Naming and Necessity From a Functional Point of View

OSAMU KIRITANI
Department of Research Promotion,
Tokyo Women's Medical University

The aim of this paper is to develop a new connection between naming and necessity. I argue that Kripke's historical account of naming presupposes the functional necessity of naming. My argument appeals to the etiological notion of function, which can be thought to capture the necessity of functionality in historical terms. It is shown that the historical account of naming entails all conditions in an etiological definition of function.

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Saul Kripke began his influential lectures, *Naming and Necessity* (1980), remarking that some connection would be developed between naming and necessity. However, it has been argued that Kripke's theses about naming do not presuppose any theses about *metaphysical* necessity (Almog 1986; Stalnaker 1997). The aim of this paper is to develop another connection between naming and necessity. I will argue that Kripke's historical account of naming presupposes the non-metaphysical necessity of naming. My argument will appeal to the etiological notion of function (Millikan 1984; Neander 1991a, 1991b; Griffiths 1993; Godfrey-Smith 1994), according to which the function of an entity is fixed by its history. On the etiological view, the human heart has the function to pump blood, since its pumping blood contributed to the survival of our ancestors. I have elsewhere suggested that the etiological notion of function captures the modality of functionality in non-metaphysical terms (Kiritani 2011a, 2011b; see also Nanay 2011). Function attributions have *normative* force (see Millikan 1989, 2002; Neander 1991a, 1991b; Davies 2001, 2009; Hardcastle 2002; McLaughlin 2009): an entity has the function to do *F* if and only if it *ought to* do *F*. This "ought" can be regarded as expressing the *necessity* of *F*. The function of the heart is to pump blood, while it is necessary for the

heart to pump blood.[1] The etiological notion of function can be thought to capture the necessity of functionality in historical terms. In what follows, first, I will clarify a condition in Millikan's (1984) etiological definition of function. Next, I will show that Kripke's historical account of naming entails all conditions in the etiological definition. Then it will be shown that the historical account of naming presupposes the *functional* necessity of naming.[2]

Direct Proper Function

Millikan (1984, chapter 1) gives an etiological definition of function, which she calls "direct proper function," for members of two kinds of "reproductively established families." Any set of entities having the same character derived by replications from a certain entity or certain entities is called a "first-order reproductively established family." Such a common character is called a "reproductively established character." (Any member of a first-order reproductively established family from which a current member m was derived by replication or by successive replications is called an "ancestor" of m.) Genes, viruses, and imitative behaviors are members of first-order reproductively established families. Roughly, members of first-order reproductively established families are what Dawkins (1972) and Hull (1988) call "replicators," whereas members of "higher-order" reproductively established families are phenotypes. According to Millikan (1984, chapter 4), uses of a word form a first-order reproductively established family. In this paper, I will leave aside the cases of higher-order reproductively established families, and concentrate on the cases of first-order reproductively established families. Millikan gives the definition of direct proper function in the following way:

> Where m is a member of a reproductively established family R and R has the reproductively established or Normal character C, m has the function F as a direct proper function iff:[3]
> (1) Certain ancestors of m performed F.
> (2) In part because there existed a direct causal connection between having the character C and performance of the function F in the case of these ancestors of m, C correlated positively with F over a certain set of items S which included these ancestors and other things not having C.
> (3) One among the legitimate explanations that can be given of the fact that m exists makes reference to the fact that C correlated positively

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[1] In provability logic, a sentence A is necessary ($\Box A$) if and only if A is provable in a formal system (Boolos 1993). Unlike metaphysical necessity, $\Box A \rightarrow A$ is not always true in provability logic, since even if A is provable in some system, A might not be true when the system is unsound. Similarly, even if it is functionally necessary for x to do F, x might not do F, that is, malfunction (see Kiritani 2011a, 2011b).

[2] In this paper, like Almog and Stalnaker, I will concentrate on the cases of proper names, leaving aside the cases of natural kind terms.

[3] "Normal character" corresponds to the cases of higher-order reproductively established families.

> with F over S, either directly causing reproduction of m or explaining why R was proliferated and hence why m exists. (Millikan 1984, 28)

Condition (3) seems a little complicated. Moreover, Millikan does not characterize the notion "legitimate explanation" in (3).[4] Based upon her comment on the definition, as far as the cases of first-order reproductively established families are concerned, (3) can be paraphrased as follows:

> (3') The performance of F by each of these ancestors directly caused replication of either m or some ancestor of m.

Let us make sure that this paraphrase is valid. Millikan makes the following comment on the definition of direct proper function:

> The intuitive idea behind the definition that I will give of a direct proper function is this. A function F is a direct proper function of x if x exists having a character C because by having C it *can* perform F.… First interpret "because by having C it *can* perform F" to mean "because there were things that performed F in the past due to having C." But how could it be because F was performed in the past by C as opposed to, merely, because F was performed in the past by something or other, that x was produced?… My suggestion is that when it is in part because A's have caused B's in the past that a positive *correlation* has existed between A's and B's, and the fact that this *correlation* has existed figures in an explanation of the proliferation of A's, then it does make sense to say that A's exist in part because A's caused B's. (Millikan 1984, 25–26)

Condition (3') requires that m exists having C because the ancestors of m in (1) performed F. Even if (1) and (3') are satisfied, it does not follow that, as Millikan's comment requires, m exists having C "because there were things that performed F due to having C," not "by something or other," since a positive correlation between C and F does not figure in an explanation of the proliferation of R (i.e., C's) which results in the existence of m. However, (2) requires that such a correlation existed in part because the ancestors of m in (1) performed F due to having C. If (2) is satisfied in addition to (1) and (3'), a positive correlation between C and F figures in an explanation of the proliferation of R which results in the existence of m. Then it follows from Millikan's suggestion that m exists having C "because there were things that performed F due to having C." Hence, F is a direct proper function of m. Thus, (3) can be paraphrased into (3').

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[4] Millikan makes the following remark on "legitimate explanations" in (3):
There are of course many legitimate explanations, some more interesting than others, for every happening in nature. What matters here is only that explanations making reference to correlations of a certain type can be given *at all* for why certain traits of organisms survive. (Millikan 1984, 26)

Reference and Functional Necessity

I will show that Kripke's (1980, 90–97) historical account of naming entails all conditions in the definition of direct proper function.[5] First, note that Kripke's historical account makes reference to a first-order reproductively established family. The historical account makes reference to a causal chain of uses of a name which all have resulted from imitation of another use. Let C be a certain name and R be a set of uses of a word. The historical account of naming makes reference to the first-order reproductively established family R of which C is the reproductively established character.

Let us make sure that Kripke's historical account of naming entails conditions (1) and (3'). According to Kripke's historical account, a current user of the name must have intended to use it with the same reference as another use from which he learned the name. Learning of the name, whether successful or unsuccessful, would not have occurred if another use of the name had not referred to a certain object. Thus, another use of the name m' had to refer to a certain object o, and m' referring to o had to cause a current use of the name m. If m' was not the introduction of the name, the other use of the name m'' had to refer to o too, and m'' referring to o had to cause m'. Then it follows that each past use in the causal chain of uses of the name had to refer to a certain object o, and each past use referring to o had to cause the next use of the name. Each past use in the causal chain of uses of the name can be seen as an ancestor of a current use of the name. Let F be reference to a certain object o. The historical account of naming entails (1) and (3'), that is, certain ancestors of a current member m of R performed F, and the performance of F by each of these ancestors directly caused replication of either m or some ancestor of m.

How about condition (2)? Millikan characterizes the notion "correlation" in the following way:[6]

> To say that there is a correlation between two things A and B is to say that a higher proportion of A's than of non-A's are B (and—it follows—vice versa). A correlation holds relative to some definite sample of things, and this sample must of course contain things that are not A (as well as things that are not B). (Millikan 1984, 26)

Kripke's historical account of naming makes reference to a language community into which the name was introduced. Let S be the set which consists of all past uses of words in the language community after the name was introduced. At most, uses of some indexicals, other names, or definite descriptions could refer to the same object as uses of the name. On the other hand, as we have seen, each past use in the causal chain of uses of the name had to refer to a certain object o. It follows that over

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[5] The definition of direct proper function can be applied to uses of a name (Millikan 1984, 75), but, as far as I know, Millikan has never compared it with Kripke's historical account of naming.

[6] This characterization is identical with Sober's (1984, 281–282).

the set *S*, the proportion of uses of the name referring to *o* had to be higher than the proportion of uses of words other than the name referring to *o*. That is, there had to be a positive correlation between using the name and referring to a certain object *o* over the set *S*. In addition, using the name must be a cause of referring to *o*. The historical account of naming entails (2) in the definition of direct proper function.

Kripke's historical account of naming entails all conditions in the definition of direct proper function. The definition of direct proper function, which is an etiological definition of function, can be thought to capture the necessity of functionality in historical terms. It follows that Kripke's historical account of naming presupposes the functional necessity of naming. On the historical account of naming, it is functionally necessary for uses of a name to refer to a certain object.

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