Chapter Three: Theoretical Background

1   Introduction

This thesis is primarily about D-determiners:[1] their universal function and their language-specific properties. The main claim of this thesis is that D-determiners always introduce domain restriction over their NP, regardless of what other properties they may have. Their function is to constrain the set introduced by the NP to a set of contextually salient individuals. However, they may have additional properties. For example, some D-determiners assert the uniqueness of their referent. D-determiners can also encode deictic information, such as proximity. Deictic information is crucially distinct from domain restriction: deixis provides information about the location of referents, and domain restriction includes only contextually salient individuals, regardless of their physical location. The deictic information interacts with the domain restriction. Both deixis and domain restriction narrow down the domain, but in different ways.

In §2, I discuss the status of presuppositions and conversational implicatures. This is important background which is necessary to understand the difference between English and Skwxwú7mesh determiners.

In §3, I provide the background on the notion of definiteness. I will discuss two opposing theories of definiteness: familiarity (anaphoricity) and uniqueness. This is also important background information for understanding the difference between Skwxwú7mesh and English determiners.

In §4, I discuss domain restriction and its place in the semantics of nominals. I provide evidence that domain restriction must be introduced in the functional domain of a DP (cf. von Fintel 1994) and not by a nominal (contra Stanley 2002, Stanley and Szabó 2000). This background is necessary to understand in which ways English and Skxwxú7mesh determiners behave similarly.

In §5, I provide the analysis of the English D-determiner *the*; this is in preparation for the next chapter, which will provide a different analysis for Skwxwú7mesh D-determiners. I argue

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[1] Recall that the term D-determiners does not include demonstratives, numerals or quantifiers.

that domain restriction and uniqueness interact: in a language where D-determiners assert uniqueness, the domain restriction will force the DP to be familiar; in a language where sentences containing D-determiners only carry an implicature of uniqueness, the domain restriction will not force familiarity.

§6 concludes the chapter.

2 Presuppositions vs. implicatures

The available interpretations for any given DP are determined in part by presuppositions or implicatures. Here I provide an overview of presuppositionality and implicatures.

2.1 Presuppositions

Presuppositions are pragmatic inferences, distinct from entailments, which can be drawn from the use of sentences. These inferences are tied to particular constructions or lexical items (Levinson 1983). For example, *manage to X* presupposes that the agent attempted to X; (1)a presupposes (1)b.

(1) a. Davor **managed** to get a job.
  b. Davor tried to get a job.

Presuppositions are taken for granted, rather than entailed. One test for presupposition involves the survival of the presupposition under negation. Entailments, under negation, can be altered; presuppositions usually "survive".[2] (1)a entails that Davor got a job (2)b, but (2)a does not. However, both (1)a and (2)a presuppose that Davor *tried* to get a job (i.e. (1)b).

(2) a. Davor didn't **manage** to get a job.
  b. Davor got a job.

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[2] Sometimes these presuppositions do not survive.
  (i) Davor didn't **manage** to get a job because he wasn't even trying.
I do not discuss these cases in this thesis.

In §3, I discuss more cases of presupposition involving D-determiners. See Frege (1997[1892]), Strawson (1998 [1950]), Stalnaker (1973, 1974), Karttunen (1974), Levinson (1983) among many others for more discussion.

2.2 Conversational implicatures

Conversational implicatures (commonly referred to as implicatures) are pragmatic inferences that are not tied to any particular construction or lexical item (Levinson 1983).[3] Instead, they are drawn from the uses of sentences, on the assumption that speakers observe certain rational principles governing conversation (Grice 1975). Grice specifies four conversational maxims that speakers generally obey to create effective and cooperative communication.

(3)   a.   The maxim of Quality
           try to make your contribution one that is true, specifically:
           (i)   do not say what you believe to be false
           (ii)   do not say that for which you lack adequate knowledge

        b.   The maxim of Quantity
           (i)   make your contribution as informative as is required for the current purposes of the exchange
           (ii)   do not make your contribution more informative than is required

        c.   The maxim of Relevance
           make your contributions relevant

        d.   The maxim of Manner
           be perspicuous, and specifically:
           (i)   avoid obscurity
           (ii)   avoid ambiguity
           (iii)   be brief
           (iv)   be orderly   (from Levinson 1983: 101-102)

Implicatures can arise on the basis of these maxims in at least two ways. First, an implicature can arise from the assumption that the speaker observes the maxims.

(4)   a.   I went into a house.   implicates:
        b.   The house was not the speaker's house.   (by Quantity)

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[3] However, Chierchia (2001) and Fox (2004) both argue that implicatures are calculated compositionally.

(5)   a.   April likes chocolate. implicates:
           b.   The speaker believes that April likes chocolate.   (by Quality)

(6)   a.   A: I'm out of gas.
                    B: There's a gas station down the block.   implicates:
           b.   The gas station is or might be open, and has gas to sell.   (by Relevance)

Secondly, they can arise when the speaker deliberately violates a maxim. Irony is an example of this.

(7)   A: John didn't come to pick me up as promised today.
           B: What a great friend you have there.

(7) appears to be an obvious case of a violation of the Maxim of Quality (as the speaker cannot possibly believe his or her statement and be sincere about it). The hearer assumes that the speaker is cooperative, and takes the utterance to convey the exact opposite of what it literally says. Another example is given below.

(8)   War is war.

(8) is a tautology and seems to blatantly violate the Maxim of Quantity. Sentences like (8) should not communicate anything to the hearer. However, they do. The Maxim of Quantity requires that speakers be informative; if the speaker says something that appears to be uninformative, the hearer makes an assumption that the speaker is in fact saying something informative. In this case, the sentence means something like 'horrible things always happen in war, and you can't do anything about it'.

Implicatures are different from presuppositions in that they are cancelable, or do not even arise when contradicted. B's utterance in (9) does not have the implicature associated with (4)a.

(9)   A: Did you stay outside all day today as planned?
           B: No, I had to enter a house because I got so cold. In fact, my house was the closest, so I just went home.

Implicatures arise from the maxims, given a certain context. For instance, what counts as "the right amount" of information depends on the context. The context itself can prevent an implicature from arising that would otherwise arise. See Chapter 4 for some more examples of implicatures and cancellation.
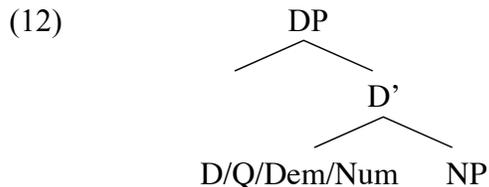
3   The DP hypothesis

In much of the traditional syntactic and semantic literature on English, what has been considered to be a determiner includes the set of all functional elements that can precede the NP within the nominal domain (excluding adjectives).

(10)   a.   I watched **the/a/one/each/every/that** swan swim across the lake.

   b.   I watched **the/two/those** swans swim across the lake.

Until Abney (1987), nominals were commonly assumed to be NPs, and to have a noun head. The noun could take a complement and had a specifier position that could host D-determiners, numerals, demonstratives and quantifiers.

(11)   NP
                    ┌─────────┴─────────┐
            D/Q/Num/Dem   N'
                              ┌───────┴───────┐
                              N   ...
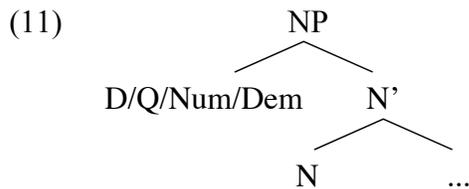
Abney (1987) argues instead that determiners are the head of nominals: NPs are the complement of the head D.

(12)   DP
                    ┌─────────┴─────────┐
                                      D'
                              ┌────────┴────────┐
                      D/Q/Dem/Num   NP

He analyzes all of the pre-NP elements (cardinal numerals, quantifiers, demonstratives, and articles) as occupying the same position: D.

(13)
```
        DP
        /\
          D'
          /\
       D     NP
    ⌈  a  ⌉
    |  some |
    {  the  }
    |  each |
    ⌊  that ⌋
```
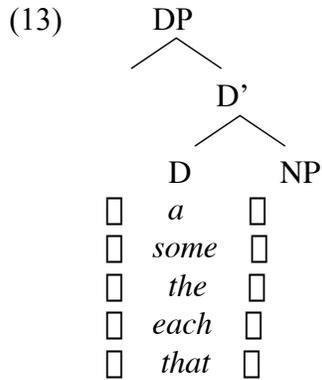
Following Abney (1987), I assume that most nominals are DPs, rather than NPs and that D-determiners are the head of a DP. Unlike Abney, I do not assume that quantifiers, demonstratives and numerals have the same syntactic status as D-determiners (see also Giusti 1993, 1994, 1995).

(14)
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         DP
         /\
           D'
           /\
        D     NP
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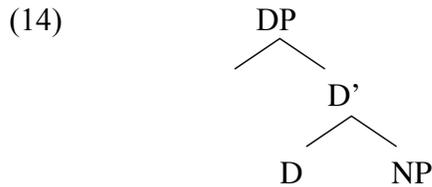
4   Background on definiteness

The behaviour of Skwxwú7mesh DPs provides us with evidence that definiteness reduces to the interaction of (i) assertion of uniqueness and (ii) domain restriction. Both must be present in the denotation to produce definiteness. I will argue below that domain restriction is always present when a D-determiner is present; all DPs (in any language) will therefore involve domain restriction. As I will show in the next chapter, Skwxwú7mesh D-determiners lack an assertion of uniqueness. Skwxwú7mesh D-determiners are used in both novel and familiar contexts, and therefore the definiteness effects seen in a language like English are missing.

This section will address the arguments for different analyses of definiteness. The analysis I adopt in this thesis will be given in §5.

4.1   Definiteness in English: uniqueness or familiarity?

While the semantic contribution of definiteness is not agreed upon, most authors seem to agree that definiteness is a primitive of the grammar: a DP is either definite or indefinite.

The debate is mainly divided into two camps. Many researchers argue that some form of uniqueness drives the definiteness effects we see (Frege 1997[1892], Russell 1998 [1905], Hawkins 1978, 1991, Abbott 1999, Kadmon 1992, among many others). Others argue that familiarity is encoded by definite DPs (Christophersen 1939, Heim 1988, Prince 1981, Prince 1992, among others). However, there are some who argue that more features are required to describe English (de Jong 1987). De Jong (1987) in particular claims that there are three categories of DPs in English: definite, indefinite, and something in between. Definiteness for her must be decomposed into two features: uniqueness and presupposition of existence.

The behaviour of D-determiners in S̲kw̲xwú7mesh sheds new light on the English debate. Once we look at a language which lacks familiarity effects, we can see more clearly that definiteness is composed of more than just uniqueness or just familiarity. I will therefore also argue that definiteness is not a primitive of the grammar. However, instead of features, I will appeal to domain restriction in §5. Domain restriction is necessary to describe the S̲kw̲xwú7mesh facts, as well as the English. I will decompose definiteness into two parts: (i) domain restriction and (ii) assertion of uniqueness. The familiarity effects will be derived from these two parts.

4.2   Evidence for uniqueness

In the philosophical literature, both of the original analyses of definiteness (Frege 1997 [1892] and Russell 1905 [1998]) viewed uniqueness as being relevant to the interpretation of any definite description. In Russell's case, the uniqueness of the referent was asserted, and in Frege's case, it was presupposed (in modern terms).

4.2.1   Assertion versus presupposition of existence

In order to understand most of the uniqueness analyses, a digression on presupposition or assertion of existence is necessary. First, presupposition or assertion of existence is *not*

equivalent to familiarity. Familiarity and presupposition of existence both involve knowledge the speaker assumes the hearer has; however, familiarity also is related to the discourse structure.

Second, the discussion on existence and uniqueness is usually conflated. In the next three sections, I try to tease these notions apart, so that the analysis given in §6 is clear.

The Russellian analysis of the sentence in (15)a is given in (15)b. Both the existence and the uniqueness of the referent are asserted.

(15)   a.   **The** king of France is wise.

       b. $\exists$x [king-of-France(x) & $\forall$y [king-of-France(y) → y=x] & wise (x)]

The sentence in (15) asserts all of (16).

(16)   a.   There is a king of France.

       b.   There is not more than one king of France.

       c.   This individual is wise.

According to Russell, the falsity of any of (16) entails that (15)a is false. On this view, both the uniqueness and the existence of the king of France are logical entailments of the sentence containing the DP 'the king of France'.

Under a Russellian analysis, (17) (the negative counterpart to (15)) should be ambiguous between two readings: one where the entire proposition is negated, and one where the unique king of France exists, but is not wise, as shown in (18).

(17)   The king of France is not wise.

(18)   a.   ¬[$\exists$x [king-of-France(x) & $\forall$y [king-of-France(y) → y=x] & wise (x)]]

       b. $\exists$x [king-of-France(x) & $\forall$y [king-of-France(y) → y=x] & ¬[wise (x)]].

However, if there is no king of France, (15) is neither true nor false, according to Strawson (1998 [1950]). That is, even though (16)a is false, (15) is not automatically judged by speakers to be false. It is instead judged to be neither true nor false (see von Fintel 2004). Strawson further claimed that the description 'the king of France' does not assert that there is a king of France, but rather *refers* to him (see also Searle 1969). Frege's analysis was similar to

Strawson's (and over half a century earlier): the existence and uniqueness of the definite is presupposed. As we saw in §2.1, presuppositions "survive" under negation.

(19) a.   The king of France is wise.
            true if there is exactly one king of France and he is wise
            false if there is exactly one king of France and he is not wise
            truth-valueless if there is not exactly one king of France

      b.   The king of France is not wise.
            true if there is exactly one king of France and he is not wise
            false if there is exactly one king of France and he is wise
            truth-valueless if there is not exactly one king of France

Both sentences in (19) can be judged true if there is a king of France. Frege also argues that the sentences are only judged true if there is *exactly one* king of France.

While existence does not appear to be asserted, it is not clear whether uniqueness is also not asserted. For example, if there is no King of France, (17) does appear to be truth-valueless. However, if there are two or more kings of France, (17) seems to have a different status: the hearer wants to force one king to be more salient or prominent than another.[4] In the next two sections I discuss analyses which presuppose or assert the uniquness of the referent.

4.2.2 *Presupposition of uniqueness*

Presupposition of uniqueness is argued to be the distinction between *a* and *the* by many researchers (Hawkins 1978, 1991; Abbott 1999; Kadmon 1992, 2001, and many others). They argue that *a* does not presuppose the existence of a unique individual matching the description of the NP, whereas *the* does.

(20) a.   **The** king visited me.

      b.   **A** king visited me.

In (20)a, there is only one king in the context; in (20)b, there can be many different kings. It would be infelicitous to use (20)b in case there is only one king. This effect can also be seen in negative contexts.

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[4] See von Fintel (2004) for more discussion of judgments of presupposition failures.

(21)   a.   I didn't visit **the** king.

        b.   I didn't visit **a** king.

In (21)a, there must be a unique king; in (21)b, there does not. In fact, there may not even be any kings.

The force of uniqueness that *the* provides is shown in example (22)a below, where the fact that there could be other alternatives is metalinguistically negated by the speaker using *the* instead of *a* (cf. Horn 1985). *A* strongly implicates the existence of alternatives in (22)b.

(22)   a.   That wasn't *a* reason I left Pittsburgh, it was ***the*** reason.

        b.   He was **a** friend; I had others.   (Abbott 1999)

However, Lyons (1999) and Hawkins (1991) both argue that *a* is not strictly non-unique. When it is used, the speaker often implicates that there may be more than one. The fact that non-uniqueness is not *required* is shown in examples like the one below.

(23)   I saw **a** man yesterday.

At the beginning of a conversation, the man is being introduced. However, there may be no other men relevant to the discourse. He may be, for the purposes of this conversation, unique. But *a* is usually used to introduce a new referent, as we will see in the next section.

An interesting case is one where there is only one possible referent. Here, the use of the indefinite article is infelicitous.

(24)   a. #   **A** sun appeared.

        b.   **The** sun appeared.

Hawkins (1991) argues that *the* presupposes a unique referent; the use of *a* only implicates that there is more than one entity satisfying the description of the NP in the context. As Heim (1991) notes, sentences like (24)a are not predicted to be bad, since *a* does not presuppose non-uniqueness, and in fact cannot. This can be seen in examples like (25) below.

(25)   **A** pathologically curious neighbor of mine broke into the attic.   (Heim 1991)

If *a* presupposed the non-uniqueness of the DP, this sentence should presuppose that I have at least two pathologically curious neighbours. However, (25) does not presuppose this. Heim argues that we are forced to make an extra assumption for why *a* is bad in situations where the referent is known to be unique, like the sun, at least on our Earth. She posits a maxim: "Make your contribution presuppose as much as possible!" If the hearer knows that the speaker has reason to presuppose the uniqueness of the referent, the speaker cannot use a form which does *not* presuppose the uniqueness. Heim formulates this need to use *the* where the presuppositions are satisfied, as in (26).

(26)   In utterance situations where the presupposition for [the ζ] ξ is already known to be satisfied, it is not permitted to utter [a ζ] ξ.   (Heim 1991)

The use of *a* implicates that the speaker is not able to use *the*, because s/he does not know if there is exactly one referent. In a case like (24)a, both speaker and hearer know that there is exactly one referent, and this knowledge conflicts with the implicature that the speaker does not have enough information to use *the*. If the speaker does not obey the maxim, the hearer will expect there to be another referent. If the hearer does not know there is exactly one referent, as in (25), the use of *a* is licit.

So far we have only discussed singular definites. The uniqueness analysis for singular definites can be extended to plural and mass definite DPs. There are a number of names associated with 'plural uniqueness': the maximal set (Sells 1985) and inclusiveness (Hawkins 1978) among them. I will refer to uniqueness and maximality (following Kadmon 1992) for the singular and plural instances for the remainder of this thesis. Uniqueness and maximality are essentially the same thing: the maximal individual is also the unique member that includes the join of all the atoms (the supremum - Link 1983), and the unique individual is also the maximal individual, which happens to be an atom.

That maximality is relevant to *the* in plural and mass noun cases can be seen below.

(27)   a.   Yesterday a bunch of children were playing in the yard. I saw **the** children again today.

        b.   A: I bought some milk today. I don't want it to go bad. Did you put away the groceries?

              B: Most of them, but I drank **the** milk.

The set of children in the second sentence of (27)a is the set of *all* of the previously mentioned children. In (27)b, speaker B must have drunk all of the milk that was purchased today.

4.2.3   Assertion of uniqueness

Not all researchers argue that uniqueness is presupposed. Instead, they claim that uniqueness is asserted. For example, Link (1983) and von Fintel and Heim (2001) both posit analyses which assert the uniqueness of the referent.

Link's (1983) definition of *the* (which is basically Russellian) is given below in (28). *The* asserts the both the uniqueness and the existence of the referent.

(28)   the $=$ $\lambda Q\, \lambda P\, \exists y[Q(y) \wedge \forall x[Q(x) \to x\Pi y] \wedge P(y)]$

His analysis captures both uniqueness and maximality: the definition of *the* allows for singular, plural, and mass nouns. He claims that the nouns themselves provide the singular, plural, or mass interpretation of the DP. The part of the formula $\forall x[Q(x) \to x\Pi y]$ is the assertion of uniqueness/maximality of the referent. The predicate Π is the *individual part relation* (or i-part); $x\Pi y$ means that x is an i-part of y. This i-part x of y cannot be null. In a singular case (as in (29)), y is an atom because singular predicates like *child* only have atoms in their denotation. x must therefore be equal to y. This is equivalent to the ι-operator, which demands that the referent be unique.

(29)   The child $=$ $\lambda P\, \exists y[child'(y) \wedge \forall x[child'(x) \to x\Pi y] \wedge P(y)]$
                     $=$ $\lambda P\, \exists y[child'(y) \wedge \forall x[child'(x) \to x = y] \wedge P(y)]$
                     $=$ $\lambda P\, \exists y[y = \iota x\ child'(x) \wedge P(y)]$

In a plural case (as in (30)), y cannot refer to an atom, because plural predicates like *children* only have sums of atoms in their denotations. Instead, y refers to the maximal individual sum of all the atoms in the predicate.

(30)   The children $=$ $\lambda P\, \exists y[^{\otimes}child'(y) \wedge \forall x[^{\otimes}child'(x) \to x\Pi y] \wedge P(y)]$
                        $=$ $\lambda P\, \exists y[y = \iota x\ [^{\otimes}child'(x) \wedge \forall z[^{*}child'(z) \to z\Pi x]\ ] \wedge P(y)]$

In the case of a mass noun (as in (31)), *y* cannot refer to an atom because mass predicates like *water* do not have atoms in their denotations.[5]

(31)   The water   = $\lambda P \exists y[water'(y) \wedge \forall x[water'(x) \rightarrow x\Pi y] \wedge P(y)]$

In all cases, the DP will refer to the supremum (the unique atom, the plural object consisting of all atoms, or the entire mass) of the set denoted by the NP.

von Fintel and Heim (2001) also appeal to an analysis which asserts the uniqueness of the referent. Their mechanism differs from Link's in that it presupposes existence, rather than asserting it. Their analysis is similar in that it can handle singular, plural, or mass nouns. In the formula in (32)a below, anything before the period is presupposed, and anything following is asserted (following the notation in Heim and Kratzer 1998).

(32)   a $[[the]] = \lambda P_{<e,t>}: \exists x_e\ P(x) = 1.\ max(P)$

        b. $max(P) :=$ the unique x such that $P(x) = 1\ \&\ \forall y[P(y) = 1 \rightarrow y \leq x]$

Max(P) is the maximal individual (i.e. the supremum) that P is true of; it is undefined if there is no unique individual. I provide their analysis here, because I build upon their idea in §5.

4.3   Evidence for familiarity

The competing theory of definiteness is that of familiarity (Christophersen 1939, Karttunen 1976, Grosz 1977, Clark and Haviland 1977, Clark and Marshall 1981, Heim 1988, Prince 1981 and 1992). Heim (1988) argues that *the* and *a* in English track discourse referents by marking a distinction between novel and familiar referents.

Under a familiarity analysis, definites can only be used when both the speaker and hearer are familiar with the referent and indefinites can only be used when the hearer is not familiar with the referent. There are two ways that a referent can be familiar to the hearer: the referent can either be discourse-old, in which case the referent has an antecedent in the discourse, or hearer-old, in which case the referent is part of the shared knowledge of the world (Prince 1992).

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[5] I am glossing over some of the finer details of how mass predicates work. See Link (1983) for more details.

(33)　A:　　I saw **a** cat lurking around my garden last night.　　(discourse-new)

　　　B:　　Where is **the** cat now?　　　　　　　　　　(discourse-old)

(34)　I saw **the** moon last night.　　　　　　　　　　(discourse-new, hearer-old)

If the DP does not have an antecedent in the discourse, and is not part of the shared knowledge of the world, the nominal must be indefinite.

(35)　#I saw **the** cat lurking around my garden last night.　　(discourse-/hearer-new)

If the referent does have an antecedent, the nominal must be definite.

(36)　A:　　I saw **a** cat lurking around my garden last night.　　(discourse-new)

　　　B:　　#Where is **a** cat now?　　　　　　　　　　(discourse-old)

However, there are exceptions to the claim that definites must always be familiar (that is, not every definite has a referent that is discourse- or hearer-old).

(37)　Watch out, **the** dog will bite you.　　　　　　　　　　　　(Heim 1988)

The sentence in (37) can be used in a context where there was no previous mention of a dog, even if the dog is not in sight, or the hearer does not know that the dog exists.

Heim argues that in this case, the hearer accommodates the presupposition of familiarity (following work by Lewis 1979). The speaker can assume that the hearer will be able to accommodate the new information provided by 'the dog'. The definition of accommodation is given below.

(38)　Accommodation:
　　　if at time t something is said that requires presupposition p to be acceptable, and if p is
　　　not presupposed just before t then - ceteris paribus - presupposition p comes into
　　　existence.　　　　　　　　　　　　　　　　　　(Lewis 1979: 172)

Accommodation obviously does not happen in all cases, or the speaker should be able to use (35) out of the blue. It *can* be accommodated if the hearer has reason to believe the speaker has a cat

(that perhaps ran away). However, if the hearer knows of no cat that could be part of the discourse context, the hearer has a right to ask "which cat?"[6]

4.4 Deriving uniqueness from familiarity

Each hypothesis captures some intuition about how *the* is used by speakers. However, it is not immediately clear how either of them captures the intuition that is central to the opposing hypothesis. The familiarity hypothesis must explain why there is an intuition that *the* is associated with uniqueness, especially in novel contexts. In (39) below, *the hammer* must refer to the only contextually relevant hammer; the only hammer within reach, for example. This sentence can be used in novel contexts.

(39)   Pass me **the** hammer.

Heim (1988) argues that this is not a systematic effect. Instead, she claims that there is only an intuition that definites are *typically* unique. She derives this intuition from her familiarity theory and Gricean constraints.

In Heim's system, definites must be familiar. A definite must be associated with a discourse referent which is already present in the representation of the discourse before it can be processed. The introduction of a discourse referent for the definite can be triggered by a DP in the previous discourse, by something salient in the context (as in (39)), or even by accommodation (see previous section). A speaker can only use a familiar DP if it is clear which discourse referent is intended to be its referent. If there are equally likely candidates, the hearer is faced with ambiguity. This is a violation of Grice's maxim of manner.

(40)   Maxim of Manner:
       1.   Avoid obscurity of expression.
      2.   **Avoid ambiguity.**
      3.   Be brief (avoid unnecessary wordiness).
      4.   Be orderly.

This can be seen in an example like (41).

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[6] This is essentially the 'wait-a-minute' test proposed by von Fintel (2004).

(41)   John has a cat and a dog. **The cat's/*the pet's** name is Felix.   (Heim 1988: 384-5)

The definite *the cat* is preceded by two indefinite nominals whose discourse referents could serve
as its antecedent. *The cat* is appropriate because only one discourse referent fits its descriptive
content. *The pet*, on the other hand, is inappropriate because there are two equally likely
antecedents, and the hearer will be unable to resolve the ambiguity.

In this system, *the cat* does not have to refer to the only cat John has, or the only salient
one in the context. It just has to be linked with the discourse referent of *a cat*. The uniqueness
effect is therefore indirect; uniqueness is not part of the meaning of *the*. Instead, the uniqueness
is forced by the requirement to avoid ambiguity when locating a discourse referent that satisifies
the familiarity requirement imposed by *the*.

Uniquely identifying descriptions, which are hearer- and discourse-new, pose a larger
problem for the familiarity hypothesis. In (42)a, the hearer need not know that Mary had bought
a car, and in (42)b, the referent does not exist yet. In neither case is the referent familiar. Yet
both of these cases are felicitous.

(42)   a.   Mary's just gone for a spin in **the** new car she bought.   (Lyons 1999)

        b.   I will build **the** first space ship to take humans to Mars.

Similar examples are given below.

(43)   a.   **The** only whale in this ocean/**the** moon/**the** prime minister

        b.   **That** whale underneath us

These are all uniquely referring expressions. In order to make these examples fit a familiarity
analysis, accommodation of the referents is necessary.[7] Familiarity alone cannot account for
these facts.

4.5   Deriving familiarity from uniqueness
On the other hand, the uniqueness hypothesis must be able to explain the intuition that *the* is
usually used when the referent is familiar, such as in (44) below.

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[7] (42)b is also a problem for analyses which presuppose or assert the existence of the referent.

(44)   Mary had **a** cat on her lap. She was petting **the** cat, and it was purring.

Kadmon (1992), who works in the Discourse Representation Theory (DRT) of Kamp (1981) and Heim (1988), argues that definites are obligatorily unique, and that they presuppose the existence of their referent. She also claims that it is possible to derive the "anaphoric nature" of definites from their uniqueness. According to her, definite DPs do not have to presuppose familiarity.

    Kadmon argues that if you assign a new variable to a definite DP (that is, you interpret it as a novel discourse referent), it necessarily violates uniqueness. This is because the variable that has been introduced is brand new and there is nothing predicated of it, so there is no way to guarantee the uniqueness of the value of the variable. She does not provide examples of how this would work; nevertheless, I adapt the idea in §6 below.

4.6   Summary

Both uniqueness and familiarity seem to be relevant to definites in English. It is difficult to describe all properties of *the* in terms of one or the other. However, in the next section, I will show that D-determiners introduce domain restriction over their NP. This is shown to be the missing link: I show that domain restriction is necessary to account for the behaviour of English *the* and that familiarity is a byproduct of the interaction between uniqueness and domain restriction.

5   Domain restriction

In this section, I provide background on domain restriction, as well as some argumentation for the position of domain restriction. Particularly, I argue that domain restriction must be provided by some functional superstructure of the NP.

5.1 Why domain restriction?

It has been argued that DPs are sensitive to the context in which they are uttered (Westerståhl 1984; von Fintel 1994, 1998, 1999; Martí 2003, among others). This is because DPs (usually) cannot refer to all individuals in the world that match the NP description. For example, in (45)a, *the men* does not (normally) refer to all men in the world. Instead, it refers to the set of contextually salient men. Similarly, in (45)b, *the man* cannot refer to the only man in the world; it can only refer to a man who is unique in the context.[8]

(45) a. The men were laughing.
      b. The man was laughing.

Westerståhl (1984) claims that *the* is itself domain restriction, and nothing more. I will not adopt this, as uniqueness also plays a role.

5.2 Quantifiers and domain restriction

According to some, quantifiers introduce unpronounced domain restriction variables ranging over properties of individuals (Westerståhl 1984; von Fintel 1994, 1998, 1999; Martí 2003).[9] von Fintel claims that strong quantifiers restrict the domain of the NP that is quantified over. In this way, strong quantifiers are context-dependent.

(46) The dinner guests had rhubarb pie for dessert. **Everyone** developed a rash.

                                                            (von Fintel 1998:2)

In the example above, *everyone* does not quantify over all the individuals in the world; in fact, it *cannot* quantify over all the individuals in the world. Instead, it is restricted to the dinner guests who had rhubarb pie for dessert.

Formally, the domain of the quantifier is restricted to those dinner guests by an unpronounced element (C) that is introduced by the quantifier. In the example below, the domain of the quantifier *every* is restricted to the freshmen in the context.

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[8] Attempts to make uniqueness more 'realistic' (see Kadmon 1992) involved contextual dependence.
[9] I claim that D-determiners are (at least in some languages) the pronunciation of this domain restriction.

(47)   **Every** freshman is from out of state.
        every [C & freshman] [out of state]
        every λx [C(x) & freshman (x)] [λx [out of state(x)]]   (von Fintel 1999:3)

This unpronounced element C is of type <e,t> and is interpreted via intersective predicate modification with the NP predicate (which is also of type <e,t>). C is the characteristic function of the set of individuals that are under discussion: in this context, this set might include all the participants in the relevant undergraduate semantics class.

5.3   Bare nouns and (the lack of) domain restriction

In general, DPs appear to be associated with domain restriction. However, there is a debate over where the domain restriction appears. Stanley and Szabó (2000) have argued that nouns are associated with domain restriction. It follows from their analysis that bare nouns are also associated with domain restriction. Here I show that this cannot be correct.

        If nouns themselves were to introduce domain restriction, we would expect bare nouns to also introduce domain restriction. However, bare nouns do not seem to show the same sensitivity to the context as other nominals do. In the following example, the bare noun *bears* does not refer back to the set introduced by *some bears*. In the generic case in (48)a, *bears* must refer to all the bears in the world. In (48)b and c, *bears* must introduce a new group of bears, which sounds strange following a discussion of the first group of bears without some notification of the change in topic.

(48)   a.   I saw some bears last night. They were wandering around Stanley Park. **Bears** like to hang around the park.

        b.   I saw some bears last night. They were wandering around Stanley Park. # I shot **bears**.

        c.   I saw some bears last night. They were wandering around Stanley Park. # **Bears** were eating garbage.

If I want to refer back to the original set of bears, I must use a D-determiner or demonstrative, as in (49).

(49)　a.　I saw some bears last night. They were wandering around Stanley Park.
　　　　　The/those bears like to hang around the park.

　　　b.　I saw some bears last night. They were wandering around Stanley Park. I shot
　　　　　the/those bears.

　　　c.　I saw some bears last night. They were wandering around Stanley Park.
　　　　　The/those bears were eating garbage.

If I want to introduce a new set of bears, I must notify the hearer by using a partitive.

(50)　a.　I saw some bears last night. They were wandering around Stanley Park. I shot
　　　　　some other bears.

　　　b.　I saw some bears last night. They were wandering around Stanley Park. **Some
　　　　　other bears** were eating garbage.

Breheny (2003) also argues on independent grounds that nouns cannot introduce domain restriction.

(51)　Every fake philosopher is from Idaho.　　　　(Kratzer 2004; ascribed to Breheny 2003)

Let the domain for the DP *every fake philosopher* be the set of Americans. The sentence in (51) may only get the interpretation in (52)a. However, if the domain restriction is associated with the noun itself, the sentence should get the interpretation in (52)b. This is an impossible interpretation.

(52)　a.　Every American fake philosopher is from Idaho.

　　　b.　Every fake American philosopher is from Idaho.

Stanley and Szabó's (2000) analysis cannot be correct. The contextual restriction must be introduced by some higher functional projection than the NP. I will argue in the next chapter that this is D, at least in Skwxwú7mesh.[10]

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[10] Kratzer (2004) argued that quantifiers could not be associated with domain restriction since languages never appear to have overt domain restriction. However in Skwxwú7mesh the determiners are overt domain restrictors.

6   Foreshadowing the analysis

In order to understand the analysis of Skwxwú7mesh D-determiners in Chapters 4 and 5, it is necessary to understand domain restriction and modes of composition. First I describe how domain restriction works in English, in order to compare to Skwxwú7mesh in the next two chapters. Secondly, I provide an overview of Chung and Ladusaw's (2004) two modes of composition, Specify and Restrict because I analyze deictic and non-deictic DPs as composing via Specify and Restrict, respectively.

6.1   Deriving familiarity

I have shown above that bare nouns cannot introduce domain restriction. In the next chapter, I will argue that only D-determiners can introduce domain restriction. I argue here that English DPs assert the uniqueness/maximality of their referent. This assertion interacts with domain restriction to create the familiarity effects we see in English.

I show in Chapters 4 and 5 that Skwxwú7mesh D-determiners are associated with domain restriction. If we assume the same for English, plus assertion of uniqueness, the familiarity effects can be accounted for. It is difficult to decide, on English-internal grounds, which analysis works best for definiteness. However, the mechanisms discussed above cannot be extended to Skwxwú7mesh and are therefore not universally valid. Familiarity effects are not found in Skwxwú7mesh, and so any analysis of D-determiners which crucially rests on familiarity will not be extendable to Skwxwú7mesh. Presupposition of existence and presupposition or assertion of uniqueness are also not found in Skwxwú7mesh, so any analysis which *only* rests on these effects will also not be extendable to Skwxwú7mesh. However, the analysis in this thesis, that all D-determiners are associated with domain restriction, *is* potentially universally valid.

I argue that the familiarity effects in English arise from domain restriction and the assertion of uniqueness. If a DP must be unique, as with English definite DPs, then the referent will be restricted to the intersection of the domain restriction and the set denoted by the NP. I argue that if a D-determiner asserts uniqueness, the DP must refer to the intersection of C and the NP.

This is similar to Kadmon's (1992) analysis of definiteness. She argues that if you use a definite DP in a novel context, the DP has to be assigned a new variable. Since this variable is

brand new, there is no way to guarantee that it is unique. Rather than appealing to a DRT representation, as Kadmon does, I argue that the definite D-determiner *the* has domain restriction in its representation;[11] this domain restriction must contain the unique element that matches the descriptive content of the NP. If it does not contain a unique element that matches the description, the DP is infelicitous. This is because the domain restriction must contain all of D_e.[12] Until the context has been narrowed, C must contain the entire set of individuals in the world. There can be no unique individual that satisfies the NP description.

I am adapting the formula given by von Fintel and Heim (2001) by adding domain restriction (C) to the representation. I do not assume that *the* presupposes existence; I only adopt the assertion of uniqueness.

(53) $[[the]] = \lambda P \max(\lambda x [P(x) \wedge C(x)])$

I do not adopt the presuppositional part of their analysis because once we adopt domain restriction, presupposition of uniqueness is redundant. C is inherently presuppositional; it is a free variable, which is linked to the context.

In what follows, I will consider a number of different cases: novel examples of singular and plural definite DPs, examples with singular and plural definite DPs where C contains one individual, and examples with singular and plural definite DPs where C contains more than one individual.

I begin with a novel use of a singular DP. Here, *the* cannot be used. I assume that the domain restriction includes the entire domain of entities (D_e), because the domain has not been narrowed by anything in the discourse.

(54)   a. #   I saw **the** bear.   (novel) $C_{the\ bear} = D_e$ [13]

        b. $[[the\ bear]] = \max(\lambda x [bear'(x) \wedge C(x)]) = \emptyset$

---

[11] Unlike Marti (2003), I do not argue that the domain restrictor occupies a separate syntactic node.

[12] I assume that it includes all of D_e, and not, say, all entities that exist right now, because it is always possible to talk about deceased entities.

    (i)   The cat liked to walk around.   (now deceased cat)

Nothing in the sentence gives us the information that the cat is no longer alive; the only way that the DP could refer to the right cat is if C included deceased entities.

[13] Westerståhl (1984) argues that domain restriction must be different for each DP; for the sake of simplicity I am providing the domain restriction for the relevant DP.

Because C contains all bears in the domain D_e, the intersection of *bear* and C contains the same individuals as *bear*. There is no maximal individual that belongs to both *bear* and C.

Plural definites are slightly different. *The* cannot be used in a novel context for plural DPs either, but the result is different.

(55) a. # I saw **the** bears.   (novel)) $C_{\text{the bears}} = D_e$

      b. $[[\text{the bears}]] = \max(\lambda x\ [^{\otimes}\text{bear'}(x) \wedge C(x)]) = D_e$

Here, the context set again contains all bears in the domain D_e; the intersection of *bears* and C is the sum of all bears. The sentence *I saw the bears* then can only be true if I saw all of the bears in the world, which is extremely unlikely. People do not normally have the opportunity to see all the bears in the world, especially at one time. Pragmatically, hearers know that the domain should be narrowed, but without any other information, they do not know how to narrow the domain.

In cases where the domain includes one bear, the DP will refer to that bear. The intersection of C and the set provided by *bear* is the bear in the domain.

(56) a.   I saw **the** bear. $C_{\text{the bear}} = \{\text{bear}_i\}$

      b. $[[\text{the bear}]] = \max(\lambda x\ [\text{bear'}(x) \wedge C(x)]) = \text{bear}_i$

If the DP is plural, but the domain only includes one bear, the DP cannot refer to that bear. This is because the predicate $^{\otimes}$*bear* only provides individual sums of members of *bear*. There are no atomic individuals in $^{\otimes}$*bear*. There are also no individual sums in C. The intersection of C and $^{\otimes}$*bear* is null.

(57) a. # I saw **the** bears. $C_{\text{the bear}} = \{\text{bear}_i\}$

      b. $[[\text{the bear}]] = \max(\lambda x\ [^{\otimes}\text{bear'}(x) \wedge C(x)]) = \emptyset$

In cases where the domain includes more than one bear, a singular DP cannot be used. This is because the predicate *bear* only includes atomic individuals. There is no maximal individual in the intersection of C and *bear*.

(58) a. # I saw **the** bear. $C_{\text{the bear}} = \{\text{bear}_i, \text{bear}_j, \text{bear}_k\}$

b.   [[the bear]] = max(λx [bear'(x) $\wedge$ C(x)]) = Ø

If the DP is plural, and the domain includes more than one bear, the DP will be felicitous. This is because the intersection of C and $^\cap$bear will be individual sums of the predicate *bear*. Max will choose the maximal individual of that set.

(59)   a.   I saw **the** bears. $C_{\text{the bears}}$ = {$bear_i$, $bear_j$, $bear_k$}

       b.   [[the bear]] = max(λx [$^\otimes$bear'(x) $\wedge$ C(x)]) = $bear_i$+$bear_j$+$bear_k$

If the hearer is given enough information to decide that the referent is unique, it is no longer necessary that the referent be familiar (cf. Hawkins 1991, Kadmon 1992).

(60)   a.   Mary went out with **the** man she met yesterday. $C_{\text{the man}}$ = {Mary}

       b.   [[the man she met yesterday]] = max(λx [man-she-met-yesterday'(x) $\wedge$ C(x)]) =
                                         man_i $C_{\text{the man}}$ = {Mary, man_i}

Hearers *can* narrow the domain C; but they can only do so if they have enough information to do so. Under most circumstances, they will not be able to tell how to narrow the domain enough for the DP refer to a unique individual. They will not normally accept a definite DP in a novel context, because they feel uncertain as to the contextual domain.

      The familiarity effects seen in English derive from domain restriction and the assertion of uniqueness. It is therefore possible that only one feature of *the* (domain restriction or uniqueness) is relevant to other languages. I address such a language in Chapter 4. I show that S̲k̲wx̲wú7mesh D-determiners are associated with domain restriction, but do not assert the uniqueness of their referent.

      Under the analysis provided here, the fact that definites are (usually) used in familiar contexts is no longer part of the lexical entry of *the*. Instead, it falls out from the fact that *the* provides domain restriction over its NP and that it asserts the uniqueness of its referent. The domain C must intersect with the set of the NP. The lexical entry for *the* must include assertion of uniqueness, since any definite DP refers to the unique individual/maximal set matching the description denoted by the NP.

6.2 Specify and Restrict

Chung and Ladusaw (2004) argue that there are two modes of composition for indefinites: Specify and Restrict. My analysis of Skwxwú7mesh DPs draws upon their analysis of M_ori indefinites.

6.2.1 Specify

The first mode of composition that I discuss is Specify. Specify is essentially another term for choice function. It type-shifts the property denoted by the NP to an individual, where the individual is the output of a choice function (Chung and Ladusaw 2004; cf. Reinhart 1997, Winter 1997, Kratzer 1998 and Matthewson 1999, among others). The function variable assigns an individual to the property supplied by the NP. The individual saturates the argument of the predicate.

(61)　a.　　A dog barked.

　　　b.　　EC (λx [bark'(x)], CF([dog'(y)])) =
　　　　　　$\exists$**f** [bark'(**f**(dog'))]

Chung and Ladusaw argue that existential closure of the choice function can apply at any point in the derivation. [14] This allows an indefinite to take any scope with respect to an operator.

(62)　a.　　A dog didn't bark.

　　　b.　　$\exists$**f** $\neg$[bark'(**f**(dog'))]　　　　(wide scope)

　　　c.　　$\neg$ $\exists$**f** [bark'(**f**(dog'))]　　　　(narrow scope)

The existential closure only applies to save the structure. The existential closure takes place at any point in the derivation (above or below negation), in order to provide closure over the variable over choice functions.

　　　I analyze the Skwxwú7mesh deictic DPs as composing with the predicate via Restrict. I do this because the deictic DPs are able to escape the scope of negation, but do not necessarily take wide scope.

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[14] As they note, for some languages, the existential closure must take place at the highest point. See, for example, Matthewson (1999) for arguments that Stát'imcets DPs are closed off at the highest point.

(63) Háw   <u>k</u>-'an   i   yél<u>x</u>-t ta   swí7<u>k</u>a.
      neg   irr-1sg.sbj   prox   find-tr det   man
      'I didn't find a man.'
      ∃f ¬ [find'(**f**(*man'))(I)]   (wide scope)
      ¬ **∃f** [find'(**f**(*man'))(I)]   (narrow scope)

Further, deictic DPs can escape islands.

(64) Í7<u>x</u>w ta   nexw7usiálh wa7   e<u>k</u>'   sesel<u>k</u>w   [u   <u>k</u>   huya7-as
      all   det   teacher   impf   fut   sad   if   irr   leave-3sbj
                ta   s7ixwelh].
                det   child
      'All the teachers will be sad if a child leaves.'
      ∃x [*child'(x) ∧ [leave'(x) → ∀y [*teacher'(y) ∧ sad'(y)]]]   (wide scope)

The DP therefore cannot be undergoing QR (see Fodor and Sag 1982 and Ruys 1992).

6.2.2   Restrict

Restrict differs from Specify in that it does not saturate the argument position of the predicate. If
an argument is composed by Restrict, it is interpreted differently. "In this mode, the property
argument is interpreted as a restrictive modifier of the predicate" (Chung and Ladusaw 2004: 6).
The domain of the predicate is thereby restricted to elements that have the property introduced
by the object.

(65) Restrict (λy λx [feed'(y)(x)], dog')
      =   λy λx [feed'(y)(x) ∧ dog'(y)]   (Chung & Ladusaw 2004: 5)

Restrict does not change the type of the predicate. The verb *feed* is of type <e,<e,t>>, and the
type of *feed* plus a Restrict DP is still <e,<e,t>>. The internal argument of the predicate must still
be saturated via some other process; they do this by appealing to existential closure or by
function application of another argument. Chung and Ladusaw also assume that once an
argument has been targeted by Restrict, it can be demoted. This has the effect of "flipping" the
order of arguments, as in (66)a. The argument does not have to be demoted, however. In (66)b,
the object argument is saturated by the DP *Fido* before the subject argument is saturated.

(66)   a.   Restrict (λy λx [feed'(y)(x)], dog')
              =   λx λy [feed'(y)(x) ∧ dog'(y)]
              FA (λx λy [feed'(y)(x) ∧ dog'(y)], John)
              =   λy [feed'(y)(John) ∧ dog'(y)]
              EC λy [feed'(y)(John) ∧ dog'(y)])
              = ∃y [feed'(y)(John) ∧ dog'(y)]
              "John dog-fed."

        b.   Restrict (λy λx [feed'(y)(x)], dog')
              =   λy λx [feed'(y)(x) ∧ dog'(y)]
              FA (λy λx [feed'(y)(x) ∧ dog'(y)], Fido)
              =   λx [feed'(Fido)(x) ∧ dog'(Fido)]
              FA (λx [feed'(Fido)(x) ∧ dog'(Fido)], John)
              =   feed'(Fido)(John)) ∧ dog'(Fido)]
              "John dog-fed Fido."

They argue that existential closure can take place at any point before the event argument is closed off (the VP level).

        This is different from function application, where the argument saturates the argument position of the predicate.

(67)   FA (λy λx [feed'(y)(x)], Fido)
        =   λx [feed'(Fido)(x)]

It is also different from Specify.

(68)   Specify (λy λx [feed'(y)(x)], CF ([dog'(y)]))
        =   λx [feed'(**f**(dog')(x)]
        FA (λx [feed'(**f**(dog')(x)], John)
        =   [feed'(**f**(dog'))(John)]
        EC ([feed'(**f**(dog'))(John)]
        =   ∃f [feed'(**f**(dog'))(John)]

        I analyze the non-deictic DPs as composing via Restrict in Chapter 5. I do this because the non-deictic DPs take obligatory narrow scope.

6.3   The Sḵwx̱wú7mesh D-determiners

In the next two chapters, I analyze deictic DPs as composing via Specify, and non-deictic DPs as composing via Restrict. In terms of composition, Sḵwx̱wú7mesh DPs behave quite differently

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from English definite DPs. However, like the English D-determiner *the*, I analyze all the D-determiners in Skwxwú7mesh as having domain restriction in their representations.

(69) a $[[the]] = \lambda P \max(\lambda x [P(x) \wedge C(x)])$

  b. $[[ta]] = \lambda P f(\lambda x [P(x) \wedge C(x)])$

  c. $[[kwi]] = \lambda P \lambda x [P(x) \wedge C(x)]$

The fact that none of the D-determiners in Skwxwú7mesh assert the uniqueness of their referent allows them to be used in both novel and familiar contexts.

7 Conclusion

In this chapter, I have provided some of the background necessary for understanding the analysis of the Skwxwú7mesh D-determiners, which will be given in the next two chapters. I have also provided an analysis of the English D-determiner *the*. This analysis shares something in common with the analysis for Skwxwú7mesh: domain restriction.