Towards a Unified Account of Anti-Uniqueness Inferences

This paper is about expressions that are obligatorily associated with a certain class of inferences, which I call **anti-uniqueness inferences** here. The relevant items in English include *wh-ever* free relatives [6,7,12], *at least/most* numerals [3,9,13], disjunction *or* [4,7,10], and also in other languages *irgendein* indefinites in German [5,11] and *algún* indefinites in Spanish [1,2]. As will be shown below, they all give rise to essentially the same inferences in the same grammatical environments, but in the literature so far, they are mostly analyzed independently, and the major accounts of the inferences are only applicable to a subset of them. The main goal of this paper is to develop a unified account. In particular, the chameleonic behavior of the anti-uniqueness inferences is known to be recalcitrant to accounted for with a unified semantics. It is proposed here that the basic meaning is the ignorance meaning, and other interpretive flavors are derived from it via a pragmatic enrichment.

Same Inferences: A motivation for a unified account comes from the observation that the relevant items give rise to the same set of inferences in the same semantic contexts. This is illustrated below with *wh-ever* free relatives, *at least* numerals and disjunction in English. Importantly, the associated inference changes its semantic flavor in different semantic contexts, which makes the present phenomenon highly intriguing but also challenging at the same time (cf. [9]). Firstly, in non-embedded contexts, the items in question are obligatorily associated with an ignorance inference (the indifference readings are put aside in this abstract).

(1) a. Whatever Mary is reading is about semantics
⇝ The speaker doesn't know what Mary is reading
b. At least three books are about semantics
⇝ The speaker doesn't know exactly how many books are about semantics
c. This book or that book is about semantics
⇝ The speaker doesn't know which book is about semantics

Under a deontic necessity modal, the ignorance inference disappears, and instead a so-called *free choice* inference arises.

(2) a. You must read whatever Mary assigned
⇝ No matter what Mary assigned you must read it
b. You must read at least three books
⇝ You can choose how many to read as far as it is more than three
c. You must read this book or that book
⇝ You can choose from the two

The same free choice inference is observed under a deontic possibility modal too.

(3) a. You can read whatever Mary assigned
⇝ No matter what Mary assigned you may read it
b. You can read at least three books
⇝ You can choose how many as far as it is more than three
c. You can read this book or that book
⇝ You can choose what to read from the two

Furthermore, under a universally quantified noun phrase, they give rise to a non-uniformity inference of the following kind ([10] for *or*, [12] for *whatever*).

(4) a. Each student read whatever books I assigned to him
⇝ Not everyone read the same book
b. Each student read at least three books
⇝ Not everyone read the same number of books
c. Each student read this book or that book
⇝ Not everyone read the same book

A non-uniformity inference is observed under an existential plural noun phrase too ([10] for *or*).

(5) a. Three students read whatever books I assigned to them
⇝ Not everyone read the same book
b. Three students read at least three books
⇝ Not everyone read the same number of books

c. Three students read this book or that book
   $\rightsquigarrow$ Not everyone read the same book

Against Scalar Implicature Analysis: Since [11]'s influential analysis of *irgendein* indefinites, it is widely entertained that the relevant inferences are scalar implicatures [1,2,3,8,10,14]. Yet this type of account cannot be straightforwardly extended to *whatever*, as it crucially hinges on the assumption that the relevant expressions are existential quantifiers. Given the above data, however, an account that is applicable to all of these items is desirable. Furthermore, an additional support comes from Japanese where the series of words formed by a wh-phrase and the particle *-ka*, which can be used in definite and indefinite noun phrases, give rise to the same inferences as above (data omitted in the abstract).

Analysis: It is assumed here that an ignorance meaning is hardwired in the semantics of the items in question. I further propose that the non-ignorance cases are derived from the ignorance meaning by a pragmatic enrichment mechanism called **Opinionated Speaker** ([8,14]).

For an illustration, let us consider *whatever*. Following the previous accounts of this item ([6,7,12]), it is assumed to be a definite description (6a). In addition, it universally quantifies over alternative individual concepts A (cf. [6]) in a non-truth-conditional dimension:

(6) Whatever Mary is reading is about semantics
   a. The unique individual x that Mary is reading is about semantics
   b. $\forall a \in A\ \neg B_s^w(a(w)$ is what Mary is reading and is about semantics)

B_s^w here reads "the speaker s believes," and binds the intensional variable w. This accounts for ignorance readings in non-embedded contexts.

For the other types of inferences mentioned above, an additional mechanism of pragmatic enrichment is employed. For example, let us consider (7), whose basic semantics before enrichment is given in (6a) and (6b).

(7) Each boy read whatever book I assigned to him
   a. Each boy read the unique book x that I assigned to him
   b. $\forall a \in A\ \neg B_s^w(\forall z \in \textbf{boy}, a(w)$ is the book x that I assigned to z and z reads x)

I propose that (7b) gets strengthened to (8) due to the pragmatic enrichment mechanism, **Opinionated Speaker** (cf. [8]), which strengthens an ignorance statement $\neg B_s^w(p)$ to a negative statement $B_s^w(\neg p)$.

(8) $\forall y \in A\ B_s^w(\neg \forall z \in \textbf{boy} : y(w)$ is the book x that I assigned to z and z reads x)

(9) **Opinionated Speaker (OS):** $\neg B_s^w p \Rightarrow B_s^w \neg p$, unless it ascribes a contradictory belief to s

In the ignorance case in (6) above, OS cannot apply as it would result in a contradictory belief.

The free choice inference under a possibility modal merits an examination. The key assumptions here are that possibility modals existentially quantify over plural worlds that are distributed by a universal quantifier ([10]), and that they can be 'specific' and take the widest scope in both meanings.

(10) You can read whatever Mary assigned
   a. $\exists W \in D_{@} \forall w \sqsubseteq W$ (you read what Mary assigned in w)
   b. $\exists W \in D_{@} \forall a \in A\ \neg B_s^w(\forall w \sqsubseteq W$: you read $a(w)$ in w)

Here (10b) is strengthened by OS, yielding (11), which is the free choice reading.

(11) $\exists W \in D_{@} \forall a \in A\ B_s^w(\neg \forall w \sqsubseteq W$: you read $a(w)$ in w)

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