Uniformity between Dependent Plurals and Anti-quantifiers*

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I. Introduction

In this paper, I will basically account for the two types of sentences in (1) in a unified way. The sentence in (1a) has a dependent plural. Choe (1987), citing Barbara Partee, defines dependent plurals as “a use of bare plurals in which their meaning seems to be the same as that a singular indefinite would have in certain related sentences.” For example, in (1a), each of the unicycles has a singular wheel despite the fact that the noun phrase wheel is attached with a plural marker that is characterized as dependent. On the other hand, the sentence in (1b) has a so-called anti-quantifier each. Choe (1987) defines anti-quantifiers as particles that typically have scope under something else. In (1b), the noun phrase that forms a constituent with the anti-quantifier each is under the scope of the noun phrase bicycles in the relation of having.

* This paper develops my dissertation on plurality and distributivity, Joh (2008), modifying major semantic rules to employ. In some of my previous works, citing Joh (2008), I have also included a few data illustrated in this paper to present the general theory of distributivity. Yet, in this paper, I focus on the uniformity between dependent plurals and anti-quantifiers in detail, making some changes on my own previous works.
(1a) Unicycles have wheels.
\[ \forall z [z \in \{\text{unicycles}\} \rightarrow \exists x [\text{wheel}(x) \& \text{have}(z, x)]] \]

(1b) Bicycles have two wheels each.
\[ \forall z [z \in \{\text{bicycles}\} \rightarrow \exists x [\text{two wheels}(x) \& \text{have}(z, x)]] \]

As a matter of fact, the uniform patterns between dependent plurals and anti-quantifiers not only occur in the transitive construction as shown in (1), but also appear in the ditransitive construction and in the adjunct phrase as illustrated in (2) and (3), respectively. In (2), we can see that the distributive relation resides between the indirect object and the direct object, with the dependent plural and the anti-quantifier being positioned in the direct object. In (3), the dependent plural and the anti-quantifier are placed in the adjunct phrase and project a distributive sense with respect to the plural events involved with the main clause. The examples listed in (2) and (3) also reveal that the uniformity between dependent plurals and anti-quantifiers is indeed at play even though it is merely descriptive at this point.

(2a) Jenny gave toys to the kids.
(2b) Jenny gave the kids two toys each.

(3a) The boys carried a ball with noses.
(3b) The girls made two cookies in two kitchens each.

I organize this paper as follows. First, in section 2, I will review a previous work, Choe (1987), who has presented a theory of distributivity that has attempted to deal with dependent plurals and anti-quantifiers in a unifying fashion. In section 3, I will put forward a new analysis and discuss its advantages in comparison to Choe (1987). In section 4, I will discuss why both dependent plurals and anti-quantifiers exist in the grammar even though they uniformly correspond to the same pluralization operator. Section 5 will conclude this paper.