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THE REFERENCE OF INDEFINITES*

The indefinite article has the function of picking out a single representative from among various representatives of a kind.1

1  INTRODUCTION

In this paper I argue that indefinite NPs have a more complex referential nature than is usually supposed, and that this structure must be reflected in their semantic representation. According to the classical view due to Frege and Russell, an indefinite NP is represented by an existential quantifier, a variable, the restriction and the occurrence of the variable in the argument position of the main predicate. Hence, there is no clear correspondence to the indefinite NP on the surface. Sentence (1) is translated into the formula (2a), in which the indefinite NP \textit{a man} corresponds to the variable \( x \) in the argument position of the predicate \textit{walk} and in the predication \textit{man}(x). The formula specifies that the intersection of the two sets denoted by the predicates is non-empty. The model-theoretic interpretation (2b) links the variable \( x \) to an object \( d \) that fulfills both predicates, treating the attributive material \textit{man} on par with the assertive material \textit{walk}. Hence, at the representational level, the indefinite NP is not represented as an independent expression. This conception has been widely accepted in semantics and can be found in current semantic theories.

(1) A man walks
(2) a. \( \exists x [\text{man}(x) \& \text{walk}(x)] \)

b. The formula \( \exists x [\text{man}(x) \& \text{walk}(x)] \) is true iff there is an object \( d \) in the domain of individuals such that \( d \) is in the extension of the predicate \textit{man} and in the extension of the predicate \textit{walk}.

In Lewis-Heim-Kamp theories, indefinites do not express existential force by their own; they rather introduce discourse referents into an additional level of semantic representation. The discourse referents can then be bound by other quantifiers or by the text operator \( \exists \), as in (3a). Alternatively, we can describe the existential closure at the level of interpretation, as in (3b): the representation becomes true if there is an assignment functions that fulfills the conditions.

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(3) a. \( \exists a : \text{man}(a) \& \text{walk}(a) \)  
b. \( \{ a : \text{man}(a) \& \text{walk}(a) \} \) is true if there is an assignment function \( g \) such that \( g(a) \) is in the extension of the predicate \( \text{man} \) and in the extension of the predicate \( \text{walk} \).

As in the classical theory, this approach treats the descriptive material of the indefinite like the assertive material of the matrix sentence, and there is no clear correspondence between the syntactic constituent of an indefinite NP and its representation.

I want to maintain that indefinite NPs must have a different representation, which reflects their syntactic nature as proper constituents and their semantic function as referring expressions. I shall argue that indexed epsilon terms give a far better analysis of indefinites than the representation as existential quantifiers, as variables, or as discourse referents can do. Sentence (1) is represented by the formula (4), in which the epsilon term \( \varepsilon x \text{man}(x) \) corresponds to the grammatical constituent \( a \text{ man} \). The epsilon operator is interpreted by a choice function \( \Phi_n \), which assigns to a set one of its elements. This semantics reflects the primarily referential nature of indefinites. The model theoretic interpretation (5) is true if there is a choice function \( \Phi_n \) such that the choice function assigns an element to the set of men that is in the extension of walking entities.

\[
\begin{align*}
(4) & \quad \text{walk}(\varepsilon x \text{man}(x)) \\
(5) & \quad \text{The formula } \text{walk}(\varepsilon x \text{man}(x)) \text{ is true iff there is a choice function } \Phi_n \text{ such that } \Phi_n([\text{man}]) \in [\text{walk}] 
\end{align*}
\]

I argue that this representation allows to analyze the complex structure of indefinite NPs, which is reflected in its interaction with quantifiers and adverbs of quantification. Furthermore, I argue that indefinites can also be dependent on other indefinite NPs, and I give a representation of this dependency structure for the first time.

The paper is organized as follows: Section 2 gives a short overview over the different analyses of indefinite NPs through history, starting from the traditional grammatical view, passing through the Fregean logic and ending with the dynamic account. Section 3 present recent theories that analyze indefinites by means of choice functions. The discussion of some problems of this approach leads to the modification proposed in the dynamic semantics with choice functions in section 4. Besides their interpretation as choice functions, indefinites also introduce updates on a global choice function in order to model their context change potential. It is only in this semantics that we can account for the uniform analysis of indefinites and definites NPs as terms. Furthermore, we can analyze dependencies between indefinite NPs and account for the so called asymmetric readings of conditionals.

## 2 INDEFINITE NPS AND THEIR REPRESENTATION

In this section I give a short overview of different approaches to and representations of indefinite NPs. Since the treatment of indefinite NPs cannot be separated from anaphoric expressions that are linked to them, this overview must encompass anaphora, too.