Proper Names and Local Information

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Evolutionary theory has recently been applied to language. The aim of this paper is to contribute to such an evolutionary approach to language. I argue that Kripke's causal account of proper names, from an ecological point of view, captures the information carried by uses of a proper name, which is that a certain object is referred to. My argument appeals to Millikan's concept of local information, which captures information about the environment useful for an organism.

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In my previous paper (Kiritani, 2008), I argued that Kripke's (1980, pp. 90–97) causal account of proper names, in terms of natural selection, captures the *norm* of uses of a proper name, which is to refer to the same object as past others' uses in a language community. In this paper, I will argue that Kripke's causal account of proper names captures the *information* carried by uses of a proper name from an ecological point of view. My argument will appeal to Millikan's concept of "local information."[1] Millikan (2000, appendix B, 2004, chapter 3) has proposed the concept of local information to capture information about the environment useful for an organism. In the next section, I will briefly review Millikan's concept of local information. In the section that follows, I will show that Kripke's causal account of proper names implies Millikan's characterization of local information. Then it will be shown that Kripke's causal account, from an ecological point of view, captures the information carried by uses of a proper name, which is that a certain object is referred to.

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[1]Like Taylor (2007), I will follow Millikan's convention of abbreviating "local natural information" to "local information."

Local Information

Millikan's concept of local information is intended as an improvement of Dretske's semantic concept of information (see Millikan, 2000, appendix B, 2004, chapter 3). According to Dretske (1981, chapter 3), certain entities are natural signs carrying information if they are instances of types that are perfectly correlated with what they sign because each instance is causally connected with what it signs.[2] Tracks of a certain kind are correlated with the presence of quail. Readings on fuel gauges are correlated with the amount of fuel in the tanks to which they are connected. However, as Millikan points out, such a correlation does not need to be perfect. Pheasants, also in the woods, might leave the same kind of tracks, and readings on broken gauges might say "full" where the tanks are not full. Moreover, Dretske has left it obscure how sign instances, because of which such a correlation holds, are fixed (see also Dretske, 1988, chapter 3).[3] Millikan proposes conceiving of them as fixed by repetitions within a local domain, and gives the following characterization of information. (Note that Millikan (2000, appendix B) still called local information "informationC.")

> Natural signs bearing informationC are . . . instances of types that are correlated with what they sign . . . because each sign instance is [causally] connected with what it represents in a way that recurs . . . . (Millikan, 2000, pp. 236–237)[4]

Following this characterization, in some woods, most tracks of a certain kind carry the information that there are quail, and readings on normal gauges carry information about the amount of fuel in the tanks.

Reference and Information

I will show that Kripke's (1980, pp. 90–97) causal account of proper names implies Millikan's characterization of local information. Then it will be shown that Kripke's causal account captures the information carried by uses of a proper name.

(1) Kripke's causal account of proper names requires that uses of a name are reproduced in a language community. Thus, Kripke's causal account implies that sign instances are fixed by repetitions within a local domain.

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[2]Millikan (2000, p. 218) points out that reference to prior knowledge in Dretske's original conception can be eliminated.

[3]Barwise and Seligman (1997) also left it obscure how normal tokens of a classification, because of which an informational constraint holds, are fixed.

[4]Millikan (2004, pp. 44–45) notes that a "causal" connection is *sufficient* for local information. This poses no problems to my argument.

(2) Kripke's causal account of proper names requires that a causal chain between each use of a name and its referent is established by reproductions. Hence, Kripke's causal account implies that each sign instance is causally connected with what it signs in a way that recurs.

(3) Kripke's causal account of proper names requires that there is a language community into which a name is introduced. Let S be the set which consists of all past uses of words in a language community after a name was introduced. At most, uses of some descriptions, other names, or pronouns could refer to the same object as uses of the name. On the other hand, each use in a causal chain of uses of the name refers to a certain object *o*. It follows that, over the set S, the proportion of uses of the name referring to *o* is higher than the proportion of uses of words other than the name referring to *o*. That is, there is a correlation between using the name and referring to a certain object *o* over the set S. Kripke's causal account implies that sign instances are of types that are correlated with what they sign.

These show that Kripke's causal account of proper names implies Millikan's characterization of local information. It follows that Kripke's causal account captures the information carried by uses of a proper name, which is that a certain object is referred to.

Concluding Remarks

Millikan has proposed the concept of local information to capture information about the environment useful for an organism. In this paper, I have shown that Kripke's causal account of proper names implies Millikan's characterization of local information. It follows that Kripke's causal account captures the information carried by uses of a proper name from an ecological point of view. My argument would contribute to clarifying a connection between language and nature.

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