

THE EPIDEMIC MODEL AND ITS ASSUMPTIONS

By now in the literature on alcohol and other drugs there are a number of discussions laying out very explicitly the existence of alternative models of alcohol and drug use (e.g., Siegler & Osmond, 1968; Siegler, Osmond & Newell, 1968; Bruun, 1971; Cahn, 1970; Evans, 1969; National Commission . . . , 1972; Cahalan & Room, 1973, Chapter 2). It is, for that matter, a matter of common knowledge that separate medical and criminal models and explanations for alcohol and drug use exist and are, to some extent, in competition. What is less often recognized is the existence of separate and potentially competing models within such more general rubrics as medical, criminal, moral, or sociological. Calling alcoholism or drug addiction a disease sooner or later invites the question of what kind of disease is involved. And here, as Christie and Bruun remark, "the conceptual framework seems to be all chaos" (1970, p. 65). In this regard, Robinson has recently noted "the importance of teasing out and attempting to delineate the models of different peoples' disease concepts of alcoholism" (1972, p. 1038).

In this discussion we will consider the assumptions and implications of one of these particular disease models, the epidemic model, as it is applied to the use of alcohol and other drugs. Actually, the term "model" is misleading, giving the topic an air of abstract formalism. What we are talking about here are firmly-held, though often unarticulated, beliefs involving the nature of reality, the foundations of social order, and the interpretation and social disposition to be put on the phenomena covered by the model. We might better describe what we are talking about as "governing images": summary characterizations of the phenomena concerned which largely predetermine the practical actions to be taken with respect to them.

Within the general field of disease, a wide variety of such "governing images" can be discerned, formed on various principles: for instance, in terms of an analogy with a dramatic or commonplace disease (e.g. for alcohol problems, diabetes,

allergic reaction, bronchitis), in terms of the appropriate social role (disability, disfigurement, "hopeful case", crazy person), or in terms of characteristics of general classes of diseases (epidemic, wound, metastasis). The governing images are not neatly arranged in hierarchical ranks or contrasting types, and are often conjoined or merged into each other. Often, then, the process of testing their relative goodness of fit to a particular set of empirical phenomena requires a considerable preliminary specification of what the various more or less alternative governing images mean and imply.

The concept of "epidemic" and the related concept of "contagion" are very widely used as governing images concerning youthful illicit drug use. In the alcohol literature, on the other hand, we have to look back to the heyday of the temperance movement to find a comparable usage. The concept of "epidemic" clearly carries with it a whole agenda of assumptions about the nature of the reality it seeks to comprehend, but these assumptions are rarely examined or explicated. The primary exceptions to this seems to be the work of Jaffe and various associates at Illinois, where some of the implications are rather clearly spelled out. Jaffe has written an essay (1973) laying out explicitly the very practical implications of adopting a particular governing image, using the concept of "contagion" as his exemplar. In various articles in which Hughes is the first author, the Illinois researchers have described sustained attempts to take seriously and follow out to their logical programmatic conclusions some of the assumptions of the epidemic model (e.g., Hughes, Crawford and Barker, 1971; Hughes & Jaffe, 1971; Hughes, Senay & Parker, 1972; Hughes, Barker, Crawford & Jaffe, 1972; Hughes & Crawford, 1973).

As we have noted, an epidemic model explicitly invokes a disease conceptualization. Thus, it shares with other types of disease models a number of general implications about the nature of the

*Drinking and Drug Practices Surveyor 8 (August 1973),
pp. 16-21.*

phenomena to be thus characterized (Room, 1970):

- that they have enough in common so as to be usefully classed together;
- that they represent a condition with extent in time (rather than a single occurrence);
- that the condition, however caused, is located in the individual person;
- that the condition is undesirable and foreign to the individual's natural or optimal state.

In most cases, a disease rubric also carries the implication, as Talcott Parsons and others have noted, that the condition is involuntary, not willfully continued by the individual affected. This implication of disease models has been the primary motivation behind humanitarian efforts to get all kinds of human behaviors declared to be diseases rather than crimes, sins or social problems (Room, 1972).

While the epidemic disease model, as we shall discuss, tends to focus attention towards social and ecological patterns and away from individual propensities, it paradoxically tends to run against the implication of most disease models by not carrying a specific exoneration of the "patient."* Historically, often there was some feeling of culpability of the affected persons in an epidemic; cholera, for instance, was widely thought in the nineteenth century to be a manifestation of the immoral living habits of the poor (Rosenberg, 1962). At the least, in the great public health campaigns of the past, the question of individual culpability for becoming sick was simply swept aside, and public health laws are still the primary example of laws which can impose very severe de-facto penalties (e.g., quarantine) without the constitutional protections (e.g., against search and seizure) which would be applicable where culpability is at stake. In some more recent campaigns, culpability is in fact assumed. The hero of Ibsen's *Ghosts* may not have been responsible for his condition; but public health campaigns on venereal disease tend, in spite of a cover of rhetoric, to reflect medical and general attitudes that venereal diseases are an example of poetic justice for willful moral crimes.

Venereal disease campaigns are usually seen as the most direct precedent for an epidemic model of drug use, and are cited by Hughes and co-workers as the exemplar on which their efforts are modeled. Unlike disease models in general, then, an epidemic disease model at most side-steps the issue of the "patient's" culpability and, in fact, often carries with it an odium of willful behavior. Particularly when, as for venereal disease and drug addiction, the disease involved is seen as being associated with the voluntary enjoyment of forbidden pleasures, an epidemic model tends to carry with it a justification of the most draconian measures against the moral degenerates harboring the disease, for the protection of the still uncorrupted. In these circumstances, an epidemic model assumes that the balance between the rights of those affected and the rights of all other parties is tilted very heavily against those affected.

Besides implications about the nature of phenomena, disease conceptualizations in general carry implications about the social processing of the phenomena. The most obvious of these is that the phenomena, whatever their nature, fall within the jurisdiction of medical institutions, medical professions, and medical ideologies. Classically, a disease is something to be cured, controlled or prevented, rather than ignored, encouraged, mandated, forbidden or substituted for. A disease is something to be processed

*The Marihuana Commission's second report (National Commission . . . , 1973) includes a discussion of "contagion"/epidemic models (pp. 271-272), but makes what seems to me the confused argument that drug use cannot be contagion because it happens with the "victim's consent," while in the same paragraph mentioning drug dependence rather than drug use as the thing that is risked. With the assumptions implied in this discussion, a logical counterargument would be that there is an exact analogy to VD, with "dependence" in the role of the venereal disease, and "drug use" in the role of voluntary sexual intercourse. As argued in the text, however, "consent" is not an issue for adherents of an epidemic model.

by a therapist or therapeutic team with legitimated authority over the processing. Ideologically (although not always practically), the eradication of disease is a moral imperative; calling something a disease is not only labelling it undesirable and abnormal, but also issuing a call for action against it. Optimistic--and activist--pragmatism is the characteristic clinical style (Room, 1972). Applying a disease concept to human behavior is thus a classical tactic of "moral entrepreneurs": for instance, calling something a "cancer within the body politic," so automatically invokes this moral imperative that it is unnecessary to add "which must be cut out." As Jock Young implies (1971), clinical perspectives on human behavior slide very easily into a stance of moral and social absolutism. The very idea of tolerating or accepting something which is viewed as a disease is shocking.

Besides these general implications of any disease model, an "epidemic" or "contagion" model also carries implications specific to the model, which are often in contrast with alternative disease models. To start with, when applied in the drug field, "epidemic" and "contagion" are characterizations of change in a set of human behaviors, specifically in the use of particular drugs. The terms are used to refer to particular kinds of change: to increase rather than decrease in use, and to increase in the form of initiation of new users rather than to increased use or other changes in use by old users. The terms are, of course, explicitly placing the behaviors referred to under the rubric of disease, and disease entities in clinical thought tend to be something you have or don't have rather than a dimension which you have more or less of (see the comments on the clinical environment of disease concepts in Room, 1972). So, when we speak of an epidemic, we are usually speaking of a pattern of occurrences rather than a pattern of intensifications or modifications. (Of course, in areas where it is the intensification of a behavior which is regarded as a disease, only the occurrence of the intensifications is counted in the epidemic. In principle, a "normal" laugh would not be counted in an epidemic of hysteria.)

Applying "epidemic" or "contagion" to a pattern of increasing use, then, concentrates attention on the question and process of initiation into use (see Hughes and Crawford, 1973 and deAlarcón, 1969) more or less to the exclusion of consideration of other kinds of changes in use--intensification, modification, diminution, cessation--and of stability of use. Epidemic models are not normally applied to phenomena which are seen as relatively stable in their overall rates--like alcohol problems--even if the stable overall rate conceals a great deal of initiation and remission at the individual level.

Hughes, Jaffe and coworkers have recognized quite explicitly the contrasting views of the nature of drug-using behavior implied by a mental illness versus a contagion model:

The evidence presented in this paper suggests that the incidence of heroin addiction can follow the course of contagious diseases, fluctuating from periods of epidemic spread on the one hand to relatively quiescent periods on the other. The application of a contagious disease framework to the study of heroin addiction suggests . . . a need to shift emphasis from the psychological characteristics of "diseased" individuals to the specific mechanisms of spread. . . . Planners appear to treat mental illness as an epidemic disorder with fairly stable incidence and prevalence rates for a given community over time. . . . The incidence and prevalence of a contagious disease, on the other hand, may vary greatly from community to community and from year to year in the same community. . . . Community mental health programs are not expected to control mental illness. While the mental health system does detain emotionally disturbed individuals who disrupt the community, it does not seek out the mentally ill and coerce them into treatment. Contagious disease programs, however, have a clear mandate for disease control. Protection of the general public from exposure to and infection from actively diseased individuals requires that they be coerced into treatment should they

refuse help voluntarily. This notion of coercive treatment is alien to the tradition of community mental health and could be a source of conflict for mental health workers (Hughes, Barker, Crawford and Jaffe, 1972, p. 1000).

The epidemic model is traditionally applied in situations of great urgency and gravity. It seems to me that the quotation accurately conveys the spirit of this heroic tradition of epidemiological intervention efforts. What is missing, however, is any recognition of the fact that the efforts are not equally heroic for all infectious diseases. The degree of heroism in the efforts, in fact, seems to vary according to a regular calculus of the risks involved in catching the disease, including: (a) the probability of death or irreversible and debilitating damage; (b) the probability of chronic impairment; and (c) the probable span of time affected by an ill-effect (so that a child's death is more shocking than an old person's).

Medical ideology, and particularly epidemiological ideology, tends to be avowedly activist and oriented to the heroic: every epidemiologist carries in his knapsack the handle to the Broadstreet pump; the moral imperative to prevention is so strong that the fact that there are differentiations in our commitment of energies between preventing rabies and preventing warts is often not noticed. But, in fact, public health efforts to combat syphilis were less strenuous in the heyday of penicillin than either before that time, or since the increase in resistant strains. (For an attempt at an analogous calculus of the relative balancing of costs and risks in occupational and transportation safety, see Starr, 1969.) It is clear, as the Marijuana Commission points out, that differentially severe contagions receive and merit different kinds of prevention action (National Commission . . . , 1973, pp. 271-2).

As the quotation from Hughes et al. emphasized, a contagion model is implicitly in contrast with other disease models of drug use, notably the "mental illness" model of psychological dependence currently in the ascendant in the drug literature (Room, 1973). Dependence notions emphasize chronicity, and focus on character-

istics of the individual and on the psychological loading to be put on behavior. The process of transmission--the effective accessibility of the drug--is taken for granted; the research question concerns the individual differences in susceptibility.

Contagion notions emphasize change, and focus on behavior itself and the ecological and sociometric patternings of behavior. Individual susceptibility is taken for granted ("It's so good, don't even try it once" --Smith and Gay, 1972); the process of transmission is the focus of interest. For contagion models, the drug-using behavior itself tends to be regarded as the "seat" of the disease; for dependence models, the behavior is at most an indicator of an entity "seated" in the individual's will. Other disease "seatings" are also available, though currently out of fashion for the opiates. Long-term physiological consequences may be regarded as the "disease" to be prevented, as with cigarette smoking; or long-term social consequences, as is often the case with the homeless alcoholic on skid row. Each of these disease models has a different set of interpretations to bring to bear on the data; as also, of course, do the various alternative non-disease models.

The emphasis of the contagion model on the transmission process brings it into the arms of several subdisciplines of sociology. The diagrams of Hughes and Crawford (1973) and of deAlarcón (1969) are essentially a variety of sociometric chart. Discussions of social contagion processes traverse the same territory as differential association theory. Classical diffusion research in sociology (Rogers, 1962) tended to make the assumption that all innovations studied were universally desirable and took as its problem overcoming the recalcitrance of the potential adoptors. This is now matched by a style of research in diffusion that assumes the universal undesirability of the innovation and takes as its problem negating the susceptibility of the potential adoptors. By directing attention to transmission processes and to factors external to the affected individual's self, the epidemic model focuses upon essentially sociological data. But

though they share a conceptual territory, the sociologist and the clinically-trained epidemiologist are likely to have small patience with each other's disciplinary paradigms, and radically different approaches to the data and interpretations of its meaning are likely to result.

As we noted, governing images of drug use like the epidemic model are more frequently invoked than examined; the models are usually seen as setting the agenda for research rather than as forming part of the substance of the research. It is still rare to find the various alternative models for the same field of behavior defined explicitly in contrast to one another, and even rarer to find their relative predictive strength subject to empirical testing. Yet clearly the different images cannot all be equally faithful to reality all the time, and to the extent they can be operationalized, the models can and should be tested for their relative goodness of fit to various kinds of empirical data. Hirschi's landmark study, Causes of Delinquency (1972), provides a precedent in its testing of the evidence for three different sociological models of delinquent behavior.

The testing of an epidemic model on empirical data is hampered by the fact that the model does not specify expectations for many aspects of the data. Is it an epidemic of drug use in general or of use of a particular drug (or a particular mode of administration)? (Donnellis Jones, 1968) that is to be tested for? Does an epidemic end in a return to previous patterns or can it include a pattern of a permanent rise in usage? If there is a fall in rates, is this to be attributed, as Hughes et al. do, to a "delayed community response" or to the epidemic's burning itself out? (This is a problem in interpreting Dr. Snow's response, too: the epidemic was apparently already on the wane when he took matters into his own hands.) There are many historical examples of tendencies to self-limitations in hazardous or impulsive human behavior. Since the "seriousness" of the behavior, either in its own right or in its implications for the future, seems to be an important part of the epidemic model, to what extent can we operationalize and test for the seriousness of particular patterns of behavior?

Even when the problems of measurement can be solved, the empirical evidence will not, of course, conclusively settle which governing image, if any, best fits any particular circumstances and behaviors. The evidence will still be subject to varying interpretations, and will be viewed by conflicting ideological parties as a weapon for their dispute rather than as an Occam's razor for determining the truth. But we must at least hope that, in the long run, the piling up of relevant empirical data will have its effect on the governing images with which we view alcohol and other drug use.

--Robin Room

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CONCEPTUAL MODELS OF DRUG DEPENDENCE

"Drug abusers'? What a disgusting term! Dope fiends is the name, DOPE FIENDS!"

--Dick Tracy, 1971.