Essay Review

Policing the heart


The Western literary tradition is awash with protagonists whose adverse life experiences have led to an untimely death from ‘heartbreak’. In King Lear, Gloucester’s flaw’d heart bursts as a result of the conflicting passions of joy and grief, and Lear himself dies of a broken heart following the murder of his daughter Cordelia. Where the arts have led, science is attempting to follow. This edited book draws together many of the leading researchers in the field to produce a comprehensive yet accessible account of current empirical and theoretical evidence linking a range of psycho-social factors to social variations in coronary heart disease (CHD). Inevitably, there is some overlap between the 16 chapters, which coupled with the sheer volume of empirical evidence and the broad range of theoretical standpoints, makes for a challenging read, particularly when read from cover to cover. Even so, Stress and the Heart provides a valuable introduction and reference point.

The widely observed social gradient in CHD mortality provides the book’s point of departure, with a chapter by Marmot and Bartley summarizing the evidence and exploring the theoretical and methodological issues around the use of social class as a measure of socioeconomic status (SES). The association between SES and CHD has been demonstrated in so many studies that even the most determined sceptic would find it difficult to refute. The question is why does this association exist. Leaving aside arguments about statistical artefact, social selection, and lifestyle factors, explanations have traditionally emphasized the role of material deprivation. However, the Whitehall study of relatively well-healed civil servants changed all that by demonstrating the same stepped relationship between SES and CHD across employment grades, even after standardizing for known risk factors, like smoking, diet, and exercise. The subsequent search for the ‘missing’ aetiological factor has exercised Social Medicine for a generation.

The prime suspect is psycho-social stress, although as the editors concede, the concept cannot be used without circumspection, if indeed it can profitably be used at all. The use of a single category ascribes homogeneity to a broad range of (arguably discrete) psychological and physiological processes and implies a scientific consensus that may be lacking. There is a tension running through the book between acknowledgement of diversity and the project of spinning the totality into a unified if multi-faceted framework. The different environmental, psychological, genetic, and physiological factors are easily linked together in a flow-chart which democratically accords each its place in the pathways to CHD morbidity and mortality, but this immediately raises questions about the explanatory weight ascribed to each factor and the nature of the relationships between them. Do structural/material factors, such as childhood poverty, play a greater role than so-called personality traits such as Type A behaviour, negative affectivity and hostility? Are these personality traits determined by structural factors such as job control/demands, or do personality traits determine either our experiences at work or our perceptions of those experiences? Teasing out answers to these questions is fraught with methodological and conceptual difficulties. Chapters on the role of work, social relations, hostility, diet, and physical activity in the pathways to CHD all report considerable progress, but the web of causality remains tangled and dense. On completing the book the reader is left with a sense of multiple disciplines exploring a common problem in parallel from their own respective standpoints, rather than of a fully integrated inter-disciplinary approach based on a shared understanding of first principles. Some attempts are made to vault the disciplinary boundaries in genuinely new ways, for example Montgomery et al.’s excellent chapter on gene-environment interactions, but even this fails to provide the basis for what might be termed a general theory of stress and CHD.

One possible route out of the impasse is offered by Davey Smith et al. whose chapter on the life course approach suggests that the physiological consequences of social disadvantage and hardship gradually accumulate through the different stages of life like drops of rainwater falling into a bucket—finally brimming over into CHD morbidity and mortality. This approach has a number of advantages: it fits with the physiological evidence which suggests that established CHD is the end point of a series of physiological changes which can be traced back to early childhood. In addition, conceptualizing CHD as a result of cumulative exposure to adverse experiences fits well with the social gradient and offers the scope for charting the inter-relationships between different environmental, psychological, and physiological factors as they interact across the life course. Despite these advantages the approach put forward by Davey Smith et al. also shares some of the limitations of the broader stress discourse. Surprisingly, for such a temporally aware perspective, the life course approach is ahistorical—implying that life simply unfolds in a cultural vacuum. Moreover, there is no account of the ways in which environmental stimuli are mediated by subjectivity—the assumption is that exposure to the same set of environmental stimuli will produce the same physiological response, irrespective of what the individual makes of his circumstances.

These two criticisms, ahistoricism and neglect of subjectivity can be levelled at other contributors to Stress and the Heart,
Indeed they form a major lacuna in this field of research. The two omissions are closely linked. If we begin with the question of subjectivity. Psychological approaches to stress recognize the role of appraisal in mediating the stress response, i.e. it is not just objective conditions that trigger the stress response, but what the individual makes of them that determines whether they are perceived as a threat or not. Moreover, it is recognized that this subjective aspect of stress is influenced by personality traits and by aspects of the individual’s immediate milieu, such as the availability of social support. However, this understanding of subjectivity stops at the level of the individual and his immediate social network. There is little awareness of the extent to which our mode of being in the world, i.e. the ways in which we make sense of our experiences and (un)consciously learn how to feel, act, and behave are conditioned by broader socio-cultural narratives or discourse, or of how these discursive factors become embodied as patterns of neuro-hormonal reactivity. Foucault described these subjective strategies as ‘technologies of the self’ and they go much deeper than socially constructed rules governing the presentation of the self; they affect not just how we present ourselves to the world, but how we construct our own beliefs about our self and how we manage our mental and emotional life. Foucault’s main insight lies in his recognition that technologies of the self are not fixed aspects of the individual, but transitory historical phenomena which are implicated in the exercise of power.

This leads into the second criticism concerning the ahistoricism of stress research. By history we do not simply mean a record of events, but History in the Hegelian sense of the unfolding of human will, including prevailing beliefs about human resilience, what can reasonably be endured, what to feel and how to behave in a crisis, when and from whom to seek help. Derek Summerfield refers to this historically changing emotional script as the ‘ethnopsychology’ and he notes that the diagnostic categories of psychiatry, for example post-traumatic stress disorder, make a significant contribution to it. The ethnopsychology brings into being different forms of personhood and subjectivity, including that of the stress victim; it influences how we feel and behave when confronted by an aggressive boss or a pressing work deadline. It answers the question of why problems at work, which previously led to industrial disputes and political activity, are now experienced as causes of mental and physical illness.

This relationship between historical change and changes in subjectivity is not explored by the contributors to Stress and the Heart—history is reduced to changes at work or in the demands of modern life, and subjectivity is reduced to personality traits and types, all of which can be measured and included as input variables in the left-hand column of regression models. This omission has two consequences; first it leads to a diminished sense of human agency and will; ‘stress victims’ are viewed as passive cases in an epidemic, whose symptoms result from exposure to pathogenic factors and whose cure depends on intervention by others. There is little sense of the active subject making sense of the world or grappling with his emotional and physiological responses to it. A second consequence is that the discourse of stress is profoundly unreflective—no attempt is made to explore the extent to which stress theory is both a product of the prevailing ethnopsychology or a contributor to it. The assumption appears to be that stress theory exists outside of its historical context. However, historical analysis of the emergence of stress as a scientific construct reveals that it is a remarkably amorphous category which has changed and adapted to reflect the ideological concerns of different times and places, be it cold-war America in the 1950s or social democratic Scandinavia in the 1970s. Moreover, the findings of stress research have spread far wider than academic journals, permeating the popular imagination to a remarkable degree and providing the discourse of choice for describing the human response to adverse experiences. But the authors do not engage the possibility that the phenomenon they are studying may be affected by their episteme and pronouncements. So, why is it that stress research appears to be immune to history and subjectivity?

A key reason is the physiologically embodied nature of the stress response and particularly the way in which these physiological reactions appear to work autonomously, i.e. beyond conscious control or regulation. Several chapters in Stress and the Heart document the physiology of the stress response and the extent to which these changes may contribute to the development of heart disease. This pathway is approached from either end—with some researchers starting from the physiology of the stress response, i.e. the workings of the autonomic nervous system and the hypothalamic-pituitary-adrenal axis, and charting how these physiological changes may be implicated in the aetiology of CHD. Others start with CHD and work backwards through the physiological changes that precede it. Technological advances have aided this project; in earlier times arterial and myocardial disease processes could only be observed post mortem or during surgery, but as Hemingway reports in the book, these previously hidden injuries of class can now be revealed by ultrasound. Methodological and conceptual difficulties remain and Skrabak has warned us to be sceptical about ‘plausible physiological pathways’, but even so, the evidence does provide a compelling argument that the two approaches will eventually join in the middle, even if they are not quite there yet. Indeed, the physiological evidence is so compelling and so firmly rooted in scientific observation and experimentation that it reinforces the perception that stress is an ahistorical phenomenon largely governed by autonomous physiological processes rather than by subjectivity. Certainly, research of this kind confirms the embodied reality of stress and cannot be dismissed as pure mythology or junk science. However, physiological evidence is not a trump card for stress theory that legitimates all of its claims and resolves all of its conceptual difficulties.

The problem lies in stress theory’s ambivalent and uncertain attempts to resolve the problem of mind/body dualism. Science rejects Cartesian dualism with its metaphysical beliefs about the soul in favour of a materialist account that argues that the mind is a physiological entity. The ability to reduce emotional states to their biological correlates, which can be assayed experimentally with all the rigour of scientific method, enables stress theorists to marginalize the role of history and subjectivity in mediating the stress response (and in shaping their own intellectual output). However, although mind emerges from the body it is not reducible to it. Thus, emotional states may have an observable physiological existence, for example, patterns of neuro-hormonal activity, but this is not incompatible with the observation that emotions are also social phenomena shaped by
social interaction and governed (albeit imperfectly) by consciousness—as Emerson put it ‘We boil at different degrees’. The symbolic character of stressors and the voluntary or willed nature of the response has been recognized by a leading econeurocardiologist:

‘Bodily responses triggered by a thought or by a perception of one’s surroundings are attributable, of course, to symbolic as contrasted with tangible stimuli. The bodily changes observed constitute a part of the behaviour of a person, behaviour that is governed by the significance of the situation to the implicated individual. There is, indeed, a vast repertoire of behaviours that adapt the individual to life experiences of all sorts. Each involves discrete patterned responses that are activated and coordinated by the nervous system, and may involve voluntary as well as involuntary behaviour’.6

As the quotation suggests, the stress response may be both voluntary and involuntary and the boundary between the two is shifting and unclear. This becomes apparent when lay accounts of stress are considered. The stress response is often experienced as an unwanted and unwilled set of physiological symptoms that the individual struggles to control or at least disguise. But how does the body learn to unconsciously respond in this way to particular external stimuli? It may be plausible that evolution might equip us with a hard-wired response to physical threats such as fear of heights or predators, but it is unlikely to account for our response to modern stressors such as low job control or effort-reward imbalance. There must be a process by which stimuli are perceived and consciously labelled as threatening, even if over the subsequent life course this association between external stimuli and physiological response becomes so deeply embedded that it operates autonomously.

We began by noting that the pathway between stress and the heart was charted by dramatists and novelists long before scientists took an interest. In many respects it seems that the humanities are better able to address the complex relationships between the body, history, and consciousness that lie behind the phenomenon. In literature there is no contradiction in presenting a character as inescapably a product of the times in which they live, i.e. as a subjectivity brought into being by an historically specific sensibility and set of social relations, but at the same time as a unique consciousness capable of investing their embodied existence in the world with meaning. If the contribution of science to our understanding of stress and the heart is to be fully recognized it must also find rigorous methods for addressing the influence of history and subjectivity.

Stress and the Heart is primarily concerned with the basic science of the pathway and devotes just one chapter to potential interventions. Fair enough; perhaps it is too early to derive policy implications from a programme that is far from complete. Even so, it is worth pausing to consider where this large field of research is leading. There are at least three levels of intervention: reduction of environmental stressors; psycho-therapy to ‘strengthen’ the individual; and bio-medical intervention to ameliorate the physiological symptoms of stress. One does not have to read too closely between the lines to recognize that the contributors to Stress and the Heart have different views on whether stress is better addressed by counselling or by a more politically contentious assault on social inequalities, again raising the question of whether science is shaping the preferred strategy or vice versa.

Only the second type of intervention is addressed in the final chapter, by Burg and Berkman, that examines psychosocial interventions in CHD. The application of therapeutic techniques is based on the assumption that stress can be subjectively managed. However, the social character of subjectivity is largely overlooked in favour of an individualized approach which emphasizes the role of counselling, relaxation techniques, and behaviour modification. One rather obvious criticism of this approach is that it overlooks the structural and economic causes of mental distress and hardship. Those adopting a public health perspective might prefer a more preventive approach which entails, for example, job re-design, work-life balance, and the elimination of other environmental stressors. The difficulty here is the broad range of factors that are implicated in the aetiology of stress and by extension CHD.

Reading the contributions to Stress and the Heart it is difficult to avoid the conclusion that virtually any adverse experience or emotional upset (if not arousal per se) is likely to make a small contribution to arterial wall thickening. Thus, preventive strategies are likely to have fundamental consequences for the ways in which we live our lives. The question of whether to lead an active or contemplative life has traditionally been a philosophical or theological matter, but the stress discourse transforms it into a health issue to be governed by legislative measures, healthcare practitioners, and employers. For example, health promotion is already enshrined in social governance, seeking to regulate many aspects of everyday life including diet, alcohol consumption, smoking, sex, and exercise. Policies aimed at tackling stress are likely to be even more intrusive because they potentially extend to virtually every aspect of life. At a time when CHD mortality rates are falling across the developed world (with the conspicuous exception of the former Soviet Union),7 many will find this a high price to pay for a healthy heart. Presented with the prospect of an anodyne society where our emotional lives are policed by the therapeutic state many will choose to live life to the full and keep taking the statins.

References

DAVID WAINWRIGHT