

THE VALUE OF NATURAL KINDS FROM A KRIPKEAN
PERSPECTIVE: A CRITIQUE OF ERIC KATZ'S,
"ORGANISM, COMMUNITY, AND THE 'SUBSTITUTION
PROBLEM'"

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Saul Kripke's influential theory of reference examines the relationship between the *name* given to a referent and various descriptive *statements* that can be made about it. In this essay, I extend this theory of reference, as developed by Kripke and Hilary Putnam, in an effort to critique and also develop Eric Katz's argument in, "Organism, Community, and the 'Substitution Problem'."

I begin by explaining how Katz rejects an organism model of species within an ecosystem because it allows for the possibility of 'the substitution problem', and instead favors a community model of associated individuals who are valued both *intrinsically* and *instrumentally*. I then maintain that Katz's distinction between the organism and the community models is merely one of degree and is largely semantic. The difference between the models is the way in which they serve Katz's goal of differentiating between intrinsic and instrumental value. I analyze this goal within the context of Kripke's theory of reference in a way that illuminates some of the issues contributing to the dispute between valuing species intrinsically and instrumentally. Finally, I conclude that Katz's counterfactual exercise and 'the substitution problem'; if approached from the perspective of the Kripke's theory of reference, can bring to light new considerations for an ethic to address.

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Organism vs. Community

To analyze Eric Katz's holistic environmental ethic, it is important first to understand his conceptual distinction between the organism and community metaphors often used to describe natural systems. In the next section, we will see that there are significant problems with this distinction. The organism model conceives of individual species as organs in a larger organism, organs that cannot exist apart from the organism. The community model conceives of individual species as members of a larger group, but also acknowledges that they have a measure of independence. For Katz, an organism model is not desirable because it fails to value a species for itself, intrinsically, and instead values a species solely in terms of its functional, instrumental worth (Katz 249).¹ Katz believes a feasible environmental ethic must establish an acceptable balance between and include both intrinsic and instrumental value. The community model, for Katz, seems to fill this requirement.

Katz argues (incorrectly it would seem) that the organism model fails to strike this balance between values, because it imagines a species merely as a component, part, or unit whose "existence [in the natural system] is due to the continuous functioning of the organic whole of which they are a part" (Katz 245). A species is conceived of as an organ necessarily dependent upon all the other organs in the system. By overemphasizing species' interdependence, Katz argues, the organism model denies a species' independence, its intrinsic value. The independence is lost, according to Katz because, "an entity valued intrinsically requires no relationship with any other entities" (Katz 249). But all species require relationships with other entities to survive. It seems that within this dependence there does exist an element of value which is granted to the species itself, to its presence in the system as a whole; intrinsic value does seem to be present.

Katz argues that another undesirable result of the organism model is 'the substitution problem'. If a species is valued only instrumentally, it is logically possible to replace that species with either another species or a machine capable of fulfilling its functional role in the natural system. Katz explains, "what is really important is the *role*, not the *species*" (Katz 251).² If this is true, the organism model allows for a species to be replaced without remorse, because what is most important is the ecosystemic organ, to which the species is wholly subservient.

Eric Katz claims, however, that there *is* a model that successfully embraces both the intrinsic value of a species as well as the instrumental role it plays in the natural system. This model is that of the community, which "focuses on both functional value and autonomous intrinsic value of natural entities in a system" (Katz 241). In this model, an entity exists both as an individual (in its own right) and as a member (constituting a unit) of a functioning community. A species, as an entity in the community model, has a relatively independent existence and value over and above its value as a member of the community. According to Katz this relatively independent status makes a species in this model "similar to an entity with intrinsic value; it possesses some value in itself without regard to other entities" (Katz 249). It is clear that this model solves 'the substitution problem' by recognizing that species cannot be conceived solely as a functional unit in an ecosystemic whole, by recognizing their intrinsic worth. In recognizing both instrumental and intrinsic value, this model creates the conditions necessary for an effective environmental ethic which recognizes and protects a species both for itself and for its function.

A Degree Relationship: Organism and Community

Now that Katz's basic argument has been explicated, we can turn to an examination of its seemingly unfounded distinction followed by a Kripkean critique of this distinction. A close reading of the article shows that the difference

between an organism and a community is nothing more than a difference of degree, one that weights intrinsic and instrumental value. Therefore, Katz's criticism of the organism model in favor of a supposedly more balanced version, the community model, is inaccurate in suggesting that the organism model wholly *excludes* intrinsic value. Katz acknowledges that his distinction is merely a semantic differentiation of degree in saying,

the model of community permits the consideration of both intrinsic and instrumental value to a greater extent than the model of organism. Since an organism is *primarily* concerned with the functions of interdependent parts, it emphasizes instrumental value. (Katz 249-50)³

In saying that what is important is the *extent* to which value is acknowledged in the community model, Katz expresses his displeasure with the lesser degree to which the organism model grants a species value. Katz favors an ethic with a more even balance of values, both intrinsic and instrumental. But the organism model need not lack intrinsic value entirely. In advocating the community model as a balanced ethic, Katz makes it clear that a species necessarily has intrinsic value merely by virtue of being natural:

[T]he intrinsic value of natural entities is their source or origin — what causes them to be what they are. A natural entity possesses intrinsic value to some extent because it is natural, an entity that arose through processes that are not artificially human. This 'naturalness' is one of the properties that gives it its value. (Katz 254)⁴

Evidently, it is not that the organism model overlooks or excludes intrinsic value, rather, Katz finds the degree to which that model acknowledges this value inadequate for forming a balanced environmental ethic. But because he has explicitly said that species have intrinsic value merely by

virtue of being natural, the substitution problem is a misleading construct. Substituting a species valued both instrumentally and intrinsically, for that is what Katz claims a desirable ethic would accomplish, would seem morally wrong even for a holist. If a species is valued intrinsically even to a diminished extent, then it would be hypocritical for the valuers to replace it with another intrinsically valued entity, since substitution seems to presuppose that neither the *replaced* species nor the one *replacing* it has intrinsic value. Hence the 'substitution problem' amounts to a "straw man", since even most holists would balk at the idea that species are *nothing but* replaceable organs.

Katz makes clear what aspects of an environmental ethic he considers are important, namely, that it incorporate both intrinsic and instrumental value into its framework, thereby eliminating the possibility of the 'substitution problem' being actualized. In what follows, I show how Kripke's theory of reference can provide the basis for a thought experiment leading to such an ethic. In addition, I indicate why an application of Hilary Putnam's work with counterfactual worlds provides additional reasons why 'the substitution problem' is an implausible concern. Finally, I argue that their work can also give the sort of rationale for preservation that Katz believes a feasible ethic could provide.

The Theory of Reference

Kripke's theory of reference as explained in *Naming and Necessity* is concerned with the extent to which descriptions are related to names in the real world as well as in counterfactual worlds. In reworking reference theory, Kripke criticizes and ultimately overcomes the previous conclusions concerning names and descriptions as suggested by such philosophers as Frege and Russell. Frege for example believes that names, spoken and written linguistic terms, are *synonymous* with their ontological "definite descriptions," statements that can be made about a referent's properties. For Frege, names have the same meaning as descriptions;

that is, names can 'stand in for'/'be substituted for' descriptions. The particular description the speaker intends the name to stand for is used "to determine the referent of the name" (Kripke 28).

By contrast, a name for Kripke is a rigid designator; that is, it is nothing more than a strict label or a tag given to a referent, to a unique identity. As Kripke states, "Let's call something a *rigid designator* if in every possible world it designates the same object . . . [*N*]ames are rigid designators" (Kripke 48).⁵ The name, then, is rigidly tagged onto an object across all possible worlds. However, a description, in Kripke's theory of reference, is not synonymous with a name; that is, a description is not something that 'stands for' a name or is equivalent to it. If a name is 'x' in a given sentence, then in Kripke's analysis, a description can not be substituted for 'x' and still maintain the same meaning (Kripke 48).⁶ A description is a contingent statement from which a reference is fixed or determined. Hence, "the description used is not synonymous with the name it introduces but rather fixes its reference" (Kripke 96n).

In the new theory of reference, this description is most directly aimed at *proper* names. In cases involving individuals, the theory is easily applied, seeming almost commonsensical. Kripke gives many such examples, one of which concerns Aristotle. If the name 'Aristotle' is the name affixed to a specific object, then the statement 'Plato's greatest student' is, as a description, not a rigid designator but instead is a statement about the contingent properties associated with that name. It is contingent because if Aristotle were not Plato's greatest student, he would still have been called 'Aristotle'. The name is rigid, but the description in this case is not.

Of special interest here is the case in which a statement is a definite description which can be used to isolate 'Aristotle' as a unique individual. Such a case would be a statement in which Aristotle were to state that he was born in 'x' month to 'such and such parents'. The descriptions in this case point only to the being named 'Aristotle' as a unique individual. In

this case, the description indicates fundamental qualities/essential properties that could *only* be held by one unique individual. When essential properties are used in a descriptive statement in this way, that description, too, is a rigid designator. Then and only then, just as a name would, the description tags the individual with its essential properties (Kripke 28). These essential properties are exclusively necessary characteristics or scientific facts about the individual that are known definitely.

Common Nouns and General Names As They Are Associated With Natural Kinds

Another interesting relationship between name and description that is especially significant in this analysis is how Kripke's theory of names applies to common nouns and general names. By applying the theory to a collection of individuals, such as a species, the theory of names becomes significant for environmental ethics. In these cases, the name used represents a group that has some commonality, unlike the previous cases where the names belonged to unique individuals. Within these cases "is the class of general names associated with natural kinds — that is, with classes of things that we regard as of explanatory importance; classes whose normal distinguishing characteristics are 'held together' or even explained by deep-lying mechanism" (Putnam 102). It becomes clear that when general names are used, a wrinkle is added to Kripke's theory of reference. Do the individual members of the group lose some form of individuality by being represented by a *collective* rigid designator? What is the *shared essence* of the members in the group such that they can all be tagged by the same name?⁷ What implications does this have for groups such as species, and how does this affect an environmental ethic? Hilary Putnam addresses many of these unanswerable questions in his development of Kripke's theory of reference as it applies to groups.

Putnam's investigation leads to a focus on essences of groups with something in common. As he explains, "what the essential nature is is not a matter of language analysis but of scientific theory construction. . ." (Putnam 105). Such scientific constructions would resemble chemical breakdowns or chromosomal structures of objects. Kripke suggests that, "A *priori*, all we can say is that it is an empirical matter whether the characteristics originally associated with the kind apply to its members universally, or even ever, and whether they are in fact jointly sufficient for membership in the kind" (Kripke 137). As Putnam points out, there is one obvious problem with such essential descriptions. Because they represent a stereotype of the object, they do not account for abnormalities. Despite this drawback, these descriptions, have the status of rigid designation because they are based on as the actual nature of the particular things as they can be known by humankind. Kripke grants that, "In general, science attempts, by investigating basic structural traits, to find the nature, and thus the essence (in the philosophical sense) [*a priori*] of the kind" (Kripke 138).

An example of essence, understood as what a thing necessarily is according to science, is explained by Hilary Putnam in an article entitled "Meaning and Reference," Putnam complicates the theory of reference and names a hypothetical 'substitution problem' in a counterfactual world. This world contains a liquid possessing the same superficial properties as Earth's water: "it is indistinguishable from water at normal temperatures and pressures," except it is composed of XYZ as opposed to H₂O (Putnam 121b). The substance is known as and called 'water' in this counterfactual 'Twin Earth', but according to Putnam's analysis, largely based on Kripke's, this substance is not water. It is a scientifically known fact that in our world 'H₂O is water' is a true identity statement. That is, this statement is not contingently known because it is an identity statement between two names. In this case, if the statement "H₂O = water" is true and if they are both names (that is, they are rigid designators), then "H₂O = water" is a necessary truth. It is interesting to

note that even though the statement is not contingent, it still must be true *a posteriori*. Because this non-contingent claim is known *a posteriori* it involves an element of uncertainty. Even though we know water to chemically be H₂O, it is possible in the future that, another scientifically determined composition will be discovered that is more accurate. The new theory of reference, insofar as it considers the essences of things, rests on the dynamic shoulders of empirical science.

Species, Katz, and The New Theory of Reference

Many of the above mentioned examples and concepts prove helpful when examining the main issues in Eric Katz's article. The implications of the new theory are important in giving additional reasons for the implausibility of 'the substitution problem' as well as for providing a basis for arriving at an environmental ethic similar to the 'community model' from Katz's essay.

The substitution problem, as was explained earlier, is not a plausible problem. If it is acknowledged that species have intrinsic value by virtue of being natural, as was suggested earlier, then it is not plausible that this "serious moral problem," of replacing intrinsically valued species with other entities capable of carrying out the original's understood function in an ecosystem, could arise. Indeed, Katz admits in his article that such a substitution has never really occurred.

After suggesting that such a thing *could* happen, however, he also stated that if the substitution problem occurred it would be morally wrong, because it directly "involves the ideas of identity, integrity, or intrinsic value applied to individual organisms and species" (Katz 253). He later says in the article, "a technically adequate functional substitute, because it is not an outgrowth of the original natural processes of the system, does not possess the same intrinsic value as the original entity" (Katz 254, 245). Therefore, the identities of species are *separate from* and *independent of* each other. Such natural independence is in part why something is intrinsically valuable. This is very similar to the statement

describing Kripke's conception of identities being a combination of *origin* and *substance*, both of which are essential. As Kripke surmises, "If a material object has its origin from a certain hunk of matter, it could not have had its origin in any other matter" (Kripke 114). Because Kripke considers origin and substance unique characteristics of an independent identity, it seems that these are the elements that cause a being to be separate and independent.

It follows that, even if some other entity or mechanical object were capable of replacing a species' functional role, the replacement would never 'be' the species. It would not acquire the identity of the replaced species by mimicking the functional role. Hilary Putnam gives a concise account of this in the example of water on Twin Earth. Putnam explains that even if XYZ fulfills the "operational definition," that is, has the same superficial properties as water, it is not water because it does not have the same essential properties as the stuff on Earth (Putnam 129-30b). Therefore, by using Putnam's example I maintain that in Katz's 'substitution problem', even if the *functional* role is fulfilled and the thing looks superficially like the original species, it *is* not and *cannot* be that species, since its essence is necessarily different. The origin and substance of the two species are different; therefore, the identity of the replacement species is different from that of the original species: A species cannot be replaced.

Although on the surface this link between Katz and Kripke's analysis seems tenuous, it is important to understand, because Kripke guarantees the identity and individuality of unique beings. It follows, in Kripke's analysis, that a separate entity has also a separate identity and essence, since identity is tied up in origin and substance (Kripke 114). It is unique in its fundamental properties which set it away from and distinguish it from other entities. Although many of these properties may be shared with other entities (such as function which could be mimicked), science and philosophy grant that there is something, an essence, that is unique to that specific entity. It is helpful here to repeat Katz's claim that, "the intrinsic value of natural entities is their source or origin.

..” (Katz 254, 249-50). These conclusions provide the base for a balanced ethic by privileging origin and uniqueness over mere “role” within an ecosystem. A combined consideration of all three of these properties helps locate the intrinsic *and* instrumental value of each species.

As we have seen, by attempting to extend this principle to common names, Putnam also extends the analysis of essence. If the theory of names is applied to a collective entity (a species for instance), then that group should have some fundamental, essential property that grants it individuality and distinction. In Katz’s article this is explained as justification for the preservation of rare species which, it seems, no longer have any instrumental worth in an ecosystem. Because a Panda Bear is fundamentally unlike any other species, since it maintains its own identity and essential properties, it is intrinsic value that justifies preserving the species. As Katz explains,

They have no instrumental value [supposedly], since the ecological system seems to function quite well without them. Thus, if they are to be preserved or protected, as environmentalist policies universally dictate, it must be because of their intrinsic value.
(Katz 255)

One concern that could arise from applying theory of name principles to groups is that an individual in a group will lose its individuality and merely represent the ‘group essence’ as a whole. This difference is not however lost, it is, in part, indicated in a semantic specification — the names are different. Let’s take the case of a herd of deer. Because they are a group how is it possible that each member in the group is a distinct individual if they do not have different names? It is possible if, when referring to a specific deer, we say, ‘that’ deer. ‘That’, in this case, is a rigid designator intended to indicate only one deer from the herd.

Another way to support Katz's search for an adequate environmental ethic is to examine his use of counterfactual worlds in view of Kripke's thought. In so doing, we can arrive at a theoretically-based appeal which leads to a rationale for preservation that is very similar to Katz's community model. Hence, Kripke's theory can inform the future development of a feasible environmental ethic that advocates species preservation.

By applying Kripke's philosophy, we come to a rather astonishing realization. As was mentioned earlier, because of the uncertainty of science necessary truths, essences, and essential properties cannot always be known *a priori*. If, then, there is still much to learn about relationships and essences and composition, any description that is not 'analytic'⁸ carries with it an element of doubt. Kripke is careful to deal with this topic in *Naming and Necessity*. In a footnote he indicates that he did not try to deal with the delicate issues involving analyticity here, but does acknowledge Putnam's work (Kripke 122-23). Later, however, in the summary, he warns that, "For species, as for proper names, the way the reference of a term is fixed should not be regarded as a synonym for the term" (Kripke 135).

Following this realization, we can see the danger in considering fixed references to be analytic truths. It is still true in our world that definite descriptions, descriptions which supposedly capture the essence of a thing or species, can change as our knowledge increases and develops. We first had to *learn* that water = H₂O. It may still be the case, as was mentioned earlier, that H₂O may not be the most accurate representation of water's composition. Just so, then, that our understanding of what constitutes a species' essence, is based on society's understanding of its chemical composition, its chromosomal makeup, and even its ecosystemic role.. This description, it seems, is not necessarily analytic, but is just a description that at least temporarily 'fixes the referent'. Our knowledge about a species' essence may

change in the future. In view of these empirical scientific matters, we may doubt that a successful analytic statement about a species is possible.

These arguments about a species' value and its essence are fundamental in developing an understanding of the relationship between, not only a species and its role, but also one species with another. It is only possible, once this relationship is understood, to make a determination about the continued existence or obliteration of a unique identity. Although this investigation of Katz from Kripke's perspective does not neatly solve the problems surrounding species valuation, it informs the debate, developing the issues in question. If there is no way for us to 'know' what a species' real essence is, or its role is not a part of its essence, it follows that Kripke's theory of names could assist both the impetus for preservation and the justification for destruction. Preservation would be based on the arguments I have illuminated in this essay, and destruction could be justified because of what is not known. There is still a personal judgment involved that theory can only influence, not dictate. It is, however, helpful to note that our understandings of a species, as was shown above, is merely dependent upon a fixed reference based upon the knowledge we have, not the knowledge we might gain. Simply, preservation need not be based on an instrumental futurity because of the knowledge we lack or could lack — even if we do not consider the potential use-value of a species, because it is valued intrinsically by virtue of being natural, it seems as though it should not be destroyed or replaced.

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NOTES

1. Katz makes it clear that an ethic based solely on a species' intrinsic worth is *equally* unacceptable. It seems that this intrinsically valuable ethic would lead to a completely individualistic ethic denying species interdependency, since "An entity valued intrinsically requires no relationships with any other entities."

2. Italics added.

3. Italics added.

4. It is interesting to question Katz's meaning when he says 'artificially human'. For instance, is an animal that is conceived through artificial insemination in a zoo not considered natural because its origins are in some fundamental way artificial human processes?

5. Italics added. See also p. 58

6. A description is not a rigid designator that is just like a name "unless (of course) we happen to use essential properties in our description" (57).

7. There is extensive literature which investigates these concerns, much of the work of Hilary Putnam, but this topic is for the most part beyond the scope of this paper.

8. Kripke understood analyticity to be descriptions that were both necessary and *a priori*.