Personality, health and ageing

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INTRODUCTION

The study of the interaction between personality and health has a long history. One of the best remembered postulates of Ancient Greek medicine (enunciated by both Hippocrates and Galen) is the typology of four personality types, each of which was presumed to have an excess of a particular bodily fluid or humour which predisposed them to fall ill with particular diseases: the depressive, melancholic temperament (black bile); the optimistic, sanguine temperament (blood); the irascible, choleric temperament (yellow bile); and the impassive, phlegmatic temperament (phlegm).

This typology has been given a new lease of life in recent years by psychologists working in the field of health psychology; notably by Hans Eysenck who has reinterpreted the classical personality characteristics in terms of the dimensions of neuroticism–stability (N–S) and extraversion–introversion (E–I): melancholics being high in N and low in E, sanguines low in N and high in E, cholerics high in N and high in E, and phlegmatics low in N and low in E. Eysenck has also elaborated a number of hypotheses linking these personality types with outcomes in the fields of behaviour, health and well-being[1].

But finding links between personality and disease is just one aspect of interest in the study of health and personality. Much more important is the beginnings of an attempt to understand processes rather than simply identify associations[2].

Psychologists and social scientists, as well as clinicians must appreciate the following:

(1) Many diseases have complex and lengthy developmental histories. They may be labelled in different ways and identified with different indicators at different points in time, which complicates their specification as endpoints.
(2) Different factors may be responsible for the development of a disease at different points along its path. For example, different factors may be related to the gradual deposition of fats in the arterial wall which underlies heart disease, and to the sudden rise in catecholamine production which leads to a coronary embolism.
(3) Research is made more difficult by the fact that many chronic and age-related diseases, such as the cancers and cardiovascular disease, are asymptomatic in their early stages. In such conditions, actual hard measures of the presence of disease are difficult to secure, and are often unethical to obtain in the absence of symptomatology, and also of modest reliability.

Ultimately, we do need to understand the personality/health interaction biologically as well as psychologically, specifically in terms of the major physiological pathways.

The same need for awareness of complexity applies to personality, which I shall define as 'the motivations, attitudes and behaviour that characterize an individual'.

(1) We need to appreciate that the influences of personality upon health are much more complicated than those of environmental factors. It is much easier to prove links by collecting data in the wake of natural experiments, noticing the changing prevalence of the factor in different populations, and making use of quasi-experiments and randomized trials. No precise parallels exist for the study of personality-disease links.
(2) Any discussion of personality in regard to health is often limited to personality traits. But there are many other aspects of personality, including motives and the self-concept, which affect health. Within psychogerontology there is a growing tradition of experiential-contextual research on personality which focuses on the evolving lives of people and the meaning ascribed by them to life events in the context of their previous history, achievements and goals. This approach has as much if not more to offer as the usual personality trait approach.
(3) It is also misleading to put too much stress on discovering direct causal links from personality to health. Personality is likely to affect health by its indirect connections, i.e. via health-damaging and health-promoting behaviours, as in any direct association with the physiological processes underlying disease. These connections are particularly important now that more attention is being paid to health education.
(4) The study of personality and health is not only about the onset and recovery from illness, but also about

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responses to and coping with acute and chronic illnesses, and the effects of the latter on personality. Arthritis, stroke and dementia are some of the conditions that deserve much attention in this context.

(5) For a life-span psychologist and gerontologist there are more particular questions that arise when considering the links between personality and health. It is not only the likelihood of major disease which changes with age. Also the relationships between personality and health may vary across the life span. For example, if certain personality types die sooner, there will be a different profile of older groups on personality variables. It is also important to be aware of causation working in the opposite direction to what is expected, i.e. from health to personality rather than the reverse. For example, chronic disease itself may lead to specific personality patterns.

Methodological problems abound in this area of study, e.g. comparing young and old with and without disease *X* and behaviour *Y*. There are great difficulties in interpreting cause and effect in cross-sectional studies, and dissociating factors in the social environment, the individual, and in their interaction. Longitudinal studies therefore are of particular importance: in studies on the origins of diseases people ideally should be assessed *before* they develop the disease. This is costly because only a relatively small number of people, even in advanced age, develop a particular disease over 5 to 10 years, and procedures to measure signs of subclinical disease which increase the number of cases are expensive.

Nevertheless, there have been a considerable number of major longitudinal studies carried out on the health of older people which also have included personality data[3]. Most studies have been American: particularly important have been the studies conducted at Duke University in North Carolina and at Baltimore. There have also been some European longitudinal studies notably the study at Bonn in Germany. Also of relevance are studies which were not originally designed to answer questions regarding ageing, but have continued long enough to be used for this purpose. These include the Berkeley study, originally a 1930s study of parenting, and the Framingham study of heart disease. Current longitudinal studies tend to be shorter and more focused in content, for example on the very old or frail. Examples are the Georgia Centenarian Study, the Berlin Study of Aging, and the San Francisco study of late life.

CONCEPTS AND THEORIES OF PERSONALITY, HEALTH AND AGEING

One of the big questions in psychology is whether personality is stable or changes with age. One way of resolving the paradoxes in the research literature on this subject is to think of the realm of personality in terms of two types of variables: those that remain relatively stable throughout adulthood (typically referred to as traits), and those which develop and change (including attitudes to the self and to the world around, values, beliefs, goals and reference systems). Unfortunately, most research does not take both aspects of personality into account, perhaps because most investigators studying traits have been looking for stable personality domains, whereas those studying attitudes have been looking at factors promoting development and change.

Although it is important not to focus excessively on traits, their prominence in recent health research has to be acknowledged. Current evidence favours the so-called 'big five' model which indentifies the primary traits as neuroticism, extraversion, openness, agreeableness and conscientiousness. The body of evidence supporting this model is now impressive and the NEO (AC) measure, arising from the Baltimore longitudinal studies of adult life and ageing, has now become the measure of choice in applied studies of personality[4].

Neuroticism is the personality trait that has been most often examined in conjunction with health behaviour. It is defined as the tendency to experience negative emotions including anger, anxiety and depression. It has been connected with health behaviour, principally in terms of heightened symptom report. It has also been suggested to be a risk factor heightening stress levels. But it is not necessarily a negative factor in the health context. It may lead to more frequent referral and thus early detection.

Conscientiousness (c) is arguably the personality trait most likely to be implicated in health promoting behaviour, although as a result of its relatively recent appearance as one of the major traits, studies are still limited in number. Extraversion has also been associated with health promoting behaviour, i.e. extroverted individuals are hypothesised to be less reluctant and inhibited about presenting symptoms. The relevance of Openness is also clear, i.e. the capacity to notice new events and interpret them differently to already established ways of thinking.

It is important to mention a different strand of research on personality markers, not as well known as the trait approach, which is the attempt to understand differences between individuals in terms of the motives which mark their behaviour. The most frequently studied motives have been the need for achievement, for power and for affiliation. Although there has been little or no research on the relationship of other needs to health, there have been many studies on the so-called Type A hypothesis of a link between high achievement orientation and heart disease which is discussed later.

Operating at a somewhat more fluid level are the personality systems of maintaining self-esteem, sustaining feelings of predictability or control over outcomes, keeping life meaningful and understandable, and maintaining a sense of optimism and humour. Although these characteristics show considerable stability they are not as stable as the major personality traits. We know that many of these other developmental characteristics centred around self and life perceptions are important determinants of mental health and may also contribute to physical health outcomes[5]. Measures of dispositional optimism predict reports of few physical symptoms in relatively healthy populations as well as faster physical recovery and high quality of life after bypass surgery. In a longitudinal study of Harvard male undergraduates a non-optimistic explanatory style predicted subsequent physician-diagnosed poor health in mid-life, controlling for initial health status. But not all longitudinal studies produce expected results. One study found that children rated by parents and teachers as bright, optimistic, cheerful, and with a good sense of humour died younger in adulthood.

Attention has also been given to the role of personal meaning in maintaining health. Antonovsky[6] was one of the first to draw attention to the importance of what he called a sense of 'coherence' in health protection and health enhancement. Survey studies in the USA support the stress-buffering functions of systems of personal meaning, especially religious and spiritual attitudes, in maintaining physical health in the face of everyday stress[7].

Of all characteristics of the self, sense of control has been most investigated in relation to health outcomes[8]. There is evidence that the relationship between sense of control, well-being and physical health may grow stronger with age. Interventions which enhance options for control promote health. But there is also evidence for there being an optimum level of control and considerable variation in older people's preferred amounts of control.

Even more open to change are attitudes of acceptance or avoidance towards specific outcomes or situations, such as ill health or dependency. Very important are the tendencies either to try to assimilate perceived or anticipated losses (by trying harder, compensating and selecting appropriate environments), or to accommodate to them (by rearranging priorities, devaluing blocked goals, rescaling evaluative criteria, and constructing new palliative meanings). There are theories of ageing which suggest that the failure to switch from assimilative to accommodative strategies—in particular to give up blocked goals—is a cause of depression in later life[9]. But both assimilation and accommodation are valuable. The flexibility of mind shown both in hanging on to old goals as well as seeking new goals for the self is an important aspect of personality in later life.

Does health behaviour change with age? One frequently mentioned possibility, related to the 'disengagement' hypothesis, is that people as they age become less involved with life around them and are therefore more passive and/or prone to ignore events. As they disengage from expected patterns of response to new events, they also become more fatalistic about their ability to control them. In support of this hypothesis is the evidence that older people are less emotionally responsive to environmental threats, including health threats. In some conditions such as melanoma there is evidence that elderly people delay longer in presentation. However, this could be a result of a combination of sensory defects, social isolation and lack of knowledge.

Indeed, there is growing evidence from the US that older people, compared with both younger and middle aged groups, are more likely to take preventive actions with health problems and are more compliant with treatment. Although older people appear to use active problem solving less as a means of coping with most of life's problems, in the area of health difficulties they show the reverse pattern. At the same time they show fewer signs of emotional distress to threats of illness, so that this in itself does not explain their greater vigilance[10].

The evidence suggests that older patients seek medical advice sooner than middle-aged patients for both the most and the least severe symptoms. When symptoms are of intermediate severity—i.e. not so severe as to demand immediate attention but not so mild as to be ignored—the difference of time delay can be as much as seven times[10]. The probable explanation is that older people are more ready to seek medical advice for early signs of illness because they are more aware that its threatening and debilitating effects are best dealt with by quick action. Younger people prevaricate because of an unwillingness to admit to having health problems and because they have the energy and the reserves of energy to take risk.

PERSONALITY ASSOCIATES OF MAJOR PHYSICAL DISEASES

Heart disease

Of all personality factors, the type A cluster of behaviours has been the target of most study, and the findings associated with it have given more credence to the relevance of personality to health than any other factor. The construct was crystallized in the writing of two cardiologists, Friedman and Rosenman, who designated as 'type A' those individuals who charcteristically display excessive achievement striving, competitiveness, impatience, hostility, and vigorous speech and motor mannerisms[11].

An $8\frac{1}{2}$ year follow-up report on 3500 initially healthy men showed that those characterized as type A were about

twice as likely to develop angina, myocardial infarction and sudden cardiac death. Ratings of type A were based primarily on observation of behaviour in a structured interview (SI) developed by Friedman and Rosenman. However, subsequent research with a questionnaire (JAS) designed to mimic the structured interiew correlated at a disappointingly low level with the ratings of observation and also failed to show predictive association. This led researchers to examine more closely what the significant features in the behaviour ratings might be. What seems crucial in the type A ratings is the use of vigorous speech patterns, such as loud, rapid and accelerated speech, explosive vocal intonations, and short response latencies. Also important is the manifestation of hostility during the interview, including rather subtle attitudinal indicators such as boredom and condescension, as well as obvious irritation and outright surliness.

Recent prospective studies do not suggest that so-called type A individuals (i.e. those who are competitive, achievement oriented, easily annoyed and time urgent) are more likely to be at risk from chronic heart disease and myocardial infarction[5]. The focus of interest is now more specifically on hostility, anger and anger expression. Hostility scales as well as clinical ratings of potential for hostility do predict cardiovascular morbidity and mortality. They also predict later smoking and alcohol use, as well as higher lipid levels and body mass index.

Findings in this area also illustrate the complexities of lifetime studies. The Duke studies show that anger and overt hostility decline with age whereas hostile beliefs on the other hand increase. Overt hostility is also higher in those older persons who are in worse physical condition in old age. The findings add up to a picture of extreme anger as a non-adaptive characteristic later in life, which most people learn to master or sublimate. That results on this subject are being taken seriously also in this country is shown by the recent grant of the British Heart Foundation to the University of Edinburgh to investigate personality and heart disease. At the psychophysiological level—this is the connection that has to be made eventually—researchers are focusing on the effects of emotional states of anger on the sympathetic adrenomedullary system.

Cancer

Speculation dates back to Galen that 'melancholy' women are more likely to develop breast cancer. The latest formulation of this hypothesis is in terms of 'type C' personality. Type C is a more heterogeneous set of descriptions than type A, but thought to represent a coping style which is the inverse of type A, comprising hopelessness, helplessness, depressive feelings and repression in the face of stress. Particular claims have been made for the relevance of these characteristics as a risk factor for melanoma[12]. It is interesting to note that type C is in some ways an expected product of socialization processes for women, whereas type A is the equivalent for men.

Retrospective and case-control studies are hard to interpret as psychosocial factors could just as easily be consequences as causes. More convincing are quasi-prospective studies in which patients who will shortly have a biopsy to determine a malignant or benign condition are assessed. Findings have been mixed with some studies supporting the hypotheses, and others not. Perhaps the most striking set of findings in the field come from a randomized intervention study, which focused on enhancing social supportive bonds between members of treatment groups, and showed increased survival time in women with metastatic breast cancer, from a mean of 19 months in untreated controls to 37 months in treated subjects[13]. However, other major studies, including a 10 year prospective study, have failed to identify associations between depression and repression on cancer morbidity or mortality. The evidence to date is less convincing than for heart disease. At best it suggests that future studies focus on the benefits of 'getting in touch' with feelings and 'working through' problems. Low emotionality in itself does not seem to be a risk factor. At the psychophysiological level the focus of interest is on enhanced pituitary-adrenocortical activity which is thought to suppress immune function and enhance cancer risk.

A more substantial relationship is to be expected between personality characteristics and health behaviours such as self-referral and attendance at screening procedures. In a recent study of breast screening in women in their 40s in the USA, Siegler and colleagues confirmed links with the trait of conscientiousness. The association remained even after adjusting for other predictors (e.g. knowledge of recommended behaviour, family history, numbers of friends with breast cancer)[14]. In the case of a cancer such as melanoma, a study is planned to investigate possible interactions between personality and other psychosocial factors in accounting for late presentation in advanced age, e.g. the interaction of lower levels of conscientiousness with poor visual acuity and lack of knowledge.

COPING WITH DISEASE AND DISABILITY

Investigations into changes in coping response with age have also employed a variety of hypotheses. Some theorists have postulated a regression to more primitive coping behaviours, with older people becoming more egocentric, impulsive and hostile, which has not been born out by results. Others have suggested an increase in mature coping behaviours, including the use of wise detachment and

humour. Contextual hypotheses, by contrast, suggest that age differences in coping, when they are found, are the result of changes in what people have to cope with as they age rather than normative changes. A life-course approach emphasizes that people do show developmental changes as the result of experience and learning, but that these vary according to personal history and social circumstances.

The literature in this field has been predominantly American, but there has also been a strong current of research on stress and ageing in Germany, originating in the Bonn Longitudinal Study. Research studies consistently indicate that active coping in situations of illness is the predominant response shown by older people. There is evidence, consistent with this, that they also show less hostility and anger[15]. No age differences are evident in the coping strategies of chronic pain patients, an important finding as there is an ageism present in many clinical settings which sees older patients as untreatable or not treatable with the methods the clinician is comfortable in using. Studies in Southampton also show older people to be satisfied with the way they cope with the illness problems they face. Indeed, there is some evidence that they show superior adjustment to younger people in certain situations involving health related stress (e.g. kidney dialysis), being more appreciative of the benefits of intervention[16].

Because of the concentration of illness and disability in the later years, older people might be expected through practice to become more expert at dealing with health problems. The Bonn study did find a significant decline both in 'depressive reactions' and in the number of 'resistance' responses to health stresses in their female group (who had initially scored more highly than the male group on both indices) in the course of ageing[17]. Particularly interesting is the study of a subgroup of the Bonn sample who developed chronic disease 4–6 years after the beginning of study. On follow up there were no differences in perceived stress between it and the main group. In fact, the cognitive as well as practical anticipatory adjustment to the encroaching disease had made the ill group less vulnerable to stress. They showed a higher degree of active coping and no greater amount of depressive or apathetic responses. Even 5–8 years after the manifestation of chronic illness there was no higher prevalence of depressive reactions. Hope was the dominant response. The authors suggest that these people were showing an accelerated style of adapting to old age, displaying forms of behaviour which the rest of the sample began showing 8–10 years later: in particular, asking for help, identifying with the aims and fates of children and grandchildren, disengaging from extrafamiliar roles, as well as responding with stronger emotions of hope[18].

It is necessary to understand responses to illness in old age in terms of process. Frailty in old age, where it is the product of gentle decline, can be adjusted to by means of disengagement. The San Francisco longitudinal studies of the very old bear this out[19]. But sudden chronic debilitating illness can lead to passivity or paralysis of a less adaptive kind where the individual is unable or refuses to take action. This does not contradict the vigilance hypothesis. The literature supports the view that older people realize well enough that they are slowly wearing out. They understand they must keep rapid deterioration at bay. They have learned by experience to take action, and when they act, they act sensibly and purposefully unaccompanied by unnecessary emotional responses. But some are faced by changes and losses for which they are not prepared and in the end lose competence. They are overwhelmed by, and not prepared for, some levels of chronic disability. Older people, just like younger people, display insufficient coping behaviour under heavy strain. Some react passively to this situation, whereas others remain determined to make their own decisions despite the air of unreality. It is in understanding these reactions and the most helpful responses to them that psychology can play a major role.

I have not considered the important subject of taking account of patient treatment goals in our rehabilitation services. Encouraging results have emerged from a study in Southampton which investigated how a personality assessment schedule which focuses on the 'life strengths' built up over the lifespan could be incorporated in procedures for setting rehabilitation goals[20].

Lastly, it is important to note that dependency is not necessarily a negative state. We need to have a model of dependency which emphasizes gains as well as losses. Dependency itself can be a purposefully chosen and adaptive way of life, in part self regulated, understandable in terms of the person's own principles and priorities. If dependency is the individual's chosen solution, rather than environmentally induced, we need to respect and appreciate that decision.

PERSONALITY AND DEMENTIA

In practice, dementia is usually defined in terms of cognitive change, especially memory and learning disturbance. However, personality change is also an important aspect of the disease and one that was emphasized by Alzheimer himself. Sufferers behave in a way they would not have done before. Dementia is a good illustration of the point that it is difficult in practice to distinguish personality from cognition. A person's abilities also define and limit their characteristic ways of behaving.

Sometimes the changes noticed in dementia are less to do with memory and more to do with personality or behaviour, particularly in frontal lobe dementia which produces a very definite personality change characterized by carefreeness and disinhibition even though cognition

is relatively unimpaired. However, a profile of personality change is also observable at a more general level in dementia. Studies in which relatives/carers have been asked to use the NEOAC scales to rate the personality of their demented caree before and after the development of the disease show systematic changes both in USA and UK studies[21,22]. The now substantial evidence on personality change with age suggests only minor changes during normal ageing, small decreases in neuroticism (N) and extraversion (E) being most observed. In dementia by comparison major changes occur, declines in Conscientiousness as well as E, and increases in N. Therefore, observed personality change appears to be very much a symptom of dementia.

As well as objectively studying change in behaviour it is equally important to attempt to understand the subjective experience of dementia. It has been described in terms of loss of 'personhood' or 'self'. Whereas the amnesic person suffering brain trauma and the person with a mental handicap still retain a self and a grasp on reality, the onslaught the dementing person faces through loss of previously well-learned memories eventually takes away the basis for a sense of personal integrity. Personality researchers have a contribution to make to a number of aspects of dementia care. These include understanding emotional reactions, learning about the earlier life antecedents of behaviour, and preserving the person's life story.

The emotions equip us to deal with life in a world which is far from certain, but obviously for demented people, to whom the world appears increasingly uncertain, emotional life will be more vivid: at times they will be more anxious, more depressed, more frustrated, and also more relieved when someone or something at last becomes clear to them.

Much behaviour will have antecedents earlier in the life-course, reflecting habitual behaviours. Perhaps most important of all is an understanding of previous interpersonal behaviour. In Southampton research is being conducted into whether an improved understanding of the person's history of attachment to people who have played an important part in their early life improves quality of care in residential settings. There is evidence that as the disease progresses people move back in time to earlier attachments. Very many come to speak about their parents as if they were alive, and insight into that earlier attachment is helpful[23]. In some tragic cases demented people come to suffer again the experience of earlier abuse and trauma. The importance of therapeutic work in this field are only now being recognized.

A dementing person's sense of personhood can be preserved by keeping their story alive through systematically speaking with them about the episodes they remember, and perhaps with the help of some additional detective work, reconstructing parts of their life into coherent wholes[24]. Even when they are no longer able to tell their own story, it can still be communicated to others. This will play an important part in keeping their social identity alive. We react very differently to people whose pasts we know from those of whom we know nothing. To know a person's story is to know their identity.

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