Context by Coincidence

Why a “strong switched reading” (Westerståhl, 1985) does not exist

Steven Westelaken
0309753
15 augustus 2009
Prof. dr. Helen de Hoop

1. Introduction[1]

(1) A: Would you consider 40% to be "many"?
B: That depends, 40% of what?
A: 40% of all senior students graduated?
B: No, I wouldn't say many of them had graduated.
A: How about 40% of all drivers drive 180mph on average?
B: Yes, that's a lot.

Conversations like the one shown in (1) above illustrate an interesting phenomenon: whether a certain proportion is considered to be "many" is apparently not simply tied to a fixed value or proportion, but rather to a contextual element that determines if the proportion or value in question can be said to be "many". I say proportion *or* value, as coming up with similar situations for cardinal values rather than proportions is fairly easily done. See (2) below.

(2) A: Would you say 200 of any given thing are many?
B: I suppose that depends. Two-hundred cars would be a lot.
A: But two-hundred grains of sand are not many grains of sand?
B: Exactly.

Unlike definite determiners and quantifiers like *the*, *no*, *three*, and *all*, which are classified as being either "weak" or "strong" (Milsark, 1979; Barwise & Cooper, 1981; De Hoop, 1992; Ladusaw, 1994; and many others), indefinite determiners like *some*, *many*, and *few* are ambiguous between a weak and a strong reading (Milsark, 1979; Partee, 1988). This means there are (at least) two possible readings for these ambiguous determiners and quantifiers. This division is as analysed in Partee (1988) and as in De Hoop (1992), as both accounts argue in favour of a reasonably clear-cut division between a "weak" and a "strong" reading of the ambiguous quantifiers *many* and *few.* That is, their truth conditions either just include $|A \cap B|$, resulting in a weak reading, or they also include $|A|$ as a whole in their strong reading.

The analysis above, however, is a subject of ongoing discussion, as there are several accounts of there being multiple (i.e. more than the argued minimal of two) possible readings for said determiners and quantifiers (Westerståhl, 1985; Cohen, 2001; Herburger, 1997), although I personally consider Cohen's (2001) relative proportional reading to be nothing more than a rewritten version of the 'regular' proportional reading as defined by Partee in her 1988 article. For the remainder of this article, therefore, Cohen's (2001) account shall not be taken into elaborate consideration. Of the three accounts mentioned above, Westerståhl's "strong switched reading" (Westerståhl, 1985) is perhaps the most interesting analysis and thereby subject to further contemplation; this "strong switched reading" would have its truth condition compare $|A \cap B|$ to $|B|$ instead of to $|A|$.

In this article, I will aim to clarify the distinction between the minimal amount of two clearly distinct readings of ambiguous quantifiers like *many* and *few*, as argued by Partee (1988) and De Hoop (1992), and the more elaborative analyses that argue in favour of multiple distinct readings of these ambiguous quantifiers, as seen in Westerståhl (1985) and Herburger (1997). I will furthermore argue against the existence of a so-called "strong switched reading" as proposed by Westerståhl (1985) and a focus-affected reading as proposed by Herburger (1997), taking into consideration that the inclusion of the elements of the B set can be explained as a logical consequence of the obligatory focus as observed in Herburger (1997) and De Hoop and Sola (1996), Westerståhl's own observation that it is impossible to achieve a "strong switched reading" when an unambiguous

1 I would like to thank Helen de Hoop and Sander Lestrade for their useful remarks and aid in writing this thesis, without whom this final version would not have been possible.

strong quantifier like *most* is used instead of *many* (Westerståhl, 1985), the observation that Milsark's existential phrases (Milsark, 1979) can be applied to any instance of Westerståhl's "strong switched reading" (1985), and that any instance Westerståhl argues should be analysed with his strong switched reading can actually be fully accounted for by a combination of the two-way distinction between a weak and a strong reading, as proposed in Partee (1988) and in De Hoop (1992), and the effect of focus as described in De Hoop and Sola (1996) and in Herburger's focus-affected reading (1997).

I deem it necessary to proceed with more accurately defining the distinction between the weak and strong readings in section 2, differentiating between Milsark's existential distinction (Milsark, 1979), Barwise and Cooper's analysis of the distinction between weak and strong as an inherent property of any determiner or quantifier (Barwise & Cooper, 1981), and De Hoop's and Fodor and Sag's contextual analysis of the distinction between weak and strong, in which they argue determiners and quantifiers can be considered either weak or strong depending on whether they should be interpreted quantificationally or non-quantificationally in their specific contexts (De Hoop, 1992; Fodor & Sag, 1982). In section 3, I will elaborate on present accounts of *many* and *few* specifically, considering Partee's account that indefinite quantifiers are always ambiguous between their respective weak and strong readings (Partee, 1988), Westerståhl's strong switched reading (Westerståhl, 1985), the analysis that what Westerståhl's claims is a strong switched reading is actually nothing more than a normal cardinal reading (De Hoop & Sola, 1996), and Herburger's focus-affected reading (Herburger, 1997). In section 4, I discuss the relations between and the implications of the aforementioned articles and try to argue against the strong switched reading as proposed by Westerståhl (1985). In section 5 I will supply a comprehensive look at a case study after the supposed degrammaticalisation and re-grammaticalisation of the Dutch indefinite cardinal quantifier *tig*, which surprisingly appears to lack a true proportional reading, after a (Dutch) article by Norde (2006).

2. Defining weak and strong

2.1 There is Milsark

In his 1974 Ph.D. thesis, listed in the References section of this article as Milsark (1979), as published by Garland Publishing Company, Milsark made an important distinction between determiners that could be paired with the existential phrase *There is/are...*, which would become a focal point for determiner and quantifier semantics. Milsark distinguished at least two groups of determiners and quantifiers and coined the descriptive terms "weak" and "strong", respectively. This distinction would crucially hinge on the acceptability of a given determiner or quantifier in sentences headed by existential phrases, like those in (3a-e), reproductions of examples by Milsark (1979).

(3a) There were two people in the room.
(3b) There were people in the room.
(3c) There were sm people fired.[2]
(3d) *There were the/all people who hate Chopin on the boat from Poland.
(3e) *There is the man in the room.

Through these examples, Milsark aims to examplify the consequences of these determiners

2 The spelling *sm* for *some* is used by Milsark to distinguish between stressed and unstressed versions of *some*.

and quantifiers being definite or indefinite with regard to existential "*there*-insertion contexts", as he himself calls them. Milsark also explains why the sentences in (3d) and (3e) come across as "ill-formed" and are redundant by looking at the sentences in question as an expression featuring the existential operator E, as below in (4):

(4) E (A(x)) (x is a man) (x is in the room)

Given the universal operator A is placed inside an existential context, it becomes instantly redundant, effectively resulting in a reading no different from the one in (5) below:

(5) E(x) (x is a man) (x is in the room)

Furthermore, Milsark argued the above was not the full story to this distinction, as weak determiners tend to have a cardinal reading in existential phrases, as can be seen in Milsark's own examples, in (6a) and (6c) below, whereas those same weak determiners would generate a quantificational reading instead of a cardinal one when placed in non-*there*-insertion sentences, as seen in Milsark's examples shown in (6b) and (6d).[3]

(6a) Some people were toasted.
(6b) There were some people toasted.
(6c) Typhoons [Ø] arise here.
(6d) There arise [Ø] typhoons here.

Obviously, neither sentence in (6) is ill-formed, even though the determiners/quantifiers are placed both in existential *there*-insertion contexts and in universal or quantificational contexts. Furthermore, there is a distinct semantic difference between (6a) and (6c) and their counterparts (6b) and (6d), considering the determiners in (6b) and (6d) are obviously cardinally interpreted, whereas those in (6a) and (6c) are preferably interpreted quantificationally. Milsark thereby reasons there must be a third group of determiners, which is ambiguous between weak and strong.

Thus, Milsark (1979) recapitulates that there are three distinct groups of determiners and quantifiers. According to him, the first group consists of ambiguous determiners and quantifiers such as the ones displayed in (6) above. The second group, "typified by the overt universal quantifier words (<u>the</u>, <u>each</u>, <u>all</u>, <u>every</u>, <u>both</u>, etc.), <u>most</u>, and numerical expressions in the form <u>three of the</u>, <u>ten of the</u>, has only a quantificational reading". Notice how Milsark incorporates partitives into this group, too. The third group consists of unambiguously cardinal (or weak) determiners, such as *a*, *three*, *ten*, and *fifty-two*, further examplified by the difference between the sentences in (7) and (8), respectively.[4]

(7a) A man was shot in the bar.
(7b) There was a man shot in the bar.

(8a) Sómebody was shot in the bar, but fortunately the others managed to get away.
(8b) Somebody was shot in the bar; what a mess for the barkeep.

Milsark explains through these two sets of sentences that the determiner *a* as seen in (7) is an unambiguously weak determiner, whereas *some* in (8) is an ambiguous determiner, rather:

3 The Øs in square brackets were added by me to indicate the presence of an 'invisible' plural indefinite determiner, of which the existence is also argued (or at least assumed) in Milsark (1979).

4 The writing of *sómebody* in (8a) is supposed to indicate the stressed version of *somebody*, as opposed to its unstressed version *somebody* in (8b).

> "The intuitions here are fiendishly subtle, but I think it is possible to maintain that (85a) means only that the number of men shot was one (the cardinality reading), and not "it can be said of some one man, as opposed to others, that he was shot in the bar." This can be seen somewhat better by replacing a man with somebody, which for these purposes seems to be identical in meaning with a man, except that it has the quantificational/cardinal ambiguity, which can be brought out, as usual, by stress. When we do this, we find that (85a) is not equivalent to (86a), but to (86b)." (Milsark, 1979)

In this example, "(85a)" refers to the sentence (7a) above, while "(86a)" and "(86b)" refer to respectively (8a) and (8b) above. Notice how Milsark already acknowledged the importance of focus (or "stress", as he calls it), which I will discuss later on as part of Herburger's focus-affected reading of *many* (Herburger, 1997). Indeed, in Milsark (1977), he shows through the following examples, represented here by (9) and (10), that unstressed ambiguous determiners tend to go well with existential readings, whereas stress indicates a quantificational or partitive reading.

(9a) There are sm people in the bedroom.
(9b) *There are some of the people in the bedroom.

(10a) *Sm people were tall.
(10b) Some of the people are jackasses.

2.2 Weak/strong as properties of determiners

In the much acclaimed article by Barwise and Cooper (1981), they propose the formal definition for the distinction between Milsark's weak and strong (1979) as below, in (11), by which they relate the strength/weakness of any given determiner to the strength/weakness of the entire NP it is part of.

(11) A determiner D is *positive strong* (or *negative strong*, resp.) if for every model $M = \langle E, [[\ ]] \rangle$ and every $A \subseteq E$, if the quantifier $[[D]](A)$ is defined, then $A \in [[D]](A)$ (or $A \notin [[D]](A)$, resp.). If D is not (positive or negative) strong then D is *weak*.

This, according to Barwise and Cooper (1981), is ultimately what causes sentences like the one in (3e), repeated here in (12), to be either tautologous or contradictory (or, in Milsark's (1979) words, "redundant"), as a strong determiner presumably aims to presuppose the existence (or, of course, the overt non-existence) of its noun complement in the first place. Weak determiners, on the other hand, do not require the presupposition of their noun (cf. Cohen, 2001 for a more elaborate discussion on this subject).

(12) *There is the man in the room.

While Barwise and Cooper's (1981) account is generally considered a useful approach at formally defining Milsark's proposal, McNally and Van Geenhoven (1998) discuss its shortcomings, particularly considering its application to specific problematic examples. Although I do not disagree with Barwise and Cooper's (1981) statement that the existence of the determiner's complement is presupposed for strong determiners, I do believe their assertion that any given determiner or quantifier is either unambiguously weak *or* unambiguously strong is not in lieu with the data at hand, particularly considering such examples as in Milsark (1979) and Partee (1988). Rather, I think an approach as the one put forth by De Hoop (1992) and Fodor and Sag (1982) to be far more desirable.

2.3 Weak/strong: a contextual distinction

Rather than trying to define the weakness/strength of any determiner or quantifier as a property of the determiner or quantifier in question, Fodor and Sag (1982) show that, despite generally being considered a weak quantifier, even the indefinite determiner *a* can receive a quantificational reading. Consider their sentence in (13) below.

(13) A student in the syntax class cheated on the final exam.

Most definitely, it is possible to distinguish two very different readings, namely a referential, individual one and a quantificational one. Their respective paraphrases are shown below, in (14) and (15).

(14) This particular student in the syntax class cheated on the final exam.
(15) The intersection of the set of students in the syntax class and the set of cheaters is not empty.

These two distinct interpretations of the exact same sentence (and, moreover, the exact same determiner) suggest that it is not simply the case that a determiner is either definite or indefinite, nor is it the case that a determiner can be only non-quantificational. A similar example is provided in De Hoop (1992), repeated below in (16).

(16) A cousin of mine is pregnant.

In similar fashion, we can interpret this sentence in two distinct ways, namely either that there is a person who is a cousin of mine and who is also pregnant (i.e. the quantificational reading that the intersection of the set of individuals that are cousins of mine and the set of pregnant individuals is not empty) or that the specific individual known as a certain cousin of mine is part of the set of pregnant individuals (i.e. the referential interpretation that the individual who is my cousin is a member of the set of pregnant individuals).

Examples like the ones in (13) and (16) clearly show Barwise and Cooper's (1981) approach to defining strength and weakness (as properties inherent to all determiners and quantifiers) is inaccurate; their theory does not account for the ambiguity found in some determiners. Moreover, these examples underline the ambiguity between weak and strong determiners by showing a supposedly characteristically weak determiner can in fact have a quantificational reading. With this in mind, a characterisation of weak and strong as either quantificational or non-quantificational (i.e. descriptive, rather) is much more desirable. Whether a given determiner is quantificational, then, is dependent on the context in which the determiner occurs and determiners can inherently be ambiguous between weak and strong interpretations.

For the purpose of this article, I shall adhere to the latter concept of weak and strong, as described by De Hoop (1992).

2.4 Intersectivity and symmetry

Now that I have explained why Barwise and Cooper's (1981) approach to defining weakness and strength in determiners and quantifiers is less than ideal and how De Hoop's (1992) and Fodor and Sag's (1982) considerations lead to a far broader and more applicable definition of the terms *weak* and *strong*, I believe it is useful to define the terms *intersectivity* and *symmetry* as used in Barwise and Cooper (1981) and in De Hoop (1992). As per De Hoop's account:

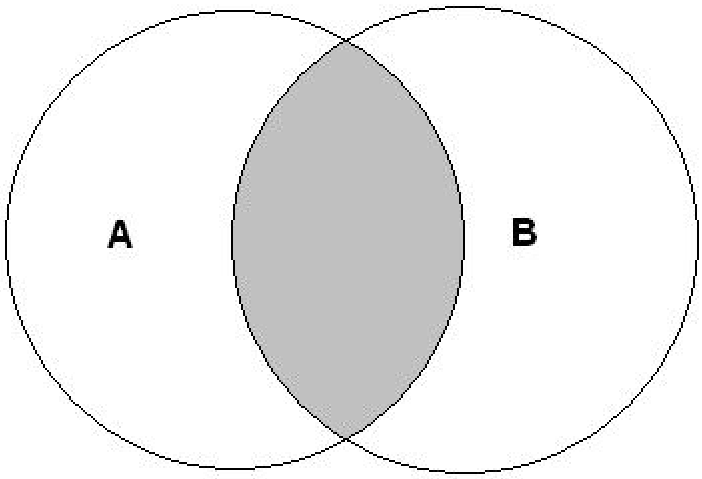
> "A determiner is symmetric if and only if it is intersective; in other words, *intersectivity* is equivalent to symmetry, as was proven by Barwise and Cooper (1981). An intersective determiner is only concerned with the intersection of the two sets A and B." (De Hoop, 1992)

She proceeds to define the concept of intersectivity as formulated in (17).

(17) INTERSECTIVITY
$D_E AB \leftrightarrow D_E(A\cap B)(A\cap B)$

Simply put, the constraint states that, in order for a determiner to be intersective, it should restrict its scope solely to the intersection A∩B, rather than to the sets A and/or B as a whole. A graphical representation of this constraint, based on De Hoop (1992), can be found in (18) below.

(18)



In this representation of the intersectivity constraint, the gray area indicates the scope of an existential, intersective determiner. An example of sentences in which the intersectivity constraint is satisfied can be found in (19) and (20) below.

(19) Three cars are red.
(20) Five cats are in the garden.

For both (19) and (20), the size of A or B does not matter at all. As long as there are (at least) three individuals that are both a car and of red colour, the truth condition of (19) is satisfied. The same goes for (20) and cats and individuals in the garden. All (20) requires to be true is that there are five individuals that are cats and are in the garden. The truth formulas of (19) and (20) can therefore be represented as in (21) and (22).

(21) Three (A) (B) iff $|A\cap B| \geq 3$
(22) Five (A) (B) iff $|A\cap B| \geq 5$

As said before, intersectivity can be considered equivalent to symmetry (Barwise & Cooper, 1981), but what does it mean when a determiner is symmetrical? Once again, let us take into account the graphical representation in (18), but this time, rather than focus on the satisfaction of the intersectivity constraint, consider the apparent symmetry in the image. This symmetry can also be formulated as a constraint, as shown in (23) below.

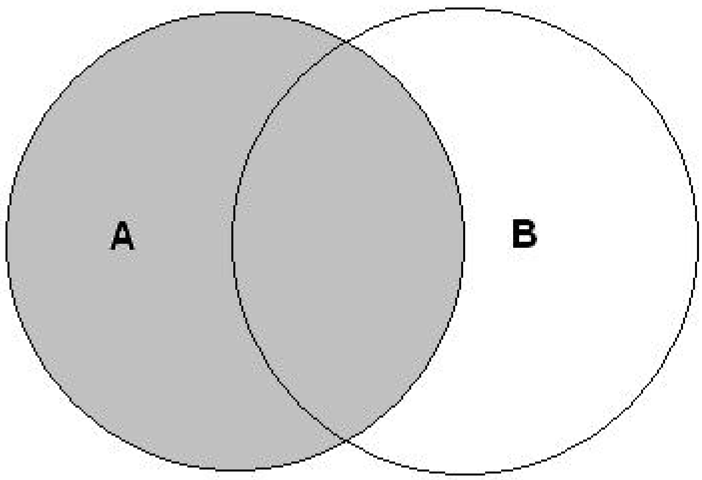
(23) SYMMETRY
$D_E AB \leftrightarrow D_E BA$

This means that (19) and (20) and their truth formulas (21) and (22) can be reversed into (19') and (20') and their truth formulas (21') and (22'), as defined below, without a change in meaning.

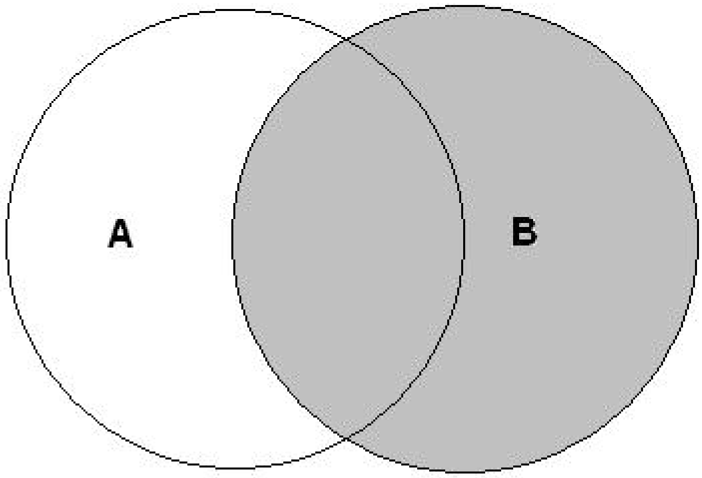
(19') Three red individuals are cars.
(20') Five individuals in the garden are cats.
(21') Three (B) (A) iff $|A \cap B| \geq 3$
(22') Five (B) (A) iff $|A \cap B| \geq 5$

For the sake of comparison, let us now consider how the intersectivity/symmetry constraints are not satisfied by a strong, quantificational determiner. What is required for a determiner to not satisfy the intersectivity constraint is that the determiner in question does not restrict its scope to the intersection of $A \cap B$ alone, but also incorporates one of the available sets into its truth formula. (Alternatively, one might suggest that a determiner is not intersective if it does not incorporate the intersection of $A \cap B$ at all, although in this case one could hardly consider the descriptive relation between the sets to be a determiner, due to the three basic constraints of extension, conservativity, and quality as explained in Barwise and Cooper (1981) and De Hoop (1992). For the sake of brevity, safe for conservativity, I will not elaborate on these concepts here, as they fall outside the scope of this article.) Logically, there would be two possible interpretations of a determiner that incorporates more than just the intersection $A \cap B$ into its truth formula, namely one that also considers set A as a whole, as can be seen in (24), and one that also considers set B as a whole, as can be seen in (25).

(24)



(25)



The practical examples below illustrate how (25) is not a possible interpretation of unambiguously strong determiners such as *all* and *most*, as can be seen in (26) and (27).

(26) All cars are red.
(27) Most fish are edible.

As far as basic logic is concerned, it is impossible to interpret these sentences as paraphrased in (28) and (29).

(28) All red things are cars.
(29) Most edible individuals are fish.

This, coincidentally, is also expressed by the conservativity constraint mentioned above, the definition of which is shown in (30) and can be found in De Hoop (1992).

(30) CONSERVATIVITY
$D_EAB \leftrightarrow D_EA(B \cap A)$

According to De Hoop, this constraint shows "that in order to determine the truth values of these sentences, we need only be concerned with the set the noun refers to (*A*) and the intersection of the sets denoted by the noun and the predicate ($A \cap B$), whereas we can ignore the rest of set *B* (*B-A*), which is irrelevant for the truth values of the sentences" (De Hoop, 1992). We can therefore limit our set of determiners that do not satisfy the intersectivity constraint to determiners that also incorporate set A into their scope, rather than restrict their scope to the intersection $A \cap B$ alone. As has already been made clear by the distinction between (26) and (28) and that between (27) and (29), a reverse interpretation of these sentences is not possible, due to the conservativity constraint. This is unlike the determiners that do satisfy the intersectivity constraint and it is precisely therefore that intersectivity and symmetry are the defining factors for the distinction between weak and strong, as put forth by De Hoop (1992).

In summary, as opposed to weak determiners and quantifiers, strong determiners and quantifiers have truth conditions that do not just include the intersection of two sets ($A \cap B$), but also one of the sets as a whole (A), and strong quantifiers are not symmetrical.

3. The ambiguity of *many*

With a solid representation of the concepts *weak* and *strong*, I will now move on to the subject of ambiguous quantifiers. For the scope of this article, I will limit the discussion to the interpretation of *many*, as opposed to other (supposedly) ambiguous quantifiers such as *most* and *few*.

3.1 Much ambiguity as per Partee (1988)

In her 1988 article, Partee does not only emphasise the ambiguity found in 'vague' quantifiers such as *many* and *few*, but she also coins the contextually determined variables *n* and *k*, to which the cardinality of an intersection A∩B (in case of *n*) or the cardinality of an intersection A∩B divided by the cardinality of the A set as a whole (in case of *k*) are to be compared in order to determine their truth values. She thereby defines two interpretations between which *many* and *few* are ambiguous.

With ambiguous quantifiers like *many* and *few*, she argues, there is no true distinction between weak or strong to make. In fact, these quantifiers can be both and they can even be both in the exact same sentences. A problem with ambiguous quantifiers that is not present in less ambiguous quantifiers, however, is the fact that there will always be a need for a context to determine whether they are true or false. For weak quantifiers, context will provide a number *n*, whereas for strong quantifiers, it will provide a proportion *k*.

I will start by considering weak interpretations of ambiguous quantifiers, of which an example can be seen in (31).

(31) Many cars are red.

Say we were in a situation where there were 200 red cars in front of us. (31) would be a correct way to express this, simply because of the fact that seeing 200 red cars is a rare occurrence in itself. We could say that the context that determines *n* in this case is the amount of red cars one usually sees simultaneously. This weak reading of the quantifier is also called a cardinal reading (Milsark, 1979), as it involves a certain cardinal value |A∩B| that determines when something is considered to be "many". The truth condition following this reasoning can be seen in (32), where *n* is the context-dependent number.

(32) Many (A) (B) iff $|A \cap B| > n$

From (32), it immediately becomes apparent why this is a weak quantifier. After all, it satisfies the intersectivity and symmetry constraints discussed earlier; in this case, the truth condition only involves the intersection of the two sets (i.e. it is intersective) and it is also symmetrical.

Moving on to strong readings of ambiguous quantifiers, a new example need not be given, as (31) will do just as well and will on top of that serve to demonstrate the ambiguity of *many.* In fact, the only thing that needs to be changed is the contextual information provided. This time, we are not exactly looking at 200 red cars, but only twelve. Of those twelve cars, four are red. Suppose this is an unusual amount, because where you live, nobody actually has a red car. In such a scenario, seeing four red cars out of twelve cars total is an unusually large proportion that would wholly justify the use of (31). This strong reading of (31) is also called a proportional reading, as it requires the intersection of the two sets to exceed a certain context-dependent proportion of the first set (A). For the strong reading of an ambiguous quantifier like *many*, the truth condition is the one in (33), where *k* is the context-dependent proportion.

(33) Many (A) (B) iff $|A \cap B| / |A| > k$

This also clearly demonstrates why (33) is considered to be a strong reading. The fact that $|A|$ is included represents that idea, as its inclusion dissatisfies the intersectivity constraint, along with the effect that the formula in (33) is not symmetrical due to its inclusion (see (34) for an illustration of this assertion).

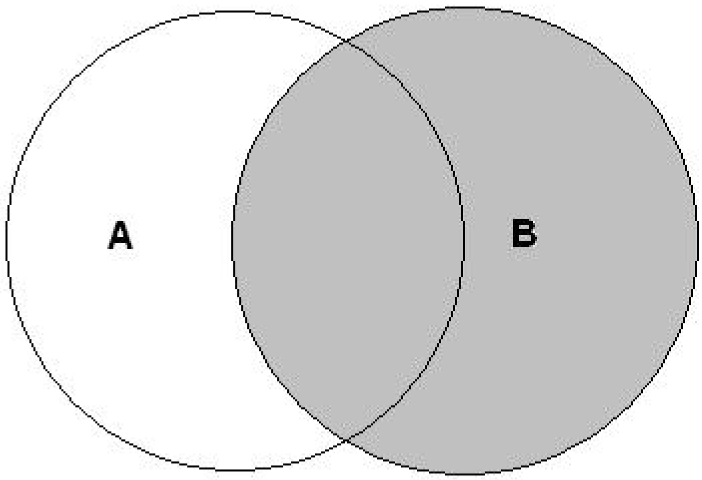
(34) $|A \cap B| / |A| \neq |A \cap B| / |B|$

As argued by Partee (1988), it thus follows from the two possible interpretations of (31) that *many* be ambiguous between a weak, existential and a strong, quantificational reading and that an appropriate value or proportion for *many* is contextually determined and represented by *n* and *k*, respectively.

3.2 Westerståhl: a third intepretation!

Next to the regular strong reading of quantifiers, a so-called "strong switched reading" is also said to exist (Westerståhl, 1985). This switched reading is in fact a strong reading, but includes the second set (B) in its truth condition instead of the first. A visual representation of this has already been provided in (25) and is repeated below in (35).

(35)



(36) Many Scandinavians are winners of the Nobel Prize in literature.
(37) Many (A) (B) iff $|A \cap B| / |B| > k$
(38) Many winners of the Nobel Prize in literature are Scandinavian.

Now consider (36), a sentence by Westerståhl (1985) which is commonly chosen to support this idea. It is argued that, in a certain context, the truth condition of (36) is (37). This assumption would make (36) equal to (38) and would lead to the proportional switched reading of (36). Again, as argued by Partee (1988), (36) would be ambiguous between a weak reading and a 'regular' strong reading of *many*, its appropriate value or proportion for *n* and *k* determined by the context, but Westerståhl's strong switched reading advocates a third possibility between which *many* may be ambiguous, namely the reading described in (37) and (38), for which an appropriate proportion for *k* is also determined by the context. According to Westerståhl, a possible context in which this reading might surface is a discussion on winners of the Nobel Prize in literature, during which one of the participants wishes to express there is a particularly large proportion of Scandinavians who are winners of the Nobel Prize in literature.

As a more extensive discussion on Westerståhl's strong switched reading will make up section 4, it is sufficient to now note Westerståhl's (1985) approach to be problematic regarding the conservativity constraint as described by Barwise and Cooper (1981) and De Hoop (1992), which has been discussed earlier on in this article in section 2.4. The conservativity constraint dictates that a determiner needs at most to only be concerned with the intersection A∩B and set A and that it should specifically *not* be concerned with set B. With this in mind and accepting Westerståhl's approach, it seems the only feasible solution is one where we abandon the conservativity constraint, as the strong switched reading of an ambiguous determiner can not exist without violating the conservativity constraint. In section 4, however, I will provide a different explanation for this phenomenon, which does not violate the conservativity constraint and does furthermore not require an addition to or a modification of the existing model as proposed by Partee (1988).

3.3 FOCUS affects the reading

As to propose a solution for Westerståhl's problematic approach (1985) with regard to the conservativity constraint, as described above, Herburger (1997) reanalyses Westerståhl's reading as a so-called "focus-affected reading". For a sentence like (36) to receive the switched reading, Herburger argues, the quantified NP is necessarily focused, which she indicates by capitalising the focused element. Herburger does not define exactly what focus means, but there should probably be a general consensus on what can be considered focus. Below, in (39), you will find a repetition of (36), this time with added overt focus as per Herburger (1997).

(39) Many SCANDINAVIANS are winners of the Nobel Prize in literature.

Herburger (1997), like Westerståhl (1985), considers what she calls a focus-affected reading to be a third, distinct reading of *many*, rather than one of two readings as proposed by Partee (1988). Like Westerståhl, she recognises the fact that the substitution of *many* by an unambiguously strong quantifier like *most* leads to the impossibility of the strong switched reading and the focus-affected reading. Unlike Westerståhl, however, Herburger (1997) aims to explain this peculiarity by arguing the focus-affected reading to be similar to Partee's (1988) weak reading, in that it occurs in the same environment, albeit with the 'strong-like' properties of the inclusion of set B and the failure to satisfy the symmetry constraint. I do not agree with Herburger, however, on her statement that the symmetry/cardinality problems "crucially suggest that a general account of weak DPs cannot assume that the determiners of these DPs are symmetric" (Herburger 1997).

Apart from Herburger's (1997) assumption that weak DPs do not have to be symmetrical, there is a second argument on which she and I crucially differ in opinion, namely that Westerståhl's (1985) strong switched reading (or at least Herburger's own focus-affected reading) does ultimately not violate the conservativity constraint, mainly because she paraphrases (40a) as (40b) rather than as (40c). Here, *prop* indicates a proportional reading of *many* and *non-conserv* indicates a violation of the conservativity constraint.

(40a) Many SCANDINAVIANS have won the Nobel prize in literature.
(40b) [Many_{prop} x: have won the Nobel prize in literature(x)] SCANDINAVIANS(x)
(40c) [$\text{Many}_{non\text{-}conserv}$ x: SCANDINAVIANS(x)] have won the Nobel prize in literature(x)

Rather than offering a satisfactory elaboration on her assertion that *many* quantifies over the predicate rather than over the NP, she merely states that "given the logical form in [(40b)], it is now the nonfocused part, and not the NP, that corresponds to A in [(30), the conservativity constraint], and furthermore, it is the focus that corresponds to B, not the IP" (Herburger, 1997). Unlike Herburger, whose proposal still suffers from a problematic handling of the conservativity and symmetry constraints, I am more inclined towards an account such as the one by De Hoop and Sola (1996), who simply analyse the phenomenon refered to by Westerståhl (1985) as a "strong switched reading" and by Herburger (1997) as a "focus-affected reading" as an ordinary cardinal reading (with the added element of focus, but this does not alter the truth value in any way).

3.4 An ordinary story about cardinality

In stark contrast with Westerståhl's (1985) and Herburger's (1997) proposals, De Hoop & Sola (1996) have no trouble coming up with sentences that are problematic for either approach. Indeed, they argue Westerståhl's *Many Scandinavians are winners of the Nobel Prize in literature* (Westerståhl, 1985), even with added focus, as well as sentences like *Few COOKS applied* (cf. Herburger, 1997), are nothing more than ordinary cardinal readings of the quantifiers *many* and *few*. This consideration stems from their observation that a sentence like the one in (41) can even be considered true when all of the linguists that applied were American, whereas the strong switched reading and the focus-affected reading would predict them false in this scenario. Once again, capitals are used to indicate stress or focus on the capitalised constituent.

(41) Few AMERICAN linguists applied, and moreover, no German, Dutch, or Italian linguists at all!

A crucial difference with Westerståhl's (1985) and Herburger's (1997) accounts in De Hoop and Sola's (1996) consideration is that they include a definite, strongly contrastive context as part of the utterance, resulting in a reading that can be analysed as nothing else than a cardinal reading of *few*. Notably, their analysis does not violate the conservativity constraint, nor even the intersectivity and symmetry constraints for weak determiners and quantifiers.

Even though De Hoop and Sola's (1996) account enables them to analyse any of the sentences deemed strong switched readings (Westerståhl, 1985), focus-affected readings (Herburger, 1997), or even relative proportional readings (Cohen, 2001) as simple cardinal readings, without even scratching principles like conservativity and intersectivity, I do not fully agree with their assumption that any occurrence of this type of sentences *should* be analysed as such. Surely, they are suitable analyses, but they do not take into consideration Partee's (1988) argument that *many* and *few* are always ambiguous between a weak, cardinal and a strong, quantificational reading. Indeed, as stated above, (41) can only be analysed as a cardinal reading of *few*, but I do believe Cohen (2001) is correct in pointing out the difference between (39), repeated here in (42), and (43). Between the two, he states, there is a considerable difference between the cardinalities of their A sets (i.e. there are considerably more Scandinavians than that there are Andorrans). Therefore, it would take less Andorrans who are winners of the Nobel Prize in literature for (43) to be true than that it would take Scandinavians who are winners of the Nobel Prize in literature for (42) to be true. Thus, the size of the A set helps determine the values of n and k.

(42) Many SCANDINAVIANS are winners of the Nobel Prize in literature.
(43) Many ANDORRANS are winners of the Nobel Prize in literature.
(44) Many A B iff $|A \cap B| > n$
(45) Many A B iff $|A \cap B| / |A| > k$

Whether we analyse (42) and (43) as in (44) or (45) is perhaps a capricious subtlety, but I do not see why, considering the strong ambiguity of *many* and *few*, as expressed by Partee (1988), and considering the existence of a quantificational reading in general, De Hoop and Sola (1996) would rather analyse the cardinality of set A (i.e. SCANDINAVIANS respectively ANDORRANS) as a contextually determined factor of the value of *n* instead of as part of the truth formula compared to *k* in (45). Specifically, as the examples in (42) and (43) contain a variation in the cardinality of A rather than in |A∩B|, the difference in meaning is more accurately conveyed through (45) than through (44) and there is, in my opinion, no reason why (45) should not be just as desirable as (44). One might perhaps argue that the covert inclusion of |A| in *n* is to mirror the covert inclusion of |B| in *k* (i.e. we refrain from including |B| in the truth formula of a so-called 'strong switched reading', but consider it – perhaps even in its entirety – to be part of what defines the value for *k*, yet we are disinclined to exclude |A| from a truth formula, even though it could fully be accounted for as part of what determines the value for *n* in a similar fashion). However, as the conservativity constraint dictates |B| can not be overtly incorporated into the truth formula (i.e. it should not be part of any truth formula, except as part of what defines the value for *k*; |B| should not be written out), there is a far stronger inclination to account for |B| as part of *k* than to exclude |A| from the truth formula. Furthermore, while determining the contributing contextual factors in the estimations of *n* and *k* is likely to be very hard indeed (cf. Partee, 1988), I am more strongly inclined to specify |A| overtly in the truth formula than to keep it underspecified.

4. Arguments against Westerståhl's (1985) Strong Switched Reading

In this section, I will attempt to provide four conclusive arguments against the probability of a strong switched reading as proposed by Westerståhl (1985) and, secondarily, against Herburger's (1997) proposal of a focus-affected reading and in favour of an ambiguity between an ordinary cardinal reading and a strong, quantificational reading as proposed by Partee (1988), the ambiguity thereof largely depending on the specific context.

Firstly, as explained in section 3.3, Herburger (1997) proposed Westerståhl's (1985) strong switched reading is in fact nothing more than a focus-affected reading. In her reading, the constituent in the sentence that receives focus also determines part of the context *n* and *k* are dependent on. Consider once again (39), which is repeated below as (46).

(46) Many SCANDINAVIANS have won the Nobel Prize in literature.

As Herburger (1997) and Cohen (2001) correctly point out, placing focus on *Scandinavians* automatically places them into the contextual set, in that it forces a comparison between Scandinavian winners and winners of other nationalities. While Herburger (1997) argues this to be a facilitator for her focus-affected reading and Cohen (2001) rather sees it as a suggestion that *k* can be defined as the cardinality of the intersection between A and B divided by the average cardinality of the intersections of B and contextually appropriate alternatives to A, as summarily paraphrased in (47), it does in fact only emphasise the sense in the assumption that |B| is only indirectly accounted for in the truth formula of (46) through its covert inclusion in *n* or *k*. As correctly pointed out by Cohen (2001), what ensues is that the second set is automatically included in the context, because that second set is what all compared nationalities have in common. Where Cohen and I differ in opinion, however, is if there can be contextual determiners other than B, which is why I strongly reject his assertion that *k* can be substituted as shown in (47). Regardless of whether Cohen (2001) is correct or not, the inclusion of B in the context set means that any focus-affected reading or "strong switched reading" has set B in its context, essentially supporting the statement that a strong switched reading is in fact simply a weak (or an ambiguous, as argued below) reading with |B| partially or fully (as per Cohen, 2001) defining *n* or *k*.

(47) Many A B iff $|A \cap B| / |A| > |\cup A \cap B| / |\cup A|$, where $\cup A$ is the contextually appropriate set of alternatives to A (Cohen, 2001).

A second argument against the strong, proportional switched reading as proposed by Westerståhl (1985) and against the focus-affected reading advocated by Herburger (1997) is, ironically, supplied by Westerståhl (1985) and Herburger (1997) themselves, who note the strong switched reading and the focus-affected reading, respectively, completely disappear the moment an unambiguous strong quantifier is used, as is the case in (48). Due to the strong nature of *all*, (48) can never be the equivalent of (49).

(48) All SCANDINAVIANS have won the Nobel Prize.
(49) All winners of the Nobel Prize are Scandinavian.

Due to this fact, it is safe to conclude the focus-affected reading (Herburger, 1997) and the strong switched reading (Westerståhl, 1985) can never be strong proportional readings, as the switched and focus-affected readings are blocked the moment the ambiguous quantifier *many* is substituted with an unambiguously strong reading inducing quantifier like *all*. Moreover, the example provided by De Hoop and Sola (1996) as seen in (41) shows that the intended reading *is* possible when the ambiguous quantifier *many* is substituted with a clearly existential quantifier *few*.

Thirdly, a very strong indicator towards the hypothesis that Westerståhl's (1985) and Herburger's (1997) accounts are instances of a weak reading of *many* rather than a strong one can be attributed to Milsark's (1979) original distinction between *weak* and *strong*; consider the intended reading is preserved when inserted into the *there*-insertion contexts provided by Milsark, as shown in (50) and (51) (examples are provided by Westerståhl (1985) and De Hoop and Sola (1996), respectively).

(50) There are many SCANDINAVIANS who are winners of the Nobel Prize in literature.
(51) There are few AMERICAN linguists who applied.

Surely, the existentiality of the *there*-insertion context (Milsark, 1979) warrants a classification of the quantifier as a weak quantifier. As the reading Westerståhl (1985) and Herburger (1997) intended is preserved in (50) and (51), *many* and *few* can then clearly be considered weak quantifiers.

In a similar fashion, however, one might advocate a strong, proportional reading of at least *many* in (50) (as argued in section 3.4, *few* as in (41) can hardly be analysed as anything but cardinal). Consider the intended reading is *also* preserved in case of a partitive comparative construction shown in (52).

(52) Many of the SCANDINAVIANS are winners of the Nobel Prize in literature.

Although the phrase *many of the* in (52) is obviously quantificational, it does in fact still achieve the intended reading, in which the proportion of Scandinavians that are winners of the Nobel Prize in literature is compared to a contextually determined proportion *k* which is, due to the focus on *SCANDINAVIANS*, largely determined by contextually appropriate alternatives to set A, Scandinavians. It is, however, also possible that, besides the contextually appropriate alternatives to

Scandinavians, other factors contribute to *k*, such as the average proportion of Scandinavians that were winners of the Nobel Prize in literature in previous years. This supports my assertion that, perhaps, as mentioned in the end of section 3.4, Westerståhl's (1985) strong switched reading and Herburger's (1997) focus-affected reading can instead be interpreted not only as an ordinary cardinal reading, as proposed by De Hoop and Sola (1996), but also as a strong, proportional reading, thereby lending further support to Partee's (1988) observed imperative ambiguity in possibly ambiguous quantifiers. Furthermore, the fact that multiple, unidentified factors might contribute to *k* indicates it is still a viable variable, contra Cohen's (2001) attempt to define the contents of *k*.

The fourth and final argument against Westerståhl's (1985) strong switched reading and Herburger's (1997) focus-affected reading is that they simply are solutions uncalled for. As supported by the previous arguments and as argued by De Hoop and Sola (1996), these perceived third possible readings can be explained by the existing system as pioneered by Milsark (1979) and elaborated on by Partee (1988). There is therefore no need for an additional classification as either "strong switched" or "focus-affected". However, apart from not being more desirable than a system that lacks a third, proportional, switched strong reading, it is in fact also a less desirable solution; Westerståhl (1985) admits to his strong switched reading violating the conservativity constraint as explained in Barwise and Cooper (1981) and De Hoop (1992), while Herburger (1997) has to go through considerable effort in her attempt to argue that her focus-affected reading is not a *direct* violation of the conservativity constraint. Rather, then, with a suitable system at hand, I opt for the interpretation of Westerståhl's (1985) strong switched reading and Herburger's (1997) focus-affected reading as a normal cardinal reading as proposed by De Hoop and Sola (1992), a proportional reading as proposed in section 3.4 of this article and repeated in the third argument of this section, or a reading that is ambiguous between a cardinal and a quantificational reading, more in line with Partee (1988).

5. The Dutch case of *tig*

Of particular interest, I present the Dutch case of the indefinite, purely cardinal quantifier *tig*. In the past few decades, it has crossed a considerable amount of stages in the process of grammaticalisation (Norde, 2006). She describes the Dutch suffix *-tig* and the Dutch word *tig* as originating from the Gothic marker *tiguns* for *ten*, as found in such compounds as *fimf tiguns* for *fifty*. In all Germanic languages, this free morpheme then grammaticalised into such bound suffixes as *-tig* in Dutch, *-ty* in English, and *-zig* in German. In compliance with the general parameters inherent to the process of grammaticalisation as described in Meillet (1912), Kuryłowicz (1975), Heine and Reh (1984), Lehmann (1995), and Norde (2006), among others, the Dutch suffix *-tig* lost at least part of its semantic content when the free morpheme *tig* disappeared from the language, it underwent decategorisation when it lost its inflections, it experienced morphological downgrading, and it is currently found in speech as the phonologically reduced form of /təx/ rather than /tɪx/. In a study of recent developments in the informal, spoken Dutch and closely related languages such as Frisian and German, however, the free morpheme *tig* appears to have been reinstated as an indefinite quantifier denoting an indefinite, large, cardinal value. Contrary to its earlier grammaticalisation, it appears to have undergone what is considered to be degrammaticalisation, consisting of a significant increase in semantic content, the undergoing of recategorisation in gaining the inflected ordinal quantifier *tigste*, morphological upgrading, and a phonological increase with the reintroduction of the stressed pronunciation of /tɪx/ (for comprehensive discussion on degrammaticalisation, see Norde (2005; 2006), Haspelmath (2004), and Heine, Claudi, & Hünnemeyer (1991), and Kiparsky (to appear). Even more recently, *tig* has again “(re)grammaticalised” from its function as an indefinite quantifier to an intensifying (indicated by *INT*) adverb *tig*, as in (53), by Norde (2006).

(53)	Het	laden	gaat	bij	mij	wel	tig	sneller
	The	loading	goes	at	me	even	INT	faster

“The loading is INT faster for me.”

For the scope of this article, however, we are primarily concerned with the interpretation of *tig* as an indefinite quantifier denoting an indefinite, large, cardinal value.

Norde (2006) defines *tig* as a constituent referring to a context-dependent large cardinal value. However, she and I do not agree as to its use in any given context. Although Norde (2006) assumes *tig* is a direct equivalent of the Dutch word *veel* 'many'/'much', both pragmatic and semantic differences between the two make this interpretation undesirable.

Firstly, *tig* can not be a direct equivalent of *veel* due to the fact that the former is not meant to represent a realistic value, whereas *veel* does always imply a realistic value. The consequence of this distinction is that *tig* can be used to indicate an indefinitely large amount, in which case the actual amount is hardly relevant, whereas *veel* tends to take realistically possible values and proportions into account. That is to say, *veel*, on the one hand, depends on a contextually estimated maximum, as *veel* represents either a cardinal value or a proportion (cf. Partee, 1988). On the other hand, *tig* simply expresses an amount of such considerable size that even the speaker himself is unable to give an approximation. Examples are provided by Norde (2006) herself, as seen in (54), (55), (56), and (57) and their approximate translations in (54'), (55'), (56'), and (57'). These examples are taken from unspecified internet sources, as *tig* is only used in informal contexts (Norde, 2006).

(54) “Ik ga geen scooter/brommer rijden. Ik rijd nooit grote afstanden naar school of naar mijn werk. Kijk in de situatie van Willem kan ik het begrijpen: elke dag tig kilometer op je fiets is kut.”
“wat versta je onder tig?? meer dan 10 km??”
“meer dan 10 km ja”

(54') “I won't be driving a scooter. I never ride a considerable distance to school or to work. In Willem's case, I can understand; *tig* kilometres on your bicycle every day sucks.”
“what do you mean by *tig*?? more than 10 km??”
“more than 10 km, indeed”

(55) “Ik begin mij aan die uit de hand gelopen ruzie jullie behoorlijk te ergeren en vraag mij af of jullie niks beters te doen hebben dan het vervuilen van tig nieuwsgroepen. Kap daar eens mee.”
“Hoeveel is tig?”
“Meer dan 1....en maakt dat ueberhaubt wat uit?”

(55') “This exaggerated argument of yours is starting to get on my nerves and I wonder whether you have nothing better to do than to pollute *tig* news groups. Quit it.”
“How much is *tig*?”
“More than 1...does it even matter?”

(56) “Hoeveel is 'tig'?”
“alles vanaf twin”TIG””

(56') “How much is '*tig*'?”
“everything past twen”TY””

(57) [discussie over Van Gaal]
“Hij is wel tig keer zo goed als Baan”
“hoeveel is tig …...twintig dertig veertig vijftig zestig zeventig tachtig of negentig?”
“Hij is in ieder geval beter, hoeveel tig weet ik niet. Maar daar gaat het ook niet om.”
“ok maar dan moet je ook niet zeggen dat ie tig beter is dan baan”

(57') [discussion on Louis van Gaal]
“He must be *tig* times as good as Baan”
“how much is *tig* …...twenty thirty fourty fifty sixty seventy eighty or ninety?”
“He is better, anyway, how much *tig* I do not know. But that is not the issue, anyway.”
“ok, but then you shouldn't say he's *tig* better than baan, either”

These examples, (55) and (57) in particular, clearly show *tig* is generally not used to indicate a specific amount or proportion, but rather indicates an unusually large amount or proportion. This is made especially clear when the speaker is asked after the value of *tig*, at which point they clarify that *tig* was never meant to indicate an absolute value or proportion. (54) is an example of this as well, although this is arguably less so due to the speaker mentioning “10 km” as a definite value. An important consideration here, however, is that the value of 10 km has already been provided by the other speaker. The example in (56) is slightly different from the others, although there is no apparent implied maximum in this example either. Moreover, (56) even contains a minimum value, an unthinkable suggestion for *veel*.

The second reason why *tig* can not be the direct equivalent of *veel* is its semantic value. Whereas *veel* is generally considered to be an ambiguous quantifier (cf. Westerståhl, 1985; Partee, 1988; De Hoop & Sola, 1996), *tig* can only get a cardinal reading. This is apparent in examples (54), (55), and (56) above, where the speaker specifically mentions *tig* is used to indicate a cardinal value. In (57), no specific cardinal value is mentioned, but *tig* does quantify over *keer* 'times', a semantic position which strongly favours a definite, cardinal quantifier over an indefinite quantifier. Indeed, the partitive **tig van de* '*tig* of the' is an ill-formed phrase, as *tig* and the (proportional) partitive construction are mutually exclusive.

The different uses of *tig* compared to those of *veel* strongly suggest the two are not direct synonyms of each other. Rather, *tig* seems to have been 'recruited' into the set of quantifiers in order to resolve the ambiguity created by *veel*. It appears the Dutch *tig* now functions as an unambiguously weak quantifier denoting an excessively large amount. The degrammaticalisation of the suffix *-tig* to the free morpheme *tig* thereby directly supports Partee's (1988) claim that *many* is indeed a quantifier that is ambiguous between its weak and strong readings. If it were not, *tig* would not be called upon to resolve this ambiguity.

6. Conclusion

In this article, I have attempted to argue against the existence of a strong switched reading and a focus-affected reading of the ambiguous quantifier *many* as described in Westerståhl (1985) and Herburger (1997), respectively. In section 2, I have set out to define the distinction between weak and strong determiners for the purpose of this article, addressing previous work by Milsark (1979), Barwise and Cooper (1981), and De Hoop (1992). I have continued by explaining the connection between the concepts of *weak* and *strong* by providing a critical view on the ambiguity reported by Partee (1988), on the supposed third distinct reading of *many* as proposed by Westerståhl (1985) and Herburger (1997), and on the view expressed by De Hoop and Sola (1996) that this third distinct reading is actually nothing more than an ordinary cardinal reading.

In section 4, I have provided four distinct arguments against Westerståhl's (1985) strong switched reading and Herburger's (1997) focus-affected reading. Firstly, I have argued that the apparent inclusion of set B into the truth value of certain instances of *many* is a logical consequence of the focus placed on the NP *many* quantifies over. Moreover, I have argued |B| is only present in the truth formula at a covert level, incorporated into the proportion of *k*. Secondly, I have shown that an unambiguously strong quantifier is incompatible with both Westerståhl's (1985) and Herburger's (1997) account, suggesting a weak interpretation would better suit the intended reading. Thirdly, I have shown the intended reading by Westerståhl's (1985) and Herburger's (1997) accounts to be perfectly suitable for Milsark's (1979) *there*-inclusive contexts, furthermore elaborating on this by showing that a more ambiguous interpretation is perhaps preferable over a fully cardinal account, as some of the intended readings of *many* can also be conveyed by a partitive construction. Lastly, I have argued Westerståhl's (1985) and Herburger's (1997) accounts of strong switched readings and focus-affected readings, respectively, to be redundant on the grounds that they do not add anything useful to the system in place and even violate the notion of conservativity.

I have concluded my article with a comprehensive look at the Dutch indefinite quantifier *tig*, which can be considered a strong case for the ambiguity of quantifiers as argued by Partee (1988).

References

Barwise, J. & Cooper, R. (1981). Generalized quantifiers and natural language. *Linguistics and Philosophy*, 4:2, 159-219.

Cohen, A. (2001). Relative Readings of *Many*, *Often*, and Generics. *Natural Language Semantics*, 9:1, 41-67.

Fodor, J. D. & Sag, I. (1982). Referential and Quantificational Indefinites. *Linguistics and Philosophy*, 5, 355-398.

Haspelmath, M. (2004). On directionality in language change with particular reference to grammaticalization. In O. Fischer, M. Norde & H. Perridson (Eds.), *Up and down the cline – the nature of grammaticalization* (pp. 17-44). Amsterdam / Philadelphia: John Benjamins.

Heine, B., Claudi, U. & Hünnemeyer, F. (1991). *Grammaticalization. A Conceptual Framework.* Chicago: University of Chicago press.

Heine, B. & Reh, M. (1984). *Grammaticalization and reanalysis in African languages*. Hamburg: Buske.

Herburger, E. (1997). Focus and Weak Noun Phrases. *Natural Language Semantics*, 5, 53-78.

de Hoop, H. (1992). *Case Configuration and Noun Phrase Interpretation*. Ph.D. Thesis, Rijksuniversiteit Groningen.

de Hoop, H. & Sola, J. (1996). Determiners, Context Sets, and Focus. In *Proceedings of the Fourteenth West Coast Conference on Formal Linguistics* (pp. 155-167). Stanford, CA: CSLI Publications.

Kiparsky, P. (to appear). Grammaticalization as optimization. In D. Jonas (Ed.), *DIGS VIII Proceedings*. Oxford: Oxford University Press.

Kuryłowicz, J. (1975). The evolution of grammatical categories. In J. Kuryłowicz (Eds.), *Esquisses linguistiques II* (pp. 38-54). München: Wilhelm Fink Verlag.

Ladusaw, W. A. (1994). Thetic and categorical, stage and individual, weak and strong. In M. Harvey & L. Santelmann (Eds.), *Proceedings of SALT IV* (pp. 220-29). Ithaca, NY: Cornell University DMLL.

Lehmann, C. (1995). *Thoughts on grammaticalization*. München & Newcastle: Lincom Europa.

McNally, L. & van Geenhoven, V. (1998). *Redefining the Weak/Strong Distinction*. Retrieved July 29, 2009, from http://mutis.upf.es/~mcnally/weaknps.pdf

Meillet, A. (1912). L'évolution des formes grammaticales. In A. Meillet (Ed.), *Linguistique historique et linguistique générale I* (pp. 130-148). Paris: Edouard Champion.

Milsark, G. (1977). Toward an Explanation of Certain Peculiarities of the Existential Construction in English. *Linguistic Analysis*, 3, 1-30.

Milsark, G. (1979). *Existential Sentences in English*. New York: Garland Publishing Company.

Norde, M. (2005). Parameters of degrammaticalization. Lezing gehouden op *New Reflections on Grammaticalization 3*, Santiago de Compostela, juli 2005. http://odur.let.rug.nl/norde/parameters%20of%20dgz.pdf

Norde, M. (2006). Van suffix tot telwoord tot bijwoord: degrammaticalisering en (re)grammaticalisering van *tig*. *TABU*, 35:1/2, 33-60.

Partee, B. (1988). Many quantifiers. In J. Powers & K. de Jong (Eds.), *Proceedings of ESCOL 5* (pp. 383-402). Columbus, OH: Ohio State University.

Westerståhl, D. (1985). "Logical Constraints in Quantifier Languages." *Linguistics and Philosophy*, 8, 387-413.