Canadian Journal of Bioethics
Revue canadienne de bioéthique

Canadian Journal of Bioethics
Revue Canadienne de Bioéthique

Externalist Individualism: A New Ontological Approach of Diseases

Mohammad Mahdi Hatef

Volume 8, Number 1-2, 2025

Numéro hors-thème & Leçons tirées de la COVID
Open Issue & Lessons from COVID

URI: https://id.erudit.org/iderudit/1117868ar
DOI: https://doi.org/10.7202/1117868ar

See table of contents

Publisher(s)

Programmes de bioéthique, École de santé publique de l'Université de Montréal

ISSN

2561-4665 (digital)

Explore this journal

Cite this article

Hatef, M. M. (2025). Externalist Individualism: A New Ontological Approach of Diseases. *Canadian Journal of Bioethics / Revue canadienne de bioéthique*, *8*(1-2), 46–53. https://doi.org/10.7202/1117868ar

Article abstract

The understanding of disease in the dominant biomedical model involves two components, internalism and individualism, which jointly give rise to an ontological approach towards patients that can be referred to as atomism. I argue against such an approach in philosophy of medicine. I focus on internalism, showing that the inevitable presence of the notions of biological function and statistical normality in the biomedical model renders internalism about diseases untenable. Additionally, I argue that the new externalist individualism offers an alternative ontological approach that escapes the challenges to which the atomistic approach is exposed regarding both the concept of disease and medical practice. Subsequently, I focus on an implication of this new approach which relates to the idea of diseases as natural kinds, demonstrating that it proposes a concept of diseases as natural kinds that is conceptually consistent.

Canadian Journal of Bioethics
Revue Canadienne de Bioéthique

46-MM Hatef. *Can J Bioeth / Rev Can Bioeth.* 2025;8(1-2):46-53

ARTICLE (ÉVALUÉ PAR LES PAIRS / PEER-REVIEWED)

Externalist Individualism: A New Ontological Approach of Diseases

Mohammad Mahdi Hatef[a]

Résumé
La compréhension de la maladie dans le modèle biomédical dominant implique deux composantes, l'internalisme et l'individualisme, qui donnent lieu à une approche ontologique des patients que l'on peut qualifier d'atomisme. Je m'oppose à une telle approche en philosophie de la médecine. Je me concentre sur l'internalisme, en montrant que la présence inévitable des notions de fonction biologique et de normalité statistique dans le modèle biomédical rend l'internalisme sur les maladies intenable. En outre, je soutiens que le nouvel individualisme externaliste offre une approche ontologique alternative qui échappe aux défis auxquels l'approche atomistique est exposée en ce qui concerne à la fois le concept de maladie et la pratique médicale. Ensuite, je me concentre sur une implication de cette nouvelle approche qui se rapporte à l'idée des maladies en tant que types naturels, en démontrant qu'elle propose un concept de maladies en tant que types naturels qui est cohérent d'un point de vue conceptuel.

Mots-clés
maladie, internalisme, externalisme, individualisme, types naturels

Abstract
The understanding of disease in the dominant biomedical model involves two components, internalism and individualism, which jointly give rise to an ontological approach towards patients that can be referred to as atomism. I argue against such an approach in philosophy of medicine. I focus on internalism, showing that the inevitable presence of the notions of biological function and statistical normality in the biomedical model renders internalism about diseases untenable. Additionally, I argue that the new externalist individualism offers an alternative ontological approach that escapes the challenges to which the atomistic approach is exposed regarding both the concept of disease and medical practice. Subsequently, I focus on an implication of this new approach which relates to the idea of diseases as natural kinds, demonstrating that it proposes a concept of diseases as natural kinds that is conceptually consistent.

Keywords
disease, internalism, externalism, individualism, natural kinds

Affiliations
[a] Science and Technology Studies, York University, Toronto, Ontario, Canada
Correspondance / Correspondence: Mohammad Mahdi Hatef, hatef.mehdi@gmail.com

INTRODUCTION

The common understanding of disease in the biomedical model involves two essential components. The first is *internalism* about diseases, according to which something that classifies a state as a disease state is internal to the patient. In other words, the facts based on which a state is classified as a disease state are facts about the internal states of a patient. This component is implicitly observed in some characterizations of disease, including updated definitions proposed by C. Boorse, who developed the most influential theoretical account of disease in the biomedical model. Despite their differences, Boorse's varied definitions share one component: that disease is an internal state. It is obvious when he suggests that "disease is a type of internal state which impairs health, i.e., reduces one or more functional abilities below typical efficiency" (1, p.555), or when he suggests that "diseases are internal states that interfere with functions in the species design" (1, p.558). This component of the model has been addressed by R.M. Hare (2), W. Davies (3) and S.N. Glackin (4). An interesting point noticed by Glackin is that the internalist view of disease has been so obvious and dominant that Davies, who argued against it, felt no need to provide evidence to demonstrate its broad influence (4, p.287). Nevertheless, this component stands in need of clarification. Above, I introduced internalism through the notion of internal state. We may define an internal state of an organism as a state which is determined solely by intrinsic properties of that organism. Therefore, internalism about diseases implies that facts based on which a state is classified as a disease state of a patient are facts about the intrinsic properties of that patient.[1]

The second component in the biomedical model's idea of disease is *individualism*, according to which disease is thought of as a state which is borne by individuals. More briefly, it is an individual who bears a disease state. Again, it has rarely seemed necessary to argue for this component, perhaps because, as A. Broadbent holds, rejecting individualism, or claiming that populations may be thought of as bearing health-related properties, has been regarded as counterintuitive (6). Individualism remains canonical in key philosophical texts about health (1,7); even in the definition proposed by the World Health

[1] One may object that what is meant here by an internal state is stronger than what was likely meant by Boorse, who appealed to the internal state in order to stress the fact that disease is a state *in* the organism (e.g., flea bites), not a state *of* the organism (e.g., the flea on its skin) (5). In addition, his conceptual analysis of disease obviously involves some external components (4). Even if we admit that parts of Boorse's view run counter to internalism in the sense we mean it here, it can still be argued that there is at least a tension in his view. Regardless of Boorse's view, however, a claim which I share with Davies and Glackin is that internalism prevails in the biomedical model.

ISSN 2561-4665

Organization, while there is no direct reference to the individual, it has usually been understood as if it takes the individual as the bearer of physiological, psychological, and social health.[2]

We can claim, therefore, that within the biomedical framework, diseases are standardly thought of as borne internally by individual patients. This idea of disease has also influenced the way through which medicine views the individual patient. Since it conjoins these two components of diseases, namely internalism and individualism, the ontological approach of the biomedical model towards an individual patient can be said to have adopted an atomistic approach. Disease is thus an internal state of an individual, not an external state of an individual nor an internal state of a population. This reductionist view evokes a well-known but mostly criticized ontological stance in social science, according to which all social facts are exhausted by facts about isolated individual states.[3] In this view, for instance, the content of the fatherhood relation can be exhausted by the psychological and behavioural states of the father and son. Similarly, an atomistic view in medical ontology implies that, regarding a disease, the content of the facts which turn a state into a disease state can be exhausted by facts about the internal states of an individual patient.[4] To conclude, no external fact determines, in a non-reductionist way, whether a state is a disease state or not.

Despite its dominance, this ontological approach faces some difficulties. The first is that internalism is not compatible with certain implications of Boorse's definitions of disease, the latter being the most influential view in the biomedical model of medicine. I address this in more detail below. The second is that this approach is incapable of offering a unified notion of disease, since its ontology fails to accommodate a large group of diseases, namely epidemics: characterizing these diseases inevitably requires appealing to phenomena such as prevalence and infection, or features like prevalence rate and infection pattern, and these can hardly be explained within an atomistic framework as they manifestly involve reference to external entities. The third challenge is that this notion is barely compatible with an evolutionary account of diseases, which is adaptationist, and the notion of adaptation evokes biological externalism (10). This ontological approach also has a challenging consequence for medical practice: it would not be surprising if an atomistic approach tended to decontextualize patients, since the states of a patient are now thought of as possessions of the isolated individual. Alternatively, the externalist approach provides an ontological basis for what has been referred to as the *humanistic model of medicine*, which emphasizes "healing the whole person in a whole life context" (11, p.90) as the primary aim of medical practice. This approach not only acknowledges the impact of environmental factors on disease but also challenges any view that treats patients as "divorced from related objects and persons" (11, p.17).

In this essay, I want to argue against atomism in medicine. I focus on internalism to show that the inevitable presence of the two notions of biological function and statistical normality in the biomedical model renders internalism about diseases untenable. Additionally, I argue that externalist individualism offers an alternative ontological approach that escapes the above challenges. After presenting my externalist approach to diseases and outlining its advantages, I address an implication of this approach related to the idea of diseases as natural kinds, demonstrating that it proposes a concept that is conceptually consistent. Before addressing this argument for externalism, I will first address a related argument proposed by Davies and Glackin to make clear how it is different from my case.

DAVIES AND GLACKIN'S ARGUMENT FOR EXTERNALISM

Davies (2) proposed an argument for externalism about mental illnesses, which Glackin (3) developed to apply also to somatic illnesses, in support of a sort of somatic externalism. According to Davies, "many of psychiatry's diagnostic categories are implicitly committed to constitutive externalism about mental illness. Some of these categories are socially externalist in nature" (2, p.291). The reason is that "some relations borne by S to her environment place constitutive conditions on her having mental illness" (2, p.291). He identifies two types of such conditions: the first type consists of historical constitutive conditions and concerns cases where facts which determine whether an individual is affected by a disease include facts about her previous environment. Post-traumatic stress disorder (PTSD) and depression are two examples of such cases. The second type consists of contemporaneous constitutive conditions, where facts which determine whether an individual is affected by a disease consist of facts about her current environment. The second type of disease differs from the first in the respect that the disease is present in so far as the external constitutive conditions persist. Davies takes oppositional defiant disorder (ODD) and factitious disorder as examples of the second type, where some external entities, like an authority figure or social rules in the case of ODD, are required to persist in order for some particular behaviours to manifest. While Davies's argument is claimed to apply to "many mental illnesses" (2, p.295), Glackin extends it to somatic illnesses, arguing that "many if not all somatic illnesses are dependent in just the same way on environmental factors" (3, p.287).

Two points must be made concerning this argument. First, it seems that the first type of disease – cases like PTSD and depression – does not provide a strong case for externalism. The environmental factor in such diseases is simply a part of the causal chain in the formation of the disease, which is evident since the manifestation of symptoms in such cases does not require the persistent and contemporaneous presence of these environmental factors. The difference between these two types

[2] M. Ereshefsky, for example, states that "the World Health Organization's definitions of 'health' and 'disease', for instance, cite the 'physical, mental, and social well-being' of the *individual*" [emphasis added] (8, p.223).
[3] As C. Taylor pointed out, the term *atomism* "seems to be used almost exclusively by its enemies. Even extreme individualists like Nozick don't seem to warm to this term, but tend to prefer others, like 'individualism'" (9, p.187). Nonetheless, to distinguish this view from externalist individualism, I retain this term.
[4] Here, we are concerned with ontological questions to do with atomism and its components, namely internalism and individualism, rather than epistemological or semantic questions.

is analogous to the difference between artifacts and social entities. Consider an artifact like a knife, the formation of which refers to an environmental factor, i.e., a human being who makes the knife. The persistence of the knife does not require persistence of that environmental factor. By contrast, a piece of paper would not be money without the persistent and contemporaneous presence of an environmental factor, i.e., the collective intentionality of people who recognize that piece of paper as money, or the medium of exchange. Were that collective intentionality withdrawn from that piece of paper, it would no longer be money (12-13). The contribution by environmental factors in the first type of disease is a causal contribution, while the contribution for the second type is, to be precise, constitutive. The second point with regard to this argument is that it applies to many, but not all, diseases; many mental diseases for Davies, and many somatic diseases for Glackin. Indeed, the externalist view in each case is tenable only if we can actually identify an environmental factor, either historical or contemporaneous, contributing to the disease.

I intend to propose an argument, however, that supports externalism about diseases not case by case, but in a substantial way, and applies to *all* diseases. According to my argument, there is something in the nature of disease that impedes internalism. The argument I develop applies, I presume, to all sorts of diseases, either somatic or mental, if there is anything such as mental disease, and escapes the difficulties with the prevailing view mentioned above.[5]

AN ARGUMENT FOR EXTERNALISM

For a more precise examination of the biomedical model of disease, let us return to Boorse's definition. For him, a pathological state is a state of a part or process in an organism "when the ability of the part or process to perform one or more of its species-typical functions falls below some central range of the statistical distribution for that ability in corresponding parts or processes in members of an appropriate reference class of the species" (14, p.370). Boorse would later call this analysis the *biostatistical theory*, a name, according to him, "emphasizing that the analysis rests on the concepts of *biological function* and *statistical normality*" [emphasis added] (5, p.4). In the following, I argue that both of these concepts imply externalist commitments, and a pathological state which involves these concepts is consequently externalist as well.

First, let us address the concept of biological function. Boorse works with two analyses of biological function. In the first, borrowed from Sommerhoff (15), he thinks of function as a *causal contribution* to a goal. This goal is hypothesized for an organism or a part and requires that organism or part to modify its behaviour throughout a range of environmental variations in a way required for the attainment of the goal (5). In this analysis, the goal is seen, firstly, as constitutive of the function, and, secondly, is located outside of the organism: and these are sufficient to embed an externalist commitment within the function. In the second analysis, borrowed from L. Wright (16) and referred to as the *etiological analysis*, the function of something "is those of its effects which historically explain its presence. In particular, the functions of a part of an organism are the effects which, through evolution, fixed it in the population" (16, p.10). This analysis is in line with efforts made by Boorse in another section of his essay to reconcile his conception of disease with an adaptationist view. To adopt an adaptationist view, however, is precisely to admit an externalist commitment to biological function, because biological functions in such a view are understood as adaptationist responses to environmental conditions, and hence environmental factors are rendered constitutive of the adaptation of an organism (10).

A second component in Boorse's characterization of the disease is the reference to the statistical normal, or the "statistical means surrounded by some range of 'normal variation'" (5, p.546). He notes that a deviation from the statistical normal is neither necessary nor sufficient for a state to be regarded as pathological. There are conditions which are deviations from the mean but are not counted as a disease, like a type O blood, and states which are almost typical but are counted as disease, like tooth decay. Hence, it can be concluded that he equates the normal with the statistical mean but does not equate diseases with abnormal conditions; nonetheless, there is no doubt that a deviation from the statistical normal is for him a significant component of the disease. However, the statistical normal supervenes on how the value of a property is distributed among a population. In this sense, for any individual, it is environmental facts that determine the statistical normal. In other words, that an internal state of an individual is counted as pathological depends on analogous states in other people. Now, in so far as we consider the role which the statistical normal plays in determining diseases, we can again argue that it is external facts which determine the pathological character of a state.

In another definition, Boorse appeals to an abstract entity, *species design*, in suggesting that "diseases are internal states that interfere with functions in the species design" (1, p.558). Yet species design is precisely the functions which are statistically typical to a species. In other words, a species design is a hierarchy of values of the statistical normal related to the internal structures or functions of an organism which appears as an ideal empirical entity.[6] Thus, in this definition as well, both the concepts of biological function and the statistical normal have essential roles, and their being external to individuals gives rise to externalist commitments in a state classified as a disease state.

[5] My argument does not require that there is certainly something such as mental illness. In other words, I am not taking a stance against movements like Mad Pride, which consider mental illness as valuable form of diversity rather than a condition needing treatment. Indeed, my argument has a conditional form: if there is such a thing as mental illness, my account could also apply to that condition.

[6] The phrase "ideal empirical" may seem confusing in Boorse's text when he refers to the species design. It becomes clearer if we notice that it is empirical as it is constituted by qualities and values collected through empirical studies on organisms. At the same time, it is ideal, since, as Boorse states "the portrait may not exactly resemble any species member" (1, p.557).

Glackin (3) notes these aspects of the argument, but skips over them considering his general disagreement with the biostatistical theory. There is a significant difference between Davies's and Glackin's main argument and my own, however, for they argue for externalism about the state itself. In other words, they argue that this state involves external components, whether it is classified as disease or not: in the first route, they refer to an external causal component in its history, and in the second, they argue that there is an external constitutive component in its present condition.[7] My argument, however, does not concern the state itself. Rather, I argue that if that state, whatever it may be, is to be classified as a disease state, it will inevitably have an external component. It follows from my argument that a state as a disease state, not a state *per se*, involves external components.

In a similar way, the contrast which I draw between internalism and externalism about disease differs from a well-known contrast drawn between disease as an internal substance and disease as an external substance. A notion of disease which was promoted by nineteenth-century pathology and twentieth-century genetics took it to be an entity (or substance) which is internal to the organism; in contrast, another notion of disease developed in light of infectious diseases regarded disease as that "which invades the human body, a foreign substance" (17, p.39). While this contrast concerns the etiology of diseases, my contrast concerns the constitution of disease, and rather than referring to factors contributing to the formation of that state, refers to constituents of that state as a disease state.

In this externalist view, what classifies a state as a disease state includes something external to the patient. In other words, facts which classify a state as a disease state include facts about extrinsic properties, which can be associated with other individuals, pathogens, etc. Joining externalism to individualism gives rise to an ontological stance which can be referred to as *methodological individualism*.[8] In this view, facts which classify a state as a disease state are still facts about individuals or patients, but individuals or patients who are constituted through their relations to others or to the environment.[9] Now, a description of a patient irreducibly involves interpersonal or external relations. Similarly, a description of a disease state as one of the patient's states also consists of the relations between intrinsic and environmental properties. This ontological approach allows the two concepts of biological function and the statistical normal to be appropriately regarded as constitutive to the disease state.

ADVANTAGES OF EXTERNALISM

Besides its compatibility with the nature of diseases, an externalist approach also has other advantages over internalism. Among them is that an externalist ontology is capable of accommodating epidemic diseases, so as to offer a unified notion of diseases. As pointed out in the first section above, epidemic diseases constitute a problem for internalism, as characterizing these diseases requires appealing to phenomena such as prevalence and infection, or features like prevalence rate and infection pattern, and these can hardly be explained within an atomistic framework. Indeed, interpersonal constituents of epidemics, like the prevalence rate and infection pattern, can be represented only through interpersonal relations and statistical distributions, in the same way as, say, panic might be. Note that the ontological account of epidemics does not require holism, i.e., an ontological commitment to irreducibly collective entities. Indeed, diseases are still attributed to individuals, but individuals who are being constituted through their relations to the environment.

In order to show that these interpersonal relations are capable of thoroughly capturing non-individual reality, I refer here to an articulation by E.O. Wright et al. (19). Consider a system with two individuals, X and Y. The entire system Z can be described as such:

$$Z = b_1X + b_2Y$$

where b_1 stands for the impact of X and b_2 stands for the impact of Y. Now, if there is an interaction between X and Y, such as a contagion from the first individual to the second, it follows that:

$$Z = b_1X + b_2Y + b_3XY$$

where b_3 stands for the impact of the interaction between two individuals in this system. This new impact, however, can still be dissolved into former impacts, provided that individuals are considered richer than before. Then it follows that:

$$X^* = X(1 + b_3Y / 2b_1) \qquad Y^* = Y(1 + b_3X / 2b_2)$$
$$Z = b_1X^* + b_2Y^*$$

Here, while interpersonal relations are not reducible to properties of isolated individuals, they are not thought of as requiring macro entities (20). In other words, an ontology which is required by epidemics is not more inflationary than an ontology which

[7] A similar externalist stance was attributed by M.A.G. Cutter to nosologists, or the classifiers of diseases. For them, as she states, "disease is relational rather than substantial, the result of individual constitutions, the laws of pathology, and the peculiarities of environments" (17, p.40). Moreover, she proposes an independent argument for the view of disease as a relation (17, p.45-6).

[8] Methodological individualism might seem a purely methodological thesis about how to explain social realities. But what I mean here by this term has significant ontological commitments. For more detail, see B. Epstein (18).

[9] Similar to the distinction between a state *per se* and a state as a disease state, there is a distinction between an individual *per se* and an individual as a patient. As with the former distinction, what is crucial here is the constitutive role of extrinsic properties to individuals as patients, rather than to individuals *per se*. This is what situates our discussion within medical ontology and distinguishes it from social ontology.

is required by population thinking, and as population thinking in biology does not require holism, epidemics in medicine do not require it either.

Another advantage of this ontology is its compatibility with the evolutionary idea of the disease. As pointed out above, Boorse himself admits that a statistical concept of normal cannot sufficiently account for health and disease; however, very little has been said about a view which might complement the statistical concept. A possible complementary view is the evolutionary view. As R.M. Nesse states:

> A deep understanding of what is abnormal requires a richly detailed understanding of what is normal. Statistical generalizations will not suffice. Instead, we require nothing less than a complete knowledge of what the body is for, how it works, and, especially, how it came to have its current form (21, p.38).

A crucial point is that the evolutionary background of a disease might work in opposition to the statistical notion of normality. In other words, the statistical component of normality and the evolutionary component might make competing demands on the health of the organism. But when health and reproductive success diverge, natural selection would be obviously on the side of reproductive success, at the cost of health. For instance, while depression is obviously a disease, it has been suggested that possibly it has developed as a mechanism to turn off motivation in situations where action is likely to be maladaptive (22). Thus, the adaptive component of health needs to be independently analyzed. But an internalist approach to diseases is not capable of capturing the adaptive component of health, because adaptation is ontologically a relation, with a relata outside of the organism. In H.T. Engelhardt's terms, "the notion of successful adaptation is context specific and determined by what one wishes to achieve in a particular context" (23, p.168-69). The externalist approach, however, is compatible with an adaptationist view of health, since, in advance, it recognizes external relations in the concept of normality and thus in the concept of health and disease.

The fourth advantage concerns the contextuality of the disease. As stated above, an atomistic understanding tends to decontextualize the patient, or to ignore features of her embodiment and the rich and complex ways in which she is situated within a social and material environment including human and non-human agents. From a scientific point of view, decontextualization might be thought of as required by the process of establishing the subject matter of scientific investigation. But, as some researchers (24-27) have pointed out, decontextualization is among the causes of what is known as the quality-of-care crisis in contemporary medicine.

Rather than being a fruitful activity, decontextualization, viewed from this stance, has been an orientation with troublesome consequences in context of patient care. As I argued in this essay, the material and social environment cannot be ontologically eliminated from the disease. So, ruling out the contextual factors as a methodological orientation misdirects medical practice. Hence, the problem is not whether we can, or cannot, establish a medical ontology on an atomistic basis; the problem is that this medical ontology fails to capture what medical entities actually are. Nonetheless, such a failure has not prevented this orientation from influencing medical practice, when it calls upon medical practitioners to study and treat diseases as if they were internal states of an isolated person, an orientation which underestimates the role of external factors in the constitution of health. By introducing an ontology which is more compatible with the nature of diseases, the external understanding offers a more fruitful orientation.[10] This orientation is also compatible with a view that has been referred to as the *humanistic view of medicine* (27), one in which a patient is not an isolated organism but a person within a social context and with a *social self* (26); a person none of whose states are constituted independently of social relations and conditions (38).

DISEASES AND NATURAL KINDS

The externalist view, nevertheless, represents a challenge to a particular ontological aspect of health: namely, the view that diseases are natural kinds.[11] This challenge arises through adopting a classical view of natural kinds, according to which the properties which bring a class of objects together in a natural kind are intrinsic properties of those objects (41,42). This view is encouraged by a neo-Aristotelian view of natural kinds (43) which suggests that

> the notion of a natural kind must be tied to that of a real essence. That is, whether we are talking about kinds of stuff (gold, water, cellulose) or kinds of individual (tiger, oak, stickleback), members of natural kinds have real essences, intrinsic properties that make them members of the relevant kind (44, p.29).

Now, if extrinsic properties of disease states are to contribute to determining whether they are disease states, one might worry that diseases will thereby not qualify as natural kinds. Before addressing this challenge, let us first contemplate the motivation of philosophers of natural kinds in thinking of kind-making properties as intrinsic, in order to see whether this motivation applies to diseases as well.

[10] With regard to mental diseases, many studies have stressed the efficacy of an external approach in the treatment of such diseases (28-37).

[11] While widely adopted, it is contested as well. D.P. Sulmasy (39), for instance, holds that "a disease is not a natural kind. It is a classification of a certain state of affairs that can occur in members of particular living natural kinds" (p.496). Sulmasy's urge to reject diseases as natural kinds seems to be the popular idea that "natural kinds are natural kinds of objects". However, as B. Ellis (39) pointed out, there can be also natural kinds of properties, events, processes, etc., and thus diseases are natural kinds to the extent that, let's say, volcanoes are natural kinds. A similar disagreement is found in L. Reznek (40). He does not, however, reject the claim that "diseases are natural kinds". What he rejects is the claim that "the disease is a natural kind", which is in large extent different.

As pointed out above, the major motivation for taking kind-making properties as intrinsic is essentialism, and as E. Sober (45) argued, the major motivation for essentialism about these properties is their necessity. It is argued that for a property to be necessary, its instantiation should not be dependent on any other property or object, and hence such properties are required to be intrinsic. Thus, in so far as we are concerned with their necessity, these properties are thought of as intrinsic. Accordingly, the true question would be whether there is any motivation to believe in necessity with regard to diseases.

To address the question regarding diseases it is helpful to consider a similar debate in the case of species, as these two types of entities, or biological kinds, are similar in substantial respects. Insofar as species are concerned, kind-making properties are supposed to be their external relations – ancestral descents in the genealogical view, and ecological roles in the ecological view. Noticing the relational character of the substantial properties of species convinced E. Mayr (46) to draw a contrast between Darwinian thinking and biological essentialism. But revisions proposed by Sober (45), R. Boyd (47) and P. Griffiths (48) challenged this contrast. According to Griffiths, many of the traditional commitments of essentialism are problematic in biology, among which is the intrinsic condition for essential properties. As he says, “population thinking excluded essential intrinsic properties, but it does not exclude essential relational properties” (48, p.210). An essential property that makes some instances members of a kind could be their relation to a causal homeostatic mechanism, a mechanism which was defined by Boyd (49) as what causally explains the maintenance of property correlations throughout the set of instances of a kind. As Griffiths argued, this mechanism need not be internal to individuals at all: it could even have social causes, i.e., generated by human agency, such as in the case of social kinds. What is at stake here is that this causal mechanism can fulfill the roles traditionally associated with intrinsic essential properties, such as supporting valid generalizations and reliable inductions.

Hence, a contrast initially posited between Darwinian thinking and essentialism turns out to be a contrast between Darwinian thinking and internalism. Now, having abandoned the intrinsic condition for essential properties while recognizing relations between individuals as determining conditions for the identity of kinds, we can still appropriately refer to essences with respect to species. The only thing is that the cost for this replacement needs to be paid; and this cost is to abandon the necessity of essential properties, as this essentialism no longer supports the necessity. To pay this cost regarding species not only is not difficult, but it is indeed to be welcomed considering the internal dynamics of species.

The case for necessity with regard to diseases is no better than the case for species. Both the above-mentioned components which contribute to whether a state is pathological – statistical normality and adaptation – pose challenges to necessity in diseases. Accordingly, there is no state which can be judged to be necessarily pathological, since any change in the constituents of a disease state can rescind its pathological character. This could be a change in the diet of a reference population which in turn shifts the statistical normal of diabetes and turns some states which have already been regarded as pathological into normal (and vice versa); or it could be a major drift by African people to Europe which neutralizes the adaptationist advantage of bearing the sickle cell alleles, and turns it into a pathological state.[12] Accordingly, essentialism in this sense, which recognizes relational essential properties, not only causes no problem for the notion of disease, but also is more compatible with how the disease is actually understood from a medical point of view.

Denying necessity in the natural kinds of disease has a remarkable metaphysical implication, though. It is commonly believed that natural kinds are constituents of the laws of nature (50). Now, when a law is a relation between a kind property and an essential property (51), e.g., being an electron and having the charge 1.6×10^{-19}, or a relation between two essential properties of a natural kind (52,53), e.g., electron charge and electron spin, it seems that denying necessity with respect to essential properties can undermine the nomological necessities in such laws. In other words, denying the necessity inherent to natural kinds of diseases could undermine the necessity of some laws in medicine. Like in the previous case, however, this consequence is not at all worrying, as the statistical nature of laws in medicine is more compatible with the regularity view of scientific laws than the necessity view.[13] In other words, an idea of natural kinds without necessity is more compatible with the statistical flexibility of laws in medicine. Hence, an idea of natural kinds based on an externalist approach to diseases not only is not conceptually incoherent, it is indeed more in accord with the nature of diseases in particular and medical ontology in general.

While it takes effort to show that the externalist notion of disease is compatible with the classic idea of natural kinds, it is easy to show its compatibility with the recent epistemological idea of natural kinds. Rather than being identified through metaphysical considerations, natural kinds are identified, according to this idea, through their role in epistemic practice (55), where natural properties do not stand in static essential relations, but rather in dynamic homeostatic relations. In Boyd’s theory of homeostatic property clusters, natural kinds are determined by homeostatic mechanisms rather than by structures of essential properties, and, as he points out, these mechanisms may be either internal or external to a given system (47,56). What this suggests for the structure of kinds makes room in advance for externalism about natural kinds. As a result, the externalist notion of diseases seems problematic neither for the metaphysical notion of natural kinds, nor for the epistemological notion.

[12] Sickle cell is the trait of having an abnormal hemoglobin molecule that enables red blood cells to resist malarial parasites. Such a trait is to the advantage of the host in an environment where malaria is endemic. But in environments of low oxygen concentration, such a trait leads to sickle cell anemia.
[13] It can also be proposed in such a way that as a subset of biological laws the laws in medicine are void of necessity. For arguments against necessity in biological laws, see (54).

CONCLUSION

That a disease state *per se* is an internal state of an individual has been seen as encouraging an internalist view of diseases. Nevertheless, these states as disease states have certain essential externalist components that highlight the role played by the environment in categorizing individual states into normal and pathological states. Ignoring this component has given rise to a misunderstanding about the nature of diseases and has misdirected medical ontology down an atomistic line. This approach is also accompanied by an inappropriate orientation in medical practice, encouraging or at least allowing a decontextualization of the patient. As I argued in this essay, an externalist approach not only provides a consistent and unified concept of disease but also reduces that tension in medical practice. There is, however, a potential challenge facing an externalist approach; diseases, in this sense, cannot be regarded as natural kinds, at least when traditionally understood. But the idea of natural kinds in medicine is presumably much more in line with the corresponding idea in biology rather than in physics. Accordingly, a solution that has been suggested for the problem of species as natural kinds applies also to diseases: this is a solution that recognizes relational essential properties and enables us both to take an externalist approach to diseases, and to locate them within the framework of natural kinds.

Reçu/Received: 08/06/2024
Publié/Published: 28/04/2025

Remerciements
Je remercie M. Hossein Khalaj, Leila Afshar et Ben Young pour leurs précieux commentaires sur la version initiale de mon manuscrit. Je suis également reconnaissant envers les étudiants en médecine qui ont suivi mes cours de philosophie de la médecine et de sciences humaines médicales dans diverses universités iraniennes ces dernières années.

Acknowledgements
I am grateful to M. Hossein Khalaj, Leila Afshar, and Ben Young for their helpful comments on my draft. I am also indebted to the medical students in my Philosophy of Medicine and Medical Humanities courses at various Iranian universities over the past few years.

Conflits d'intérêts
Aucun à déclarer

Conflicts of Interest
None to declare

Édition/Editors: Cécile Bensimon & Aliya Affdal
Les éditeurs suivent les recommandations et les procédures décrites dans le Core Practices de COPE. Plus précisément, ils travaillent pour s'assurer des plus hautes normes éthiques de la publication, y compris l'identification et la gestion des conflits d'intérêts (pour les éditeurs et pour les auteurs), la juste évaluation des manuscrits et la publication de manuscrits qui répondent aux normes d'excellence de la revue.

The editors follow the recommendations and procedures outlined in the COPE Core Practices. Specifically, the editors will work to ensure the highest ethical standards of publication, including: the identification and management of conflicts of interest (for editors and for authors), the fair evaluation of manuscripts, and the publication of manuscripts that meet the journal's standards of excellence.

Évaluation/Peer-Review: Alexandra T Romanyshyn & Suvielise Nurmi
Les recommandations des évaluateurs externes sont prises en considération de façon sérieuse par les éditeurs et les auteurs dans la préparation des manuscrits pour publication. Toutefois, être nommé comme évaluateurs n'indique pas nécessairement l'approbation de ce manuscrit. Les éditeurs de la *Revue canadienne de bioéthique* assument la responsabilité entière de l'acceptation finale et de la publication d'un article.

Reviewer evaluations are given serious consideration by the editors and authors in the preparation of manuscripts for publication. Nonetheless, being named as a reviewer does not necessarily denote approval of a manuscript; the editors of *Canadian Journal of Bioethics* take full responsibility for final acceptance and publication of an article.

REFERENCES

1. Boorse C. Health as a theoretical concept. Philosophy of Science 1977;44(4):542-73.
2. Davies W. Externalist psychiatry. Analysis 2016;76(3):290-96.
3. Glackin SN. Individualism and the medical: what about somatic externalism? Analysis 2017;77(2):287-93.
4. Hare RM. Health. Journal of Medical Ethics 1986;12(4):174-81.
5. Boorse C. A rebuttal on health. In: Humber JM, Almeder RF, editors. What is Disease? Totowa, NJ: Humana Press; 1997.
6. Broadbent A. Philosophy of Epidemiology: New Directions in the Philosophy of Science. Dordrecht: Springer; 2013.
7. Engelhardt HT. Ideology and etiology. The Journal of Medicine and Philosophy 1976;1(3):256-68.
8. Ereshefsky M. Defining health and disease. Studies in History and Philosophy of Biological and Biomedical Sciences 2009;40(3):221-27.
9. Taylor C. Atomism. In: Taylor C. Philosophy and the Human Sciences: Philosophical Papers. Cambridge: Cambridge University Press; 1985. p. 187-210.
10. Godfrey-Smith P. Complexity and the Function of Mind in Nature. Cambridge: Cambridge University Press; 1996.
11. Davis-Floyd R, St. John G. From Doctor to Healer: The Transformative Journey. New Brunswick, NJ: Rutgers University Press; 1998.
12. Searle J. The Construction of Social Reality. New York: Free Press; 1995.
13. Mason R. The metaphysics of social kinds. Philosophy Compass 2016;11:841-50.
14. Boorse C. Concepts of health. In: VanDeVeer D, Regan T, editors. Health Care Ethics: An Introduction. Philadelphia: Temple University Press; 1987. p. 359-93.
15. Sommerhoff G. Analytical Biology. Oxford: Oxford University Press; 1950.
16. Wright L. Functions. The Philosophical Review 1973;82(2):139-68.

17. Cutter MAG. Reframing Disease Contextually. Dordrecht: Springer; 2003.
18. Epstein B. Ontological individualism reconsidered. Synthese. 2009;166:187-213.
19. Wright EO, Levine A, Sober E. Reconstructing Marxism: Essays on the Explanation and the Theory of History. London: Verso; 1992.
20. Udehn AL. Methodological Individualism: Background, History and Meaning. London: Routledge; 2001.
21. Nesse RM. On the difficulty of defining disease: a Darwinian perspective. Medicine, Health Care and Philosophy 2001;4(1):37-46.
22. Nesse RM. Is depression an adaptation? Archives of General Psychiatry 2000;57(1):14-20.
23. Engelhardt HT. The Foundations of Bioethics. Oxford: Oxford University Press; 1986.
24. Zaner RM. The Context of Self: A Phenomenological Inquiry Using Medicine as a Clue. Athens: Ohio University Press; 1981.
25. Cassell EJ. The Nature of Suffering and the Goals of Medicine. Oxford: Oxford University Press; 1991.
26. Tauber AI. Patient Autonomy and the Ethics of Responsibility. Cambridge, MA: MIT Press; 2005.
27. Marcum JA. An Introductory Philosophy of Medicine: Humanizing Modern Medicine. Dordrecht: Springer; 2008.
28. De Haan SE. Enactive Psychiatry. Cambridge: Cambridge University Press; 2020.
29. Krueger J. Schizophrenia and the scaffolded self. Topoi. 2020;39(3):597-609.
30. Krueger J, Colombetti G. Affective affordances and psychopathology. Discipline Filosofiche. 2018;18(2):221-47.
31. Roberts C, Krueger J, Glackin S. Psychiatry beyond the brain: Externalism, mental health, and autistic spectrum disorder. Philosophy, Psychiatry, & Psychology 2019;26(3):E51-68.
32. Cooper R. Where's the problem? Considering Laing and Esterson's account of schizophrenia, social models of disability, and extended mental disorder. Theoretical Medicine and Bioethics 2017;38(4):295-305.
33. Hoffman GA. Out of our skulls: How the extended mind thesis can extend psychiatry. Philosophical Psychology 2016;29(8):1160-74.
34. Merritt M. Instituting impairment: extended cognition and the construction of female sexual dysfunction. Cognitive Systems Research 2013;25-26:47-53.
35. Sprevak M. Neural sufficiency, reductionism, and cognitive neuropsychiatry. Philosophy, Psychiatry, & Psychology 2011;18(4):339-44.
36. Drayson Z. Embodied cognitive science and its implications for psychopathology. Philosophy, Psychiatry, & Psychology 2009;16(4):329-40.
37. Sneddon A. Towards externalist psychopathology. Philosophical Psychology 2002;15(3):297-316.
38. McIntyre A. Medicine aimed at the care of persons rather than what? In: Cassell J, Siegler M, editors. Changing Values in Medicine. New York: United Publications of America; 1979. p. 83-96.
39. Sulmasy DP. Diseases as natural kinds. Theoretical Medicine and Bioethics 2005;26(6):487-513.
40. Reznek L. The Nature of Disease. London: Routledge and Kegan Paul; 1987.
41. Kripke SA. Naming and Necessity. Cambridge, MA: Harvard University Press; 1972.
42. Putnam H. The meaning of 'meaning'. In: Gunderson K, editor. Minnesota Studies in the Philosophy of Science, Vol. VII. Minneapolis: University of Minnesota Press; 1975. p. 131-93.
43. Magnus PD. Scientific Enquiry and Natural Kinds. New York: Palgrave Macmillan; 2012.
44. Wilkerson TE. Natural kinds. Philosophy. 1988;63(243):29-42.
45. Sober E. Evolution, population thinking and essentialism. In: Sober E. From a Biological Point of View. Cambridge: Cambridge University Press; 1994.
46. Mayr E. Typological versus population thinking. In: Evolution and Anthropology: A Centennial Appraisal. Washington, DC: The Anthropological Society of Washington; 1959. p. 409-12.
47. Boyd R. Realism, anti-foundationalism and the enthusiasm for natural kinds. Philosophical Studies 1991;61(1-2):127-48.
48. Griffiths P. Squaring the circle: natural kinds with historical essences. In: Wilson RA, editor. Species: New Interdisciplinary Essays. Cambridge, MA: MIT Press; 1999. p. 208-28.
49. Boyd R. Homeostasis, species and higher taxa. In: Wilson RA, editor. Species: New Interdisciplinary Essays. Cambridge, MA: MIT Press; 1999. p. 141-85.
50. Armstrong DM. What is a Law of Nature? Cambridge: Cambridge University Press; 1983.
51. Lowe EJ. The Four-Category Ontology: A Metaphysical Foundation for Natural Science. Oxford: Clarendon Press; 2006.
52. Armstrong DM. A World of States of Affairs. Cambridge: Cambridge University Press; 1997.
53. Bird AJ. Are any kinds ontologically fundamental? In: Tahko TE, editor. Contemporary Aristotelian Metaphysics. Cambridge: Cambridge University Press; 2011. p. 94-104.
54. Hamilton A. Laws of biology, laws of nature: problems and (dis)solutions. Philosophy Compass. 2007;2(3):592-610.
55. Kendig C. Activities of kinding in scientific practice. In: Kendig C, editor. Natural Kinds and Classification in Scientific Practice. London: Routledge; 2016.
56. Onishi Y, Serpico D. Homeostatic property cluster theory without homeostatic mechanisms: two recent attempts and their costs. Journal for General Philosophy of Science 2022;53:61-82.