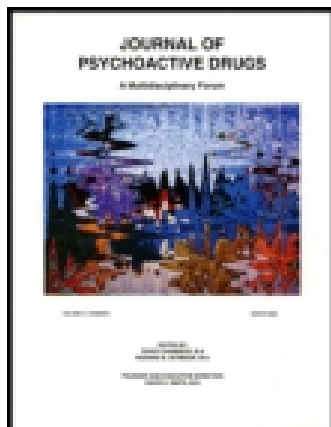


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## Journal of Psychoactive Drugs

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/ujpd20>

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Published online: 24 Jan 2012.

To cite this article: Scott O. Lilienfeld (1995) Reply to Maltzman's "Why Alcoholism is a Disease", Journal of Psychoactive Drugs, 27:3, 287-291, DOI: [10.1080/02791072.1995.10472473](https://doi.org/10.1080/02791072.1995.10472473)

To link to this article: <http://dx.doi.org/10.1080/02791072.1995.10472473>

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# Short Communication

## REPLY TO MALTZMAN'S "WHY ALCOHOLISM IS A DISEASE"

Scott O. Lilienfeld, Ph.D.\*

In a recent article in this journal titled "Why Alcoholism is a Disease," Maltzman (1994) addressed a number of important issues regarding the disease concept of alcoholism and challenged the assertions of prominent critics of this concept (e.g., Peele, Brodsky & Arnold 1991; Fingarette 1988; Marlatt, Demming & Reid 1973). In his response to these critics, Maltzman raised several points with which the present author concurs. For example, he argued that social value judgments play a key role in definitions of disorder (see also Wakefield 1993, 1992a, 1992b) and that the question of whether a psychological or medical condition is a disease bears no necessary implications for either its treatment or treatability.

Before introducing his major arguments, Maltzman (1994:13) pointed out that "despite the number and extent of remarks concerning the disease concept of alcoholism, such discussions have all suffered from the same shortcoming. None have (*sic*) examined the meaning of the concept of disease *per se* in any depth. They have not examined the notion of disease in light of developments in biopsychosocial medicine . . . and the philosophy of science and of medicine."

In this reply I focus on the conceptual underpinnings of Maltzman's claims regarding the concept of disease, and argue that these claims actually undermine many of his principal arguments. Although Maltzman intended to present a more sophisticated treatment of the disease model of alcoholism in light of conceptual and philosophical advances concerning the nature of disease entities (e.g., Whitbeck 1977), it is precisely on these grounds that his reasoning is found to be most wanting. As a result, Maltzman's comments have contributed more confusion than clarification to the debate concerning the disease concept of alcoholism. An alternative formulation of disease is proposed that may help to bring closure to intractable debates regarding this concept.

## THE NATURE OF SYNDROMES

Maltzman began his defense of the disease model of alcoholism by adducing support for the assertion that alcoholism is a syndrome. He defined a syndrome as "a lawful pattern of recurrent observable signs and symptoms" (p. 14). This definition, although not technically incorrect, lacks clarity. More precisely, a syndrome is with few exceptions a constellation of signs and symptoms that covary across individuals. This constellation is "lawful" in that the diagnostic features constituting it tend to be correlated with one another at higher than chance levels. In rare cases, syndromes comprise signs and symptoms that are largely or entirely uncorrelated across individuals, but which point to an underlying pathological state. Gerstmann's syndrome, for example, consists of right-left disorientation, agraphia, acalculia, and finger agnosia which, although negligibly correlated across individuals, are suggestive of parieto-occipital disturbance (Benton 1959).

Although Maltzman is correct that alcoholism fulfills the traditional criteria for a syndrome (i.e., a covarying set of signs and symptoms), he committed three errors in his discussion of the nature of syndromes. Because these errors have the potential to produce confusion regarding the definition of syndromes, they should be rectified before proceeding further. First, Maltzman provided the following example in the context of illustrating the nature of a syndrome: "If I get up every morning, shave, shower, and eat my corn flakes smothered with ketchup, this is a recurrent pattern of behavior" (p. 14). Maltzman is incorrect, however, in maintaining that this consistent behavior pattern is a syndrome. As noted above, a syndrome refers to the covariation of characteristics (typically signs and symptoms) across, not within, individuals. A syndrome is a nomothetic, not an idiographic, entity that is meaningful only in reference to a population or sample.

Second, Maltzman mistakenly invoked the longitudinal pattern of a condition as evidence for its syndromal nature. For example, he reviewed data suggesting that alcoholism tends to be characterized by a predictable pattern of phases over time, as indicated by the pioneering work of Jellinek (1952). Maltzman concluded that "these phaseology studies provide evidence supporting one of the two criteria that must be met for a condition to merit the classification of a disease; it is a syndrome" (p. 18). But the longitudinal pattern of a set of diagnostic characteristics is

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irrelevant to its syndromal status, because syndromes are defined by the cross-sectional covariation of signs and symptoms across all individuals, not by the longitudinal course of individuals who already possess the signs and symptoms in question. The data cited by Maltzman bear on the predictive validity of the syndrome of alcoholism (e.g., Robins & Guze 1970), but not on the question of whether alcoholism constitutes a syndrome to begin with.

Third, Maltzman mistakenly contended that the diagnostic reliability of a condition is a necessary condition for its classification as a syndrome. He referred to the high inter-rater reliabilities achieved for the diagnoses of alcohol dependence and alcohol abuse in recent studies (e.g., Williams et al. 1992) and averred that "if alcoholism and problem drinking were not syndromes, they could not be reliably diagnosed" (p. 19). In fact, however, the issue of inter-rater reliability is irrelevant to the syndromal nature of a condition, because raters can agree with perfect or near-perfect accuracy on the presence or absence of a composite of features that are largely or entirely uncorrelated across individuals. For example, imagine that a group of individuals is asked to rate a sample of subjects on the following features: height, nose width, and hair length. Although the pairwise intercorrelations among each of these characteristics will be close to zero, raters will probably demonstrate excellent agreement on the composite of these three characteristics. Internal consistency, not inter-rater reliability, is a prerequisite for a condition to be regarded as a syndrome.

#### DISEASES AS LIFE-THREATENING SYNDROMES

Central to Maltzman's defense of the disease model of alcoholism is the following claim: "The rule [for a syndrome to be classified as a disease] is that the condition must have two characteristics: it must be a syndrome and it must be life threatening" (p. 15; see also Maltzman 1991). Although Maltzman did not delineate the criteria required for a syndrome to be life threatening (e.g., Must this syndrome involve a direct short-term threat to life? Or can its threat to life be long-term or eventual?), his definition necessarily implies that a disease must on average reduce the life spans of afflicted individuals.

Maltzman neglected to point out that definitions of disease involving decreased life expectancy or other criteria involving biological disadvantage (e.g., reduced evolutionary fitness) have been posited previously (e.g., Boorse 1975; Kendell 1975; Scadding 1967) and have long since been discarded among philosophers of medicine. This is because such definitions are subject to numerous counterexamples, as well as being flawed conceptually. Colds, dental caries, psoriasis, and postherpetic neuralgia, although widely agreed on examples of disease, have essentially no effect

on average life expectancy (Wakefield 1992a). Such counterexamples are probably even more abundant in the domain of psychopathology, where many well-established mental disorders (e.g., paraphilias, somatoform disorders, reading disabilities) presumably have little or no effect on mortality rates. Consequently, Maltzman's definition of disease is underinclusive.

Conversely, Maltzman's definition would classify as diseases a number of conditions and behavior patterns that are widely regarded as nondiseases. Pregnancy, for example, is a syndrome because it involves a constellation of signs and symptoms (e.g., presence of an embryo or fetus, increased weight, morning sickness, fatigue) that covary across individuals. Because pregnancy, especially in previous centuries, reduced the average life spans of affected individuals, it would have satisfied Maltzman's criteria for disease. Similarly, individuals whose political behaviors and attitudes bring them into marked conflict with extremely totalitarian regimes (e.g., students who openly espouse democratic opinions in modern-day communist China) would in many cases be considered diseased according to Maltzman's criteria, because their behaviors and attitudes would reduce their life expectancy.<sup>1</sup> Thus, Maltzman's definition of disease also is overinclusive.

In addition, Maltzman's definition of disease is flawed conceptually because it suggests that certain syndromes can be transformed from diseases into nondiseases, and vice versa, simply by altering the culture or environment of affected individuals. Consequently, his definition is subject to further counterexamples. For instance, individuals with sickle-cell trait experience sickling only in oxygen-deprived (typically high-altitude) environments. Maltzman's definition therefore implies that sickle-cell trait would not constitute a disease among individuals living at sea level or in low-altitude environments (see also Wakefield 1993). Similarly, individuals with allergies and hemophilia experience symptoms only when exposed to specific environmental stimuli (viz., pollen and skin lacerations, respectively). Maltzman's definition thus implies that individuals with allergies or hemophilia who live in environments that protect individuals from such stimuli would not be diseased.

Maltzman's definition also suggests that a syndrome can change rather suddenly from a nondisease to a disease as a consequence of newly originating complications of this syndrome. Homosexuality, for example, would probably not have fulfilled Maltzman's criteria for disease prior to the appearance of the human immunodeficiency virus (HIV). Following the spread of HIV, however, homosexuals now have a significantly reduced average life expectancy and thus would qualify as diseased according to Maltzman's criteria. The susceptibility of Maltzman's definition to such short-term changes renders it incapable of providing an enduring classification of disease.

## DISEASES AS VALUE LADEN

Maltzman correctly notes that social value judgments play a key role in definitions of disease. This point has been made by a number of other authors (e.g., Pichot 1986; Sedgwick 1982; Szasz 1960) and is consistent with the observation that the classification of certain behavior patterns (e.g., homosexuality; see Spitzer 1981) as diseases or nondiseases has changed over time as a consequence of altered societal attitudes. More recently, Wakefield (1993, 1992a, 1992b) has contended that disorders are defined in terms of both a scientific component (specifically, a dysfunction of a naturally selected biological or psychological system) and a social component (specifically, a value judgment that this dysfunction is harmful to the individual, society, or both). For example, albinism, fused toes, and reversed heart position, although biological dysfunctions, are not generally viewed as diseases because they are not judged by society to be harmful to either the individual or others (Wakefield 1992a, 1992b). Conversely, value judgments alone are not sufficient to account for definitions of disease. For example, extreme laziness and rudeness, although negatively valued in most or all cultures, are not regarded as diseases, perhaps because they do not involve dysfunctions of biological or psychological systems (Wakefield 1992a).

The difficulty with Maltzman's argument that diseases are value laden, however, is that it directly contradicts other key elements of his definition of disease. As noted earlier, Maltzman defined disease as a life-threatening syndrome. The life-threatening nature of a syndrome, however, is not a value judgment; a syndrome either shortens the average life spans of afflicted individuals or it does not. Moreover, Maltzman asserted that most authors have "inappropriately treated this issue [the question of whether alcoholism is a disease] as though it is an empirical question that is in principle falsifiable" (p. 13). Again, this claim is logically inconsistent with Maltzman's assertions that a disease must be both a syndrome and life threatening. Both assertions are eminently falsifiable and thus lie within the boundaries of science.

Moreover, Maltzman compounded this confusion by elsewhere defining disease as a "significant deviation from a norm or standard of health as judged by experts" (p. 15; see also p. 28). Although this judgment is surely influenced in part by subjective values of health, it is not equivalent to the question of whether a syndrome reduces life expectancy, which is a purely factual issue. In addition, as noted earlier, some marked deviations from consensual standards of health (e.g., colds, psoriasis) exert essentially no influence on life expectancy. Consequently, Maltzman's formulation of disease is internally contradictory and is thus either unworkable or in need of modification.

## LEVELS OF SCIENTIFIC UNDERSTANDING

Maltzman avers that "in none of the diseases mentioned, or any other, is there an assumption that the observable pattern of signs and symptoms is caused by some underlying disease state . . . The disease *is* the lawful pattern of recurring observable signs and symptoms" [emphasis in original] (p. 15). Maltzman is incorrect, however, that etiology is irrelevant to the classification of a syndrome as a disease. To the contrary, etiology has traditionally been accorded an important role in the classification of diseases in organic medicine (Meehl & Golden 1982).

In this context, Kazdin (1983) has distinguished among syndrome, disorder, and disease on the basis of levels of scientific understanding concerning their underlying pathology and causal processes (see Gough 1971, for a similar discussion of three "levels of diagnosis"). Syndromes, as previously noted, are virtually always constellations of signs and symptoms that covary across individuals. Disorders can in turn be defined as syndromes that cannot be accounted for by other, more "basic" (i.e., causally primary) conditions. Specific phobia would be defined as a disorder in DSM-IV (American Psychiatric Association 1994) because it consists of a covarying set of signs and symptoms (e.g., marked avoidance behavior in the presence of a feared stimulus, persistent fear of this stimulus) that cannot be accounted for by the presence of other mental disorders characterized by anxiety (e.g., obsessive-compulsive disorder; see Lilienfeld, Waldman & Israel 1994).

Finally, diseases are disorders in which the pathological processes have been identified and in which the etiology is known or at least reasonably well understood (see also Lilienfeld et al. 1994; Meehl & Golden 1982). Although pathology is sometimes accorded more emphasis than etiology in definitions of disease (e.g., Spitzer & Wilson 1975), at least some progress has been made toward uncovering the etiological processes in traditional diseases. Sickle-cell trait, for instance, is an exemplar of a disease because both its pathology (e.g., crescent-shaped erythrocytes containing hemoglobin S) and etiology (two autosomal recessive alleles) have been identified (Sutton 1980). In the case of less prototypical examples of disease, such as Alzheimer's dementia (Selkoe 1992), the pathology (e.g., neurofibrillary tangles, senile plaques, amyloid angiopathy) is clearly identified and the understanding of the etiology is incomplete but evolving.

According to Kazdin's threefold distinction, virtually all of the conditions in DSM-IV (including alcohol dependence and abuse) are best viewed as syndromes or, in rare cases, disorders. Maltzman is therefore incorrect in suggesting that alcoholism fulfills the same criteria for disease as do most diseases in organic medicine, because neither the pathology nor etiology of alcoholism is adequately



understood. Although Maltzman reviewed evidence indicating that clear-cut and relatively enduring neuropathological changes (e.g., frontal lobe damage) often result from prolonged alcohol use (Harper & Kril 1990), these alterations constitute the sequelae sometimes produced by alcoholism rather than the pathology associated with alcoholism *per se*. Maltzman's assertion that alcoholism is a disease thus implies a deeper level of scientific understanding of alcoholism than is currently available.

### DISCUSSION OF IRRELEVANT EVIDENCE

Maltzman committed an error that has been virtually ubiquitous among both proponents and opponents of the disease model of alcoholism (e.g., see Milam & Ketcham 1981); namely, the practice of reviewing and critiquing evidence that is irrelevant to the question of whether alcoholism is a disease as these authors have defined it. Although Maltzman first defined a disease as a life-threatening syndrome and then provided evidence that alcoholism satisfies this definition, he subsequently reviewed evidence suggesting that (1) alcoholics tend to lose control over their drinking, (2) controlled drinking is an ineffective and potentially harmful treatment for alcoholism, (3) matching treatments with the characteristics of alcoholic patients does not result in improved therapeutic efficacy, and (4) extant data appear to contradict the tenets of the relapse prevention model of alcoholism (e.g., Marlatt & Gordon 1985). In fact, however, none of these lines of evidence has any bearing on the question of whether alcoholism fulfills Maltzman's criteria for a disease, because they are irrelevant to the question of whether alcoholism reduces life expectancy. Consequently, Maltzman's critique of the research literature in these four domains in no way buttresses his claim that alcoholism is a disease.

Maltzman might respond to this criticism by pointing out that several of these lines of evidence have often been put forth by opponents of the disease model of alcoholism (e.g., Peele 1989) as antithetical to the assertion that alcoholism is a disease. Nonetheless, the fact that other authors have advanced such evidence as relevant to the disease status of alcoholism does not justify Maltzman's repeating this error. To his credit, and in contrast with many other authors in the alcoholism literature (e.g., Peele 1989), Maltzman has clearly delineated his criteria for disease prior to discussing the research evidence concerning the disease model of alcoholism. It is therefore regrettable that (1) Maltzman's definition of disease is flawed and (2) much of the evidence he reviewed and critiqued is not even pertinent to this definition.

### CONCLUSION AND IMPLICATIONS

In summary, it appears that Maltzman's comments have contributed more confusion than clarity to the debate con-

cerning the disease concept of alcoholism. His definition of disease is subject to numerous counterexamples and is flawed conceptually, and his failure to distinguish among syndromes characterized by different levels of scientific understanding (e.g., Kazdin 1983) led him to imply mistakenly that alcoholism fulfills the same standards for disease as most syndromes in organic medicine. Moreover, his assertion that the definition of disease is value laden, although possessing considerable merit (e.g., Wakefield 1992a), contradicts other elements of his definition.

Is there an alternative to Maltzman's proposal that could help to bring clarity to the ongoing controversy regarding the disease concept of alcoholism? Elsewhere (Lilienfeld & Marino, *in press*) it has been suggested that the higher-order concept of illness, including mental illness, is best conceptualized not as a scientific concept, but as a Roschian concept (see Rosch & Mervis 1975; Rosch 1973). Roschian concepts, which are cognitive constructions used primarily to categorize entities in the natural world (e.g., living thing, bird, mountain), are characterized by fuzzy boundaries and an absence of perfectly defining features. Such concepts are organized around an ideal prototype containing of all the features containing the category, and therefore consist of both clear-cut (i.e., prototypical) and marginal examples. In the case of mental illness, certain syndromes (e.g., schizophrenia, manic-depression, specific phobias) appear to be prototypical examples for most individuals, whereas others (e.g., premenstrual dysphoric disorder, self-defeating personality disorder, and perhaps alcoholism) appear to be marginal examples for most individuals. Moreover, it is precisely on the margins where most individuals, even informed experts, are most likely to disagree, just as many biologists disagree on whether a virus should be classified as a living thing.

A Roschian analysis of illness implies that mental illness can never be defined explicitly, because illness does not constitute a natural (i.e., scientific) category. If this Roschian analysis is correct, then the question of whether alcoholism is a disease is intrinsically unanswerable, because the boundaries of illness are inherently unclear. In this respect, Maltzman may well have been correct when he maintained that "much of the controversy centered around the question of whether alcoholism is a disease or not has inappropriately treated this issue as though it is an empirical question that is in principle falsifiable" (p. 13).

The central shortcoming with Maltzman's article is that he did not take this argument far enough. By selecting as the title for his article a phrase that stakes a clear-cut empirical claim concerning the disease status of alcoholism, by defining disease as a life-threatening syndrome, and by reviewing and critiquing research evidence purportedly bearing on the question of whether alcoholism is a disease, he has undermined his premise that the scientific debate regarding the disease concept of alcoholism is

inherently intractable. Ultimately, it would be more efficacious to abandon the fruitless debates regarding the disease concept of alcoholism and, as suggested by Maltzman (p. 28), focus effort and energy entirely on a better understanding of the etiology, treatment, and prevention of this puzzling condition.

## NOTES

1. Maltzman might take issue with this example on the grounds that the reduction in life expectancy must be intrinsic to the condition. In other words, political behaviors and attitudes are not inherently life threatening and decrease average life span only because of certain govern-

ments' reactions to them. As Wakefield (1992a:379) noted, however, "because humans are social animals, it is impossible to separate the functioning of the organism from all consideration of how others respond." Thus, aphasia presumably reduce life expectancy because aphasic individuals experience profound difficulty in communicating with others (Wakefield 1992a). (Note that if aphasia do not reduce life expectancy, they would not be considered diseases according to Maltzman's definition and would therefore qualify as clear counterexamples to his definition of disease). Moreover, the requirement that the threat to life be intrinsic would render Maltzman's definition of disease unable to accommodate the conditions discussed in the next paragraph (viz., sickle-cell trait, allergies, hemophilia).

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