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Charlie Davison, George Davey Smith and  
Stephen Frankel

Lay epidemiology and the prevention  
paradox: the implications of coronary  
candidacy for health education

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**Abstract** This paper is concerned with the appropriateness of current attempts to prevent chronic disease through behavioural change. Based on extensive ethnographic research in South Wales, the paper suggests that, within contemporary British health culture, there exists a well developed lay epidemiology which has a significant bearing on the public plausibility of modern health promotion messages. The paper describes the notion of the coronary candidate (the 'kind of person who gets heart trouble') and discusses the operation of the idea in everyday life. The manner by which lay epidemiology and the population approach to health promotion construct the 'prevention paradox' within the social world is outlined. In conclusion it is suggested that lay epidemiology readily accommodates official messages concerning behavioural risks within the important cultural fields of luck, fate and destiny. This simultaneously constitutes a rational way of incorporating potentially troublesome information, and a potential barrier to the aims of health education.

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**Introduction**

It is well known within contemporary British society that coronary heart disease is a major cause of pain, illness, disability and untimely death. Like all kinds of misfortune (undesirable events which occur to some people sometimes but not everybody always) heart disease is the subject of a variety of cultural operations and activities whose goal is to bring it under some measure of human control. A pre-cursor to such control is the development of an explanation (or set of explanations) which can account for the occurrence of the misfortune itself. Over the past three decades a

well defined explanatory paradigm has developed in medical and official circles in Britain concerning the misfortune known scientifically as coronary or ischaemic heart disease and to the non-medical public as heart trouble, heart attack, coronary, heart, dicky ticker etc. Before entering into a discussion of the daily cultural practice that we have labelled 'lay epidemiology', it is worth taking stock of the back-drop to the study reported here and particularly the 'official' line on heart disease in Britain.

During the course of the twentieth century, investigators have announced the discovery of many conditions and behaviours which have strong associations with the development of coronary heart disease (CHD) in individuals. Some have been identified as possible causal factors. The communication of these discoveries to the wider society and their implications for personal life and behaviour has become a major concern of many primary care professionals and a growing body of health educators and health promoters.

It has become common currency in modern Britain that many deaths attributed to heart disease are preventable. This general outlook has come to be broadly shared by people within and outside the various medical professions. The core of the notion is that, in many cases, damage to the circulatory system is caused by identifiable behaviours which could theoretically be modified or eliminated. Turning this theory into practice has been the task of a plethora of public and private bodies, large and small, academic and campaigning, whose activities have encompassed fund-raising, research, political and professional lobbying, and direct public education.

In common with other parts of the industrialised western world, Britain has entrusted the main thrust of heart disease prevention to large-scale programmes of primary prevention. In Wales, where the research reported in this paper was carried out, the 'fight' or 'battle' (it has become traditional to use images of warfare to discuss attempts to reduce the rate of CHD) against heart disease is most publicly carried out by Heartbeat Wales, a division of the Welsh Health Promotion Authority. This programme has had a high public profile throughout Wales, and has played a significant role in placing heart disease close to the centre of the population's everyday discourse on health.

Against the back-drop of large-scale intervention, a complex debate has developed in public health and medical social science circles concerning the efficacy, politics and ethics of prevention strategies based on individuals and prevention strategies based on communities<sup>1</sup>. There are two basic strands to this debate:

a) Should public health initiatives concerning chronic disorders be based on screening, whereby those identified as being 'at high risk' are discovered and appropriate personal interventions made? Or should public health initiatives be based on a general population intervention, whereby the entire population is treated as being 'at risk'?

b) Should prevention efforts be aimed at specific behaviours deemed to be under the voluntary control of individual citizens, or should prevention efforts be aimed at infrastructural upgrading and the improvement of general social conditions?

The key issues here are the relative roles of the individual and the social in the aetiology and distribution of chronic disease, complexity being added by the recognition that many individual behaviours are rooted in a cultural field, which in turn is strongly influenced by social differentiation. In the discourse of the modern British health promotion movement these political/ideological debates appear as an essentially unproblematical relationship between knowledge (awareness of information) and the decision to do healthy things (or not do unhealthy things).

A central and recurring image of the philosophy which underpins modern coronary prevention is that of free choice in the context of the availability of healthy alternatives to behaviours which prevention programmes identify as dangerous. Thus much effort is put into market/choice oriented programmes such as liaison with the food retail sector over the availability of low fat products, laying out exercise circuits in parks, awarding healthy menu certificates to restaurants and canteens, encouraging public curbs on smoking etc.

Current health promotion activity in Britain attempts to address all the issues included in (a) and (b) above, with a two-pronged approach. On the one hand in an education/advertising programme attempting to instill in the population the idea that heart disease is strongly linked to behaviours and conditions which could be changed by the triumph of self-control over self-indulgence. Coupled with this is an attempt to encourage a market infrastructure and a moral climate in which (to borrow a Heartbeat Wales slogan) 'the healthy choices are the easy choices'. 'Choosing health' is thus central to the official ideology, with the strong implication being that much heart disease is attributable either to ignorance or to a lack of self-discipline.

This paper concerns the status of this professional/official ideology in the daily lives of people living in the southern half of Wales. The central focus is on the relationship between these ideas and the everyday cultural mechanisms which serve to explain illness and death attributed to heart conditions. The paper is based on a preliminary analysis of formal, semi-structured interviews with randomly sampled adult informants in two urban and one rural district of South Wales ( $n = 180$ ) and from many hours of informal discussion and observation carried out in the same areas. Fieldwork has involved formal (taped semi-structured interview) and informal (observation, discussion) interaction with male and female adults from a wide range of socio-economic circumstances<sup>2</sup>. Our general aim here is to explore one of the central themes of both scientific and lay theorising about illness and death associated with impairment of the heart and its functions – that of assessing the possibility and probability of an individual becoming a victim.

The individual and the social appear interwoven in this public discourse, much as they do in many professional debates concerning the aetiology and distribution of chronic disease. Unlike those debates, however, 'lay' theories may display a complex and thoughtful interest in the relationship between preventability and inevitability, an area sometimes glossed over by the confidence in control which pervades the ideology of modern Western medicine.

The professional, official and media messages concerning the preventability of heart disease to which the informants taking part in this project have been exposed are similar in nature to those directed at other British populations. Almost all the countries and regions of the United Kingdom have been the targets of mass communication exercises concerning the risks of everyday behaviour and the importance of individual action to gain better health. It is our observation, however, that the early launch and consequent high profile of Heartbeat Wales have led to a stronger local impact than other British campaigns. In a qualitative sense attitudes towards illness and its prevention amongst the informants taking part in this research can be seen as broadly representative of wider British society. Given that professional and state intervention in the area of heart disease has been stronger in Wales than the rest of the United Kingdom, however, and that other regions and countries are currently 'catching up', the South Wales data presented here are of particular interest as an indicator of future developments elsewhere.

### **Explaining ill health – an everyday public concern**

It has long been a commonplace observation in the discipline of social anthropology that cultural systems of explanation or accountability need to address two distinct issues. In the first place the general kind of misfortune requires explanation: how and why does it happen? In the second place, the site and time of particular misfortune require explanation: how and why did it happen to this person at this time?

In many of the cultures studied by classical anthropology, the first type of explanation was often found to make use of well understood physical or material processes. The second, more personal, areas of explanation were often found to involve metaphysical or supernatural processes (see, for example, Evans Pritchard 1937).

In our own society, where the development of science has shaped so many other cultural institutions, it is sometimes overlooked that this pair of explanations is still required. This is so because it is a central pillar of the Western scientific tradition that the two explanatory strands are unified. In the case of explaining illness, the scientific system requires that large numbers of individual events are observed, that common aspects are noted, and that plausible causal hypotheses are suggested which link

misfortune to its surrounding circumstances. In theory at least, we combine both birds and attempt to kill them with one explanatory stone.

Officially, this enterprise is the preserved role of specialist observer-hypothesisers (physicians, epidemiologists, actuaries etc.) but in reality many, if not all, of us carry out such observations and generate hypotheses concerning the misfortunes that befall us and others around us. In this activity we tend not to invent completely fresh explanations; rather we employ the knowledge and lore which we have received from the wider society during our formation and development as individuals. It is important to our tradition that many of our explanatory models change with time, that we proudly incorporate advances in scientific understanding and that we constantly produce fresh generations of citizens with more answers than those which went before.

Where illness misfortune is concerned, it has been traditional for this received body of explanatory material to be divided into two: scientific or professional knowledge on the one hand and lay or public belief on the other. The two strands, though, are rarely if ever entirely separable, indeed the range of thought and belief in both the professional and public domains is so broad that the traditional lay/scientific dichotomy may well have outlived its usefulness. This situation is not surprising, if we consider that we are dealing with a society from which science has grown and to which science and scientists continue to belong, a society where the media of mass communication carry an enormous volume of up-to-date scientific information, and where large numbers of individuals are involved in the application of scientific advances in the course of their daily routines in homes, public spaces, work and educational establishments. As the following descriptions and discussions will show, assessing the risk of heart disease and the possibilities of avoiding it are areas where the professional/lay distinction is more marked in form and process than in the contents of beliefs and explanations<sup>3</sup>.

### **Coronary candidacy and the study of health beliefs**

In this paper we describe and attempt to analyse the use of one cultural mechanism which plays a central role in the explanatory systems employed in Britain to account for coronary heart disease. The idea which we address is that of the 'candidate for heart trouble', 'coronary candidate', or 'the kind of person who gets heart trouble'. Our aim, here, is to describe a general explanatory framework which we have observed in wide usage in everyday life, a framework which is based on a fusion of all aspects of the explanatory dilemma discussed above. We also seek to provide an illustration of the sophistication of the cultural mechanisms which are used to account for the misfortune of common chronic illness in a markedly scientific society.

Clearly, in a social world as highly differentiated and stratified as our own, the views and attitudes of individuals and cultural groups differ widely. The goal of our analysis, however, is to explore the overall structures within which differentiation occurs, rather than dogmatically to ascribe detailed and fixed ideas to all members of such a complex social formation.

In recent decades, there has been a growing level of interest in academic and clinical circles in the area of 'health beliefs' (see for example: Herzlich 1973, Blaxter 1979, Pill and Stott 1981, 1982, 1985). It has been suggested that there exist, in the public mind, a range of explanatory models (Kleinman 1980) which people employ to account for illness and poor health and which serve to identify appropriate paths of treatment. Further to this idea, it has been advanced that individuals and groups have at their disposal a 'repertoire' of health beliefs (Chrisman and Kleinman 1983, Chrisman 1989) on which they may draw under various circumstances. While a certain amount of work has been done on the actual contents of such beliefs (Hellman 1978, Blaxter and Paterson 1982, Williams 1983, Cornwell 1984, Pollock 1988) and some investigations have been carried out into their social distribution (Pill and Stott 1985, Calnan 1987, Cox 1987), the ways in which they influence or inform individual and group behaviour remain somewhat enigmatic (for a useful review see Dean 1984).

The idea of 'candidacy' is of particular interest to the study of health beliefs because it is one way in which a general knowledge about the causes and distribution of illness is placed in an operational field. Through its use, generalised information which is derived from an aggregation of many cases is returned to the realm of the individual. It is a mechanism that helps individuals to assess personal risks, obtain reassuring affirmation of predictability, identify the limits of that predictability (thus mapping *un*-predictability), devise appropriate strategies of personal behaviour and to go some way towards explaining events which, by their very nature, are deeply distressing. In the cultural edifice which our society has erected to make sense of coronary disease and death, 'candidacy' is a central pillar.

### **Candidacy and 'lay epidemiology'**

In the course of our discussions with the informants taking part in our investigations, we have observed that the scientific medical fields of symptomatology, nosology, aetiology and epidemiology have identifiable counterparts in the thoughts and activities of people outside the formal medical community. As is the case with scientific areas of theory and practice, the lay schema is not a series of discrete units, but a complex and interactive system in which each branch can be both informed by and

dependent on the others. Lay and scientific 'ologies' are not, of course, entirely congruent, but we discern a certain degree of overlap.

The notion of 'candidacy' belongs to the area of lay epidemiology and, as is the case with other areas of lay knowledge and belief, it shares much with its more strictly scientific counterpart. Individual cases (from personal observation or report) of people who are known to have suffered heart disease are purposefully linked to other circumstances surrounding the event. From this data, regularities are noted and these contribute to the generation of explanatory hypotheses which serve to challenge or support suspected aetiological processes.

Aetiological theories, in turn, dictate the type of information which is commonly communicated about each case. Thus, because hair colour is not linked to the onset of heart trouble in aetiological hypotheses, the hair colour of sufferers is not noted by observers nor is it communicated in conversation or mass media reportage. The widespread belief that obesity is strongly associated with many heart cases, on the other hand, leads to the noting and communication of the sufferers stature or build. These ideas do not exist as individual snippets of information. They are given coherent form and substance by the use of an overall profile or image of the kind of person who tends to suffer from heart trouble. This person is a 'candidate'.

Clearly the development of these ideas is not an entirely individual affair. Rather it is a collective activity with many different types of input. The mass media and official bodies are the source of much processed scientific data; reports of illness and death are available from family, friends, work colleagues and neighbours; celebrities such as politicians and sports people suffer and die in the public gaze; individuals make their own observations of themselves and of those around them. None of this cultural activity takes place in a vacuum or is drawn *tabula rasa* by an individual. Such is the cultural condition of individuals in mass society that the opinions, attitudes and perspectives they hold tend to be personalised modifications of generalised systems passed on from agencies of the wider society.

In the context of a social formation so overtly conscious of its own technological advance, such modifications often contain the idea that received systems are inherently old fashioned or outmoded. In our experience, this is certainly true of explanatory mechanisms used in the field of health and illness. Here scientific/medical advance is seen as so rapid that there is a general expectation that new treatments, cures and prophylaxes will constantly appear. Those in tune with advances in the field of illness prevention through behaviour change are often labelled 'health conscious'; the obvious parallel being with the similarly fast-moving worlds of fashion and style in clothing and the arts.

### **The idea of candidacy in everyday life**

As a mechanism which orders experience and observation, making sense of everyday events, the idea of candidacy appears in many different social and conversational contexts. We have identified four distinct uses of the candidacy idea:-

- (i) the retrospective explanation of other peoples' illness and death through heart disease.
- (ii) the prediction of other peoples' illness and death through heart disease.
- (iii) the retrospective explanation of one's own illness through heart disease.
- (iv) the assessment of one's own risk from illness and death through heart disease.

As some of the excerpts from our interviews illustrate, the use of the idea of candidacy is often attended by laughter. We find that this aspect of the system is in keeping with a more general cultural tradition which employs humour to defuse danger and so allows the 'unthinkable' to enter everyday discourse.

#### *Candidacy as retrospective explanation*

In the first type of instance, a person who has suffered or died from 'heart' is being discussed:

*Informant:* Mind you, he was always a bugger for his fry-ups and his cream-cakes, so he had to be well up for it, like.

*Informant:* Of course, it was in the family, so it was to be expected really.

*Informant:* Fit, skinny, young. The last person you'd expect to have a coronary!

*CD:* And you say that your uncle had a heart attack . . . .

*Informant:* Well, with him, frankly he was a walking heart attack waiting to happen! (laughter)

Where an individual's own suffering from heart trouble is being discussed or mentioned, the retrospective assessment of candidacy is less likely to be attended by laughter. The definition of the issue as humorous, though, is sometimes an option which the sufferer chooses. As the following excerpt indicates, the explanation of one's own heart trouble is essentially similar to the explanation of the misfortune in others:

*CD:* Do you think that there was luck involved for example, in the onset of your, um, angina the first time you had it? Or of your heart thing the first time you had it?

*Informant:* Not particularly no no I don't think so. I think that was a result of, of, uh . . . a definite sort of stress that was taking place in my life, as it does in so many others.

### *Candidacy as prediction*

In the second type of instance, a person is referred to as being a likely candidate in connection with some event or story which is under discussion. When a local media news bulletin carried a report of a school bus crash precipitated by the driver's sudden heart attack, a teenager joked:

*Informant:* God, half of our drivers look as if they might keel over at any moment! (laughter)

*CD:* Really?

*Informant:* Yeah, big fat wheezy blokes huffing and puffing! (laughter)

Such comments may also refer to the special treatment (gentle, restrained or slow) deemed to be necessary when dealing with a candidate:

*(Informant referring to a minor argument in a cinema queue)* I didn't like to say any more, 'cos she looked as if she might have a heart attack any minute! (laughter)

The predictive dimension of candidacy is also used in everyday conversation in a less humorous way, with such comments as 'he'll have a heart attack if he isn't careful', or 'she shouldn't be carrying that heavy box all that way, a big woman like that'.

### *Candidacy in personal risk assessment*

The use of candidacy in the assessment of personal risk clearly involves the use of the construct for predictive purposes. There are, however, such marked differences in tone, context and 'flavour' between personal and general usage that we describe them separately here. We have observed that the personal assessment use of the candidacy idea is less common in everyday conversation than the other types. For those individuals who participate in this use, however, we would judge that it is of particular importance in assessing the appropriateness of behavioural change.

The language of this type is similar, however:

*Informant:* Thinking about my parents and my job, I suppose I've gotta be a candidate for some kind of heart trouble.

*CD:* Do you think of yourself as being particularly at risk from these kinds of problems?

*Informant:* I don't know why, exactly, but I've always thought of myself as a candidate for cancer, rather than heart.

**The term: 'candidate'**

Although our main aim here is to describe and analyse aspects of a cultural system (in which the actual word 'candidate' is not always used), some comment on the widespread use of the word itself is in order. While we would not choose to dwell on the possibility that some individuals actually seek heart disease, we feel that it is worthy of note that the term 'candidate' is in many ways an ambiguous one in the context of painful, debilitating and sometimes fatal illness.

In its more general uses (the seeking of employment or political office), an individual puts him/herself forward for selection to the desired position. In the case of the coronary candidate, however, the word seems to be used to denote a person who (for a variety of possible reasons) is seen as being at particular risk from the misfortune of heart disease. This usage may be nothing more than a linguistic quirk. On the other hand, there may be some logic in the lexical situation, and we have identified three possible areas which show some link between these uses of the term.

In the first place, many of the behaviours (if not the conditions) which are incorporated in the candidacy system are aspects of life which are generally seen as open to choice. Thus, if an individual achieves candidacy through some kind of indulgence, then the idea of putting-oneself-forward for selection could be present. This idea is concordant with the widespread belief amongst the 'health conscious' that many heart sufferers 'bring it on themselves'. Second, it should be noted that sudden heart stoppage is something of a preferred form of death. 'Dropping dead' from a heart attack is widely seen as a quick, natural, and relatively painless death (in comparison with cancers, respiratory disorders and traumatic accidents) and many individuals profess to desire that end 'given the choice'. Third, we have detected evidence of a jocular attitude amongst some men in the more thrusting end of the enterprise and business community that sees a heart attack as something of a status symbol and proof that success has been earned by hard work.

It should be added, moreover, that the term 'candidate' has been widely used by scientific investigators into CHD. Its occurrence in everyday discourse concerning heart trouble is likely to be, to some extent at least, directly attributable to its use in science. An interesting early airing of the term is found in Gertler *et al* (1951), a report of a small-scale epidemiological investigation of heart patients which identifies certain attributes of coronary candidacy which we have found to be very important in the British lay system.

### How are candidates identified?

The assessment of candidacy rests on three sets of criteria or areas of information: physical appearance, social information and personal information. Which areas come into play depend on the context and circumstances to which the observations relate and to the degree of personal involvement of the observer. If an opinion is being passed on the candidacy of a person seen in passing in the street, then the second two levels of information are unlikely to be available or appropriate. If a person is assessing their own situation, the second two areas may well take on particular importance.

The first and most common type of assessment is based on a simple appraisal of physical appearance. We have found that there is a very strong connection in the public mind between obesity and the risk of heart disorders. If a person is deemed to be fat or overweight, then they are generally seen as being a candidate. Obvious evidence of a lack of fitness (such as heavy breathing or excessive perspiration) are also regularly cited as signs of candidacy. A red or flushed facial complexion is also thought to be an indicator of this general condition. Some informants have also stressed the presence of a grey 'pallor' which can be observed on the faces of individuals who are at risk because of their physical condition. One informant was particularly succinct in response to one of the standard questions on the semi-structured interview schedule:

*CD:* Do you have an image in your mind of the kind of person or sort of person who might suffer from heart trouble?

*Informant:* I think of a fat, overweight person with a grey greasy sheen on their skin.

The second area of information on which candidacy is assessed is information concerning the position of the individual in relation to various parts of the wider social world. Here the three most important areas of interest are the existence of heart trouble in close kin, the location of the individual within the labour market, and the geographical area from which the person comes or in which they reside.

While we have discussed the importance of the hereditary aspect elsewhere (Davison *et al* 1989), it is worth mentioning the details of the other two. As far as occupational status is concerned, the aspects of work which are most strongly associated with coronary candidacy are: mental stress through responsibility/decision making, mental stress through time/production pressure, physical stress (strain) through hard manual labour, poor work environment (fumes, dust, heat, damp), lack of exercise in sedentary work.

In the case of geographical area, it simply appears that some places are more associated with heart disease in the public mind than others. In South

Wales there is a general expectation that Valleys people are more likely candidates than country people or those from the coastal cities. This opinion is linked to several ideas, the foremost among them being that Valleys people eat a generally poor diet; and tend to smoke and drink to excess (see below); that Valleys people are generally poorer than other people and thus experience stress through financial worry; that Valleys people work in poor environments; that Valleys people live in damp places enjoying little sunshine; that Valleys people have suffered these conditions for many generations with the result that susceptibility to heart trouble is now hereditary (see Davison *et al* 1989 for further discussion of this 'Lamarckian' idea). It seems likely that, in other areas of Britain, similar regional observations and prejudices exist.

Personal information which contributes to the assessment of candidacy includes information relating to both an individual's behaviour and to their nature. People who are known to engage in activities strongly associated with causing heart trouble, such as smoking, eating large amounts (especially of fatty food), or consuming excessive amounts of alcohol are thought to be strengthening or increasing their candidacy. Similarly, people whose personal natures tend towards nervousness, excessive worry or regular bouts of anger are generally recognised as possible candidates.

### **Who is a candidate?**

In the course of our investigations we have encountered a wide range of conditions and behaviours which our informants perceive as being causally linked to the onset of heart disorders. In many cases, the fact that an individual exhibits or partakes in just one of these factors is enough for them to be identified as a coronary candidate. This is particularly true in the case of retrospective candidacy, that is when acquaintances of a sufferer admit to 'not being surprised' that X had a heart attack, although they may not have actually predicted it.

In cases where an individual presents an extreme form of a risk condition or behaviour, a more complete form of candidacy emerges which includes a predictive as well as a retrospective dimension. This is also the case when a combination of different risks are identified in the conditions and behaviour of the individual in question. Thus, a person who is thought to be overweight (but not extremely so) may not be identified as a candidate in a predictive sense, but if they suffered a heart attack, their size may well be mentioned retrospectively as a possible cause. If that person also smoked and drank heavily, or held a particularly stressful job, or was subjected to worry through unemployment or debt, their candidacy would be enhanced and a predictive element appear. An *extremely* fat person, however, may well be identified predictively as a candidate, even if they were deemed to be entirely virtuous (and a strong moral dimension is

present) in respect of behavioural risks and 'lucky' in respect of other risky conditions such as hereditary susceptibility.

It should be added here that many risky behaviours and conditions are closely linked to each other. A hereditary propensity to suffering from heart disorders, for example, may well go with an inherited tendency to be overweight. It is also widely assumed that poorer people eat 'badly' largely as a direct function of their poverty. Similarly people who are, by their nature, 'worriers' are likely to smoke more than others, thus doubly enhancing their candidacy. This type of linkage tends to give each individual candidacy an organic wholeness and a personal character. This accords well with the widespread notion that each individual is essentially unique and that each person's experiences and choices in life are different.

The full range of individual conditions and behaviours which we have recorded as being linked to coronary candidacy are listed in Table 1.

Table 1 *People who may be identified as coronary candidates*

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Fat people	
People who don't take exercise and are unfit	
Red faced people	
People with a grey pallor	
Smokers	
People with a heart trouble in the family	
Heavy drinkers	
People who eat excessive amounts of rich, fatty foods	
Worriers (by nature)	
Bad tempered, pessimistic or negative people	
People who are under stress from – work	
	family life
	financial difficulty
	unemployment/retirement
	bereavement
	gambling
People who suffer strain through – hard manual labour	
	conditions of work/home
	excessive leisure exercise
	overindulgence
	(sex, dancing, drugs, lack of sleep, etc)

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It is now clear, then, that the range of conditions and behaviours that are involved in the candidacy system is wide indeed. One of the striking aspects of this width is that almost any type of person could be a candidate. In occupational terms, there are risks attached to the lives of rich 'high-flying executives' and to those of impecunious manual labourers. A sedentary life is seen as risky, but so is a life of over-strenuous exercise. While we judge that, in general, women are seen as being at less risk than

men, it is clear that the candidacy system can be and is applied across gender boundaries. It could also be added that, after the age of about 40, candidacy is seen to increase with age.

Individuals, however, tend to place their own emphasis on various elements of the system, and it is unusual to encounter complete agreement between people as far as the finer details of candidacy and risk are concerned. The social distribution of these emphases (do 'executives', for example, tend to think that they, or manual workers are at greater risk?) is at present under investigation as part of our continuing research project (for some limited but interesting data see O'Looney and Harding 1982).

### **Candidacy and the unpredictability of sudden death**

A striking element of the notion of coronary candidacy is that it is recognised as being a fallible system. There are many coronary illnesses and deaths which occur to people who do not fit any particular candidacy profile, and this is widely noted. Indeed such comments as 'the last person you'd expect' or 'perfectly fit, and always led a healthy life' indicate that these events represent a violation of the candidacy system. It is also widely observed that not *all* candidates develop the illness.

Such violations, however, are readily incorporated into the explanatory model as a whole by the simple recognition that candidacy only indicates increased risk while death from heart attack remains famed for its caprice. A strong element of the public image of heart disease (and of the sudden fatal heart attack in particular) is that it is a random killer. In the course of our field investigation we have observed that, even though most of our informants have professed the opinion that heart disease is to some extent preventable or postponable, the idea that it could happen to anyone (at any time) is omnipresent.

Under these circumstances it could be said that the candidacy system has the second function of providing a simple classification of heart illness episodes. Some are explicable in terms of the conditions and behaviours described above whilst others are not. This second type belong in a residual bad luck category and are referred to through such phrases as 'one of those things', 'when your number's up', 'what's for you is for you', 'fate' or 'destiny'. People are said to have simply 'dropped dead' and the finality of this phrase somehow communicates both a random and sudden event. In the absence of an adequate aetiological hypothesis (the mechanism of misfortune is not understood), the answer to the more personal explanatory question (why this person and not that one?) is found in another rich field of British cultural life, that of chance.

The candidacy system, then, has two interwoven strands. On the one hand is a set of criteria which can be used in the post-hoc explanation of illness and death, the prediction of illness and death, and the assessment of

risk. On the other hand, there exists the all-important knowledge that the system is fallible. It cannot account for all coronary disease and death, neither can it account for the apparently unwarranted longevity of some of those that the system itself labels as candidates. Thus the observation that 'it never seems to happen to the people you expect it to happen to' becomes integrated as a central part of the system itself.

### **Candidacy, population approaches and the prevention paradox**

It can be seen from the description of the system given above that many of the factors that go into the assessment of candidacy are closely linked to those highlighted by contemporary health promotion campaigns. But to see quite how compatible the systems are, it is necessary to examine the theory and rationale underpinning strategies which treat the entire population as being at risk.

The essence of the population approach to heart disease prevention is the recognition that screening individuals to identify those at high risk is a strategy which can deliver only limited success. This is because most fatal heart attacks happen to people outside the high risk group. Even if screening were well attended, identified high-risk subjects accurately and led to successful intervention in all of the high risk cases it discovered, the total number of heart deaths prevented would be relatively small.

Where the bulk of deaths from CHD occur in the middle range of the population distribution of any given risk factor, a strategy must be followed which brings about a general diminution of a given risk in the population as a whole. Such a strategy, however, leads to a situation in which many individuals change their lives to no personal end – they would not have had a heart attack anyway. Rose terms this the 'Prevention Paradox', that is that 'a preventive measure which brings much benefit to the population offers little to each participating individual' (Rose 1985).

The prevention paradox poses some problems for those involved in the development of population approaches to heart disease prevention in that, if people are told that behavioural change is statistically unlikely to benefit them as individuals, they are unlikely to take part. Simultaneously, it is recognised that the most efficient method of mass behavioural change is to change the norms or rules of behaviour – in short to change culture itself. As Rose points out: 'If non-smoking eventually becomes "normal", then it will be much less necessary to keep on persuading individuals. Once a social norm of behaviour has become accepted and (in the case of diet) once the supply industries have adapted themselves to the new pattern, then the maintenance of that situation no longer requires effort from individuals. The health education phase aimed at changing individuals is, we hope, a temporary necessity, pending changes in the norms of what is socially acceptable' (Rose 1985: 37).

Rather than communicate the paradoxical nature of population strategies to the general public, the response of health educators and health promoters in Wales and elsewhere has been to disseminate simple messages suggesting that 'saturated fat is bad for you – eat less', 'obesity is dangerous – stay slim', 'exercise is good for you – do more' etc. The strong implication that flows from the contemporary 'health lifestyles' movement is that, for example, all saturated fat is always bad for everyone. The fact that this type of message is at best a distortion of the epidemiological evidence (see for example Oliver 1987) appears not to have diminished the zeal of its delivery.

The strategists of modern population approaches, however, have overlooked the existence and operation of lay epidemiology. The facts that ordinary people notice illness and death, talk about these events and partake in individual and group explanations has important implications for the cultural engineering activities of the health promoters. Whether or not coronary mortality drops, heart attacks will continue to kill people who were apparently not at risk and people who are at risk will continue to avoid heart attacks.

The basic result of the cultural engineering approach to coronary prevention is that publicly recognised risk thresholds are lowered. People who, before the onset of whole population health education, never thought of themselves as being at risk (from their diet, for example) now do. In the course of our discussions with informants and our observations of social responses to health education, we have identified two important outcomes of the public lowering of risk thresholds. Firstly, the number of individuals who survive risky behaviours becomes greater. Secondly, while the number of coronary cases who were not apparently at risk diminishes, there is a heightening of their public profile<sup>4</sup>.

As we have seen, lay epidemiology detects these anomalous deaths and unwarranted survivals and cultural systems of explanation exist to account for them. Those who have lived beyond publicly recognised risk thresholds and survived into a healthy old age are seen as being 'lucky' because their individual 'constitution' allowed them to enjoy themselves and remain alive. Those who have led safe lives yet not 'died of old age', have their passing put down to 'bad luck', 'just one of those things', or the mysterious activities of the 'grim reaper'. It is ironic that such evidently fatalistic cultural concepts should be given more rather than less explanatory power by the activities of modern health education, whose stated goals lie in the opposite direction.

Aside from irony, however, there are also important political implications to be found in the interaction between lay epidemiology and the prevention paradox. It is clear that modern British health education has never come to terms with the complex relationship between the individual and the collective in the field of health and illness. Rather it has opted for a form of worthy dishonesty based on two simple premises. First, that

individual citizens cannot or will not take part in behavioral change unless they are encouraged to anticipate an individual benefit. Second, that the broadcasting of propaganda based on half-truth, simplification and distortion is a legitimate use of public funds, so long as the goal of the enterprise is the good of the community.

The responses of the lay public in Britain to the current health education campaigns concerning individual behaviour and the risks of CHD reveal a sharp conflict between self-interest and shared values. While the operation of lay epidemiology ensures that it is impossible to fool all of the people all of the time, the central political issue remains unresolved. It will only be with the socialisation of health, when it is seen as a collective and not an individual phenomenon, that the problems of the prevention paradox will be overcome.

*Health Care Evaluation Unit,  
Dept. of Epidemiology and Community Medicine,  
University of Bristol,  
and  
Dept. of Community Medicine,  
University College, London*

## Notes

- 1 The 'official' line on community intervention and personal risk reduction appears in literally thousands of papers, books and pieces of publicity material. For a recent comprehensive resume of British orthodoxy, see the special 1987 issue of *Health Trends* (2, 19). Of particular interest is Oliver's contribution which sounds a rare note of professional scientific caution. The theoretical background to whole population approaches is described in Rose (1981). For diverse contributions to the critique of the dominant paradigm, see Cole (1988), Crawford (1977), Davey Smith (1989), Farrant and Russell (1986), Gillick (1984), McCormick and Skrabanek (1988), Naidoo (1986) and Radical Statistics Health Group (1987).
- 2 The gender and occupational status of the randomly sampled, formally interviewed informants (June 1988–December 1989) were as follows:

<i>R-G Occupational Class</i>	<i>Male</i>	<i>Female</i>	<i>ALL</i>
I + II	24	26	50
III <sub>n</sub>	14	23	37
III <sub>m</sub>	27	21	48
IV + V	23	22	45
TOTAL	88	92	180

- 3 These issues have been constructively addressed by the 'Attribution Theory' school of social psychology. A useful review and analysis of this work is provided by Moscovici and Hewstone (1983). From a cultural point of view, however,

their sharp distinction between 'standard' (scientific, objective) thinking and 'non-standard' (lay, subjective) thinking seems unconvincing. Our data also lead us to question seriously their assertion that 'the ordinary person seems at such pains to establish that things do not happen by chance, that an explanation is given although a real cause is lacking' (Moscovici and Hewstone 1983: 122). While this may be what scientifically-minded health promoters would like to achieve, our data indicate that it is certainly not the case where theorising about heart disease is concerned. As this discussion of lay epidemiology attempts to show, ideas of luck, fate and inexplicable random distribution continue to play an important part in modern British explanatory culture.

- 4 In terms of contemporary, everyday discourse on health, behaviour and candidacy, these issues appear as two important figures. On the one hand are those we have termed 'Uncle Normans' (Davison 1989), as in 'my Uncle Norman ate bacon and egg every day and lived till 93'. On the other are those who are seen as 'the last person you'd expect to have a coronary'. Both types make an appearance in the social networks of many individuals, and 'the last person' makes regular appearances in the mass media.

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