ON THE SEMANTICS OF FREE RELATIVES WITH *-EVER*

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To my brother, Andrew Tredinnick.

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ABSTRACT

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This dissertation is about three aspects of the semantics of *-ever* free relatives: their modal flavor (ignorance or indifference), their quantificational force (definite or universal), and their presuppositions.

Free relatives with *-ever* have readings available to them that plain free relatives do not. Von Fintel (2000) argues that *-ever* introduces a presupposition of variation over the denotation of the free relative (a definite expression) across possible worlds. When the modal base is epistemic, variation results in the ignorance reading; when the modal base is counterfactual, variation results in the indifference reading. I adopt this analysis of the modal dimension of *-ever* free relatives and make a further distinction between agent indifference and external indifference.

Regarding quantificational force, it has been variously argued that *-ever* free relatives are definite descriptions and that they are universals. Dayal (1997) argues that *-ever* free relatives are definites that acquire the properties of universals when they appear in generic contexts. I argue that a version of this last position is correct: Not all *-ever* free relatives can display universal behavior. While indifference free relatives can behave either like definites or like universals, ignorance free relatives cannot behave like universals and always behave like definites even in generic contexts.

I argue that the ability of indifference free relatives to behave like universals is correlated with the projection behavior of their presupposition. The counterfactual presupposition that produces indifference can be accommodated locally, giving rise to agent indifference, or it can project globally, giving rise to external indifference.

In contrast, the epistemic presupposition that produces ignorance can only project globally. Furthermore, ignorance free relatives that appear in generic contexts are not interpreted under the generic operator. These properties of ignorance free relatives are linked to the fact that ignorance free relatives are epistemic items.

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Chapter 1

Background

1.1 The semantics of free relatives with *-ever*

This chapter contains an overview of past analyses of the semantics of *-ever* free relatives. I present the background on the semantics of *-ever* necessary for the discussion in the following chapters. The discussion focuses on the contributions of von Fintel (2000) and Dayal (1997), which form the starting point for the observations in this chapter. One of the central issues concerning the semantics of *-ever* free relatives has been the question of quantificational force: Are *-ever* free relatives definite descriptions or universally quantified expressions? Dayal takes up this question in detail, arguing that they are definite descriptions that under certain circumstances acquire the behavior of universals, while von Fintel provides the analysis of the modal dimension of *-ever* free relatives. The main focus of this chapter is on separating modal flavor from quantificational force in the interpretation of *-ever* free relatives.

1.1.1 Modal flavor

Free relatives with *-ever* have readings that are not available to their plain free relative counterparts. The ignorance/indifference dichotomy in (1)-(2) is described by von Fintel. The sentence in (1) has an "ignorance" reading: The speaker doesn't know what Arlo is cooking. The sentence in (2), on the other hand, has an "indifference" reading: Bill didn't care what he grabbed.

(1) I can tell there's a lot of garlic in whatever Arlo is cooking over there.

(2) Bill needed a paperweight, so he grabbed whatever was on the desk.

A single free relative with *-ever* potentially has either one of the two readings, and the sentences in (1) and (2) are designed to bring out one or the other. The two readings do not cooccur. For instance, the continuations in (3)-(4) show that only indifference free relatives are compatible with speaker providing the identity of the thing in question.

(3) There's a lot of garlic in whatever Arlo is cooking... *namely, tomato soup.

(4) Bill grabbed whatever was on the desk... namely, a stapler.

The ignorance reading increases in salience when the free relative contains an *it*-cleft.[1] In (5) and (6), the free relative *wh*-phrase is coindexed with an empty element in the focus position of the cleft. Even (6), which is based on our core indifference example, is difficult to construe as anything other than an ignorance free relative.

(5) There's a lot of garlic in whatever$_i$ it is e_i that Arlo is cooking.

[1] This device is used by Elliott (1971), Jacobson (1988/1995), and von Fintel (2000), among others. According to Beaver (2001:11), "an it-cleft 'it was x that y'ed' is argued to presuppose that something 'y'ed', or perhaps that there is a unique such entity". While *it*-clefting encourages an ignorance reading, it does not entirely rule out an indifference reading.

(6) Bill grabbed whatever it$_i$ was e_i that was on the desk.

Contrast the *-ever* free relatives in (1) and (2) with their plain free relative counterparts in (7) and (8).

(7) There's a lot of garlic in what Arlo is cooking.

(8) Bill grabbed what was on the desk.

Neither of the sentences in (7)-(8) implies ignorance or indifference. Instead, they are straightforwardly paraphrased with definite descriptions: "There's a lot of garlic in the thing Arlo is cooking" and "Bill grabbed the thing that was on the desk". Dayal uses the *namely* test to highlight the difference between the ignorance free relative in (9) and the plain free relative in (10). (9) is compatible with speaker providing the identity of the thing in question, but (10) is not:

(9) *Whatever Mary is cooking, namely ratatouille, uses onions.

(10) What Mary is cooking, namely ratatouille, uses onions.

The difference between indifference free relatives and plain free relatives can be highlighted by providing a context in which we have taken pains to indicate that Bill cares about the identity of the thing he grabs, as in (11)-(12). This context helps to rule out indifference, and as a result (11) is good only under an ignorance reading of the free relative.

(11) #Bill needed a paperweight with certain characteristics. So, after much careful thought, he grabbed whatever was on the desk.

(12) Bill needed a paperweight with certain characteristics. So, after much careful thought, he grabbed what was on the desk.

Von Fintel proposes that *-ever* introduces a presupposition of variation over the denotation of the free relative (a definite expression) across possible worlds. This variation is construed as either ignorance or indifference, depending on the modal base. An epistemic modal base yields ignorance, and a counterfactual modal base yields indifference. This analysis accounts for just one of the factors contributing to the multiple readings available to sentences with *-ever*. In addition to modal flavor, *-ever* free relatives also vary with respect to their quantificational force.

1.1.2 Quantificational force

It has long been argued that free relatives have the semantics of definite descriptions, not universals, regardless of whether *-ever* is present (Jespersen 1927, Jacobson 1988/1995, Rullmann 1995, Grosu 1996, Grosu & Landman 1998). In particular, plain free relatives pass a range of tests that are widely considered to be diagnostic of definiteness. But with *-ever* free relatives the case is not so clear. Free relatives with *-ever* often behave like universally quantified expressions. Notice that it is possible to force an *-ever* free relative to have a reading that can be (loosely) paraphrased with *every*. For example, (13) and (14) present scenarios that facilitate such readings. In the case of (13), suppose I know that Arlo always cooks with garlic and that none of the dishes he is preparing will suit you because you're allergic to garlic. I might caution you by uttering (13).

(13) There's probably a lot of garlic in whatever dish Arlo is preparing... so you'd better say something to him if you want to eat tonight. (= every dish Arlo is preparing)

In the case of (14), suppose that Bill is a thief or was simply overzealous and so grabbed everything in sight. One might add "he left nothing at all".

(14) Bill grabbed whatever was on the desk. . . he left nothing at all. (= everything on the desk)

In addition to these observations about paraphrase, note that *-ever* free relatives can also behave like universals according to certain syntactic tests such as the licensing of NPIs and modification by *almost*. The *-ever* free relatives in (15)-(16) license NPIs.

(15) There's a lot of garlic in whatever Arlo has ever cooked.

(16) Bill grabbed whatever object was anywhere near him/the slightest bit handy.

Universals ordinarily allow modification by adverbs such as *almost*, while definites do not (for example, *I ate almost every cookie on the plate* but **I ate almost the cookies on the plate*). Free relatives with *-ever* accept *almost* modifiers such as *almost, just about*, and *practically*.

(17) There's a lot of garlic in just about whatever Arlo is cooking.

(18) Bill grabbed practically whatever was on the desk.

This phenomenon requires an explanation in light of the claim that free relatives are definite descriptions.

The interaction of modal flavor and quantificational force results in a number of readings for free relatives. There are several factors that must be taken into account when interpreting a free relative. Is the free relative plain or suffixed with *-ever*? If suffixed, is it an ignorance free relative or an indifference free relative? Finally, does the free relative behave like a definite or a universal?

In this chapter, I first survey approaches to the semantics of *-ever* that discuss indifference and ignorance in one way or another. I then turn to analyses that treat

free relatives as universal expressions, or that focus on explaining the universal behavior of free relatives. In the course of this discussion, we will see that whether a free relative conveys indifference or ignorance must be seen as a separate question from whether it behaves like a definite or a universal. Although modal flavor and quantificational force are easily conflated, the two phenomena are distinct and require different explanations.

1.1.3 Presupposition and accommodation

The sentences in (19) and (20) have presuppositions. Sentence (19) presupposes speaker ignorance, while (20) is constructed in such a way that the agent Zack is construed as indifferent.

(19) Unless there's a lot of garlic in whatever Arlo is cooking, I'll eat out tonight.
Presupposition of ignorance: Speaker doesn't know the identity of the thing Arlo is cooking.

(20) Unless Zack simply voted for whoever was at the top of the ballot, he must have spent at least 5 minutes in the voting booth.
Presupposition of indifference: Zack didn't care who was at the top of the ballot.

Von Fintel observes the following contrast. In (19), speaker ignorance projects globally (my eating out tonight is not dependent on whether I know the identity of what it is that Arlo is cooking, only on how much garlic is in it):

(21) "I don't know what Arlo is cooking, but unless there's a lot of garlic in it, I'll eat out tonight". = (19)

In (20), however, the presupposition of indifference is interpreted inside the *unless*-clause:

(22) "Unless Zack indifferently voted for the person at the top of the ballot, he must have spent at least 5 minutes in the voting booth". = (20)

In Chapter 3, I argue that indifference free relatives are interpreted as agent indifference free relatives when the presupposition of indifference is locally accommodated and as external indifference free relatives when the presupposition of indifference projects globally. In Chapter 4, I argue that the presupposition of ignorance projects globally because it is epistemic.

1.2 Ignorance and indifference

In sections 1.2.1 and 1.2.2, I discuss von Fintel's analysis of *-ever* free relatives, which is the analysis that I will adopt. The discussion leads to some open questions. In sections 1.2.3 and 1.2.4, previous analyses on which von Fintel builds are briefly examined.

1.2.1 von Fintel's (2000) semantics for *-ever*

Any analysis of the semantics of *-ever* rests on a pretheoretical analysis of its contribution to the meaning of the sentence in which it appears. Von Fintel (2000) identifies the ignorance and indifference readings in (1) and (2) and takes this as a core phenomenon upon which he bases his analysis of the morpheme *-ever*, reproduced here in (23). This is the analysis that I will adopt.

(23) *whatever* (w)(F)(P)(Q)

Presupposes: $\forall w' \in \min_w [F \cap (\lambda w'.\iota x.P(w')(x) \neq \iota x.P(w)(x))]$:

$Q(w')(\iota x.P(w')(x)) = Q(w)(\iota x.P(w)(x))$

Asserts: $Q(w)(\iota x.P(w)(x))$

In (23), *whatever* is a relation between (i) the world of evaluation $\mathbf{w}$, (ii) a modal base $\mathbf{F}$, (iii) $\mathbf{P}$, the expression formed by abstracting over *whatever* in the free relative, and (iv) $\mathbf{Q}$, the expression formed by abstracting over the entire free relative in the matrix. *Whatever* presupposes that [in all worlds $\mathbf{w}'$ differing minimally from the world of evaluation $\mathbf{w}$ in the following respect: $\mathbf{w}'$ is in the intersection of (a) the set of worlds constituting the modal base and (b) the set of worlds $\mathbf{w}'$ in which the identity of $\mathbf{x}$ in $\mathbf{w}'$ is different from the identity of $\mathbf{x}$ in $\mathbf{w}$], [the proposition $\mathbf{Q(P(x))}$ has in $\mathbf{w}'$ whatever truth value it has in the actual world $\mathbf{w}$]. In a very condensed way of putting it, the presupposition says the following: For all $\mathbf{w}'$ in which the identity of $\mathbf{x}$ is different from what it is in $\mathbf{w}$, the proposition $\mathbf{Q(P(x))}$ has the same truth value in both $\mathbf{w}$ and $\mathbf{w}'$.

The operator $\mathbf{min}$ is a conditional operator that ensures that the domain is non-empty and that the worlds quantified over are minimally different from one another.[2] In other words, *whatever* presupposes that there is variation in the modal base $\mathbf{F}$ with respect to the referent of $\iota\mathbf{x.P(x)}$. $\mathbf{F}$ is a set of worlds given by a modal base function from worlds to sets of propositions, where a proposition is a set of worlds. $\mathbf{F}$ is the set of worlds where all the propositions assigned to $\mathbf{w}$ by the modal base function are true.[3] This approach provides a unified semantics for *-ever*. When the modal base

[2]The expression $\min_w$ encodes $w' \leq_w w''$, which reads "w′ is at least as close to w as w″ is". Heim (1992) provides the following definition of minimally different worlds (stated in terms of maximal similarity): "A conditional *if* ϕ, ψ is true in a world w if ψ is true in all ϕ-worlds maximally similar to w. ... [A] ϕ-world maximally similar to w [is] a world in which ϕ is true and which resembles w no less than any other world where ϕ is true". Following the Limit Assumption of Lewis (1973a), this set of worlds ("all ϕ-worlds maximally similar to w") is non-empty (that is, there is an existential presupposition associated with it). A contextually supplied ordering source determines what this set of minimally different (or maximally similar) worlds is. The following ordering semantics is from Kratzer (1991): "A set of propositions A induces a partial ordering $\leq_A$ on W in the following way: For all w, w′ ∈ W, for any A ⊆ $\mathcal{P}$(W): w $\leq_A$ w′ iff {p: p ∈ A and w′ ∈ p} ⊆ {p: p ∈ A and w ∈ p}". This may be read as, "a world w is at least as close to the ideal represented by A as a world w′ iff all propositions of A which are true in w′ are true in w as well".

[3]So F = $\bigcap$(modal-base-function(w)).

is epistemic, variation results in the ignorance reading. The same variation results in the indifference reading when the modal base is counterfactual. This correspondence is summarized in the following table.

PRESUPPOSITION	MODAL BASE
ignorance	epistemic
indifference	counterfactual

The modal base is assumed to be contextually given, following the research program of Kratzer (1977, 1981, 1991). The formulation in (23) uses the independently existing semantics for epistemic and counterfactual modality to provide the type of variation necessary to interpret *-ever* on both its readings.

Finally, notice that in (23) **x** is bound by an iota operator. The claim is thus that free relatives are definites.[4] A free relative with *-ever* makes the same contribution to the assertion as its plain free relative counterpart, which always has the semantics of a definite expression. The addition of *-ever* signals that a (minimal) variation in the identity of $\iota\mathbf{x}.\mathbf{P}(\mathbf{x})$ does not affect the truth of the matrix sentence in **w**.

Let's apply the analysis in (23) to the examples in (1) and (2) (here I use situations in place of worlds). Von Fintel interprets the indifference free relative in (2) as follows:

(2) Bill needed a paperweight, so he grabbed whatever was on the desk.

(24) Assertion: λs_o **grab**(b, ιy.**on-the-desk**(y, s_o), s_o)

Indifference presupposition: $\forall s' \in \min_{s_o}$ [F $\cap$ ($\lambda s''.\iota$y.**on-the-desk**(y, s'') $\neq$ ιy.**on-the-desk**(y, s_o))]: **grab**(b, ιy.**on-the-desk**(y, s'), s') = **grab**(b, ιy.**on-the-desk**(y, s_o), s_o)

[4]The iota operator is discussed in detail at the outset of Chapter 2.

The assertion is "Bill grabs in $\mathbf{s}_0$ the thing on the desk in $\mathbf{s}_0$". The presupposition is "For each $\mathbf{s}'$, a counterfactual situation of $\mathbf{s}_0$, if something else had been on the desk in $\mathbf{s}'$, he would have grabbed that thing in $\mathbf{s}'$" or "In all of the minimally different counterfactual worlds in which a different thing is on the desk, Bill grabs what's on the desk". Or, in other words, if something else had been on the desk, he would have grabbed that. From this we are invited to infer that Bill grabbed indifferently. I discuss this inference about Bill's attitude in more detail in section 1.4.

The ignorance free relative in (1) is interpreted as follows:

(1) I can tell there's a lot of garlic in whatever Arlo is cooking over there.

(25) Assertion: λs_0 **in**(**a-lot-of-garlic**, ιx.**Arlo-is-cooking**(x, s_0), s_0)
Ignorance presupposition: $\forall s' \in \min_{s_0}$ [F $\cap$ ($\lambda s''.\iota y.$**Arlo-is-cooking**(y, s'') $\neq$ ιy.**Arlo-is-cooking**(y, s_0))]: **in**(**a-lot-of-garlic**, ιy.**Arlo-is-cooking**(y, s'), s') = **in**(**a-lot-of-garlic**, ιy.**Arlo-is-cooking**(y, s_0), s_0)

The assertion is "There's a lot of garlic in the thing Arlo is cooking". The presupposition is "For each $\mathbf{s}'$, an epistemically accessible situation of $\mathbf{s}_0$, if Arlo is cooking something else in $\mathbf{s}'$, that thing has a lot of garlic in $\mathbf{s}'$" or "In all of speaker's minimally different epistemically accessible worlds where Arlo is cooking something different, there's a lot of garlic in what he's cooking". It is difficult to provide an ordinary language paraphrase of the ignorance presupposition that directly conveys its conditional meaning. A close translation might involve something like "as far as I know" or "for all I know" ("for all I know, he is cooking soup, or sauce, or..."). In the end, what this comes down to is "I don't know what the thing is that Arlo is cooking".

Let's look at how this works for the case of ignorance. In the actual world, a proposition p is either true or false. Incomplete knowledge about the world, for

instance ignorance concerning the value of proposition p, implies the existence of certain epistemic alternatives to the actual world, namely, epistemically accessible worlds in which p is true and epistemically accessible worlds in which p is false. Suppose I know that q is true but I don't know whether p is true. Then worlds w_1 and w_2 are potentially epistemically accessible to me, but worlds w_3 and w_4 are not:

(26) $w_1 = \{q, p, \ldots\}$
$w_2 = \{q, \neg p, \ldots\}$
$w_3 = \{\neg q, p, \ldots\}$
$w_4 = \{\neg q, \neg p, \ldots\}$

A set of possible worlds representing an agent's epistemic state thus divides possible worlds into two classes—worlds that are compatible with propositions that the agent knows and those that are not.

As noted above, the conditional operator **min** ensures that the epistemic modal base is not empty and that its worlds are minimally different from one another. If the modal base were empty, then the epistemic state described would be inconsistent. Likewise, the set of all propositions represents an inconsistent epistemic state. (For further discussion, see Gärdenfors 1988:28-30 and Meyer 2001.) Because the set described by $\mathbf{min}_w[\mathbf{F} \cap (\lambda \mathbf{w}'.\iota \mathbf{x}.\mathbf{P}(\mathbf{w}')(\mathbf{x}) \neq \iota \mathbf{x}.\mathbf{P}(\mathbf{w})(\mathbf{x}))]$ in (23) is not the null set, it ensures that there are epistemic worlds in the modal base that vary with respect to the identity of $\iota \mathbf{x}.\mathbf{P}(\mathbf{x})$. From this it follows that speaker doesn't know the identity of $\iota \mathbf{x}.\mathbf{P}(\mathbf{x})$. In order for there to be at least one world in the epistemic modal base in which the identity of $\iota \mathbf{x}.\mathbf{P}(\mathbf{x})$ is different from what it is in the world of evaluation, the speaker must be ignorant of the identity of $\iota \mathbf{x}.\mathbf{P}(\mathbf{x})$. On the other hand, if the identity of $\iota \mathbf{x}.\mathbf{P}(\mathbf{x})$ is the same across the epistemic modal base, then the speaker

by definition knows its identity.[5] This account of *-ever* preserves the analysis of free relatives as definite expressions. The challenge remains in extending this view to explain how it is that *-ever* free relatives behave at times like universals.

1.2.2 Counterfactual and epistemic entailments

The term "counterfactual entailment" appears in the literature as a descriptive label for what von Fintel (2000) identifies as a presupposition of indifference. Under the indifference reading, the sentences in (27) and (28) have counterfactual entailments. The counterfactual entailment in (27) is that if Mary had bought something other than what she did, John would still be happy with it. The counterfactual entailment in (28) is that if Bill had cooked something else, Mary would have eaten that.

(27) Whatever Mary bought, John was happy with it.

(28) In those days, Mary ate whatever Bill cooked.

Indifference free relatives have a counterfactual entailment, while ignorance free relatives do not.

In this respect, indifference free relatives show the same behavior as relative clauses with *any*. Kratzer (1989), citing the discussion in Vendler (1962), observes that in (29), *every* is associated with an accidental interpretation of the universal, whereas

[5] Although I am following common practice in using the term "epistemic" as a shorthand for both knowledge and belief, it is possible to make a further distinction between epistemic (knowledge) and doxastic (belief) worlds. Knowledge is true, whereas belief may or may not be true. In a possible worlds model, this means that the world of evaluation must be among the speaker's epistemically accessible worlds, but it may or may not be among the speaker's doxastically accessible worlds. For instance, if the speaker knows that Arlo is cooking goulash, then all worlds in the speaker's epistemic modal base are worlds in which Arlo is cooking goulash. On the other hand, if the speaker has a false belief that Arlo is cooking goulash, then it is in all the speaker's doxastic worlds, but not in all the speaker's epistemic worlds, that Arlo is cooking goulash. Such a model allows for inconsistent belief, but not for inconsistent knowledge.

any in (30) has a generic (that is, nonaccidental) interpretation. Accordingly, (30) has a counterfactual entailment that (29) lacks. The sentence in (30) entails that if I were a doctor, I would be able to tell you what to do, while (29) with *every* does not.

(29) Every doctor will tell you what to do.

(30) Any doctor will tell you what to do.

Put another way, in (30) there is an essential connection (that is, a causal relation) between being a doctor and telling you what to do. In (29), the connection could be simply accidental.

The analysis of indifference free relatives in (23) is based in part on the observation that they have a counterfactual semantics. The following examples from von Fintel further illustrate the counterfactual entailment of indifference free relatives.

(31) I grabbed whatever tool was handy, and if a different tool had been handy, I would have grabbed that.

(32) Zack simply voted for whoever was at the top of the ballot, and if a different person had been at the top of the ballot, he would have voted for that person.

(33) I had no time to play around, so I grudgingly used whatever email program was installed on the computer, and if a different email program had been installed, I would have used that one.

As we have seen, indifference is often expressed as agent indifference. In section 1.4, I will argue that it is the counterfactual entailment alone, and not necessarily the presence of an indifferent attitude on the part of some agent (e.g., Zack in (32)),

that characterizes indifference free relatives. I will argue that while the agent indifference construal has its source in the counterfactual semantics, it is strictly speaking optional.

Let's turn now to ignorance free relatives. Because the indifference reading involves a counterfactual modal base, the free relatives in (27) and (28) have indifference readings rather than ignorance readings when the counterfactual entailment is present. What happens when these sentences are interpreted with an epistemic modal base? The "epistemic entailment" for the corresponding ignorance cases is the commitment to the proposition that speaker doesn't know the identity of $\iota\mathbf{x}.\mathbf{P}(\mathbf{x})$. It too takes the shape of a conditional statement in (23). Under the ignorance reading, the free relative in (27) means "Mary bought something and I don't know what it was, but John was happy with it". Under this reading there is no counterfactual entailment, that is, we are not licensed to conclude that John would have been happy with something else that Mary bought (or even that if Mary had bought something else, I still wouldn't know what it was). The free relative in (28) also loses the counterfactual entailment when the modal base for *-ever* is epistemic.

In sum, following the analysis in (23), when the modal base in the presupposition is counterfactual, we are invited to draw a counterfactual entailment. When the modal base is epistemic, there is no counterfactual entailment and instead an epistemic entailment arises.

1.2.3 Early descriptions of modal flavor

Jespersen (1927:62) writes that the suffix *-ever* indicates "the generic meaning (i.e., indifference of choice)" and provides the following examples.

(34) a. Whoever says so is a liar.

b. Whatever I get is at your disposal.

c. He wants to shoot whoever comes near him.

d. He will eat whatever comes his way.

e. She will eat whatever sweets you give her.

f. He will shoot at whoever comes near him.

g. He will pay attention to whatever you may say.

h. She went through whatever paces her owner demanded of her.

Elliott (1971) is apparently the first to describe the ignorance reading and to point out that *-ever* free relatives can have multiple readings. He gives the following example and paraphrases (p.92).[6]

(35) He gave a present to whoever came through the door.

a. "He gave a present to everyone who came through the door".

b. "He gave a present to whoever it was that came through the door".

Elliott describes (35a) as a generic use of the *-ever* free relative and (35b) as a "lack of knowledge" use. He also characterizes the difference between the readings in (35) as a difference between nonspecific and specific readings, respectively. In our terms, (35a) describes an indifference free relative and (35b) describes an ignorance free relative. In addition, notice that the paraphrase in (35a) uses the universal *every*. I return to this in section 1.3.

According to Elliott, both (35a) and (35b) involve a presupposition about the speaker's lack of knowledge. Specifically, *-ever* free relatives "presuppose that the identity of the referent is unknown to (at least) the speaker" (p.91).

[6]Tredinnick (1994) gives similar construals of the data along the lines of (35).

Under the position taken here, indifference free relatives such as the one in (35a) are not characterized by ignorance, although they can be consistent with it. One might have enough information to follow the indifference free relative with "namely, Andy, Bob, Carl, and David", or one might just as well be unable to identify who it was that came through the door. In either case, the indifference free relative does not by itself convey ignorance. The notion that *-ever* is presuppositional, however, remains a crucial part of our understanding of its contribution to the semantics.

Subsequent works by Jacobson and by Dayal also treat ignorance as basic to *-ever*. Neither recognizes the existence of indifference free relatives as they are described by von Fintel. Iatridou & Varlokosta (1996, 1998) contrast ignorance readings with what they call a "conditional" reading and Dayal contrasts ignorance with a "free choice" reading, but in both cases these are exclusively associated with a universal-like interpretation as in (35a). Their analyses do not take into account indifference free relatives such as the one in (2) and those in (31)-(33), which are not susceptible to paraphrase with *every*.

1.2.4 Early treatments of *-ever* as a modal operator

In this section, I look briefly at the kinds of observations that inform the analysis of *-ever* as a modal operator.

Baker (1995:215) refers to *-ever* free relatives as "conditional free relatives". He observes the following: "A conditional free relative is most natural in a situation in which the entity to which it refers cannot be identified. It has an essentially conditional force, so that [(36)] has roughly the import indicated in [(37)]".

(36) George accepted [whichever story Leah submitted to his magazine].

(37) If Leah submitted story$_1$ to his magazine, George accepted story$_1$.

If Leah submitted story$_2$ to his magazine, George accepted story$_2$.

If Leah submitted story$_3$ to his magazine, George accepted story$_3$.

An important insight of this analysis is that the semantics of *-ever* involves variation. Other analyses of *-ever* (for example Iatridou & Varlokosta 1996 and 1998, Dayal 1997, and Quer 1998) argue that its interpretation involves alternatives, and in these studies alternatives are implemented in terms of possible worlds semantics.

Iatridou & Varlokosta (1996:122) propose that *-ever* is a modal operator:

> In the speaker's ignorance reading, *whatever* quantifies over epistemic worlds. So in a sentence like "whatever I cooked is green" on the reading "whatever it is that I cooked, it is green," *whatever* quantifies over the worlds that are compatible with the thing that I cooked being green. Such worlds include this thing being green and a tomato, it being green and a potato, etc.

The interpretive effect is straightforward: Variation over an agent's epistemic alternatives is interpreted as agent's ignorance at the point of variation. It is this basic idea, that the variation imposed by *-ever* involves quantification over possible worlds, that informs our current understanding of *-ever* free relatives as modal constructions.

According to Dayal (1997), the universal effects arise when the free relative is in the nuclear scope of a generic operator. The generic operator binds the world variable of the free relative, yielding a possibly different referent for the free relative in each world. Specifically, she proposes that *-ever* is an overt universal quantifier over a set of worlds she calls "identity alternatives". I-alternatives are defined as those epistemic alternatives to the world of evaluation that vary only on the basis of the denotation of the free relative, as given in (38).

(38) a. whatever$_j$ [IP$\ldots$t$_j\ldots$] denotes at w = λQ $\forall$i-alternatives $\in$ f(w)(s) [Q(i)(ιx[P(i)(x)])] where P is the property derived by abstracting over x$_j$ in the IP denotation.

b. f(w)(s) = {w′: ∀p[s believes p(w) → p(w′)]} for a world of evaluation w and speaker s, f(w)(s) is the set of worlds in which the speaker's beliefs about w hold.

c. a world w′ ∈ f(w)(s) is an i-alternative iff there exists some w″ ∈ f(w)(s), such that ιx[P(w′)(x)] ≠ ιx [P(w″)(x)].

Clause (a) says that *-ever* is a modal operator over i-alternatives. I-alternatives are defined using (38c) and the function in (38b). Clause (b) restricts the worlds quantified over to the speaker's epistemic alternatives. Clause (c) requires that those worlds vary with respect to the denotation of the free relative. The domain of quantification is a set of epistemically accessible worlds of the speaker over which the identity of the object denoted by the free relative varies. Finally, notice that *-ever* is part of the assertion, unlike in Elliott and von Fintel where it is presuppositional. The presuppositional behavior of *-ever* free relatives is discussed in Chapter 3.

Dayal translates (39) as in (40). The speaker who uses (39) expresses ignorance with respect to the referent of the free relative by virtue of the fact that *-ever* quantifies over a set of speaker's epistemically accessible worlds that vary with respect to the identity of the thing Mary is cooking.

(39) Mary is cooking something. Whatever she's cooking uses onions.

(40) ∀ i-alt ∈ f(w)(s)[uses-onions(i)(ιx[cooking(i)(x)(m)])]

Both Quer and von Fintel argue that the restriction to something as specific as i-alternatives is not necessary to achieve the desired variation and that the same result can be derived with existing mechanisms of the theory of possible worlds semantics for modality. Quer argues that the restriction to epistemic alternatives, and even to identity, both of which are inherent in the notion of i-alternative, is too strong. Following Giannakidou (1998), he subsumes *-ever* free relatives under a class of "free

choice descriptions" such as the Romance subjunctive and expressions with indefinite free choice items, which he argues are licensed exclusively in modal contexts. Quer argues that the availability of a certain degree of flexibility in the modal base makes i-alternatives redundant (p.179): Under the possible worlds model developed by Kratzer, the worlds quantified over will always vary in a way that is determined by the speaker's epistemic state, and this includes a mandatory variation with respect to the denotation of the free relative.

Von Fintel makes much the same observation regarding the redundancy of i-alternatives. He argues that i-alternatives serve only as an intermediary, a means of embedding the contribution of *-ever* somewhere else in the grammar. His solution is to have *-ever* explicitly presuppose variation with respect to the denotation of the free relative, as in (23). This formulation captures the conditional meaning of *-ever* free relatives directly.

In addition, von Fintel sets out to extend Dayal's analysis to account for the indifference reading, putting the ignorance/indifference dichotomy at the heart of his reformulation. However, in doing so, he doesn't address the question of exactly what the relationship is between modal flavor and quantificational force.

1.3 The universal character of *-ever* free relatives

In this section, I leave aside the question of ignorance and indifference and turn to analyses of *-ever* that focus on its quantificational force.

1.3.1 *-ever* as a universal quantifier

Jespersen (1927), among many other authors, consistently uses definites such as *that which*, *the thing*, and *the person* to paraphrase plain free relatives. Of *-ever* free

relatives he says, "... in the ordinary grammars these pronouns are given as a separate class, termed *indefinite relative pronouns*. There is, however no reason why they should be set up as a class by themselves: they are not more indefinite in their meaning than the simple *who* or *what*" (p.64).

Jacobson (1988/1995) argues that free relatives are definites, even when they appear with *-ever*. She points out that *-ever* free relatives support *it*-anaphora, as do definites, while universals do not:

(41) John read whatever/the thing/*everything Bill assigned—it was long and boring.

But free relatives with *-ever* are so frequently susceptible to paraphrase with *every* that not surprisingly there is a view of *-ever* free relatives that takes them to be fundamentally universal expressions. This behavior has inspired a number of analyses under which *-ever* is considered to be an overt universal quantifier (Bresnan & Grimshaw 1978, Larson 1987, Tredinnick 1994, Iatridou & Varlokosta 1996 and 1998). Bresnan & Grimshaw represent the traditional analysis in this respect: "The interpretation of the bound morpheme *-ever* of free relatives seems to involve universal quantification in the domain specified by the wh-phrase" (p.335). Larson makes an explicit comparison with the ordinary universal *every*: "Free relatives with *wh-ever* (for example, *I stole whatever he found*) are semantically equivalent to universally quantified NPs (compare *I stole everything that he found*)" (p.249). He concludes, "*-ever* [is] the universally quantified *wh*-form" (p.263).

Iatridou & Varlokosta use data from specificational pseudoclefts to argue that *-ever* free relatives are universals, not definites. Specificational pseudoclefts allow definites, but not universals, in subject position. They report the following judgment:

(42) *Whatever I like about John is not his sense of humor.

But (42) is greatly improved if the first person subject in *whatever I like about John* is replaced with someone other than speaker, as in (43). The ignorance free relative in (43) is more plausible than the one in (42), because it is more likely for the speaker to be ignorant of someone else's likes and dislikes.

(43) Whatever Mary likes about John is not his sense of humor.

(42) cannot be used to show that all *-ever* free relatives are universals. I return to this example in Chapter 2.

The view that free relatives are definites is argued for at length by Jacobson, who reaches this conclusion in part by arguing that they never exhibit the behavior of universals, even when suffixed with *-ever*. But this position is too strong. Free relatives with *-ever* do sometimes behave like universals. In addition to arguments from paraphrase, it can be shown that *-ever* free relatives exhibit other properties of universal expressions, something that cannot be said of their plain free relative counterparts.

In Chapter 2, I look at a number of syntactic tests that distinguish universals from definites. Two of these tests—NPI licensing and modification with *almost*—were given in (15)-(18) and are repeated here, showing that *-ever* free relatives can behave like universals.

(15) There's a lot of garlic in whatever Arlo has ever cooked.

(16) Bill grabbed whatever object was anywhere near him/the slightest bit handy.

(17) There's a lot of garlic in just about whatever Arlo is cooking.

(18) Bill grabbed practically whatever was on the desk.

Specifically, I will show in Chapter 2 that while indifference free relatives can behave either like definites or like universals, ignorance free relatives cannot behave like universals and always behave like definites. I follow Dayal in linking the universal effects to a generic context, as described in the next section.

1.3.2 The effect of context on the interpretation of *-ever* free relatives

This section discusses the relationship among modal flavor, quantificational force, and genericity.

The pretheoretical characterization of the data that Dayal seeks to explain is embodied in the distinction between what she calls "identity" and "free choice" (FC) readings. She takes (44) and (45) as paradigm examples of the relevant contrast.

(44) Everyone who went to whatever movie the Avon is now showing said it was boring. (=the movie the Avon is now showing)

(45) John will read whatever Bill assigns. (=everything/anything Bill assigns)

There is an explicit association of the identity free relative in (44) with a definite expression, while the FC free relative in (45) is associated with a reading that is paraphrased with *every* or *any*. This use of "free choice" is probably very close to our notion of indifference (cf. Jespersen's characterization "indifference of choice"), but the two are different at least in that for Dayal the FC free relative always has a paraphrase that involves a universal. As we have seen, this is not necessarily the case. Several examples in which the indifference free relative denotes a unique, singular entity are repeated here.

(31) I grabbed whatever tool was handy, and if a different tool had been handy, I would have grabbed that.

(32) Zack simply voted for whoever was at the top of the ballot, and if a different person had been at the top of the ballot, he would have voted for that person.

(33) I had no time to play around, so I grudgingly used whatever email program was installed on the computer, and if a different email program had been installed, I would have used that one. email program was installed on the computer.

Each one of these has a salient reading for which a paraphrase with *every* would be inappropriate. But all are indifference free relatives. The conclusion drawn from these facts is that modal flavor (in this case, indifference) is independent of quantificational force.

Central to Dayal's analysis is the observation that (45) differs from (44) in that it is in a generic context. She attributes the FC reading to the universal contributed by the generic context. Under Dayal's analysis, the FC free relative is derived from the identity free relative. The basic meaning of *-ever* (for her, ignorance) combines with genericity to produce a free relative with a free choice meaning. Dayal interprets (46) as in (47).

(46) Whatever Mary cooks uses onions.

(47) $\forall$w[C(w)][$\forall$ i-alt $\in$ f(w)(s)[uses-onions(i)(ιx[cooking(i)(x)(m)])]]

The generic induces universal quantification over worlds **w**, under which the universal over i-alternatives is embedded. According to Dayal, "*ever* forces the assertion to extend to i-alternatives of each generically bound world". It is this double quantification—the generic context combined with *-ever*—that produces the universal effects, not either alone.[7] In Chapter 3, I consider exactly how genericity and the

[7]Dayal also argues that *-ever* free relatives exhibit universal behavior because the modality introduced by *-ever* requires that *-ever* free relatives shift to the generalized quantifier type.

presupposition of indifference together create the universal effects.

Dayal's analysis is similar to Elliott's in a number of ways. Both recognize the dual character of *-ever* free relatives along the definite/universal dimension. The paraphrases given in (44)-(45) describe a contrast similar to the one in (35). And both attribute the universal effect to the effect of a generic context. By linking *-ever* exclusively to speaker's epistemic alternatives, Dayal's analysis in (38) implicitly assumes that all *-ever* free relatives are ignorance free relatives. Elliott too argues that *-ever* always indicates ignorance on the part of the speaker. The following table describes this view:

	EPISODIC	GENERIC
ignorance	definite	universal (free choice)

I will argue that this table needs to be extended to include indifference.

Both Dayal and Elliott seek to present a unified analysis of *-ever*, and they do this by providing a constant semantics for *-ever* that centers on ignorance. Such a view treats quantificational force as the sole phenomenon driving the multiple interpretations available to *-ever* free relatives. Apropos the contrast in (44)-(45), Dayal's position is that "there is no formal dichotomy between the two [readings]" (p.110). In support of this she remarks that in cases such as (48), in which the free relative denotes a plural entity, "it is hard to unequivocally classify the reading as identity or FC". Dayal interprets the second half of (48) as in (49).

(48) Mary cooked several dishes yesterday. Whatever she cooked had onions.

(49) $\forall$ i-alt $\in$ f(w)(s)[have-onions(i)(ιx[*cook(i)(x)(m)])]

Under the view espoused here, the fundamental ambiguity of *-ever* derives from the modal base and not from its quantificational force. The difficulty in classifying

(48) stems not from the fact that both ignorance and free choice elements are present at some level, or that the two readings are formally equivalent, but from the fact that the *-ever* free relative admits of both ignorance and indifference readings. The episodic context in (48) allows both ignorance and indifference free relatives:

(50) Ignorance: "The dishes Mary cooked—I don't know what they were—had onions".

(51) Indifference: "The dishes Mary cooked had onions, and if she had cooked different dishes, they would have had onions too".

(48) is episodic, whereas (46) is generic. (46) also has both ignorance and indifference readings. The ignorance reading is less salient than the indifference reading, but it is nonetheless readily available. Both ignorance and indifference free relatives can occur in generic contexts such as the one in (46):

(52) Ignorance: "The thing Mary cooks (say, that dish she always brings to potlucks)—I don't know what it is—uses onions".

(53) Indifference: "All situations in which Mary cooks something are situations in which the thing Mary cooks uses onions, and for each of those situations, if Mary had cooked something else, that thing would have used onions too".

The discussion so far can be summarized as follows:

	EPISODIC	GENERIC
ignorance	ex. (1), (44), (48) as in (50)	ex. (46) as in (52)
indifference	ex. (2), (31)-(33), (48) as in (51)	ex. (45), (46) as in (53)

Two contextual parameters determine the quantificational force of *-ever* free relatives: modal flavor and the genericity/episodicity of the sentence. All four logical possibilities obtain.

The main contribution of Chapter 2 is the observation that in three of the four cells above, free relatives behave uniformly like definites. I consider in detail what interpretation the *-ever* free relative receives when it behaves like a universal and conclude that when an *-ever* free relative behaves like a universal, it is on the indifference reading only. I will argue that ignorance free relatives cannot be paraphrased with *every* (for example, consider the interpretation of (46) as in (52)). And I will show that they do not pattern like universals according to syntactic tests for universality such as those mentioned above in connection with (15)-(18).

Dayal's analysis of the universal behavior of *-ever* free relatives in terms of genericity is not enough to explain the full range of readings available to *-ever* free relatives. A complete account of the multiple interpretations available to *-ever* free relatives requires taking into account both modal flavor and genericity. In the following chapters, I examine in detail how these two otherwise orthogonal phenomena interact to produce the pattern of data described here.

1.4 Agent indifference and external indifference

I end this chapter with some observations regarding the empirical coverage of the analysis in (23). The conclusion is that *-ever* free relatives should always be analyzed as in (23). Ignorance and indifference are the only two interpretations available to *-ever* free relatives; so-called universal free relatives are indifference free relatives. I first argue that indifference free relatives that can be paraphrased with *every* are uniformly stronger than their counterparts with *every*, and that it is the element of indifference that makes them stronger. In the course of the discussion, I identify two types of indifference free relatives: "agent indifference" free relatives and "external

indifference" free relatives.[8] I argue that the agent indifference construal is optional.

1.4.1 Universal free relatives?

Occasionally, *-ever* free relatives are judged to have a purely universal reading that is supposed to be distinct from the indifference reading we have been discussing. That is, in addition to ignorance and indifference, *-ever* free relatives are occasionally judged to have a third reading: a pure universal interpretation with no modal content. I argue here that there is no third reading.

Von Fintel proposes that (54) is "largely synonymous" with (55) (p.37). One is tempted to say, as he does, that the counterfactual presupposition is too strong in such a case and hence cannot be the correct analysis.

(54) There's a lot of violence in whatever Parker writes.

(55) There's a lot of violence in everything Parker writes.

The striking feature of (54) is that there is no one to attribute indifference to. In particular, there is no agent other than the one inside the free relative. In (2), for example, we attributed indifference to Bill. Let us call Bill the "locus of indifference" in (2). Perhaps it is the lack of a locus of indifference in sentences such as (54) that has led researchers to analyze them as ordinary universals. Sentences such as (2) and (31)-(33) differ from (54) in that they make a locus of indifference available.

My claim is that counterfactual indifference is in fact present in (54). The sentence in (55), which contains *everything* rather than *whatever*, fails to capture the sense in (54) that no matter what Parker writes, it has a lot of violence in it. The difference between (54) and (55) that I am arguing for may be easier to see if the tenses are

[8] Instead of the term "external indifference", one might use "speaker indifference", "no-locus indifference", or perhaps "free indifference".

changed. To the extent that (55) appears to characterize anything Parker might write, it is because it is expressed as a habitual. The contrast is much clearer if the predicate is embedded under either a past or a future, to avoid interpreting it as a habitual.

(56) There will be a lot of violence in whatever Parker writes.

(57) There will be a lot of violence in everything Parker writes.

If we don't want Parker to produce violent works, the situation described by (56) seems more dire than the one in (57). In (57), perhaps we can successfully intervene with a few editor's notes. In (56), there seems to be nothing we can do about it.

Consider also the sentences in (58)-(59). In the (a) sentences, by using an indifference free relative instead of *every*, I imply that John has magical powers or is blessed with extraordinary luck. In the (b) sentences, I'm reporting some facts, or a chance occurrence. For instance, in (58b) we say that there is some set of people who won, and they just happen to be the ones John voted for. In (58a) we more strongly imply that there is a crucial connection between John's having voted for that person and that person winning. The difference is analogous to the one discussed in relation to (29) and (30).

(58) a. In those days, whoever John voted for won.

b. In those days, everyone John voted for won.

(59) a. In those days, whatever lottery number John picked won.

b. In those days, every lottery number John picked won.

In (58a) and (59a), the free relative itself is in subject position and the agent inside the free relative, *John*, cannot be construed as acting indifferently. Just as in (54),

these sentences do not make an agent available to serve as the locus of indifference. They are nonetheless indifference free relatives and have the semantics in (23). I will call the indifference reading in these sentences "external indifference". These free relatives involve the same counterfactual semantics as the cases with an identifiable locus of indifference. These are simply cases where there is no entity in the sentence to whom we can attribute an indifferent attitude. When *every* is used to paraphrase an *-ever* free relative, it should be understood as an approximation only. Such a paraphrase can be helpful when trying to help one's reader distinguish two readings, as in (35), but it is not an adequate semantic analysis.

1.4.2 The locus of indifference

While ignorance is always relative to someone's epistemic worlds, the claim here is that indifference need not be realized in relation to an agent. Counterfactual worlds are determined impersonally, unlike epistemic worlds, which are calculated with respect to the knowledge state of some person. Indifference free relatives differ from ignorance free relatives in that indifference free relatives do not require an attitude holder as part of their interpretation, while ignorance free relatives, because they are epistemics, do. For instance, in (1) the speaker is the locus of ignorance.

When an agent subject is available, the locus of indifference is preferentially that agent. Or there can be no ascription of indifference whatsoever. For example, I might utter (60) if I have a crystal ball that allows me to examine counterfactual possibilities and draw a conclusion based upon what I find there, although I may not be indifferent to who Bill marries and Bill's decision to marry Susan may have been anything but indifferent.

(60) Bill's married to Susan; he married whoever he met first.

Let's look at some more examples of external indifference. The sentences in (61)-(64) each invite interpretations under which the matrix subject is indifferent to counterfactual changes in the segments that are aired. This is the preferred reading. But it is not necessary to attribute indifference to the agent subject.

(61) Since I am my greatest fan, I'm going to air whatever segment I've written.

(62) Susan always airs whatever segment I write.

(63) Susan is going to air whatever segment I write.

(64) Whatever segment I write, Susan is going to air it.

(61) contains the first person subject "I", so it's hard to see why the speaker would make this prediction if it weren't for speaker's own feelings of indifference. But in (62)-(64), there is a reading under which I seem to know more about Susan than she does. I may not think that Susan has an indifferent attitude toward the segments she airs, but I do seem to think things will turn out as though that were the case. These are predictions about the course of events, not about Susan's attitude. For instance, perhaps I'm simply trying to say that her standards are too low. It may be that Susan cares very much and applies a lot of effort in deciding which segment to air, but simply has low standards.[9]

The only candidate for the locus of indifference, if there is one, is an agent subject in whose scope the *-ever* free relative appears. Other NPs in the sentence cannot be

[9]In (11), the agent indifference free relative was unacceptable because we had provided a context in which it was clear that Bill did care about the identity of the thing that was on the desk. (11) would be acceptable with an indifference free relative only if we were to suppose that there are forces outside of Bill's conscious control that lead him to grab in such a way that it is as if he were indifferent. On this understanding, the indifference free relative in (11) is acceptable to the extent that one can construct an appropriate context for it. The agent indifference construal, when it appears, is always optional.

construed as indifferent. When an agent subject is present, we are invited to make the inference that an indifferent attitude influences the actions of that agent. In the absence of such an inference, we have what I am calling external indifference. (65) contrasts with (66) in that only (65) makes available a suitable locus of indifference. (65), which has an agent subject, can convey indifference on the part of John, but (66) can't. (Both (65) and (66) can contain ignorance free relatives, but I am not concerned with that reading here.) The predicate *get into trouble for* is nonagentive and as a result John can't be construed as having an indifferent attitude in (66). (66) nonetheless contains an indifference free relative.

(65) John read whatever story his father sent him.

(66) John got into trouble for whatever he said.

The term "indifference free relative" is most accurate as a descriptive label when the sentence also contains an indifferent agent, but indifference free relatives can occur in other configurations.

Agent indifference, when it is present, is epiphenomenal. It is not directly represented in or required by the semantics in (23). It is a side effect of the construal of the counterfactual modal base for *-ever*. What is constant across indifference free relatives is not an indifferent agent, but the counterfactual entailment, as predicted by von Fintel's analysis.[10] Whether this can also be construed as someone's indifference is dependent on the content of the sentence, i.e., the availability of an agent subject in whose scope the free relative occurs, as in (65). This outcome is in fact predicted by the way in which the modal base is determined.

[10]Nonetheless, von Fintel's examples of indifference free relatives are all susceptible to the agent indifference construal, because they all occur in the scope of an agent subject.

1.4.3 The causal link

In (67)-(70), I apply (23) to indifference free relatives with and without an identifiable locus of indifference. (67) has an agent subject: "Kay voted for the person at the top of the ballot, and if someone else had been there she would have voted for that person".

(67) Kay voted for whoever was at the top of the ballot.

(68) $\lambda s_0.$**vote**(k, ιy.**top-of-ballot**(y, s_0), s_0) $\wedge$ $\forall s' \in \min_{s_0}$ [F $\cap$ ($\lambda s''.\iota$y.**top-of-ballot**(y, s'') $\neq$ ιy.**top-of-ballot**(y, s_0))]: **vote**(k, ιy.**top-of-ballot**(y, s'), s') = **vote**(k, ιy.**top-of-ballot**(y, s_0), s_0)

(68) may be read as follows: "Kay voted in $\mathbf{s}_0$ for the person at the top of the ballot in $\mathbf{s}_0$, and for each $\mathbf{s}'$, a counterfactual situation of $\mathbf{s}_0$, if someone else had been at the top of the ballot in $\mathbf{s}'$, she would have voted for that person in $\mathbf{s}'$".

In (69), the free relative itself is in subject position: "The person at the top of the ballot won, and if someone else had been there that person would have won".

(69) Whoever was at the top of the ballot won.

(70) $\lambda s_0.$**win**(ιy.**top-of-ballot**(y, s_0), s_0) $\wedge$ $\forall s' \in \min_{s_0}$ [F $\cap$ ($\lambda s''.\iota$y.**top-of-ballot**(y, s'') $\neq$ ιy.**top-of-ballot**(y, s_0))]: **win**(ιy.**top-of-ballot**(y, s'), s') = **win**(ιy.**top-of-ballot**(y, s_0), s_0)

(70) may be read as follows: "The person at the top of the ballot in $\mathbf{s}_0$ won in $\mathbf{s}_0$, and for each $\mathbf{s}'$, a counterfactual situation of $\mathbf{s}_0$, if someone else had been at the top of the ballot in $\mathbf{s}'$, that person would have won in $\mathbf{s}'$".

The logical forms in (68) and (70) are essentially indistinguishable, and this is all that (23) gives us. What, then, produces the agent indifference construal? The

counterfactual entailment, as expressed in the presupposition of indifference, gives rise in a Gricean fashion to the question of why the counterfactual entailment should exist.[11] In the case of indifference free relatives, one looks for a causal link between the free relative and the assertion in which it appears. For example, take (67). Why is there an essential connection between being a person at the top of the ballot and Kay's voting for the person with that property? One way of producing a causal link is to ascribe indifference to the agent subject. In (67), we might suppose that the causal link that explains the counterfactual entailment arises from Kay's indifference to who she votes for (agent indifference). This explains why, when the correct configuration obtains, the agent indifference construal is both hard to avoid and optional. A causal link is desired, and the problem of the causal link can be easily resolved in the agent indifference theory.

(69) is an external indifference free relative. When an agent subject is not present, as in (69), we might imagine that some other agent, even a set of rules or a law of nature, is responsible for creating a situation that makes the counterfactual entailment valid. In (69), the cause in question is perhaps some principle of human psychology according to which voters are influenced by a name's location on the ballot. Regarding the examples in (58)-(59), I pointed out that we might suppose that the counterfactual entailment is valid because John has magical powers or is blessed with extraordinary luck. In contrast to agent indifference, these are all examples of external indifference.

I illustrate external indifference with a few more examples. In (71), the predicate *receive* implies a sender. So, we might suppose that the agent responsible for the counterfactual entailment in (71) is the person or persons who send Bill what is on sale at Sears.

[11] Causation is commonly associated with counterfactual reasoning. Lewis (1973b) bases his theory of causation on the observation that a proposition such as "A caused B" means something like "If A had not occurred, B would not have occurred".

(71) For his birthday, Bill usually receives whatever is on sale at Sears.

The agent may be even further removed from the lexical semantics. Suppose Bill has a large collection of vintage clothing. You ask how he acquired the collection, and the response is (72).

(72) Bill inherited whatever was in his grandfather's closet.

We might suppose that the agent responsible for the counterfactual entailment in (72) is Bill's grandfather through his will or the person responsible for executing the will. Even an inanimate object, the will itself, can plausibly be considered the source of the counterfactual entailment. (73) demonstrates a case in which the causal link is in a physical law.

(73) The magnet attracted whatever pieces of metal were in the room.

All of these cases—in which someone or something other than an agent subject is responsible for the counterfactual entailment expressed by *-ever*—are cases of external indifference. Though they might be said to involve an agent of some kind, I will not label them agent indifference free relatives but rather external indifference free relatives.

In using an indifference free relative of any kind, the speaker remains committed to the semantics in (23). The particular causal connection that is supplied to support (23) will vary. The agent indifference construal has its origins in the counterfactual entailment, but it is not necessary to ascribe indifference to an agent subject even when the sentence makes one available. In Chapter 3, I look more closely at indifference free relatives from which an inference about attitude can be drawn.

1.5 Summary and overview of the dissertation

In this chapter, I surveyed some of the major advances in our understanding of the semantics of *-ever* free relatives. Jacobson (1988/1995) argued that free relatives are definites. Iatridou & Varlokosta (1996 and 1998) suggested the analysis of *-ever* as a modal operator. Dayal (1997) pointed out a connection between generic contexts and the universal-like behavior of *-ever* free relatives. And von Fintel (2000) clarified for us the interpretational distinction between ignorance and indifference and provided a formal analysis in which the contribution of *-ever* is given as presuppositional. Taken together, their observations allow us to see the free relative data in a new light.

This chapter has been devoted to laying out a new picture of the *-ever* free relative data, in particular to making clear the relationship between modal flavor and quantificational force. I argued that modal flavor and quantificational force in *-ever* free relatives must be considered independently of one another. In addition, I argued that the two-way characterization "ignorance" and "indifference" exhausts the range of meanings for *-ever* free relatives. In particular, "universal free relatives" are not a separate type of free relative. Finally, within indifference free relatives, I distinguished between agent indifference and external indifference. I argued that the agent indifference construal obtains when an agent subject in whose scope the free relative appears is taken to be the locus of indifference. External indifference free relatives lack a locus of indifference.

Section 1.3 ended with an observation concerning modal flavor and quantificational force in *-ever* free relatives: Only indifference free relatives can behave like universals. In Chapter 2, I take up this claim in more detail. Specifically, I will argue for the following view of the data:

	EPISODIC	GENERIC
ignorance	definite, *universal	definite, *universal
indifference	definite, *universal	definite, universal (free choice)

Free relatives are definite expressions. Both types of *-ever* free relative—ignorance and indifference—can surface in episodic and generic contexts. They surface as definite expressions in both environments, but only indifference free relatives can behave like universals in generic contexts.

This empirical claim will be further motivated in Chapter 2. Chapters 3 and 4 are devoted to explaining the generalization. In Chapter 3, I explain how the presupposition of indifference interacts with the generic context to produce the universal effects in indifference free relatives. I also provide an analysis of the agent indifference construal and examine its interaction with generic quantification. In Chapter 4, I propose an explanation for why ignorance free relatives never behave like universals. The explanation relies on the fact that ignorance free relatives have an epistemic modal base and cannot be generically quantified.

Chapter 2

Quantificational Force

In Chapter 1, I took the position that an *-ever* free relative must be one of two types: ignorance or indifference. Following von Fintel (2000), ignorance free relatives have an epistemic modal base, and indifference free relatives have a counterfactual modal base. Plain free relatives do not have this modal dimension.

In this chapter, I ask the question: Are free relatives definites or universals? The picture that emerges as a result of this investigation is that only plain free relatives and ignorance free relatives uniformly behave like definites. Indifference free relatives, on the other hand, can behave like either universals or definites. This finding is summarized in the table below.

	PRESUPPOSITION	MODAL BASE	QUANTIFICATIONAL FORCE
plain free relative	- - -	- - -	definite
-ever free relative	**ignorance**	epistemic	definite
	indifference	counterfactual	definite, universal

Section 2.1 presents the theory of definiteness that I will be assuming. Sections 2.2 and 2.3 present in detail the data supporting the claim that in each case where

universal effects are present, it is on the indifference reading only. I present a number of cases in which indifference free relatives exhibit the behavior of universals but ignorance free relatives do not. Plain free relatives—those without *-ever* —uniformly have the semantics of definite descriptions. Section 2.4 considers and rejects some arguments that free relatives are indefinites. Section 2.5 describes the trigger for the universal effect, namely, generic quantification.

2.1 A lattice-theoretic semantics for definites

The logical forms used in Chapter 1 represent the free relative denotation as ιx.P(x). The iota operator is a formal representation of the claim that free relatives are definites. In this section, I describe the semantic notion of definiteness that I will assume lies behind this formula.

2.1.1 Maximality

Russell (1905) interpreted singular definite descriptions as expressions that assert both existence and uniqueness. On this view, the definite determiner asserts that there is just one thing that satisfies its restrictor: 'The P is Q' is true if and only if something is P (existence) and at most one thing is P (uniqueness) and every P is Q (matrix predication), as given in (74).

(74) $\exists x[P(x) \wedge \forall y(P(y) \rightarrow y{=}x) \wedge Q(x)]$

Following the Fregean line of thought, the definite determiner presupposes rather than asserts existence and uniqueness. This is reflected in the lexical entry for *the* in (75) (from Heim & Kratzer 1998:75), where the domain contains only those functions for which there is exactly one element x such that $f(x) = 1$. The expression is undefined if there is no such unique entity.

(75) $[\![\text{the}]\!] = \lambda f : f \in D_{<e,t>}$ and there is exactly one x such that f(x) = 1 . the unique y such that f(y) = 1

The definite determiner is translated as the iota operator. The iota operator is a function from sets of type ⟨e,t⟩ to individuals of type e. An iota expression ιx.P(x) is interpreted as "the unique individual x such that P(x)".

Sharvy (1980) and Link (1983) independently develop a theory of definite description that broadens the notion of uniqueness to include mass terms and plural count terms. The essence of the argument is that the uniqueness typical of singular definites and the exhaustivity typical of plural definites are two sides of the same coin. Sharvy concludes, "the primary use of 'the' is not to indicate uniqueness. Rather, it is to indicate totality; implication of uniqueness is a side effect."[1]

Link's sum individual σx.P(x) is defined as the unique individual with the property of being a *maximal* P. Maximality is identified with the supremum, or least upper bound, of an algebraic structure (i.e., the maximal element of a partially ordered set, as in (82) below). A sum individual is created by the sum operator '$\oplus$'. The sum of objects a and b is the sum individual (plural object) a$\oplus$b. Plural objects have the same type as singular objects. They are both first order entities of type e. The sigma operator picks out a maximal entity in a denotation domain that is a partially ordered set with the structure of a Boolean algebra closed under sum formation. The domain of sums is ordered by the part-of relation '$\leq$', where x$\leq$y $\leftrightarrow$ x$\oplus$y=y. (For example, a$\leq$a$\oplus$b $\leftrightarrow$ a$\oplus$a$\oplus$b=a$\oplus$b.)

(76) defines a sigma expression σx.P(x) in terms of the corresponding iota expression. (76) conceives of uniqueness as maximality: σx.P(x) denotes the sum individual that is the supremum of all objects that are *P.

[1]See section 2.1.2 for a discussion of the nonmaximality of some definite expressions.

(76) a. σx.P(x)

b. ιx[*P(x) $\wedge$ $\forall$y[*P(y) $\rightarrow$ y$\leq$x]]

P is a plural predicate. The star operator '' takes a one-place predicate P into the set of all sums of atoms in P. As indicated in (82), the singular predicate **book** denotes a set of singular individuals, namely, the set of all individuals that are a book. The plural predicate ***book** denotes the closure of a set of individuals under sum formation, namely, the set of all the sum individuals of books. (The notations ***book**, **book***, and **books** are equivalent.) When applied to a verbal predicate, * is a distributivity operator.

Translations for a singular definite (*the book*) and a plural definite (*the books*) are given in (77)-(78). The sigma expression incorporates an existential presupposition. It denotes the unique individual with the property of being a maximal book or 'books', respectively. (76a) can be used when the domain is a singleton, in which case ιx.P(x) and σx.P(x) denote the same object.

(77) $[\![$the book$]\!] = \sigma$x[**book**(x)] = ιx[**book**(x)]

presupposition: $\exists$x[**book**(x) $\wedge$ $\forall$x$'$[**book**(x$'$) $\rightarrow$ x$'\leq$x]]

denotation: the unique individual x such that $\forall$x$'$[**book**(x$'$) $\rightarrow$ x$'\leq$x]

(78) $[\![$the books$]\!] = \sigma$x[**books**(x)]

presupposition: $\exists$x[**books**(x) $\wedge$ $\forall$x$'$[**books**(x$'$) $\rightarrow$ x$'\leq$x]]

denotation: the unique individual x such that $\forall$x$'$[**books**(x$'$) $\rightarrow$ x$'\leq$x]

When pluralization is defined with the * operator, the plural includes the singular. Link also defines a $\circledast$ operator for proper plurals. A proper plural predicate $^{\circledast}$P is the set of nonatomic sums in the plural predicate *P, and it therefore excludes atoms from the denotation domain. The maximal sum of P is given by σx.P(x) and the maximal proper sum of P is given by σ*x.P(x), as defined in (79).

(79) a. $\sigma^*x.P(x)$

b. $\iota x[^{\circledast}P(x) \wedge \forall y[^*P(y) \rightarrow y \leq x]]$

The expression $\sigma^*x.P(x)$ presupposes that there are at least two P's, and this would seem to be correct for many uses of the plural in natural language. For example, a plural definite such as *the books* is infelicitous in case there is only one book in the denotation domain. This infelicity is explained if natural language pluralization is the $\circledast$ operator, because $^{\circledast}P$ does not provide a maximal proper sum when the domain is a singleton. But there are cases of natural language pluralization that the $\circledast$ operator gets wrong, namely, cases where a plural does not necessarily mean "at least two". For example, Winter (2002) observes that (80) and (81) have the same truth conditions.[2] Both mean that not one student is a vegetarian.

(80) No student is a vegetarian.

(81) No students are vegetarians.

The $\circledast$ operator predicts incorrectly that (81) is true if just one student is a vegetarian, while the * operator correctly predicts that it is false under those circumstances. I do not try to settle this question here, and I will not make any particular use of proper sums in what follows.

[2]Likewise, neither free choice *any* nor indifference-universal free relatives show a truth-conditional difference in the number of the sortal. In both (i) and (ii), the singular versions are identical to the plural versions.

(i) Kay read any book(s) John wrote.
(ii) Kay read whatever book(s) John wrote.

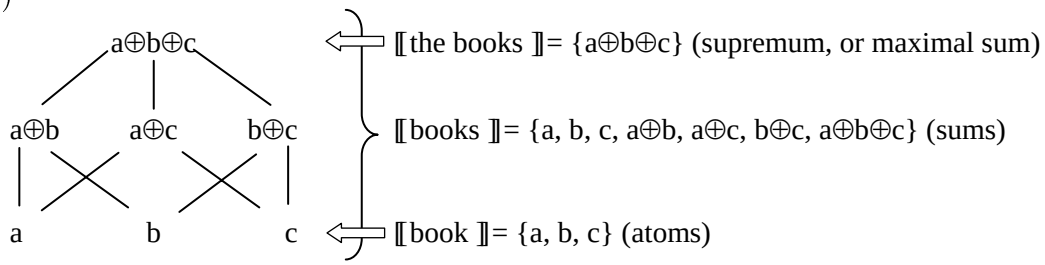
In (i) and (ii), the sortal merely conveys an expectation, which may be incorrect, about John's output. In (iii), which has no sortal, there is no particular expectation as to whether John wrote one or more than one thing.

(iii) Kay read whatever John wrote.

For further discussion of this question, see Schwarzschild (1996) and Sauerland (2003). Each proposes to derive the facts about natural language pluralization using the * operator, ruling out the singular where appropriate with independent mechanisms.

Algebraically, maximality is spelled out as the supremum in the domain of reference. For example, the denotation domain in (82) is a complete atomic join semilattice in which the maximal element is the sum of all the elements in the set. The sigma operator picks out the maximal entity a⊕b⊕c.

(82)



Landman (1989) argues for using a structure in which the bottom element is removed, as it is in (82). Doing so allows one to avoid defining an atom in the domain of individuals as an element that has only the zero element as a proper part. Instead of a zero element, it is the atoms that are the minimal elements of the set. This has the result that the null element is not part of the denotation domain for individuals.[3]

When the domain of reference contains multiple atoms, as in (82), a plural definite such as *the books* denotes the maximal sum (the supremum). The supremum is the

[3]Jacobson (1988/1995) argues that free relatives are unlike ordinary definites in that they can denote the null set, as in (i). (ii) contains an ordinary definite and is significantly degraded in contrast to (i).

(i) I read (exactly) what was on the reading list—namely, nothing at all.
(ii) *I read the things/stuff on the reading list—namely, nothing at all.

The examples involve a play on expectations, and they are ironic or sarcastic in nature. It is difficult to factor out ungrammaticality and sarcasm here. Nonetheless, it is apparent that (i) and (ii) differ in acceptability.

unique element of the set such that the other elements are its parts.

If the domain of reference is a singleton, a singular definite such as *the book* denotes that atom (also a supremum). A singular definite is infelicitous when the denotation domain contains more than one atomic element, because then there is no maximal atomic element. Mass nouns do not have atomic elements, and we can think of them as plural objects without the atomic level.

Jacobson (1988/1995) extends the algebraic treatment of definites to free relatives. According to Jacobson, free relatives are predicative expressions that type-shift to NP meanings. Rullmann (1995), however, argues that the type-shifting step is unnecessary because the *wh*-word in the free relative directly contributes a maximality operator to the semantics. So, according to Rullmann, the free relative in (83) translates as (84a), which is equivalent to the iota expression in (84b).

(83) what John ordered

(84) a. $max(\lambda \mathrm{x}.\mathrm{ordered}(\mathrm{j}, \mathrm{x}))$

b. $\iota \mathrm{x}[\mathrm{ordered}(\mathrm{j}, \mathrm{x}) \wedge \forall \mathrm{x}' \, [\mathrm{ordered}(\mathrm{j}, \mathrm{x}') \rightarrow \mathrm{x}' \leq \mathrm{x}]]$

The free relative *what John ordered* denotes the maximal individual of which it is true that it is a thing and that John ordered it, or in other words, the sum of all the things that John ordered.

While the iota operator is historically used only for singular expressions, I will follow Sharvy and others in redefining it so that it can be used for both singulars and plurals. (Link 1987 in fact suggests defining iota in terms of sigma.) Conflating assertion and presupposition for the moment, the expression $\mathrm{Q}(\iota \mathrm{x}.\mathrm{P}(\mathrm{x}))$ can be redefined as in (85), which differs from (74) in that the part-of relation '$\leq$' replaces '$=$'.

(85) $\exists \mathrm{x}[\mathrm{P}(\mathrm{x}) \wedge \forall \mathrm{y}(\mathrm{P}(\mathrm{y}) \rightarrow \mathrm{y} \leq \mathrm{x}) \wedge \mathrm{Q}(\mathrm{x})]$

This yields exhaustivity in the case of plurals and uniqueness in the case of singular expressions. The iota operator is thus redefined as a maximality operator. Both exhaustivity and uniqueness are expressions of maximality.

(86)-(88) show how (85) breaks down into presupposition and denotation, using free relatives as examples. (86) is unspecified for number. (87)-(88) contain overt sortals.

(86) $[\![$what John ordered$]\!] = \iota$x.**ordered**(j, x)

presupposition: $\exists$x[**ordered**(j, x) $\wedge$ $\forall$y[**ordered**(j, y) $\rightarrow$ y$\leq$x]]

denotation: the unique (sum) individual x such that $\forall$y[**ordered**(j, y) $\rightarrow$ y$\leq$x]

(87) $[\![$what book John ordered$]\!] = \iota$x.[**book**(x) $\wedge$ **ordered**(j, x)]

presupposition: $\exists$x[**book**(x) $\wedge$ **ordered**(j, x) $\wedge$ $\forall$y[**ordered**(j, y) $\rightarrow$ y$\leq$x]]

denotation: the unique individual book x such that $\forall$y[**ordered**(j, y) $\rightarrow$ y$\leq$x]

(88) $[\![$what books John ordered$]\!] = \iota$x.[**books**(x) $\wedge$ **ordered**(j, x)]

presupposition: $\exists$x[**books**(x) $\wedge$ **ordered**(j, x) $\wedge$ $\forall$y[**ordered**(j, y) $\rightarrow$ y$\leq$x]]

denotation: the unique sum individual 'books' x such that $\forall$y[**ordered**(j, y) $\rightarrow$ y$\leq$x]

(86)-(88) illustrate the intended interpretation of the notation ι**x.P(x)** as it is used throughout the present work.

2.1.2 On the exhaustivity of plural definites

The idea that plural definites are maximal expressions is challenged by examples such as those in (89)-(92). (Examples in (89) are from Link 1983 and (90)-(92) are from Breheny 2000. See also the references in Filip & Carlson 2001.)

(89) a. The children built the raft.

b. All the children built the raft.

(90) Johnny was naughty because he fed the elephants chocolate.

(91) The burglar could get in because the windows were open.

(92) a. Mary's children ate some of the pizza.

b. Mary's children are blond.

While (89b) is true only if every one of the children in question is actively involved in building the raft, not every child needs to be actively involved in order for (89a) to be true. (90) can be true even if Johnny fed only some of the elephants chocolate, and (91) can be true if only some of the windows were open. (92a) can be true if only some of Mary's children ate the pizza, in contrast to (92b), where all of Mary's children must be blond in order for the sentence to be true.

Breheny argues that plural definites are underspecified with respect to whether or not they are maximal, and that exhaustivity is obtained through a pragmatic principle of optimal relevance. Others maintain that plural definites are inherently maximal, and locate nonmaximality elsewhere in the grammar. Krifka (1996) argues that plural predications are unspecified as to whether they are total or partial predications on sum individuals, and that the interpretation is resolved according to a principle of strongest interpretation. Brisson (1998) attributes nonmaximal interpretations of plural definites to pragmatic weakening in the domain of the distributivity operator.

Free relatives allow nonexhaustive readings as well. In (93), which contains the plural definite *the rules*, it's possible to violate the rules by violating just one of them. The sentences containing free relatives in (94)-(95) are also consistent with a violation of some but not all of the rules.

(93) You violated the rules. (cf. You violated all the rules.)

(94) Earlier, we agreed to certain rules. This violates what we agreed to.

(95) John's motion is out of order. It violates whatever meeting rules we're following.

Caponigro (2004) argues that free relatives denote sets. Under this view, the free relative *wh*-word is a set restrictor; it has no inherent quantificational force. In support of the claim that free relatives have no quantificational force of their own, he provides evidence from free relatives in the complement position of existential predicates in Italian and other languages. Although ordinary definites are prohibited from appearing in this position, in the Italian example in (96) a free relative can appear there with an indefinite interpretation.[4]

[4]Grosu & Landman (1998) note that Germanic languages generally lack this type of free relative, which occurs only in the complement of existential predicates. Of the Germanic languages, Caponigro cites examples from Yiddish and a variety of New York English. I reproduce a few more of his examples here.

(i) Yiddish
nisht vayil es iz nisht geven [mit vemen tsuredn]
not because it has not been [with who.DAT to-speak]
"not because there wasn't anyone one could talk to"

(ii) New York English
I don't have [what to eat]
"I don't have anything I can eat"

(iii) Hebrew
le-mazali yesh li [im mi le-daber] kshe-ani acuva
to-luck-my have to-me [with who to-talk] when-I sad
"Fortunately, I have somebody to talk to when I am sad."

(iv) Catalan
la pobra no tenia [amb qui parlar]
the poor not had.3s [with whom speak.INF]
"The poor one didn't have anybody he could talk to."

(96) C'è [chi sà dire solo no]
there's who can.3S say only no
"There are people who say no all the time".

Caponigro argues that free relatives receive either a maximal or a nonmaximal interpretation as a result of type-shifting. Free relatives that are interpreted exhaustively are iota expressions. Those that are interpreted nonexhaustively are existentially quantified expressions.

I will assume for the sake of simplicity that all definite expressions denote a maximal sum. Whether or not plural definites are semantically exhaustive, the arguments presented later on in this chapter that free relatives are definites remain intact.

2.1.3 Free relatives as definites

Various claims have been made regarding the quantificational force of free relatives. Both *-ever* free relatives and plain free relatives have interpretations that are easily paraphrased with *every*, but this does not mean that they are universally quantified expressions. In many cases, this type of paraphrase is merely a recognition of their maximality, akin to noticing that *John ate the cookies* can usually be paraphrased with *John ate every cookie*. Later on in this chapter, I will argue that when we look beyond paraphrase, grammatical tests for universality show that some indifference free relatives can in fact behave like universals while ignorance free relatives and plain free relatives never do.

The standard contrasts for plain and *-ever* free relatives, due to Jacobson, are given in (97)-(98). The sentences in (97) contain plain free relatives and those in

(v) Finnish
minulla on [kenelle puhua] kun olen surullinen
I.ADE is [who.ALL speak.INF] when am sad
"I have somebody I can talk to when I am sad."

(98) contain *-ever* free relatives. As Jacobson observes, the (a) sentences have salient readings that could be paraphrased with a definite expression, while the (b) sentences have salient readings that could be paraphrased with a universal quantifier such as *every*.

(97) a. I ordered what he ordered for desert.

b. Do what the babysitter tells you.

(98) a. Everyone who went to whatever movie the Avon is now showing said it was boring.

b. John will read whatever Bill assigns.

For (97a), suppose we each ordered a piece of pie for dessert. For (97b), suppose the speaker expects the babysitter to tell you to do a number of things during the course of the afternoon. For (98a), suppose the Avon is a small movie theater with just one screen. For (97b), suppose John is devoted to Bill and so will do all the readings he assigns.

Cooper (1983:96) presents the same contrast for the plain free relative *what Mary says* in (99). According to him, the free relative can be interpreted as though it has a hidden universal quantifier ("everything that Mary says"), or it can be paraphrased as a definite description ("the thing that Mary says").

(99) a. What Mary says surprises me.

b. I like what Mary says.

Once one has constructed the right scenarios, both readings are available in both sentences.

The readings that Cooper has in mind for (99) are perhaps something like what we get by adding an adverb of quantification as in (100) (for the case of the uni-

versal readings) or an episodic predicate as in (101) (for the case of the definite readings).

(100) a. What Mary says always surprises me.

b. I always like what Mary says.

(101) a. What Mary says is going on here surprises me.

b. I like what Mary says is going on here.

Similarly, the (a) sentences of (97)-(98), which exemplify the "definite" readings, are episodic, while the (b) sentences, which exemplify the "universal" readings, contain universal quantifiers: (97b) contains an imperative operator and (98b) contains a future operator. Dayal (1997) draws on facts such as these in linking the universal behavior of *-ever* free relatives to the context.

So far, we have noted that both *-ever* free relatives and plain free relatives can have a maximal interpretation that lends itself to paraphrase with the universal quantifier *every*. For the case of plain free relatives, I take it to be uncontroversial that they are clear cases of definite expressions, even under readings for which one might offer a paraphrase with an ordinary universal, as in (97b) and (99). The exhaustivity of plain free relatives is a reflection of their maximality, not a sign that they are universally quantified expressions. For example, instead of using a universal such as *every*, a paraphrase with *the things* or *the stuff* captures the meaning of (97b) adequately: "Do the things/stuff the babysitter tells you to do." This is in fact the semantic analysis that Jacobson argues for and that I will adopt here: The plain free relative is a definite, which means that its interpretation involves a maximality operator rather than a universal quantifier.

Jacobson argues that *-ever* free relatives are also definites, and I will adopt that position as well. But unlike plain free relatives, *-ever* free relatives can sometimes be-

have as though they were universally quantified, according to syntactic tests that are diagnostic of universal quantification. In sections 2.2 and 2.3, I examine the behavior of *-ever* free relatives in a number of environments that either require universality (*almost* modifiers, scope under negation, NPI licensing) or prohibit it (*it*-anaphora, discourse antecedents, specificational pseudoclefts). I demonstrate that it is only with indifference free relatives that the universal behavior of free relatives surfaces.

Taking into account the two dimensions of modal flavor and quantificational force, a sentence containing an *-ever* free relative potentially has four interpretations: indifference-iota, indifference-universal, ignorance-iota, and ignorance-universal. As we will see, the last of these readings is unavailable. There are no ignorance-universal readings. In what follows, ignorance-iota free relatives are referred to simply as "ignorance" free relatives. The following table summarizes the basic pattern that is established in the next sections.

DEFINITE (iota)	UNIVERSAL
ignorance	*ignorance
indifference	indifference

Free relatives with *-ever* can have a sortal in the *wh*-phrase, as in (102a-c). The free relatives in (102a-c) have singular count, plural, and mass interpretations, respectively. In (102d), the sortal is morphologically null and the free relative is unmarked for number.

(102) a. I read whatever book John wrote. SINGULAR COUNT SORTAL

b. I read whatever books John wrote. PLURAL SORTAL

c. I read whatever poetry John wrote. MASS SORTAL

d. I read whatever John wrote. NO SORTAL; NUMBER UNSPECIFIED

Because (102d) is not marked for number, it is consistent with any of the following

interpretations: *the thing John wrote*, *the things John wrote*, or a mass term something like *the stuff John wrote*. The suffix *-ever* contributes an additional modal dimension, interpreted as either ignorance or indifference.

2.2 Only indifference free relatives can acquire the properties of universals

In this section, I demonstrate that indifference free relatives can sometimes behave like universals, while ignorance free relatives always behave like definites. As observed by Dayal (1997), the availability of the universal behavior in indifference free relatives is coincident with a generic context. For purposes of the discussion in this section, any context that supplies multiple instantiations of the object described by the free relative will be considered a generic context. A typical example is (98b), under a reading where John will read what Bill assigns each time Bill assigns something. Generic contexts are discussed in more detail in section 2.5.

Among those who argue that free relatives with *-ever* are definites are Jacobson (1988/1995), Rullmann (1995), Grosu (1996), Grosu & Landman (1998), and Dayal (1997). Their data is reexamined below, this time taking into account the ignorance/indifference dichotomy. With *-ever* free relatives, there are two distinct patterns. There are cases in which *-ever* free relatives clearly pattern with definites, and others in which they clearly pattern with universals. In particular, we must look carefully at what interpretation the *-ever* free relative is receiving when it behaves like a universal.

For comparison, I also discuss plain free relatives. Plain free relatives pass a number of tests that are widely considered to be diagnostic of definiteness. This data, taken together with the fact that plain free relatives are naturally paraphrased

with definite expressions, seems to show rather convincingly that they are definites.

2.2.1 *almost* modifiers

Dahl (1970) points out that the modifier *absolutely* distinguishes universal from non-universal expressions, attributing the observation to James McCawley: *absolutely all*, but **absolutely some*. In a similar vein, Horn (1972) and Carlson (1981:9) observe that universals accept modification by adverbs such as *almost, nearly*, and *practically*.[5] Carlson provides the example in (103). Other examples are in (104).

(103) Nearly anyone can ride a bicycle.

(104) John did practically every chore/all the chores/none of the chores you asked him to do.

In contrast, neither ordinary definites nor plain free relatives accept *almost* modifiers. Sentences with ordinary definites are given in (105), and sentences with plain free relatives are given in (106).

(105) a. *Nearly the people who want to can ride a bicycle.

b. *John did practically the chores you asked him to do.

(106) a. *Nearly what has wheels is easy to ride.

b. *John did practically what you asked him to do.

Regarding *-ever* free relatives, Jacobson provides the following judgment (Jacobson's (79)).

(107) *For years, I did nearly/almost whatever you told me to do.

[5]Well-known exceptions to this generalization are the universals *both*, *each*, and *neither*. Partee (1986/2004) observes that *almost* can also modify numerals including *majority* and *minimum*, as in *almost ten* and *almost a majority*.

There are two modal bases with which *-ever* can be interpreted, namely, ignorance and indifference. The free relative with *nearly/almost* in (107) is acceptable if it is interpreted as an indifference free relative, like the ones in B's responses in (108).

(108) A: Thanks for your help. You did whatever I asked you to do.

B-1: Well, I did practically whatever you asked me to do.

B-2: That's because almost whatever chore you asked me to do was easy.

B's responses have indifference readings exclusively, even with the singular *whatever chore* in response B-2. Horn (2000) includes a number of naturally occurring examples of *-ever* free relatives with *almost* modifiers. I reproduce just three of them here.

(109) Although most of the reports have suggested that only a small minority of the I.O.C.'s 114 delegates may have received direct financial benefits from local organizers, the overwhelming message is that **almost whatever** a delegate asked for could not be denied... (New York Times, 1/24/99, Sports p. 1, re International Olympic Committee scandal)

(110) Mukhamedov's utter involvement in every role, and his subjection of his impressive personality to the style and needs of each appearance, ensure that **almost whoever** dances with him looks her best. (The [London] Times, 1/21/99)

(111) "I'll do **absolutely whatever** it takes," Walton said. "A place like Helix High School changes your life, so it excites me to be here." (San Diego Union Tribune, 1/24/99, B2, on Helix graduate and Hall of Fame basketball player Bill Walton, returning for a scrub-down reunion day)

The same effect cannot be achieved with the ignorance reading. The exchange in (108) is recast in (112) to make an ignorance reading of the free relative more salient.[6] Speakers A and B know that Kay had John do something, but they don't know what. Response B′, with *almost*, is not available under the intended ignorance reading of the free relative. A reading of B′ under which *almost* is acceptable can be obtained only if the free relative is interpreted as an indifference free relative, which it is rather difficult to do in this context.

(112) A: Kay said she was surprised that John could fit in more work today. Apparently, she gave him some extra chore to do and he's already finished it.

B: That's because whatever chore it was that she asked him to do was easy.

B′: #That's because almost whatever chore it was that she asked him to do was easy.

(112) uses singular *chore* while (113) contains plural *chores*. Even then the free relative in B′ cannot be modified by *almost* under the intended ignorance reading; it would be acceptable only under an indifference reading.

(113) A: Kay said she was surprised that John could fit in more work today. Apparently, she gave him some extra chores to do and he's already finished them.

B: That's because whatever chores she asked him to do were easy.

B′: #That's because almost whatever chores she asked him to do were easy.

The minimal pairs in (114)-(115) make the same point.

[6] In (112), the first person pronoun is removed in order to make speaker ignorance more plausible. In addition, the free relative *wh*-constituent is coindexed with the focus position of an *it*-cleft. As noted in Chapter 1, this is a device that tends to favor the ignorance reading.

(114) A: What chores did Kay ask John to do?

B: I don't know, but whatever chores she asked him to do were easy.

If we take the free relative in B's response in (114) to be an ignorance free relative (its most salient reading), we understand it to reinforce the claim "I don't know". Now compare it with B's response in (115).

(115) A: What chores did Kay ask John to do?

B: I don't know, but almost whatever chores she asked him to do were easy.

The free relative in (115), which is modified by *almost*, does not reinforce the claim of ignorance. Instead, we must shift to an indifference reading for the free relative.

Free relatives with *-ever* accept *almost* modifiers on the indifference reading only, while ignorance free relatives and plain free relatives uniformly behave like definites. This pattern is repeated in the rest of the grammatical environments examined below.

2.2.2 Scope under negation

Dayal (1997) observes that *-ever* free relatives behave like universals in that they can scope under negation. (116) has a reading in which the universal scopes under negation ("it is not the case that I liked every book Sue recommended"). (116) thus supports the continuation "...but I liked most of them". The desired reading is unambiguously available with a marked intonation pattern ("I didn't like EVery book Sue recommended"). The definite in (117) does not allow such a continuation. Instead, it is consistent with the continuation "...not a single one pleased me".

(116) I didn't like every book Sue recommended.

(117) I didn't like the books Sue recommended.

Unlike the universal, the definite expression denotes a sum. When a sum is interpreted under negation, it does not mean "not all of the sum". The same is true for the plain free relative in (118). (118) does not allow the continuation "...but I liked most of them".

(118) Sue recommended lots of books this month, and I didn't like what she recommended.

The *-ever* free relative in (119), however, has a narrow scope reading that supports the continuation "...but I liked most of them". Again, the desired reading can be brought out with a marked intonation pattern ("I didn't like whatEVer Sue recommended").

(119) Sue recommended lots of books this month. I didn't like whatever book Sue recommended, but I liked most of them.

Dayal points out that *-ever* free relatives like the one in (119) behave like the universal in (116), not like the definite in (117). The observation that I make here is that only indifference free relatives can scope under negation. That is, the narrow scope reading of (119) is available only with an indifference free relative.

Before considering what readings are available to the free relative in (119), it will help to consider similar data presented in Horn (2000). He points out that free choice *any*, NPI *any*, and the quantifier *every* behave differently under negation. (120a) contains NPI *any*, (120b) contains *every*, and (120c) contains free choice *any*.

(120) a. I wouldn't marry anyone.

b. I wouldn't marry everyone.

c. I wouldn't marry just anyone.

(120a) says that I would marry no one. (120b) says that it is not the case that I would marry everyone (leaving open the question of whether I would marry some or none of them). (120c) says that I would not marry indiscriminately.

The relative scope orders for (120) are given in (121). (121a) represents the case of NPI *any*: a universal quantifier scopes over negation. (121b) represents the case of *every*: a universal scopes under negation. Horn argues that free choice *any* is neither universal nor existential. Instead, it is interpreted as an "indiscriminative". In (121c), the notion of indiscriminacy contributed by free choice *any* does not enter into a scope ambiguity with negation.

(121) a. $\forall x \neg[\ldots x \ldots]$

b. $\neg\forall x[\ldots x \ldots]$

c. $\neg$ *indiscriminacy*

(122) reproduces (120) for *-ever* free relatives. (122) shows that the pattern described in (121) is preserved for *-ever* free relatives under negation (a more realistic scenario is given in (123)).

(122) a. I wouldn't marry whoever you asked me to...your judgment is always flawed.

b. I wouldn't marry whoEVer you asked me to...but I would marry most of them.

c. I wouldn't marry just whoever you asked me to...I make these decisions carefully.

(123) a. I wouldn't read whatever book you recommended...your judgment is always flawed.

b. I wouldn't read whatEVer book you recommended... but I would read most of them.

c. I wouldn't read just whatever book you recommended...I make these decisions carefully.

(124) sets up a context in which speaker does not know what has been recommended. Under ignorance readings, the universal effect disappears and the *-ever* free relative behaves like a definite. Ignorance readings of the free relative in (124) mean only "I wouldn't read the book you recommended" with a presupposition of speaker ignorance as to the identity of the book.

(124) I didn't hear your comments just now, but I know that...

a. I wouldn't read whatever book you recommended...(#)your judgment is always flawed.

b. #I wouldn't read whatEVer book you recommended.

c. #I wouldn't read just whatever book you recommended.

The continuation in (a) is compatible with the ignorance free relative in that it provides a reason for not reading the book you recommended, but it does not support a universal-like reading for the ignorance free relative. And when ignorance readings are imposed, the variants in (b) (with the marked intonation pattern of the previous examples) and (c) (with *just*) are not available at all. The same is true if *book* is replaced with *books*.

The *-ever* free relatives in (122) and (123) are indifference free relatives. In particular, I will argue that (123c) contains an agent indifference free relative. Von Fintel (2000) suggests that the indifference free relative in (125) (which I identify as an agent indifference free relative) is related to the reading of *any* in (126).

(125) Unless Zack simply voted for whoever was at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

(126) Maeve isn't just any lawyer—she is the best in the business.

I discuss agent indifference free relatives in Chapter 3.

2.2.3 Negative polarity items

NPIs are licensed in a variety of contexts, including in the restriction of universals such as *every*, as in (127).

(127) John got into trouble for everything he ever said.

But they are not licensed in ordinary definites, as shown in (128).

(128) *John got into trouble for the things he ever said.

Again, plain free relative *what* patterns with ordinary definites. Plain free relatives do not license NPIs.

(129) *John got into trouble for what he ever said.

The *-ever* free relatives in (130) license NPIs such as *ever* and *the least bit*, but on the indifference reading only. Notice that (130) contains the singular *whatever story*.

(130) a. John got into trouble for whatever he ever said.

b. John read whatever story his father ever sent him.

c. Kay sent a letter to whoever was the least bit inclined to care about the problem.

Each one of these free relatives licenses an NPI, but on the indifference reading only. For instance, (130c) cannot mean "Kay sent letters to the person(s) who cared about the problem, although I couldn't tell you who". Instead, it means "Kay sent letters to those who cared, and she did so indiscriminately". (130) is repeated in (131), this time with *it*-clefts, so that it is easier to get the intended ignorance reading.

(131) a. #John got into trouble for whatever it was that he ever said.

b. #John read whatever story it was that his father ever sent him.

c. #Kay sent a letter to whoever it was who was the least bit inclined to care about the problem.

Jacobson cites the following as ungrammatical:

(132) I can read whatever books Bill ever read.

I judge (132) to be grammatical, on a par with those in (130). I can think of three reasons why this discrepancy in judgments might exist. First, (132) is somewhat implausible, or at least awkward, in isolation. In fact, Horn (2000) provides an example that is similar but much improved in terms of naturalness: "I'll read whatever books you've ever asked me to read". Alternatively (or in addition), it is possible that (132) is degraded as the result of a phonological **ever ever* filter. The effect, if it exists, is strongest in examples like (130a), in which just one syllable intervenes between the two instances of *ever*. In this respect, (130b), in which three words (five syllables) intervene, is an improvement over both (130a) and Jacobson's example in (132). Horn attributes a similar observation regarding "*ever*-doubling" to Richard Larson. Finally, Jacobson's paper associates *-ever* exclusively with ignorance, but *-ever* free relatives do not license NPIs on the ignorance reading. If (132) is considered with the ignorance reading in mind, it is ungrammatical. Only indifference free relatives license NPIs.

2.2.4 A digression on the collective partitive reading

Grosu & Landman (1998:160) observe the following pattern. The definite in (133) has both a distributed reading and a collective partitive reading. The distributed reading is "take a proposal: three-quarters of it will be vetoed", and the collective partitive reading is "of the proposals, three-quarters won't make it". The distributed reading involves the level of the individual proposal (three-fourths of a proposal), while the collective reading involves a sum (three out of four proposals). The same two readings are available to the *-ever* free relative in (134). The ordinary universal in (135), however, has only the distributed reading.

(133) We will veto three-quarters of *the proposals you make.*

(134) We will veto three-quarters of *whatever proposals you make.*

(135) We will veto three-quarters of *every proposal you make.*

They argue that on the distributed reading, the complement of the partitive phrase must QR, while the collective reading obtains when the complement of the partitive phrase is interpreted in situ. Free relatives with *-ever*, like definites, can be interpreted in situ. Universals, on the other hand, must QR. This is part of the evidence they put forward to argue that *-ever* free relatives are definites rather than universals.

Based on this observation of Grosu & Landman, Dayal argues that free relatives retain the properties of definites even when they exhibit universal behavior. She points out regarding the free relatives in (136)-(138) that all three license the NPI *any* and that all three have collective partitive readings. For example, (138) is compatible with there being guests whose gifts are not used by John and Mary at all.

(136) Mary has read two thirds of whatever books were on any of her reading lists.

(137) In all her years in office Mary has approved only a fraction of whatever grants any of her students have submitted.

(138) John and Mary have used most of whatever gifts they'd got from anyone.

These examples do not demonstrate that free relatives retain the properties of definites when they acquire the properties of universals. When (136)-(138) have singular rather than plural sortals, they license NPIs and must be interpreted with the distributed reading.

The correct generalization regarding (133) and (135) appears to be not the contrast between definite and universal but rather a contrast between plural and singular. If *every* has a domain of plural individuals, as in (139), then a collective reading is possible. Both distributive and collective readings are available with *all the proposals* in (140) and *any proposals* in (141). The singular *any proposal* in (142), however, has only a distributive reading.

(139) We will veto three-quarters of *every twelve proposals you make.*

(140) We will veto three-quarters of *all the proposals you make.*

(141) We will veto three-quarters of *any proposals you make.*

(142) We will veto three-quarters of *any proposal you make.*

Compare the free relatives in (134) and (143). The singular in (143) has only a distributed reading whereas the plural in (134) has both distributed and collective partitive readings.

(143) Over the next 10 years, we will veto three-quarters of *whatever proposal you make.*

The availability of a collective reading depends on there being a plural entity in the domain of quantification, not on there being a definite expression in the complement of the partitive phrase.

The plain free relative in (144) can have both the distributed (three fourths of a proposal) and collective (three fourths of a sum) readings. In this respect, it behaves like an ordinary plural definite.

(144) We will veto three-quarters of *what you submit*.

Finally, notice that the sentence in (145), which contains *however many books*, allows the collective partitive reading, and only the collective partitive reading, under both ignorance and indifference readings of the free relative. It contrasts with (146) and the other examples we have been looking at. (145) can mean only "no matter how many books John assigned, we read only half of the total" (the collective reading) and not "no matter how many books John assigned, we read only half of each one of them" (the distributed reading).

(145) In those days, we read only half of however many books John assigned.

(146) In those days, we read only half of whatever books John assigned.

This is expected, as the relevant variable in *however many books* is not an individual but rather the number inside a degree phrase [[n-*many*] *books*]. (146), on the other hand, contains a variable over individuals and thus has a distributed reading available to it.

In this section, I have argued that the presence of a collective partitive reading does not necessarily indicate definiteness, but only indicates that there is a plural entity in the domain of the partitive. The *-ever* free relative in (143) has a singular sortal and does not have a collective reading, whereas the *-ever* free relative in (134)

has a plural sortal and so does have a collective partitive reading available to it. Both are universals, but only (134) has a plural sortal. The same is true of the minimal pairs in (135) and (139) (*every*) and in (141) and (142) (*any*).

2.2.5 Summary

Ignorance free relatives and plain free relatives always behave like definites. Only indifference free relatives can behave like universals, and this is so regardless of whether the free relative contains a singular sortal, a plural sortal, or none at all. The following examples illustrate the universal behavior of indifference free relatives for each of the three environments discussed above.

almost modifier

(147) I did practically whatever (chore(s)) you asked me to do.

Scope under negation

(148) a. John didn't read whatever Sue recommended... but he read most of it.

b. John didn't read whatever (book(s)) Sue recommended... but he read most of them.

NPI licensing

(149) John read whatever (story(ies)) his father ever sent him.

2.3 Indifference-universal readings are blocked in environments where universals are prohibited

In this section, I discuss three cases in which indifference-universal readings are blocked: indifference-universal free relatives do not support *it*-anaphora, they do not take discourse antecedents, and they cannot appear in the subject position of specificational pseudoclefts. These are also environments in which universals are prohibited. Although these environments block the indifference-universal readings, they should allow both indifference-iota and ignorance readings. I identify some cases where the indifference-iota reading is not available and argue that its absence is due to independent reasons.

2.3.1 *it*-anaphora

In Chapter 1, I briefly discussed one kind of evidence that Jacobson provides in support of the argument that free relatives are definites, namely, *it*-anaphora. Those examples are discussed again here. While definite expressions support *it*-anaphora, universals do not.

(150) John read the thing/*everything Bill assigned—it was long and boring.

In order to resume an antecedent such as *every book* in (151), plural *they* is needed.

(151) John read every book Bill assigned—*it was/they were long and boring.

Plain free relatives, like definites, support *it*-anaphora, as shown in (152).

(152) John read what Bill assigned—it was long and boring.

And the *-ever* free relatives in (153)-(154) support *it*-anaphora too.

(153) John read whatever Bill assigned—although I don't remember what it was, but I do know that it was long and boring.

(154) Everyone who went to whatever movie the Avon is now showing said it was very boring.

What are the readings available to (153)-(154)? Iatridou & Varlokosta (1996, 1998) point out that the free relatives in (153)-(154) have ignorance readings.[7] While these examples favor ignorance readings, (155)-(156) provide examples in which the indifference-iota reading is more clearly available.

(155) It was an emergency, so I just went ahead and grabbed whatever tool was handy. Unfortunately, it was the wrong size.

(156) I had no time to play around, so I grudgingly used whatever email program was installed on the computer, and it turned out to be much better than the one I usually use.

The *-ever* free relatives in (153)-(156) do not have indifference-universal readings, and the sentences are acceptable only on indifference-iota and ignorance readings. So far, I have demonstrated that both ignorance and indifference-iota free relatives are acceptable where a universal would be prohibited.

Iatridou & Varlokosta provide this further example:

(157) *Everyone who talks to [whatever woman he meets on the street]$_i$ says she$_i$ is beautiful.

They point out that (157) lacks an ignorance reading. It is also unacceptable on an indifference-universal reading. They conclude that a free relative with what they call

[7] Iatridou & Varlokosta contrast a "speaker's ignorance" reading with a "conditional" reading, but they do not dwell on the difference between the two. For them, both have universal force.

a conditional reading—the one in (157)—behaves like a strong quantifier with respect to bound variable anaphora. Their claim is that (158)—the equivalent of (157) with a universal—is ungrammatical for the same reason that (157) is.

(158) *Everyone who talks to [every woman he meets on the street]$_i$ says she$_i$ is beautiful.

So there is one reading of the *-ever* free relative in (157) in which it behaves like a universal. (I discuss the ignorance reading of (158) in Chapter 4.)

In addition, an indifference-iota reading of (157) is available, although it is peculiar and requires some additional set-up.

(159) We sent some men out to do some interviews and then asked them to rate their subjects on several criteria. We found an unusual pattern: Everyone who talks to [whatever woman he meets on the street]$_i$ says she$_i$ is beautiful, whereas those who take some time in picking their subjects don't have the same favorable opinion of them.

(160) is a variant that uses the free relative "whatever woman he meets first". In this case, uniqueness is established by using "first" in the predicate and the indifference-iota reading is not hard to pick out.

(160) Everyone who talks to [whatever woman he meets first]$_i$ says she$_i$ is beautiful.

Finally, notice that if the free relative appears in a context of modal subordination, *it*-anaphora can succeed for an indifference-universal free relative. Roberts (1989, 1996) gives the following examples of modal subordination involving *it*. The second instance of the pronoun is not in the syntactic scope of the antecedent *a book*, and it is anaphoric to the indefinite only if it is in a modal context.

(161) a. If John bought a book, he'll be home reading it by now. It'll be a murder mystery. (cf. #It's a murder mystery.)

b. Usually Fred buys a muffin every morning and eats it at the office. It's always oat bran. (cf. #It's being baked.)

The *it*-anaphora in (161) is made possible through modal subordination, which requires that the *it* in the second clause occur in the scope of an intensional operator: In (161a) that operator is *will*, and in (161b) it is *always*. It is not directly licensed by the quantification introduced by the *if*-clause in (161a) or the quantifiers *usually* or *every* in (161b).

The phenomenon is demonstrated here with some ordinary definites and then with universals. The source for the licensing of *it* in (162)-(163) is modal subordination. (The examples with *every* are somewhat degraded, or at least hard to interpret, but nonetheless they show the same effect with respect to modal subordination and *it*-anaphora.)

(162) a. The boy closest to the teacher gets called on often. He never knows the answer. (cf. #He knows the answer.)

b. In those days, John was devoted to Bill and always read the book he assigned. It was usually long and boring. (cf. #It was long and boring.)

(163) a. (?)Every boy closest to the teacher gets called on often. He never knows the answer. (cf. #He knows the answer.)

b. (?)In those days, John was devoted to Bill and always read every book he assigned. It was usually long and boring. (cf. #It was long and boring.)

The following is (162b) with an *-ever* free relative in place of the definite description.

(164) In those days, John was devoted to Bill and always read whatever (book) he assigned. It was usually long and boring.

(164) exhibits modal subordination and it is this, not the suffix *-ever*, that facilitates *it*-anaphora. Although in (164) the ignorance reading is unavailable, it is not a counterexample to the claim that ignorance free relatives, but not indifference-universal free relatives, support *it*-anaphora.

2.3.2 Discourse antecedents

A second case that demonstrates that indifference-universal readings are blocked in environments where universals are prohibited is the inability of indifference-universal free relatives to take a discourse antecedent.

Dayal points out that *-ever* free relatives take discourse antecedents, unlike quantifiers. In (165a), "whatever she bought" takes the discourse antecedent "something". But in (165b-c), the same coindexation is impossible with quantified expressions.

(165) a. Mary bought [something]$_i$. [Whatever she bought]$_i$ was expensive.

b. Mary bought [something]$_i$. [Something she bought]$_{*i}$ was expensive.

c. Mary bought [something]$_i$. [Everything/Anything she bought]$_{*i}$ was expensive.

The definite in (166) and the plain free relative in (167) take discourse antecedents.

(166) Mary bought [something]$_i$. [The thing she bought]$_i$ was expensive.

(167) Mary bought [something]$_i$. [What she bought]$_i$ was expensive.

This pattern is taken to show that free relatives are definites, and not quantified expressions, because they can take discourse antecedents.

What readings are available to the *-ever* free relative in (165)? As coindexed, (165) has an ignorance reading: "The thing Mary bought—I don't know what it was—was expensive". It is ungrammatical under the indifference-universal reading, which describes multiple situations in which Mary buys something (or iterations of things Mary bought). In addition to the ignorance reading, (165) should also have an indifference-iota reading ("The thing Mary bought was expensive, and had she bought some other thing it would have been expensive"), but this does not seem to be available. One problem with obtaining an indifference reading in (165a) is perhaps that the intended reading is absurd. It establishes a fundamental connection between Mary buying something and it being expensive, and further suggests that there was just one expensive something.

In the following more plausible scenario, the ignorance reading is ruled out by establishing knowledge of the identity of the thing in question, leaving only the indifference-iota reading as a possibility. Consider the utterance "Whoever is at the top of this ballot won" in the following context. A and B are looking at the ballot. Smith is at the top of the ballot.

(168) A: Which one of these candidates won?

B: (pointing) This guy/Smith did.

A: How do you know?

B: Because I know how people vote, and I know that whoever is at the top of this ballot won.

Even if we can rule out the ignorance reading so that the indifference reading surfaces fairly clearly, the indifference free relative is not just anaphoric to *this guy* or *Smith*. In addition to talking about Smith, we're also talking about those counterfactual worlds in which someone other than Smith is at the top of the ballot.

The same effect can be obtained by using an ordinary definite description and indicating by paraphrase that the person's identity is irrelevant. In (169), the definite expression *the person at the top of the ballot* does not appear to be anaphoric to Smith.

(169) A: Which one of these candidates won?

B: (pointing) This guy did.

A: How do you know?

B: Because I know how people vote, and I know that the person at the top of this ballot—it doesn't matter who it is—won.

By contrast, obtaining a referential link in the reverse direction is much easier. The indifference free relatives in (155)-(156), repeated here, support *it*-anaphora on the indifference-iota reading.

(155) It was an emergency, so I just went ahead and grabbed whatever tool was handy. Unfortunately, it was the wrong size.

(156) I had no time to play around, so I grudgingly used whatever email program was installed on the computer, and it turned out to be much better than the one I usually use.

The free relative is a definite description, by virtue of which its referent is part of the common ground. In (155)-(156), for example, the indifference free relative introduces an object that serves as the antecedent for pronoun in the second clause, as sketched in (170). Its counterfactual meaning does not prevent access to its extension. In (165a) and (168), the indifference free relative could not be used anaphorically because it has in addition a counterfactual meaning that does not find a counterpart in the intended antecedent *something/this guy/Smith*, as sketched in (171).

(170)

whatever tool was handy		*it*
[intension extension]	⟵	[intension extension]

(171)

something this guy/Smith		*whatever Mary bought whoever is at the top of the ballot*
[intension extension]	⟵̸	[intension extension]

We can attribute this to the fact that the indifference free relative has a counterfactual modal base and is defined over counterfactual worlds, whereas the intension of *this guy* and the proper name *Smith* in (168) are constant functions and the discourse marker introduced by *something* in (165) is of extensional type e. A mismatch between the intension of the indifference free relative and the intension of its intended antecedent prevents anaphora in these examples.

2.3.3 Specificational pseudoclefts

The standard observation is that only plain free relatives can appear in precopular position in specificational pseudoclefts, as in (172), whereas predicational pseudoclefts allow both plain and *-ever* free relatives in that position, as in (173).

(172) What(*ever) John is is proud. SPECIFICATIONAL

(173) What(ever) John is is worthwhile/rare. PREDICATIONAL

The free relative in (172) is ungrammatical in the presence of *-ever*, and this is true whether it is an ignorance free relative or an indifference free relative.

Specificational pseudoclefts allow definites in precopular position, but not universals.

(174) The book Mary bought was Barriers.

(175) *Everything Mary bought was Barriers.

If free relatives are definites, the prohibition in (172) is puzzling.

Dayal explains the prohibition on *-ever* in specificational pseudoclefts by pointing out that the requirement that the identity of ιx.P(x) be unknown is incompatible with the semantics of the pseudocleft, because there the identity is explicitly given by the postcopular element.

Von Fintel's analysis can be applied in this case to make the correct prediction for both readings of the free relative in (172). Under the ignorance reading, the story is the same as the one given by Dayal. Under the indifference reading, a similar problem arises. The semantics we have assigned to (172) makes the impossible prediction that in all counterfactual worlds differing minimally with respect to what property John has, John has the same property. The point is illustrated in (176).

(176) *In those days, whoever John visited when he was sick was Mary.

It cannot be that in all counterfactual worlds differing minimally with respect to which person John visits when he's sick, the person he visits is Mary. Nor can it be that, across the epistemic space of speaker, in all the possible outcomes of the current world that differ minimally with respect to who John visits when he's sick, that person is Mary.

In principle, (172) should be acceptable with any type of free relative, since free relatives are definites. The problem arises when *-ever* is present. Perhaps we can avoid the problems of interpretation just outlined by in some way maintaining the presupposition introduced by *-ever*, while at the same time avoiding the conflict between the presupposition and the semantics of the specificational pseudocleft. If we can do this, an *-ever* free relative should be acceptable. Let's turn to that now.

On the basis of data from specificational pseudoclefts, Iatridou & Varlokosta (1996, 1998) argue that *-ever* free relatives are universals.[8] They report the following judgment (their (22)):

(177) *Whatever I like about John is not his sense of humor.

In a footnote, they observe that some speakers allow (177) on the ignorance reading. This is my judgment as well. The ignorance reading may be clearer in the slightly altered version in (178), where the speaker is ignorant not of speaker's own likes and dislikes but is, more plausibly, ignorant of Mary's likes and dislikes.

(178) Whatever Mary likes about John is not his sense of humor.

(178) means "I don't know what it is that Mary likes about John, but it's not his sense of humor". In short, (177) does not show that *-ever* free relatives as a whole are universals.

With regard to (177)-(178), notice that the sentences are negative. This means of characterizing the postcopular constituent is consistent with ignorance of its identity. Otherwise, the meaning of *-ever* (variation over the free relative denotation) conflicts with the meaning of the specificational statement (assertion of identity). This conflict arises in (172) and (176), but not in (177)-(178). The prediction is that (177)-(178) are grammatical on the ignorance reading, which is in fact the case.[9]

[8]With respect to (177), they note "specificational pseudoclefts with *whatever* are ungrammatical not only on the conditional reading of *whatever*, but also on its speaker's ignorance reading. ... We argue that this is still the result of the quantificational force of *whatever*. ... In other words, *whatever* retains its quantificational force on the speaker's ignorance reading and therefore on this reading it cannot participate in the formation of specificational pseudoclefts" (1996:122-3).

[9]Dayal (1997) also cites cases of what appear to be specificational pseudoclefts that accept *-ever* free relatives in precopular position.

(i) Whatever Bill cooked was what Mary ate/the thing Mary ate.

If all counterfactual worlds differ minimally with respect to what Mary likes about John, then in at least one of those worlds she likes his sense of humor. So this solution will not work for indifference free relatives.

The initial conclusion as established by (172) and (175) was as follows: Free relatives with *-ever* systematically pattern with universals, but this time under both ignorance and indifference readings. While negating a specificational pseudocleft gave us an opening for the ignorance reading in (177)-(178), it does not appear that we can find a way out for indifference. As pointed out in the discussion of (176), indifference appears to be incompatible with the semantics of the specificational pseudocleft.

2.3.4 Summary

Although indifference-universal free relatives are prohibited in environments that also prohibit ordinary universals, in principle these environments should allow both indifference-iota and ignorance free relatives. I have shown that this is indeed the case, except for two instances where indifference-iota free relatives cannot appear: An indifference-iota free relative does not take a discourse antecedent and cannot appear in the subject position of a specificational pseudocleft. I argued that its absence in these environments is due to the nature of the presupposition of indifference.

The following summarizes the conclusions reached above regarding three environments that prohibit universals.

it-anaphora

As expected, (157) is ungrammatical with an indifference-universal free relative. (160) provides a context that easily supports *it*-anaphora with an indifference-iota free

(i) is intended to demonstrate that ignorance free relatives are acceptable in the subject position of specificational pseudoclefts as long as what is in postcopular position is sufficiently vague as to its identity. It's not clear, however, that these are specificational pseudoclefts. The examples in (177)-(178) will have to suffice to make this point.

relative. (154) contains an ignorance free relative.

(157) *Everyone who talks to [whatever woman he meets on the street]$_i$ says she$_i$ is beautiful.

(160) Everyone who talks to [whatever woman he meets first]$_i$ says she$_i$ is beautiful.

(154) Everyone who went to whatever movie the Avon is now showing said it was very boring.

Discourse antecedents

Definite expressions, but not quantified expressions, can take discourse antecedents. Accordingly, (165a) is ungrammatical under an indifference-universal reading of the free relative.

(165) a. Mary bought [something]$_i$. [Whatever she bought]$_i$ was expensive.

The free relative in (165a) can be interpreted as an ignorance free relative. What is unexpected is that it cannot be interpreted as an indifference-iota free relative. This was attributed to a mismatch between the intension of the indifference free relative and the intension of its intended antecedent.

Specificational pseudoclefts

Universals cannot appear in the subject position of a specificational pseudocleft. Both ignorance and indifference free relatives are prohibited from appearing there, except when the presupposition of variation is compatible with the assertion of the specification pseudocleft as a whole. The presupposition of ignorance is at odds with the semantics of the specificational pseudocleft in (172) ("in all the possible outcomes of the current world that differ minimally with respect to what John is, what he is is proud"), but we were able to overcome that absurdity in the case of (178) ("in all

the possible outcomes of the current world that differ minimally with respect to what Mary likes about John, what she likes about him is not his sense of humor").

(172) What(*ever) John is is proud.

(178) Whatever Mary likes about John is not his sense of humor.

The presupposition of indifference ("in all counterfactual worlds differing minimally with respect to what John is, what he is is proud" and "in all counterfactual worlds differing minimally with respect to what Mary likes about John, what she likes about him is not his sense of humor") is compatible with neither (172) nor (178).

2.4 Free relatives as indefinites?

To this point, I have considered the behavior of free relatives in terms of either definiteness or universal quantification, without considering whether free relatives might be indefinites. There are a number of reasons to think that free relatives are not indefinites.

2.4.1 Discourse antecedents

The data from discourse antecedents in section 2.3.2 demonstrates that free relatives are not indefinites. While a plain free relative or an ignorance free relative can easily take a discourse antecedent, as in (179), the indefinite in (180) cannot.

(179) Mary bought [something]$_i$. [What(ever) she bought]$_i$ was expensive.

(180) Mary bought [something]$_i$. [A thing she bought]$_{*i}$ was expensive.

2.4.2 Existential sentences

In addition, Grosu & Landman (1998:158) and Wiltschko (1998:710) observe that free relatives do not occur in existential sentences, which are contexts of indefiniteness.

(181) a. There was a present on the table.

b. *There was the present on the table.

c. *There was everything/anything Mary bought for you on the table.

d. *There was what Mary bought on the table.

e. *There was whatever Mary bought on the table.

There is no reading of the free relative in (181e) that makes the existential grammatical. Both plain free relatives and *-ever* free relatives are uniformly excluded from contexts of indefiniteness.[10]

2.4.3 Uniqueness

Wiltschko argues that both plain and *-ever* free relatives are indefinites. In the remaining sections, I discuss only some of Wiltschko's data.

Definites presuppose uniqueness. This means that in (182), Peter and Mary explained the same thing. In (183), however, it could be that Peter and Mary explained different things.

[10] As noted in section 2.1.2, Grosu & Landman (1998) and Caponigro (2004) discuss, for languages other than English, a type of indefinite free relative that occurs only in the complement of existential predicates.

(182) Peter explained the thing people needed to know and Mary explained the thing people needed to know.

(183) Peter explained a thing/something people needed to know and Mary explained a thing/something people needed to know.

Wiltschko argues that (184), which contains a free relative, can mean that Peter and Mary explained different things.

(184) Peter explained what(ever) people needed to know and Mary explained what(ever) people needed to know.

Let's evaluate (184) first with a plain free relative. Imagine that Peter and Mary are taking turns at a microphone, talking to the same audience, in the same room, one after the other. (185) can mean that Peter and Mary explained different things if, say, they are answering questions from the audience. With Peter and Mary taking turns at the microphone, "people" means "people who ask a question at that turn" and at each turn the needs may change. But if we hold these factors constant, (185) describes the same event as (182), that is, Peter and Mary explained the same thing.

(185) Peter explained what people needed to know and Mary explained what people needed to know.

With the addition of *-ever*, as in (184), both ignorance and indifference readings become available.

A different scenario, one that eliminates the problems inherent in the changing identity of "people" and the subjectivity of "need to know", is used in (186)-(187). In both cases, Bill and Mary disapprove of the same thing.

(186) Peter disapproved of what Bill intended to read and Mary disapproved of what Bill intended to read.

(187) Peter disapproved of whatever books Bill intended to read and Mary disapproved of whatever books Bill intended to read.

Thus, free relatives introduce a unique discourse referent, unlike indefinites. Only when a subpart of the free relative has a variable denotation do we get the appearance of indefiniteness, as in (184).

2.4.4 Adverbs of frequency

Another argument from the uniqueness of definites comes from their behavior with adverbs of frequency. Wiltschko uses (188)-(190) to show that free relatives pattern with indefinites, because in both (189) and (190) *repeatedly* has differentiated scope. In (188), it must be that Mary killed the same ant repeatedly. But the indefinite in (189) and the free relative in (190) are compatible with repeated killings of different ants.

(188) #Mary repeatedly killed the ant.

(189) Mary repeatedly killed an ant.

(190) Mary repeatedly killed what(ever) was in her way.

But notice that the definite in (191) also supports differentiated scope for *repeatedly*, because *the thing that was in her way* can be interpreted over a series of temporally adjacent situations each containing an ant (suppose that Mary is dealing with a trail of ants).

(191) Mary repeatedly killed the thing that was in her way.

For the same reason, (192) with the relative clause *that was in her way* is greatly improved over (188), which lacks the additional descriptive material.

(192) Mary repeatedly killed the ant that was in her way.

The free relatives in (190) are thus analogous to the definite in (191), not to (188).

2.4.5 Nonspecific readings

Wiltschko uses the following examples to argue that free relatives are like indefinites in that they can acquire a nonspecific reading under negation. The definite is incompatible with the *because*-clause in (193), while the indefinite in (194) and the plain free relative in (195) are both fine.

(193) John didn't marry the Canadian girl (#because there is no Canadian girl).

(194) John didn't marry a Canadian girl (because there is no Canadian girl).

(195) John didn't marry who he loves (because there is nobody he loves).

But what makes (195) grammatical is not simply that it contains a free relative. The expression *who he loves* in (195) does not necessarily presuppose existence of someone that John loves (perhaps because it describes a natural kind—we may assume without too much trouble that everyone loves someone, even if that someone is as yet unrealized). When minimal pairs are used, the contrast above goes away and free relatives align with definites rather than indefinites. The expressions in (197) result in anomaly for the *because*-clause while those in (196) do not. In both (196) and (197), the free relatives behave like the definites.

(196) a. John didn't marry the person he loves (because there is no person he loves).

b. John didn't marry a person he loves (because there is no person he loves).

c. John didn't marry who(ever) he loves (because there is nobody he loves).

(197) a. John didn't marry the person he met in Canada (#because there is no person he met in Canada).

b. John didn't marry a person he met in Canada (because there is no person he met in Canada).

c. John didn't marry who(ever) he met in Canada (#because there is nobody he met in Canada).

2.4.6 Summary

This section presented evidence from contexts that distinguish between definites and indefinites. When minimal pairs are constructed, free relatives plainly behave like definites rather than indefinites.

2.5 Episodic and generic contexts

In section 2.5.1, I describe how a range of sentences have been treated using the generic operator in a situation-based semantics. In section 2.5.2, I describe how the generic operator interacts with definite expressions, using first ordinary definites and then free relatives as examples. In section 2.5.3, I discuss episodic contexts that are not purely episodic. In section 2.5.4, I discuss sentences that appear to have multiple layers of genericity.

2.5.1 The generic operator

Carlson (1995) gives a typical characterization of the distinction between generic and episodic sentences. A generic sentence is "any sentence expressing a generalization", while episodic sentences "relate specific occurrences". He gives the following paradigmatic examples:

(198) Generic sentences:

a. Cats chase mice.

b. Bears migrate from North to South America.

c. The sun rises in the East.

d. Bishops move diagonally.

(199) Episodic sentences:

a. The cat is on the mat.

b. Sam drove the bus from Amsterdam to Rotterdam.

c. The sun rose in the East.

d. Max moved his king's bishop from K2 to Q1.

Carlson goes on to say that "... a generic sentence is true (or false) not by there being any corresponding constituents of the world so described, but instead by virtue of there being some array of instances (episodes) from which language users can abstract the stated regularities. ... Generic statements are supported by principled patterns, not accidental ones. ... They express regularities or nonaccidental generalizations."

There is a wide consensus that generic sentences have the following properties: (i) they express nonaccidental generalizations (also described as normality, lawlike-ness, regularity, or essentiality), (ii) they involve quantification, perhaps universal, and (iii) they allow for exceptions. Various accounts of the semantics of generics have been offered that locate genericity with a sentential operator and derive their properties from the semantics of that operator.

It is common practice to represent the generic operator as a universal quantifier over situations, with the understanding that the generic operator is a universal that

allows for exceptions. For example, Condoravdi (1994/1997) argues that the generic operator is an intensional modal operator with universal force. Different modal bases and ordering sources produce different generalizations. Exceptions are accounted for by the ordering function, according to which some worlds in the modal base are more ideal than others. For example, (200) can be taken to be either a descriptive generalization ("normally, people around here do this") or a normative generalization ("ideally, people around here do this").

(200) People around here shoot at each other indiscriminately.

The descriptive generalization has a circumstantial modal base determined by people's habits and a stereotypical ordering source, and the normative generalization has a circumstantial modal base determined by the law and a deontic ordering source.[11] The generalization in (201) presents a similar ambiguity. While it may be true as a descriptive generalization, it is false as a normative generalization.

(201) Americans drive on the right-hand side of the road in England.

See also Krifka, Pelletier, Carlson, Meulen, Chierchia & Link (1995), Carlson (1995), and Cohen (1999) for comprehensive discussion of approaches to the semantics of generics.

Krifka, et al. propose the formal representation in (202) for generalization over objects or situations. The definition requires that there be multiple instantiations of x that satisfy the restrictor.

[11] The full explanation goes as follows: "Let's assume that the area around here is such that it induces violent habits in people but that violent behavior is neither morally nor legally sanctioned. Then [(200)] would be true if interpreted with respect to a circumstantial modal base taking into account facts about the habits and dispositions of the local population and a stereotypical ordering source. But it would be false if interpreted with respect to a circumstantial modal base taking into account facts about what morality or the law prescribes and a deontic ordering source where the ideal is such that what morality or the law prescribes is adhered to" (Condoravdi 1997:42-43).

(202) An expression Q[...x...;...](Restrictor[...x...];Matrix[...x...]) is *a generalization over x* iff it allows for models in which there is more than one value for x for which ∃[Restrictor[...x...]] is true (where ∃ binds all free variables except x).

Habituals are based on episodic verbs and describe multiple episodes occurring over time with some regularity. Krifka, et al. define habituals as a special case of generalization, namely, generalization over situations, as in (203). An example is given in (204).

(203) A sentence is habitual iff its semantic representation is of the form
Gen[...s...;...] (Restrictor[...s...]; Matrix[...s...])
where s is a situation variable.

(204) Mary smokes when she comes home.
Gen[s,x;](x=Mary & x comes home in s; x smokes in s)
"In general, if there is a situation of Mary coming home, she will smoke in that situation."

The sentence in (205) has a number of generic readings that depend on the assignment of focus:

(205) John drinks beer.

Krifka, et al. (1995) and Pelletier & Asher (1997) propose that these ambiguities can be captured in a situation semantics by mapping the unfocused material to the restriction of the generic operator in each case.

(206) John drinks *beer*.
Gen[x, y, s;](x=**John** & x **drinks** y **in** s; y is **beer**)

"In appropriate situations in which John drinks something, this is normally beer."

(207) John *drinks* beer.

Gen[x, y, s;](x=**John** & y is **beer** & y **in** s & x **in** s; x **drinks** y **in** s)

"In appropriate situations where there is some beer available, John normally drinks it."

(208) John *drinks beer.*

Gen[x, s; y](x=**John** & x **in** s; ∃y[**beer**(y) & x **drinks** y **in** s)

"In appropriate situations which contain John, he will drink beer."

I will use a similar approach to representing genericity.

In what follows, I represent the episodic/generic distinction as existential or generic quantification over situations, respectively. The generic operator in (210) is a modalized universal quantifier. I don't make any other special assumptions about the semantics of the generic operator.

(209) ∃s [. . . s . . .]

(210) GENs [. . . s . . .] [. . . s . . .]

Having collapsed all generalizations under (203), we can distinguish habituals from other types of generic statements by the observation that the situations quantified over in a habitual are temporally ordered. Other kinds of generic statements—those described as generalization over individuals rather than generalization over episodes—can be expressed using situations as well. Situations need not correspond to episodes. For example, in (211) the interpretation of *The children in this program are almost always shy* on the individual-level reading requires evaluation over a series of different children (or different child-containing situations), so that the children are evaluated

one at a time. The situations in question do not have a temporal dimension and they are not temporally ordered. (Kratzer 1989 discusses the notion of a minimal situation sufficient to make a proposition true.)

(211) The children in this program are almost always shy.

Almost all [x,s](x=**one of the children in this program** & x **in** s; x is **shy in** s)

"In almost all appropriate situations containing one of the children in this program, the child will be shy."

Other examples are given in (212)-(214).

(212) A parking ticket is expensive.

Gen[x, s](x=**parking ticket** & x **in** s; x is **expensive in** s)

"In appropriate situations containing a parking ticket, the parking ticket will be expensive."

(213) Birds fly.

Gen[x, s](**bird**(x, s); **fly**(x,s))

"In appropriate situations containing a bird, the bird will fly."

(214) If a farmer owns a donkey, he feeds it.

Gen[x, y, s, s′](**farmer**(x, s) & **donkey**(y, s) & **own**(x, y, s); **feed**(x, y, s′))

"In general, situations containing a farmer and a donkey in an owning relationship extend into other situations in which the farmer and the donkey are in a feeding relationship."

By contrast, the situations in (204)-(208) correspond to temporally ordered episodes.

2.5.2 The observed readings

Dayal (1997) points out that the universal effects for *-ever* free relatives appear in generic contexts and not in episodic contexts.

The effect of context on the interpretation of ordinary definites is demonstrated in (215), in which the same sentence (*the person in the front row was called on twice*) has both episodic and generic interpretations.

(215) a. Episodic: In my 10am class this morning, the person in the front row was called on twice.

b. Generic: In those days, the person in the front row was called on twice.

(215a) is episodic: there is a (unique) person in my 10am class who sat in the front row and was called on twice. The definite description *the person in the front row* denotes one of the people in my 10am class. It is interpreted as in (216), where its situation variable is bound by existential closure. The existential quantifier has one argument.

(216) $\lambda s_0.\exists s$ [s is past with respect to s_0 & s is my 10am class this morning & s has a (unique) person in the front row & the person in the front row in s is called on twice in s]

Now I turn to the generic context in (215b). The definite expression here has two interpretations, one in which its reference is fixed and one in which it covaries with the situation (i.e., it shows quantificational variability effects). There is an interpretation of the generic in (215b) under which the denotation of *the person in the front row* is fixed across the situations in question, so that it denotes the same person in every situation. It might be uttered in a context in which I'm talking about an old classmate whose name I can't remember. This interpretation is one in which

the generic operator does not bind the situation variable of the definite expression. The phrase "in those days" delineates the period of time s, which contains classroom situations s′.

(217) $\lambda s_0.\exists s$ [s is past with respect to s_0 & s is the period of time delineated by "in those days" & s has a (unique) person in the front row & GENs′≤s [s′ is a classroom situation] [the person in the front row in s is called on twice in s′]

There is a second interpretation of (215b) under which the denotation of *the person in the front row* varies across classroom situations, giving a different person in each situation: generally, a classroom situation with a (unique) person in the front row is a classroom situation in which that person was called on twice. Under this interpretation, the generic operator binds the situation variable of the definite expression as in (218).

(218) $\lambda s_0.\exists s$ [s is past with respect to s_0 & s is the period of time delineated by "in those days" & GENs′≤s [s′ is a classroom situation with a (unique) person in the front row] [the person in the front row in s′ is called on twice in s′]

In episodic contexts, as in (215a), the value of the definite expression is fixed. But in generic contexts, as in (215b), the denotation of the definite expression can, but need not, covary with the situation.

I use (219) to illustrate the role of episodicity in the interpretation of *-ever* free relatives. As with ordinary definites, free relatives are constrained to a fixed value in episodic contexts while in generic contexts the free relative can, but need not, covary with the situation.

The sentence "Zack voted for whoever was at the top of the ballot" can be interpreted as episodic, as in (219a) (say, yesterday's election) or as a generic, as in (219b)

(say, in the years before Zack became a taxpayer).

(219) a. Yesterday, Zack voted for whoever was at the top of the ballot.

b. In those days, Zack voted for whoever was at the top of the ballot.

The assertions of (219a-b) are spelled out in (220)-(222).

(220) Episodic: Zack voted for the person at the top of the ballot.

(221) Generic (binding the free relative): Generally, when Zack voted for someone, he voted for the person at the top of the ballot.

(222) Generic (not binding the free relative): *There was one person who was always at the top of the ballot* and generally, when Zack voted for someone, he voted for that person.

The plain free relative in (223) also has the meanings sketched in (220)-(222).[12]

(223) a. Yesterday, Zack voted for who was at the top of the ballot.

b. In those days, Zack voted for who was at the top of the ballot.

Plain free relatives do not behave like universals with respect to the syntactic tests discussed in sections 2.2 and 2.3.

Schematically, (221) translates as (224) and (222) translates as (225). In (224), the definite expression is in the nuclear scope of the generic operator, where its situation variable is bound by the generic operator. In (225), however, the situation variable of the definite is identified with the utterance situation s_0. The result is that in (225) the definite is interpreted above the generic rather than under it. In both cases, the definite remains in the nuclear scope.

[12](223) may be degraded for some speakers, as plain *who* tends to be marginal in English free relatives.

(224) $\lambda s_0.\text{GEN}s \leq s_0$ [. . .] [. . . ιx.P(x,s). . .] =(221)

(225) $\lambda s_0.\text{GEN}s \leq s_0$ [. . .] [. . . ιx.P(x,s_0). . .] =(222)

Dayal argues that the semantic effect of universality requires the presence of the generic operator in a structure such as (224). However, she does not take into account the difference between ignorance and indifference free relatives. This distinction is taken up in the next chapters. While it is clear that indifference free relatives can be bound by the generic operator, it is not so clear for ignorance free relatives.

2.5.3 Natural kinds

The claim so far is that the universal effects in indifference free relatives arise only in generic contexts where the denotation of the free relative varies (following Dayal 1997). One objection that might be raised is that generic NPs are apparently licensed in episodic contexts. Carlson's paradigmatic examples in (198) are semantically tenseless. But sentences with tense operators can have generic interpretations too. In the case of free relatives, it appears that a generic operator is not necessary to license a reading of (226) in which John grabbed every dish on the table.

(226) John grabbed whatever dish was on the table.

Free choice *any* is not licensed in the episodic sentence in (227), but in the minimally different (228) it is fine. In connection with the licensing of free choice *any* in apparently episodic sentences such as (228), this phenomenon has been given the label "subtrigging" (LeGrand 1975). (229) is an example of subtrigged *any* from Dayal (1998).

(227) *John grabbed anything.

(228) John grabbed anything that was on the table.

(229) At the end of his speech, the president thanked any soldier who had fought in the gulf war.

There are reasons to believe that environments such as (226), (228), and (229) contain genuine generic operators.

Chierchia (1998:348-352, from which this entire paragraph quotes liberally) argues that natural kinds are not only biological, well-established kinds, but also anything to which sufficiently regular behavior can be imputed. In any given world, a kind is identified with the totality of its instances. So, for instance, the dog-kind is modeled as the set of dogs, and it "can be identified with the totality of dogs, the scattered entity that comprises all dogs, or the fusion of all dogs around" (p.349). A kind can be manufactured out of a property by taking the largest member of its extension at any given world. Complex nouns may constitute a kind only if they are sufficiently general, so "the property of being a broken old shoe that Leo left behind is unlikely to have a corresponding kind" (p.351).

A kind consists of actual and possible instances. In (230), the NP *a five year old child* can be taken to denote a kind that consists of actual and possible instances of five year old children. (230) successfully expresses a generalization, even if there are no five year old children in the actual world and the NP is undefined for the world of evaluation.

(230) A five year old child can do that.

(230) can be analyzed as a generalization with a subject NP that describes a kind. Quantification over the kind denoted by *five year old child* results in situations that contain an instance—actual or possible—of that kind. The effect is that of quantification over individuals.

The contrast in grammaticality between (227) and (228) can be explained by the fact that *anything* and *anything on the table* denote substantially different entities. The descriptive content of the relative clause *that was on the table* facilitates creation of a natural kind. Likewise, free relatives such as *whatever was on the table* in (226) can be taken to involve a natural kind. The kind is able to provide the domain of the generic operator with multiple instantiations of what was on the table. The claim is that the additional descriptive material makes the extensional context an intensional one, contra Dayal (1998). (228) is interpreted as in (231). The situations in (231) need not be temporally ordered.

(228) John grabbed anything that was on the table.

(231) λs_0.GEN$s \leq s_0$ [s is past with respect to s_0 & $\exists$x[on-the-breakfast-table(x, s)] & C(j, x, s)] [grab(j, x, s)]

"Every situation s in the past of the appropriate type containing John and a thing on the breakfast table is a situation in which John grabs the thing on the breakfast table."

Kadmon & Landman (1993) essentially use the same mechanism to account for the universal behavior of free choice *any* when they argue that free choice *any* has a generic interpretation. See Sæbø (2002) and Quer (2000) for additional arguments that apparently episodic subtrigging contexts are actually modal ones.

2.5.4 Sources of genericity

What is the source of the generic quantification in (226)? Considering just episodicity, (226) has four interpretations, two that are episodic and two that are habitual. Episodic interpretations are given in (232) and habitual interpretations are given in

(233). In addition, the free relative itself can be interpreted as generically quantified or not (roughly, "every dish" vs. "the dish").

(232) Yesterday morning, John grabbed whatever dish was on the breakfast table.

a. "Yesterday morning, John grabbed the dish that was on the breakfast table."

b. "Yesterday morning, John grabbed every dish on the breakfast table."

(233) In those days, John grabbed whatever dish was on the breakfast table.

a. "In those days, each morning, John grabbed the dish that was on the breakfast table."

b. "In those days, each morning, John grabbed every dish on the breakfast table."

As the (b) paraphrases indicate, both (232) and (233) have interpretations under which John grabbed everything on the table. In (232), it could be that yesterday's breakfast table contained several dishes and John grabbed each one of them. In (233), it could be that every morning John would grab every dish on the breakfast table.

I will assume that (232b) and (233a-b) all involve some type of generic quantification, even though (232) in particular appears not to contain a generic operator. The presence of genericity at the level of the sentence, as in (233a-b), or at a more embedded level, as in the (b) versions, is sufficient to produce the universal effects. Of the four choices represented in (232)-(233), context will determine the salience or appropriateness of one over the other, but all are in principle available.

For comparison, (234)-(235) contain similar examples, but with the free relative in subject position. The same observations hold.

(234) Yesterday morning, whatever dish contained milk tasted funny.

a. "Yesterday morning, the dish that contained milk tasted funny."

b. "Yesterday morning, every dish that contained milk tasted funny."

(235) In those days, whatever dish contained milk tasted funny.

a. "In those days, at meals, the dish that contained milk tasted funny."

b. "In those days, at meals, every dish that contained milk tasted funny."

I will first discuss the (a) versions of (232)-(233), and then the (b) versions. (232a) is the simplest case. It is an episodic sentence. Its assertion is given in (236).

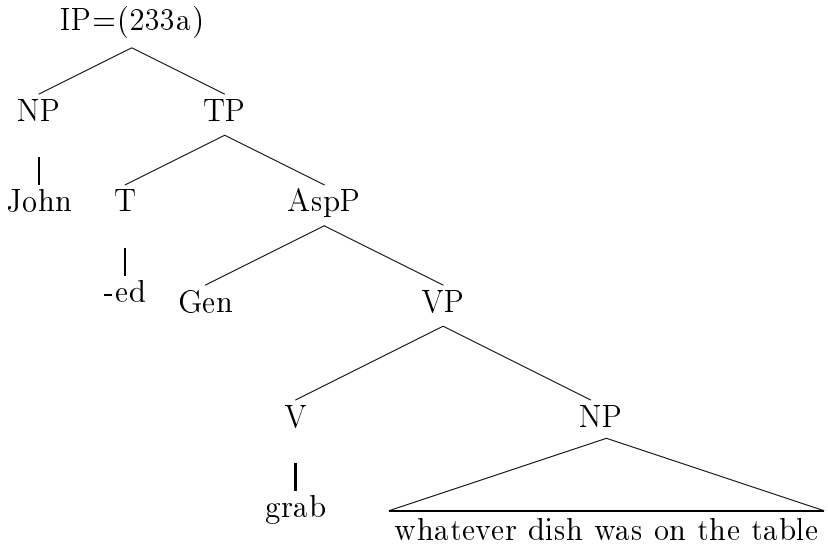
(236) $\lambda s_0.\exists s$ [s is past with respect to s_0 & grab(j, [whatever dish was on the breakfast table in s], s)]

"There is a situation s in the past in which John grabs FR."

(233a) is a habitual. The adverbial phrase *in those days* is nonquantificational but facilitates a generic reading by defining a stretch of time across which situations can be defined. Chierchia (1998) proposes that generic sentences be represented as in (237), where the generic operator is part of the verbal aspect.[13] Structurally, the operator **Gen** c-commands its scope; the material that (locally) c-commands **Gen** forms the restriction of **Gen**.

[13]Based on surveys of generic markers across a number of different languages, Filip & Carlson (1997) argue that genericity is independent of both aspect and tense. I do not pursue that question here. Regardless of what labels the functional projections in (237) bear, the structural relationships described are equally useful in guiding the mapping from s-structures to logical forms such as (238).

(237)



Chierchia gives the interpretation of a structure such as (237) as (238).

(238) λs_0.GEN$s \leq s_0$ [s is past with respect to s_0 & C(j, s)] [grab(j, [whatever dish was on the breakfast table in s], s)]

"Every situation s in the past of the appropriate type containing John is a situation in which John grabs FR."

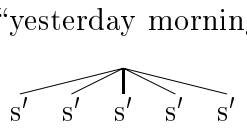
Now I turn to the (b) versions. In (232b), the generically quantified reading is obtained when a generic operator quantifies over situations that consist of subparts of the episode. There is a direct analogy with habituals such as (233). In (232), *yesterday morning* behaves analogously to *in those days* by defining a period of time across which subsituations or temporal slices can be defined. Making a direct parallel with (233a), let's start by assuming that the meaning of (232b) can be represented as in (239). That is, I use the structure (237), but will take the generic operator to quantify over subsituations. (After discussing (233b), a different syntactic representation will be introduced for (232b).)

(239) $\lambda s_0.\exists s$ [s is past with respect to s_0 & GEN$s' \leq s$ [C(j, s')] [grab(j, [whatever dish was on the breakfast table in s'], s')]]

"There is a situation s in the past in which every one of its subsituations s' of the appropriate type containing John is a situation in which John grabs FR."

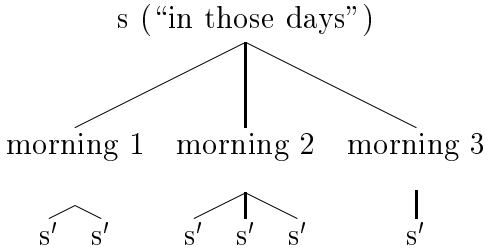
In (239), the situation **s** is yesterday morning, and the subsituations **s′** are minimal situations, some or all of them possibly cooccurring in time, that contain John and a dish that he grabs. The following diagram describes the relationship between **s** and its subsituations in (239).

(240)



(233b) is more complicated. In addition to the habitual component ("every morning"), it is possible that John grabs every dish on each of those mornings. One way of approaching the difference between (232b) and (233b) is to retain the logical form in (239), widen the episode in question from "yesterday morning" to "in those days", and impose on its subsituations pragmatic groupings that correspond to the different mornings in **s**. The diagram in (241) describes such a grouping. The top node **s** is the period of time described by *in those days* and the nodes labeled **s′** are minimal situations containing John and a dish that he grabs.

(241)



Under this view, the groupings that correspond to mornings are entirely pragmatic, not semantic. They are accordingly not represented in (239). But the possibility of examples such as (242) and (243) provides reason to think that genericity is involved at two different levels in (233b). In the following examples, *almost* modifiers independently modify at the sentence level and at the free relative level.

(242) Almost every morning, John ate just about whatever was on the breakfast table.

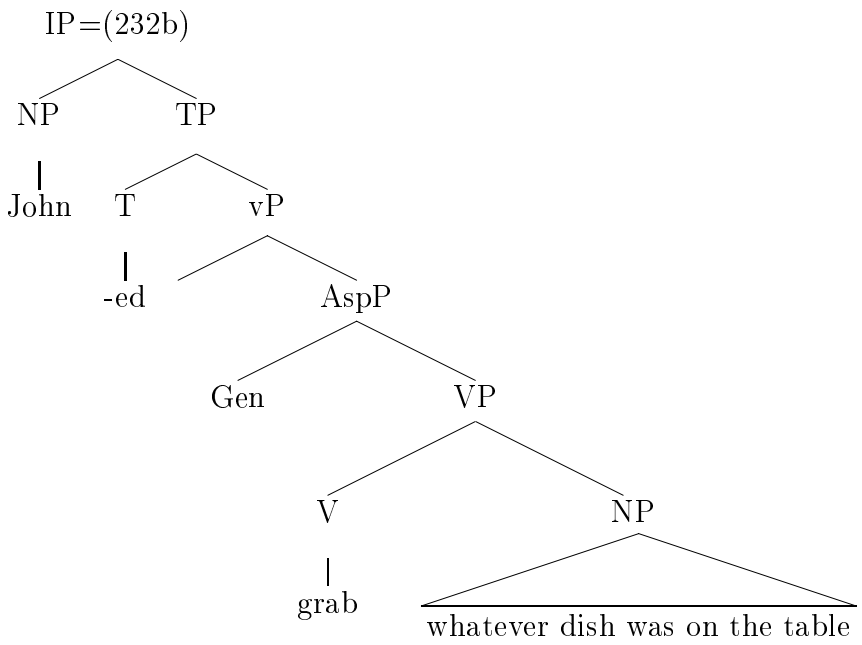
(243) Nearly always, John eats practically whatever is on the breakfast table.

So perhaps the (b) versions of (232)-(233) should be accounted for by positing a second layer of genericity. With this in mind, I discuss first (232b) and then (233b).

An alternate analysis of (232b) is in (244), for the interpretation in (239)/(240) above. In (244), the generic operator appears under vP (a split VP was first proposed by Larson 1988 for double object constructions). (244) differs from (237) only in that there is an additional layer of structure, namely, vP, between TP and AspP.[14]

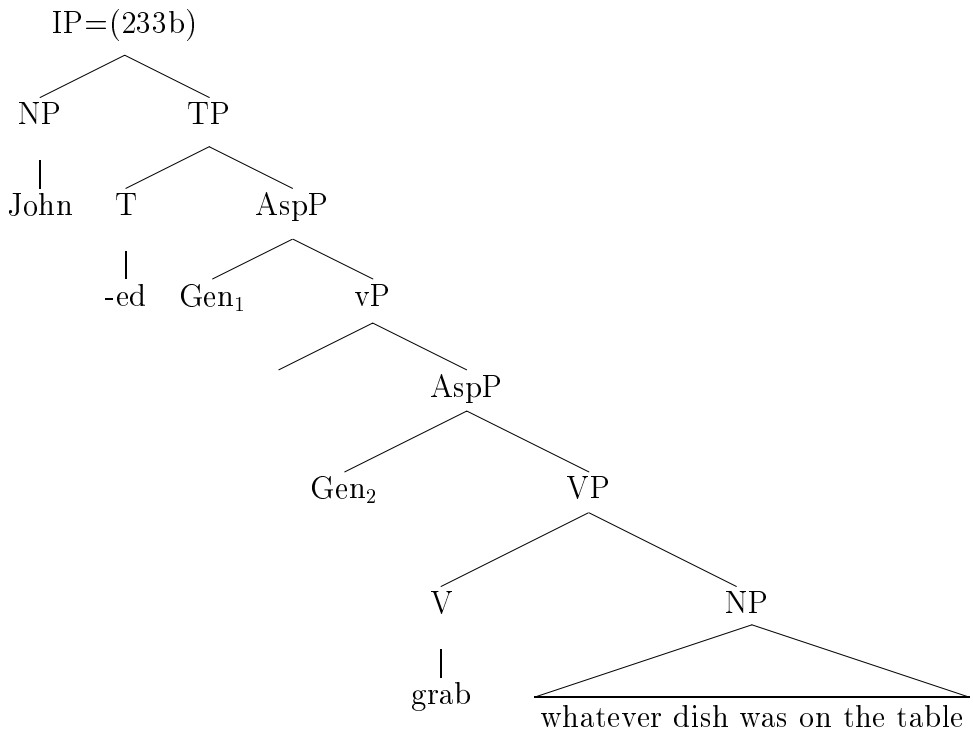
[14](244) does nothing more than put Gen within an extended VP and take Gen out of the immediate scope of Tense. I adduce no independent evidence for (244) over (237).

(244)



The possibility of situating a generic operator under vP in turn suggests the possibility that in (233b) there are two generic operators at work. To Chierchia's representation in (237) we add a second operator **Gen** using the split VP structure.

(245)



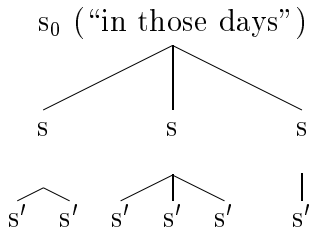
(245) is translated as in (246).

(246) λs_0.GENs$\leq s_0$ [s is past with respect to s_0 & C(j, s)] [GENs$'\leq$s [C(j, s$'$)][grab(j, [whatever dish was on the breakfast table in s$'$], s$'$)]]

"Every situation s in the past of the appropriate type containing John is a situation in which every one of its subsituations s$'$ of the appropriate type containing John is a situation in which John grabs FR."

In (246), the groupings that correspond to mornings are obtained by directly quantifying over mornings. In (239)/(241), quantification was over minimal grabbing situations only. The phrase "in those days" defines a period of time containing situations that correspond to mornings, whose subsituations are minimal situations containing John and a dish that he grabs. Thus, (246) could describe something like the following:

(247)



The generic operator that we have placed higher in the structure in (245) quantifies over a period of time that is carved up into temporally ordered situations—the kind of quantification that is typical of habituals. The lower one quantifies over subsituations that are not temporally ordered—similar to the situations quantified over when we consider shy children, expensive parking tickets, flying birds, or donkey-farmer pairs in (211)-(214), five year old children in (230), or John's grabbing multiple dishes at breakfast. And we can say the same thing about the examples with free choice *any* in (228)-(229). It is this second kind of genericity that Kadmon & Landman have in mind when describing a free choice *any* NP as a generic NP.

In this section, I have raised two questions: whether a generic operator appears below a vP in free relatives with meanings such as (232b) and, in addition, whether two generic operators are needed to interpret free relatives with meanings such as (233b).[15] Although examples such as (242)-(243) suggest that more than one generic operator is necessary to account for readings such as (233b), I leave open the question of whether (239) or something more like (246) is the correct analysis for (233b).

2.6 Conclusions and questions

This chapter was devoted to establishing the generalization that only indifference free relatives can acquire the behavior of universals. Taking the ignorance/indifference dichotomy and von Fintel's analysis as a starting point, I considered the quantificational force of *-ever* free relatives in light of the ignorance/indifference dichotomy and focused on separating out the two dimensions. The conclusion was that only indifference free relatives can behave like universals, while both ignorance and indifference free relatives can behave like definites.

Quantificational force is not itself a parameter but rather is a by-product of two contextual parameters: modal flavor and genericity. As expected, there is no universal effect when an *-ever* free relative appears in a purely episodic context. In generic contexts, however, the universal effects are possible only with indifference free relatives.

[15] Readers who would like a more complete summary of this section may consult the following table.

EXAMPLE	SCHEMA	TREE	LF	DIAGRAM
(232a)	VP	- - -	(236)	- - -
(232b)	GEN VP	(237)	(239)	(240)
	vP GEN VP	(244)	"	"
(233a)	GEN VP	(237)	(238)	- - -
(233b)	GEN VP	(237)	(239)	(241)
	GEN vP GEN VP	(245)	(246)	(247)

When indifference free relatives exhibit universal behavior, a generic operator quantifies over situations or subsituations containing the free relative. Free relatives of any type can appear in a generic context, and when they do they can covary with the situation (with the possible exception of ignorance free relatives). It is only indifference free relatives that exhibit universal effects under those circumstances.

	GENERIC CONTEXT	COVARYING VALUE	UNIVERSAL BEHAVIOR
ordinary definite	✓	✓	*
plain free relative	✓	✓	*
ignorance free relative	✓	?	*
indifference free relative	✓	✓	✓

The universal effects for *-ever* free relatives are obtained (i) when the free relative is in a generic context and (ii) when the denotation of the free relative covaries with the situation. These features are not sufficient to achieve the universal effects in free relatives. We also know that (iii) the free relative must be an indifference free relative.

These observations form the basis for the discussion of indifference free relatives in Chapter 3. It remains to be explained why only indifference free relatives—and not ignorance free relatives or plain free relatives—are subject to these effects. The claim that both plain free relatives and *-ever* free relatives are at some level definites is implicit in the analysis adopted in Chapter 1, and if it is to be maintained something more will need to be said for the case of indifference free relatives.

In the end, we are left with some questions to answer. First, what is the contribution of *-ever* to the free relative's ability to behave like a universal? Or, conversely, why don't plain free relatives exhibit the behavior of universals in the same envi-

ronments? It cannot be attributed to the fact that indifference free relatives have intensional meanings, because plain free relatives—just like ordinary definites—have intensional meanings as well. Chapter 3 is devoted to explaining the universal effect for indifference free relatives, which occurs when they are generically quantified. I present an analysis of how the universal effects are derived for indifference free relatives in generic contexts. In addition, I will argue that agent indifference free relatives cannot behave like universals. In both cases, the analysis requires taking into account the projection behavior of the presupposition of indifference.

Second, we must explain why it is that, contrary to Dayal and Elliott, ignorance free relatives in fact cannot have universal-like interpretations. Chapter 4 is devoted to explaining why ignorance free relatives cannot behave like universals.

Chapter 3

Indifference

In Chapter 2, it was established that when *-ever* free relatives behave like universals, they do so only on the indifference reading. In this chapter, I discuss the properties of indifference free relatives in detail. I provide an explanation for the universal effects in indifference free relatives and continue the investigation of the universal effects by comparing agent indifference and external indifference free relatives.

I will argue that the difference between external indifference and agent indifference derives from the projection behavior of the presupposition of indifference. The counterfactual presupposition that produces indifference can project globally, giving rise to external indifference, or it can be accommodated locally, giving rise to agent indifference. In generic contexts, global presupposition projection has roughly the effect of domain widening. The universal effects arise when the presupposition of indifference induces what can be characterized as widening in the restriction of the generic operator. In this, I follow Kadmon & Landman (1993), who argue that domain widening is a necessary ingredient for the universal effects displayed by free choice *any* in generic contexts. A prediction is then made that the projection behavior of the two types of indifference also correlates with the universal effects. Agent indifference free relatives

should not exhibit universal effects, because local presupposition projection cannot result in domain widening for the generic operator.

Section 3.1 summarizes the relevant background from Chapters 1 and 2, lays out the basic facts to be accounted for in this chapter, and includes a discussion of previous approaches to explaining the universal effects. Section 3.2 discusses the role of the generic operator in creating the universal effects. Section 3.3 examines the projection behavior of the presupposition of indifference. Section 3.4 introduces a proposal for the shape of the presupposition of indifference when it is associated with a generically quantified free relative. Section 3.5 brings together these observations and presents first an analysis of the universal effects in external indifference free relatives and then an analysis of the agent indifference construal. Section 3.5.3 explores a prediction of this account, namely, that agent indifference free relatives do not exhibit universal effects.

3.1 The issues

3.1.1 The presupposition of indifference

The analysis of *-ever* free relatives that we adopted in Chapter 1 looks like this (from von Fintel 2000):

(248) *whatever* (w)(F)(P)(Q)

Presupposes: $\forall w' \in \min_w [F \cap (\lambda w'.\iota x.P(w')(x) \neq \iota x.P(w)(x))]$:

$Q(w')(\iota x.P(w')(x)) = Q(w)(\iota x.P(w)(x))$

Asserts: $Q(w)(\iota x.P(w)(x))$

The contribution of *-ever* is presuppositional, and indifference arises when the modal base **F** in the presupposition is counterfactual. The suffix *-ever* enforces variation in

the identity of ι**x.P(x)** across the modal base: The domain of quantification is the subset of **F** whose worlds vary with respect to the identity of the thing denoted by the free relative. This is given by the expression in (249) (repeated from (248)).

(249) $\min_w[\mathrm{F} \cap (\lambda \mathrm{w}'.\iota \mathrm{x}.\mathrm{P}(\mathrm{w}')(\mathrm{x}) \neq \iota \mathrm{x}.\mathrm{P}(\mathrm{w})(\mathrm{x}))]$

Let us refer to this set ("minimally different F-worlds in which the identity of ιx.P(x) differs from what it is in the world of evaluation") as **G**. The presupposition of variation in (248) can then be abbreviated as in (250).

(250) Abbreviated presupposition of variation

$\forall \mathrm{w}' \in \mathrm{G} \rightarrow \mathrm{Q}(\mathrm{w}')(\iota \mathrm{x}.\mathrm{P}(\mathrm{w}')(\mathrm{x})) = \mathrm{Q}(\mathrm{w})(\iota \mathrm{x}.\mathrm{P}(\mathrm{w})(\mathrm{x}))$

Occasionally, when the expression in (249) is not under discussion, I will use the abbreviation in (250).

In this chapter, I examine both the content of the presupposition of indifference and its projection behavior. This leads to analyses for external indifference, for agent indifference, and for exactly how it is that genericity and the presupposition of indifference together create the universal effects in external indifference free relatives.

3.1.2 Agent indifference and external indifference

In Chapter 1, I motivated a distinction between agent indifference and external indifference. There I argued that the agent indifference construal, when it appears, is optional. The agent indifference construal is available in (251) but not in (252) (these examples can also contain ignorance free relatives, but we are not concerned with that reading here).

(251) Kay voted for whoever was at the top of the ballot. (agent or external)

(252) In those days, whoever was at the top of the ballot won. (external only)

(251) has an agent indifference construal available to it, namely, that Kay had an indifferent attitude when she voted for the person at the top of the ballot. On that reading, (251) contains an agent indifference free relative. (252) does not have a reading under which the outcome is influenced by indifference on the part of some agent. It contains an external indifference free relative.

External indifference free relatives are in principle compatible with indifference on the part of an agent or some other party, as are plain free relatives. But neither conveys agent indifference as a part of its meaning (just as indifference free relatives are compatible with, but do not convey, ignorance). By "agent indifference free relative", I mean something in particular. The agent indifference construal requires an agent subject, and the agent indifference construal is available only when the indifference free relative is in the scope of an agent subject. In (251), the agent subject is Kay. The sentences in (253)-(255) further illustrate this property. (253) contains a free relative in subject position, (254) contains an experiencer subject, and (255) contains an agent subject. Only (255) allows an agent indifference construal, namely, that John had an indifferent attitude when he purchased what Susan designed. The desired external indifference readings can be obtained as follows. For the case of (253), suppose that I need to hire an architect to design a building for me. I like all of the buildings that Susan has designed, but she always spends far too much. I decide not to hire her for my project, and I give (253) as the reason why. For (254), suppose that Susan's buildings have a distinctive architectural style that John recognizes. As he travels, he notices the buildings she has designed. And then, for (255), suppose he likes them so much that he purchases them.

(253) Whatever building Susan designed was expensive.

(254) John noticed whatever building Susan designed.

(255) John purchased whatever building Susan designed.

A sentence like (253) doesn't make a locus of indifference available, because the free relative itself is in subject position. (254) is a poor candidate for reliably obtaining an agent indifference reading, since it contains the experiencer verb *notice*. It is difficult to construe John as indifferent in (254), since it would require that agency be imposed on an experiencer subject. The experiencer subject supplies a weaker locus of indifference than does the agent subject in (255), which contains the agentive verb *purchase*. In (255), the indifference free relative is in the scope of an agent subject and it readily allows for the epiphenomenal inference that John had an indifferent attitude when he purchased what Susan designed.

These observations about the locus of indifference are useful in controlling for one reading or the other when considering the free relative data in what follows.

3.1.3 Universal effects

In contrast to their plain free relative counterparts, *-ever* free relatives exhibit universal effects. They can accept *almost* modifiers, take universal scope under negation, and license NPIs. Examples with *almost* modifiers are in (256), universal scope under negation is illustrated in (257), and NPIs are in (258). In Chapter 2, I argued that the (b) examples contain indifference free relatives, not ignorance free relatives.

(256) a. *I did practically what you asked me to do.

b. I did practically whatever you asked me to do.

(257) a. John didn't read what Sue recommended... #but he read most of it.

b. John didn't read whatever Sue recommended... but he read most of it.

(258) a. *John read what his father ever sent him.

b. John read whatever story his father ever sent him.

I provide an analysis for the universal effects in section 3.5, where the presupposition of indifference will be called into service to explain both the universal effects and the phenomenon of agent indifference. In section 3.5.3, I will suggest that (256b) and (257b) contain external indifference free relatives, not agent indifference free relatives. (258b), however, is an exception: NPIs are licensed in both agent indifference free relatives and external indifference free relatives.

3.1.4 The generic context

As discussed in Chapter 2, a free relative such as the one in (259) has the following interpretations (putting aside for now the presupposition of indifference):

(259) Zack voted for whoever was at the top of the ballot.

a. Episodic: Zack voted for the person at the top of the ballot.

b. Generic (binding the free relative): Generally, when Zack voted for someone, he voted for the person at the top of the ballot.

c. Generic (not binding the free relative): There was one person who was always at the top of the ballot, and generally, when Zack voted for someone, he voted for that person.

In (259a), the free relative appears in an episodic context. In generic contexts, the free relative denotation can covary with the situation introduced by the generic operator, as in (259b), but, as shown in (259c), it need not. These interpretations are represented schematically in (260).

(260) a. $\exists s\ [\ldots \iota x.P(x,s)\ldots]$ =(259a)

b. $\lambda s_0.\text{GEN}s \leq s_0$ [...] [... ιx.P(x,s)...] =(259b)

c. $\lambda s_0.\text{GEN}s \leq s_0$ [...] [... ιx.P(x,s_0)...] =(259c)

In (260b), the situation variable of the free relative is bound by the generic quantifier and it is in this case that the universal effects can arise. In (260c), the situation variable of the free relative is identified with the utterance situation. The generic quantifier is not exploited and the universal effects do not arise. Free relatives that exhibit the behavior of universals must have the interpretation described in (260b).

Dayal (1997), whose analysis of the universal effects I will follow in large part, argues that universal effects arise when an *-ever* free relative is in a generic context. Dayal describes the universal readings as free choice readings. She argues that free choice readings arise when the generic operator binds the situation variable of the free relative, producing a possibly different referent for the free relative in each situation, as outlined in (260b). Appearing in this configuration is a necessary—but, as we will see, not sufficient—feature of *-ever* free relatives that exhibit universal effects.

3.1.5 Previous proposals regarding the contribution of *-ever*

Previous explanations for the universal effects associated with *-ever* free relatives do not take into account the ignorance/indifference dichotomy spelled out in von Fintel (2000). But they do get us a long way toward a satisfying solution. In these analyses, the basic empirical fact about *-ever* that needs explaining is considered to be the opposition between a definite-like interpretation characterized by ignorance and a universal-like interpretation characterized by free choice. In Chapter 2, I argued that both ignorance and indifference free relatives have definite-like interpretations, while only indifference free relatives have universal-like interpretations.

As for why (260b) creates universal effects only with *-ever* free relatives and not

with plain free relatives, Dayal writes that the universal effects are produced because "the additional modality introduced by *ever* forces the assertion to extend to i-alternatives of each generically bound world" and "forces evaluation at i-alternatives of every world" (p.110).[1] Quer (1998) adopts the same approach to describing the link between *-ever* and the universal effects associated with it. Like Dayal, he treats *-ever* as modalized and takes the suffix *-ever* in combination with a modal context to be necessary to produce the universal effects. One goal of this chapter is to explain exactly how this works when the contribution of *-ever* is a presupposition of indifference.

The role of *-ever* in indifference free relatives is strikingly similar to the role of free choice *any* when it comes to exhibiting universal effects. Kadmon & Landman (1993) must explain why the indefinite in (261) cannot accept an *almost* modifier, while the *any* NP in (262) can.

(261) *Almost an owl hunts mice.

(262) Almost any owl hunts mice.

According to Kadmon & Landman, the universal effects associated with free choice *any* in (262) require both genericity and widening. Their analysis involves the structure in (263). In (263), genericity comes from a generic operator with sentential scope. The generic quantifier is a universal, but one that is vague with respect to its domain. The role of *any* is to widen the interpretation of *owl* along some contextually supplied dimension. For example, in a context in which the health of the owl is relevant, a statement such as (263) would involve a widened domain that includes even sick

[1] As discussed in Chapter 1, Dayal analyzes the free relative *-ever* as a modal operator over i-alternatives. She defines i-alternatives as the epistemically accessible worlds of the speaker over which the identity of the object denoted by the free relative varies.

owls.[2]

(263) a. Any owl hunts mice.

b. GENx[∃x(owl(x))] [hunt-mice(x)]

c. "For every x such that x is an owl, x hunts mice."

Semantic widening (and concomitant pragmatic strengthening) is intended to explain not only the reduced tolerance of exceptions that is signaled by *any*, but also to provide an explanation for why free choice *any* behaves like a universal.

Krifka (1991, 1995) goes one step further in deriving the widening behavior of *any* from its meaning. His explanation is similar in spirit to Kadmon & Landman's but relies on semantic scales. For Kadmon & Landman, the widening behavior is an inherent feature of *any*. According to Krifka, an NPI denotes the minimal element of a scale (a feature that is manifest in NPIs such as *a bit* or *budge an inch*) and, furthermore, introduces alternatives along that scale. He accounts for the free choice reading of *any* through a scalar implicature generated by the NPI in contexts that are not downward entailing. When *any* occurs in a context that is not downward entailing, it entails all weaker (=less informative) statements based on those alternatives. For example, the sentence *Mary likes anyone* asserts that Mary likes a person and gives rise to a Gricean implicature that no weaker claim would be appropriate, because a weaker claim (say, that Mary likes Andy, Brett, and Carl) would not have been sufficient to state the whole truth. In this way, *any* takes on the characteristics of a universal quantifier.

Kadmon & Landman's analysis of free choice *any* crucially involves the generic operator. Semantic widening in the domain of the generic operator effectively turns the

[2]When the context gives no particular restrictions, as when a statement with free choice *any* is considered in isolation, the interpretation can be indistinguishable from that of a true universal.

generic operator into a dimensionally precise, although still domain vague, universal. Under these conditions, the indefinite NP *any owl* acquires universal force.

Regardless of whether one subscribes to this view of free choice, we can take from it certain insights. In sum, what these approaches give us is the requirement of a generic context, an item that introduces alternatives, and widening in the restriction of the generic operator. There is a productive analogy from this theory of universal effects, namely, widening in the domain of the generic operator, to an explanation of the universal effects in indifference free relatives.[3] My goal is to explain how the presupposition of indifference given by von Fintel's analysis of *-ever* fits into this picture.

The universal effects in free relatives cannot be attributed solely to the fact that *-ever* appears in a generic context. Several things are necessary to produce the universal effects in free relatives, summarized here in (264).[4]

(264) i. The free relative must appear in a generic context.

ii. The denotation of the free relative must covary with the situation given by the generic operator.

iii. The free relative must be an *-ever* free relative.

iv. The *-ever* free relative must be an indifference free relative.

[3]It is interesting to note that Jacobson (1988:28-9/1995:480-1) analyzes the suffix *-ever* as an NPI and uses Kadmon & Landman's notion of widening and strengthening to explain the ignorance reading. She suggests that *-ever* provides semantic widening with respect to the denotation of the free relative: "...my suggestion is that *ever* simply broadens the domain of the set of atoms from which the plural entity is constructed. ...It is reasonable for a hearer to conclude that the speaker's motivation for broadening the domain is to indicate that the domain of relevant atoms is sufficiently broad that s/he does not know or cannot imagine the identity of the particular atom in question." Jacobson does not extend this line of reasoning to the universal behavior of *-ever* free relatives, since she argues that *-ever* free relatives always behave like definites. And she discusses only ignorance free relatives, because she takes ignorance to be the sole contribution of *-ever*.

[4]Item (iv) will be slightly revised in section 3.5.1.

Requirement (iii) is a longstanding observation of the literature on *-ever* free relatives. Requirement (iii) together with requirement (i) represent the crucial ingredients of the Dayal/Quer approach described above. (ii) states the not unsurprising requirement that the free relative be generically quantified when it appears in the generic context. In Chapter 2, I argued that requirement (iv) should be added to the mix.

Previous analyses cannot rule out the universal effects for ignorance free relatives. Both Dayal and Quer identify the right configuration, and they identify the presence of *-ever* as a necessary factor, but they cannot explain why ignorance free relatives do not show universal effects in the same configuration. Ignorance free relatives are discussed in Chapter 4.

Previous analyses do not rule out in a satisfactory way the universal effects for plain free relatives and ordinary definites. The analysis in (260b)—that is, a requirement that the free relative covary with the situation introduced by the generic operator—gets the covarying (de dicto) reading in generic contexts but not the universal effects, and on that score it does not differentiate *-ever* free relatives from plain free relatives. And it does not necessarily capture the counterfactual entailment that characterizes (265). As observed in Chapter 1, (265) is stronger than (266).

(265) In those days, whatever lottery number John picked won.

(266) In those days, every lottery number John picked won.

By the same token, previous analyses do not explain in a satisfactory way why both the generic operator and *-ever* are required in order to produce the universal effects. The universal force in *-ever* free relatives clearly depends on both a generic context and the quantification over alternative worlds introduced by *-ever*, but the presence of either alone is not sufficient to create the universal effects. If the generic operator alone were sufficient, we would expect universal effects to arise with plain

free relatives in modal contexts, as long as the denotation of the free relative varies with the situation contributed by the generic operator. If the suffix *-ever* alone were sufficient, we would expect universal effects to arise in episodic contexts. But neither of these is possible.

In section 3.5, I argue that what the presupposition of indifference contributes is essentially domain widening. In particular, I examine how this might work if we adopt von Fintel's analysis in (248) for *-ever*. The task is to show how the presupposition of indifference interacts with genericity to create the widening, and thus the universal effects, in indifference free relatives. In section 3.5, I also provide an analysis of the agent indifference construal. The sections immediately below lay the groundwork for these analyses: Section 3.2 discusses the role of the generic operator in producing the universal effects. Section 3.3 discusses the presupposition projection facts for both external and agent indifference free relatives. Section 3.4 discusses the application of the analysis in (248) to free relatives that are generically quantified.

3.2 The role of the generic operator

In this section, I revisit the universal effects with specific attention to external indifference. The aim of this section is to show how to derive the results of syntactic tests for universal quantification that were discussed in Chapter 2 (specifically, the tests involving *almost* modifiers, NPIs, and universal scope under negation).

For external indifference free relatives, there is a direct parallel between the available semantic interpretations in (259) and the environments in which indifference free relatives have universal behavior. External indifference free relatives exhibit the following pattern:

	FIXED VALUE	COVARYING VALUE
episodic	✓	*
generic	✓	✓

	DEFINITE BEHAVIOR	UNIVERSAL BEHAVIOR
episodic	✓	*
generic	✓	✓

This section argues that in external indifference free relatives, the generic quantifier provides the universal that is responsible for the universal effects.

3.2.1 *almost* modifiers

What does an indifference free relative with an *almost* modifier mean? Consider the external indifference free relative in (267) with *almost*.

(267) Almost whatever John writes is violent.

Let's assume that an *almost*-modifier must take a universal in its immediate scope.[5] There are two possibilities for the placement of *almost* in an LF associated with the free relative in (267): the generic operator in the assertion, as given in (260b), and the universal associated with the presupposition of indifference, as given in (250). With respect to these two candidate universals, there are four possibilities: the *almost*

[5]In the verbal and adjectival domains, *almost* modifiers are licensed by telic eventualities and total adjectives, respectively:

(i) Jane almost died. (telic)
(ii) #Jane almost slept. (atelic)
(iii) The table is almost clean. (total adjective)
(iv) #The table is almost dirty. (partial adjective)

In addition, an *almost* modifier must appear at the left periphery of the constituent it modifies. Thus, (v) and (vi) form a minimal pair with respect to the interpretation of *almost*.

(v) Kay read almost [whatever John wrote]$_{\text{NP}}$
(vi) Kay almost [read whatever John wrote]$_{\text{VP}}$

For discussion of these and other properties of *almost*, see Morzycki (2001), Rapp & von Stechow (1999), Rotstein & Winter (2004), and references therein.

modifier modifies one or the other, both of them, or neither one (in which case the source of the universal lies elsewhere). These possibilities are outlined in (268) for (267).[6]

(268) a. Modifying generic operator:

"In **almost all situations s** in which John writes something, it is violent, *and if the actual things he wrote in each of those generic situations had been different, the same thing would have happened.*"

b. Modifying presupposition of indifference:

"In all situations s in which John writes something, it is violent, *and in* **almost all s′**, *counterfactual situations of s where the actual things he wrote in each of those generic situations were different, the same thing would have happened.*"

c. Modifying both generic operator and presupposition of indifference:

"In **almost all situations s** in which John writes something, it is violent, *and in* **almost all s′**, *counterfactual situations of s where the actual things he wrote in each of those generic situations were different, the same thing would have happened.*"

d. Modifying neither:

"In all situations s in which John writes something, it is violent, *and if the actual things he wrote in each of those generic situations had been different, the same thing would have happened*, and **almost all . . . ?. . .**"

A sentence *almost* p entails ¬p. Specifically, *almost* requires that there be exceptions to p. Thus, in order for (267) to be true, there must be some things that John

[6]The paraphrase of the presupposition of indifference that is used in (268) is discussed in detail in section 3.4.

writes that are not violent. This rules out (268b) and (268d), which both say that everything John writes is violent. We are left with (268a) and (268c), whose assertion is represented in (269).

(269) $\lambda s_0.$*almost* GENs$\leq s_0$ [C(s) $\wedge$ $\exists$x(**write**(j, x, s))] [**violent**(ιy.**write**(j, y, s), s)]

"For almost every situation s of the appropriate type containing something that John writes, what John writes in s is violent."

(269) gets the truth conditions right. From this we conclude that in (267), *almost* modifies the generic operator.

But does the *almost* modifier also modify the presupposition of indifference? That is, how do we choose between (268a) and (268c)? It is difficult to tell what happens to the presupposition of indifference when it is associated with an assertion modified by *almost*. The intuition that we have about (268) is that it asserts *almost* p and strongly suggests that something more is going on. (268a) indicates that while the counterfactual entailment holds, certain (perhaps principled) exceptions to it exist. It suggests that the counterfactual entailment is valid, but that occasionally something happens that causes it not to manifest itself. There is more than one way to implement this notion of (principled) exception. Perhaps what John writes is violent, except if it is a letter to his mother. On the other hand, perhaps what John writes is violent, except if he's just had a good nap. (268a) seems appropriate both for the case where the exception is based on the nature of the situation (e.g., after a good nap) and for the case where the exception is based on a property of ι**x.P(x)** (e.g., its intended audience). The content of the presupposition of indifference is discussed in detail in section 3.4. There I will argue that the presupposition in (268c) doesn't make much sense.

Having determined the role of the generic operator in (267), and still uncertain about whether the presupposition associated with (267) is modified by *almost*, we move on to the role of *-ever*. While *-ever* free relatives accept *almost* modifiers, plain free relatives do not. The plain free relative in (270) is unacceptable, in contrast to the *-ever* free relative in (267), repeated here. A similar pair was given above in (256).

(270) *Almost what John writes is violent.

(267) Almost whatever John writes is violent.

Our question is: Why don't plain free relatives accept *almost* modifiers in generic contexts? As the generic operator is clearly the semantic anchor when it comes to the universal effects, why do we also need *-ever*? The question raised by the pair in (270) and (267) is the same as the question raised by the pair in (261) and (262), repeated here.

(261) *Almost an owl hunts mice.

(262) Almost any owl hunts mice.

In (261), there is nothing for *almost* to modify but the generic operator. This is the case in (262) as well. Therefore, the generic operator does not in itself license the *almost* modifier in (262). What differs is that in (262), *almost* appears immediately before a syntactic element that interacts with the generic operator. (Kadmon & Landman argue that *any* interacts with the generic context to create a true universal.) For free relatives, we have determined that semantically, an *almost* modifier modifies the generic operator, as in (269). Syntactically, it must precede an overt universal or an element such as *any* that contributes something crucial to the interpretation of

the generic sentence. In the case of *any*, this was identified as domain widening. We want the same solution for *-ever*.

Taking the data at face value, the difference in acceptability between (270) and (267) can be taken to show that *-ever* free relatives contribute something that interacts with the generic operator, while plain free relatives do not. This sounds, of course, exactly like what Dayal (1997) has in mind: "the additional modality introduced by *ever* forces the assertion to extend to i-alternatives of each generically bound world". It remains to be seen what exactly the contribution of *-ever* is.

3.2.2 Universal scope under negation

In this section, I argue that when an indifference free relative behaves like a universal in taking universal scope under negation, negation interacts with the generic quantifier, not the presupposition of indifference.

External indifference free relatives are given in (271). Relative scope orders are in (272). In (271b), the free relative takes universal scope under negation. Only universal quantifiers show the kind of alternation in (271).[7]

[7] An aside is in order here to rule out a metalinguistic negation of external indifference in (271b): "I fail to *indiscriminately* receive the books that are sent to me, though I may in fact receive all of them". Consider the following scenario. Suppose the post office has a rule of delivering only small parcels (I have to pick up the big ones myself), but nonetheless the post office usually delivers all parcels that are sent to me, including all the big ones. In this case, I can say both that I receive everything sent to me and that it occurs indiscriminately. But suppose now that all the parcels I'm sent happen to be small ones, and in addition I know that the post office is enforcing its rule regarding parcel size. In this case, I can say that I receive everything sent to me, but I can't say that it occurs indiscriminately. (271b) does not have this second interpretation, under which only an element of indiscriminacy is negated. This missing reading is illustrated in (i).

(i) *I won't receive whatEVer book Oprah recommends from now on, although I'll still receive all of them.

We will see later, in sections 3.3.3 and 3.3.4, that agent indifference free relatives do allow such an interpretation.

(271) a. I usually receive Oprah's book club recommendation, but since I recently announced to my family that I'm disappointed with Oprah's taste and since I know that none of my family will want to disappoint me, I'm sure **I won't receive whatever book Oprah recommends from now on**. I'll probably have to buy them all myself.

b. I usually receive Oprah's book club recommendation, but since the post office has been unreliable lately I'm sure **I won't receive whatEVer book Oprah recommends from now on**, but I will receive most of them.

(272) a. $\forall x \neg [\ldots x \ldots]$ = (271a)

b. $\neg \forall x [\ldots x \ldots]$ = (271b)

What is the source of the universal quantifier in (272b)? As we have seen, there are two potential sources: the generic operator and the universal associated with the presupposition of indifference. The possibilities are sketched in (273) (I leave out the case where neither universal is negated). In (273d), I have added the case where negation scopes over the conjunction of the two.

(273) I won't receive whatEVer book Oprah recommends from now on, but I will receive most of them. = (271b)

a. Scope over generic operator:

"[**It is not the case that** in all situations s in which Oprah recommends a book, I receive it], *and if the actual books she recommended in each of those generic situations had been different, the same thing would have happened.*"

b. Scope over presupposition of indifference:

"In all situations s in which Oprah recommends a book, I receive it, *and* **it is not the case that** *in all s′, counterfactual situations of s where the actual books she recommended in each of those generic situations were different, the same thing would have happened.*"

c. Scope over both generic operator and presupposition of indifference:

"**It is not the case that** in all situations s in which Oprah recommends a book, I receive it, *and* **it is not the case that** *in all s′, counterfactual situations of s where the actual books she recommended in each of those generic situations were different, the same thing would have happened.*"

d. Scope over conjunction of generic operator and presupposition of indifference:

"**It is not the case that** (i) in all situations s in which Oprah recommends a book, I receive it, and (ii) *in all s′, counterfactual situations of s where the actual books she recommended in each of those generic situations were different, the same thing would have happened.*"

Like the examples with *almost*, (273) entails that there are some books that I don't receive. (273b) does not get the right truth conditions, because it says that I receive every book Oprah recommends. (273d) also allows for the case where I receive everything, because it is possible for the first conjunct to be true while the second is false. So, when an *-ever* free relative behaves like a universal under negation, the generic operator is negated, as in (273a) and (273c). That assertion is given in (274).

(274) $\lambda s_0.\neg \text{GEN} s \leq s_0\ [C(\text{me}, s) \wedge \exists x(\textbf{recommend}(o, x, s))]\ [\textbf{receive}(I, \iota y.\textbf{recommend}(o, y, s), s)]$

"It is not the case that every situation s of the appropriate type containing

me and something that Oprah recommends is a situation in which I receive in s the thing that Oprah recommends in s."

Is the presupposition of indifference also negated? It seems clear that in (273), the presupposition of indifference is weakened, if not denied entirely. The question that was raised with respect to *almost* modifiers arises here as well. Once again, our choice is between (273a) and (273c). And again we seem to have some options for why we are denying (or weakening) the counterfactual entailment: we might have a situation-based reason or a book-based reason. I revisit the presupposition of indifference in section 3.4, where I argue that only (273a) expresses the presupposition we want. Leaving the choice between (273a) and (273c) open for the moment, I now move on to the role of *-ever*.

Unlike *-ever* free relatives, plain free relatives cannot take universal scope under negation. Compare (275) and (273), repeated here. A similar pair was given in (257).

(275) *I won't receive what Oprah recommends from now on, but I will receive most of it.

(273) I won't receive whatever Oprah recommends from now on, but I will receive most of it.

Why is it that *-ever* free relatives can take universal scope under negation, but plain free relatives cannot? Semantically, it is the generic operator that interacts with negation to produce the scope effects. But to obtain the scope effects, an overt quantifier is always required, as in (277).

(276) *Not a five year old can do that.

(277) Not any five year old can do that.

The phenomenon that Kadmon & Landman note for *almost* in (261)-(262) also occurs for free choice *any* under negation, as shown in (276)-(277). In (277), *any* effects domain widening and enables the generic operator to scope under negation. Later on, I will make a similar claim for *-ever* in sentences such as (273).

3.2.3 NPI licensing

NPIs are licensed in downward entailing contexts such as negation (278), the first argument of a universal quantifier (279), and the protasis of both indicative and counterfactual conditionals (280)-(281).[8]

(278) John didn't (ever) write a violent work. → John didn't write a violent book.

(279) Everything John (ever) wrote was violent. → Every book John wrote was violent.

(280) If John's screenplay is (ever) picked up by a studio, he'll be wealthy. → If John's screenplay is picked up by a minor studio, he'll be wealthy.

(281) If John had (ever) written a violent screenplay, this studio would have purchased it. → If John had written a short, violent screenplay, this studio would have purchased it.

By contrast, neither definite descriptions (282) nor quantifiers such as *some* (283) license NPIs.

(282) The things John (*ever) wrote were violent. ↛ The books John wrote were violent.

[8]Examples such as (i) have been taken to show that *if*-clauses are not downward entailing, or that they are downward entailing only if a constant perspective is maintained across the inference. See the discussion in von Fintel (1999, 2001).

(i) If you strike a match, it will light. ↛ If you strike a wet match, it will light.

(283) Some things John (*ever) wrote were violent. $\nrightarrow$ Some books John wrote were violent.

Plain free relatives do not license NPIs (284), but *-ever* free relatives do (285). The inability of plain free relatives to license NPIs shows that the NPI in (285) is not licensed by the generic operator alone. A similar pair was given in (258).

(284) *What John ever wrote was violent.

(285) Whatever screenplay John ever wrote was violent.

The assertion of (285) is given in (286).

(286) $\lambda s_0.\text{GEN}s \leq s_0$ [C(j, s) $\wedge$ $\exists$x(**write**(j, x, s))] [**violent**(ιy.**write**(j, y, s), s)]
"Every situation s of the appropriate type containing John and something that he writes is a situation in which what John writes is violent."

What licenses the NPI in (285)? We know that in (285), the generic operator alone does not put the NPI in a downward entailing environment because, as shown in (284), a plain free relative in the same environment does not create a downward entailing environment for the NPI. The same observation can be made for free choice *any*:

(287) *A tourist who has ever been to Paris knows where the Eiffel Tower is.

(288) Any tourist who has ever been to Paris knows where the Eiffel Tower is.

However, I will argue in section 3.5.3 that NPIs that appear in indifference free relatives are licensed through a different mechanism than the one that I am proposing for the other universal effects. This will be necessary because agent indifference free relatives license NPIs, although they do not exhibit any of the other universal effects.

3.2.4 Summary

In sections 3.2.1 and 3.2.2 above, I showed that the generic operator is the source of the universal that creates the universal effects in indifference free relatives. I also noted in section 3.2.3 that NPIs will require some extra attention later on. By way of analogy with free choice *any*, I argued that *-ever* contributes something to the interpretation that allows the generic operator to behave like a true universal.

In section 3.5, I will propose that a general solution for the universal effects with both free choice *any* and indifference free relatives is possible. Before doing that, I examine the projection behavior of the presupposition of indifference in section 3.3 and its content in section 3.4.

3.3 Presupposition projection

In this section, I pursue an observation made by von Fintel about the projection behavior of the presupposition of variation, which turns out to be important to understanding a number of the properties displayed by *-ever* free relatives. I examine the presupposition projection facts for indifference, both with and without the agent indifference construal. The conclusions of this section are as follows: External indifference can project globally, while agent indifference must project locally. When we have the intuition that indifference is predicated of an agent subject, indifference enters into the truth conditions. The presupposition of indifference must project locally in order for the agent indifference construal to arise.

The discussion of presupposition projection in this section is intended to be theory-neutral with respect to the specific mechanisms involved. Nonetheless, in certain concepts I follow Beaver & Zeevat (2004) closely. Most important is the notion that all projection is accommodation. So (global) projection is identified with accommodation

in the global context, and nonglobal (that is, local or intermediate) projection is identified with accommodation in a context that is either local to the presupposition trigger or intermediate between the site of the presupposition trigger and the global context.

Consider (289) (from Beaver & Zeevat), where the presupposition triggered by the factive verb *know* is "it is raining". In (289), the presupposition projects globally, as described in (289a). ((289b) represents intermediate accommodation and (289c) represents local accommodation.)

(289) If Mary's carrying an umbrella, then she knows that it is raining.

a. = It is raining. If Mary's carrying an umbrella, then she knows that it is raining.

b. ≠ If it is raining and Mary's carrying an umbrella, then she knows that it is raining.

c. ≠ If Mary's carrying an umbrella, then it is raining and she knows that it is raining.

But in (290), where global accommodation would result in an infelicitous discourse, the presupposition is accommodated locally, where it is evaluated as part of the assertion, as described in (289c).[9]

(290) I wonder if it's raining. If Mary's carrying an umbrella, then she knows that it is raining.

a. ≠ I wonder if it's raining. It is raining. If Mary's carrying an umbrella, then she knows that it is raining.

[9]Earlier accounts analyze nonglobal accommodation (i.e., the failure to project) using notions such as cancellation (Gazdar 1979) and filters and plugs (Karttunen 1973). The existing literature on presupposition projection is vast. See Beaver (1997, 2001) for overviews and criticism.

b. ≠ I wonder if it's raining. If it is raining and Mary's carrying an umbrella, then she knows that it is raining.

c. = I wonder if it's raining. If Mary's carrying an umbrella, then it is raining and she knows that it is raining.

Beaver & Zeevat discuss a number of principles that might be called into service to explain the projection behavior of different presuppositions in different contexts (including, for example, a preference for global accommodation, a preference for the accommodation strategy that maximizes logical strength, and a prohibition against creating redundancy in the truth-conditional content), but these problems do not concern us here. Instead, I will concentrate on two questions: What is accommodated and where? The second question (where) is addressed for *-ever* free relatives in this section, and the first question (what) is addressed in section 3.4.

3.3.1 *unless*-clauses

Von Fintel points out that the presuppositions of ignorance and indifference behave differently in *unless*-clauses. In (291), speaker ignorance projects globally.

(291) Ignorance

Unless there's a lot of garlic in whatever Arlo is cooking, I'll eat out tonight.

a. = I don't know what Arlo's cooking. Unless there's a lot of garlic in what Arlo is cooking, I'll eat out tonight.

b. ≠ Unless (i) I don't know what Arlo's cooking and (ii) there's a lot of garlic in what Arlo is cooking, I'll eat out tonight.

(291) is interpreted as in (291a), not (291b). Speaker ignorance projects out of the *unless*-clause: whether or not I'll eat out tonight is not dependent on my ignorance of

what Arlo cooked. But in (292), the presupposition is interpreted inside the *unless*-clause: Zack's indifference enters the truth conditions at the embedded level. Note that von Fintel is construing (292) as an agent indifference free relative.

(292) Agent indifference

Unless Zack simply voted for whoever was at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

a. ≠ Zack voted indifferently. Unless Zack simply voted for the person at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

b. = Unless Zack simply voted indifferently for the person at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

(292) is interpreted as in (292b). In contrast to ignorance, agent indifference projects below *unless* (I discuss ignorance free relatives in Chapter 4).

Next I turn to external indifference. (293) does not have the agent indifference construal, because the free relative itself is in subject position. Without a locus of indifference, and thus without the agent indifference construal, the presupposition of indifference projects either globally, as in (293a), or locally (i.e., below *unless*), as in (293b).

(293) External indifference

John is going to play our zip code—07070—in the lottery today. He hopes to get rich, but *unless whatever number John picks wins the lottery, he'll have to keep his day job.*

a. =? It doesn't matter what number John picks. Unless the number John picks wins the lottery, he'll have to keep his day job.

b. = Unless (i) it doesn't matter what number John picks and (ii) the number John picks wins the lottery, he'll have to keep his day job.

The global projection described in (293a) conveys "regardless of the number John picks, if it doesn't win then John keeps his day job". (293b), where the presupposition of indifference is interpreted inside the *unless*-clause, conveys that John will not win unless the number he picks is destined to win ("if it is not the case both that the number John picks wins the lottery and that this is so regardless of what number he picks, then John keeps his day job").

Another external indifference example is given in (294).

(294) External indifference

Mary will get upset unless whatever number John picks wins the lottery.

a. =? It doesn't matter what number John picks. Mary will get upset unless the number John picks wins the lottery.

b. = Mary will get upset unless (i) it doesn't matter what number John picks and (ii) the number John picks wins the lottery.

With global projection, as described in (294a), we understand that Mary will be upset unless the number John picks wins the lottery, and in addition that this will be so regardless of what number he picks: It is John's picking a number that doesn't win that causes Mary to be upset. With the local projection in (294b), we understand that Mary wants John to have a special influence over the lottery: She will get upset unless there is an essential connection between John's picking a number and it winning.

3.3.2 *because*-clauses

Agent indifference free relatives differ from external indifference free relatives in that they cannot be interpreted above *because*. Consider (295).

(295) Agent indifference

Jane must be foolish, because she voted for whoever was at the top of the ballot.

a. ≠ Jane voted indifferently. Jane must be foolish, because she voted for the person at the top of the ballot.

b. = Jane must be foolish, because she voted indifferently for the person at the top of the ballot.

Agent indifference must be interpreted below *because*, as in (295b).

(296) contains a version of (295) in which the free relative is in subject position. It therefore has only external indifference, not agent indifference. (296a) describes global accommodation and (296b) describes accommodation of the presupposition below *because*.

(296) External indifference

See the people Jane voted for? Smith, Thomas, Udall, and Vernon. Jane must be foolish, because whoever was at the top of the ballot got her vote.

a. =? It doesn't matter who was at the top of the ballot. Jane must be foolish, because the people at the top of the ballot got her vote.

b. = Jane must be foolish, because (i) it doesn't matter who was at the top of the ballot and (ii) the people at the top of the ballot got her vote.

(296a) describes a correspondence between Jane's voting for these people and her being foolish: What makes her foolish is that she voted for these people, and this is so regardless of what people they are. According to (296b), what makes Jane foolish is that there is an essential connection between a person's being at the top of the ballot and her voting for that person.

Another example of external indifference is given in (297). (297a) describes global accommodation and (297b) describes accommodation inside the *because*-clause.

(297) External indifference

Mary got upset because whatever number John picked won the lottery.

a. =? It didn't matter what number John picked. Mary got upset because the number John picked won the lottery.

b. = Mary got upset because (i) it didn't matter what number John picked and (ii) the number John picked won the lottery.

On the interpretation in (297a), we understand that Mary got upset because the number that John picked won and, furthermore, that she would have gotten upset no matter what that number was. On the interpretation in (297b), we understand that Mary got upset because John has a special influence over the lottery. She is not necessarily upset that the number he picked won, but she is upset that there is a natural law that makes it so.

3.3.3 Adverbs of frequency: *usually but not always*

Both agent indifference free relatives and external indifference free relatives can be iterated with adverbs of frequency. But the truth conditions that result are different.

In (298), there is a reading under which Kay's indifference is part of the assertion: "Usually but not always, on election day, Kay voted *indifferently* for the person at

the top of the ballot (if someone else had been there, she would have voted for that person)". This is an agent indifference construal. (298) is true under the agent indifference construal in the following scenario: Kay votes in eight elections and each time votes for the person at the top of the ballot. She votes indifferently seven times. The eighth time, she considers the candidates carefully, weighs their relative merits, and then casts her vote for the person at the top.

(298) Agent indifference

Usually but not always, Kay voted for whoever was at the top of the ballot.

a. ≠ Kay voted indifferently. Usually but not always, Kay voted for who was at the top of the ballot.

b. = Usually but not always, Kay voted indifferently for who was at the top of the ballot.

(298) has the meaning in (298b), not (298a). With agent indifference, (298) is consistent with Kay voting for the name at the top of the ballot in all eight elections.

The same sentence without *-ever*, as in (299), is false in the above scenario (where Kay did in fact vote for the person at the top of the ballot in all eight elections).[10]

(299) Plain free relative

Usually but not always, Kay voted for who was at the top of the ballot.

(300) provides a version of (298) in which Kay cannot be construed as indifferent because the free relative, not *Kay*, is in subject position.

(300) External indifference

Look at Kay's voting pattern. I have all the names she voted for listed here.

Usually but not always, whoever was at the top of the ballot got her vote.

[10](299) may be degraded for some speakers, as plain *who* tends to be marginal in English free relatives.

a. = It didn't matter who was at the top of the ballot. Usually but not always, the person at the top of the ballot got her vote.

b. ≠ Usually but not always, (i) it didn't matter who was at the top of the ballot and (ii) the person at the top of the ballot got her vote.

(300) means only (300a), and it is false in the above scenario. (300) requires that in at least one case Kay did not vote for the name at the top of the ballot. The presupposition of indifference in (300) must project above the adverb of quantification.

3.3.4 Negation

Consider (301)-(302), in which the sentences containing the free relative are negated. (301) allows an agent indifference construal and thus can be used in a scenario where the presupposition of indifference alone is denied. But there is no interpretation of the external indifference free relative in (302) that allows us to deny the presupposition of indifference without also denying that the rest of the assertion holds. In (301), it is possible to negate the conjunction of the assertion with indifference, but in (302) it is not.

(301) Agent indifference

Look at Kay's voting pattern. I have all the names she voted for listed here. *She didn't vote for whoever was at the top of the ballot.* She voted for the people she knows, and they just happen to be the ones at the top of the ballot.

a. ≠ Kay voted indifferently. It is not the case that Kay always voted for the person at the top of the ballot.

b. = It is not the case that (i) Kay always voted for the person at the top of the ballot and (ii) she did so indifferently.

(302) External indifference

Look at Kay's voting pattern. I have all the names she voted for listed here. *Whoever was at the top of the ballot didn't get her vote.* #She voted for the people she knows, and they just happen to be the ones at the top of the ballot.

a. = It didn't matter who was at the top of the ballot. It is not the case that the person at the top of the ballot always got Kay's vote.

b. ≠ It is not the case that (i) the person at the top of the ballot always got Kay's vote and (ii) this happened by law or principle.

Under an agent indifference construal of (301), Kay can vote for everyone at the top of the ballot, as long as she does not do so indifferently. The external indifference free relative in (302) cannot describe the case in which she votes for everyone at the top of the ballot. The presupposition of indifference in (302) must project above negation.

3.3.5 Summary

The presupposition associated with an external indifference free relative may project either above or below *unless* or *because* when it appears in clause A in configurations such as those in (303). But the presupposition associated with an agent indifference free relative in that context must project locally.

(303) a. *unless* A B

b. *because* A B

When the indifference free relative appears under an adverb of frequency or under negation, (that is, in clause A in configurations such as those in (304)), the presuppo-

sition of an external indifference free relative must project globally, while the agent indifference free relative must project locally.

(304) a. *usually* A

b. ¬A

These observations will be taken into account and explained in the next sections. In section 3.4, I discuss the shape that the presupposition of indifference takes on when it is associated with a free relative that is generically quantified. In section 3.5, I argue that there is a connection between the projection behavior of the presupposition of indifference and the interpretation of the free relative. Universal effects arise when the presupposition of indifference projects over the generic operator. Agent indifference arises when the presupposition of indifference is accommodated locally, under the scope of an agent subject.

3.4 External indifference: The shape of the presupposition

In this section, I address the question of how the analysis in (248) applies to an external indifference free relative that is generically quantified. These are cases where the implementation is tricky.

3.4.1 A naive implementation

It is a straightforward matter to implement the analysis in (248) for an indifference free relative in an episodic sentence such as (305).

(305) In yesterday's election, whoever was at the top of the ballot won.

(306) Assertion: $\lambda s_0.\mathbf{win}(\iota y.\mathbf{top\text{-}of\text{-}ballot}(y, s_0), s_0)$

Presupposition of indifference: $\lambda s_0.\forall s' \in \min_{s_0} [F \cap (\lambda s''.\iota y.\mathbf{t\text{-}o\text{-}b}(y, s'') \neq \iota y.\mathbf{t\text{-}o\text{-}b}(y, s_0))]$: $\mathbf{win}(\iota y.\mathbf{t\text{-}o\text{-}b}(y, s'), s') = \mathbf{win}(\iota y.\mathbf{t\text{-}o\text{-}b}(y, s_0), s_0)$

The presupposition in (306) may be read as follows: "For each $\mathbf{s}'$, a counterfactual situation of $\mathbf{s}_0$, if someone else had been at the top of the ballot in $\mathbf{s}'$, the same thing would have happened (i.e., that person would have won in $\mathbf{s}'$)".

But how do we represent the presupposition of an indifference free relative that is interpreted under a generic operator, as in (307)? A naive application of (248) produces (308).

(307) These days, whoever is at the top of the ballot wins.

(308) Assertion: $\lambda s_0.\text{GEN}s \leq s_0 [C(s) \wedge \exists x(\mathbf{t\text{-}o\text{-}b}(x, s))] [\mathbf{win}(\iota y.\mathbf{t\text{-}o\text{-}b}(x, s), s)]$

Presupposition of indifference: $\lambda s_0.\forall s' \in \min_{s_0} [F \cap (\lambda s''.\iota y.\mathbf{t\text{-}o\text{-}b}(y, s'') \neq \iota y.\mathbf{t\text{-}o\text{-}b}(y, s_0))]$: $\mathbf{win}(\iota y.\mathbf{t\text{-}o\text{-}b}(y, s'), s') = \mathbf{win}(\iota y.\mathbf{t\text{-}o\text{-}b}(y, s_0), s_0)$

The assertion in (308) is: "Every $\mathbf{s}$, a subsituation of $\mathbf{s}_0$ that is an election situation with a (unique) person at the top of the ballot, is a situation in which the person at the top of the ballot in $\mathbf{s}$ wins" while the presupposition is the same as the one given in (306) above. Clearly, this presupposition is wrong. We are not concerned with someone who is at the top of the ballot in the situation $\mathbf{s}_0$ described by "these days". We are concerned with the people at the top of the ballot in the subsituations $\mathbf{s}$ contained in $\mathbf{s}_0$. That is, where the presupposition talks about the identity of $\iota y.\mathbf{t\text{-}o\text{-}b}(y)$, we have to ask, "the identity of which $\mathbf{y}$?" A second way in which our interpretation in (308) is incorrect is that it naively interprets the variable $\mathbf{Q}$ as excluding the generic operator. The relevant portion of (248) is repeated here in (309).

(309) $Q(w')(\iota x.P(w')(x)) = Q(w)(\iota x.P(w)(x))$

In (307), the predicate represented by **Q** includes the generic operator.

To correct both of these flaws, the presupposition of a generically quantified indifference free relative should say something like "For each $\mathbf{s}'$, a counterfactual situation of $\mathbf{s}_0$, if the actual people at the top of the ballot in each of the generic election subsituations of $\mathbf{s}'$ had been different, the same thing would have happened". Such a presupposition was used in informal paraphrases in section 3.2. In the next sections, I address first "the (actual) people" (section 3.4.2) and then "the same thing" (section 3.4.3).

3.4.2 Taking sums

This section addresses the content of '???' in the presupposition of indifference in (310).

(310) Presupposition of indifference (for a generically quantified external indifference free relative):

$\lambda s_0.\forall s' \in \min_{s_0}[F \cap \mathbf{???}]$: $Q(s')(\iota x.P(s')(x)) = Q(s)(\iota x.P(s)(x))$

The subsituations that are relevant for the presupposition of variation associated with a generically quantified *-ever* free relative are all those election subsituations that contain a person at the top of the ballot. We can include all these cases in (310) if we treat them as a sum. This is similar to the strategy used in building an E-type pronoun.[11]

A typical example of an E-type pronoun is *they* in (311).

(311) Every boy on the chess team asked a girl to the prom. They all said yes.

[11] Thank you to Maribel Romero for suggesting the E-type strategy used here.

"They" is not the set corresponding to "every girl", "every girl who was asked to the prom" or "every girl who was asked to the prom by some boy". Instead, it is the sum of girls each of whom was asked to the prom by some boy on the chess team. Since Evans (1977, 1980) and Cooper (1979), E-type pronouns have been analyzed as disguised definite descriptions. The pronoun *they* is the definite description σx.R(x) given in (312).

(312) σz[**girl**(z) $\wedge$ $\exists$x(**boy**(x)) $\wedge$ **on-chess-team**(x) $\wedge$ **ask-to-prom**(x, z)]

The interpretation of (311) is thus as in (313).

(313) [$\forall$x [**boy**(x) $\wedge$ **on-chess-team**(x) $\rightarrow$ $\exists$y(**girl**(y)) $\wedge$ **ask-to-prom**(x, y)]] $\wedge$ **say-yes**(σz[**girl**(z) $\wedge$ $\exists$x(**boy**(x)) $\wedge$ **on-chess-team**(x) $\wedge$ **ask-to-prom**(x, z)])

If an E-type pronoun is a definite description (σx.Rx or, equivalently, ιx.Rx), the question then lies in how to construct R in a systematic fashion from the context. Elbourne (2001) argues that an E-type pronoun is the definite determiner in a definite description (such as the one in (314)) that has undergone NP deletion.

(314) Every boy on the chess team asked a girl to the prom. The [girls that were asked to the prom by a boy on the chess team]NP all said yes.

In this way, he reduces the problem of E-type anaphora to the problem of NP deletion. NP deletion is exemplified here in (315)-(316) (examples from Elbourne).

(315) I like Bill's wine, but Max's [*e*]NP is even better.

(316) Sue only bought two books, but Mary bought at least three [*e*]NP.

Now let's return to the question that concerns us here, namely, the shape of a presupposition of indifference that is associated with a generically quantified free

relative. In our case, we are not concerned with how we can predict the content of R for a given context, but merely with what that content is. We arrive at the correct presupposition for (307) by taking sums, much as we did in (312). The presupposition of indifference concerns, for each counterfactual situation $\mathbf{s}'$, the sum of people (i) each of whom was at the top of the ballot in a subsituation of $\mathbf{s}'$ and (ii) that is a sum different from the sum of people at the top of the ballot in the actual subsituations of s_o. (317) describes that sum.

(317) $\lambda s'.\sigma x.\exists s''\leq s'$ [C(s'') $\wedge$ [**t-o-b**(x, s'')]] $\neq \sigma x.\exists s''\leq s_o$ [C(s'') $\wedge$ [**t-o-b**(x, s'')]]

This is what we were getting at when we earlier used the paraphrase "if the actual people at the top of the ballot in each of the generic election subsituations of $\mathbf{s}'$ had been different". We can now talk about "the overall sum of people at the top of the ballot in s_o"and "the overall sum of people at the top of the ballot in s′".

3.4.3 The problem of Q

This section continues the discussion of the shape of the presupposition of indifference associated with the free relative in (307), repeated here.

(307) These days, whoever is at the top of the ballot wins.

When we say of (307) that "the same thing" would have happened, we mean that the property Q, when it is predicated of the counterfactual subsituations of an s′, has whatever truth value it has when that same property is predicated of the subsituations of s_o. So "Q would have happened in s′", as in (318a), means "GEN(R) would have happened in s′", as in (318b). That is, in sentences such as (307), Q is a generalization.

(318) a. $Q(s') = Q(s_o)$

b. $\text{GEN}(\text{R})(\text{s}') = \text{GEN}(\text{R})(\text{s}_0)$

For an s′ that has the property described in (317), we want to ensure the equivalence of the propositions in (319).

(319) a. $\text{GEN}\text{s}^+ \leq \text{s}'$ [s^+ is an election situation] [**win**(ιy.**t-o-b**(y, s^+), s^+)]

b. $\text{GEN}\text{s} \leq \text{s}_0$ [s is an election situation] [**win**(ιy.**t-o-b**(y, s), s)]

When the matrix also contains *almost* or negation, then Q is represented as in (320).

(320) a. *almost* $\text{GEN}(\text{R})(\text{s}') =$ *almost* $\text{GEN}(\text{R})(\text{s}_0)$

b. $\neg\text{GEN}(\text{R})(\text{s}') = \neg\text{GEN}(\text{R})(\text{s}_0)$

We ended section 3.2 without making a decision about whether the *almost* modifier in (267) modifies the universal quantifier in the presupposition of indifference. That is, we still have to choose between (268a) and (268c), repeated here with modifications in (321) and (322)

(267) Almost whatever John writes is violent.

(321) Modifying generic operator:

"In **almost all situations s** in which John writes something, it is violent, *and if the actual things he wrote in each of those generic situations had been different, almost* $\mathbf{GEN(R)(s')} =$ *almost* $\mathbf{GEN(R)(s_0)}$."

(322) Modifying both generic operator and presupposition of indifference:

"In **almost all situations s** in which John writes something, it is violent, *and in* **almost all s′**, *counterfactual situations of s where the actual things he wrote in each of those generic situations were different, almost* $\mathbf{GEN(R)(s')} =$ *almost* $\mathbf{GEN(R)(s_0)}$."

Now that decision is rather easy. (321) makes some sense and captures what we want to say. But (322) says that "it almost always almost always happens", and this is not what (267) means.

For scope under negation, (273) is repeated here.

(273) I won't receive whatEVer book Oprah recommends from now on, but I will receive most of them.

(323) Scope over generic operator:

"**It is not the case that** in all situations s in which Oprah recommends a book, I receive it, *and if the actual books she recommended in each of those generic situations had been different,* $\neg\mathbf{GEN(R)(s')} = \neg\mathbf{GEN(R)(s_0)}$."

(324) Scope over both generic operator and presupposition of indifference:

"**It is not the case that** in all situations s in which Oprah recommends a book, I receive it, *and* **it is not the case that** *in all s', counterfactual situations of s where the actual books she recommended in each of those generic situations were different,* $\neg\mathbf{GEN(R)(s')} = \neg\mathbf{GEN(R)(s_0)}$."

The presupposition in (323) makes some sense, while the presupposition in (324) does not.

3.4.4 The revised presupposition

When an external indifference free relative is generically quantified, the bound variable $\iota\mathbf{x.P(x)}$ in the presupposition of indifference takes the shape of an E-type pronoun, and the presupposition itself is a presupposition about generalizations.

Putting together the elements in (317) and (319), we have the revised presupposition of indifference in (325).

(325) Revised presupposition of indifference (for the generically quantified external indifference free relative in (307)):

$\lambda s_0.\forall s' \in \min_{s_o}[F \cap \lambda s''.\sigma x.\exists s'''\leq s''\ [C(s''') \wedge [\textbf{t-o-b}(x,\ s''')]] \neq \sigma x.\exists s'''\leq s_0\ [C(s''') \wedge [\textbf{t-o-b}(x,\ s''')]]]$: $GENs^+\leq s'\ [C(s^+) \wedge \exists x[\textbf{t-o-b}(x,\ s^+)]]\ [\textbf{win}(\iota y.\textbf{t-o-b}(y,\ s^+),\ s^+) = GENs\leq s_0\ [C(s) \wedge \exists x[\textbf{t-o-b}(x,\ s)]]\ [\textbf{win}(\iota y.\textbf{t-o-b}(y,\ s),\ s)$

It reads as follows: "For each $\mathbf{s}'$, a counterfactual situation of $\mathbf{s}_0$ in which *the overall sum* of people at the top of the ballot in all the election subsituations of $\mathbf{s}'$ is different from the actual overall sum of people at the top of the ballot in all the election subsituations of $\mathbf{s}_0$, a property predicated of counterfactual subsituations $s^+\leq s'$ has the same value as that same property predicated of subsituations $s\leq s_0$" or "For each of the minimally different counterfactual situations in which a different set of people is at the top of the ballot, generally, in relevant subsituations of that situation, the person at the top of the ballot wins".

The picture is clearer if we use worlds (maximal situations) at the top.

(326) Revised presupposition with world variables:

$\lambda w_0.\forall w' \in \min_{w_o}[F \cap \lambda w''.\sigma x[\exists s'''\leq w''\ [C(s''') \wedge [\textbf{t-o-b}(x,\ s''')]] \neq \sigma x[\exists s'''\leq w_0\ [C(s''') \wedge [\textbf{t-o-b}(x,\ s''')]]]$: $GENs^+\leq w'\ [C(s^+) \wedge \exists x[\textbf{t-o-b}(x,\ s^+)]]\ [\textbf{win}(\iota y.\textbf{t-o-b}(y,\ s^+),\ s^+) = GENs\leq w_0\ [C(s) \wedge \exists x[\textbf{t-o-b}(x,\ s)]]\ [\textbf{win}(\iota y.\textbf{t-o-b}(y,\ s),\ s)$

(326) reads as follows: "For each $\mathbf{w}'$, a counterfactual world of $\mathbf{w}_0$ in which the overall sum of people at the top of the ballot in all the election subsituations of $\mathbf{w}'$ is different from the actual overall sum of people at the top of the ballot in all the election subsituations of $\mathbf{w}_0$, a property predicated of counterfactual subsituations $s^+\leq w'$ has the same value as that same property predicated of subsituations $s\leq w_0$" or "For each of the minimally different counterfactual worlds in which a different set

of people is at the top of the ballot, generally, in relevant subsituations of that world, the person at the top of the ballot wins".

3.4.5 Some welcome results

There are several different relationships that the presupposition might bear to the generic quantifier, some of which are schematized in (327)-(329). In (327), the presupposition of indifference is accommodated in the nuclear scope of the generic quantifier. In (328), the presupposition of indifference appears in the nuclear scope of the generic quantifier, but separate from the assertion. In (329), the presupposition is again separate from the assertion. The generic quantifier appears in the nuclear scope of the universal over counterfactual worlds, which is the structure argued for in section 3.4.3.

(327) assertion: GEN [...] [... *indifference*...]

(328) assertion: GEN [...] [...]
pressupposition: GEN [...] [... *indifference*...]

(329) assertion: GEN [...] [...]
presupposition: $\forall w' \in G$: GEN(R)(w') = GEN(R)(w)

In this section, I show why the approaches in (327) and (328) won't work.

Recall (300b), where the whole counterfactual conditional and the iota expression are put in the nuclear scope of the quantificational adverb (in this case, *usually but not always*) together with the assertion.

(300) External indifference
Look at Kay's voting pattern. I have all the names she voted for listed here. *Usually but not always, whoever was at the top of the ballot got her vote.*

a. = It didn't matter who was at the top of the ballot. Usually but not always, the person at the top of the ballot got her vote.

b. ≠ Usually but not always, (i) it didn't matter who was at the top of the ballot and (ii) the person at the top of the ballot got her vote.

This is what (327) describes, and it gets us the wrong interpretation:

(330) Assertion: $\lambda s_0.\text{MOST}s \leq s_0$ [**election-day**(s)] [**win**(ιy.**t-o-b**(y, s), s) $\wedge \forall s' \in$ G $\rightarrow$ **win**(ιy.**t-o-b**(y, s′), s′) = **win**(ιy.**t-o-b**(y, s), s)] = (300b)

Putting the counterfactual conditional and iota expression in the nuclear scope in a separate presupposition line, as in (328), won't work either. It gives us a reading for (307) that incorrectly takes into account the fate of the person at the top of the ballot in any particular subsituation of s_0. Such a reading would be "Generally, in election subsituations, the person at the top of the ballot wins, and in all the election subsituations where the person at the top of the ballot wins (or doesn't win), this happens regardless of that person's identity". As a welcome corollary, the presupposition in (329) makes the correct predictions for the generalization over counterfactual situations in (307). It gives us a reading in which the fate of the person at the top of the ballot in a counterfactual subsituation is independent of what happens in any particular actual subsituation of s_0: "Generally, in election subsituations, the person at the top of the ballot wins, and this (general) tendency is not an accident of s_0 but arises in all the counterfactual subsituations of s_0 too".

(331) shows how counterfactual alternatives might be generated for each actual situation **s** in a sentence like (307), with possible values for ι**x.P(x)** recorded as 'a', 'b', 'c', etc. The evaluation situation is $\mathbf{s}_0$. The counterfactual worlds $\mathbf{s}' \leq \mathbf{s}_0$ are listed as $\mathbf{s}'$, $\mathbf{s}''$, etc.

(331)

	1	2	3	4	...
s_0	a	b	c	d	(and so on for all $s \leq s_0$)
s'	b	c	d	e	(and so on for all $s^+ \leq s'$)
s''	c	d	a	b	(and so on for all $s^{++} \leq s''$)
s'''	e	a	b	c	...
s''''	f	g	h	i	...
$\vdots$					

A generalization over actual subsituations $s \leq s_0$ is a generalization over s_1, s_2, s_3, etc. A generalization over counterfactual subsituations $s^+ \leq s'$ is a generalization over $s^+{}_1$, $s^+{}_2$, $s^+{}_3$, etc. For each of these election subsituations, (331) indicates who is at the top of the ballot (for example, in s_1 it is 'a' and in $s^+{}_2$ it is 'c'). If alternatives are generated for each situation s, then it must be that, for instance, 'a' is never at the top of the ballot in a counterfactual situation of s_1, 'b' is never at the top of the ballot in a counterfactual situation of s_2, etc. And this is not what we want.

Consider again what (307) means. In fact, if in $\mathbf{s}_0$ the people at the top of the ballot are Andy, Brett, Carl, and Donna, then in $\mathbf{s}'$ those people might be Andy, Brett, and Eve, and in $\mathbf{s}''$ they might be Frances, Gordon, Harold, Ingrid, and James, and so on. A name that appears at the top of the ballot in an actual subsituation of $\mathbf{s}_0$ (e.g., 'a' in $\mathbf{s}_1$) should be able to appear in the counterfactual correlate of that subsituation in any of the minimally different situations $\mathbf{s}' \leq \mathbf{s}_0$ (e.g., 'a' could in principle appear at the top of the ballot in $\mathbf{s}^+{}_1$). All that is required is that, for any $\mathbf{s}' \leq \mathbf{s}_0$, generally, in election subsituations of $\mathbf{s}'$, the person at the top of the ballot wins. By applying the presupposition to each subsituation in turn, as in (331), we don't seem to be able to generate the right kinds of situations. We want to be able to apply the presupposition of variation to the set of people at the top of the ballot in $\mathbf{s}_0$ and require that what differs across counterfactual situations $\mathbf{s}'$ is this set. We can generate the right cases—those in (331) plus others—if we treat the presupposition

as we would an E-type pronoun: as a sum.

In addition, notice that this means of constructing the presupposition allows an easy implementation of the situation-based and identity-based exceptions discussed in section 3.2.1. (332) contains a set of alternatives generated for the presupposition of (267) (repeated here), which contains an *almost* modifier. The presupposition of indifference is a presupposition of variation over sums, so it is possible, for example, for 'a' to appear in both s_1 and its counterfactual counterpart $s^+{}_1$. In addition, there need not be the same number of subsituations in each of the minimally different s'.

(267) Almost whatever John writes is violent.

(332)

	1	2	3	4	...
s_0	**a**	**b**	c	**d**	
s'	a	c	d	e	
s''	c	d	a	b	
s'''	e	a	b	c	
s''''	f	g	h	i	
⋮					

Say we've got just 4 election subsituations in s_0. In subsituations 1, 2, and 4, the person at the top of the ballot wins (represented in bold). Subsituation 3 is the exception that makes *almost* p true. Then, if the exception is situation-based (e.g., "except if there's a low turnout"), any low turnout subsituation in any $s' \leq s_0$ is excluded. But if the exception is identity-based (e.g., "except if it's Clinton"), then any subsituation containing value c that appears in an $s' \leq s_0$ is excluded. Exceptions (whether principled or not) can be applied across counterfactual situations s' without linking them to the fate of the person at the top of the ballot in any actual subsituation of s_0, which is just what we want. All that is required is that, for any $s' \leq s_0$, there be at

least one subsituation that bears out an exception to the proposition that the person at the top of the ballot wins.

Another illustration of why (328) does not capture the required presupposition of indifference involves (300). If (328) is applied to (300), we get (333). (333) asserts that in most but not all subsituations of s_0, the person at the top of the ballot gets Kay's vote, and presupposes that in most (but not all) subsituations whatever happened to that person (they either got her vote or not) would have happened anyway regardless of that person's identity.

(333) Assertion: $\lambda s_0.\text{MOST}s \leq s_0$ [**election-day**(s)] [**win**(ιy.**t-o-b**(y, s), s)]

Presupposition: $\lambda s_0.\text{MOST}s \leq s_0$ [**election-day**(s)] [$\forall s' \in G \rightarrow$ **win**(ιy.**t-o-b**(y, s'), s') = **win**(ιy.**t-o-b**(y, s), s)]

(333) makes the wrong prediction for (300). It would be true in scenario (334), where the first, second, and third subsituations of s_0 make the assertion true, and the third, fourth, and fifth columns make the presupposition true.

(334)

	1	2	3	4	...
s_0	a won	b won	c won	d didn't	e didn't
s'	...didn't	...didn't	a won	c didn't	f didn't
s''	...didn't	...didn't	b won	g didn't	m didn't
s'''	...didn't	...didn't	n won	k didn't	l didn't
⋮					

That is, (333) does not guarantee that, in all situations in which the person at the top of the ballot won, that happened regardless of identity. Nor does it guarantee that, across all counterfactual situations of s_0, there is a (majoritarian but not universal) tendency for the person at the top of the ballot to get Kay's vote. As I have argued, this is in fact the reading that we want to obtain, and for this we need (329).

In the next section, I explain how the presupposition of indifference interacts with the generic context to produce the universal effects in indifference free relatives.

3.5 The role of indifference

In section 3.2, I concluded that the universal that serves as the semantic anchor for the universal effects is the generic operator, not the universal in the presupposition. What, then, is the role of indifference in creating the universal effects? In section 3.5.1, I will argue that the universal effects in indifference free relatives are like the universal effects with *any* and, furthermore, that the universal effects require that the presupposition of indifference project over the generic operator.

In section 3.5.2, I turn to agent indifference. I will argue that local accommodation of the presupposition of indifference is the source of the agent indifference construal and the truth conditions associated with *-ever* on that reading.

Section 3.5.3 discusses a prediction of these analyses.

3.5.1 Explaining the universal effects in external indifference free relatives

One question I have raised all along is why the universal effects arise with *-ever* free relatives and not with plain free relatives. I will take an approach inspired by Dayal (1997), Quer (1998), and Kadmon & Landman (1993) according to which an item such as *-ever* exhibits universal behavior when it induces widening in the domain of the generic operator.

I propose the following mechanism for *-ever*. Universal effects arise when the presupposition of indifference projects over the generic operator. When the presupposition of indifference projects above the generic operator, the creation of counterfactual

alternatives induces widening in the domain of the generic operator, which leads to the universal effects. Von Fintel's analysis of indifference as a counterfactual presupposition provides a way of effecting widening in the domain of the generic operator, which in turn produces the universal effects.

The analysis in (248) is modified in (335) for a generically quantified free relative with *whatever*. When the presupposition of indifference projects above the generic operator, it takes on the form in (335), which differs from (248) in several ways: It is defined for instances where **Q** is **GEN(R)**, the presupposition in (335b) is a presupposition involving both sums and generalizations (**G** in (335b) is spelled out in (336)), and the domain of quantification in (335c) draws from actual and counterfactual situations.

(335) a. whatever(w)(F)(P)(GEN(R))

b. Presupposes: $\forall w' \in G \rightarrow GENs^{+} \leq w'(R(s')(\iota x.P(s')(x))) = GENs \leq w_o(R(s)(\iota x.P(s)(x)))$

c. Asserts: $GENs \leq w_o, w'$ [. . . C(s) . . .] [. . . ιx.P(x,s) . . .]

(336) $G = \min_{w_o}[F \cap \lambda w''.\sigma x[\exists s''' \leq w''\ [P(x, s''')]] \neq \sigma x[\exists s''' \leq w_o\ [P(x, s''')]]]$

When the generic quantifier induces covariation of the denotation of the free relative, the presupposition of indifference is built using an E-type pronoun. Specifically, its bound variable is treated like an E-type pronoun, as in (336).

The presupposition in (335b) guarantees that the domain of the generic operator in the assertion in (335c) is widened to include not only the actual subsituations (of a certain kind) in w_o but also the subsituations (of a certain kind) in counterfactual worlds w′. These features of the presupposition of indifference come about because the presupposition projects above the generic operator.

Thus, external indifference is like *any*. By increasing tolerance for exceptions, the presupposition of *-ever* widens the domain of the generic operator, allowing the generic to function like a syntactic universal. This was demonstrated in section 3.2 for *almost* modifiers, universal scope under negation, and NPI licensing.

In order for the universal effects to obtain, the free relative must appear in a generic context, it must be suffixed with *-ever*, and it must be an indifference free relative. The requirements for the universal effects were summarized in (264) and are repeated here:

(264) i. The free relative must appear in a generic context.

ii. The denotation of the free relative must covary with the situation given by the generic operator.

iii. The free relative must be an *-ever* free relative.

iv. The *-ever* free relative must be an indifference free relative.

I have argued that requirement (iv) is explained by the fact that the presupposition of indifference induces widening in the restriction of the generic operator, which results in the universal effects for indifference free relatives in generic contexts. In view of this conclusion, let's revise requirement (iv) as follows:

(337) Revised requirement (iv)

iv. The presupposition of the *-ever* free relative must induce widening in the restriction of the generic operator.

In (335), the assertion and presupposition together produce a natural generalization about being at the top of the ballot ("generally, if x is at the top of the ballot, x wins"). The widened domain creates a statement not only about actual (sub)situations but also counterfactual (sub)situations made available by **G**.

This explains the difference between *whatever* and *every* in (265) and (266) (both repeated here), the difference between plain free relatives and *-ever* free relatives with respect to the universal effects, and the difference between ignorance and indifference free relatives with respect to the universal effects. (265) differs from (266) in that it involves universal quantification over both actual and counterfactual situations, while (266) involves quantification over actual (not counterfactual) individuals.

(265) In those days, whatever lottery number John picked won.

(266) In those days, every lottery number John picked won.

Plain free relatives, because they do not have a modal dimension, cannot be used to widen the domain of the generic operator. The presupposition of ignorance, although it projects globally, likewise does not widen the domain of the generic operator. Ignorance free relatives are discussed in Chapter 4.

3.5.2 Explaining agent indifference

In this section, I provide an analysis of the agent indifference construal and examine its interaction with generic quantification. I argue that agent indifference arises when the presupposition of indifference is accommodated locally, under the scope of an agent subject.

The agent indifference free relative in (298) is repeated here.

(298) Usually but not always, Kay voted for whoever was at the top of the ballot.

Agent indifference: "Usually but not always, on election day Kay voted indifferently for the person at the top of the ballot (if someone else had been there, she would have voted for that person)".

One goal of this section is to explain how the meaning "voted indifferently" arises in (298).

A second goal of this section is to describe the logical entailments of the agent indifference construal under adverbs of quantification such as *usually but not always* in (298) and under negation, as in (301), repeated here.

(301) Look at Kay's voting pattern. I have all the names she voted for listed here. *She didn't vote for whoever was at the top of the ballot.* She voted for the people she knows, and they just happen to be the ones at the top of the ballot.

Both (298) and (301) were discussed in section 3.2.

Von Fintel (2000) suggests that the indifference free relative in (292) (repeated here) is related to the reading of *any* in (338). I have identified (292) as an agent indifference free relative.

(292) Unless Zack simply voted for whoever was at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

(338) Maeve isn't just any lawyer—she is the best in the business.

(339) provides an example similar to (338), but without negation.[12] In both (339) and (340), Maeve hired a lawyer; they differ as to whether she did so indiscriminately. (338) and (340) involve what Horn (2000) has identified as negation of indiscriminacy.

(339) Maeve hired just any lawyer she found walking down the street.

(340) Maeve didn't hire just any lawyer she found walking down the street—she hired the best in the business.

[12] (338) can't be used without negation (**Maeve is any lawyer*). (339) is an example of "subtrigged" *any*: The relative clause gives enough additional information to turn the NP into a natural kind, which facilitates a generic reading for the NP. For more on this view of subtrigging, see Sæbø (2002) and Quer (2000), as well as the related discussion in Chapter 2. LeGrand (1975) and Dayal (1998) also discuss subtrigging.

In another way of putting it, (338) and (340) represent metalinguistic negation of the contribution of *any*. See also footnote 7 (section 3.2.2) on metalinguistic negation of the contribution of *-ever*. Here, I make a proposal for how we can derive the effect of metalinguistic negation exhibited for the *-ever* free relative in (301), which is available only with agent indifference.

In section 3.3, I already argued that local accommodation of the presupposition of indifference is necessary to account for the entailments of sentences that contain indifference free relatives. (298) is interpreted as in (341).

(341) $\lambda s_0.\text{MOST}s \leq s_0\ [\textbf{election-day}(s)]\ [\textbf{vote}(k, \iota y.\textbf{t-o-b}(y, s), s) \wedge \forall s' \in \min_s[F \cap (\lambda s'.\iota x.\textbf{t-o-b}(x, s') \neq \iota x.\textbf{t-o-b}(x, s))] \rightarrow \textbf{vote}(k, \iota y.\textbf{t-o-b}(y, s'), s') = \textbf{vote}(k, \iota y.\textbf{t-o-b}(y, s), s)]$

"In most election situations s, two things happen: (i) Kay votes in s for the person at the top of the ballot in s and (ii) for every s′, a counterfactual situation of s, if someone else had been at the top of the ballot in s′, the same thing would have happened".

When an *-ever* free relative is construed as an agent indifference free relative, the presupposition of indifference is accommodated in the nuclear scope. In contrast to generalizations involving external indifference free relatives, the generalization in (298)/(341) is over the subsituations of the actual situation s_0 only.

In section 3.3.3, we saw that (298) (with an agent indifference construal) is consistent with a scenario in which Kay in fact voted for the person at the top of the ballot every time she voted: (341) gives us USUALLY (p∧q), which is consistent with ALWAYS p. This accounts too for the metalinguistic negation of *-ever* that is possible with agent indifference free relatives: ¬(p∧q) is consistent with p∧¬q as well as ¬p∧¬q.

I now turn to the paraphrase "indifferently" that we have used throughout to paraphrase the agent indifference construal. Agent indifference readings arise when the free relative is in the scope of some agent subject, and when the presupposition of indifference is interpreted in construction with that agent subject. Agent indifference is indifference that is predicated of an agent subject, and the locus of indifference for an agent indifference free relative is the agent subject. I argued in Chapter 1 that agent indifference is a side effect of the counterfactual semantics of indifference free relatives, and that the construal process that creates it is optional. In particular, I argued that the agent indifference construal is essentially a theory (the result of Gricean reasoning) that explains the counterfactual entailment.

The presupposition of indifference must project locally in order for the agent indifference construal to be available, and the agent indifference construal obtains only when the presupposition of indifference is interpreted under an agent subject. In order to account for the agent indifference construal in (298), the presupposition of indifference must be accommodated locally, not only under *usually but not always* but also under a volitional operator associated with the agent subject. In (298), the presupposition of indifference is in the nuclear scope, under the agent subject Kay, where it is predicated of Kay and construed as part of the main predication.

In (341), agent indifference is represented indirectly. Procedurally speaking, the part of the representation that is contributed by the presupposition of indifference combines with the VP denotation before the matrix predication. In this sense, it is like a manner adverbial. Thus, a paraphrase of (341) that better captures the agent indifference construal might read: "In most election situations s, Kay votes in s for the person at the top of the ballot in s *in such a way that* for every s′, a counterfactual situation of s, if someone else had been at the top of the ballot in s′, she would have voted for that person in s′". The presupposition of indifference invites (and here

almost requires) the inference that Kay acted indifferently.

Compare the external indifference free relative in (307) with the agent indifference free relative in (342).

(307) These days, whoever is at the top of the ballot wins.

(342) In those days, Kay voted for whoever was at the top of the ballot.

(307) tells us about the consequences of being at the top of the ballot in any relevant situation, actual or counterfactual. (342), on the other hand, tells us only about Kay's behavior in s_0. These assertions are given in (343) and (344), respectively.

(343) GENs$\leq s_0$,s′ [... C(s)...] [**win**(ιy.**t-o-b**(y,s))]

(344) GENs$\leq s_0$ [... C(s)...] [**win**(ιy.**t-o-b**(y,s)) $\wedge$ $\forall$s′ $\in$ min$_{s_0}$[F $\cap$ (λs′.ιx.**t-o-b**(x, s′) $\neq$ ιx.**t-o-b**(x, s))] $\rightarrow$ **win**(k, ιy.**t-o-b**(y, s′), s′) = **vote**(k, ιy.**win**(y, s), s)]]

(344) involves a generalization over election subsituations in s_0, while (343) involves a generalization over election subsituations in both s_0 and its counterfactual alternatives. In (344), the presupposition of indifference is accommodated in the nuclear scope of the generic operator.

3.5.3 A prediction

In this section, I provided an explanation for the universal effects that is compatible with von Fintel's semantics for *-ever*. I argued, following Dayal, Quer, and Kadmon & Landman, that a generic operator is a necessary ingredient in producing the universal effects. I argued that indifference free relatives behave like universals when the presupposition of indifference projects over the generic operator. I also argued that indifference free relatives are interpreted as agent indifference free relatives when the

presupposition of indifference is locally accommodated under a volitional operator associated with the agent subject.

The clear prediction that stems from this view is that the universal effects should not be available to agent indifference free relatives, since local accommodation cannot give us widening in the domain of the generic operator. The observation that agent indifference free relatives project locally, combined with requirement (iv) (that the indifference free relative must induce widening in the restriction of the generic operator), effectively requires that a free relative that exhibits universal effects cannot be an agent indifference free relative and must be an external indifference free relative.

In fact, the examples of the universal effects that are given in the existing literature on *-ever* free relatives are always cases of external indifference. If we are on the right track and local accommodation of the presupposition of indifference prevents the free relative from contributing widening in the restriction of the generic operator, then the agent indifference construal precludes universal effects.

Now let's examine this prediction for (256)-(258). First, recall (256).

(256) a. *I did practically what you asked me to do.

b. I did practically whatever you asked me to do.

Intuition does seem to bear out this prediction for (256b), where an agent indifference construal is impossible to maintain. But this is difficult to demonstrate. It is equally hard to show, for example, that the reading of (292) (repeated here) under which Zack is taken to have an indifferent attitude is incompatible with universal behavior of the free relative.

(292) Unless Zack simply voted for whoever was at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

We can make some headway by considering *almost* modifiers in combination with *usually but not always*. Consider again the case where out of eight election situations Kay votes for the person at the top of the ballot in all eight, but does so indifferently in only seven of them. (298) is repeated here.

(298) Usually but not always, Kay voted for whoever was at the top of the ballot.

(298) is true in the scenario above only if Kay is construed as indifferent. Now compare (298) to (345), which is unacceptable with an agent indifference free relative. It cannot be used if in fact Kay votes for the person at the top of the ballot each time, even if she is only sometimes indifferent. (345) allows only an external indifference reading of the free relative.

(345) #Usually but not always, Kay voted for almost whoever was at the top of the ballot.

The semantic object required by *almost*—namely, a generic operator whose domain is maximally widened along some dimension—is not present in the configuration necessary for the attitude indifference construal. This is because the presupposition of *-ever* does not project beyond the local context in (345) when it contains an agent indifference free relative.

Next, recall (257). The narrow scope reading in (257b) does not have an agent indifference reading available to it.

(257) a. John didn't read what Sue recommended... #but he read most of it.

b. John didn't read whatever Sue recommended... but he read most of it.

With the agent indifference construal, the negation in (257b) can only be interpreted as a negation of the contribution of *-ever* (metalinguistic negation), as in (346).

(346) John didn't read whatever Sue recommended... he read it all deliberately.

Finally, we come to (258), repeated here. (258b) differs from (256b) and (257b) in that the agent indifference free relative licenses the NPI. As long as John read every story his father sent him, (258b) is true. It doesn't matter whether indifference entered into the picture.

(258) a. *John read what his father ever sent him.

b. John read whatever story his father ever sent him.

Indifference free relatives license NPIs regardless of whether or not they are interpreted as agent indifference free relatives. This is unexpected and will have to be left to future research.

3.6 Summary

In this chapter, I argued that the projection behavior of the presupposition of indifference is correlated with the ability of the free relative to exhibit universal effects. First, when the presupposition of indifference projects globally (over the generic operator), it has the effect of widening the domain of the generic operator, which produces the universal effects. Second, the presupposition of indifference must project locally in order for the agent indifference construal to obtain. Agent indifference free relatives have properties that set them apart from external indifference free relatives, but previous analyses do not provide a way of separating out external indifference from agent indifference. In particular, agent indifference free relatives are susceptible to metalinguistic negation and they do not uniformly behave like universals in that they do not display the full range of universal behavior described in Chapter 2. I proposed that these facts can be explained with local accommodation of the presupposition of indifference.

I also answered the question "What is presupposed?" for the case of external indifference free relatives that are generically quantified. I argued that a generically quantified external indifference free relative carries a presupposition of variation over sums and that the presupposition itself is about generalizations.

Chapter 4

Ignorance

In Chapter 2, I argued that ignorance free relatives do not exhibit universal effects. For example, ignorance free relatives do not license NPIs and cannot be modified by *almost*. In Chapter 3, I argued that the universal effects for indifference free relatives arise in generic contexts when the presupposition of indifference induces widening in the restriction of the generic operator.

The problem inherited from previous chapters, namely, the failure of ignorance free relatives to exhibit universal effects, comes down to the problem of explaining the behavior of ignorance free relatives in generic contexts. The universal effects require the following:

(347) i. The free relative must appear in a generic context.

ii. The denotation of the free relative must covary with the situation given by the generic operator.

iii. The free relative must be an *-ever* free relative.

iv. The *-ever* free relative must induce widening in the restriction of the generic operator.

Either ignorance free relatives don't covary with the situation given by the generic operator (requirement (ii)) or they don't induce widening in the restriction of the generic operator (requirement (iv)), or both. I address requirement (ii) in section 4.2 and return to requirement (iv) in section 4.6.

Section 4.1 discusses the interpretation of the presupposition of ignorance under attitude subjects. Section 4.2 discusses the behavior of ignorance free relatives in generic contexts. Section 4.3 discusses the projection behavior of the presupposition of ignorance. Section 4.4 reviews some basic facts about epistemic items. Section 4.5 contains the proposed explanation for the behavior observed in sections 4.2 and 4.3. I will argue that because the ignorance free relative is an epistemic item, it introduces a situation variable that is coindexed with the actual situation variable and cannot be bound by intermediate operators. The result is that the presupposition of ignorance must be accommodated globally and must be interpreted above the generic operator, so that ignorance free relatives cannot be generically quantified. Section 4.6 addresses an exception to the generalization put forward section 4.5, namely, the existence of some ignorance free relatives that arguably fulfill requirement (ii). Requirement (iv), however, remains a problem for all ignorance free relatives.

4.1 The locus of ignorance

4.1.1 Attitude predicates

The sentence in (348) presupposes that Patrick owns a cello (that is, the existential presupposition of the definite description *his cello* projects globally).

(348) Patrick is going to sell his cello.

But (349), which embeds *his cello* under the attitude predicate *want*, does not necessarily presuppose that Patrick owns a cello, because (349) can appear in the context in (350).

(349) Patrick wants to sell his cello.

(350) Patrick is under the misconception that he owns a cello, and he wants to sell his cello.

(349) presupposes that Patrick believes he owns a cello (Heim 1992). In both (349) and (350), the presupposition that Patrick owns a cello is accommodated in the belief context created by *want*. (349) asserts something about Patrick's desires and carries a presupposition about his beliefs. Heim proposes that the sentence in (349) means "Patrick thinks that if he sells his cello, then he will be in a more desirable world than if he doesn't sell his cello". This meaning is achieved by quantifying universally over Patrick's belief worlds. Thus, attitude verbs are analyzed as universals over situations.

The remainder of the section describes how epistemic items fare under attitude predicates. Epistemic items involve reference to speaker's knowledge or belief. In addition to the epistemic modals, there are epistemic items in other parts of the grammar, for example the English adverb *obviously* and the German discourse particle *ja*.[1] For example, (351) expresses that it is obvious to the speaker that the winner trained well.

(351) The winner obviously trained well.

In (351), the epistemic adverb *obviously* describes the opinion or belief of the speaker. When an epistemic item is interpreted under an attitude predicate (including contexts

[1] All of the examples using *ja* and *obviously* are taken from (or otherwise based on examples in) Kratzer (1999) and von Fintel & Iatridou (2002).

of reported speech), it involves reference to the knowledge or belief of the subject of the attitude. (352) expresses that it was obvious to John that the winner trained well.

(352) John said that the winner obviously trained well.

In (352), *obviously* is relativized to the subject NP *John*. Attitude subjects can also bind variables. (353) expresses that it was obvious to each girl that her boyfriend didn't love her.

(353) Every girl$_i$ complained that her$_i$ boyfriend obviously didn't love her$_i$

In (353), the epistemic item *obviously* is interpreted with respect to the girl in each of the complaining situations.

The attitude holder in (351) is the speaker, in (352) it is John, and in (353) the attitude holders are the complaining girls.

4.1.2 Ignorance free relatives under attitude predicates

Like other epistemic items, the presupposition of ignorance can be relativized to an attitude subject. Von Fintel points out that while the free relative in (354) has a speaker's ignorance reading, it also has a reading under which it is Pascal, the subject of the intervening attitude predicate *suspect*, who didn't know what he was eating. The epistemic presupposition can be accommodated and bound under an attitude subject. On this reading of (354), Pascal is the locus of ignorance.

(354) Pascal correctly suspected that whatever he was eating was not vegetarian.

In (355), the presupposition of ignorance is evaluated relative to the epistemic modal base of the taster for each of the taster-containing situations.

(355) Each taster hoped that whatever he was eating was vegetarian.

When we remove the attitude subject, as in (356)-(358), the ignorance free relative must be interpreted with respect to speaker's ignorance.

(356) There's a lot of garlic in whatever Arlo is cooking over there.

(357) John was the one who cooked whatever Pascal was eating.

(358) Whatever Pascal was eating was not vegetarian.

In (356)-(358), the modal base for the presupposition of variation is construed as speaker's epistemically accessible worlds. As we saw in (354) and (355), the modal base can also be construed as the epistemically accessible worlds of an attitude subject.

The locus of ignorance for an ignorance free relative must be either an attitude subject or the speaker. Compare this to the case of indifference. As argued in Chapters 1 and 3, the agent indifference construal arises when an agent subject is taken to be the locus of indifference. External indifference arises when there is no locus of indifference.

	SUBJECT	OTHER
Locus of ignorance	attitude subject (attitude subject ignorance)	speaker (speaker ignorance)
Locus of indifference	agent subject (agent indifference construal)	none (external indifference)

In the next section, I turn to the main goal of this chapter: explaining the lack of universal behavior in ignorance free relatives.

4.2 Ignorance in generic contexts

This section discusses requirement (ii): Can ignorance free relatives be generically quantified in generic contexts?

4.2.1 Covariation

As argued in Chapter 2, while *-ever* free relatives are constrained to a fixed value in episodic contexts, in generic contexts indifference free relatives can exhibit universal effects because they can covary with the situation introduced by the generic operator (i.e., indifference free relatives fulfill requirement (ii)).

The sentence in (359) can be understood as either episodic (say, yesterday's election) or generic (say, in the years before Zack became a tax payer). (360)-(362) give the assertions associated with (359), with speaker ignorance in italics. Two of these interpretations are readily available. However, the reading that corresponds to an ignorance free relative bound under the generic operator, (361), gives us some trouble.

(359) Zack voted for whoever was at the top of the ballot.

(360) Episodic: *I don't know who was at the top of the ballot*, but Zack voted for the person at the top of the ballot.

(361) Generic (binding the free relative): *Generally, when Zack voted for someone, he voted for the person at the top of the ballot, *but I don't know who it was in any of those cases.*

(362) Generic (not binding the free relative): *There was one person who was always at the top of the ballot and I don't know who it was,* but generally, when Zack voted for someone, he voted for that person.

Let's look at (361) more closely. First, we want to ensure a reading under which it is the speaker, not Zack, who is ignorant of the identity of the person at the top of the ballot. Notice that if the predicate *vote* is forced to serve as an attitude predicate, however marginally, then Zack can be construed as the locus of ignorance. The presupposition of ignorance is then interpreted relative to Zack's epistemic worlds, as described in (363).[2]

(363) Zack's ignorance: ?Zack voted for the person at the top of the ballot, *and he didn't know who it was.*

This is not the intended reading of (361).

We also want to rule out an indifference reading, which is also available to (359), and evaluate (361) only with a presupposition of speaker ignorance. To this end, consider an ignorance free relative in the following scenario. Mary, John, and I are sitting together at a meeting. I ask Mary a question that she can't answer. She tells me to ask the guy [name inaudible] wearing a tie, since she believes he has a good memory. I turn to John and say (364).

(364) Whoever's wearing a tie has a good memory.

This is a sensible ignorance free relative. Now, suppose this happens a lot. A lot of people happen to tell me that tie-wearing guys have a good memory, though I never catch their names. Perhaps, after this goes on for a while, I want to summarize. I say (365), but the intended ignorance reading is not possible.

(365) #I've been told that whoever's wearing a tie has a good memory.

[2]This reading is similar to free indirect discourse, as in (ii) (compare to (i)) and (iii) (all examples from Doron 1991):

(i) Robin thought: "I am tired."
(ii) She was tired, thought Robin.
(iii) He would return tomorrow (thought John).

(365) cannot mean "I've been told that the people wearing a tie have a good memory, and I don't know who they all are" (though it is of course compatible with that circumstance). When we switch to a generic context and attempt to covary the denotation of the free relative with the generic situation, we get only an indifference reading for the free relative in (365). In fact, the indifference reading of (365) is a silly one, insofar as there is no essential connection between wearing a tie and having a good memory. In (365), the indifference reading suggests that there is a causal connection between two unrelated properties. In moving from (364) to (365), we lose ignorance and are forced to interpret (365) as an indifference free relative.

The difficulty with (361) is somewhat surprising, as the speaker ignorance reading it describes is easy to construct and, moreover, seems to be a sensible thing to say. We know what it should mean, but that meaning is not there. In Chapter 2, I left open the question of whether ignorance free relatives can covary under the generic operator. These examples show that an ignorance reading cannot be generically quantified when it conveys speaker ignorance. If an ignorance reading is available at all, it is one in which the presupposition is interpreted outside of the generic quantifier, as described in (362). The reading in (362) does not exploit the generic quantifier.

Recall also this example from Chapter 1, which has both ignorance and indifference readings:

(366) Whatever Mary cooks uses onions.

(367) Ignorance: "The thing Mary cooks (say, that dish she always brings to potlucks)—I don't know what it is—uses onions".

On the ignorance reading, the denotation of the free relative does not covary with the situation given by the generic operator.

Now I turn to attitude subject ignorance. (368) puts the presupposition of ignorance under an attitude subject, and the corresponding paraphrases for attitude subject ignorance are given in (369)-(371). In (370), it is easier to construe ignorance (specifically, Zack's ignorance) across a number voting situations than it was to construe speaker ignorance across a number of situations in (361) and (365).

(368) Zack suspected that whoever was in the next voting booth was wearing too much perfume.

(369) Episodic: *Zack didn't know who was in the next voting booth*, but he suspected that the person in the next voting booth was wearing too much perfume.

(370) Generic (binding the free relative): ?Generally, on election day, Zack suspected that the person in the next voting booth was wearing too much perfume, *but he didn't know who it was in any of those cases.*

(371) Generic (not binding the free relative): *There was one person who was always in the next voting booth and Zack didn't know who it was,* but generally, on election day, Zack suspected that that person was wearing too much perfume.

It appears that the exception to our claim that ignorance free relatives do not fulfill requirement (ii) is the case where an ignorance free relative is interpreted relative to the epistemically available worlds of an attitude subject. But even if (368) can be used to convey Jack's ignorance in a number of voting situations, the free relative cannot behave like a universal:

(372) In those days, Zack suspected that (*almost) whoever was in the next voting booth was wearing too much perfume.

I return to attitude subject ignorance in section 4.6. In the next sections, I focus mainly on speaker ignorance.

4.2.2 The absence of universal effects

The universal effects for *-ever* free relatives are obtained in generic contexts when the denotation of an indifference free relative covaries with the situation given by the generic operator. (362) is an example of an ignorance free relative in a generic context, and we must conclude that while ignorance free relatives can appear in generic contexts, their denotation cannot covary with the situation given by the generic operator.

Schematically, a free relative whose situation variable is bound by a generic quantifier translates as in (373a), and a free relative whose situation variable is bound by the matrix lambda operator translates as in (373b). In (373a), the definite expression is in the nuclear scope of the generic operator, where its situation variable is bound by the generic operator. In (373b), however, the situation variable of the definite is identified with the utterance situation s_0.

(373) a. $\lambda s_0.\text{GEN}s \leq s_0$ [...] [... ιx.P(x,s)...]

b. $\lambda s_0.\text{GEN}s \leq s_0$ [...] [... ιx.P(x,s_0)...]

Dayal argues that the semantic effect of universality in *-ever* free relatives requires the presence of the generic operator in a structure such as (373a). However, she does not distinguish between ignorance and indifference readings in generic contexts. I will argue that speaker ignorance free relatives are always interpreted as in (373b), and that this is a reflection of the fact that speaker ignorance free relatives are linked to the utterance situation.

There is a direct parallel between the semantic interpretations observed here and

the universal behavior of *-ever* free relatives in the grammatical tests described in Chapter 2. Ignorance free relatives do not exhibit universal effects in generic contexts.

	DEFINITE BEHAVIOR	UNIVERSAL BEHAVIOR
episodic	✓ ignorance ✓ indifference	*ignorance *indifference
generic	✓ ignorance ✓ indifference	*ignorance ✓ indifference

This parallels the interpretations observed in the previous section: In a generic context, the denotation of a speaker ignorance free relative cannot covary with the situation given by the generic operator.

	FIXED VALUE	COVARYING VALUE
episodic	✓ignorance ✓indifference	*ignorance *indifference
generic	✓ignorance ✓indifference	*ignorance ✓indifference

Speaker ignorance free relatives are limited to the structure in (373b), that is, they do not meet requirement (ii). In the next sections, I will examine why this is so.

4.3 Presupposition projection

In this section, I present evidence to the effect that the presupposition of ignorance projects globally.

4.3.1 *unless*-clauses

Recall the following example from Chapter 3, in which speaker ignorance projects globally.

(374) Unless there's a lot of garlic in whatever Arlo is cooking, I'll eat out tonight.

a. = I don't know what Arlo's cooking. Unless there's a lot of garlic in what Arlo is cooking, I'll eat out tonight.

b. ≠ Unless (i) I don't know what Arlo's cooking and (ii) there's a lot of garlic in what Arlo is cooking, I'll eat out tonight.

(374) is interpreted as in (374a), not (374b). Speaker ignorance projects out of the *unless*-clause, so that whether or not I'll eat out tonight is not dependent on my ignorance of what Arlo cooked.

(375) has a reading where it is Pascal who doesn't know what he's eating. This presupposition about Pascal's ignorance can project globally, so that whether he'll eat here again is not dependent on his ignorance regarding the identity of the dish he's eating. It is dependent only upon whether he suspects it's not vegetarian. It is less clear whether the presupposition can be accommodated locally, although we predict that it can.

(375) Unless Pascal suspected that whatever he was eating was not vegetarian, he may actually eat here again.

a. = Pascal didn't know what he was eating. Unless he correctly suspected that it was not vegetarian, he may actually eat here again.

b. =? Unless (i) Pascal didn't know what he was eating and (ii) he correctly suspected that it was not vegetarian, he may actually eat here again.

4.3.2 *because*-clauses

Ignorance and indifference free relatives differ with respect to whether or not they can be interpreted below *because*. Consider (376) on an ignorance reading.

(376) I must be a bad citizen, because I voted for whoever was at the top of the ballot.

Recall that agent indifference must be interpreted below *because* ("I'm a bad citizen because I voted indifferently"). We do not get a parallel reading for ignorance. (376) with an ignorance free relative cannot mean "I'm a bad citizen because I voted for the person at the top of the ballot and I don't know who that person was". Instead, it means "I don't know who I voted for, and I must be a bad citizen because I voted for the person at the top of the ballot".

In (377), the presupposition of ignorance can be interpreted above *because*, even when ignorance of who cooked the meal is attributed to Pascal. As with (375), accommodation of Pascal's ignorance under *because* is a harder reading to get.

(377) Pascal must be paranoid, because he suspected that whoever cooked his meal was a vegetarian.

4.3.3 *usually but not always*

Consider (378) on an ignorance reading in the scenario given directly below.

(378) Usually but not always, Kay voted for whoever was at the top of the ballot.

In eight elections, Kay voted for the person at the top of the ballot every time. In addition, speaker knows for most of the ballots (but not all) who the person at the top of the ballot was. With an ignorance free relative, (378) is false in that scenario. Speaker's knowing or not knowing who was at the top of the ballot does not alter the conditions under which (378) is true. The sentence is necessarily false if Kay in fact votes for the person at the top in all eight cases.

Now consider (379). If Pascal always claims he's not eating vegetarian food, then (379) is not necessarily false. It may depend on whether or not on those occasions Pascal also conveyed that he didn't know what he was eating.

(379) Usually but not always, Pascal claimed that whatever he was eating was not vegetarian.

We can test (379) by creating a discourse in which global accommodation of Pascal's ignorance would create an infelicitous discourse.

(379′) Pascal knew full well what he was eating. Usually but not always, Pascal claimed that whatever he was eating was not vegetarian.

a. ≠ Pascal knew full well what he was eating. Pascal didn't know what he was eating. Usually but not always, Pascal claimed that what he was eating was not vegetarian.

b. ≠ Pascal knew full well what he was eating. Usually but not always, (i) Pascal didn't know what he was eating and (ii) Pascal claimed that what he was eating was not vegetarian.

c. = Pascal knew full well what he was eating. Usually but not always, Pascal claimed that (i) he didn't know what he was eating and (ii) what he was eating was not vegetarian.

4.3.4 Summary

To our first observation (no universal effects with ignorance free relatives) and our second observation (no generic quantification for ignorance free relatives under the generic operator, except in the case of attitudes), we add a third observation: The presupposition of ignorance projects globally, except in the case of attitudes. In

section 4.6, I will argue that ignorance free relatives cannot induce widening in the restriction of the generic operator.

	UNIVERSAL EFFECTS	COVARI-ATION	ACCOMMO-DATION SITE	WIDEN-ING
speaker	no	no	global only	no
attitude subject	no	yes	global/local	no

4.4 Expressive content of (some) epistemic items

The presupposition of ignorance, in addition to being an epistemic item, displays properties of several other types of items: evidentials, indexicals, logophors, and expressives. Each of these categories is distinct, though they overlap to some degree and discussion of one usually requires discussion of another. An EPISTEMIC item involves knowledge or belief on the part of the speaker or an attitude subject. An EVIDENTIAL gives the source of speaker's knowledge or belief. An INDEXICAL item is one that is dependent on the utterance situation for its interpretation. A LOGOPHOR is a pronoun that refers to an individual with a point of view. Finally, EXPRESSIVE meaning is distinguished from descriptive meaning in that it does not contribute to the assertion.

4.4.1 Epistemic items

Kratzer (1991) gives the following examples of epistemic, deontic, and circumstantial instances of the modal *must*, where her analysis of the modal semantics is transparent.

(380) a. In view of the available evidence, Jockl must be the murderer.

b. In view of what the law provides, Jockl must go to jail.

c. In view of the present state of his nose etc., Jockl must sneeze.

As described in (380), *must* contributes a neutral necessity operator that is contextually dependent on different modal bases: epistemic in (380a), deontic in (380b), and circumstantial in (380c).[3] Here, the "in view of" phrase gives the modal base explicitly.

There are a number of respects in which epistemic modals and other epistemic items behave differently from deontic and circumstantial modals. It is often observed that epistemic items have the following tendencies. They (i) contribute to the expressive/nonassertive content of the sentence in which they appear, (ii) appear to be high in the syntax, at least at LF, (iii) cannot be bound except by attitude subjects, and (iv) are linked to the utterance situation (unless bound by an attitude subject, in which case they are linked to the attitude situation(s)). I will argue that these features of ignorance free relatives determine their behavior in generic contexts and under attitude subjects.

4.4.2 Epistemics contribute to expressive content

The semantic contribution of an utterance can be divided into expressive content and descriptive content. Expressive content does not contribute to determining the truth conditions of the sentence in which it appears, while descriptive content does. Epistemic modality often contributes to expressive content, in contrast to deontic and circumstantial modals, which are always computed as part of descriptive content.

[3]Modals are categorized into two basic classes: epistemic modals and non-epistemic modals. After this, classification strategies (and terminological preferences) differ. The non-epistemic modals consist of root and circumstantial modals, although circumstantial modals are sometimes treated as a subcase of the root modals. For general surveys, see Palmer (1986), Brennan (1993), and Papafragou (2000).

Westmoreland (1998) argues that epistemics are evidential markers, since their semantic contribution is to indicate the source of information. An evidential morpheme marks the speaker's source for the information reported in the utterance. (The idea is that epistemic *must* p means "therefore p" rather than "□ p".) Westmoreland comments on the portion of (381a) given in (381b), arguing that the propositional complement of *thought* in (381b) is not *must* p but simply p, as in (381c).[4]

(381) a. So she began. "O Mouse, do you know the way out of this pool? I am very tired of swimming about here, O Mouse" (Alice thought this must be the right way of speaking to a mouse; she had never done such a thing before, but she remembered having seen, in her brother's Latin Grammar, "A mouse—of a mouse—to a mouse—a mouse—O mouse!")

—from *Alice in Wonderland*

b. Alice thought ["O Mouse"] must be the right way of speaking to a mouse.

c. "O Mouse" is the right way of speaking to a mouse.

Under this view, epistemics are semantically extrapropositional. That is, they contribute to expressive content rather than descriptive content. Similarly, von Fintel & Iatridou (2002) point out that in (382) the epistemic modal *must* is not part of the descriptive content. It can't be questioned by B's "Are you sure?".

[4]Westmoreland (1998:80-1) puts it this way: "The word *must* is invisible to the compositional process that constructs the propositional content of a sentence when it is embedded under a propositional attitude predicate; the information it contributes regarding the source of a proposition comes about by an independent process. This is even more obvious when MUST ϕ is embedded under a non-factive predicate like *believe*. Example [(381a)], partially repeated here as [(381b)], illustrates this. I take *thought* in this passage to be roughly synonymous with *believed* or *had the impression that*. Alice does not believe that she has drawn an inference; she knows that she has done so. What she believes is that "O Mouse" is the right way of speaking to a mouse. The word *must* contributes the independent information that this belief was drawn from the evidence of something that she had experienced."

(382) A: It must be raining.

B: Are you sure?

= Are you sure it's raining?

≠? Are you sure that from the evidence it can be deduced that it is raining?

4.4.3 Subjective and objective epistemic modality

The syntactic corollary to the observation that epistemics are extrapropositional is the observation that epistemic modals occupy relatively high syntactic positions. Drubig (2001) follows Westmoreland in taking epistemics to be evidentials and further argues that epistemics are syntactically high. For instance, epistemics often take scope over other propositional operators such as tense and negation. (383) has both epistemic and deontic interpretations available to it, but on the epistemic reading, *may* must scope over negation.

(383) John may never leave early.

a. In view of the available evidence, J. may never leave early. (*may*¬ only)

b. In view of what the rules provide, J. may never leave early. (*may*¬/¬*may*)

In (384), in which negation scopes over the modal at s-structure, the scope order is fixed. (384) thus disambiguates the deontic readings, as in (384b), and rules out an epistemic reading entirely, as in (384a).

(384) Never may John leave early.

a. *In view of the available evidence, never may J. leave early.

b. In view of what the rules provide, never may J. leave early. (¬*may* only)

In (383)-(384), the epistemic readings in the (a) sentences are unavailable just in case the epistemic does not take widest scope.[5]

This is the sort of evidence that has led researchers to treat epistemic modals as badly- (or at least strangely-) behaved modals. But while epistemic items tend to be high syntactically, this is by no means always the case. Papafragou (2000) and von Fintel & Iatridou (2002) provide a number of counterexamples to Drubig's generalization. Von Fintel & Iatridou conclude that both analyses—the evidential analysis and the traditional modal analysis—are necessary to explain the full range of behavior of epistemic modals and other epistemic items. They cite in particular constructions such as "need not", in which an epistemic modal takes narrow scope with respect to negation: *John need not be at home.* ($\neg\Box$) *He might be at work.*[6] Papafragou, on the other hand, argues that the traditional modal analysis is all that is needed.

Papafragou attributes the tendency of epistemic items to be syntactically high and to be semantically extrapropositional to the fact that they are usually subjective epistemics, having as their conversational background the speaker's beliefs. There is a well-established distinction between subjective and objective epistemic modality. Subjective epistemic statements are relativized to the speaker's current belief set. Because it is limited to the time of utterance, this type of epistemic modal is indexical. It is for this reason, argues Papafragou, that the subjective epistemic takes on characteristics of an evidential. But the association with evidentials is indirect.

By these criteria, the ignorance free relative is a subjective epistemic. I will focus on properties having to do with subjectivity rather than epistemicity per se. It is

[5]Drubig gives a variety of additional evidence for his claim that epistemics are syntactically high. For example, double modal constructions have ordering restrictions whereby if one of the modals is epistemic it must take scope over the other: *might could* but **could might*.

[6]Drubig suggests that to the extent there are exceptions to the patterns he describes, it is because the shift from epistemic modal to evidential is a change in progress in English.

-ever's behavior as a subjective epistemic that interests us here.

4.5 Expressives resist embedding and block binding

It has been shown that the German discourse particle *ja* (Kratzer 1999) and other epistemic items (von Fintel & Iatridou 2003) resist embedding and block binding. I describe these cases and the arguments that have been made about them, and then show that ignorance free relatives have the same properties.

4.5.1 German *ja*

I take the following definition of *ja* from Kratzer (1999) (for the item *ja* and a clause α).

(385) *Ja* α is appropriate in a context c if the proposition expressed by α in c is a fact of w_c which—for all the speaker knows—might already be known to the addressee.

Ja is illustrated in (386)-(387). In (386), it is reasonable for speaker to suppose that hearer is aware of the hole in hearer's sleeve. But in (387), B has little reason to believe that what he has to say is known to A. Thus *ja* is appropriate in (386), but not in the question-answer sequence in (387).

(386) Du hast ja'n Loch im Ärmel.
you have JA a hole in the sleeve
"You have a hole in your sleeve."

(387) A: Who did Austin marry?

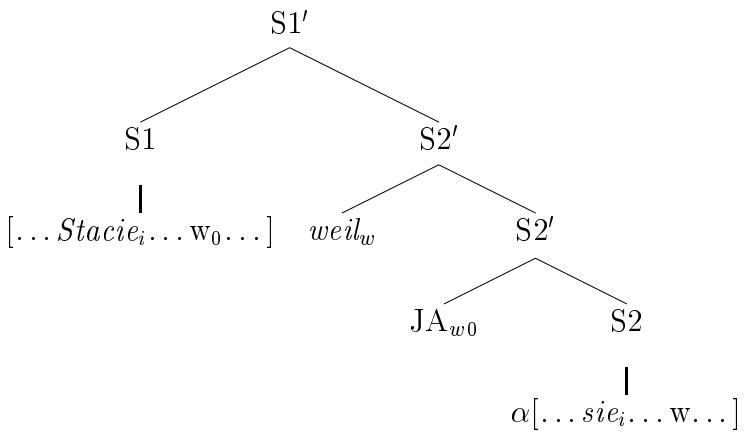
B: #Austin hat ja Ashley gehieratet.
Austin has JA Ashley married
"Austin married Ashley."

Ja resists semantic embedding: In (388), *ja* is not interpreted under *because* (i.e., Stacie did not lose her job because speaker thinks hearer might already know that she was in the union).

(388) Stacie hat ihren Job verloren, weil sie ja in der Gewerkschaft war.
Stacie has her job lost because she JA in the union was
"Stacie lost her job because she was in the union."

Descriptive and expressive meaning, because they are independent dimensions of meaning, have a limited interaction. According to Kratzer, "discourse particles and other kinds of expressives are ignored in the computation of descriptive meanings". Although *ja* is contained in the *weil*-clause, it is predicated of the speaker and is not interpreted as part of the truth-conditional content of the *weil*-clause.

(389)

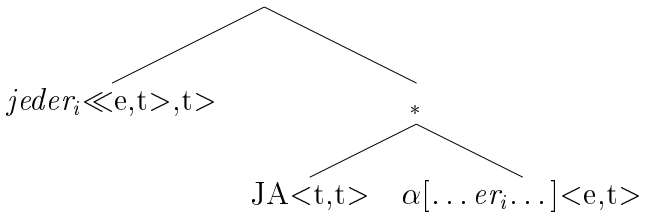


And *ja* blocks binding: In (390), *ja* appears inside the *because*-clause and blocks binding into that domain: *er* can be bound by *jeder* only if *ja* is not present.

(390) Jeder von diesen Arbeitern$_i$ hat seinen Job verloren, weil er$_i$ (*ja) in der Gewerkschaft war.
each of those workers has his job lost because he JA in the union was
"Each of those workers lost his job because he was in the union."

Kratzer's observation is that the discourse particle *ja* cannot intervene between a bound variable pronoun and its binder: Since an item such as *ja* must take scope over (combine with) something that expresses a proposition, it can't intervene between a bound variable and its binder. (391) describes how *ja* blocks binding in (390).

(391)



In (390), the *because*-clause in an open formula, so *ja* cannot be used. On this view, the expressive tier, which is computed separately, cannot in fact be computed when there is an unbound variable in the scope of the expressive in question.[7]

4.5.2 English *obviously*

Like German *ja*, the English adverb *obviously* resists semantic embedding and blocks binding.

While *obviously* can contribute expressive meaning, its counterpart *it is obvious that* contributes only descriptive meaning. The contrast between the two is illustrated in (392)-(393). In (392), *it is obvious that* enters into the assertion: you should be ashamed because it is obvious that you did something wrong. (This in turn suggests, not by logical entailment but perhaps by common sense, that you should be ashamed because you did something wrong.) (393), on the other hand, asserts something different: you should be ashamed because you did something wrong.

(392) You should be ashamed because it is obvious that you did something wrong.

[7]The representation of expressive meaning is taken up in Potts (2003), which contains a broad survey of expressive items and their behavior.

(393) You should be ashamed because obviously you did something wrong.

The phrase *it is obvious that* is interpreted under *because*, where it enters into the truth conditions. But the adverb *obviously* behaves like an evidential. In (393), *obviously* is not interpreted under *because*, and it contributes to an expressive tier rather than to the assertive tier.

Binding is the next question. In (394), *every* can bind *her* across *it is obvious*. By contrast, in (395), *her* can be bound by *every* only when *obviously* is not present. The adverb *obviously* blocks binding.

(394) Every girl$_i$ should be upset with her boyfriend because it is obvious that he doesn't love her$_i$

= "Every girl should be upset with her boyfriend because his lack of love for her is obvious (to anyone)."

(395) Every girl$_i$ should be upset with her boyfriend because (*obviously) he doesn't love her$_i$

$\neq$ "For every girl, (i) she should be upset with her boyfriend because he doesn't love her and (ii) it's obvious (to speaker) that he doesn't."

(395) is unacceptable on the given coindexation if *obvious* is present.

4.5.3 Ignorance free relatives

Like the epistemic items *ja* and *obviously*, ignorance free relatives resist embedding and block binding. The first property was demonstrated in section 4.3, as global projection of the presupposition of ignorance. Some of those examples are repeated here. In (376′), it is not the case that John is a bad citizen because he voted for the person at the top of the ballot and I don't know who that person was.

(376′) John must be a bad citizen, because he voted for whoever was at the top of the ballot.

Similarly, in (374), speaker ignorance projects out of the *unless*-clause.

(374) Unless there's a lot of garlic in whatever Arlo is cooking, I'll eat out tonight.

a. = I don't know what Arlo's cooking. Unless there's a lot of garlic in what Arlo is cooking, I'll eat out tonight.

b. ≠ Unless (i) I don't know what Arlo's cooking and (ii) there's a lot of garlic in what Arlo is cooking, I'll eat out tonight.

(378) is false on the speaker ignorance reading just in case Kay indeed voted for the person at the top of the ballot each time she voted (in contrast to agent indifference, where such a reading is possible). That is, the presupposition of ignorance is interpreted above *usually but not always*.

(378) Usually but not always, Kay voted for whoever was at the top of the ballot.

Ignorance resists embedding because it is linked to the utterance situation (via the speaker), and hence cannot be bound by intermediate operators such as the generic operator. In the assertion, the situation variable of the free relative $\iota\mathbf{x.P(x,s_0)}$ is tied to the situation variable of the presupposition of ignorance, in which case neither the $\mathbf{s_0}$ of the asserted definite description nor the $\mathbf{s_0}$ of the presupposition of ignorance is bound by the generic operator. So a configuration such as (396):

(396) $\lambda s_0.\mathrm{GEN}s{\leq}s_0[\ldots \iota x.\mathrm{P}(x,s)\ldots s\ldots]$

is impossible and must surface as (397):

(397) $\lambda s_0.\mathrm{GEN}s{\leq}s_0[\ldots \iota x.\mathrm{P}(x,s_0)\ldots s\ldots]$

The presupposition of ignorance is linked to the utterance situation (s_0) and does not embed semantically. The asserted definite description cannot be bound by the generic quantifier.

Furthermore, the presupposition of ignorance blocks binding. Let's reconsider an example from Chapter 2. (398), in which the anaphor is coindexed with the free relative, is ungrammatical on a universal-indifference reading. On an ignorance reading, (398) should mean what (399) means, with the presupposition that the speaker doesn't know the identity of the woman.

(398) *Everyone who talks to [whatever woman he meets on the street]$_i$ says she$_i$ is beautiful.

(399) Everyone who talks to [the woman he meets on the street]$_i$ says she$_i$ is beautiful.

But even if we make the implausible assumption that for every person there is some unique woman who that person meets on the street, it is difficult to get a very clear ignorance reading for the free relative in (398). The effect is subtle but real. The presupposition of ignorance is an epistemic item that blocks binding. In (398), the quantifier *every* cannot bind *she* across the ignorance free relative.

I have argued that because the ignorance free relative is an epistemic item, it introduces a situation variable that is coindexed with the actual situation variable and cannot be bound by intermediate operators. The result is that the presupposition of ignorance must be accommodated globally and must be interpreted above the generic operator, and that ignorance free relatives cannot be generically quantified. I also argued that the ignorance free relative, because it has an epistemic modal base, is an item that blocks binding.

This explains the failure of ignorance free relative with respect to requirement (ii). The denotation of an ignorance free relative is always fixed, even in generic contexts. Ignorance free relatives do not provide multiple instantiations over which a generic quantifier can range. They have uniqueness and existence presuppositions that project globally. A reading in which the situation variable of the ignorance free relative is bound by the generic quantifier is not available, and it is only with indifference free relatives that the presupposition of variation can be interpreted under the generic quantifier.

4.6 The exception: Attitude subject ignorance

While these facts explain most cases of ignorance free relatives, there are some ignorance free relatives for which requirement (ii) arguably holds but (iv) nevertheless does not.

4.6.1 Epistemic items under attitude predicates

So far, we have considered cases in which the epistemic item is linked to the utterance situation via the speaker. Expressive meaning can be predicated of a reported situation rather than the utterance situation. Kratzer gives the following examples. In (400), the opinion that Webster is a bastard is attributed to the attitude holder denoted by *my father*, not to the speaker. In (401), *ja* expresses something like "for all Webster knew" rather than "for all speaker knows".

(400) My father screamed that he would never allow me to marry that bastard Webster.

(401) Webster sagte, dass er ja niemanden gekannt habe.
Webster said that he JA nobody known had

"Webster said that he hadn't known anybody."

While *ja* ordinarily blocks binding, there is one exception: attitude subjects can bind into a *ja*-domain. In (402), *ja* is bound by the attitude subject *jeder der Zeugen*. It is interpreted with respect to the attitude subject in each reported situation, via the bound variable pronoun *er*.

(402) Jeder der Zeugen behauptete, er habe ja mit eigenen Augen gesehen,
each of the witnesses claimed he had JA with own eyes seen
dass
that
"Each of the witnesses claimed that he had seen with his own eyes that..."

Epistemic items like *ja* require an attitude holder. In (386), the attitude holder is the speaker and *ja* is anchored to the utterance situation. In (402), *ja* is anchored to attitude-world situations: The attitude verb takes the complement containing the free relative to the complaining situations inhabited by "each of the witnesses", each with its own attitude holder.

The adverb *obviously* also blocks binding, and again there is one exception: Attitude subjects can bind into such a domain. In (403), *obviously* is caught under *said*, where it is interpreted relative to each girl. (403) contrasts with (395) in this respect.

(403) Every girl$_i$ said she should be upset with her boyfriend because obviously he doesn't love her$_i$
= "Every girl said she should be upset with her boyfriend because he doesn't love her, and for each girl it's obvious (to that girl) that he doesn't."

Attitude predicates are an exception to the problems caused by binding environments, because they introduce an attitude holder along with each attitude situation and the epistemic can then by satisfied in that environment.

4.6.2 Logophoricity

The behavior of ignorance under attitude subjects was examined in (359)/(370) and (372), each of which is repeated here.

(359) Zack voted for whoever was at the top of the ballot.

(370) Generic (binding the free relative):

?Generally, on election day, Zack suspected that the person in the next voting booth was wearing too much perfume, *but he didn't know who it was in any of those cases.*

(372) In those days, Zack suspected that (*almost) whoever was in the next voting booth was wearing too much perfume.

While ignorance free relatives may at times covary with the situation given by an attitude predicate, they never exhibit universal effects. So, we can conclude that even if they meet requirement (ii), they fail to meet requirement (iv). Requirement (iv) is discussed below.

First, an introduction to logophors is in order. The short-distance pronouns in (404)-(405) are a problem for the binding theory. The pronoun *him* is coreferent with the subject *John* and thus violates Condition B. Nevertheless, the sentences are fine as coindexed.

(404) John$_i$ put the pillow near him$_i$

(405) John$_i$ found a coffee stain on him$_i$

Such pronouns have been analyzed as logophors (e.g., Tenny 1996). A logophoric pronoun is a pronoun that refers to an individual whose point of view is being represented. The pronouns in (404)-(405) are referentially independent of John insofar as

they represent an independent perspective, namely, John's point of view with respect to himself. Under this analysis, John is an attitude holder.

A logophor is always coindexed with the subject of an attitude (e.g., a logophor occurring under "John told Mary that..." cannot be interpreted with respect to Mary's attitude but would have to be associated with John). Epistemic items such as the presupposition of ignorance have an argument position for an attitude holder, a property that they have in common with logophors. The attitude holder in the case of epistemic items is ordinarily the speaker, but in attitude contexts it can be an attitude subject.

Von Fintel & Iatridou suggest that "Kratzer's exception" (examples such as (402), which is repeated here) can be explained by analyzing the bound variable pronoun as a logophor: "The pronoun [*er* in (402)] is not bound directly by the quantifier. It is a logophoric pronoun whose reference is the 'I' of the reported speech act."

(402) Jeder der Zeugen behauptete, er habe ja mit eigenen Augen gesehen,
each of the witnesses claimed he had JA with own eyes seen
dass
that
"Each of the witnesses claimed that he had seen with his own eyes that..."

The same solution is available for ignorance free relatives whose locus of ignorance is an attitude subject. (355) is repeated here, with coindexation reflecting the logophoric analysis.

(355′) Each taster$_i$ hoped$_j$ that whatever$_j$ he$_j$ was eating was not vegetarian.

Such a strategy is not available for speaker ignorance free relatives.

So, there are cases where the denotation of the ignorance free relative can covary. Why then are universal effects not available for at least these ignorance free relatives?

(406) Each taster hoped that (*almost) whatever he was eating was vegetarian.

This question is addressed in the next section.

4.6.3 Domain widening

Although ignorance free relatives that appear under attitude predicates appear capable of fulfilling requirement (ii) (covariation), they nonetheless fail to exhibit universal effects. If we grant that at least sometimes the denotation of an ignorance free relative can covary with the situation, why is it that universal effects are nonetheless impossible with ignorance free relatives? In this section, I will argue that an ignorance free relative cannot fulfill requirement (iv) (domain widening).

The simple approach to this question is to take a common sense view. The counterfactual entailment induces widening in the domain of the generic operator, which in the case of indifference free relatives leads to a logically stronger assertion. But the ignorance entailment regarding someone's belief worlds does not result in a stronger statement. The statement may be more informative, but it is informative in ways that are irrelevant to the assertion.

In a generic sentence, by quantifying over subsituations, we are indirectly quantifying over individuals, the ones denoted by the free relative at each subsituation (given requirement (ii) of covariation). Without a counterfactual presupposition, the generic operator quantifies over subsituations that are part of the actual situation. Or, if we consider the generic operator to be modal, then it quantifies over subsituations that are part of the actual situation plus other subsituations substantially similar according to some typicality measure. This amounts to a restricted domain of subsituations: All subsituations considered are typical situations from the point of view of the actual situation. This means that the set of people at the top of the

ballot in those typical subsituations is also typical. This provides a restricted domain of individuals for values of the free relative.

When we add the counterfactual presupposition regarding the identity of $\iota\mathbf{x.P(x)}$, we have the effect of including subsituations that respect other typical aspects of the actual situation, but not necessarily the typicality of the persons at the top of the ballot. This amounts to extending the domain of individuals that can serve as values of the free relative.

The epistemic presupposition describes not the properties of the actual situation as seen from what would happen in situations minimally different from it, but it describes somebody's knowledge about the actual situation. This does not produce any widening effect. A central requirement for the universal effects is thus that the modal base in the presupposition of variation be counterfactual (not epistemic). In other words, "not having a clue" is not the kind of semantic widening that leads to a pragmatically stronger statement, which Kadmon & Landman (1993) argue is necessary to license the widening in the first place. Even when universal behavior is not ruled out by the expressive behavior of ignorance free relatives (i.e., even assuming we can get past the failure to embed and blocking of binding), ignorance free relatives cannot induce widening in the domain of the generic operator.

4.7 Summary

In this chapter, I addressed the question of why ignorance free relatives do not exhibit universal effects. In particular, I addressed the question of why ignorance free relatives that appear in a generic context are not interpreted under the generic operator. I argued that because the ignorance free relative is an epistemic item, it introduces a situation variable that is coindexed with the actual situation variable and hence can-

not be bound by intermediate operators. This means the asserted definite description cannot be generically quantified and that its presupposition of ignorance must be accommodated globally.

I also noted that while ignorance free relatives appear able to covary with the situation given by an attitude predicate, they fail to exhibit universal effects. (372) is repeated here.

(372) In those days, Zack suspected that (*almost) whoever was in the next voting booth was wearing too much perfume.

Even if an ignorance free relatives can sometimes meet requirement (ii), it will always fail to meet requirement (iv).

Chapter 5

Further research

This chapter contains descriptions of a number of facts and puzzles about free relatives that were not discussed in the previous chapters.

5.1 Plain free relatives

In this section, I describe some peculiarities of the plain free relative: a prohibition on singular sortals, the degree reading, and restrictions on plain *who*.

5.1.1 Prohibition on singular sortals

Plain free relatives differ from *-ever* free relatives in that they generally do not allow singular sortals. The free relative in (407a), in which the sortal is a singular count noun, is marginal at best.[1] When a sortal appears in a plain free relative, it usually must be a plural or a mass noun, as in (407b-c).

[1]My judgment is in fact that sentences such as (407a) are ungrammatical, especially when they appear in isolation. This is also the judgment reported in the literature. However, one hears them all the time. I have accordingly marked (407a) with '??' and treat it as "marginal at best" rather than ungrammatical.

(407) a. ??I read what book John wrote. SINGULAR COUNT

b. I read what poetry John wrote. MASS

c. I read what books John wrote. PLURAL

d. I read what John wrote. NO SORTAL; NUMBER UNSPECIFIED

While *-ever* is optional with some *wh*-words, in other cases it is obligatory, and in the case of *why* prohibited entirely. The data breaks down nicely into complex and simple *wh*-phrases: *-ever* is obligatory in complex *wh*-phrases, except for the case of *what(ever)* N. When *-ever* is absent, the restriction noted in (407) for plain free relatives applies. In the simple *wh*-phrases, the suffix *-ever* is optional on *what, who, when, where*, and *how*, and unavailable altogether with *why*.

(408)

simple:	complex:
what(ever)	what(ever) N
who(ever)	whichever N
when(ever)	however many/much (N)
where(ever)	however A
how(ever)	whoever's (N)/whosever N
*whyever	*wh*-ever the hell

5.1.2 The degree reading

Carlson (1977) discusses degree relatives such as those in (409). An ordinary restrictive relative is given in (410).

(409) a. This piano weighs [every pound that they said it would e]

b. [Any men there were e on the life raft] died.

c. Max put [everything/all/what he could e] in his pocket.

(410) Huey put [everything which e was red] in his crib.

Degree relatives and ordinary restrictive relatives have truth-conditionally distinct interpretations. (410) has the interpretation in (411), but (409c) does not have the corresponding interpretation in (412).

(411) $\forall x$ [x was red $\rightarrow$ Huey put x in his crib]

(412) $\forall x$ [Max could put x in his pocket $\rightarrow$ Max put x in his pocket]

According to Carlson, the amount relative in (409c) "is a statement about Max's being able to put a certain number of things in his pocket, and not a statement about each particular object in the area that is able to be put in his pocket. So [(409c)] makes the claim that the whole of that number or amount of things were placed as specified" [p.529]. The degree reading excludes a nonsensical scenario such as the one where Max put more marbles in his pocket than his pocket could hold; it also excludes the case where Max put each thing into his pocket individually and removed it immediately, such that the pocket would never become full. Both of these correspond to the non-degree reading of (409c), which is a statement about each object in the area.

In contrast, the ordinary restrictive relative in (410) is only a statement about each red object in the area; it has no degree reading. Thus (410) is false if there is some red object that is not in the crib, whereas (409c) is not necessarily false in the case where there is, say, a marble that is not in Max's pocket. All that is necessary under the amount reading is for Max's pocket to be full or otherwise contain all that it can given the circumstances (e.g., taking into account time limitations, Max's ability to stuff his pockets, the strength of the pocket material, etc.).

Plain free relatives such as those in (407b-c) are usually interpreted as degree relatives.[2] Here they have the identity-of-substance reading, e.g., "I read the (few)

[2]The comment here is similar to the one about (407a). I believe that I have heard sentences such as (407b-c) uttered without being intended as degree relatives, although in isolation the degree

books John wrote". Grosu & Landman (1998) analyze this type of free relative as a maximal degree construction, on a par with the degree relatives discussed by Heim (1987), e.g., "It will take them a week to drink the champagne we spilled that night" (which has an identity-of-quantity reading).

Grosu (1996:261) assumes that the restriction described in (407a) is due to a lexical idiosyncrasy of *what* in free relatives, namely, that it "carries the implication that the set of individuals designated by the common noun has a (relatively) low and not precisely specified cardinality." This is intended to explain, for instance, the implication in (407b-c) that John wrote "little poetry" or "few books". Neither the degree analysis nor the ordinary individual relative analysis provides an explanation for the "little" implication in plain free relatives such as (407b-c).

Regarding the peculiarities in (407a-c), notice that each of these free relatives is essentially identical to its counterpart with *the* (one unceremoniously replaces *what* with *the*). By contrast, English has no direct counterpart for the free relative in (407d), which has a null sortal.

(413) a. I read the book John wrote.

b. I read the poetry John wrote.

c. I read the books John wrote.

Perhaps this overlap explains the marginality of (407a) and the fact that (407b-c) are almost exclusively interpreted as degree relatives: The forms are not ruled out, but they compete with their ordinary definite counterparts. As a result, the free relatives in (407b-c) take on a specialized function, that of degree relatives. In the absence of any specialized function for the free relative in (407a), it becomes marginal.

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reading is the most salient, if not the only, reading.

A similar speculation is made in Dayal (1995:201) concerning the relative frequency of correlatives in Hindi as compared to free relatives in English:

> It is worth pointing out, in this connection, that Hindi seems to make rather extensive use of correlatives compared to the use of free relatives in English. This could correlate with the fact that Hindi does not have a lexical item corresponding to *the*. While definite descriptions are an alternative to free relatives in English, no such alternative to correlatives exists in Hindi. This would be a functional explanation for the observed crosslinguistic difference in frequency.

For free relatives with *-ever*, the problem of marginal or unexpected readings does not arise. We might suppose that this is because free relatives with *-ever* are already unique among definite expressions, insofar as they have a modal dimension. Free relatives with *-ever* can have a degree reading, but it is not especially salient. Degree readings of *-ever* free relatives are rare, unlike for plain free relatives. In (407b-c) the degree readings are the most salient, while in the case of *-ever* free relatives such readings are merely available. Grosu & Landman provide the following example (this is their (91)); they point out that the degree reading is enhanced by the fact that it is relativized out of an existential.

(414) I took away whatever books there were on the table.

5.1.3 Plain *who* is marginal

While plain free relatives with *what* are fully acceptable, those with *who* are often marginal.

(415) a. I leaned on what was on the wall.

b. What was on the wall fell on me.

(416) a. ??I spoke to who was in the hallway.

b. ??Who was in the hallway took my ticket.

Cooper (1983) reports the following judgments: "Of the *wh*-words we are discussing in this chapter, only *what* sounds well in headless relatives. Thus both of the examples in [(417)] sound strange or ungrammatical."

(417) a. *Who Mary knows visits me.

b. *I always welcome who Mary knows.

But plain free relatives with *who* are not always so bad. The free relatives in (418) are somewhat improved.

(418) a. ?I liked who I met.

b. ?I met who you fired.

Larson (1987:249) gives the example *I'll visit who you visit.* And there is the ubiquitous (419).

(419) I'll help who's next.

The marginality of plain free relatives with *who*, as well as their differing degrees of acceptability, remains something of a mystery. In the preceding chapters, I avoided plain free relatives with *who* to the extent practical.

5.2 Transparent free relatives

Transparent free relatives are another form of free relative that I have avoided in the previous chapters. An example is given in (420).

(420) John bought what he took to be a banjo.

This section presents various empirical observations collected in Schelfhout, Coppen & Oostdijk (2004) which are useful as an aid in identifying (and thus avoiding) transparent free relatives when the object of study is ordinary free relatives. First, I briefly give their analysis.

Schelfhout et al. argue that in (420) the apparent constituent "what he took to be a banjo" actually consists of a parenthetical ("what he took to be") followed by what they call the content kernel ("a banjo"). They argue that transparent free relatives are on a par with parenthetical phrases such as "you will never guess" in (421).

(421) There came [$_{par}$ you will never guess] how many people to the party.

Thus, in a transparent free relative the content kernel resides in the matrix, where it determines many of the syntactic properties of the transparent free relative.

Transparency is demonstrated by number and definiteness effects. Ordinary free relatives that do not contain a sortal always take singular agreement:

(422) What John wrote was/*were insightful.

But in transparent free relatives, agreement is determined by the number of the content kernel:

(423) a. What seems to be a pebble is/*are in my soup.

b. What seem to be pebbles *is/are strewn across the lawn.

Ordinary free relatives are definites and cannot appear in contexts of indefiniteness:

(424) *There is what you ordered on your desk.

But transparent free relatives can appear in such contexts, provided that the content kernel is indefinite:

(425) a. There is what John might call a banjo on his desk.

b. *There is what John might call his banjo on his desk.

Existential sentences thus serve as a diagnostic environment for transparent free relatives.

One can recognize a transparent free relative by (among other things) the fact that the transparent free relative is replaceable by its content kernel:

(426) a. There is what John might call a banjo on your desk.

b. There is a banjo on your desk.

(427) a. These are errors which John is what you might call angry about.

b. These are errors which John is angry about.

Not surprisingly, transparent free relatives must have a predicate that can serve as the content kernel.

(428) a. There is what John might call *a banjo* on your desk.

b. *There is what John painted blue on your desk.

Extraction facts support the argument that the content kernel is part of the matrix. Ordinary free relatives are islands for extraction:

(429) a. John will deliver what you order him to.

b. *Who$_i$ will John deliver what you order e$_i$ to?

But transparent free relatives allow extraction from the kernel:

(430) a. John is what you might call angry about something.

b. What$_i$ is John what you might call angry about e$_i$?

Agreement facts from Dutch further support the argument that the content kernel is in the matrix. In Dutch, attributive adjectives agree in gender and number with the following noun, as in (431) (*mooie* "beautiful"), while predicative adjectives are never inflected, as for example in (432) (*mooi* "beautiful"). In the transparent free relative in (433), the adjective is inflected for agreement with *man*.

(431) Dat is een mooie man.
that is a beautiful man
"That is a beautiful man."

(432) wat je noemt mooi
what one calls beautiful
" what one calls beautiful"

(433) Dat is een wat je noemt mooie man.
that is a what one calls beautiful man
"He is what one calls a beautiful man."

The *wh*-phrase in a transparent free relative is limited to *what*. Transparent free relatives do not occur with any other *wh*-words. In ordinary free relatives, reference to humans cannot be achieved with *what* and for this *who* is necessary:

(434) a. #I kissed what I married.

b. I kissed who I married.

But transparent free relatives can use *what* when their content kernel refers to a human:

(435) I kissed what I could best describe as my idol.

Finally, the *wh*-phrase in a transparent free relative cannot contain *-ever*, and it cannot contain a sortal.

(436) What(*ever) John might call sweet children are ruining my house.

(437) a. What (*child) John might call a sweet boy is ruining my house.

b. What (*soup) John might call a vile slop tasted delicious.

c. What (*children) John might call sweet boys are ruining my house.

5.3 Verbs of conditional possibility

In this dissertation, I tried to exclude from discussion those cases where the free relative contains a verb of conditional possibility. These free relatives, whether plain or suffixed with *-ever*, appear to obtain their quantificational force from the verb of conditional possibility rather than from a generic operator.

5.3.1 Pseudo free relatives

Bresnan & Grimshaw (1978:340-341) identify a class of pseudo free relatives such as "Tom does what(ever) he pleases" and "Go wher(ever) you like". Pseudo free relatives occur exclusively with verbs of conditional possibility such as *please, like, want*, and *choose*. Jespersen (1927:62) describes verbs of conditional possibility by way of the following contrast:

(438) a. Tom may marry whom he chooses (pleases, likes).

b. *He is going to marry whom he dislikes.

Jespersen points out that in (438a), if the verb *likes* is used, it means the same as *chooses* or *pleases* and "has no reference to Tom's personal feelings". In other words, (438a) contains a verb of conditional possibility but (438b) does not.

In a further elaboration of Jespersen's observation, Bresnan & Grimshaw present the following paradigm. The pseudo free relatives in (439)-(440) contrast with the true free relatives in (441)-(442).

pseudo free relative

(439) a. Eat what you please.

b. *Eat what you seem to please.

c. *Eat what you think you please.

(440) a. Go wherever you like.

b. *Go wherever you want to like.

c. *Go wherever you suppose you like

true free relative

(441) a. Eat what you enjoy

b. Eat what you seem to enjoy

c. Eat what you think you enjoy

(442) a. Go wherever you belong.

b. Go wherever you want to belong.

c. Go wherever you suppose you belong.

The pseudo free relatives in (439)-(440)—both the plain version in (439) and the version with *-ever* in (440)—have the meaning of conditionals. Bresnan & Grimshaw compare the interpretation of (439)-(440) to constructions in which verbs of conditional possibility appear in *if*-clauses, as in (443)-(444).

(443) a. You can go naked if you please.

b. *You can go naked if you seem to please.

c. *You can go naked if you think you please.

(444) a. If you like, you can leave.

b. *If you begin to like, you can leave.

c. *If you suppose you like, you can leave.

The pseudo free relatives in (439)-(440) and the conditional phrases in (443)-(444) provide no internal source for a *wh*-word, so they can't be analyzed in terms of straightforward VP deletion. Bresnan & Grimshaw conclude that verbs of conditional possibility must appear as the main verb in a phrase that is interpreted as a conditional (e.g., either a conditional or a universal relative clause construction). (Bresnan & Grimshaw do not attempt a paraphrase of the free relatives in (439)-(440), nor do they give an explanation of their conditional meaning beyond offering (443)-(444) as a comparison.)

While free choice *any* can occur with verbs of conditional possibility, the existential *some* cannot.

(445) a. Eat anything you please.

b. Leave anytime you wish.

(446) a. *Eat something you please.

b. *Leave sometime you wish.

Horn (2000) argues that *wh-ever* should be analyzed not as a universal but as an "indiscriminative", a free choice indefinite, along with *any*. His examples, however, often contain verbs of conditional possibility.

(447) I'll marry whoever I want.

(448) Pick whatever card you want.

He quotes also the following Rolling Stones lyric:

(449) I'm free, to choose whom I please, any old time. I'm free, to please who I choose, any old time.

According to Bresnan & Grimshaw, these are pseudo free relatives. Their particular meaning, which is equally available with plain and *-ever* free relatives, apparently comes from the verb of conditional possibility, not *-ever*.

5.3.2 Permission imperatives

Notice that (439a) and (440a), which contain pseudo free relatives, are permission imperatives.

(439) a. Eat what you please.

(440) a. Go wherever you like.

Von Fintel suggests that the *-ever* free relative in (450), which is also a permission imperative, can be interpreted as an indifference free relative: "speaker gives hearer permission to pick the apple s/he wants, with the presupposition that speaker would do the same if hearer wanted a different apple".

(450) Pick whatever apple you want.

The meaning of (450) involves the conditional "if you want". von Fintel's paraphrase, which contains the definite expression "the apple you want", is inaccurate here, as neither speaker nor hearer need have in mind a particular wanted apple.

An ignorance interpretation of (450) does require that the speaker believe that the hearer has in mind a particular apple ("pick the apple that you want, whatever one that may be"). Under this interpretation, (450) is a command and not a permission imperative. Compare a similar imperative with a predicate other than *want*:

(451) Pick whatever apple you dropped on the floor.

(451) has the usual ignorance and indifference readings, but both are commands. There is no permission imperative reading available to (451).

The upshot is that an indifference free relative can be interpreted as a permission imperative, while an ignorance free relative cannot. (450) doesn't convey "I order you to pick indifferently". Instead, it conveys "I allow you to pick freely".

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