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HANS J. EYSENCK

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Editorial

Mental health and physical disease: A new paradigm

HANS J. EYSENCK

Institute of Psychiatry, University of London, De Crespigny Park, Denmark Hill, London SE5 8AF

Advances in science and medicine can be of two kinds: They may cross a gap, or they may surmount barriers (Margolis, 1987; Nickles, 1994). A theory may have obvious gaps that need filling; that is perhaps the most usual case. But, often, advance is hindered by barriers erected by established and widely-held theories that are mistaken in essential features, but refuse to die - theories of the ether, or of phlogiston, are well-known examples. In a similar way, the recognition of the major impact of mental factors on physical health has been hindered by ancient shibboleths such as the Cartesian notion of body and mind as entirely separate entities, leading to the concentration of the medical sciences on purely physical risk factors. That such a view is unsatisfactory became apparent in 1959 with the appearance of a famous article by Hinkle & Wolff (1957) in which they reported on three rather homogeneous groups of over 4,000 men and women. They looked at the history of major and minor illnesses, as well as their circumstances, personalities and stress reactions.

Their first finding was that the distribution of illnesses was not Gaussian, but negative binomial, a sort of distribution that occurs in groups when the members of the group have different "risks" of becoming ill. Those

predisposed to become ill showed an increased susceptibility to illness *in general*, and they developed many different types of minor or major illness, not just one or two. Second, they found a clear correlation between *number of illnesses* and *stress experienced*, in terms of objective events like divorces, separations, conflicts with family members and uncongenial living and working arrangements. Clusters of illness often occurred during periods of significant stress. Third, predisposed people showed significant psychological profiles. Those people who had the greatest number of bodily illnesses, regardless of their nature and regardless of their etiology, were the ones who experienced the greatest number of disturbances of mood, thought, and behaviour. For example, not uncommonly, persons were seen with recurrent episodes of anxiety, depression, chronic obsessive and compulsive symptoms, or character disturbances; symptomatology of this type, with exacerbations and remissions, might predominate in their illness pattern throughout life. But such people, as a group, had more bodily illnesses of all types than were found among those who had few or no disturbances of mood, thought or behaviour. This can be put in other terms by saying that "*there was a parallelism be-*

tween the occurrence of psychoneuroses and psychoses, and the occurrence of bodily illness” (p. 44; italics added.)

There is now much evidence that illnesses like cancer and coronary heart disease (CHD) can be predicted with considerable accuracy in healthy people on the basis of personality ratings based on interviews or questionnaires (Eysenck, 1991, 1994; Temoshok & Dreher, 1991), and that psychological traits also discriminate between patients suffering from cancer and CHD. Typical of such studies is one begun by C.B. Thomas, in which 1,300 medical students were studied and followed up for 40 years (Shaffer *et al.*, 1987). Those who were “loners” at the beginning of the study, and suppressed their emotions behind a bland exterior, were sixteen times as likely to develop cancer than those who gave vent to their emotions - a risk ratio many times higher than that for smoking, which is more like 2.4:1. Other studies have given similar results (e.g. Eysenck, 1990, 1993; Grossarth-Maticek, 1979, 1986, Persky *et al.*, 1987; Kaplan & Reynolds, 1988.)

To stress the importance of psychosocial factors like personality and stress is not to deny the importance of physical factors like smoking and drinking, but it is important to realize that the physical and the psychosocial factors do not act independently. There is much evidence that they interact *synergistically* (Eysenck, 1994; Grossarth-Maticek, 1980; Grossarth-Maticek, Eysenck & Vetter, 1988). The importance of this form of interaction cannot be over-emphasized; it clearly invalidates the usual methodology and statistical argumentation used to suggest that millions of people are killed by smoking (Doll & Peto, 1984; Peto, 1994; Peto *et al.*, 1992). A study by Friedman *et al.* (1983) will be described to illustrate the problems arising from the synergistic interaction between smoking and personality for any estimation

of smoking-related mortality.

In this study the authors were concerned with myocardial infarction and the role played by smoking and personality in the causation of this illness. They had found in an earlier study (Friedman, Siegelau & Ury, 1975) that the strength of smoking as a risk factor for myocardial infarction (MI) was strongly related to the way the subjects responded to 94 psychological questionnaire items. The answers that were more prevalent in cigarette-smokers than in non-smokers were also more prevalent in MI cases than in controls. Grouping cases and controls into four bands on the basis of questionnaire responses, they found marked differences in the relative risks of smokers vs. non-smokers, ranging from 3.8 for the most CHD-prone group according to personality, through 3.2 and 1.5 to 0.7 for the least CHD-prone. Thus for the psychologically healthy, smoking is *not at all related* to MI! Confounding factors failed to account for this astounding finding.

In their second study, following up this surprising finding, Friedman *et al.* (1983) used a shortened 10-item questionnaire, but found very similar results. As personality risk score decreased, relative cigarette-smoking risk ratios decreased from 4.4 through 2.2 and 1.1 to 0.4. In other words, in this last group, non-smokers were over twice as likely to suffer from MI as were smokers. Thus, clearly, personality acts as a *moderator* of the effects of smoking on coronary risks, a finding supporting the evidence for a synergistic interaction between smoking and personality. Howard, Cunningham & Rechurtzer (1985), using a different questionnaire, found similar results. Their measure of “dependence” related positively to MI risk, and they found that independent smokers had a *lower* risk of MI than dependent or independent non-smokers, with dependent smokers showing the highest risk. Clearly no estimate of

risk from smoking, or of the mortality caused by smoking, can be taken seriously if psychosocial factors are disregarded - as they usually are.

Recognition of the importance of personality and stress in the causation of disease would be of purely academic interest if there did not exist methods of treatment that would render these risk factors less potent. Fortunately methods of intervention derived from principles of behaviour therapy are now available, and have been shown to be capable of largely preventing deaths from cancer, coronary heart disease and other causes (Grossarth-Maticek, 1986; Eysenck & Grossarth-Maticek, 1991). To give but one example of the power of these methods, consider a study in which 100 cancer-prone, healthy probands and 92 CHD-prone, healthy probands were randomly divided into a therapy and a control group. Therapy consisted of about 30 hours of individual treatment immediately following the testing that established prone-ness to cancer or CHD. In a 13-year follow-up, 16 of the control group and none of the therapy group had died of cancer in the cancer-prone group, and 16 of the control group and 3 of the therapy group had died of CHD in the CHD-prone group. These figures are of course highly significant statistically, and similar results were obtained when we used group therapy on large numbers of cancer-prone and CHD-prone probands (Eysenck & Grossarth-Maticek, 1991).

It has also been found that psychological methods of treatment can prolong the lives of terminally-ill cancer patients (Eysenck & Grossarth-Maticek, 1991; Simonton, Matthew-Simonton & Creighton, 1980; Spiegel *et al.*, 1989), and that psychological and medical interventions are about equally effective in this respect, and interact synergistically (Grossarth-Maticek, 1980). These findings suggest that psychological

factors are not only correlationally but *causally* linked with cancer and coronary heart disease.

This conclusion is even more firmly based on the fact that we now have experimentally supported theories about the nature of the causal links between personality/stress and disease (Eysenck, 1994). Psychological states such as hopelessness/helplessness induced depression, following stress, leads to increased levels of cortisol, which in turn reduces the efficacy of the immune system. This allows cancer cells to multiply, and thus leads to full-blown cancer (Lewis, O'Sullivan & Barraclough, 1994). Similarly, theories of causation are being developed in the CHD field (Friedman, 1991; Johnson, 1990). It seems that purely medical methods of primary prevention (Engelbosch, Depoorter & Larebeke, 1988) are no longer sufficient; there is an urgent need for psychological methods to be widely used in order to prevent the ravages cancer and CHD inflict on so many millions of people. The medical profession is fighting a rearguard battle to deny psychology its rightful place in this vitally important exercise, but the evidence for the importance of psychosocial factors in disease causation and control is now overwhelming.

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- Reprints from Professor Hans Eysenck, Institute of Psychiatry, University of London, DeCrespigny Park, Denmark Hill, London SE5 8AF.

