon the 'truth' of these assumptions, using evidence from the Whitehall studies and complementary studies by researchers such as economic historian turned epidemiologist Richard Wilkinson, American neuroscientist Robert Sapolsky and Hungarian epidemiologist Mária Kopp. The Whitehall research was presented as disruptive to the hegemonic lifestyle narrative of public health, attempting to replace it with structural and materialist explanations of disease causation or what would become known as the 'social determinants' of health.[5]

This article explores this argument, examining how the Whitehall researchers critiqued lifestyle and provided alternate narratives. It looks at the political uses to which the Whitehall research was put, as the researchers campaigned for action in addressing health inequalities. But it also situates this research and advocacy in the context of discussions of class and inequality in end-of-the-century Britain, as politicians of all stripes spoke of—to quote Conservative Prime Minister John Major, and allude to a recent popular history of the 1990s—'a classless society'.[6]

The first section examines Whitehall I's mobilisation of 'class' and its relation to disease, using cultural theorist Raymond Williams' definition of the term. It argues that Whitehall elevated class from use merely as a control variable to a key determinant of health in late-twentieth century Britain. The second looks at Whitehall II's attempts to refine this relationship, contributing to the burgeoning field of health inequalities research during the 1980s, introducing a new model of 'stress', and in doing so unsettling this dominant narrative of lifestyle in post-war British public health. The final section looks at how these ideas were (and were not) in conversation with wider discourses around class in late-twentieth century Britain by examining the rhetorical use of Whitehall by one of its directors, Michael Marmot, in communicating his critique of societal inequalities to the public.

Whitehall I: developing a class-based analysis of health, 1968–1984

In 1978, the first Whitehall study group published a paper in the *British Medical Journal* (*BMJ*) that examined the 'changing social-class distribution of heart disease'. They noted that although 'usually considered a disease of affluence … contrary to popular opinion, CHD [coronary heart disease] is not more common among the more affluent classes'.[7] Indeed, their analyses showed that 'since 1951 the risk of heart disease has increased progressively for men and women in classes IV and V [i.e. the working class] relative to

those in classes I and II [i.e. the upper classes]'.[8] What might explain these differences? The authors largely rejected socioeconomic deprivation as a cause, noting that in the 1930s it had been the upper-classes that had suffered from heart disease disproportionately. They looked instead at the diet and smoking habits of the lower classes, hoping that these recently identified lifestyle causes of heart disease might explain the discrepancy. Although smoking was indeed more common amongst the working classes, this 'risk factor' could not 'completely explain the social-class distribution of heart disease'. Could it be that class itself—the hierarchies that underpin a society—might at least partly explain 'the worsening mortality' of the working class?[9]

In the same decade, the Marxist theorist Raymond Williams wrote extensively on class in *Keywords*, his 1973 'vocabulary of culture and society', tracing the brief history of the term, and what it meant in the present day. As a prominent public intellectual who was influential in contemporary discussions about cultural phenomena, particularly for those on the left, his definition provides a framework in which to situate the Whitehall research, both contextually and conceptually. For Williams, three 'variable meanings of class' were used 'in a whole range of contemporary discussion and controversy … usually without clear distinction', a shortcoming that was as true of the Whitehall researchers as it was elsewhere. Williams' definition therefore offers a contemporaneous typology that provides clarity on the Whitehall researchers' understanding of class and inequality. For Williams, 'class' could mean either a 'group' (i.e. a socio-economic category), a 'rank' (indicating relative social position) or lastly 'formation', to describe organisation along social, political or cultural boundaries.[10]

All three meanings were mobilised in the epidemiologists' paper. The material conditions of the working class ('group') had been considered and then disregarded as a cause of worsening mortality; their relative position ('rank') in the social hierarchy had been used to try and throw light on the aetiology of heart disease; and finally, their social and cultural preferences ('formation')—for cigarettes, for certain types of food—had been instrumentalised to explain disparities in health across Britain.

This section uses Williams' definition to investigate how these same researchers' cohort studies of British civil servants—which would become known as the Whitehall studies—elided 'group', 'rank' and 'formation' to think about health and class throughout the latter part of the twentieth century. In doing so, the dominant narrative of individuals' health behaviours—smoking, drinking, exercise and diet—as an explanation for heart disease and health more broadly, was disrupted. But if the Whitehall studies are difficult to conceive of without consideration of their (at least partial) rejection of the prevailing orthodoxies of risk factor epidemiology, this article also argues that they must also be placed in the context of the 'rediscovery of poverty' in the 1960s and 1970s by social reformers. Finally, the section notes the political impact of the studies in helping to coin the neologism of 'health inequalities'.

The first Whitehall study was conceived of as a cohort study, consciously modelled on the hugely influential research on heart disease conducted in Framingham, Massachusetts.[11] Indeed, Marmot and Eric Brunner, two key individuals in Whitehall II, ruefully suggested that it was a 'British Framingham … "British" in that it was done on the cheap'.[12] Framingham had established the concept of the 'risk factor', a term that described 'a pattern of behaviour or physical characteristic of a group of individuals that increases the probability of the future occurrence of one or more diseases in that

group relative to comparable groups without or with different levels of the behaviour or characteristic'.[13] However, the ambitions of the proposed survey of civil servants had developed beyond the mere establishment of risk factors for chronic disease, and on to how such conditions might be prevented.

Brokered as a collaboration between a team at the London School of Hygiene and Tropical Medicine (LSHTM) led by Donald Reid and Geoffrey Rose, together with Harry Keen, a diabetologist at Guy's Hospital, it hoped to recruit up to 20,000 male civil servants aged over 40 years, all working in the administrative district of Whitehall, central London.[14] Civil servants were seemingly chosen for two principal reasons. Firstly, they offered a stable, fairly homogenous and compliant population with which epidemiologists could work, allowing them to do follow-up studies on a particular issue, opportunities of which the Whitehall researchers availed themselves, with regards to smoking, diet and physical activity.[15] Secondly, and perhaps reflecting the 'gentlemanly' nature of post-war (social) science, the deal to conduct the Whitehall study was sealed with a meeting between Reid and his friend Daniel Thomson, the Chief Medical Advisor to the civil service, at the Athenaeum Club, a private members' club yet to admit women.[16] Thomson, as discussed below, had already conducted surveys of occupational health amongst the civil service, and would continue to offer practical assistance throughout the first study.

At outset, the first Whitehall study was primarily 'concerned with diabetes and certain heart and lung conditions' and what might be done about them, reflecting both chronic diseases' status as leading causes of mortality, and the growing interest in preventive health in the 1970s.[17] As it informed the participants, 'it is now possible for doctors to detect certain states of ill-health at a very early stage before complications develop and when they are likely to improve with simple preventative measures'.[18] Using a number of biometric measurements taken at first registration, and following the men's health over an initial five years through their sickness absence and notifications of mortality, it hoped to identify men that were at particularly high risk of disease. These research subjects would then be funnelled into different arms of the study, focussing on smoking cessation, obesity and controlling diabetes.[19]

Class and hierarchy were absent from these planning documents, but significantly the men that were recruited to the study came from all ranks of the civil service; from the lowliest 'Messengers' to the most elite 'Administrators'. For Marmot and Brunner, this was apparently merely a 'matter of good housekeeping', following the epidemiological conventions of the day:

> "social class" was not an object of study but a control variable: a potential confounder that you got rid of in order to arrive at the "correct" conclusion about the association between risk factor and disease.[20]

This 'housekeeping' did however differentiate the Whitehall study from other contemporaneous studies of civil servants, such as one conducted by LSHTM colleague Jerry Morris on physical exercise, which only included middle-ranking 'executive' grade government employees.[21] Nonetheless, the study was firmly in the mould of existing cohort studies, and the first few papers published from it throughout the mid 1970s concentrated on diabetes and smoking, with little comment made about any disparities between grades.[22]

By the late 1970s however, something had shifted, signalled by the publication of the *BMJ* paper mentioned above, on the social class distribution of heart disease. This was followed shortly after by a paper on inequalities specifically within the Whitehall cohort.[23] There are several different explanations for this change in direction, which also help to illuminate the Whitehall study's use of class. The first is the arrival of Marmot in 1976, a British epidemiologist who had grown up in Australia, and having completed a PhD at Berkeley, returned to his mother country to work on Whitehall. Study directors Reid and Rose asked Marmot, given his interest in 'social and psychosocial things' from his doctoral research on heart disease in Japanese migrants to the US, to look at 'what grade men were in the civil service, where they were in the hierarchy'.[24] Marmot had been deeply influenced by the work of his supervisor, Len Syme, a medical sociologist who had 'had his thinking shaped by the insights of [Émile] Durkheim' and published on the apparent relationship between social class and a range of otherwise unconnected diseases. In an explication of Williams' definition of class, Syme's work suggested that both the lower social classes habits ('formation'), and their relative position in society ('rank') might be responsible for this apparent 'susceptibility' to disease.[25]

The second explanation is the data itself, which when examined by rank of employment, showed a gradient across a number of different measurements:

> Men in the lower employment grades were shorter, heavier for their height, had higher blood pressure, higher plasma glucose, smoked more, and reported less leisure-time physical activity than men in the higher grades.[26]

Here then, research subjects are viewed as Williams' 'formation'; what identified these men with a certain class or grade is their physical attributes and their social habits. But most significantly for the Whitehall researchers, '[m]en in the lowest grade (messengers) had 3.6 times the CHD mortality of men in the highest employment grade (administrators)', a trend that was proportionately observed across all grades.[27] Was it the aspects that made up their 'formation' as a grade or social class, or was it their 'rank', or place in the hierarchy that contributed to this disparity? The results had confounded Marmot's expectations and prevailing popular views; it was not those in the most high pressured, elite roles that had the worst rates of heart disease, but amongst those in comparatively lowly, unskilled work.

However, this pattern should perhaps not have been as unexpected for the study directors as it was for Marmot. Previous research for the civil service conducted by Thomson, had also demonstrated health disparities between employment grades. As historian Debbie Palmer has noted, *The Sickness Absence Report* published in 1970 had reported that '[l]ower-grade civil servants experienced the highest incidence of illness in all eight of the disease categories studied.'[28] Thomson's interpretation of this data was less than sympathetic to those in the lower grades, arguing that those in elite positions were less susceptible to illness; their superiority was a reflection of 'hereditary, environmental and intellectual factors'.[29] Thomson's eugenically-tinged understanding of social mobility was very much in keeping with broader mid-century population research.[30] As Palmer argues however, this focus on individual resilience rather than socioeconomic or psychosocial explanations contrasted sharply with Marmot's later work. Ironically however, both shared a view of class consistent with Williams' idea of 'rank', albeit from very different perspectives. For Thomson, 'rank' mattered, as an expression of intrinsic physical

and mental qualities rewarded by appropriate places in the hierarchy. For Marmot, class was also about 'rank', but from the position that it was the hierarchy itself that had material impacts on the health of those on the lower rungs. Thomson died in 1976, with Reid also passing away a year later; it would not be too unfair to suggest that in their absence the comparatively radical critique of Rose and Marmot had greater room for expression.

But the Whitehall researchers were not alone in thinking about the disparities in health outlined in their paper on social class and heart disease. As Charles Webster has observed, a British tradition of observing health inequalities between social groups goes at least as far back as Edwin Chadwick or Friedrich Engels.[31] Nevertheless, 'although inequalities in health have represented a continuing and serious social problem, active investigation tend to have been very a periodic phenomenon, stimulated by perceptions of social crisis … [such as] the 1970s'.[32] Work by sociologists and health professionals such as Ann Cartwright and Julian Tudor Hart would probably have been familiar to the Whitehall researchers.[33] However, the main areas of concern at this point centred on disparities in health service access and provision, an issue pithily encapsulated in Tudor Hart's 'inverse care law'. This held that the poorer the area, in which there were the greater healthcare needs, were also the more poorly served.[34] Consequently what was relatively novel about the Whitehall researchers' contribution lay predominantly in their attention to class as a determinant of disease itself, rather than how or whether it was adequately treated. Still, this class-based analysis was clearly part of a wider trend.

This tendency was illustrated in January 1979, with the publication of an article in *The Lancet* written by Jerry Morris that pointed out that in terms of mortality 'the professions do well, unskilled workers and their families particularly badly'; in short, 'social inequalities [remained] undiminished'.[35] This was a curtain-raiser for a report on inequalities in health that Morris was writing alongside the former Chief Medical Officer Douglas Black, professor of sociology at the University of Essex Peter Townsend, and Cyril Smith, secretary of the Social Science Research Council. The Black Report, as it would become known after its chair, was published in August 1980 by the newly incumbent Conservative government in controversial circumstances.[36] Historians and public health campaigners have viewed this as a pivotal moment in bringing the new concept of 'health inequalities' (i.e. disparities in health outcomes between social classes, ethnicities and genders) to public attention. The Whitehall data was not cited by the Black Report, but both projects' had shared influences. The Black Report had been initiated by a Labour government, goaded by an open letter to health minister David Ennals, published in *New Society*.[37] Drafted by Richard Wilkinson, it pointed out that '[a] lmost all the major causes of death … are two or three times more common among unskilled manual workers and their families (social class V) than among senior professional and managerial families (social class I)'.[38] Wilkinson believed that diet might play a large part in these differences, and his letter had been based on research he had conducted while studying for a MSc at Nottingham University, and subsequently published as part of an essay competition run by the food manufacturers Van Den Berghs Ltd.[39] This had itself received sizeable press interest, and the Whitehall researchers' *BMJ* paper was in part a response to this, subjecting the hypothesis to closer scrutiny and concluding that in their view, diet did not play such a significant role in explaining higher mortality, at least from heart disease, amongst the working class.[40]

Wilkinson's analysis was suggestive of Williams' 'formation' class categorisation, in which the lower classes' shared habits—in particular their fondness for what he viewed as a poor diet—defined them against the upper classes. The Whitehall researchers, whilst partially accepting Wilkinson's analysis, insisted however that their data illustrated the primacy of 'rank' or place in the hierarchy as the strongest explanation for differences in mortality and morbidity.

These links with the Black Report also demonstrated the intellectual heritage, albeit largely unacknowledged, of the Whitehall researchers. Marmot wrote of 'extensive discussions with Jerry Morris which influenced me greatly', but it was arguably the work of another Black Report author, Peter Townsend, that left its imprint on the Whitehall researchers.[41] Townsend contributed significantly to the 'rediscovery of poverty' in the 1960s and 1970s, both from theoretical and campaigning perspectives with his *The Poor and the Poorest* (co-written with prominent economist Brian Abel-Smith) and founding of the Child Poverty Action Group.[42] Townsend pioneered an understanding of 'relative poverty', distinct from 'absolute poverty', that Whitehall's insights—that social inequalities, rather than poverty per se, contributed to ill health—could not exist without. Substantive direct links between the Whitehall researchers and the poverty lobby of the 1960s and 1970s are difficult to trace, although Harry Keen was married to Marxist sociologist Ralph Miliband's sister, Nan. More likely, the influence was passed down by Morris, who maintained close friendships with Richard Titmuss, Abel-Smith and other members of 'the Keppel Club', an informal network of social and medical researchers that met at LSHTM.[43] Marmot has tended to cite more international intellectual influences such as Israeli sociologist Aaron Antonovsky or Indian economist Amartya Sen, but his approving quote of Morris—that 'poverty and inequality … overlap but are by no means the same'—betrays the debt.[44]

Clearly the Whitehall researchers were now starting to view class almost entirely in terms of 'rank' or relative position, rather than as one defined by shared cultural habits or in socioeconomic terms. A 1981 paper by Rose and Marmot rejected absolute poverty as having anything to do with heart disease ('[e]xperience in Third World countries shows that where poverty is prevalent, coronary heart disease is rare'), as well as many of the lifestyle risk factors, concluding that 'a man's employment status was a stronger predictor of his risk of dying from coronary heart disease than any of the more familiar risk factors'.[45] Only a third of the disparities in deaths from heart disease between grades could be explained by known risk factors such as cholesterol, obesity, smoking or sedentary lifestyles.[46] This realisation, that the Whitehall researchers were dealing not with the effects of material deprivation on health, but something else, led Marmot and his colleagues to start to investigate what he described as 'psychosocial factors'.

Whitehall II: refining the critique and establishing the field, 1985-c.2010

The second Whitehall study was subsequently set up to investigate, in more depth and greater refinement, the critique that the first had advanced; that class and hierarchy were of critical importance to health. But beyond confirming this hypothesis, there were also many questions still to be answered. As Rose put it, these investigations

> 'would have to be very wide ... The responsible factors may be genetic, connected with early environment, medical selection into or out of employment, current physical or psycho-social influences, or a combination of these factors. The mechanisms ... might range from effects of diet (affecting perhaps thrombosis and/or blood pressure), to psycho-social stress operating through the neuro-endochrine [sic] mechanisms, perhaps on blood pressure'.[47]

In contrast to Whitehall I, research subjects would not be screened once and followed up remotely. Rather, the researchers 'planned regular contacts with the cohort to track changes in social and economic circumstances, psychological states, health behaviours, and biological pathways'; in short, they 'wanted a study that was not done on the cheap'.[48]

In practical terms, this meant that the Whitehall researchers spent a good deal of time writing grant applications, which reveal some of the aims and ambitions of the project. One of the earliest, written by Rose in 1979 to the British Heart Foundation, demonstrated how the investigators viewed their work, and also who they felt were their allies in the endeavour. Noting the social class differences in heart disease mortality across the Britain, Rose suggested that continuing to examine members of the Whitehall bureaucracy might provide some answers:

> The reason why the relation between social class and disease shows up very clearly [in Whitehall] is perhaps that this is an unusually hierarchical and orderly society, an individual's occupational level accurately identifies his exposure to those causal influences which are related to social class.[49]

Following the Black Report, a cottage industry of researchers looking at social class had been catalysed. Writing in *The Lancet* in 1986, Alex Scott-Samuel, a public health doctor in Liverpool, provided a concise summary of the depth and breadth this health inequalities research. He noted 'the number of "local Black reports" by both statutory and community agencies' that had been produced, as well as placing the Whitehall research alongside recent work by sociologists and social policy researchers such as Mildred Blaxter, Julian Le Grand and David Blane.[50]

Blane in particular had focused on the Black Report as a means to address some of the main criticisms that had been levelled at health inequalities research, including Whitehall. His analysis identified four main explanations for the disparities that Black had identified; artefact, selection, cultural or behavioural, and materialist.[51] The artefactual critique referred to the argument that the five social classes defined by the Registrar General since 1913 were too crude to describe the complexities of class and its relation to occupation. Furthermore, it was argued that 'the workforce in semi and unskilled manual jobs is shrinking as such work is increasingly mechanised and automated ... newer [younger] recruits to the workforce must move into skilled or white-collar jobs'.[52] The consequence of this, particularly for causes of mortality such as coronary heart disease, was that disparities would be exaggerated because older people would be overrepresented in lower social classes. While this explanation could be relatively easily eliminated by adjusting for age in statistical models, Blane also cited Whitehall I as being instrumental in rejecting this explanation, as the clearer hierarchical divisions present in an otherwise 'homogenous industry' than in society at large meant that 'rank' itself was plainly a factor. Indeed, when planning Whitehall II, researchers thought carefully about the way in which different jobs in the civil service were to be grouped in the hierarchy.

While Marmot had thought about retaining the same simple grade categories as Whitehall I for comparability purposes, ultimately a more complex grading system was adopted.[53]

Ultimately Blane was insistent that '[o]nly materialist explanations can simultaneously account for both … the improvement in general health and the maintenance of class differences in health' observed in post-war Britain.[54] Importantly, he argued that lifestyle explanations could also be subsumed into this analysis, again citing papers from the first Whitehall study to bolster his arguments. Individuals did not make choices unconstructed by their socioeconomic circumstances; 'behaviour cannot be separated from its context'.[55]

Blane's assessment of the Black Report provides a snapshot of the key issues in heath inequalities research as the Whitehall researchers initiated the second study between 1985 and 1988. Firstly, the evidently contested nature of health inequalities research, and the theoretical challenges directed at it, prefigure the controversy that would engulf *The Health Divide*, published in 1987 and widely viewed as the follow-up to the Black Report.[56] Secondly, it also provides an example of Whitehall's findings beginning to be mobilised for political and advocacy purposes. Finally, by comparing it to some of the planning documents of Whitehall II it shows how the researchers were part of a wider conversation, in attempting to anticipate criticisms of their work to which the wider health inequalities community had been subjected.

Blane's personal recollections elsewhere of his experiences also reveal the tight professional and educational links between many of these researchers, extant since at least the early 1970s. He identified the postgraduate courses in Social Medicine at LSHTM and Medical Sociology at Bedford College, the latter run by George Brown and Margot Jefferys, as training grounds for those interested in health inequalities.[57] The work of this pair, and particularly Brown, was important to another significant strand of the Whitehall II research, as the researchers investigated stress as a potential mechanism. As Rose explained, 'psychosocial stress needs to be considered seriously in relation to social class difference in CHD with which we are concerned'.[58] The team therefore sought to collaborate with Jefferys and Brown.[59] Brown already had a great deal of experience, as historian Rhodri Hayward discusses, 'connecting stress to a particular event and particular form of temporality', in relation to schizophrenia patients at the Maudsley Hospital, south London.[60] Rose had been 'particularly impressed by [Brown's] work in this field … His "life-events" technique is based on a combined assessment of stressful but objectively describable events (job change, bereavement, divorce etc.) and personal factors predicting vulnerability to these events'.[61]

Historian Mark Jackson argues that 'stress is a hybrid phenomenon, the product of both biological and cultural forces rendered visible by the technology and language of biomedical science' throughout the twentieth century, while Fay Bound Alberti traces the cultural history of the heart as the seat of emotions from antiquity to the present day.[62] Despite the apparent displacement of the heart by the brain as the body's emotional centre in the nineteenth century, the link between an emotional state—stress—and the physical effects on the heart persisted into the mid-twentieth century, most notably in the Type A hypothesis, first coined by San Francisco cardiologists Meyer Friedman and Ray Rosenman in 1959.[63] Indeed, arguably Type A arrested what Alberti terms 'the decline of the emotional heart'.[64] Robert A. Aronowitz and Elianne Riska have written extensively on

'the rise and fall of the type A man', albeit primarily from an American angle, and Aronowitz suggests that 'excessive competitiveness and time urgency was embraced by mainstream medicine in the 1960s and 1970s but ultimately failed to enter the canon of widely accepted risk factors'.[65] In a British context, and as the second Whitehall study was being planned however, the concept still held sway, with Rose noting that:

> The rise in CHD was associated with mass changes towards a higher time pressure and competitiveness of life style … it has been shown that the so-called "Type A" behaviour pattern predicts an increased risk of CHD, independently of other major risk factors.[66]

To investigate this hypothesis, and more importantly, look at how stress was related to inequality, '[m]ore sensitive techniques of measurement need[ed] to be developed to measure "stress" related to work, travel, housing, finance, marital support, etc'.[67]

These early plans of the Whitehall researchers reveal both the wider state of current research on stress in the late 1970s and early 1980s, and hints towards the study's own reframing of the concept. Firstly, there was an acceptance that stress was in some way connected to the rise of heart disease in Western countries, that this epidemic was in some way connected to modern life, and that some individuals might be particularly vulnerable. Yet, as Aronowitz suggests, this was still very much contested. Indeed, later in the 1980s, the Health Education Authority declined to foreground stress in their Look After Your Heart campaign, noting that 'the effect of stress on the heart has not been clearly established.'[68] Nonetheless, the Whitehall researchers took at face-value the evidential basis for the Type A hypothesis, but also acknowledged that their own findings from the first study somewhat contradicted the model of individual executive stress as a cause of heart disease. In seeking to answer this paradox, they sought out connections with other emerging models of stress, somewhat outside epidemiology, and concerned with a potentially more temporally and social dynamic model than one that saw stress merely in terms of an individual's emotional response.

However, the proposed partnership with Brown and Jefferys ultimately never materialised, perhaps due epistemological differences that Rose hinted at in a letter to a civil service colleague following initial meetings:

> [I]t is not all that easy for epidemiologists and sociologists to collaborate, since they tend to see life in different terms. So far, however, both parties remain of the opinion that the other side (however limited their views) does have something distinctive and potentially important to contribute … we emphasised to George Brown that the interview instrument on which he and Eileen Lusted are working would be of ultimate epidemiological value only in so far as in time it can become simple and standardised.[69]

Despite the wry tone, the compatibility between each discipline was stretched to near breaking point as epidemiology's primary concern with standardisation and measurement sat awkwardly with the sociologists' desire for a less quantitative approach. The Whitehall researchers had considered using 'existing instruments that have already been validated (e.g. … the Framingham and Bortner questionnaires, for "Type A/B" behaviour classification)', but had found these somewhat unsatisfactory for a British context.[70] They therefore remained committed to a social model of stress, following Marmot's secondment to the Karolinska Institute in Stockholm to work with Töres Theorell on studies that linked job dissatisfaction with coronary heart disease.[71] Marmot's three months there in 1984, shortly before the launch of Whitehall II, were highly influential on his thinking,

particularly the finding 'that a stressful working environment was not just one that was busy, but one characterised by a combination of high demands and low control'.[72]

The first major paper from Whitehall II, published in 1991, reported similar results to its predecessor; 'in the 20 years separating the two studies there has been no diminution in social class difference in morbidity'.[73] Marmot and his colleagues argued that this could at least partially be explained by different working experiences across grades. Stress was a function of hierarchy, but not in the way that had previously been popularly assumed. Those in lower grades, who sat through days of 'monotonous work characterised by low control and low satisfaction' suffered worse outcomes than those in the higher grades, and furthermore 'were likely to have reported two or more of eight potentially stressful life events in the previous year'.[74] In building this model, it combined two different ideas about stress. It could be both acute, as in Brown's hypothesis of life events, but also chronic, where either the life event might be a trigger for an unfolding temporal process, or, as the Whitehall studied principally argued, stress was the result of the daily grind. The key feature was that both chronic and acute stress was more likely for those in lower grades. Stress was intimately linked to inequality.

Whitehall II had broadened the focus of the original Whitehall study, decisively moving from a study of civil servants' lifestyle to a new study that considered the psychosocial effects of their place in the workplace hierarchy, as well as in the domestic sphere, bringing in a gender dimension absent from the first study.[75] The second study had also refined its methods to address the key issues that faced the health inequalities field in 1980 and into the 1990s. The researchers also began to triangulate their findings with some more unusual sources, outside the close network of health inequalities researchers that had hitherto been their peers. In *The Great Leveller* documentary, Brunner claimed credit for identifying the links between the hierarchical differences observed among civil servants and those investigated by Robert Sapolsky in his studies of baboons and their own social orders. Although this comparison would inevitably elicit mischievous comment in the press, the connection would prove to be a highly fruitful one, providing much of the supporting evidence to Marmot's popular science book *Status Syndrome*, first published in 2004.[76] As their work started to be used in political discourse, the Whitehall researchers had ensured that the second study provided a depth of analysis that could not be present in the first study. But although it exhibited methodological sophistication, it was perhaps less attuned to wider discourses around social class and inequality in late twentieth century Britain.

'What was true in Whitehall was true in Britain as a whole'

For the Whitehall researchers, public health was inherently political. Writing in 1990, Rose underlined the most important lesson that Whitehall had taught him:

> In research in the civil service my colleagues and I found that mortality among workers of the lowest skill grades was more than three times greater than that among the top brass. This illustrates Britain's scandalous social class inequalities in health … Here lies perhaps the greatest of today's public health challenges. Its causes are economic and social, and so its remedies must also be economic and social. Medicine, health, and politics cannot be kept apart, and they should not be kept apart.[77]

Marmot would take this latter point and use it as the basis for *Status Syndrome*. Marmot was already well-established by this point, and this book and its successor *The Health Gap* would only cement his status as something approaching a biomedical celebrity with his knighthood, appearance on *Desert Island Discs*, and numerous international speaking engagements.[78]

The reputation of the Whitehall studies also continued to rise throughout the 1990s. As their research demonstrated 'that socioeconomic differences in health status have persisted over the 20 years separating the two Whitehall studies', they began to become a byword for health inequalities in public discourse, particularly by politicians wishing to succinctly draw attention to the epidemiological evidence.[79] Marmot cannily used the evidence in the publication of the Acheson report on health inequalities in 1998, and would lead his own review of the issue in 2010.[80]

With *Status Syndrome*, Marmot wanted to challenge society's relationship with public health; it was an attempt to influence the public sphere, and advocate to politicians and policymakers the scientific imperative of a fairer, more equal society. To make these arguments, Marmot corralled an impressive array of evidence, but the Whitehall study was ever present. In the introduction, he set out his argument:

> I began my research on civil servants in 1976 with the Whitehall studies … Britain was and is a stratified society, and no part of it is more exquisitely stratified than the British civil service. When I published our finding … the first reaction was civil servants, who cares! But what was true in Whitehall was true in Britain as a whole. The barely concealed reaction from other countries was: Ah! The British! What else can you expect from class-ridden Britain?[81]

Marmot argued that inequalities in health had been found across Western nations, even those thought to be relatively egalitarian, such as Sweden. As he noted elsewhere, 'Whitehall, far from representing an atypical postimperial backwater, [was] typical of the developed world'.[82]

Marmot went on to explain what he viewed as the mechanisms for this in laymen's terms, drawing on Sapolsky's animal studies, as well as the less esoteric fields of neuroscience and experimental psychology to justify his argument.[83] He also took care to elucidate for a general audience the arguments that had raged in the health inequalities research community in the 1980s; the hypothesis that healthier people were 'selected' into higher classes, as well as 'the usual suspects: bad habits, lack of access to medical care, unlucky genes'.[84]

Marmot's critique of these 'bad habits' or 'lifestyle' laid out his personal view of the way in which the debate had shifted throughout the period in which he had been researching. He reported that 'the general view' in 1978, had been that 'major diseases such as heart disease could be attributed to freely chosen lifestyle'.[85] He reeled off 'the evidence', accumulated by epidemiological studies over the last half a century and by this point firmly embedded into public consciousness:

> It is certainly true, as any reader of this book knows, that high-fat diet and high-plasma cholesterol are bad for heart disease. Smoking is a killer, in a variety of ways. Little exercise and too much food leads to obesity, diabetes and heart disease … Whitehall confirmed all of these findings and, further, showed that the lower the employment grade, position in the hierarchy, the more adverse these health behaviors were.[86]

Marmot rejected lifestyle as being sufficient explanation for health inequalities, again drawing on Whitehall, pointing out that lifestyle risk factors only accounted for a 'modest' third of the disparity between grades.[87] Marmot acknowledged however that apparently unhealthy behaviours were more common lower down the social classes. His explanation of this phenomenon was similar to his assessment of health inequalities in general; it was all a matter of 'control'. This linked back to the Whitehall researchers' theory of stress, discussed in the previous section. Stress, brought about by a lack of control over one's day-to-day existence, was the mechanism by which inequality manifested disease. He argued that people in the lower grades of the civil service, and by extension in lower social classes, had their needs for 'control and participation' less well met than those in the upper classes; not only did this have effects on people's health behaviours, but also disease itself.[88]

In Marmot's view, lifestyle public health failed to address the core issues of an unequal society. Whitehall presented a microcosm of this society, and demonstrated that what were by now accepted risk factors such as diet, exercise and smoking, did not provide a convincing enough explanation for disparities in health. The Whitehall studies, despite originating as conventional risk factor studies, had in fact complicated and disrupted the lifestyle paradigm.

But Marmot's rhetoric of 'class-ridden Britain' also points to a paradox in the Whitehall studies, health inequalities, and this moment in modern British history more widely. As historian Florence Sutcliffe-Braithwaite has noted, the 1980s into the 1990s marked a period of widening income inequality in Britain, but simultaneously a decline in the currency of class as an appropriate analytical discourse.[89] While Sutcliffe-Braithwaite suggests that 'the late 1970s and early 1980s did see something of a spike in cultural interest in "class"', this interest was arguably that of the eulogist, as sociologist Gordon Marshall, amongst others, noted in 1988:

> obituaries … have been published for social class and social class analysis. The most important of these in the British context are those of restructuring capital and labour; the growing complexity and consequent opacity of class processes; emergence of instrumental collectivism as the epitome of increasingly sectional distributional struggles; privatization of individuals and families; and fatalistic acceptance of structural inequality allied to an inability to conceive of any alternative.[90]

By the mid-1990s, historian Patrick Joyce was writing that 'class is seen by some to be unequal to the task of explaining our present reality.'[91] Such dissatisfaction was palpable across the British political spectrum, as the electoral dominance of the Conservative party gave way to a New Labour regime that was, famously, 'intensely relaxed about people getting filthy rich'.[92] To what extent were Marmot, the Whitehall researchers, and the health inequalities field in conversation with these significant cultural and political shifts?

Inevitably, the spectre of Margaret Thatcher's premiership hangs over this period. Historian David Cannadine has argued that

> like Disraeli and Churchill before her, she saw society as a ladder, with "differentials at every level," and she was deeply opposed to any government intervention intended to undermine it, or lay it flat, or break it, or remove it.[93]

Furthermore, Thatcher was also 'determined to drive the language of class—and the idea of class conflict—off the agenda of public discussion, and this was something she very

successfully accomplished.'[94] Of course, such determination was not without opposition, and the health inequalities research of the 1980s can be placed among this resistance. Thatcher contended in 1988 that:

> In the world in which we now live, divisions into class are outmoded and meaningless. We are all working people who basically want the same things. We all share the desire for higher standards of living, of health, of education, of leisure.[95]

The response to this sort of rhetoric from health inequalities researchers was that while all might share the 'desire', this was less achievable for those lower down the socioeconomic scale, and that furthermore the policies of Thatcher in exacerbating income inequality were making these 'higher standards … of health' ever less attainable. George Davey Smith, an epidemiologist who would later join the second Whitehall study, stated in 2016 that his work in the valleys of south Wales 'very soon after the miners' strikes' was motivated by a desire for 'people to say that heart disease was caused by Margaret Thatcher and capitalism ultimately.'[96]

But in terms of the left—of which the Whitehall researchers might well be included—ideas about class were also being reconfigured, arguably independently of Thatcherism. Sutcliffe-Braithwaite notes how the influential contributors to *Marxism Today* wrote of 'New Times', providing 'a compelling vision of the decline of "class"'. She quotes the sociologist John Urry, writing that, at that moment in 1988:

> Social life, culture and politics are no longer organised in terms of social class … because current inequalities of income, wealth and power do not produce homogenous social classes which share common experiences … [and] because a much wider variety of other social groups are able to organise.[97]

Indeed, shifting ideas about class were not just being expressed by the political or chattering classes; Mike Savage has used a Mass Observation directive from 1990 to argue that for the participants, class was 'presented as a matter of agency, rather than as something handed down, something which anchors an individual's biography in a larger frame' expressed in anecdotes about 'not knowing how to use a napkin, being a housewife, rising to a middle class job'.[98]

The Whitehall researchers were also concerned with agency, acknowledging that civil servants might move up—and down—the hierarchy. Marmot had lamented privately that 'when examining the relationship of grade to mortality in the original Whitehall Study, we had no information on job histories.'[99] Whitehall II attempted to address this by maintaining regular contact with the civil servants, asking questions about their employment history to provide a more rounded picture of their career development. But Marmot was also insistent that an individual's social mobility had a limited effect on health outcomes, arguing that 'while it was true that people who rise up the social scale are healthier than those they have left behind … these upwardly mobile people are *less* healthy than others in the class of their destination.'[100]

More broadly however, the political mood music of Major's aspiration towards a 'classless society … in which people can rise to whatever level … from wherever they started', suggested that if class had not completely declined in the previous decade, then the conversation had become about, in many people's minds, equality of opportunity, rather than inequality of resources.[101] Class was more social than socioeconomic; about

'formation' rather than 'group' or 'rank', to return to Williams' typology. An extension of this framing of class and inequality is provided by Lynsey Hanley in *Respectable*, her memoir of personal social mobility from working to middle class in the early 1990s, which argues powerfully that class in Britain was and remains as much experiential as materialist.[102] Whitehall was to a certain extent attuned to this discourse, most particularly in its treatment of stress as the biological pathway by which the health effects of inequality and hierarchy were manifested; '[i]t is the rank that drives the body's processes'.[103]

Despite this occasional synchroneity however between Whitehall's findings and wider political and social discourses, it was perhaps more accidental than the result of a deliberate intervention. Marmot would later report, somewhat disingenuously, a conversation with a Canadian academic, Fraser Mustard, in 1986, that

> [t]here are no policy implications [to the Whitehall research] ... Mrs Thatcher has declared that there is no such thing as society [sic] ... and the Department of Health [sic] has ruled that health inequalities are not a matter for discussion ... I am doing pure science.[104]

Marmot's tongue-in-cheek tone obfuscated his disengagement with wider political discourse and the belief that his own research should stand apart from political or policy considerations. In a rhetorical move beloved of biomedical researchers, Marmot made the claim for his research to be too important and too evidence-based to be caught up in the ideological and partisan world of politics.[105] But Marmot's claims of practicing 'pure science' were of course at odds with both the translation of his research into a popular book aimed at policymakers, politicians and the broader electorate, and the insider status which resulted in his later invitation to conduct a review of health inequalities in 2008 by then Secretary of State for Health Alan Johnson.[106] Cloistered in the worlds of public health and epidemiology, but eager to make a societal critique, Marmot was consequently more interested in transmitting his message than directly receiving signals from any wider cultural discourse about class and inequality.

Nonetheless, and despite Marmot's protestations that interest in health inequalities continued to be a 'minority interest', an 'inequality industry' emerged globally in the wake of the 2008 financial crisis, from a bestselling economic history by Thomas Piketty to American poet Frederick Seidel's collection entitled *Widening Income Inequality*.[107] In *Respectable*, Hanley approvingly quotes Richard Hoggart's contention that '[e]ach decade, we shiftily declare we have buried class; each decade the coffin stays empty.'[108] In recent years, books from Wilkinson with Kate Pickett and social geographer Danny Dorling have helped to highlight the issue to British politicians and policymakers.[109] Ahead of the 2010 election, Conservative leader of the opposition David Cameron promised to 'banish health inequalities to the history books', arguing they were one of the 'most unjust, unfair and frankly shocking things about life in Britain today'.[110] In thirty years, health inequalities had moved from an issue that Patrick Jenkin, the Conservative health minister when the Black Report was published, treated at best with 'considerable caution', to one that Cameron believed could be used to help convince the electorate to vote for his party.[111] Another decade further on however, and the hubris of Cameron's remark has been starkly exposed by the Covid-19 pandemic that, at the time of writing, continues to adversely impact the most marginalised communities, not least Black, Asian and minority ethnic (BAME) groups.[112]

Conclusion

Over the past decade, there has been a historiographical pivot towards re-using the fine-grained data from cohort studies and social surveys to reveal both individual lives and continuity and change over time, distinct from the primarily biomedical and sociological uses to which it was initially intended.[113] Similarly, historians have used these encounters between biomedical and sociological expertise and 'ordinary' people to critique the assumptions and prejudices of the former groups.[114] In turn, these trends have coincided with broader cultural interest in longitudinal studies, indicated by the acclaim that met science journalist Helen Pearson's *The Life Project*.[115]

While this article is informed by such developments, it takes a slightly different tack. The name Whitehall, a metonym for bureaucratic power in Britain, suggests at very first glance that the research participants were no 'ordinary' people. Indeed, its name might even superficially explain Whitehall's appeal to politicians wishing to gesture towards health inequalities when making a point in the House of Commons. But it was also the work of a consummate insider such as Marmot that took its societal critiques to wider audiences. This article has therefore re-examined the ideological, rhetorical and ultimately political uses of the Whitehall studies, to reveal how class and inequality were thought about in late-twentieth century Britain, and scientific attempts to make sense of such disparities.

It is intriguing that this critique of hierarchy and inequality should emerge in the same decade as sociologists were declaring the 'death of class'.[116] This article consequently complicates understandings of class in late twentieth century Britain. Where historians have assumed a narrative of declining importance of class, this examination of the Whitehall studies and the health inequalities field demonstrates that in some quarters, it continued to be a vital category of analysis. Despite the buoyancy of health inequalities discourse in socio-medical circles however, it had limited impact on political rhetoric or popular subjectivities of class.

Nonetheless, Whitehall redefined the type of critique that epidemiology and public health could make. Corroborating Whitehall's results with evidence from experimental psychology and neuroscience, Marmot in particular argued that stress was not the unfortunate side-effect of personal ambition but rather a relational response to an unequal and unfair society. Believing that the stratification that they observed among civil servants was replicated in wider society through the class system, the Whitehall researchers argued that inequality was a powerful force in society, its effects literally embodied by incidence of disease.

Notes

1. *The Great Leveller*. Broadcast 15 September 1996. [TV programme] Channel 4: Equinox https://www.youtube.com/watch?v=WmEt2WuMZ7E Last accessed 30 December 2019.
2. https://scholar.google.co.uk/scholar?um=1&ie=UTF-8&lr&cites=3593691914631654797Lastaccessed2September2020; https://plu.mx/plum/a/?doi=10.1016/0140-6736(91)93068-K&theme=plum-jbs-theme&hideUsage=true, Last accessed 2 September 2020.
3. Marmot and Brunner, "Cohort Profile," 251–6.
4. Mold et al., *Placing the Public in Post-war Britain*, 100–105.

5. Wilkinson and Marmot, *Social Determinants of Health*.
6. Turner, *A Classless Society*.
7. Marmot et al., "Changing Social-Class Distribution of Heart Disease," 1109.
8. Ibid., 1111.
9. Ibid., 1112.
10. Williams, *Keywords*, 66.
11. There is an extensive historiography on the Framingham study. For example, Aronowitz, *Making Sense of Illness*, 111–145; Giroux, "The Framingham Study," 94–112; and Oppenheimer, "Becoming the Framingham Study," 602–610.
12. Marmot and Brunner, "Cohort Profile," 251.
13. Rothstein, *Public Health and the Risk Factor*, 3.
14. Anon, "Health Survey in the Civil Service: Cardio-Respiratory Studies in Government Employees—Outline Plan" August 1968, *LSHTM Archives*, GB 0809 Whitehall 01/01.
15. Marmot, *Status Syndrome*, 278.
16. Marmot, *The Health Gap*, 13. Mike Savage contends that social science in the post-war period was part of a broader resurgence in "gentlemanly expertise." The adjective "gentlemanly" alludes to Cain and Hopkins" classic "Gentlemanly Capitalism and British Expansion Overseas," as well as denoting the masculine and socially privileged nature of many of its protagonists. See Savage, *Identities and Social Change in Britain*, 93–112.
17. Anon, "Health Survey in the Civil Service" n.d. (probably March 1968), *LSHTM Archives*, GB 0809 Whitehall 01/01.
18. Reid et al., "Health survey in the civil service" proforma letter to participants, n.d. (probably March 1968), *LSHTM Archives*, GB 0809 Whitehall 01/01. Clark, "Prevention and the National Health Service." See also Moore, *Managing Diabetes, Managing Medicine*.
19. Anon, "Flow Chart I: General Plan," 6 October 1966, *LSHTM Archives*, GB 0809 Whitehall 01/01.
20. Interview between Michael Marmot and Harry Kreisler, 18 March 2002, "Conversations with History" http://globetrotter.berkeley.edu/people2/Marmot/marmot-con3.html Last accessed 30 December 2019. Marmot and Brunner, "Cohort Profile," 251.
21. Morris et al., "Vigorous Exercise in Leisure-Time," 333–9.
22. Reid et al., "Cardiorespiratory Disease and Diabetes," 469–473; Reid et al., "Smoking and Other Risk Factors," 979–984; Rose et al., "Myocardial Ischaemia, Risk Factors and Death," 105–9.
23. Marmot et al., "Employment Grade and Coronary Heart Disease," 244–9.
24. See note 20 above.
25. Marmot, "Historical Perspective," 4. Marmot cited Syme and Berkman, "Social Class, Susceptibility, and Sickness," 1–8 as being particularly important to his subsequent work.
26. Marmot et al. "Employment Grade and Coronary Heart Disease," 244.
27. Ibid.
28. Palmer, "Cultural Change, Stress and Civil Servants' Occupational Health," 101.
29. Quoted in Palmer, "Cultural Change, Stress and Civil Servants' Occupational Health," 103.
30. Renwick, "Eugenics, Population Research, and Social Mobility Studies."
31. Webster, "Investigating Inequalities in Health before Black," 81.
32. Ibid., 82.
33. Cartwright and O'Brien, "Social Class Variations in Health," 77–98; and Tudor Hart, "The Inverse Care Law," 405–412.
34. Tudor Hart, "The Inverse Care Law," 405–412.
35. Morris, "Social Inequalities Undiminished," 87–90.
36. Berridge, "The Black Report and The Health Divide," 131–172.
37. Berridge, "The Origin of the Black Report," 120–122.
38. Wilkinson, "Dear David Ennals," 567.
39. Wilkinson, *Getting the most out of Food, 12th Series*, 41.
40. Marmot et al., "Changing Social-Class Distribution of Heart Disease," 1112.
41. Marmot, "From Black to Acheson," 1165.
42. Lowe, "The Rediscovery of Poverty," 602–611. See also Middleton, "'Affluence' and the Left in Britain," 107–138; and Sheard, *The Passionate Economist*, 196–204.

43. Fry, "The Keppel Club (1952–74)."
44. Morris, "Social Inequalities Undiminished," 88, quoted in Marmot, "From Black to Acheson," 1167. Marmot, "Capabilities, Human Flourishing and the Health Gap."
45. Rose and Marmot, "Social Class and Coronary Heart Disease," 17.
46. Marmot and Elliott, *Coronary Heart Disease Epidemiology*, 6.
47. Geoffrey Rose to A.B. Harrington, 16 June 1978, private collection.
48. Marmot and Brunner, "Cohort Profile," 251.
49. Geoffrey Rose, "Social Class and Coronary Heart Disease: Investigation of some possible underlying Factors," n.d. (accompanying letter dated 30 January 1979), private collection.
50. Scott-Samuel, "Social Inequalities in Health," 1084–1085.
51. Blane, "An Assessment of the Black Report," 423–445.
52. Ibid., 424.
53. Michael Marmot to Adrian Semmence, 22 March 1983, private collection. See Ferrie et al. "Change in health inequalities," 922–926 for explanation of the job grading methodology.
54. See note 50 above.
55. Ibid., 434.
56. See note 35.
57. Blane, "Health Inequalities," 16.
58. See note 47 above.
59. Ibid.
60. Hayward, "Sadness in Camberwell," 320–321.
61. See note 47 above.
62. Jackson, *The Age of Stress*, 16; and Alberti, *Matters of the Heart*. See also Kirby, *Feeling the Strain*.
63. Aronowitz, *Making Sense of Illness*, 146.
64. Alberti, *Matters of the Heart*, 141.
65. Riska, "The Rise and Fall of Type A Man," 1665–1674. Aronowitz, *Making Sense of Illness*, 145.
66. See note 47 above.
67. Ibid.
68. Department of Health and Social Services, "*Look After Your Heart*," 6.
69. Geoffrey Rose to Adrian Semmence, 8 May 1979, private collection.
70. See note 47 above and Heller, "Type A Behaviour and Coronary Heart Disease," 368 found in Whitehall II private collection written by Rose's colleague as well as Johnston, Cook and Shaper, "Type A Behaviour and Ischaemic Heart Disease," 86–89.
71. Anon, "Note of meeting, Tilbury House, Monday 19 June 1978," private collection.
72. Marmot, "2004 Balzan Prize for Epidemiology Acceptance Speech" 18 November 2004, Rome, Accademia Nazionale dei Lincei http://www.balzan.org/upload/EstrattoMARMOT.pdf Last accessed 2 January 2020.
73. Marmot et al., "Health Inequalities among British Civil Servants," 1387.
74. Ibid., 1391.
75. Chandola et al., "The Effect Of Control at Home on CHD Events in the Whitehall II Study."
76. For example, *The Times* City Diary column reported that 'the findings of a study of two sets of free-ranging primates … suggests while life may be lonely at the top, the lower down life's greasy pole you are, the more likely you are to suffer illness and premature death. The research "subjects" were 10,000 civil servants … and a number of Kenyan olive baboons who frolic on the Serengeti plains in East Africa … chosen because both life in hierarchical structures, both are bothered about status, and in both groups those at the top live longer.' The article was accompanied by a cartoon of pinstripe-suited civil servants swinging in trees. Anon "Bare Your Teeth at the Boss" *The Times* 65112, 15 November 1994, 27.
77. Rose, "Reflections on the Changing Times," 687.
78. While the acceptance of one of the highest ranks in the British honours system in 2000 by a researcher who has spent most of his career critiquing the deleterious effects of hierarchies might seem antithetical, Marmot did not see it in such terms. When questioned on the subject, Marmot replied that despite feeling 'uncomfortable', he had been congratulated on

the award by Jerry Morris who assured him that 'we, he was taking collective ownership of this, which of course I was absolutely delighted with—this feeling of embarrassment, which hadn't gone away, was certainly eased by having that endorsement'. *The Life Scientific: Sir Michael Marmot*. Broadcast 1 November 2011. [Radio programme] BBC Radio 4.http://www.bbc.co.uk/programmes/b016ld4q Last accessed 2 January 2020. *Desert Island Discs: Sir Michael Marmot*. Broadcast 11 June 2014. [Radio programme] BBC Radio 4. http://www.bbc.co.uk/programmes/b048j630 Last accessed 2 January 2020.

79. Marmot et al., "Health Inequalities among British Civil Servants," 1387–93. The Whitehall studies were first mentioned in the House of Commons on 20 July 1990 by Simon Coombs in a debate on "Good Health" (HC Deb 20 July 1990 vol 176 cc1315-51) and were mentioned on a further four separate occasions up until 2000.
80. Acheson, *Independent Inquiry into Inequalities in Health*; and Marmot, *Fair Society, Healthy Lives*.
81. Marmot, *Status Syndrome*, 3.
82. Marmot, "Status Syndrome," 1304.
83. Marmot, *Status Syndrome*, 6.
84. Ibid., 7.
85. Ibid., 43.
86. Ibid.
87. Ibid., 45.
88. Ibid., 241.
89. Sutcliffe-Braithwaite, *Class, Politics, and the Decline of Deference*.
90. Sutcliffe-Braithwaite, "Discourses of 'Class' in Britain in 'New Times," 300; and Marshall et al., *Social Class in Modern Britain*, 3.
91. Joyce, *Class*, 3.
92. Rawnsley, *Servants of the People*, 213.
93. Cannadine, *The Rise and Fall of Class in Britain*, 177–178.
94. Ibid., 179.
95. Margaret Thatcher, speech to Conservative Central Council, Saturday 17 March 1988, https://www.margaretthatcher.org/document/107200 Last accessed 2 January 2020.
96. *The Life Scientific: George Davey Smith on Health Inequalities*. Broadcast 1 March 2016. [Radio programme] Radio 4 http://www.bbc.co.uk/programmes/b071t8qd Last accessed 2 January 2020.
97. Urry, "The End of Organised Capitalism," 99, quoted in Sutcliffe-Braithwaite, "Discourses of 'Class' in Britain in 'New Times'," 294.
98. Savage, "Changing Social Class Identities in Post-War Britain," 5.9.
99. Michael Marmot to Adrian Semmence, 7 August 1980, private collection.
100. Marmot, *Status Syndrome*, 60. Emphasis in original.
101. Quoted in Turner, *A Classless Society*, 4.
102. Hanley, *Respectable*.
103. Marmot, *Status Syndrome*, 119–120.
104. Marmot, *The Health Gap*, 115. The periodisation is inaccurate, but the sense holds. Thatcher's quote was from a 1987 interview with *Woman's Own*, while the Department of Health was not extant until 1988.
105. For a discussion of this tendency in a contemporary context see Parkhurst, *The Politics of Evidence*.
106. University College London, "Sir Michael Marmot to lead major health review" 17 November 2008 https://www.ucl.ac.uk/news/2008/nov/sir-michael-marmot-lead-major-health-review Last accessed 4 January 2020.
107. Abrahamian, "The Rise of the Inequality Industry."
108. Hanley, *Respectable*, xiv. The quote is from Hoggart's introduction to Orwell, *The Road to Wigan Pier*, vii.
109. Wilkinson and Pickett, *The Spirit Level*, Dorling, *Injustice*.
110. Bowcott, "Cameron is Trying to Set Out a Clear Ideological Path on the NHS."

111. Jenkin, "Dispelling the Myths of the Black Report," 125.
112. Public Health England, *COVID-19: understanding the impact on BAME communities*; and Redhead and Olszynko-Gryn, "The Black Report."
113. Examples include Lawrence, "Inventing the 'Traditional Working Class'," 567–593; Savage and Flemmen, "Life Narratives and Personal Identity," 85–101 and the *Secondary Education and Social Change in the United Kingdom since 1945* project https://sesc.hist.cam.ac.uk Last accessed 4 January 2020.
114. Payling, "The People that Write to Us,"; and Lawrence, "Social-Science Encounters and the Negotiation of Difference," 215–239.
115. Pearson, *The Life Project*.
116. Pakulski and Waters, *The Death of Class*.

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