

**Weak definites:
Modification, non-unique reference and enriched meanings**

MA thesis

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Chapter 1: Introduction

According to Russell's (1905) classical analysis, definite expressions denote quantifiers whose semantics involve requirements of existence and uniqueness. A sentence like (1) thus receives the interpretation in (2).

(1) The kind of France is bald.

(2) $\exists x [\text{KoF}(x) \ \& \ B(x) \ \wedge \ \forall y [\text{KoF}(y) \ \rightarrow \ y = x]]$

There is one and only one king of France and he is bald.

Russell's analysis has been challenged by Frege (1892/1966) and Strawson (1950), who claim that definites are referential expressions, which presuppose rather than assert the uniqueness of their referent. In this view, the sentence in (1) is defined if and only if there is a unique king of France, and receives the interpretation in (3).

(3) $B(\iota x \text{ KoF}(x))$

However, there are many cases in which a definite expression can be used felicitously even though its descriptive content holds of more than one entity in the world, e.g. (4).

(4) Please put this on the table.

This led Lewis (1979) to propose that definite expressions denote the most salient entity that meets their descriptive content.

Another tradition is based on Christophersen's (1939) notion that the difference between definite and indefinite expressions lies in whether or not they refer to new discourse entities. According to Heim (1982), definites must meet a Familiarity condition, that is, a definite can only be used if the existence of its referent has already been established in the previous discourse. Indefinites, on the other hand, are governed by a Novelty condition: they must introduce novel discourse referents. The problem of the referent of *the table* in (4) being non-unique in the world is then solved, by assuming that the table that is meant is familiar to the listener.

However, there are several examples of definites that seem to meet neither the Uniqueness condition nor the Familiarity condition. The type that I will focus on are the so-called weak definites, such as in (5).

(5) Sue took her nephew to the hospital (Carlson et al., 2006)

This sentence can be used felicitously even if Sue was in a city she did not know and there was more than one hospital. In the literature extensive lists can be found of the properties of weak definites (cf. Carlson et al. (2006) and Aguilar-Guevara & Zwarts (2010)). In order to determine the most appropriate semantics of weak definites, it is important to study these properties in more detail, and to support the theoretical analysis by empirical evidence. Therefore, in my thesis I will experimentally investigate two properties of weak definites: (i) their capacity for non-unique reference, and (ii) their property of coming with an enriched meaning. The uniting factor between these two parts is the role played by modification. Firstly, I am interested in the influence of modification on the ability of weak definites to refer non-uniquely, since it has been claimed by Carlson et al. (2006) that weak definites resist modification. This claim will be tested in section 2.1. Furthermore, Aguilar-Guevara & Zwarts (2010) have adapted Carlson et al.'s claim by suggesting that weak definites can in fact be modified, as long as the modifier establishes a subkind of the noun it modifies. This hypothesis will be tested in section 2.2. In section 2.3 the results of these two experiments will be compared, in order to make a comparison of the effects of 'regular' and 'subtyping' modification on the availability of non-unique reference of weak definites. Secondly, I will zoom in on the weak definite property of carrying enriched meanings, investigating their semantic-pragmatic status. Based on the results of Chapter 2, I will use modification as a means to distinguish between the weak and the regular readings of weak definites. Finally, in Chapter 4 I will provide an overall discussion of the results and their theoretical implications. In the Appendices the complete lists of items can be found for each experiment.

Chapter 2: Non-Unique Reference and the Influence of Modification

In this section I will present two experiments, in which I made use of the VP-ellipsis test to investigate the role of (different kinds of) adjectival modification on the availability of non-unique reference of weak definites compared to regular definites. The first research question I tried to answer in this section is whether it is indeed the case modification of weak definites blocks the possibility of them having a non-unique referent, as has been claimed in the literature (Carlson et al., 2006). My second research question is whether it matters which type of modification is used. More specifically: are Aguilar-Guevara & Zwarts (2010) right in claiming that non-unique reference will be preserved when the adjective establishes a subtype of the noun it modifies?

2.1 VP-ellipsis test 1: non-modified and regular modification

2.1.1 Introduction

The aim of this first test was two-fold. Firstly, it was necessary to establish sets of Dutch weak and regular definites. Since by definition weak definites do not require a unique referent, presenting participants with a VP-ellipsis sentence containing a definite construction and asking them whether they accept the sloppy interpretation of the sentence is a good way of distinguishing weak definites from regular definites. Versions of the VP-ellipsis test have already been used by Aguilar-Guevara (2008) for Spanish definites and by Carlson et al. (2006) for English definites. The second aim of this test was to test the claim of Carlson et al. (2006) that modification blocks the availability of the sloppy reading for weak definites. They give the following examples, in which according to them the definite expression has lost its weak reading:

- (6) He went to *the 5-story hospital*.
- (7) They both checked *the calendar that was hanging upside down*.
- (8) Each man listened to *the red radio on the picnic table*.
- (9) Fred went to *the big store*.

2.1.2 Materials

Items consisted of a VP-ellipsis sentence of the type *[agent 1] went to the [location NP] and [agent 2] did too*. The manipulated variables were the type of location definite that

was used (either a weak or a regular definite), and whether or not the location NP was modified by an adjective.

Thirty-six Dutch location nouns were used, eighteen of which were intuitively judged to be potential weak definites, and the other eighteen were judged to be potential regular definites. Each location noun occurred in the modified and in the non-modified condition. Thus, in total seventy-two test items were used.

- (10) Julia ging naar de bank en Adriaan ook. *non-modified weak definite*
Julia went to the bank and Adriaan did too
- (11) Julia ging naar de sjieke bank en Adriaan ook. *modified weak definite*
Julia went to the classy bank and Adriaan did too
- (12) Robert ging naar het hotel en Liesbeth ook. *non-modified regular definite*
Robert went to the hotel and Liesbeth did too
- (13) Robert ging naar het sjieke hotel en Liesbeth ook. *modified regular definite*
Robert went to the classy hotel and Liesbeth did too

Each item was followed by two different interpretations: the sloppy interpretation, in which the two agents each went to a different location, and the strict interpretation, in which they both went to the same location. A complete item would thus look like (14).

- (14) Julia ging naar de bank en Adriaan ook.
Julia went to the bank and Adriaan did too
- a Julia en Adriaan gingen allebei naar een verschillende bank.
Julia and Adriaan each went to a different bank
- b Julia en Adriaan gingen allebei naar dezelfde bank.
Julia and Adriaan both went to the same bank

A set of control items favouring sloppy readings (e.g. (15)) was included in order to counterbalance a predicted predominance of non-sloppy interpretations in the test conditions (see 2.1.4).

- (15) Julia ging naar de bank in Londen en Adriaan ging naar de bank in New York.
Julia went to the bank in London and Adriaan went to the bank in New York

The modifiers that were used in this test were of a type that I will call ‘regular’ modification. This term should be seen in contrast with the modifiers used in section 2.2, which lead to a subtype of the nouns they modify (‘subtyping’ modification). Following

Aguilar-Guevara & Zwarts, I define regular modifiers as modifiers operating on the individual level, whereas subtyping modifiers operate on the taxonomic or kind level. As an intuitive test to determine to distinguish between these two categories, I checked whether or not the modifier-noun combination was felicitous in a generic context. Thus, *psychiatrische* ('psychiatric') was used in combination with *ziekenhuis* ('hospital'), but *nieuwe* ('new') was not.

(16) # Het nieuwe ziekenhuis is een recent verschijnsel.

The new hospital is a recent phenomenon

(17) Het psychiatrische ziekenhuis is een recent verschijnsel.

The psychiatric hospital is a recent phenomenon

Each list contained three weak definites, three regular definites, three modified weak definites, three modified regular definites, three weak definites in the filler condition, and three regular definites in the filler condition. Thus, each list contained eighteen items. Since there were eighteen items in each condition, six different lists were used. Each list occurred in four different orders, so in total there were twenty-four lists. In total eighteen different modifiers were used, with each modifier occurring with one weak definite and with one regular definite. Items were divided quasi-randomly over the six lists, with care taken to ensure that each definite and each modifier occurred only once in each list. The lists were ordered quasi-randomly too, with adjacent items always being of different conditions.

2.1.3 Method

122 native speakers of Dutch participated in this experiment. They were presented with the items in a pen and paper questionnaire, and were asked to read each sentence carefully, and after they had done so to judge for each of the two given interpretations separately whether it matched the sentence. It was stressed that participants were allowed to accept just one of the interpretations, or both, or neither.

2.1.4 Predictions

The sloppy reading was expected to be accepted more often for the weak definites than for the regular definites. Modification was predicted to block the availability of the sloppy reading. Since sloppy readings were not expected to be available for regular

definites in the first place, this effect of modification was predicted to occur with weak definites, but not with regular definites. Therefore, an interaction effect between type of definite and presence of modification was expected.

Note that the predictions all pertain to whether or not the sloppy reading was accepted. With respect to the non-sloppy reading, no differences between weak and regular definites were expected. In fact, the non-sloppy reading should always be available: ceiling effects are predicted in every condition.

2.1.5 Results

The predictions were that the sloppy reading would be systematically accepted for non-modified weak definites, but would be judged unacceptable in the case of non-modified regular definites. For each item, subjects' answers were scored as either 1 (if they accepted the weak reading) or 0 (if they did not accept the weak reading). A series of one-sample t-tests was conducted to test for each item whether the mean of its sloppy reading acceptance (henceforth SRA) score differed significantly from its expected value. For non-modified weak definites the expected value was 1, for non-modified regular definites this was 0. Table 1 shows the mean SRA scores and t-test results per item. For convenience, the English translations of the items are given here. The original Dutch items can be found in the Appendix.

Item	Mean SRA	p-value (with test value=1)	p-value (with test value=0)	Item	Mean SRA	p-value (with test value=1)	p-value (with test value=0)
dentist	.89	.163	.000	airport	.54	.000	.000
hospital	.75	.021	.000	café	.52	.000	.000
retirement home	.73	.006	.000	studio	.46	.000	.000
museum	.73	.006	.000	factory	.45	.000	.001
bike repair shop	.72	.020	.000	swimming pool	.44	.000	.002
supermarket	.72	.020	.000	restaurant	.42	.000	.002
snack bar	.71	.010	.000	convent	.40	.000	.002
pharmacy	.70	.010	.000	bowling alley	.39	.000	.004
cinema	.69	.003	.000	hotel	.29	.000	.010
bank	.68	.010	.000	farm	.28	.000	.020
court	.68	.010	.000	showroom	.28	.000	.020
forest	.67	.005	.000	school	.17	.000	.083
sauna	.67	.005	.000	soccer field	.17	.000	.083
library	.65	.005	.000	concert	.16	.000	.083
beach	.65	.001	.000	estate	.16	.000	.083
train station	.63	.005	.000	monument	.14	.000	.083
gym	.56	.002	.000	castle	.11	.000	.163

university	.56	.002	.000	lake	.10	.000	.163
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Table 1. Results of VP-ellipsis test 1: mean sloppy reading acceptance (SRA) and significance values for t-tests with test values 1 and 0, per item in the non-modified condition.

It can be seen that only *dentist* met the non-modified weak definite expectation of not differing significantly from a 1.00 SRA score. Seven items behaved in line with the behaviour expected of non-modified regular definites in that their mean SRA score did not differ significantly from 0.00, namely *lake*, *castle*, *monument*, *estate*, *concert*, *soccer field* and *school* (bold-faced in Table 1). Table 1 also shows that there is no clear cut-off point in SRA means: they cover the complete range between the only confirmed non-modified weak definite *dentist* (with a mean of .89) and the strongest non-modified regular definite *lake* (with a mean of .10). Therefore, an artificial cut-off point was decided on: items with a mean SRA of .60 or higher were classified as weak definites; items with a mean SRA of .40 or lower were considered regular definites. Since there were twelve items that matched the regular definite criterion, and because this number of items lends itself to a latin square design, it was decided to select the twelve weak definites and regular definites with the best SRA scores for their respective categories. For convenience these are given in Table 2.

Weak definite	Mean SRA	Regular definite	Mean SRA
dentist	.89	convent	.42
hospital	.75	bowling alley	.40
retirement home	.73	hotel	.39
museum	.73	farm	.29
bike repair shop	.72	showroom	.28
supermarket	.72	school	.28
snack bar	.71	soccer field	.17
pharmacy	.70	concert	.16
cinema	.69	estate	.16
bank	.68	monument	.14
court	.68	castle	.11
forest	.67	lake	.10
Overall	.72	Overall	.22

Table 2. The twelve best (non-modified) weak definites (left) and regular definites (right), with the mean SRA per item.

In order to test for an effect of modification, an lmer analysis was performed on these items, naturally revealing a significant main effect for type of definite ($\beta=0.4146$, $SE=0.0660$, $p(\text{MCMC})<.0001$), indicating that subjects accepted the sloppy reading more often for weak definites than for regular definites. It also showed a significant main effect

of presence of modification ($\beta=1.0776$, $SE=0.0656$, $p(\text{MCMC})<.0001$): the sloppy reading was accepted more often in the non-modified conditions than in the modified conditions. Finally, it showed a significant interaction effect between type of definite and presence of modification ($\beta=-0.4621$, $SE=0.0421$, $p(\text{MCMC})<.0001$), indicating that the effect of modification blocking the sloppy reading was stronger for weak definites than for regular definites. A graph of these results can be seen in Figure 1 below.

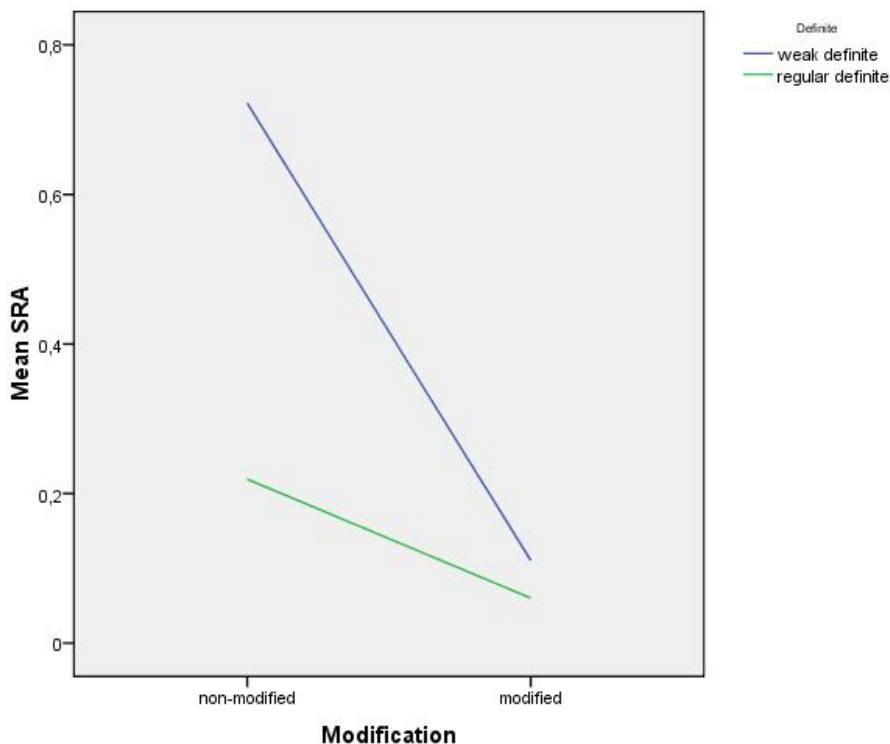


Figure 1. Results of VP-ellipsis test 1: the effect of modification on mean SRA for weak definites and regular definites.

For the sake of completeness, an lmer analysis was done in order to test for effects of modification and type of definite on the rate of non-sloppy reading acceptance¹. It revealed a significant main effect of modification ($\beta=-.2241$, $SE=.0637$, $p(\text{MCMC})<.001$), indicating that the non-sloppy reading was accepted more often in the modified condition than in the non-modified condition. There was no significant effect of type of definite ($\beta=-.0690$, $SE=.0621$, $p(\text{MCMC})=.266$), in line with our expectations.

¹ Note, though, that the classification of whether a definite is weak or regular was based on sloppy reading acceptance alone.

However, there was an interaction effect between modification and type of definite ($\beta=.0858$, $SE=.0393$, $p(\text{MCMC})=.029$).

2.1.6 Discussion

A first conclusion we can draw from these results is that there is no black-and-white division between weak definites and regular definites, but that there is a continuous scale of definite ‘weakness’. Therefore, an artificial cut-off point was decided on: weak definites were defined as having a mean SRA of .40 or lower, whereas regular definites should have a mean SRA of at least .60. Furthermore, the extreme data points are somewhat lower than expected for weak definites and higher than expected for regular definites.

Second, the lmer results confirmed the predictions that modification decreases the weak reading of weak definites, and that the effect of modification is stronger for weak definites than for regular definites. An unpredicted result was that modification had a blocking effect on the availability of sloppy readings of the regular definites as well – this was caused by the unexpectedly high sloppy reading availability (mean .22) of the non-modified regular definites.

Finally, the most interesting result with respect to the non-sloppy reading acceptance is that there was an effect of modification. This is unexpected, because ceiling results were predicted in all four conditions. However, the direction of the effect of modification is as expected, namely that modification leads to a stronger preference for the non-sloppy reading. This effect may be due to a propensity of subjects to choose only one of the two given interpretations (i.e. a tendency to pick the best one), even though in the instructions it was stressed that they were to judge each interpretation on its own. In any case, across conditions the minimum non-sloppy reading acceptance was about .82, which is still quite high.

2.2 VP-ellipsis test 2: subtyping modification

2.2.1 Introduction

In the previous section we saw that modification decreases the mean SRA of weak definites. However, Aguilar-Guevara & Zwarts (2010) suggest that when modification leads to a subtype of the noun it modifies, non-unique reference of weak definites

remains available. They base this hypothesis on the assumption that weak definites refer to kinds, similarly to Dayal's (2004a) analysis of the singular definite generic. Dayal suggests that the singular definite generic is derived compositionally from the regular iota meaning of the definite determiner (picking out the unique maximal entity out of the relevant set) combined with a taxonomic noun, that is, a noun denoting properties of kinds and subkinds. Thus, a sentence like (18) would be assigned the interpretation in (a). If the quantificational domain is as in (b) (with capitals denoting kinds), the denotation of the noun *lion* is the singleton set in (c), and the singular definite generic *the lion* denotes its unique member.

(18) The lion is becoming extinct.

(a) Become-extinct (ιx [LION(x)])

b $U_c = \{\text{LION, WHALE, DOG}\}$

c $LION' = \{\text{LION}\}$

In their analysis of weak definites, Aguilar-Guevara & Zwarts adopt Dayal's analysis, and note that weak definites are similar to singular definite generics in that they, too, refer to atomic kind individuals. Based on this analysis, they suggest that the reason why the weak definites in for instance (19)-(22) (repeated here for convenience) resist modification is that the modifiers they combine with in these cases operate on the level of objects, whereas weak definites are kind-referring.

(19) He went to *the 5-story hospital*.

(20) They both checked *the calendar that was hanging upside down*.

(21) Each man listened to *the red radio on the picnic table*.

(22) Fred went to *the big store*.

From this their prediction follows that modifiers which operate on the level of kinds should be acceptable with weak definites. In (23) the adjective *psychiatric* takes the set of hospital kinds and maps it on the singular set of the psychiatric hospital. Thus, according to them, the weak reading of *the hospital* is available in (23), but not in (24).

(23) Lola is in the psychiatric hospital.

(24) Lola is in the new hospital.

In this second VP-ellipsis test this prediction will be put to the test. The results of this experiment will be compared with those of the previous VP-ellipsis test, in order to compare the effects of regular and subtyping modification on weak and regular definites.

2.2.2 Materials

The structure of the test items used in the second VP-ellipsis test was similar to that of the items of the first VP-ellipsis test (see section 2.1.2). The only difference was in the type of modification that was used in the modified condition: whereas the modification that occurred in the first VP-ellipsis test was regular (25), in the current test subtyping modification was used (i.e. modification that establishes a subtype of the noun it modifies) (see (26)).

(25) Jan ging naar het nieuwe ziekenhuis en Marie ook.

Jan went to the new hospital and Marie did too

(26) Jan ging naar het psychiatrische ziekenhuis en Marie ook.

Jan went to the psychiatric hospital and Marie did too

The two interpretations that were given for each sentence were the same as in the first VP-ellipsis test (i.e. the sloppy and the strict reading).

The items that were used were the twelve weak definites and twelve regular definites which resulted from VP-ellipsis test 1 (see section 2.1.5). One substitution was made: *sauna* was used instead of *fietsenmaker* ('bike repair shop'), since it was not possible to find any subkinds of the latter.

The other difference between the two VP-ellipsis tests had to do with the types of fillers that were used. In the current test, twelve fillers forcing the strict reading were used, as well as twelve fillers with regular modification, in order to distract from the aim of the experiment.

Each list contained twenty-four items: six subtyped weak definites, six subtyped regular definites, six fillers forcing the strict reading, and six fillers containing regular modification. The items occurred in quasi-randomised order: no more than two adjacent items of the same condition. Eight lists were used in total. There were two basic lists, each containing half of the items, and both lists occurred in four different orders.

2.2.3 Method

Forty-one native speakers of Dutch participated in this experiment. They were given similar instructions as the participants of the previous VP-ellipsis test: they were asked to read each sentence and to judge for both of the given interpretations whether they matched the sentence. Again, it was stressed that they were allowed to accept just one of the interpretations, or both, or neither.

2.2.4 Predictions

VP-ellipsis test 1 showed that regular modification significantly reduced the mean SRA of weak definites from .72 in the non-modified condition to .11 in the regular modification condition (see section 2.1.5). Since it is thought that subtyping modification preserves the weak reading of weak definites, the prediction was that the mean SRA of weak definites in the subtyping modification condition would not differ significantly from .72.

As to the regular definites, in the previous VP-ellipsis test modification led to a significant reduction of the mean SRA: from .22 in the non-modified condition to .06 in the regular modification condition. The prediction is that subtyping modification will preserve whatever amount of SRA a definite has – thus, the mean SRA of regular definites in the subtyping modification condition is expected not to differ significantly from .22.

2.2.5 Results

Table 3 shows the mean SRA for the weak definites in the subtyping modification condition (left) and for the regular definites in the subtyping modification condition (right).

Item	Mean SRA
Dentist	.79
Supermarket	.74
Court	.58
Hospital	.53
Snack bar	.53
Bank	.50
Pharmacy	.45
Sauna	.45
Cinema	.42
Retirement home	.41

Item	Mean SRA
School	.74
Convent	.47
Farm	.36
Soccer field	.32
Bowling alley	.27
Hotel	.21
Showroom	.21
Castle	.18
Concert	.05
Estate	.05

Forest	.27
Museum	.18
Overall	.48

Monument	.05
Lake	.05
Overall	.20

Table 3. Results of VP-ellipsis test 2: mean sloppy reading acceptance for subtyped weak definites (left) and subtyped regular definites (right).

From Table 3 it can be seen that overall the sloppy reading was accepted more often for subtyped weak definites than for subtyped regular definites. A chi-square test with the independent variable *type of definite* (weak or regular definite) and the dependent variable *sloppy reading acceptance* showed that this difference was significant $\chi^2(1, 41)=30.57, p<.001$.

2.3 Comparison of results

In this section the results of both VP-ellipsis tests will be compared, to determine the relative effects of regular and subtyping modification on sloppy reading acceptance. Figure 2 shows an overview of the mean SRAs, on a scale from 0-1, per condition (non-modified, with regular modification, and with subtyping modification), split by type of definite (regular and weak). It can be seen that for weak definites the mean SRA in the non-modified condition was highest (.72), the mean SRA in the regular modification condition being very low (.11), and the subtyping condition being in between, with a mean SRA of .48. Conversely, the mean SRAs of the regular definites in the non-modified and subtyping conditions were almost equal (.22 and .20 respectively), with the mean SRA in the regular modification again being very low (.06).

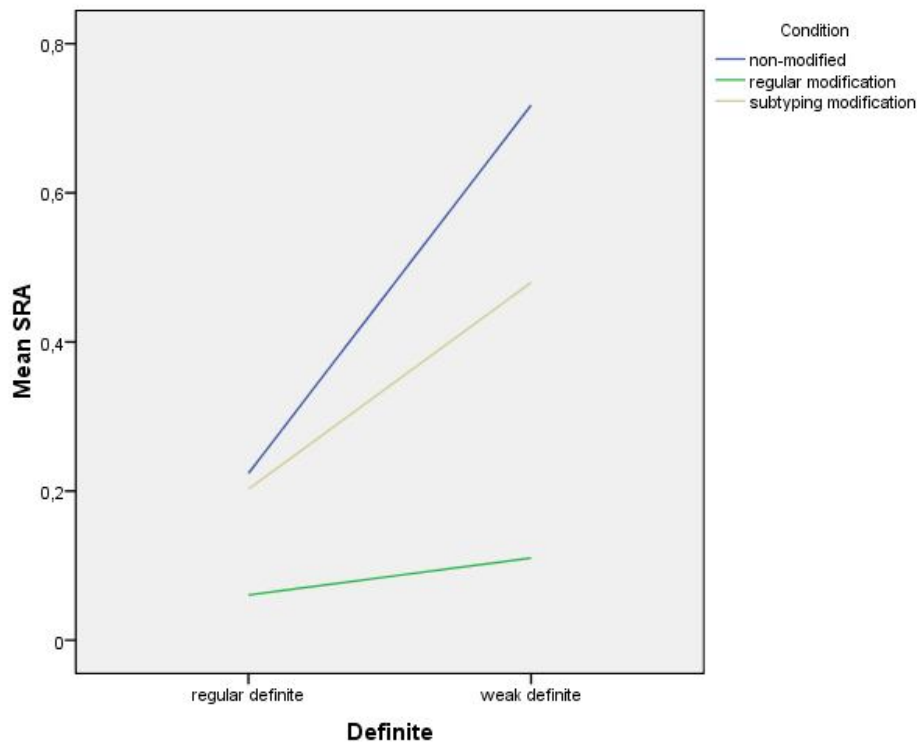


Figure 2. Mean sloppy reading acceptance for weak and regular definites in non-modified, subtyping modification and regular modification conditions.

Independent samples t-tests were used in order to do three-way comparisons between the results of the non-modified and regularly modified definites from VP-ellipsis test 1 and the subtyped definites from VP-ellipsis test 2. Since there was a significant difference between weak and regular definites in each of the three conditions, the results of the t-tests will be reported separately for weak and regular definites in sections 2.3.1 and 2.3.2 respectively.

2.3.1 Weak definite results

Table 4 shows the mean SRAs in all three conditions per weak definite.

Item	Mean SRA non-modified	Mean SRA regular modification	Mean SRA subtyping modification
Dentist	.89	.10	.79
Hospital	.75	.17	.53
Retirement home	.73	.15	.41
Museum	.73	.05	.18
Supermarket	.72	.25	.74
Snack bar	.71	.16	.53
Pharmacy	.70	.11	.45

Cinema	.69	.10	.42
Bank	.68	.12	.50
Court	.68	.04	.58
Forest	.67	.05	.27
Sauna	.67	.05	.45

Table 4. Mean sloppy reading acceptance of the weak definites, per item in the three conditions (non-modified, regular modification and subtyping modification).

From the results of the lmer analysis on the data of VP-ellipsis test 1 (section 2.1.5), it was clear that there was a significant effect of regular modification on the SRA ($\beta=1.0776$, $SE=0.0656$, $p(\text{MCMC})<.0001$). However, this was an overall effect on weak and regular definites taken together. In order to see what it looked like for the weak definites separately, a chi square test with *sloppy reading acceptance* as the dependent variable and *modification* as the independent variable was performed on just the weak definite results. It showed that regular modification resulted in a significant decrease of SRA compared to the non-modified condition ($c^2(1, 122)=190.2$, $p<.001$).

Second, a chi square test was conducted to compare the SRAs in the non-modified and subtyping modification conditions. The difference between these two conditions was significant, with the sloppy reading being accepted more often in the non-modified condition than in the subtyping modification condition, $c^2(1, 41)=29.56$, $p<.001$.

Finally, a third chi square test compared the SRAs in the regular modification and subtyping modification conditions. Again, the difference between these two conditions was significant, with the sloppy reading being accepted more often in the subtyping modification condition than in the regular modification condition, $c^2(1, 41)=80.52$, $p<.001$.

2.3.2 Regular definite results

Table 5 shows the mean SRAs in all three conditions per regular definite.

Item	Mean SRA non-modified	Mean SRA regular modification	Mean SRA subtyping modification
Convent	.40	.17	.47
Bowling alley	.39	.00	.27
Hotel	.29	.11	.21
Farm	.28	.00	.36
Showroom	.28	.08	.21
School	.17	.06	.74
Soccer field	.17	.04	.32
Concert	.16	.10	.05

Estate	.16	.04	.05
Monument	.14	.05	.05
Castle	.11	.10	.18
meer	.10	.00	.05

Table 5. Mean sloppy reading acceptance of the regular definites, per item in the three conditions (non-modified, regular modification and subtyping modification).

In the case of the regular definites as well, a chi square analysis of the results of the first VP-ellipsis test showed a significant difference between the non-modified and the regular modification conditions: the SRAs were significantly higher in the non-modified condition than in the regular modification condition ($\chi^2(1, 122)=25.58, p<.001$).

Again, the next step was to conduct a chi square analysis was conducted to compare the SRAs in the non-modified and subtyping modification conditions.² In contrast with the weak definites, with the regular definites there was no significant difference between the scores in the non-modified condition and the subtyping modification condition $\chi^2(1, 41)=.29, p=.640$.

Finally, a chi square analysis compared the SRAs in the regular modification and subtyping modification conditions. As was the case for the weak definites, the difference between these two conditions was significant: the sloppy reading was accepted more often in the subtyping modification condition than in the regular modification condition, $\chi^2(1, 41)=20.29, p<.001$.

2.3.3 Overall comparison

Figure 3 shows an overview of the mean SRAs for all three conditions, split by type of definite, ordered from lowest to highest. It can be seen that all the differences between all conditions were significant, except the difference between the subtyped regular definites and the non-modified regular definites, as we already saw in the previous section.

² Since *school* behaved atypically in having a very high SRA in the subtyping condition, the results for *school* were excluded from the overall analysis (but see section 2.4 for a discussion).

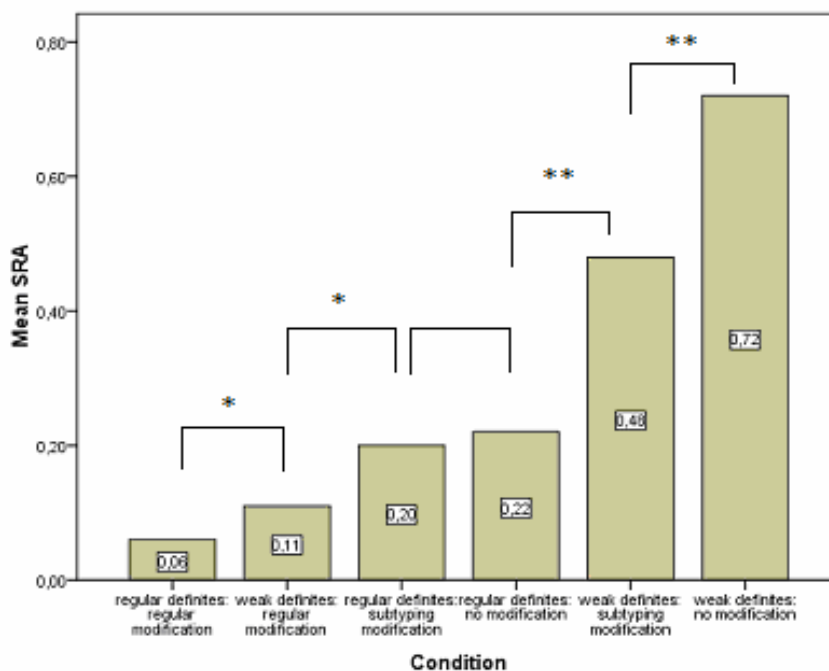


Figure 3. Overview of the mean sloppy reading acceptance per condition; *: $p < .05$, **: $p < .001$.

2.4 Discussion

Given that the prediction was that subtyping modification would preserve the sloppy reading acceptability of weak definites and whatever amount of sloppy reading acceptability the regular definites possessed, the fact that the sloppy reading was accepted more often in the case of the subtyped weak definites than for the subtyped regular definites matches our expectation.

The results of the comparisons between the two VP-ellipsis tests show that subtyping modification has a different effect on weak definites than on regular definites. In the case of weak definites it appears that subtyping modification partly blocks the availability of the sloppy reading, although it does preserve some of it. In the case of regular definites, subtyping modification preserves whatever extent to which the sloppy reading was available in the first place. From the results of the non-modified condition of VP-ellipsis test 1, we have seen that the difference between weak and regular definites is not a clear cut division, but rather a continuous scale. It seems that modification interacts with the nouns' descriptive content, and influences the position of the definite construction on a scale of SRA that ranges from 0 to 1. Since weak definites are thought

to convey a certain amount of stereotypicality and seem to be related to singular definite generics (cf. Aguilar-Guevara & Zwarts, 2010), and since Dayal (2004a) argues that the domain of quantification of singular definite generics involves taxonomic hierarchies, it may be insightful to look at these results from a conceptual semantic point of view. In her work on concepts and natural categories, Rosch presents evidence that certain natural classes are continuous rather than discretely bounded (cf. Rosch, 1973). Rosch et al. (1976: 433) put it as follows: “Some natural, continuous categories seem to be structured cognitively into items which differ in their degree of prototypicality - that is, in the degree to which the items match clear cases or good examples of the category”. Subtyping modification lowering the position of weak definites on the abovementioned SRA scale is not surprising if we consider Rosch et al.’s notion of so-called basic objects. Basic objects are defined as maximally informative categories – categories being defined as a number of objects which are considered equivalent, e.g. *dog* or *animal* –, which maximize the number of attributes they share with other members of the category, and minimize the number of attributes they share with other categories. That is, they are maximally distinct from other categories while retaining maximal internal homogeneity. Examples of basic objects are for instance *chair* or *dog*. Categories that are one level more abstract than basic object categories are superordinate categories (e.g. *furniture*, *vehicle*), which consist of members sharing only a few attributes. Categories at the subordinate level contain many attributes that are shared by other categories at this level ((e.g. *kitchen chair* shares most of its attributes with other kinds of chairs). In the case of weak definites, presumably it is the non-modified construction that is the basic object. Subtyping modification results in a subordinate category. If we assume that the ‘weakness’ of a definite is related to its position on the relevant taxonomic scale, it is expected that subtyping modification leads to a decrease of SRA. Regular modification is expected to block the sloppy reading even more, since it lowers the definite phrase from the kind or taxonomic level to the individual level.

In the light of this analysis, we can speculate why subtyping modifiers would have a different effect when combined with regular definites, namely a complete preservation of the extent to which the sloppy reading was accepted in the non-modified

condition. Weak definites are associated to taxonomies, but regular definites are not³. Perhaps subtyping modification, by specifying a subkind of the regular definite, introduces such a taxonomy for the regular definite. Thus, being non-modified and combining with subtyping modification are two different ways to the same result (i.e. the same amount of sloppy reading acceptability).

There is one other issue that deserves a discussion at this point: in Table 3 it could be seen that *school* was an outlier in the regular definite condition, with a mean SRA of .74, almost equalling the highest scoring weak definite (*dentist*, with a mean SRA of .79). It seems that the subtyping modifier *katholieke* ('catholic') forced weak definite like behaviour of the regular definite *the school*. But why did this happen only in the case of *school*, and not with other subtyped regular definites like *the organic farm* or *the classical concert*? I suggest that an analysis along the lines of bi-directional OT (cf. Blutner, 2000) might shed some light on this. The bidirectional OT framework is an implementation of Horn's (1984) 'division of pragmatic labor', in which unmarked forms come with unmarked meanings and marked forms come with marked meanings. It is used by de Swart & Zwarts (2009) in order to explain why bare nominals such as in (27) have a stereotypical or enriched interpretation, which their non-bare counterparts, such as (28), lack.

(27) John is in jail. (=John is imprisoned)

(28) John is in the jail. (=John is just visiting the prison)

De Swart & Zwarts analyse *in the jail* as being marked compared to *in jail*, since it contains additional structure (i.e. the article *the*). Similarly, the meaning 'being imprisoned' is marked compared to 'just visiting the prison', because it is stronger (i.e. more restrictive). As an illustration, consider the following entailment pattern:

(29) John is in the jail \nRightarrow John is in jail

John is in the jail \Rightarrow John is in jail

Turning back to the weak definite like behaviour of *the catholic school*, I suggest that in order to force weak definite behaviour of a regular definite, subtyping modification is necessary but not sufficient. Also required is a certain amount of typicality associated

³ Note that this is somewhat of a simplification, since with the right contextual support even regular modification can establish a generic reading (cf. Dayal, 2004: 33, fn 30). However, since in the VP-ellipsis tests presented here no additional context was used, this is not directly relevant there.

with the construction. The Dutch bare nominal construction *naar school gaan* ('to go to school') expresses such a typicality reading. As a consequence of the division of pragmatic labour, this reading does not arise with the definite construction *de school*, which explains the fact that *school* is a regular definite instead of a weak definite. In the regular modification condition (*de vieze school* – 'the dirty school') the typicality reading is also blocked, because *dirty school* denotes an individual school rather than a kind of schools. However, in the subtyping modification condition the kind reading of *school* is supported by the subtyping modifier *katholieke*, and the typicality reading is available because there is no competition with a bare form:

(30) *Jan ging naar katholieke school.

'Jan went to catholic school'

Chapter 3: Enriched Meanings

In the second part of this thesis I will investigate the weak definite property of having an enriched meaning (EM), more specifically: the semantic-pragmatic status of these EMs. But let me first make concrete what I understand by ‘enriched meanings’. I will follow the definition of Aguilar-Guevara & Zwarts (2010: 10), who assume that enrichment for a sentence like (31) means that “there is an additional restriction on the event being quantified over, in this case the events in which Alice does not just go to a building that we would classify as a hospital, but furthermore, that she was involved in the stereotypical function of hospitals (being a patient, nurse, or doctor)”.

(31) Alice went to the hospital.

Now, the question I will try to answer is whether EMs are part of the weak definite construction, or whether they arise as pragmatic inferences, based on world knowledge. Aguilar-Guevara & Schulpen (to appear) use a battery of tests traditionally used to distinguish between different types of meanings (e.g. entailments, presuppositions, conversational and conventional implicatures. They show that EMs are non-defeasable and at-issue, which suggests that they are truth-conditional meanings (i.e. that they are part of the semantics of the weak definite construction). However, in their reforcability EMs are like conversational implicatures. An important property of the latter is that they are calculable on the basis of Gricean conversational principles. In the case of EMs it is unclear whether or not they are calculable. All in all, based on these tests alone it is not possible to determine the exact semantic-pragmatic status of EMs. In this chapter I will present an experiment designed to provide empirical evidence on the basis of which this matter could be resolved. The idea behind this experiment was to test the strength of weak definite EMs relative to typical activities associated to agent nouns in sentences like *The mailman went to the hospital*, as was done in a study by Klein et al. (2009). This was done by establishing whether subjects preferred the interpretation in which the mailman went to the hospital for a ‘mailman reason’ (to deliver mail) or one in which he went there for a ‘hospital reason’ (to get medical treatment). In other conditions, the weak definite was replaced by a regular definite, or by a modified weak or regular definite. Crucially, if EMs are part of the semantics of the weak definite construction we expect an

effect of modification, since VP-ellipsis test 1 showed that modification blocks the weak reading of weak definites.

As a working hypothesis, I adopt the analysis of Aguilar-Guevara & Zwarts (2010), who propose a semantics of weak definites in which EMs are incorporated. In their account, weak definites refer to atomic kind individuals. When weak definites combine with object-level predicates, the kind individual is instantiated through Carlson's (1977) realisation relation R , and the predicate is lifted to a kind-level predicate. The stereotypical usage of the kind then becomes part of the resulting logical form through the relation U . The logical form of (31) is given in (32).

$$(32) \quad \exists e[\text{go-to}(e) \wedge \text{Ag}(e) = \text{alice} \wedge R(\text{Ref}(e), H) \wedge U(e, H)]$$

(32) denotes the event in which Alice is going somewhere and the Ref(erence object) of this change of position is a realisation of the kind *hospital*, which in this event fulfils its stereotypical function.

In the experiment presented in this chapter I will make use of the results obtained in Chapter 2. Specifically, I will use modification as a means to block the weak construction of weak definites, in order to compare the interpretation of sentences with a similar descriptive content in a condition in which the weak construction is blocked (the modified condition) and in a condition in which it is not (the non-modified condition). This experiment was preceded by two pretests, which will be discussed first.

3.1 Pretest 1: Typical activities associated with location nouns

3.1.1 Introduction

The aim of this pretest was to determine typical activities associated with the weak and regular definite location nouns to be used in the enriched meanings experiment (section 3.3). The results of this pretest were to be used in the interpretation of subjects' responses in the actual experiment.

3.1.2 Materials

The materials used for this test consisted of booklets of nineteen pages: one front page with instructions and eighteen pages each containing one location noun and some empty lines. The nouns were presented in bare form, to avoid any effect of presentation in definite or indefinite constructions on world knowledge associations.

The same sets of weak and regular definite location nouns were used as in section 2.1.2. Thus, thirty-six nouns were used in total (eighteen weak definites and eighteen regular definites). These were randomly split into two lists, both containing nine weak definites and nine regular definites. Both lists were then ordered quasi-randomly – care was taken to ensure that no more than two weak definites or regular definites occurred next to each other. The reversed versions of these lists were also used. Both the original lists and their reversed versions were also presented ‘inside out’, that is, with the first eight items and the last nine items in reversed order. Thus, in total eight lists were used. Due to a printing mistake, the last item in the inside out lists was the same as in the non-inside out versions.

3.1.3 Method

Thirty-eight native speakers of Dutch participated in this experiment. Subjects were asked to read each noun, and to write down as many reasons they could think of why someone would go to that location. They were told that for each noun they had thirty seconds to do so. After every thirty seconds a beep sounded, after which subjects had to turn the page and repeat the process for the next noun. They were asked not to turn the page before the beep sounded.

3.1.4 Results

Based on overall frequency, the most typical activities associated to the weak definite and regular definite nouns were decided. These are presented in Table 6.

Item	Prototypical activity	Item	Main Set
Pharmacy	To get medication	Retirement home	To visit old people, to be taken care of when you are old
Bank	To do financial stuff	Farm	To watch farm life and business, to buy farm products, to care for or pet animals
Library	To study, to loan or read things	Bowling alley	To bowl, to have fun
Cinema	To watch a movie	Café	To have a drink, to have fun
Forest	To take a walk	Concert	To listen to music, to have fun
Bike repair shop	To get your bike fixed	Factory	To work there, to have a look around
Court	To work, justice	Hotel	To stay there overnight
Sauna	To relax	Castle	To do some sight seeing
Snack bar	To get food/snacks	Convent	For spiritual reasons, to do some sight seeing
Gym	To exercise	Estate	To do some sight seeing
Train station	For travelling	Lake	For lake fun

Beach	For beach fun	Monument⁴	To do some sight seeing
Supermarket	To do groceries	Museum	As a cultural outing
Dentist	For dental care	Restaurant	To have dinner
University	To study	School	To study/learn things
Airport	For travelling	Showroom	To look at or buy products
Hospital	For medical help	Studio	To record something
Swimming pool	To swim	Soccer field	To play soccer

Table 6. Typical activities associated to the weak definite location nouns (left column) and the regular definite location nouns (right column).

3.2 Pretest 2: Typical activities associated with agent nouns

3.2.1 Introduction

The aim of and reasons behind this pretest were similar to those of Pretest 1, except that Pretest 2 was aimed at finding agent nouns associated with typical activities instead of location nouns.

3.2.2 Materials

For this test thirteen agents were used that were intuitively judged to be associated typical activities. Subjects were presented with booklets of fourteen pages: a front page with instructions and thirteen pages each containing one of the agent nouns in a carrier sentence (*a typical reason for a [agent noun] to go somewhere is...?*) and some empty lines.

3.2.3 Method

Twenty-four native speakers of Dutch participated in this experiment. Subjects were asked to read each sentence and then to complete it by writing down as many reasons they could think of for this agent to go to an unspecified location. As in Pretest 1, they were given thirty seconds per item, after which a beep sounded and they were to turn the page.

3.2.4 Results

Again, based on overall frequency, the most typical activities associated to the agent nouns were determined. These are presented in Table 7.

Item	Main set
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⁴ *Monument* in Dutch is ambiguous between a memorial and a culturally important old building. For this reason it was not used in the actual experiment (see section 2.3.2).

Fire fighter	To fight fires
Pizza delivery guy	To deliver pizza
Cleaner	To clean
Window cleaner	To clean windows
Florist	To sell flowers
Mailman	To deliver mail
Journalist	To report on something
AAA patrolman	To help people with car trouble
Representative	To represent someone/a company
Taxi driver	To bring someone somewhere
Delivery guy	To deliver packages
Bailiff	To collect money
Newspaper delivery guy	To deliver newspapers

Table 7. Typical activities associated with the agent nouns.

3.3 Enriched meanings experiment

3.3.1 Introduction

This experiment builds on a study conducted by Klein et al. (2009), in which subjects were presented with sentences of the type *The [agent] went to the [location NP]*. The agents that were used had well-known typical activities. The locations were either weak or regular definites. Subjects were asked to read the sentences and to visualise the scene each sentences described. They were then asked a yes/no question intended to establish whether or not they had imagined the agent as performing his typical activity. The results indicate that subjects were more likely to say that the agent was engaged in his typical activity in the regular definite condition, whereas in the weak definite condition they were more likely to say that he was not.

In the present experiment, the agents that were used were taken from Pretest 2, to ensure that they were associated with a typical activity, and the location nouns were either weak or regular definite nouns, taken from Pretest 1 and also associated with a typical activity. Thus, in each sentence there was a conflict between the typical activities associated to the agent and the location (e.g. to deliver mail vs. to get medical help in (17) below). In order to interpret the sentence one of these activities had to overrule the other. The activity corresponding to the agent presumably constitutes a conversational implicature, which is cancellable. The activity associated with the location is assumed to be a conversational implicature in the case of regular definites, but an entailment in the

case of weak definites. Crucially, since conversational implicatures are cancellable, but entailments are not, it is only in the case of weak definites that we expect the agent activity association to be systematically overridden by the location activity association.

Taking Klein et al.'s design one step further, conditions were added in which the weak or regular definite location was modified by an adjective. Given that VP-ellipsis test 1 showed that modification blocks the weak reading of weak definites, comparing the interpretations of modified weak definites and regular definites enabled us to see if EMs are dependent on the weak definite construction (i.e. are part of its semantics), or if they arise independently of the construction they are in (i.e. are a pragmatic inference).

3.3.2 Materials

The manipulated variables in this experiment were the type of location definite that was used and whether or not the location definite was modified. Thus, the test sentences occurred in four conditions: weak definite location (33), regular definite location (34), modified weak definite location (35) and modified regular definite location (36).

(33) De lange postbode ging naar het ziekenhuis.

The tall mailman went to the hospital

(34) De lange postbode ging naar het restaurant.

The tall mailman went to the restaurant

(35) De lange postbode ging naar het nieuwe ziekenhuis.

The tall mailman went to the new hospital

(36) De lange postbode ging naar het nieuwe restaurant.

The tall mailman went to the new restaurant

Twelve agent nouns were used, taken from Pretest 2, which each occurred once in every condition. Every set of four test sentences sharing the same agent consisted of one weak definite location (modified and non-modified) and one regular definite location (also modified and non-modified). These location nouns were taken from Pretest 1. In the modified condition this weak definite and the regular definite shared the same modifier. Sentences (33)-(36) above constitute such a set. In total there were forty-eight test sentences.

The items that were used were the twelve best weak definites and the best twelve regular definites that were selected based on the results of VP-ellipsis test 1 (see section 2.1.5), with two exceptions: *bejaardentehuis* ('retirement home') was substituted for *sauna* and *restaurant* was used instead of *school*. The reason for this was that in Dutch both *naar het bejaardentehuis gaan* ('to go to the retirement home') and *naar school gaan* ('to go to school') are constructions with a fixed meaning ('to move into a retirement home' and 'to be a pupil at some school'). *Sauna* and *restaurant* were the next best weak and regular definite.

The modifiers that were used on the location definites were selected from the set of modifiers that was used in VP-ellipsis test 1, with some new modifiers having been introduced, which were intuitively judged to be more 'neutral' – e.g. *gezellige* ('cozy') was substituted for *vierkante* ('square'). Care was taken only to use modifiers that would not influence the world knowledge inferences triggered by the location nouns were selected (e.g. modifiers such as *big*, *new*, *crowded* were used, but *closed* or *bankrupt* were not).

The agent nouns were modified in all four conditions in order to provide a counterbalance against a possible saliency effect of the location noun modifiers.

Twelve filler items were also used. The structure of the fillers was similar to the test items, containing an agent, a motion verb and a location, but they sometimes contained different types of agents, verbs and location nouns (see (37) and (38)). Care was taken to ensure that the fillers would not introduce an overall bias for either the agent reason or the location reason interpretation.

(37) Michiel reed naar het gebouw.

Michiel drove to the building

(38) De zenuwachtige violist kwam het podium op.

The nervous violinist walked out in stage

Subjects were presented with a list containing twenty-four sentences, of which twelve were test sentences (three items per condition) and twelve were filler items. The items in each list were ordered quasi-randomly: the two first and the two last items in each lists were always fillers, and test items in the same condition never occurred in adjacent positions. Since there were forty-eight test sentences in total, four different lists

were used, each occurring in original and reversed order. Thus, in total eight lists were used.

Each sentence occurred on a separate page. On the back of each page the question *Why did he/she do that?* (i.e. why did the agent in the test sentence go to the location that sentence mentioned?) was printed, followed by some empty lines.

3.3.3 Method

Subjects were given nine seconds per sentence, in which they had to read it and imagine the scene the sentence described. After nine seconds had passed, a beep signalled that they were to turn the page in order to describe the scene they had imagined by answering the question printed on the backside. For this they were given eighteen seconds. Based on the results of Pretests 1 and 2, subjects' answers were coded as being either an agent reason or a location reason.

3.3.4 Predictions

Subjects were predicted to prefer the location reason more often for weak definites than for regular definites. Furthermore, a greater preference for the location reason for weak definites than for modified weak definites is predicted. Finally, if EMs are part of the semantics of the weak definite construction, which Pretest 1 showed is blocked by modification, an interaction effect between type of definite and modification is expected, with modification blocking EMs more strongly for weak definites than for regular definites.

3.3.5 Results

An lmer analysis revealed a significant main effect for type of definite ($\beta=0.3497$, $SE=0.1088$, $p(\text{MCMC})<.0001$), indicating that subjects chose the location reason interpretation more often in the weak definite condition than in the regular definite condition. However, there was no significant effect of modification ($\beta=-.1188$, $SE=.1003$, $p(\text{MCMC})=.1896$), nor was there an interaction effect ($\beta=-.0009$, $SE=.1496$, $p(\text{MCMC})=.9714$). A graphical presentation of the results can be seen in Figure 4. The exact number of agent reason and location reason interpretations per condition can be found in Table 8.

Type of definite		Response		
		Agent reason	Location reason	Total
Regular definite	Modification Non-modified	93 (54,4%)	78 (45.6%)	171
	Modified	116 (67.1%)	57 (32.9%)	173
	Total	209 (60.8%)	135 (39.2%)	344
Weak definite	Modification Non-modified	38 (21.7%)	137 (78.3%)	175
	Modified	53 (31.5%)	115 (68.5%)	168
	Total	91 (26.5%)	252 (73.5%)	343

Table 8. Overview of the absolute and relative amount of agent reason answers and location reason answers per condition.

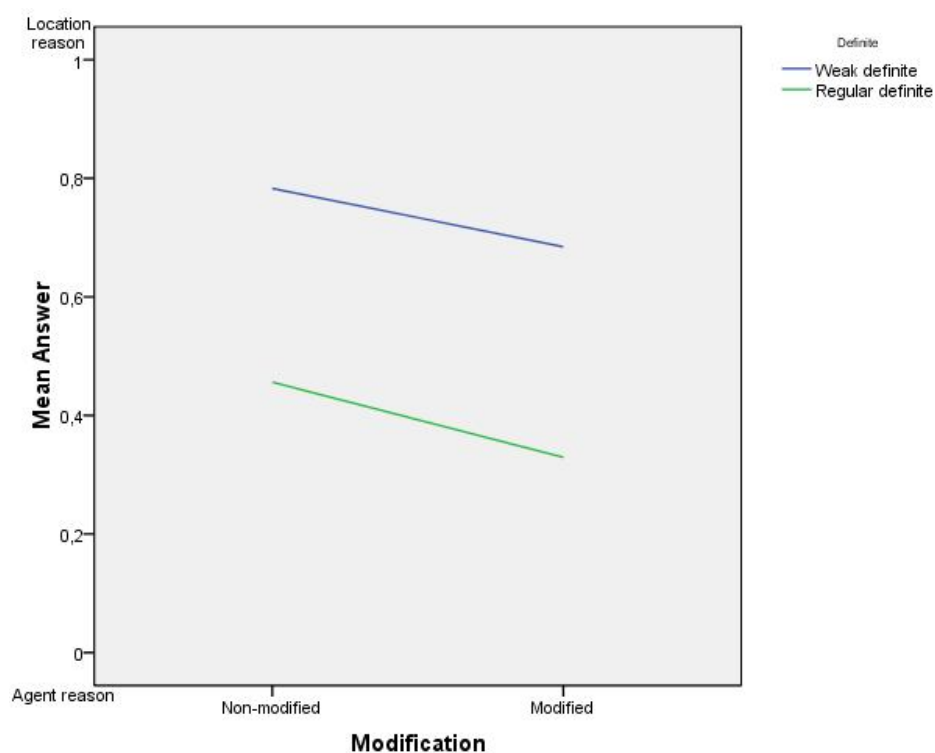


Figure 4. Mean of subjects' interpretations (0=agent reason interpretation, 1=location reason interpretation), split by type of definite and presence of modification.

3.3.6 Another look at Pretest 1

The results show a difference between weak definites and regular definites, but no effect of modification. This suggests that the difference between the two types of definites is independent of the weak definite construction. That is, perhaps it is a difference in

lexical-semantic properties between nouns occurring in weak definite or in regular definite constructions. In order to explore this possibility the data of Pretest 1, which was used to determine typical activities associated to the weak definite and regular definite location nouns, were analysed in more detail.

First, for each location noun, a list was made of each typical activity that was mentioned. For each of these activities the percentage of subjects that mentioned it was calculated. Then, for each item the percentage of the reason that was mentioned most often (*percentage of the most prominent reason*) was selected, and ANOVA analyses and correlation tests were performed to determine whether there were any effects of type of definite on these percentages, and whether they were correlated with for instance SRA.⁵

A one-way ANOVA was used to test for differences in percentages of the most prominent reason between two types of definites (weak and regular definites). The percentages of the most prominent reason were significantly higher for the weak definites than for the regular definites, $F(1, 34) = 4,927, p = .033$. When only the definites that were used in the final experiment were taken into account (i.e. twelve weak definites and twelve regular definites), the difference in percentages of the most prominent reason between weak and regular definites was no longer significant, $F(1, 22) = 3,411, p = .078$. However, when the weak definite *museum*, which was difficult to quantify due to large amount of uninterpretable responses, was removed from the dataset as used in the final experiment, the difference was significant again, with weak definites showing higher percentage of the most prominent reason than regular definites, $F(1, 21) = 4,625, p = .043$. These results suggest that the typical activities associated to weak definites are stronger than those associated to strong definites.

In addition, a Pearson's r analysis was carried out to assess the relationship between percentages of the most prominent reason and SRA in the VP-ellipsis test (in the non-modified condition). There was a positive correlation between the two variables, indicating that higher percentages of the most prominent were correlated with a higher SRA, $r=0,381, n=36, p=.022$. A similar positive correlation was also found when only the items that were used in the final experiment were taken into account, $r=0,416, n=24,$

⁵ Note that due to time constraints the amount of different reasons that were mentioned per item was not taken into account.

$p=.043$. Finally, when *museum* was excluded from the data, the positive correlation was found as well, $r=0,473$, $n=23$, $p=.023$. These results are not surprising, since we already saw that weak definites are associated with higher percentages of the most prominent reason than regular definites, and we already knew from VP-ellipsis test 1 that weak definites have higher SRAs than regular definites.

3.4 Discussion

The presence of a main effect of type of definite, with the location reason interpretation being preferred in the weak definite condition, and the agent reason interpretation being preferred in the regular definite condition, confirms the prediction that weak definite EMs are stronger than regular definite EMs. However, the predicted main effect of modification and the interaction effect of modification and type of definite were not found. Given that VP-ellipsis test 1 showed that modification blocks the weak reading, the first conclusion that should be drawn from the fact that modification had no effect in this experiment is that the hypothesis that EMs are part of the weak definite construction is not corroborated. The question then is whether the opposite conclusion, namely that EMs are a pragmatic phenomenon, should be adopted. There are several things that point into this direction. Firstly, the more detailed analysis of the results of Pretest 1 (see section 3.3.6) showed that the effect of type of definite can also be observed with the weak and regular nouns *an sich*. This suggests that the difference between weak definites and regular definites originates from the nouns themselves, rather than in from definite construction, in which case it no longer follows that there should be an effect of modification.⁶ Furthermore, this is consistent with the intuition that in a sentence like (39), i.e. in an indefinite rather than the weak definite construction, it can still easily be inferred that John went there to get medical help.

(39) John went to a hospital.

However, it is important to note that there may be alternative explanations of the results obtained in this experiment. One option is that the modification of the location nouns may have had a topicalising effect⁷, resulting in an increased preference for the

⁶ Although to be certain of this, Pretest 1 should be repeated with the adjective-noun combinations that were used in the EM experiment, rather than with only the nouns.

⁷ As was reported by one of the participants of a pilot version of this experiment.

location reason interpretation, thus obscuring the effect of modification (which was expected to decrease the location reason preference). In order to avoid such a topicalising effect the agent nouns were modified as well, but it is possible that the adjectives used to modify the agents nouns were not controlled for properly. Only modifiers that were intuitively felt not to block the typical activity associated to the agents were used, such as *tall*, *bald*, *fat*, but perhaps this led to a focus on the individual properties of the agents, rather than on their stereotypical characteristics.

Another possible explanation is that certain assumptions underlying the experimental design were wrong. For instance, it may be the case that the weak definite properties of allowing non-unique reference (cf. VP-ellipsis test 1) and of coming with strong EMs are (at least partly) independent of each other. As a consequence, the fact that modification blocks the availability of non-unique reference would then no longer imply that modification also blocks the preference for the location reason interpretation that is associated with the EM of weak definites.

Chapter 4: General Discussion

In Chapter 2 the results of two VP-ellipsis tests, used to investigate the influence of different types of modification on the weak definite property of non-unique reference, were presented and compared. The results of the first VP-ellipsis test showed that, as predicted, the sloppy reading in VP-ellipsis sentences is accepted more often for weak definites than for regular definites, and that (regular) modification of a weak definite strongly decreases the acceptability of the sloppy reading. Furthermore, this test showed that with respect to SRAs the difference between weak and regular definites is gradual, rather than black-and-white. The results of the second VP-ellipsis test showed that in the subtyping modification condition the sloppy reading is again accepted more often for weak definites than for regular definites. Again, this was according to our prediction. The comparison between the results of the two VP-ellipsis tests showed that subtyping modification completely preserves whatever amount of sloppy reading acceptability the regular definite possesses, yet it only partly preserves the sloppy reading acceptability of weak definites.

In Chapter 3 an experiment intended to establish the semantic-pragmatic nature of weak definite enriched meanings was presented. In this experiment the interpretation of sentences describing an agent associated with a typical activity going to a location which was also associated with a typical activity was tested. The location was expressed by a weak definite, a regular definite, or a modified version of either of these. The results confirmed the prediction that EMs lead to a greater preference for the location reason interpretation in the weak definite condition than in the regular definite condition. Based on the hypothesis that EMs are part of the weak definite construction, the second prediction was that modification of the weak definites would result in a decrease of this preference was, yet such an effect did not occur. Therefore, this hypothesis could not be confirmed. The tentative conclusion was that in fact the evidence points towards the opposite conclusion, namely that EMs are pragmatic inferences, although several other possible explanations of why no effect of modification was found were suggested.

4.1 Theoretical implications

It is interesting to try to relate the results presented in this thesis to Aguilar-Guevara & Zwarts' (2010) analysis of the semantics of weak definites.

Firstly, the hypothesis that was tested in the second VP-ellipsis test was that subtyping modification, in contrast with regular modification, is in fact acceptable with weak definites. This hypothesis was based on Aguilar-Guevara & Zwarts' thought that weak definites refer to kinds, and that they can be modified as long as the modifier operates on kinds as well. The fact that subtyping modification resulted in a higher mean SRA than regular modification seems to corroborate the analysis that weak definites are kind-referring. The result that subtyping modification of weak definites led to a less high mean SRA than was obtained for the non-modified weak definites requires an additional explanation. This was given by appealing to the relation between weak definites and singular definite generics, Dayal's (2004a) analysis of the latter in terms of taxonomies, and Rosch et al's (1976) notion of basic objects.

Second, what are the implications of the EM experiment? According to Aguilar-Guevara & Zwarts, weak definites refer to kinds, and through the relation *U* the kind a particular weak definite refers to is related to an event in which an instantiation of this kind functions in a way that is stereotypical for it. EMs are therefore part of the semantics of weak definites, and this semantic component is assumed to be absent in regular definites. Although Aguilar-Guevara & Zwarts are not explicit about the nature of the content of this stereotypicality, it seems likely that this is based on world knowledge about the function of, say, a hospital, and as such is a pragmatic or lexical semantic component of EMs. This pragmatic component is present in both weak definites and regular definites, which explains the surface results of Pretest 1 (i.e. both weak and regular definite location nouns are associated with stereotypical usages). However, the more detailed analysis of this pretest (cf. section 3.3.6) showed that the typical activities associated to nouns that occur as weak definites are more prominent than those associated to nouns that occur as regular definites. Thus, based on Aguilar-Guevara & Zwarts and on the results presented here, there are two ways in which weak definites differ from regular definites with respect to EMs:

1. The stereotypical usage of nouns is triggered by the weak definite construction, but not by the regular definite one;
2. This stereotypical usage is more prominent for nouns that can occur as weak definites than for regular definite nouns.

It is possible that modification did block the semantic component of weak definite EMs, but that the pragmatic part was left intact, and, based on the more detailed analysis of Pretest 1, that the pragmatic part alone was sufficient to elicit more location reason interpretations for the weak definites than for the regular definites, independently of whether or not modification blocks the EM.

Up to this point I have considered only two possible analyses: (i) EMs are part of the semantics of the weak definite construction, and (ii) weak definite EMs arise as pragmatic inferences. The question that I have glossed over so far pertains to the difference between lexical-semantics and pragmatics. That is, if EMs are not part of the weak definite construction, the knowledge that people go to hospitals for medical reasons may be part of the lexical-semantics of the noun *hospital* (e.g. in Pustejovsky's (1995) Generative Lexicon this would be the telic role of *hospital*), or it may be a pragmatic inference supported by the lexical semantics of the noun but requiring an additional context. The exact difference between these two possibilities, however, is outside the scope of this thesis.

4.2 Suggestions for future work

The EM experiment could be repeated with indefinites instead of definites, to test whether EMs arise independently of the definite construction. If EMs are part of the definite construction, the prediction would be that subjects prefer the agent reason interpretation both in the weak definite and in the regular definite condition. Conversely, if EMs are pragmatic inferences based on world knowledge associated to the nouns themselves, results similar to those of the present experiment would be expected. An additional test would be to redo Pretest 1 with the adjective-location noun combinations that were used in the EM experiment, rather than with just the bare nouns, in order to see whether the effect that was found in the more detailed analysis of Pretest 1 (cf. section 2.3.6: typical activities associated to nouns that occur in weak definite constructions were

more prominent than those that occur in regular definite constructions) was preserved in the modified conditions. Similarly, Pretest 2 might be repeated with the adjective-agent noun combinations that were used in the EM experiment, to investigate the possibility that the adjectives had an effect on the availability of the typical activity associated to the agents. With respect to the VP-ellipsis tests from Chapter 2, it would also be interesting to test more definites containing nouns that occur in bare noun constructions with *to go* (such as *to go to church* and *to go to prison* in English), in order to test whether the exceptionally high sloppy reading acceptability of *school* in the subtyping modification condition was indeed due to the typicality associated to the bare noun construction.

On a different level, an interesting question is if we can relate the effect of modification on weak definites to its effects on other constructions. Similar effects seem to occur with singular definite generics and bare singulars. In (40) *the tiger* can be interpreted generically as well as referring to an individual tiger. In (41) the generic reading is blocked by the adjective *nice*, yet (42) shows that subtyping modification preserves the generic interpretation.

- | | | |
|------|---------------------------------------|--------------------------------------|
| (40) | The tiger often eats antelope. | <i>generic reading available</i> |
| (41) | The nice tiger often eats antelope. | <i>generic not reading available</i> |
| (42) | The Bengal tiger often eats antelope. | <i>generic reading available</i> |

Similarly, modification blocks the bare singular construction in for instance English. Carlson et al. (2006) give the following examples⁸.

- (43) *She traveled on sore foot
- (44) *He was found in silk-sheeted bed.
- (45) *Mimi attended class taught by Prof. Linskowski.
- (46) *The ship is now in port that's being dredged.

We already saw that weak definites and singular definite generics seem to be related (cf. Aguilar-Guevara & Zwarts, 2010), and Carlson et al. extensively discuss the similarities between weak definites and bare singulars, so the above data are perhaps not surprising. However, it should be noted that for instance the bare predication construction is blocked

⁸ In their discussion of weak definites and bare singulars, Carlson et al. do not address the issue of whether or not these constructions are acceptable with subtyping modification. However, a Google search on for instance "attend math class" resulted in ± 70,000 hits, suggesting that just like with weak definites and singular definite generics, subtyping modification preserves the bare singular construction.

by certain (but not all) kinds modification as well. The following are examples from de Swart et al. (2005):

(47) Marie is advocaat.

Marie is lawyer

(48) *Marie is goed advocaat.

Marie is good lawyer

(49) Marie is gepensioneerd advocaat.

Marie is retired lawyer

It is not clear how the distinction between regular and subtyping modification would apply to these data, since *retired lawyer* does not seem to be a subkind of *lawyer*.

Furthermore, modification has the opposite effect on for instance bare plurals in Italian and universal *any* constructions in English. Italian bare plurals are ungrammatical in subject position (see (50); example from Chierchia, 1998). They can be saved, though, by phrasal modification, as in (51) (example from Dayal, 2005).

(50) *Studenti hanno telefonato.

Students have telephoned

(51) Studenti che volevano sapere la data dell'esame hanno telefonato.

Students who want to find out the date of the exam have telephoned

Similarly, in (52) the free choice *any* construction is blocked, whereas it becomes available in (53), in which *any book* is modified by a relative clause. However, it is only certain types of modification that have this licensing effect, as shown in (54) where the adjective *good* does not license the construction (examples from Dayal, 2004b).

(52) *John read any book.

(53) John read any book he found.

(54) *John read any good book.

Traditionally modifiers are seen as semantically inert – that is, they do not alter the semantic category of the nouns they modify (cf. Heim & Kratzer, 1998). This raises the question of how the effect of modification on weak definites and other constructions works compositionally.

Finally, it would be interesting to pursue the relation between (weak) definiteness and the notion of natural categories/basic objects, which is found in the literature on the nature of concepts.

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Appendix A: Items VP-ellipsis test 1

Non-modified weak definites

Marja ging naar het station en Saskia ook.
Marja en Saskia gingen allebei naar hetzelfde station.
Marja en Saskia gingen allebei naar een verschillend station.

Julia ging naar de bank en Adriaan ook.
Julia en Adriaan gingen allebei naar dezelfde bank.
Julia en Adriaan gingen allebei naar een verschillende bank.

Frank ging naar de rechtbank en Anne ook.
Frank en Anne gingen allebei naar dezelfde rechtbank.
Frank en Anne gingen allebei naar een verschillende rechtbank.

Linda ging naar het bos en Els ook.
Linda en Els gingen allebei naar hetzelfde bos.
Linda en Els gingen allebei naar een verschillend bos.

Siri ging naar de snackbar en Pim ook.
Siri en Pim gingen allebei naar dezelfde snackbar.
Siri en Pim gingen allebei naar een verschillende snackbar.

Rob ging naar de sauna en Kim ook.
Rob en Kim gingen allebei naar dezelfde sauna.
Rob en Kim gingen allebei naar een verschillende sauna.

Esther ging naar de tandarts en David ook.
Esther en David gingen allebei naar dezelfde tandarts.
Esther en David gingen allebei naar een verschillende tandarts.

Daan ging naar de supermarkt en Eefje ook.
Daan en Eefje gingen allebei naar dezelfde supermarkt.
Daan en Eefje gingen allebei naar een verschillende supermarkt.

Sandra ging naar de sportschool en Edwin ook.
Sandra en Edwin gingen allebei naar dezelfde sportschool.
Sandra en Edwin gingen allebei naar een verschillende sportschool.

Rianne ging naar de fietsenmaker en Lotte ook.
Rianne en Lotte gingen allebei naar dezelfde fietsenmaker.
Rianne en Lotte gingen allebei naar een verschillende fietsenmaker.

Hettie ging naar het zwembad en Gerard ook.
Hettie en Gerard gingen allebei naar hetzelfde zwembad.

Hettie en Gerard gingen allebei naar een verschillend zwembad.

Joep ging naar de universiteit en Willemijn ook.
Joep en Willemijn gingen allebei naar dezelfde universiteit.
Joep en Willemijn gingen allebei naar een verschillende universiteit.

Leo ging naar de apotheek en Tom ook.
Leo en Tom gingen allebei naar dezelfde apotheek.
Leo en Tom gingen allebei naar een verschillende apotheek.

Michiel ging naar de bibliotheek en Evelien ook.
Michiel en Evelien gingen allebei naar dezelfde bibliotheek.
Michiel en Evelien gingen allebei naar een verschillende bibliotheek.

Jan ging naar het ziekenhuis en Marie ook.
Jan en Marie gingen allebei naar hetzelfde ziekenhuis.
Jan en Marie gingen allebei naar een verschillend ziekenhuis.

Dirk ging naar het vliegveld en Magda ook.
Dirk en Magda gingen allebei naar hetzelfde vliegveld.
Dirk en Magda gingen allebei naar een verschillend vliegveld.

Lies ging naar de bioscoop en Sophie ook.
Lies en Sophie gingen allebei naar dezelfde bioscoop.
Lies en Sophie gingen allebei naar een verschillende bioscoop.

Bart ging naar het strand en Elise ook.
Bart en Elise gingen allebei naar hetzelfde strand.
Bart en Elise gingen allebei naar een verschillend strand.

Non-modified regular definites

Stan ging naar het landgoed en Joran ook.
Stan en Joran gingen allebei naar hetzelfde landgoed.
Stan en Joran gingen allebei naar een verschillend landgoed.

Femke ging naar het concert en Inge ook.
Femke en Inge gingen allebei naar hetzelfde concert.
Femke en Inge gingen allebei naar een verschillend concert.

Loes ging naar het restaurant en Erik ook.
Loes en Erik gingen allebei naar hetzelfde restaurant.
Loes en Erik gingen allebei naar een verschillend restaurant.

Robert ging naar het hotel en Liesbeth ook.
Robert en Liesbeth gingen allebei naar hetzelfde hotel.
Robert en Liesbeth gingen allebei naar een verschillend hotel.

Vincent ging naar het café en Henk ook.
Vincent en Henk gingen allebei naar hetzelfde café.
Vincent en Henk gingen allebei naar een verschillend café.

Hans ging naar het museum en Bea ook.
Hans en Bea gingen allebei naar hetzelfde museum.
Hans en Bea gingen allebei naar een verschillend museum.

Luuk ging naar het kasteel en Jaap ook.
Luuk en Jaap gingen allebei naar hetzelfde kasteel.
Luuk en Jaap gingen allebei naar een verschillend kasteel.

Ruud ging naar de showroom en Imke ook.
Ruud en Imke gingen allebei naar dezelfde showroom.
Ruud en Imke gingen allebei naar een verschillende showroom.

Joost ging naar het voetbalveld en Maaike ook.
Joost en Maaike gingen allebei naar hetzelfde voetbalveld.
Joost en Maaike gingen allebei naar een verschillend voetbalveld.

Floor ging naar de bowlingbaan en Sam ook.
Floor en Sam gingen allebei naar dezelfde bowlingbaan.
Floor en Sam gingen allebei naar een verschillende bowlingbaan.

Laura ging naar de school en Ruben ook.
Laura en Ruben gingen allebei naar dezelfde school.
Laura en Ruben gingen allebei naar een verschillende school.

Harrie ging naar de boerderij en Ben ook.
Harrie en Ben gingen allebei naar dezelfde boerderij.
Harrie en Ben gingen allebei naar een verschillende boerderij.

John ging naar de fabriek en Marleen ook.
John en Marleen gingen allebei naar dezelfde fabriek.
John en Marleen gingen allebei naar een verschillende fabriek.

Monique ging naar het meer en Roel ook.
Monique en Roel gingen allebei naar hetzelfde meer.
Monique en Roel gingen allebei naar een verschillend meer.

Renske ging naar het klooster en Olaf ook.
Renske en Olaf gingen allebei naar hetzelfde klooster.
Renske en Olaf gingen allebei naar een verschillend klooster.

Anne-Marie ging naar het monument en Sebastiaan ook.

Anne-Marie en Sebastiaan gingen allebei naar hetzelfde monument.
Anne-Marie en Sebastiaan gingen allebei naar een verschillend monument.

Hanna ging naar de studio en Noortje ook.
Hanna en Noortje gingen allebei naar dezelfde studio.
Hanna en Noortje gingen allebei naar een verschillende studio.

Roos ging naar het bejaardentehuis en Jeroen ook.
Roos en Jeroen gingen allebei naar hetzelfde bejaardentehuis.
Roos en Jeroen gingen allebei naar een verschillend bejaardentehuis.

Modified weak definites

Marja ging naar het rommelige station en Saskia ook.
Marja en Saskia gingen allebei naar hetzelfde station.
Marja en Saskia gingen allebei naar een verschillend station.

Julia ging naar de sjieke bank en Adriaan ook.
Julia en Adriaan gingen allebei naar dezelfde bank.
Julia en Adriaan gingen allebei naar een verschillende bank.

Frank ging naar de bekladde rechtbank en Anne ook.
Frank en Anne gingen allebei naar dezelfde rechtbank.
Frank en Anne gingen allebei naar een verschillende rechtbank.

Linda ging naar het smalle bos en Els ook.
Linda en Els gingen allebei naar hetzelfde bos.
Linda en Els gingen allebei naar een verschillend bos.

Siri ging naar de gezellige snackbar en Pim ook.
Siri en Pim gingen allebei naar dezelfde snackbar.
Siri en Pim gingen allebei naar een verschillende snackbar.

Rob ging naar de vieze sauna en Kim ook.
Rob en Kim gingen allebei naar dezelfde sauna.
Rob en Kim gingen allebei naar een verschillende sauna.

Esther ging naar de hippe tandarts en David ook.
Esther en David gingen allebei naar dezelfde tandarts.
Esther en David gingen allebei naar een verschillende tandarts.

Daan ging naar de drukke supermarkt en Eefje ook.
Daan en Eefje gingen allebei naar dezelfde supermarkt.
Daan en Eefje gingen allebei naar een verschillende supermarkt.

Sandra ging naar de populaire sportschool en Edwin ook.
Sandra en Edwin gingen allebei naar dezelfde sportschool.

Sandra en Edwin gingen allebei naar een verschillende sportschool.

Rianne ging naar de oude fietsenmaker en Lotte ook.
Rianne en Lotte gingen allebei naar dezelfde fietsenmaker.
Rianne en Lotte gingen allebei naar een verschillende fietsenmaker.

Hettie ging naar het grote zwembad en Gerard ook.
Hettie en Gerard gingen allebei naar hetzelfde zwembad.
Hettie en Gerard gingen allebei naar een verschillend zwembad.

Joep ging naar de kleine universiteit en Willemijn ook.
Joep en Willemijn gingen allebei naar dezelfde universiteit.
Joep en Willemijn gingen allebei naar een verschillende universiteit.

Leo ging naar de stoffige apotheek en Tom ook.
Leo en Tom gingen allebei naar dezelfde apotheek.
Leo en Tom gingen allebei naar een verschillende apotheek.

Michiel ging naar de mooie bibliotheek en Evelien ook.
Michiel en Evelien gingen allebei naar dezelfde bibliotheek.
Michiel en Evelien gingen allebei naar een verschillende bibliotheek.

Jan ging naar het nieuwe ziekenhuis en Marie ook.
Jan en Marie gingen allebei naar hetzelfde ziekenhuis.
Jan en Marie gingen allebei naar een verschillend ziekenhuis.

Dirk ging naar het rustige vliegveld en Magda ook.
Dirk en Magda gingen allebei naar hetzelfde vliegveld.
Dirk en Magda gingen allebei naar een verschillend vliegveld.

Lies ging naar de volle bioscoop en Sophie ook.
Lies en Sophie gingen allebei naar dezelfde bioscoop.
Lies en Sophie gingen allebei naar een verschillende bioscoop.

Bart ging naar het uitgestrekte strand en Elise ook.
Bart en Elise gingen allebei naar hetzelfde strand.
Bart en Elise gingen allebei naar een verschillend strand.

Modified regular definites

Stan ging naar het grote landgoed en Joran ook.
Stan en Joran gingen allebei naar hetzelfde landgoed.
Stan en Joran gingen allebei naar een verschillend landgoed.

Femke ging naar het drukke concert en Inge ook.
Femke en Inge gingen allebei naar hetzelfde concert.
Femke en Inge gingen allebei naar een verschillend concert.

Loes ging naar het hippe restaurant en Erik ook.
Loes en Erik gingen allebei naar hetzelfde restaurant.
Loes en Erik gingen allebei naar een verschillend restaurant.

Robert ging naar het sjeke hotel en Liesbeth ook.
Robert en Liesbeth gingen allebei naar hetzelfde hotel.
Robert en Liesbeth gingen allebei naar een verschillend hotel.

Vincent ging naar het rustige café en Henk ook.
Vincent en Henk gingen allebei naar hetzelfde café.
Vincent en Henk gingen allebei naar een verschillend café.

Hans ging naar het volle museum en Bea ook.
Hans en Bea gingen allebei naar hetzelfde museum.
Hans en Bea gingen allebei naar een verschillend museum.

Luuk ging naar het mooie kasteel en Jaap ook.
Luuk en Jaap gingen allebei naar hetzelfde kasteel.
Luuk en Jaap gingen allebei naar een verschillend kasteel.

Ruud ging naar de kleine showroom en Imke ook.
Ruud en Imke gingen allebei naar dezelfde showroom.
Ruud en Imke gingen allebei naar een verschillende showroom.

Joost ging naar het smalle voetbalveld en Maaïke ook.
Joost en Maaïke gingen allebei naar hetzelfde voetbalveld.
Joost en Maaïke gingen allebei naar een verschillend voetbalveld.

Floor ging naar de populaire bowlingbaan en Sam ook.
Floor en Sam gingen allebei naar dezelfde bowlingbaan.
Floor en Sam gingen allebei naar een verschillende bowlingbaan.

Laura ging naar de vieze school en Ruben ook.
Laura en Ruben gingen allebei naar dezelfde school.
Laura en Ruben gingen allebei naar een verschillende school.

Harrie ging naar de stoffige boerderij en Ben ook.
Harrie en Ben gingen allebei naar dezelfde boerderij.
Harrie en Ben gingen allebei naar een verschillende boerderij.

John ging naar de rommelige fabriek en Marleen ook.
John en Marleen gingen allebei naar dezelfde fabriek.
John en Marleen gingen allebei naar een verschillende fabriek.

Monique ging naar het uitgestrekte meer en Roel ook.

Monique en Roel gingen allebei naar hetzelfde meer.
Monique en Roel gingen allebei naar een verschillend meer.

Renske ging naar het oude klooster en Olaf ook.
Renske en Olaf gingen allebei naar hetzelfde klooster.
Renske en Olaf gingen allebei naar een verschillend klooster.

Anne-Marie ging naar het bekladde monument en Sebastiaan ook.
Anne-Marie en Sebastiaan gingen allebei naar hetzelfde monument.
Anne-Marie en Sebastiaan gingen allebei naar een verschillend monument.

Hanna ging naar de nieuwe studio en Noortje ook.
Hanna en Noortje gingen allebei naar dezelfde studio.
Hanna en Noortje gingen allebei naar een verschillende studio.

Roos ging naar het gezellige bejaardentehuis en Jeroen ook.
Roos en Jeroen gingen allebei naar hetzelfde bejaardentehuis.
Roos en Jeroen gingen allebei naar een verschillend bejaardentehuis.

Fillers

Marja ging naar het station in Eindhoven en Saskia ging naar het station in Den Bosch.
Marja en Saskia gingen allebei naar hetzelfde station.
Marja en Saskia gingen allebei naar een verschillend station.

Julia ging naar de bank in Londen en Adriaan ging naar de bank in New York.
Julia en Adriaan gingen allebei naar dezelfde bank.
Julia en Adriaan gingen allebei naar een verschillende bank.

Frank ging naar de Nederlandse rechtbank en Anne ging naar de Britse rechtbank.
Frank en Anne gingen allebei naar dezelfde rechtbank.
Frank en Anne gingen allebei naar een verschillende rechtbank

Linda ging naar het bos in Duitsland en Els ging naar het bos in Tsjechië.
Linda en Els gingen allebei naar hetzelfde bos.
Linda en Els gingen allebei naar een verschillend bos.

Siri ging naar de snackbar in het centrum en Pim ging naar de snackbar langs de snelweg.
Siri en Pim gingen allebei naar dezelfde snackbar.
Siri en Pim gingen allebei naar een verschillende snackbar.

Rob ging naar de Finse sauna en Kim ging naar de Turkse sauna.
Rob en Kim gingen allebei naar dezelfde sauna.
Rob en Kim gingen allebei naar een verschillende sauna.

Esther ging naar de pas afgestudeerde tandarts en David ging naar de tandarts die bijna met pensioen ging.

Esther en David gingen allebei naar dezelfde tandarts.
Esther en David gingen allebei naar een verschillende tandarts.

Daan ging naar de supermarkt in Overvecht en Eefje ging naar de supermarkt in Lombok.
Daan en Eefje gingen allebei naar dezelfde supermarkt.
Daan en Eefje gingen allebei naar een verschillende supermarkt.

Sandra ging naar de sportschool in Lunetten en Edwin ging naar de sportschool in Zuilen.
Sandra en Edwin gingen allebei naar dezelfde sportschool.
Sandra en Edwin gingen allebei naar een verschillende sportschool.

Rianne ging naar de gelukkig getrouwde fietsenmaker en Lotte ging naar de vrijgezelle fietsenmaker.
Rianne en Lotte gingen allebei naar dezelfde fietsenmaker.
Rianne en Lotte gingen allebei naar een verschillende fietsenmaker.

Hettie ging naar het openbare zwembad in Amsterdam en Gerard ging naar het privé-zwembad van George Clooney.
Hettie en Gerard gingen allebei naar hetzelfde zwembad.
Hettie en Gerard gingen allebei naar een verschillend zwembad.

Joep ging naar de universiteit in Eindhoven en Willemijn ging naar de universiteit in Maastricht.
Joep en Willemijn gingen allebei naar dezelfde universiteit.
Joep en Willemijn gingen allebei naar een verschillende universiteit.

Leo ging naar de apotheek in Kanaaleiland en Tom ging naar de apotheek in Lunetten.
Leo en Tom gingen allebei naar dezelfde apotheek.
Leo en Tom gingen allebei naar een verschillende apotheek.

Michiel ging naar de openbare bibliotheek en Evelien ging naar de privé-bibliotheek van de paus.
Michiel en Evelien gingen allebei naar dezelfde bibliotheek.
Michiel en Evelien gingen allebei naar een verschillende bibliotheek.

Jan ging naar het ziekenhuis in Leiden en Marie ging naar het ziekenhuis in Rotterdam.
Jan en Marie gingen allebei naar hetzelfde ziekenhuis.
Jan en Marie gingen allebei naar een verschillend ziekenhuis.

Dirk ging naar het vliegveld in New York en Magda ging naar het vliegveld in Los Angeles.
Dirk en Magda gingen allebei naar hetzelfde vliegveld.
Dirk en Magda gingen allebei naar een verschillend vliegveld.

Lies ging naar de bioscoop in Hoog Catherijne en Sophie ging naar de bioscoop bij de Drift.

Lies en Sophie gingen allebei naar dezelfde bioscoop.
Lies en Sophie gingen allebei naar een verschillende bioscoop.

Bart ging naar het strand in Katwijk en Elise ging naar het strand van Scheveningen.
Bart en Elise gingen allebei naar hetzelfde strand.
Bart en Elise gingen allebei naar een verschillend strand.

Stan ging naar het landgoed in Friesland en Joran ging naar het landgoed in Limburg.
Stan en Joran gingen allebei naar hetzelfde landgoed.
Stan en Joran gingen allebei naar een verschillend landgoed.

Femke ging naar het concert van Anouk en Inge ging naar het concert van Metallica.
Femke en Inge gingen allebei naar hetzelfde concert.
Femke en Inge gingen allebei naar een verschillend concert.

Loes ging naar het Chinese restaurant en Erik ging naar het Italiaanse restaurant.
Loes en Erik gingen allebei naar hetzelfde restaurant.
Loes en Erik gingen allebei naar een verschillend restaurant.

Robert ging naar het hotel met maar drie verdiepingen en Liesbeth ging naar het hotel met twintig verdiepingen.
Robert en Liesbeth gingen allebei naar hetzelfde hotel.
Robert en Liesbeth gingen allebei naar een verschillend hotel.

Vincent ging naar het Ierse café en Henk ging naar het Franse café.
Vincent en Henk gingen allebei naar hetzelfde café.
Vincent en Henk gingen allebei naar een verschillend café.

Hans ging naar het museum in Parijs en Bea ging naar het museum in Londen.
Hans en Bea gingen allebei naar hetzelfde museum.
Hans en Bea gingen allebei naar een verschillend museum.

Luuk ging naar het kasteel in Drenthe en Jaap ging naar het kasteel in Zuid-Holland.
Luuk en Jaap gingen allebei naar hetzelfde kasteel.
Luuk en Jaap gingen allebei naar een verschillend kasteel.

Ruud ging naar de showroom in Tilburg en Imke ging naar de showroom in Maastricht.
Ruud en Imke gingen allebei naar dezelfde showroom.
Ruud en Imke gingen allebei naar een verschillende showroom.

Joost ging naar het voetbalveld van Quick Boys Katwijks en Maaike ging naar het voetbalveld van Voetbalvereniging Harlingen.
Joost en Maaike gingen allebei naar hetzelfde voetbalveld.
Joost en Maaike gingen allebei naar een verschillend voetbalveld.

Floor ging naar de bowlingbaan in Utrecht en Sam ging naar de bowlingbaan in Rotterdam.

Floor en Sam gingen allebei naar dezelfde bowlingbaan.

Floor en Sam gingen allebei naar een verschillende bowlingbaan.

Laura ging naar de katholieke school en Ruben ging naar de islamitische school.

Laura en Ruben gingen allebei naar dezelfde school.

Laura en Ruben gingen allebei naar een verschillende school.

Harrie ging naar de boerderij op het Franse platteland en Ben ging naar de boerderij vlakbij Utrecht.

Harrie en Ben gingen allebei naar dezelfde boerderij.

Harrie en Ben gingen allebei naar een verschillende boerderij.

John ging naar de fabriek in Groningen en Marleen ging naar de fabriek in Nijmegen.

John en Marleen gingen allebei naar dezelfde fabriek.

John en Marleen gingen allebei naar een verschillende fabriek.

Monique ging naar het meer in Italië en Roel ging naar het meer in Noorwegen.

Monique en Roel gingen allebei naar hetzelfde meer.

Monique en Roel gingen allebei naar een verschillend meer.

Renske ging naar het Belgische klooster en Olaf ging naar het Duitse klooster.

Renske en Olaf gingen allebei naar hetzelfde klooster.

Renske en Olaf gingen allebei naar een verschillend klooster.

Anne-Marie ging naar het monument voor oorlogsslachtoffers en Sebastiaan ging naar het monument voor de eerste vliegreis rond de aarde.

Anne-Marie en Sebastiaan gingen allebei naar hetzelfde monument.

Anne-Marie en Sebastiaan gingen allebei naar een verschillend monument.

Hanna ging naar de studio in Hilversum en Noortje ging naar de studio in Amsterdam.

Hanna en Noortje gingen allebei naar dezelfde studio.

Hanna en Noortje gingen allebei naar een verschillende studio.

Roos ging naar het bejaardentehuis in Alkmaar en Jeroen ging naar het bejaardentehuis in Vlissingen.

Roos en Jeroen gingen allebei naar hetzelfde bejaardentehuis.

Roos en Jeroen gingen allebei naar een verschillend bejaardentehuis.

Appendix B: Items VP-ellipsis test 2

Subtyped weak definites

Julia ging naar de commerciële bank en Adriaan ook.
Julia en Adriaan gingen allebei naar dezelfde bank.
Julia en Adriaan gingen allebei naar een verschillende bank.

Frank ging naar de provinciale rechtbank en Anne ook.
Frank en Anne gingen allebei naar dezelfde rechtbank.
Frank en Anne gingen allebei naar een verschillende rechtbank.

Linda ging naar het tropische bos en Els ook.
Linda en Els gingen allebei naar hetzelfde bos.
Linda en Els gingen allebei naar een verschillend bos.

Siri ging naar de Turkse snackbar en Pim ook.
Siri en Pim gingen allebei naar dezelfde snackbar.
Siri en Pim gingen allebei naar een verschillende snackbar.

Rob ging naar de Finse sauna en Kim ook.
Rob en Kim gingen allebei naar dezelfde sauna.
Rob en Kim gingen allebei naar een verschillende sauna.

Esther ging naar de cosmetische tandarts en David ook.
Esther en David gingen allebei naar dezelfde tandarts.
Esther en David gingen allebei naar een verschillende tandarts.

Daan ging naar de aziatische supermarkt en Eefje ook.
Daan en Eefje gingen allebei naar dezelfde supermarkt.
Daan en Eefje gingen allebei naar een verschillende supermarkt.

Leo ging naar de openbare apotheek en Tom ook.
Leo en Tom gingen allebei naar dezelfde apotheek.
Leo en Tom gingen allebei naar een verschillende apotheek.

Jan ging naar het psychiatrische ziekenhuis en Marie ook.
Jan en Marie gingen allebei naar hetzelfde ziekenhuis.
Jan en Marie gingen allebei naar een verschillend ziekenhuis.

Lies ging naar de alternatieve bioscoop en Sophie ook.
Lies en Sophie gingen allebei naar dezelfde bioscoop.
Lies en Sophie gingen allebei naar een verschillende bioscoop.

Roos ging naar het protestantse bejaardentehuis en Jeroen ook.
Roos en Jeroen gingen allebei naar hetzelfde bejaardentehuis.

Roos en Jeroen gingen allebei naar een verschillend bejaardentehuis.

Hans ging naar het archeologische museum en Bea ook.
Hans en Bea gingen allebei naar hetzelfde museum.
Hans en Bea gingen allebei naar een verschillend museum.

Subtyped regular definites

Stan ging naar het 18de-eeuwse landgoed en Joran ook.
Stan en Joran gingen allebei naar hetzelfde landgoed.
Stan en Joran gingen allebei naar een verschillend landgoed.

Femke ging naar het klassieke concert en Inge ook.
Femke en Inge gingen allebei naar hetzelfde concert.
Femke en Inge gingen allebei naar een verschillend concert.

Robert ging naar het all-inclusive hotel en Liesbeth ook.
Robert en Liesbeth gingen allebei naar hetzelfde hotel.
Robert en Liesbeth gingen allebei naar een verschillend hotel.

Luuk ging naar het middeleeuwse kasteel en Jaap ook.
Luuk en Jaap gingen allebei naar hetzelfde kasteel.
Luuk en Jaap gingen allebei naar een verschillend kasteel.

Ruud ging naar de Italiaanse showroom en Imke ook.
Ruud en Imke gingen allebei naar dezelfde showroom.
Ruud en Imke gingen allebei naar een verschillende showroom.

Joost ging naar het gemeentelijke voetbalveld en Maaïke ook.
Joost en Maaïke gingen allebei naar hetzelfde voetbalveld.
Joost en Maaïke gingen allebei naar een verschillend voetbalveld.

Floor ging naar de Amerikaanse bowlingbaan en Sam ook.
Floor en Sam gingen allebei naar dezelfde bowlingbaan.
Floor en Sam gingen allebei naar een verschillende bowlingbaan.

Laura ging naar de katholieke school en Ruben ook.
Laura en Ruben gingen allebei naar dezelfde school.
Laura en Ruben gingen allebei naar een verschillende school.

Harrie ging naar de biologische boerderij en Ben ook.
Harrie en Ben gingen allebei naar dezelfde boerderij.
Harrie en Ben gingen allebei naar een verschillende boerderij.

Monique ging naar het kunstmatige meer en Roel ook.
Monique en Roel gingen allebei naar hetzelfde meer.
Monique en Roel gingen allebei naar een verschillend meer.

Renske ging naar het Benedictijner klooster en Olaf ook.
Renske en Olaf gingen allebei naar hetzelfde klooster.
Renske en Olaf gingen allebei naar een verschillend klooster.

Anne-Marie ging naar het 17de-eeuwse monument en Sebastiaan ook.
Anne-Marie en Sebastiaan gingen allebei naar hetzelfde monument.
Anne-Marie en Sebastiaan gingen allebei naar een verschillend monument.

Fillers

Marja ging naar het station in Eindhoven en Saskia ging naar het station in Den Bosch.
Marja en Saskia gingen allebei naar hetzelfde station.
Marja en Saskia gingen allebei naar een verschillend station.

Sandra ging naar de sportschool in Lunetten en Edwin ging naar de sportschool in Zuilen.
Sandra en Edwin gingen allebei naar dezelfde sportschool.
Sandra en Edwin gingen allebei naar een verschillende sportschool.

Rianne ging naar de gelukkig getrouwde fietsenmaker en Lotte ging naar de vrijgezelle fietsenmaker.
Rianne en Lotte gingen allebei naar dezelfde fietsenmaker.
Rianne en Lotte gingen allebei naar een verschillende fietsenmaker.

Hettie ging naar het openbare zwembad in Amsterdam en Gerard ging naar het privé-zwembad van George Clooney.
Hettie en Gerard gingen allebei naar hetzelfde zwembad.
Hettie en Gerard gingen allebei naar een verschillend zwembad.

Joep ging naar de universiteit in Eindhoven en Willemijn ging naar de universiteit in Maastricht.
Joep en Willemijn gingen allebei naar dezelfde universiteit.
Joep en Willemijn gingen allebei naar een verschillende universiteit.

Michiel ging naar de openbare bibliotheek en Evelien ging naar de privé-bibliotheek van de paus.
Michiel en Evelien gingen allebei naar dezelfde bibliotheek.
Michiel en Evelien allebei allebei naar een verschillende bibliotheek.

Dirk ging naar het vliegveld in New York en Magda ging naar het vliegveld in Los Angeles.
Dirk en Magda gingen allebei naar hetzelfde vliegveld.
Dirk en Magda gingen allebei naar een verschillend vliegveld.

Bart ging naar het strand in Katwijk en Elise ging naar het strand van Scheveningen.
Bart en Elise gingen allebei naar hetzelfde strand.
Bart en Elise gingen allebei naar een verschillend strand.

Loes ging naar het Chinese restaurant en Erik ging naar het Italiaanse restaurant.
Loes en Erik gingen allebei naar hetzelfde restaurant.
Loes en Erik gingen allebei naar een verschillend restaurant.

Vincent ging naar het Ierse café en Henk ging naar het Franse café.
Vincent en Henk gingen allebei naar hetzelfde café.
Vincent en Henk gingen allebei naar een verschillend café.

John ging naar de fabriek in Groningen en Marleen ging naar de fabriek in Nijmegen.
John en Marleen gingen allebei naar dezelfde fabriek.
John en Marleen gingen allebei naar een verschillende fabriek.

Hanna ging naar de studio in Hilversum en Noortje ging naar de fabriek in Amsterdam.
Hanna en Noortje gingen allebei naar dezelfde studio.
Hanna en Noortje gingen allebei naar een verschillende studio.

Ria ging naar het grote park en Rik ook.
Ria en Rik gingen allebei naar hetzelfde park.
Ria en Rik gingen allebei naar een verschillend park.

Marieke ging naar de grijze flat en Martin ook.
Marieke en Martin gingen allebei naar dezelfde flat.
Marieke en Martin gingen allebei naar een verschillende flat.

Anja ging naar het indrukwekkende paleis en Bert ook.
Anja en Bert gingen allebei naar hetzelfde paleis.
Anja en Bert gingen allebei naar een verschillend paleis.

Ellen ging naar het theater en Emiel ook.
Ellen en Emiel gingen allebei naar hetzelfde theater.
Ellen en Emiel gingen allebei naar een verschillend theater.

Petra ging naar de oude sluis en Frans ook.
Petra en Frans gingen allebei naar dezelfde sluis.
Petra en Frans gingen allebei naar een verschillende sluis.

Jenny ging naar de drukke haven en Egbert ook.
Jenny en Egbert gingen allebei naar dezelfde haven.
Jenny en Egber gingen allebei naar een verschillende haven.

Ton ging naar de vriendelijke bakker en Lisa ook.
Ton en Lisa gingen allebei naar dezelfde bakker.
Ton en Lisa gingen allebei naar een verschillende bakker.

Niels ging naar het nieuwe appartementencomplex en Klaartje ook.

Niels en Klaartje gingen allebei naar hetzelfde appartementencomplex.
Niels en Klaartje gingen allebei naar een verschillend appartementencomplex.

Olivier ging naar de beroemde brug en Mirjam ook.
Olivier en Mirjam gingen allebei naar dezelfde brug.
Olivier en Mirjam gingen allebei naar een verschillende brug.
Henk ging naar de hippe cocktailbar en Marlies ook.
Henk en Marlies gingen allebei naar dezelfde cocktailbar.
Henk en Marlies gingen allebei naar een verschillende cocktailbar.

Jonathan ging naar het kleine tankstation en Nienke ook.
Jonathan en Nienke gingen allebei naar hetzelfde tankstation.
Jonathan en Nienke gingen allebei naar een verschillend tankstation.

Tim ging naar de verbouwde drukkerij en Milou ook.
Tim en Milou gingen allebei naar dezelfde drukkerij.
Tim en Milou gingen allebei naar een verschillende drukkerij.

Appendix C: Items Pretest 1

- Een typische reden voor een postbode om ergens heen te gaan is...?
- Een typische reden voor een bloemist om ergens heen te gaan is...?
- Een typische reden voor een ramenlapper om ergens heen te gaan is...?
- Een typische reden voor een schoonmaker om ergens heen te gaan is...?
- Een typische reden voor een pizzabezorger om ergens heen te gaan is...?
- Een typische reden voor een brandweerman om ergens heen te gaan is...?
- Een typische reden voor een deurwaarder om ergens heen te gaan is...?
- Een typische reden voor een koerier om ergens heen te gaan is...?
- Een typische reden voor een taxichauffeur om ergens heen te gaan is...?
- Een typische reden voor een vertegenwoordiger om ergens heen te gaan is...?
- Een typische reden voor een wegenwacht om ergens heen te gaan is...?
- Een typische reden voor een journalist om ergens heen te gaan is...?
- Een typische reden voor een krantenbezorger om ergens heen te gaan is...?

Appendix D: Items Pretest 2

Weak definite nouns

station
bank
rechtbank
bos
snackbar
sauna
tandarts
supermarkt
sportschool
fietsenmaker
zwembad
universiteit
apotheek
bibliotheek
ziekenhuis
vliegveld
bioscoop
strand

Regular definite nouns

landgoed
concert
restaurant
hotel
café
museum
kasteel
showroom
voetbalveld
bowlingbaan
school
boerderij
fabriek
meer
klooster
monument
studio
bejaardentehuis

Appendix E: Items Enriched meanings experiment

Non-modified weak definites

De getatoëerde pizzabezorger ging naar de bank.
De kleine bloemist ging naar de rechtbank.
De knappe journalist ging naar het bos.
De blonde brandweerman ging naar de snackbar.
De bebaarde krantenbezorger ging naar de sauna.
De gespierde schoonmaker ging naar de tandarts.
De dikke ramenlapper ging naar de supermarkt.
De magere deurwaarder ging naar de fietsenmaker.
De kale taxichauffeur ging naar de apotheek.
De lange postbode ging naar het ziekenhuis.
De jonge wegwacht ging naar de bioscoop.
De puistige koerier ging naar het museum.

Non-modified regular definities

De magere deurwaarder ging naar het landgoed.
De kale taxichauffeur ging naar het concert.
De lange postbode ging naar het restaurant.
De dikke ramenlapper ging naar het hotel.
De bebaarde krantenbezorger ging naar het kasteel.
De kleine bloemist ging naar de showroom.
De knappe journalist ging naar het voetbalveld.
De blonde brandweerman ging naar de bowlingbaan.
De getatoëerde pizzabezorger ging naar de boerderij.
De jonge wegwacht ging naar het meer.
De gespierde schoonmaker ging naar het klooster.
De puistige koerier ging naar het monument.

Modified weak definites

De getatoëerde pizzabezorger ging naar de verbouwde bank.
De kleine bloemist ging naar de grijze rechtbank.
De knappe journalist ging naar het smalle bos.
De blonde brandweerman ging naar de witte snackbar.
De bebaarde krantenbezorger ging naar de rustige sauna.
De gespierde schoonmaker ging naar de moderne tandarts.
De dikke ramenlapper ging naar de grote supermarkt.
De magere deurwaarder ging naar de oude fietsenmaker.
De kale taxichauffeur ging naar de drukke apotheek.
De lange postbode ging naar het nieuwe ziekenhuis.
De jonge wegwacht ging naar de kleine bioscoop.

Modified regular definites

De magere deurwaarder ging naar het oude landgoed.

De kale taxichauffeur ging naar het drukke concert.
De lange postbode ging naar het nieuwe restaurant.
De dikke ramenlapper ging naar het grote hotel.
De bebaarde krantenbezorger ging naar het rustige kasteel.
De kleine bloemist ging naar de grijze showroom.
De knappe journalist ging naar het smalle voetbalveld.
De blonde brandweerman ging naar de witte bowlingbaan.
De getatoëerde pizzabezorger ging naar de verbouwde boerderij.
De jonge wegenwacht ging naar het kleine meer.
De gespierde schoonmaker ging naar het moderne klooster.
De puistige koerier ging naar het vierkante monument.

Fillers

Hans rende de lichte kamer uit.
Michiel reed naar het gebouw.
De zwetende vrouw fietste naar de crèche.
Het meisje nam de trein naar Parijs.
De hockeyer liep naar de dug-out.
Jan sprintte naar de vrije parkeerplaats.
De loodgieter reed naar het huis.
De zenuwachtige violist kwam het podium op.
Lotte ging naar de Tweede Kamer.
De clown liep naar de tent.
De vastberaden judoka stapte de mat op.
De acteur sprong op de aangelegde boot.