

MODAL NON-ASSERTIONS

by

David Rubio Vallejo

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Linguistics

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by

David Rubio Vallejo

Approved: _____

Benjamin Bruening, Ph.D.

Chair of the Department of Linguistics and Cognitive Science

Approved: _____

George H. Watson, Ph.D.

Dean of the College of Arts and Sciences

Approved: _____

Ann L. Ardis, Ph.D.

Senior Vice Provost for Graduate and Professional Education

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____
Satoshi Tomioka, Ph.D.
Professor in charge of dissertation

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____
Frederick Adams, Ph.D.
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____
Benjamin Bruening, Ph.D.
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____
Valentine Hacquard, Ph.D.
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____
Paul Portner, Ph.D.
Member of dissertation committee

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Has he forgotten this as he forgets all benefits received? Or is it that from being a deluder of others he has become at last his own dupe as he is, if report belie him not his own and his only enjoyer?

— James Joyce, *The Oxen of the Sun*, *Ulysses*

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حييتي، هذا كمان الك

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ABSTRACT

The interaction between root (i.e. non-epistemic) modal verbs and functional heads like tense and aspect has been investigated in a wealth of recent literature, particularly in the context of counterfactual conditionals (Iatridou, 2000; Arregui, 2009; a.o.) and actuality entailments (Bhatt, 1999; Hacquard, 2006). In this work, I continue this investigation by exploring Spanish modal constructions that express a range of meanings beyond the purely truth-conditional contribution of their constituent parts.

First, I focus on a non-cancellable kind of counterfactuality that is triggered by past tense and appears outside the stereotypical conditional environment where such inferences have traditionally been studied. This counterfactual semantic presupposition can arise both in non-conditional declaratives and a specific kind of performative in Spanish.

With respect to actuality effects, I argue that the distinction between the French-style languages that trigger actuality entailments and those that do not needn't be a crosslinguistic dichotomy, since the same split can be found *within* a single language. In Spanish, the possibility modal *poder*, together with the deontic necessity modal *deber*, can be enriched to express either actuality or counterfactuality inferences that appear to be pragmatically derived as conversational implicatures. Conversely, the necessity semi-modal *tener que* (as well as some other necessity modals like *necesitar*) trigger standard actuality *entailments*.

The overall picture that emerges is that a more nuanced reinterpretation of actuality and counterfactuality effects might be necessary because these inferences can have a different range of properties depending on the language where they are found.

Chapter 1

INTRODUCTION

Imagine the following exchange. A friend just came back from a trip around Spain in which she started out in the northern part and slowly made her way down to the south. When you ask her how she went from Bilbao to Madrid, the conversation proceeds as below:

- (1) a. **Friend:** *Pude haber cogido el tren (pero...)*
can.*PstPfv* have taken the train but
“I could have taken the train (but...)”
- b. **You:** *¡Haber cogido el tren! El paisaje es precioso.*
have taken the train the landscape is gorgeous
“You should have taken the train! The landscape is gorgeous.”

Strictly speaking, nowhere in the Spanish answer of your friend, nor in your exclamative reply does it say that she did not take the train to go to Madrid. Strictly speaking, your friend’s assertion only expresses that she had the opportunity to take the train at some time in the past. And you replied by saying that taking the train would have been a good option. However, any competent speaker of (Peninsular) Spanish would agree that both constructions do express something more: the fact that she did not take the train. She might have had the chance to take it and you think that doing so would have been a good idea. But the truth is that the train-taking event did not materialize. This dissertation is about these additional layers of counterfactuality that modal constructions may convey, but which are not part of their asserted meaning.

Counterfactuality is a shy creature: if you change just a single parameter in a sentence, it might weaken or disappear altogether. In both sentences above, counterfactuality is *strong*, i.e. impossible to cancel. If your friend were to follow up her utterance by a continuation like *...y lo hice* (“...and I did”), the outcome would be distinctly odd.

Now, if we leave out one of the words that make up your friend’s reply, namely *haber* (“have”), something interesting happens. Counterfactuality is still there, but it is no longer obligatory as the two possible continuations below show. Suddenly, it seems to have become *weaker*, i.e. cancellable.

- (2) *Pude coger el tren... pero no quise/ y tuve un viaje fantástico.*
 can.*PstPfv* take the train but not want and have a trip wonderful
 “I was able to take the train...but I didn’t want to/ and I had a wonderful trip.”

On the other hand, if *haber* is not removed, but the tense of the modal is shifted from past to present, counterfactuality disappears altogether. Rather than an unrealized opportunity, what (3) expresses is an epistemic claim about the event of taking the train. That is to say, by uttering (3) I mean that I either took the train or did not take it but, for whatever reason, I do not want to disclose to you what option I chose.

- (3) *Puedo haber cogido el tren (pero no te lo voy a decir)*
 can.*Pres* have taken the train but not CL.*2Sg* CL.*3Sg* going to tell
 “I might have taken the train (but I’m not going to tell you).”

Finally, the precise choice of modal verb can also have a decisive impact on whether a counterfactual reading will even be available. For example, while sometimes they appear to be interchangeable, the necessity modal *deber* (“must”) and the semi-modal *tener que* (“have to”) give rise to very different meanings when bearing past perfective. In the absence of *haber*, *deber* patterns with the possibility modal in that a *weak* counterfactuality continuation is possible (exactly as in (2)). Conversely, *tener que* leads to the opposite non-cancellable *actuality* inference.

- (4) *Jon debió coger el tren... pero no quiso/ y lo disfrutó mucho.*
 J must.*PstPfv* take the train but not want and CL.*3Sg* enjoy much
 “Jon had to take the train...but he didn’t want to/ and he enjoyed it a lot.”
- (5) *Jon tuvo que coger el tren (# pero no lo hizo).*
 J had.*PstPfv* that take the train but no CL.*3Sg* did
 “Jon had to take the train (but he didn’t do it).”

As the examples above show, the presence vs. absence of counterfactuality, as well as its properties (whether it is cancellable or not) do not seem to be located in a

single position in a sentence: there is no single lexical item whose inclusion in a sentence automatically triggers a counterfactual inference. Instead, counterfactuality appears to be a by-product of the interactions between particular modal verbs, tense, and viewpoint aspect combined in specific ways.

This dissertation has two main goals, which differ in their scope. The more narrow objective is to investigate the interaction between the aforementioned lexical and functional heads with regards to the counterfactuality and actuality inferences that they give rise to, particularly in Spanish. The second, more general, aim is to revise the precise nature and properties of counterfactuality itself within formal semantics.

This research will be couched within the theory of modality compiled in Kratzer (2012). The main language of investigation will be Peninsular Spanish, but reference will also be made to other related and unrelated languages like French, Basque, or Albanian. It is my hope that the analysis presented here will also make the right generalizations about those other languages, so that the crosslinguistic applicability of this work lends further support to it.

In the rest of this chapter, I provide a quick overview of the theory of modality I will be relying on in this work, as well as some background on counterfactuality, how it is typically viewed in the literature, and why I believe that this view has to be revised somewhat to account for the Spanish constructions just introduced.

In Chapter 2, I focus on the construction shown in (1a), which I will refer to as Strongly Counterfactual Circumstantial (SCCs). These structures are defined by having a circumstantial modal verb that bears past or conditional morphology, followed by the present perfect marker *haber* (“have”) in its infinitival form. As has been shown, they also trigger a counterfactual inference that is not cancellable.

Chapter 3 deals with the constructions introduced in (1b), which I will call Retrospective Imperatives after Bosque (1980) and Vicente (2013). These are performative utterances that express (among other speech acts) a notion of reproach towards the addressee for not having realized the event referred to. Therefore, they are also counterfactual with respect to the complement of *haber*.

Lastly, in Chapter 4 I concentrate on sentences like that in (2). I will call them (counterf)actual constructions (cFC), because of their aforementioned ambiguity between

a reading where the prejacent occurred in the actual world, and a reading where it did not take place. Here, I also elaborate on some interesting differences between necessity and possibility modals as far as their relationship to actuality entailments is concerned: exactly what (4-5) illustrate. The dissertation finishes in Chapter 5 with the conclusions.

1.1 Kratzer’s theory of modality and event relativity

Kratzer’s (1977, 1981, 1986, 2012) work has been extremely influential in the study of modality and the vast body of literature it has inspired explains why it tends to be considered the standard theory in the field. Much of this subsequent work has focused on expanding and polishing the predictions of the original framework (cf. von Stechow and Heim 2011, and references therein). In particular, I believe the work of Hacquard (2006, 2010) to have been especially important in the better understanding of the interplay between the syntax and semantics of modal verbs.

Inspired mainly by Lewis (1973), Kratzer (1977) set out to bridge the gap between philosophy and linguistics as far as possible worlds is concerned. *Possible worlds* are but a fancy name for the infinite different ways in which the world could be. Lewis’s (1986) famous introduction beautifully explains it:

The world we live in is a very inclusive thing. Every stick and every stone you have ever seen is part of it. And so are you and I. And so are the planet Earth, the solar system, the entire Milky Way, the remote galaxies we see through telescopes, and (if there are such things) all the bits of empty space between the stars and galaxies. There is nothing so far away from us as not to be part of our world [...] But things might have been different, in ever so many ways. This book of mine might have been finished on schedule. Or, had I not been such a commonsensical chap, I might be defending not only a plurality of possible worlds, but also a plurality of impossible worlds, whereof you speak truly by contradicting yourself. Or I might not have existed at all - neither I myself, nor any counterpart of me [...] There are ever so many ways that a world might be; and one of these many ways is the way that this world is.

The importance of modal verbs (“can”, “might”, “must”, “should”, etc.) lies in that they are linguistic devices that enable us to talk about those other ways in which the world could be different from what it actually is. In slightly more formal terms, Kratzer (1977, 1981) defined modal verbs as context-sensitive quantifier expressions over possible

worlds. Very much like “every” and “some” act as universal and existential quantifiers over individuals respectively, “must” and “can” do the same over possible worlds. The restrictions over what constitute the set of worlds relevant to assess the truth of a modal sentence are argued to be pragmatically supplied by conversational backgrounds that came to be known as the *modal base* and *ordering source* (functions from worlds to sets of propositions). This context-sensitivity can be clearly seen in the contrast between (6-7) below:

(6) John must print double-sided.

(7) John must be at home right now. His car is in the driveway.

While “must” in (6-7) consistently expresses universal quantification, these examples do convey different nuances of meaning. For instance, (6) might be said to express the necessity to follow the printing rules of the linguistics department, whereas (7) expresses something slightly less straightforward, namely, that all the evidence I have points towards John being at home at the time of speaking. Therefore, the necessity corresponds to my drawing such a conclusion from the evidence at hand (John’s car being in the driveway). We say that the modal in (6) is circumstantial with a deontic flavor,¹ and that the one in (7) is epistemic. In this work, my sole focus will be on modals that bear circumstantial modal bases (i.e. non-epistemic ones).

While the impact of this proposal proved to be enormous, some particularities of modal verbs remained unaccounted for. More concretely, there are some crucial differences in behavior between epistemics and circumstantials that escaped the original theory. In (6) above, for example, “must” seems to place a requirement on John. Conversely, the epistemic case in (7) does not impose any necessity on the subject, but rather on the speaker: the modal is relative to the body of evidence available to whoever uttered the sentence. To capture this distinction, it is typically said that while circumstantial modals are subject-oriented, epistemic ones are speaker-oriented.²

¹ Throughout this work I will use the terms non-epistemic, root, and circumstantial modal interchangeably. It will be noted in the text, whenever distinguishing between specific sub-kinds of root modals becomes necessary (c.f. Portner, 2009: 138-141).

² Example (6) could also be understood as placing a requirement on the addressee for

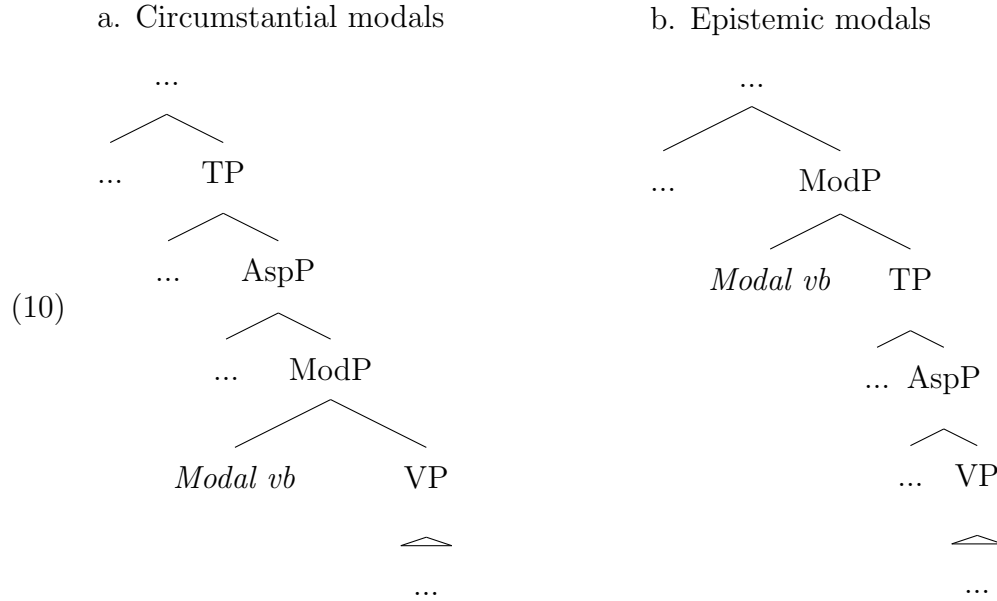
Another difference in behavior between circumstantial and epistemic modals that remained unexplained has to do with the time at which these modals are evaluated. Take the sentences below exemplifying circumstantial-deontic and epistemic possibility respectively:

- (8) John could watch TV every night as a kid. (He was allowed to) [circums.]
 (9) John could be at home. (But we don't know for sure) [epistemic]

Sentence (8) expresses a permission that the subject John had at some point in the past. Hence, we say that the past morphology we see on the modal verb is *real*. This is not the case in (9) where, despite the modal having the same past morphological form as in (8), it still refers to the body of evidence available to the speaker *at utterance time*.

One possible way to derive this split between circumstantial and epistemic modals is provided by Cinque (1999), and later exploited by Hacquard (2006, 2010). From his investigation of the relative location of adverbs and functional heads across languages, Cinque (1999) concluded that epistemic adverbs (e.g. “probably”) tend to take scope above the tense and aspectual projections, and that root adverbs (e.g. “necessarily”, “possibly”) tend to scope below them. Given the similarity between adverbs and modals, together with her assumption that the latter are *auxiliaries* and not lexical verbs, Hacquard (2006, 2010) applied these two syntactic configurations to modal auxiliaries, which are hierarchically depicted below:

John to carry out the prejacet. The relevant scenario would be one where John is a new student at the department and the addressee is in charge of overseeing that the stationery is not wasted. Therefore, a more accurate terminology could be non-speaker-oriented vs. speaker-oriented.



These two syntactic structures immediately account for the behavior of the two kinds of modals with respect to the person and time they are relative to. Given that circumstantial modals join the derivation below the TP projection, it is to be expected for them to be modified by both the subject of the sentence and the tense it bears. Conversely, precisely because epistemic modals originate above the TP, they will not be relative to the participants or time of evaluation of this projection. Rather, we could postulate that they are connected to higher, speech act projections (e.g. the speaker of the sentence, the time of utterance, etc.).

Now, however descriptively explanatory this approach might be, it still leaves some unanswered questions. For one thing, nothing precludes epistemic modals from occurring in the low position associated with circumstantial ones. Yet this is not something attested crosslinguistically. That is to say, there is no evidence in the world's languages that an epistemic modal like that in sentence (9) is ever evaluated with respect to the body of evidence available to the subject (*John* in this case), rather than the speaker.

Furthermore, this approach posits lexical ambiguity between circumstantial and epistemic modals because they take different syntactico-semantic objects as complements: the former take predicates of events (VPs), but the latter take propositions (TPs). Finally, there is the issue that this higher position above TP, while deriving the right semantics

for epistemic modals, does not always correlate with word order. In other words, whereas it is possible for a construction to transparently show the semantic configuration in the string of words (as in (11) below), this need not be the case: when a modal verb appears immediately after the subject in a sentence, there might be a genuine ambiguity between the epistemic and circumstantial readings. Unfortunately, as far as I know, this word-order vs. semantic mismatch is taken for granted in the literature as an idiosyncrasy of epistemic modals and since they are not the focus of this work, I will not dwell on it any further.

- (11) It could be that [$_{TP}$ John is at home].

On the other hand, the first two issues are indeed tackled in Hacquard (2006, 2010), who proposes that modals be relativized to events (instead of possible worlds, as assumed in Kratzer 1977, 1981). When a modal appears in the low position, it takes the VP event as an anchor. By making its modal base relative to that event, the information regarding who carried it out, when it happened, etc. is employed in determining the set of accessible worlds. When the modal is located in the higher position associated with epistemic readings, it is the speech event that the modal combines with. This ensures that the epistemic verb is relative to the speaker and time of utterance.

By relativizing modals to events in this way, we are able to motivate what had been a stipulation until then, namely, why low modals are associated with circumstantial readings and high modals with epistemic interpretations. In order to make do without lexical ambiguity however, we still need to account for the fact that whereas high modals take propositions as arguments, low modals take predicates of events. Hacquard's (2006, 2010) solution consists in suggesting that low modals merge with vPs, which she takes to be of a propositional type – exactly like TPs.

While Hacquard's (2006, 2010) account succeeds in deriving the right analysis for the structures she was interested in (i.e. French modal constructions), her approach will not be directly translatable to my proposal. This is because, for Hacquard, the assumption that modal verbs are actually auxiliaries is key. This allows her to work with the hypothesis (well supported by her French data) that these structures are monoclausal – a necessary property for her derivation of actuality entailments. Conversely, the behavior of

modals in Spanish suggests that they actually generate biclausal structures. A superficial look at the inflectional paradigm of Spanish modals, which conjugate just like any other verb, already favors the view that they are no different from verbs that select non-finite subordinate clauses. I will provide additional evidence in favor of this in Chapter 2.

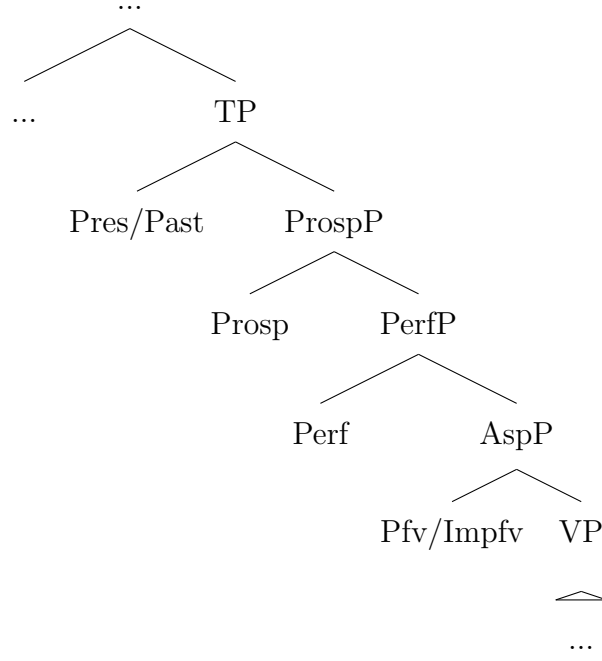
Before doing so, and given the importance that tense and aspect have in this work, I discuss the relevant such functional projections I will be assuming next.

1.2 The temporal and aspectual system – Evidence from Basque

Following recent work (Kratzer, 2011; Matthewson, 2012; Thomas, 2013), I will assume a richer aspectual architecture than traditionally argued for. In this work, this amounts to positing a binary structure of tense and aspect whereby each of these functional projections can be headed by one of two possibilities. Thus, I propose that viewpoint aspect can be perfective or imperfective, whereas tense can be either past or present. In addition, I will be working with two intermediate projections between TP and AspP. The lower one, immediately above AspP, will host the perfect *haber* (“have”). I will refer to it as PerfP. The second intermediate position, called ProspP, corresponds to what has become known in the literature as *prospective* aspect, and it provides the meaning that is attributed to the future tense in more traditional approaches.³ The relative position of these projections, together with the denotations of the aspectual heads, are provided below:

³ For the difference between prospective aspect and future tense, cf. Tonhauser (2011). I do not mean this structure to always be binary in the way described here. It might well be that the existence of other projections (like that dedicated to host the progressive) be well motivated. But for the purposes of this dissertation, this expanded temporal/aspectual hierarchy will be sufficient. Moreover, I also do not claim that every language has every single one of these projections. In fact, I argue below that Basque probably lacks a PerfP. My claim is that, if a language has these projections, they will be ordered in the way proposed here.

(12)



- a. $\llbracket \text{Prosp} \rrbracket = \lambda P_{i,st} . \lambda t . \lambda w . \exists t' [t < t' \ \& \ P(t')(w)]$
- b. $\llbracket \text{Pfv} \rrbracket = \lambda P_{\varepsilon,st} . \lambda t . \lambda w . \exists e [\tau(e) \subseteq t \ \& \ P(e)(w)]$
- c. $\llbracket \text{Impfv} \rrbracket = \lambda P_{\varepsilon,st} . \lambda t . \lambda w . \exists e [t \subseteq \tau(e) \ \& \ P(e)(w)]$

As far as the denotation of present tense is concerned, I will follow Schulz (2014: 126) in assuming that it is “a deictic temporal anchor that simply stands for the utterance time $[t^*]$ ”. The past and the perfect will be defined in section 1.3.1, where I go over the idea introduced by Iatridou (2000) that these heads can behave both temporally and modally. Suffice it to say at this point that I will propose that their main contribution is not asserted, thus building up on referential treatments of tense such as Partee (1973).

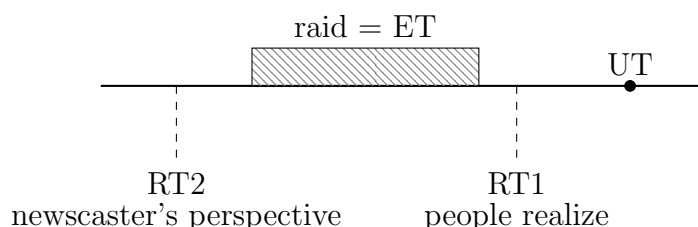
Going back to the syntactic hierarchy itself, there is multiple evidence from both well-known and more under-studied languages in favor of locating the notion of futurity and perfectivity in projections different from TP or AspP. With regards to the better-known languages, complex tenses in both Spanish and English provide overt evidence for this hierarchy.

(13) John will have finished his PhD by 2020.

(14) By the time anybody realized, the police would have raided the site already.

In (13), the perspective is that of past from some future time and it corresponds to the combination of heads Pres-Prosp-Perf. These heads are overtly realized as “will have”. The next example, (14), might be even more telling in that the morphology of “would” shows that the prospective aspect morpheme “will” bears past tense. The ordering of the relevant heads is thus Past-Prosp-Perf. Tracing the contribution of each temporal morpheme can be somewhat complex in such a sentence, so I provided a graphic representation of it below as well. The relevant scenario is one where a newscaster is narrating what happened at some point in the past as though she is located at some time prior to that event.⁴

Figure 1.1: Future-in-the-past



Additional evidence for this syntactic arrangement comes from languages where verbal morphology is expressed periphrastically. Matthewson (2012) gives evidence from Gitksan, but here I will be showing data from Basque. As is well-known (cf. Ortiz de Urbina, 1989), the Basque verbal system requires that agreement and tense information be realized as a word separate from the lexical verb (to the exception of a handful of forms that are conjugated synthetically). Aspectual information, on the other hand, is hosted on the lexical verb. The examples below show the surface realization of AspP on the verb *etor* (“to come”):

- (15) *Miren etorri da.*
M come._{Pfv} 3SgPres
“Miren has come.”

⁴ Assuming a traditional split between event time (ET), reference time (RT), and utterance time (UT), the contribution of each of the temporal/aspectual heads in (14) can be represented as follows: Perf = ET < RT1, Prosp = RT2 < RT1, Past = RT2 < UT.

- (16) *Miren etortzen da.*
 M come.*Impfv* 3SgPres
 “Miren (usually) comes.”

In order to express that the event is temporally located after some reference time (which can either be the time of utterance or some anaphorically established past time⁵), the prospective aspect morpheme (realized as the suffix *-ko*) is attached to the lexical verb with perfective aspect.⁶ These examples illustrate that the syntactic structure proposed is respected in the linear order:

- (17) *Miren etorriko da.*
 M come.*PfvProsp* 3SgPres
 “Miren will come.”
- (18) *Miren etorriko zen.*
 M come.*PfvProsp* 3SgPst
 “Miren would come.”

Thus, Basque shows even more clearly that the notion of futurity (conveyed by prospective aspect) should be differentiated from tense. This is because Basque not only demonstrates that prospective and present/past can coexist (which Spanish and English already do). In addition, the periphrastic nature of Basque verbal morphology supports the hypothesis that prospective aspect is indeed *closer* to the lexical verb in the syntax than tense. This is done by marking prospective morphology on the verb, whereas tense surfaces as an independent morpheme.

With respect to the perfect, Basque serves as an example that not every single language must show all these temporal/aspectual projections (cf. fn. 3 above). In what follows, I argue that Basque syntax lacks a perfect head (understood as a marker independent from perfective aspect, like the Spanish *haber* or English *have*) and so, that

⁵ In languages like English and Spanish, the future-in-the-past form seen in (14) is homophonous with the conditional form. Interestingly, Basque has a separate form (that still uses perfective and prospective aspect) to express conditionality:

- (i) *Nahiko balu, Miren etorriko litzateke.*
 want.*Prosp* 3SgHypothetical M come.*PfvProsp* 3SgCond
 “If she wanted, Miren would come.”

⁶ The combination of prospective on imperfective is unattested.

prospective aspect in this language directly selects for AspP. One functional reason against having such a head in Basque is that present tense plus perfective aspect is already understood as conveying that meaning (as the glosses in (15) above showed), so having a second morpheme to express the same notion could be seen as redundant. This contrasts with Spanish and English, where the present is always read as imperfective and so, it could be hypothesized that these languages do need a dedicated present perfect morpheme to express the perfectivity seen in (15).

Further evidence against postulating a perfect projection in Basque comes from a reduced number of complex verbs composed of a noun plus the auxiliary verb *izan* (“be”), where it is the presence or absence of the auxiliary that determines the aspect of the sentence.⁷ Upon a first approximation, the comparison between (19-20) might suggest that this auxiliary is behaving as the perfect head in these cases.

- (19) *Miren etorri ahal izan da.*
 M come._{Pfv} able be 3SgPres
 “Miren has been able to come.”

- (20) *Miren etorri ahal da.*
 M come._{Pfv} able 3SgPres
 “Miren can come.”

However, a wider look at the tense paradigm shows that this is probably the wrong conclusion. This is because when prospective aspect is added to (19), the sentence with the auxiliary *izan*, the meaning obtained does not correspond to the stacking of the three heads seen in (13) (i.e. Pres-Prosp-Perf). Instead, the reading obtained is the one that corresponds to a structure where only the combination Pres-Prosp is present. This is shown in (21). Thus, it appears that *izan* is nothing but a different realization of the perfective in these periphrastic auxiliaries. This conclusion is further reinforced through comparison with (17-18) where it was shown that the prospective necessarily attaches to verb roots that bear perfective aspect.

⁷ These verbs typically express modal or aspectual notions: *ari izan* (progressive marker), *nahi izan* (“to want”), *behar izan* (“to need”).

- (21) *Miren etorri ahal izango da.*
 M come._{Pfv} able be._{Prosp} 3SgPres
 “Miren will be able to come.” (not: “will have been able to”)

In this section, I have tried to justify the elaborate temporal and aspectual syntax assumed in this work and which is flexible yet accurate enough to model not only the behavior of Spanish but also English or Basque. As mentioned above, this does not mean that every language necessarily has every single functional projection drawn in (12). The claim is that, if they do, they must be arranged in that hierarchical order. The Basque data presented has shown that this is one such language which possibly lacks a perfect projection. In section 2.5.2.1, I will use this conclusion to justify the absence of SCCs in Basque.

1.3 Counterfactuality

Counterfactual constructions allow us to talk about unrealized possibilities, things that could have been but were not. Most often, counterfactuality is associated with *subjunctive* conditionals like that in (23), which differ morphologically from *indicative* conditionals like (22) in that they exhibit a layer of past that seems to have a modal behavior. In other words, even if the verb “win” is conjugated in the past perfect in (23), the anchoring time of the antecedent is not taken to precede the (simple past) time that the antecedent in (22) is relative to. As will be elaborated further in the next subsection, the fact that one of the past layers in (23) appears to be temporally inert, together with evidence from languages like Spanish where *subjunctive* mood is used in examples like (23), crystallized in work that suggested a modal contribution of past morphology.⁸

- (22) If John won, they threw him a party.

- (23) If John had won, they would have thrown him a party.

Unfortunately, the use of terminology in the literature can be confusing because the labels “counterfactual conditional” and “subjunctive conditional” are often used interchangeably. However, it is not the case that all subjunctive conditionals are counterfactual, and neither are all counterfactual conditionals necessarily subjunctive. Sentence

⁸ Cf. Lewis (1973), Iatridou (2000), von Stechow (2012), a.o.

(24) exemplifies the first case, and sentence (25), the second one.

(24) If John won tomorrow, they would throw him a party.

(25) If you are Santa Claus, I am the Easter Bunny. (Ippolito, 2013: example [3])

This might make us wonder if the difference between form and meaning can be taken a step further by questioning whether counterfactuality must necessarily be associated with conditional constructions. The answer is clearly *no*. Even though the literature on non-conditional counterfactual constructions is much more limited than that on conditionals, there are indeed other structures that allow us to convey counterfactual thoughts. Counterfactual wishes are one of them:

(26) I wish I had a car. (conveys: I don't have a car now)

(Iatridou, 2000: example [1a])

The first two examples at the beginning of this chapter also exemplify some Spanish constructions that express counterfactuality outside a conditional environment. In the exchange in (1), both the friend's utterance and the exclamative reply refer to the unrealized event of train-taking. This reading is also available in sentence (2), which is ambiguous between the counterfactual reading and an actuality interpretation in the sense of Bhatt (1999) where, despite the intensional context generated by the modal, its prejacent is understood to have taken place in the actual world. These structures are repeated below for clarity:

(1) a. **Friend:** *Pude haber cogido el tren (pero...)*
can.*PstPfv* have taken the train but
“I could have taken the train (but...)”

b. **You:** *¡Haber cogido el tren! El paisaje es precioso.*
have taken the train the landscape is gorgeous
“You should have taken the train! The landscape is gorgeous.”

(2) *Pude coger el tren... pero no quise/ y tuve un viaje fantástico.*
can.*PstPfv* take the train but not want and have a trip wonderful
“I was able to take the train...but I didn't want to/ and I had a wonderful trip.”

The contrast between the structures in (1) with the one in (2) is important because it highlights something that has been typically ignored in the literature: the fact that there

seem to be different kinds of counterfactuality with regards to whether they are cancellable or not.⁹

This claim might come as a surprise, given that the most accepted opinion nowadays is that counterfactuality is a conversational implicature – precisely because it can be cancelled (Iatridou, 2000; Ippolito, 2013). Evidence in favor of this view is based on the Anderson (1951)-style examples, where a subjunctive conditional can be used to argue for the truth of the antecedent:

- (27) If John had the flu, he would show the same symptoms that he actually shows.
We can thus conclude that he has the flu.

While this account may explain the behavior of the kind of counterfactuality triggered by (2), it certainly does not properly capture the behavior of that found in either of the two structures in (1). The reason is that the counterfactuality in (1) is truly not cancellable.

A different line of thought suggests that counterfactuality be understood as a pragmatic presupposition (Stalnaker, 1975; Karttunen and Peters, 1979; von Stechow, 1997). These approaches differ in the details, but their shared intuition is that subjunctive morphology signals that the speaker is considering worlds beyond those in the Context Set (i.e. beyond the epistemically accessible ones). While clearly ontologically different, the implicature and the pragmatic presupposition approach both have in common that the counterfactual inference they derive is pragmatic in nature and hence, cancellable. So these mechanisms do not seem well-equipped to account for either SCCs or RIs.

Nevertheless, it is interesting that different accounts try to derive counterfactuality through different means and that this inference has been associated with various categories of non-asserted meaning. Following up on this insight, the idea I will argue for in this work is that there are alternative linguistic devices that may lead to counterfactuality. Different constructions make use of different mechanisms, which results in

⁹ To my knowledge, Ippolito (2013) is the only one who touches on this when she refers to the *strong* counterfactuality of her past perfect subjunctive conditionals. In her work, she refers to this inference as a presupposition, but her derivation of it is still purely conversational.

the counterfactual inferences triggered having different properties. More concretely, I will propose that counterfactual conditionals, SCCs, and RIs should all be grouped together as far as the properties of the counterfactuality they give rise to are concerned, in spite of their apparent divergence with respect to cancellability. I will suggest that this inference is conventionally associated with past tense and that it belongs in Group C of Tonhauser et al.'s (2013) typology of projective content, a taxonomy that attempts to provide a finer-grained analysis of projective triggers that had traditionally been lumped together. Certainly, there is an important sense in which counterfactual conditionals differ from both SCCs and RIs: the example in (27) shows that counterfactuality in the former case is cancellable. When reviewing Iatridou (2000) in the next subsection, I will argue that this difference has nothing to do with past morphology, but with other ingredients like verb mood.

On the other hand, I will propose that a pragmatic mechanism based on the Question under Discussion (QUD) model might be the one at work in cFCs like (2). The pragmatic nature of this account will explain the possibility to cancel this counterfactual inference, which behaves like a conversational implicature.

Summing up, in this work I hold that there are two ways in which counterfactuality can be derived: one conventional, the other one conversationally implicated. Before concluding this introductory chapter, I will review some of the most recent accounts of counterfactuality that have been provided in the literature. From all of them, I discuss Iatridou (2000) in most detail because it is the theory that has influenced my own proposal most decisively.

1.3.1 Conditional constructions

1.3.1.1 Modal approaches: Iatridou (2000)

Iatridou (2000) points out that there are cases in counterfactual constructions where, in spite of a verb showing grammatical past tense, this morphological marking does not have a temporal semantic effect. Instead, past morphology appears to behave modally by conveying a rather abstract notion of unexpectedness or counterfactuality. She refers to these cases as *fake past*. Moreover, through crosslinguistic examination she determines that it is this fake past morphology that is responsible for counterfactuality in subjunctive

conditionals (and not subjunctive mood, for example). She supports her claim on two interesting observations. First, if a language has both a present and a past subjunctive form, it will always use the latter to mark counterfactuality (e.g. Spanish). And second, there are languages that have a subjunctive form but do not use it in counterfactuals: in these cases, past indicative tense is used (e.g. French). The contrast between *real* and *fake* past is highlighted in the English conditional sentences below, where the possibility to have the adverb “tomorrow” in (28) means that the past morphology on the verb must be fake, contrary to what happens in (29):

(28) Fake past:

If you won the championship (tomorrow), your coach would congratulate you.

(29) Real past:

If you won the championship (*tomorrow), your coach congratulated you.

Note that the fake past in (28) does not necessarily express counterfactuality because the event in the antecedent (winning the championship) is located in the future, which is non-deterministic. In this case, what the morphology expresses is that the speaker considers it unlikely that the addressee will win. This is what I meant above when I referred to the abstract idea of unexpectedness that fake past can convey.

It is when fake past is used in a deterministic setting (like when the antecedent is temporally anchored in the past) that this unexpectedness is strengthened to express genuine counterfactuality. This is precisely what happens when the pluperfect (i.e. past over past both in the antecedent and the conditional) is used in conditional constructions like (30) below. In these cases, Iatridou (2000) suggests that of the two layers of past, only one is interpreted temporally. The other one is fake. The contrast between the antecedent in (30) and its infelicitous use in a main clause illustrate this.¹⁰

(30) If Napoleon had been tall, he would have defeated Wellington. [48c]

(31) *Napoleon had been tall. [48a]

¹⁰ In (31), both the past tense on the perfect marker and the perfect itself are interpreted temporally, which leads to ungrammaticality. In its most common reading, “to be tall” is an individual-level predicate. If we force it to express a transient property (i.e. if we turn it into a stage-level predicate), (31) could be felicitously used.

This correlation between the occurrence of fake past tense and counterfactuality is deemed not to be an accident by Iatridou (2000), who sets out to explain it. In order to do so, she capitalizes on the intuition that at its very core, what past tense expresses is a notion of removal or distancing (Lyons, 1977; Schlenker, 2005). The author tries to formalize said core meaning by means of the following skeletal denotation (henceforth referred to as ExclF):

$$(32) \quad T(x) \text{ excludes } C(x) \quad [49]$$

“ $T(x)$ stands for ‘Topic (x)’ (i.e. ‘the x that we are talking about’). $C(x)$ stands for ‘the x that for all we know is the x of the speaker’.” (Iatridou, 2000: 246)

Crucially, the author suggests that the variable x in this templatic meaning can be saturated by either times or worlds. If the former happens, the ExclF will express the usual temporal displacement associated with past tense (real past). When the ExclF ranges over worlds, it will convey the modal displacement associated with subjunctive conditionals (fake past). The two possible saturated meanings of the ExclF are shown below:

(33) Real past: Topic time excludes the utterance time.

(34) Fake past: Topic worlds exclude the actual world.

Unfortunately, Iatridou (2000) did not formalize her proposal further, and I can think of at least three issues that would need to be made explicit: two structural, and one more taxonomic. As far as the structural concerns go, it would be necessary (i) to formalize how exactly the x variable in the ExclF is saturated, and (ii) to determine what are the conditions under which the ExclF might range over worlds. With respect to this second point, in principle it is to be expected that an intensional context be necessary. But this is not a sufficient condition: the antecedents of the conditional sentences in (35-36) have the exact same form in English, yet one expresses temporal displacement whereas the other one conveys counterfactuality.

- (35) *Si ganaras el campeonato, tu entrenador te felicitaría.*
 if win._{PstSbjv} the championship your coach CL.2Sg congratulate._{Cond}
 “If you won the championship, your coach would congratulate you.”

- (36) *Si ganaste el campeonato, tu entrenador te felicitó.*
 if win.*PstInd* the championship your coach CL.*2Sg* congratulate.*Pst*
 “If you won the championship, your coach congratulated you.”

Nonetheless, this might just be a consequence of the morphological syncretism that the past tense and the subjunctive show in this language. Fortunately, Spanish allows us to disambiguate: whenever the ExclF is used to range over worlds in the antecedent, past subjunctive mood is used to mark it (cf. (35)). On the other hand, indicative morphology marks that the past morpheme is contributing its canonical temporal denotation. The problem with English is that, because it uses the simple past for both constructions, these facts are obscured.

The taxonomic concern has to do with what kind of meaning the ExclF expresses. That is, whether it is an entailment, a presupposition, etc. Following previous literature,¹¹ Iatridou (2000) assumes that the counterfactual meaning of conditionals is a conversational implicature based on the possibility to cancel it. She refers to examples like (27) repeated below to illustrate her point:

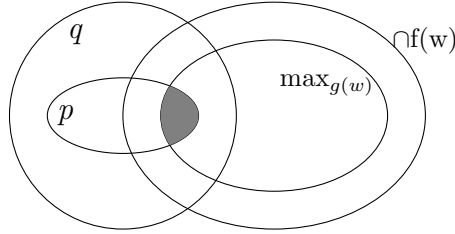
- (27) If John had the flu, he would show the same symptoms that he actually shows.
 We can thus conclude that he has the flu.

As mentioned previously, the idea is that (27) can be used in a context where we want to argue for the proposition expressed in the antecedent. So it must be that the conditional is not necessarily understood counterfactually. The problem is in formalizing how this cancellation takes place, given the ExclF denotation that Iatridou (2000) builds her proposal on. Let’s see how this might be done.

¹¹ Iatridou mentions Anderson (1951), Stalnaker (1975), and Karttunen & Peters (1979) to support her claim that counterfactuality is a conversational implicature. I find it interesting that von Stechow (1997) cites the exact same authors to argue for a presuppositional treatment of counterfactuality. Because both Iatridou and von Stechow appeal to the possibility to cancel counterfactuality, I assume that the difference between the two lies on how this cancellation is understood. That is, if it can be equated with presupposition suspension, for example; or if it is to be understood as the same kind of phenomenon that occurs with scalar implicatures when *some* is interpreted as being compatible with *all*. My account of SCCs developed in Chapter 2 will provide evidence that, as far as the counterfactuality involved in those constructions is concerned, it is closer to a semantic presupposition than to a conversational implicature.

First, let us assume a Kratzer (2012)-style analysis of conditional constructions where these structures are headed by a covert modal operator which is pragmatically saturated by two conversational backgrounds f and g . Following von Stechow (2005), I suggest that f corresponds to an empty modal base and g is a realistic ordering source, but other alternatives are possible (e.g. see Ippolito (2013) for a slightly different alternative based on historical conversational backgrounds). The meaning of a conditional is graphically represented below, where p and q are the antecedent and consequent propositions respectively (the shaded region corresponds to Iatridou’s (2000) topic worlds).

Figure 1.2: Graphic representation of a conditional construction



Second, remember that the ExclF has the following formulation when it is used modally (i.e. to express counterfactuality by referring to worlds):

- (32) Fake past: Topic worlds exclude the actual world.

According to Iatridou (2000), the topic worlds talked about in the ExclF are those in the intersection between the antecedent p and the worlds maximally similar to the actual one $max_{g(w)}$.¹² The question then is, given that the ExclF in its *fake past* interpretation excludes the actual world from the set of topic worlds, where is w^* to be found? If the construction is to be counterfactual with regards to p and, by assumption, the ordering source is realistic, w^* will be within the subset of $max_{g(w)}$ that does not intersect with p . This is the straightforward interpretation of a counterfactual conditional.

¹² “The topic world [*sic.*] is a subset of the p worlds; that is, the topic worlds do not exhaust the p worlds [...] A CF conditional is a statement not about *all* p worlds but about those that are in many/all respects similar to the actual world [...] Remote or ‘strange’ p worlds, on the other hand, are not among the topic worlds.” (Iatridou, 2000: 248).

However, the Anderson-examples like (27) show that counterfactuality can indeed be cancelled in subjunctive conditionals, so there must be a way to go around the meaning contribution of the ExclF. As Iatridou (2000) explains, the ExclF should not *force* the counterfactual reading because it only demands that the actual world be outside the topic worlds, which are a subset of the p -worlds. In other words, since the topic worlds do not exhaust the p -worlds, it could in principle be possible to find the actual world within the set of p -worlds, which is what allegedly happens in (27).

The problem with this line of reasoning is that the only non-topic worlds that are also p -worlds are those not in $max_{g(w)}$. But the way in which the ordering source is defined, it is impossible for the actual world to be outside of $max_{g(w)}$, because the ordering source is realistic. If $g(w)$ selects the worlds maximally similar to w^* , how can w^* not be in $max_{g(w)}$? The world that is most similar to the actual world is the actual world itself, so w^* must be in $max_{g(w)}$! Unfortunately, nowhere in the discussion does she bring up this issue (Iatridou, 2000: 248-249).

I can think of two ways to go around this problem. In principle, one could present an analysis where the topic worlds can be further reduced to be a proper subset of the shaded portion in Figure 1.2. This way, the actual world could be found in the intersection of p and $max_{g(w)}$ (thus allowing the non-counterfactual reading of the Anderson-examples), but not within the topic worlds. What would have to be motivated in this case are the conditions under which such a pragmatic move would be warranted, which include a re-definition of what the topic worlds are. Below I will propose a possible implementation of this.

A second possible solution (which is what I think Iatridou (2000) was trying to convey) would be for the discourse to cancel the ExclF outright, thereby allowing the actual world to be located within the topic worlds. The problem with this approach is to explain *how* this cancellation takes place because, even though Iatridou (2000) claims that this meaning of exclusion is conversational and pragmatically triggered, it is not derived via any Gricean mechanism. As a matter of fact, even if it is suggested that the modal behavior of the ExclF is connected to past tense and subjunctive mood, it remains unclear how this meaning component is related to said morphology.

Actually, Iatridou (2000) does provide a sketch of how the contribution of the ExclF

could be cancelled, based on an example from the temporal domain offered by a reviewer. However, I believe that the evidence she puts forward shows precisely the opposite; namely, that cancelling the ExclF outright is impossible, because it is conventionally (and not conversationally) associated with past tense.

Let me explain this point by discussing Iatridou’s (2000) own examples. In (37a), where the past morphology is interpreted temporally, the inference that the situation does not hold in the present is arguably cancellable by the continuation in (37b). The author’s explanation of how this cancellation is computed is provided right below the example.

- (37) a. John was in the classroom. [59]
 b. In fact, he still is.

“The discourse in [37] first asserts that the topic time excludes the utterance time and subsequently asserts that the situation time includes the utterance time. In effect this means that the discourse asserts that the situation time is large enough to include both the topic time and the utterance time, with the former excluding the latter.”

(Iatridou, 2000: 248. Italics removed.)

This interpretation appears to be on point for English. However, and this is the key issue, this possibility to cancel the *pastness* of past morphology by allowing for the situation time to include the utterance time is only available with imperfective aspect in languages that make an overt distinction between perfective and imperfective, like Spanish. This is shown in (38–39). Following Iatridou’s (2000) explanation of (37) quoted above this paragraph, I believe the infelicity of the continuation in (39) is related to the relationship between the utterance, topic, and situation times. As said by Iatridou, the past tense asserts that the topic time excludes the utterance time. Now, assuming a standard denotation of perfective aspect where the situation time is a fully included within the topic time, this necessarily means that the discourse asserts that there is no overlap between the situation and the utterance time. Therefore, trying to cancel this assertion results in infelicity.

- (38) a. *John **estaba** en la clase.*
 “John was.*PstImpfv* in the classroom.”

- b. *De hecho, todavía está.*
 “In fact, he still is.”
- (39) a. *John **estuvo** en la clase.*
 “John was.*PstPfv* in the classroom.”
- b. # *De hecho, todavía está.*
 # “In fact, he still is.”

The importance of (39) lies in that it shows that the contribution of the past morpheme is not really being cancelled as Iatridou (2000) suggests: the relation of exclusion between the topic time and the utterance time is always there. It is because of the presence of other temporal heads (imperfective aspect in the case of (38)) that it seems as though pastness is being cancelled. But this is not so: the contribution of the past morpheme is actually purely conventional and non-cancellable. Given these facts from the temporal domain, it could be expected that the *ExclF* would behave identically in the modal domain. Below I argue that this is indeed the case. Subjunctive conditionals are the modal equivalents of (38) in that the counterfactual contribution of past tense appears to be cancelled. Further evidence for this parallelism can be found in Greek, where overt imperfective marking is used for the conditionals that Iatridou (2000) refers to as *future less vivid*, which use the subjunctive in Spanish:

- (40) *An peθene o arxivos tha ton θavame stin korifi tu vunū.*
 if die.*PstImpfv* the chief FUT him bury.*PstImpfv* on-the top the mountain
 “If the chief died, we would bury him on the top of the mountain.”

(Iatridou, 2000: example [14])

Conversely, the constructions that this dissertation focuses on (SCCs in Chapter 2, and RIs in Chapter 3) provide contexts where counterfactuality cannot be cancelled: exactly as the overlap between the event and utterance time could not be asserted in (39). In light of this evidence suggesting the conventionality of the *ExclF*, I propose a reinterpretation of this meaning in terms of a felicity condition associated with the past and perfect heads, in the spirit of presuppositional analyses of tense. Given these denotations, from now on I use the label *ExclF* narrowly to refer to this felicity condition (i.e. each of the underlined sections below).

(41) *Temporal denotation for the past and the perfect:*

$$\begin{aligned} \llbracket \text{Past}_{temp} \rrbracket^{g,c} &= t_{<i>} \mid \underline{t < t^*} \mid \\ \llbracket \text{Perf}_{temp} \rrbracket^{g,c} &= \lambda p_{<i,st>}. \lambda t. \lambda w. \exists t'. \mid \underline{t' < t} \mid p(t')(w) \end{aligned}$$

(42) *Modal denotation for the past:*

$$\llbracket \text{Past}_{mod} \rrbracket^{g,c} = \lambda p_{<st>}. \lambda w. \mid \underline{w^* \notin \text{TopicWs}} \mid \exists t. p(t)(w)$$

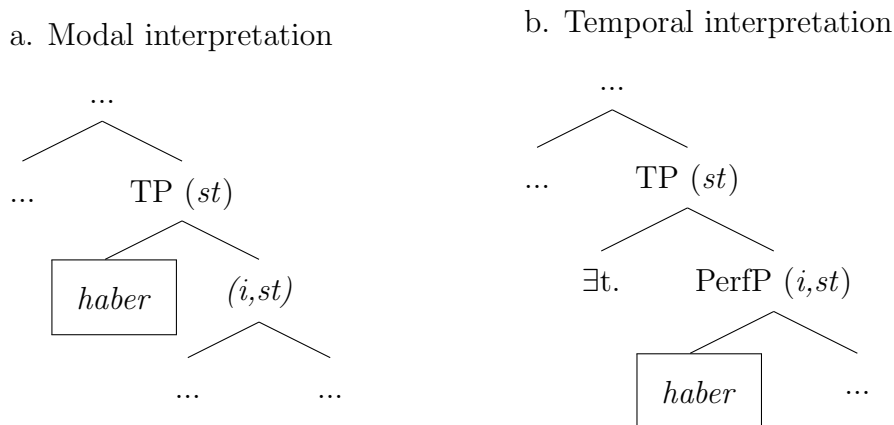
In its temporal reading, the past tense is interpreted referentially as a variable that is only defined if its referent is a time interval that precedes the utterance time. This non-asserted felicity condition corresponds to the underlined section in (41), which I represent using Potts’s (2012) notation for presupposition. The perfect behaves similarly in its non-asserted component. The difference with respect to the past tense is that the exact temporal location of this past interval is relative to some other tense higher up in the structure, following the syntactic architecture argued for in section 1.2.

Under the modal interpretation, the past morpheme existentially closes the time variable of its complement in the at-issue component. Its core contribution is also non-at-issue (i.e. presuppositional): here, the felicity condition excludes the actual world from the set of topic worlds (which in the case of conditionals is the intersection between the prejacent p and $max_{g(w)}$). Actually, it would be more correct to say that the exclusion in these cases targets the local world of evaluation (instead of the actual world). However, for clarity of exposition and given that I will not be dealing with cases where the ExclF is embedded under more than one intensional operator, the denotation in (42) will be accurate enough.

Having discussed the denotations of the past and perfect morphemes, one might wonder what the relationship is between these heads and the way in which they get realized phonologically. In other words, what the relationship is between these denotations and the lexical item that is used to express them, namely, the perfect marker *haber*. I would like to propose that this lexical item can actually correspond to the instantiation of two different heads. When *haber* has a temporal interpretation, I argue that it is actually the canonical perfect marker and so, it joins the derivation in the PerfP projection where it will take a set of times as an argument. Alternatively, when *haber* makes a modal contribution, I propose that it is actually the realization of past tense in a non-finite

context. As such, it merges as the head of the TP, right before the prejacent is passed as an argument to the modal. The hierarchical representation of these two attachment options is captured below.

(43)



A question that might be asked is why *haber* could not express the meaning associated with the temporal past tense. Unfortunately, I do not have a well-motivated explanation for this fact. It just turns out that whenever temporal *haber* scopes below a circumstantial modal, it is relative to the tense of the matrix and not to the utterance time – exactly as expected from the perfect tense. What is more, this is the case even in extensional sentences like (44), where *haber* in the infinitival subject takes as its reference time the past tense of the clause (and not the utterance time). Thus, the visiting in this example must have taken place before the becoming happy.

- (44) *Haber visitado a mi abuela me alegró.*
have visited to my grandmother CL.1SG made-happy
“To have visited my grandmother made me happy.”

The only tentative hypothesis I can suggest for this behavior is that the same functional head can only express one kind of meaning *per domain*. Since *haber* is the perfect marker, that is the only meaning it can express in the temporal domain. When I discuss the difference between RIs and present perfect imperatives in Chapter 3, I will provide additional evidence that *haber* indeed contributes a perfect meaning and not simple past when it is interpreted temporally.

Going back to (43), the next chapter will deal extensively with both of these interpretations when I provide my account of SCCs. This will include an argumentation of what the topic worlds amount to in those constructions. At that point, I will also show that the two readings (exclusion of times vs. exclusion of worlds) are in complementary distribution, and that both interpretations are available as long as the meaning that arises does not clash with the at-issue component.

For now, I would just like to suggest that this proposal could be extended to conditional constructions as well. In my view, the subjunctive morphology seen in Spanish antecedents could be interpreted as an indication that the past morpheme is contributing a modal interpretation, whereas indicative morphology could indicate that the past has its canonical temporal contribution. The possibility to cancel the counterfactuality of the former case would then have to be explained.

I believe that this could be done by focusing on the contribution of subjunctive mood. Following von Fintel’s (1997) interpretation of Stalnaker (1975), subjunctive marking would signal that it is possible for the intersection between the prejacent and the domain of quantification to lie partially outside the context set (C).¹³ Conversely, indicative mood would mark that said intersection is entirely within C.

Since I am proposing a combination of von Fintel’s (1997) and Iatridou’s (2000) insights, the different terminology used by these authors has to be homogenized. I will assume that von Fintel’s domain of quantification $D(w)$ is the set of worlds $max_{g(w)}$ that most closely resemble the actual world and which is selected by the conditional modal at the top of the structure. Furthermore, as discussed when Figure 1.2 was introduced above, I will identify Iatridou’s (2000) topic worlds with the intersection between the antecedent p and the domain of quantification $D(w)$.

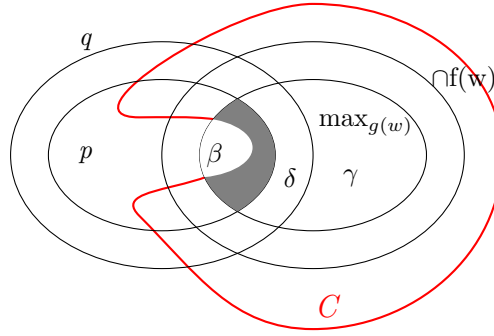
The role of the subjunctive is to provide a solution to the impasse mentioned above regarding the location of w^* when counterfactuality is cancelled. To recall, if the ExclF says that the actual world is not a member of the topic worlds, how can it be both in

¹³ This corresponds to the definition (SS’) in von Fintel (1997: 6):

(SS’) possibly [$p \cap D(w) \not\subseteq C$]

$\max_{g(w)}$ and among the antecedent worlds? von Fintel (1997) provides a way to go around this problem by suggesting that subjunctive morphology marks that it is possible for the topic worlds not to be a subset of the context set C . This is graphically represented in the figure below, where the worlds included in the context set are those within the red circle labeled C :

Figure 1.3: A subjunctive conditional



When uttering a subjunctive conditional, the speaker most natural intends to convey that she does not think that the actual world is part of the antecedent proposition (via the contribution of the ExclF). This means that w^* could be found in either the γ or δ regions above.¹⁴ But the use of the subjunctive also allows for a third possibility, namely, that w^* actually be both a p - and a $\max_{g(w)}$ -world (the β region), by by-passing the meaning of the ExclF. This can be achieved by assuming that claims about the topic worlds can only operate within the context set, that is, within the set of worlds that the conversational participants believe could be true.

If this interpretation is favored, the antecedent will be true in the actual world and so, we get the impression that the counterfactual contribution of the ExclF has been cancelled. But this is actually not quite correct: the ExclF is not cancelled, because the actual world is still outside the topic worlds (the shaded region above). Instead, an already available reading has been profiled by *updating* the context set: what was

¹⁴ If the actual world is in γ , the reading will correspond to that where both consequent and antecedent are false. If the actual world is in δ , the reading will be one where the antecedent is false but the consequent is true.

thought to possibly lie outside C (i.e. the β region) can now be included in C . I should emphasize that my choice for the term “update” is deliberate: I certainly do not mean that any sort of “revision” of C is taking place. By updating C , we are simply eliminating open possibilities, and not correcting wrong beliefs about the actual world. As should be obvious at this point, this sketch of a refinement of Iatridou (2000) would be classified within the first group of alternatives mentioned below Figure 1.2 above (i.e. a solution where the topic worlds are reduced to a subset of the intersection between p and $max_{g(w)}$).

In order to illustrate the difference between “update” and “revision”, let me bring up the Anderson-conditional example one last time. In (27), repeated below, it is not the case that the conditional sentence states that the intersection between the p -worlds and $max_{g(w)}$ is completely outside C , and that later the second sentence *revises* this false belief by asserting that the whole intersection should actually be within C . Instead, in this example we are presented with the train of thought of the speaker (e.g. a doctor). First, the conditional construction lays out the relationship that holds in the actual world between antecedent and consequent without committing to either the truth or falsity of the former. In doing so, he is generating the model shown in Figure 1.3 where $p \cap max_{g(w)}$ is partially outside C . It is only when the second sentence is uttered that C can be *updated* to include every single world in $p \cap max_{g(w)}$ within C .

(27) If John had the flu, he would show the same symptoms that he actually shows.

We can thus conclude that he has the flu.

In the view spoused here then, the role of subjunctive morphology is independent from the presence of an ExclF that ranges over worlds in the antecedent. Because subjunctive morphology and counterfactuality go hand in hand in these constructions, it seems that the former is ancillary to the latter. But this need not be so: as is well known, the subjunctive is not necessarily associated with counterfactuality cross-linguistically (e.g. the Spanish verb *querer* (“want”) subcategorizes for a subjunctive finite clause) and, as Iatridou (2000) herself showed, there are languages like French where the subjunctive is not used in counterfactual conditionals. This latter case is particularly interesting because it exemplifies how, if a language does not have a past subjunctive form, it resorts to the past indicative to create counterfactual conditionals (instead of the present subjunctive).

This is one of the main arguments of Iatridou’s (2000) to associate her ExclF with past morphology and not with subjunctive mood.

If my proposal is on the right track, the prediction is that the presence of a modal ExclF *without* subjunctive morphology might lead to cases where counterfactuality is not cancellable. Constructions like SCCs and RIs, which will be analyzed in the upcoming chapters, are meant to be instances of such *subjunctiveless* counterfactual cases. In a nutshell, because SCCs bear indicative morphology, their whole domain of quantification will be included in C and so, the update mechanism sketched above will not be available in these cases. Therefore, if the ExclF says that w^* is not a member of the proposition expressed by the prejacent in SCCs, it will necessarily be the case that the prejacent will be counterfactual with respect to the actual world.

Since my intention in this dissertation is not to provide an analysis of conditionals, I will have to leave the development of these ideas for the future.¹⁵ But there are many interesting questions whose answer still remains elusive. A most pressing one in my opinion is explaining how the cancellation of counterfactuality is computed in languages where past indicative is used in the antecedent of counterfactual conditionals (e.g. French). A possible answer might revolve around the presence of imperfective aspect, which I argued above to also be a crucial ingredient in the computation of cancellability. I hope to return to this issue in further work.

In this section, I wanted to motivate the denotation I propose for the past and the perfect based on insights from Iatridou (2000). I argued that her ExclF is actually best characterized as being conventionally associated with past morphology as a presupposition and, because of that, that it is not really cancellable. The possibility to assert the truth of the antecedent in counterfactual conditionals can be attributed to the contribution

¹⁵ It should be pointed out that the proper formalization of counterfactuality in conditionals is still subject to much debate, even in more formally developed proposals like Ippolito (2013). To mention but an example, she derives the strong (i.e. non-cancellable) counterfactuality of nonpast past perfect subjunctive conditionals through conversational means, which means that it should be cancellable. But that does not seem possible:

- (ii) # If Charlie had gone to Boston by train tomorrow, Lucy would have found in his pocket the ticket that she in fact found. So, he must be going to Boston by train tomorrow.

(Ippolito, 2013: example [98])

of subjunctive and imperfective morphology. Next, I briefly discuss an alternative set of approaches to counterfactual conditionals, which take the contribution of the past morpheme as purely temporal.

1.3.1.2 Temporal approaches: Arregui (2009) and Ippolito (2013)

Whereas their theories differ in important respects, both Arregui (2009) and Ippolito (2013) share the intuition that the extra layer of past morphology seen in English subjunctive conditionals takes scope outside the antecedent and over the whole conditional construction. In Arregui (2009), the role of this past tense is to select a past situation *s* in the actual world: hence her referring to this account as a *de re* one. The conditional as a whole in her proposal is judged true provided that “the set of law-like situations that contain (a counterpart of) *s* in which the antecedent is true is a subset of the set of law-like situations that can be extended to situations in which the consequent is true” (Arregui, 2009: 253). In her review of Arregui’s framework, Ippolito (2013: 109) discusses some inadequacies (like the problem with random coin-tossing), that her own proposal is able to overcome. In Ippolito’s (2013) account, the use of the subjunctive in conditionals is interpreted as marking that the past tense is modifying the accessibility relations of the covert modal whose restriction is the antecedent. When the indicative is used instead, this marks that the past tense is being interpreted within the antecedent itself.

Because it is not my objective to provide an account of conditional constructions in this dissertation, I will remain neutral about either proposal and simply advance some reasons to prefer a modal analysis of *haber* over a purely temporal one. This sketch of the two theories obviously does not do justice to them and so I refer the reader to the original works if their interest is in conditionals.

The most obvious difference between SCCs and conditional constructions is that the former are matrix clauses without antecedents. Therefore, the first issue that would have to be clarified if one were to apply Arregui’s or Ippolito’s approaches to an SCC like (45) is which past head will be the one that scopes out of its surface position. The past morphology on the modal already anchors its accessibility relations in the past, so it is not straightforward to see what would be achieved by moving *haber* in the way proposed

by Ippolito (2013) for the second layer of past in the antecedent of conditionals. But if *haber* does not move and its contribution is in-situ, it cannot express pastness because the prejacent event is modified by the adverb *mañana*:

- (45) *Pude haber cogido el tren mañana.*
 can._{PstPfv} have taken the train tomorrow
 “I could have taken the train tomorrow.”

As it turns out, I believe Arregui (2009) to be more directly translatable to SCCs. It could be suggested that the role of *haber* in (45) is to select an actual past situation *s* that has a counterpart *s'* in some possible world *w'*, where *s'* gets extended to a situation where the speaker takes the train in *w'*. This actuality sounds like a promising start. The problem with this paraphrase is that nothing in it precludes the actual world from being among those possible worlds *w'*. In order to capture the non-cancellable counterfactual meaning of (45), the fact that *w** cannot belong in that set of possible worlds would have to be stipulated, or added to the contribution of *haber*. But then, the difference between Arregui’s original proposal and Iatridou’s fades, since *haber* would be endowed with a modal meaning.¹⁶

In conclusion, while temporal approaches to counterfactuality are appealing for conditional constructions, it is not clear to me that they can be applicable to SCCs. Hence my preference for Iatridou’s (2000) modal theory. Before concluding this chapter, I introduce another seminal paper, which presents an alternative mechanism through which counterfactuality has been derived in sentences that are not conditionals and which inspired my analysis of cFCs in Chapter 4.

¹⁶ Arregui’s proposal

“predicts that a counterfactual with an antecedent true in the actual world can be true (there is no presupposition that the antecedent must be false in the actual world). It also predicts that a counterfactual with true antecedent and true consequent could be false. This is because quantification takes place over situations (worlds) in which there is a counterpart of the *res* situation that obey the (relevant) laws. If the consequent does not follow from the *res* situation plus laws, the counterfactual could well be false.”

(Arregui, 2009: 256)

1.3.2 Beyond conditionals: Condoravdi (2002)

Condoravdi (2002) points out that sentences like (46) are ambiguous between an epistemic and a metaphysical reading; two interpretations that can be disambiguated with the help of temporal and adverbial modifiers.

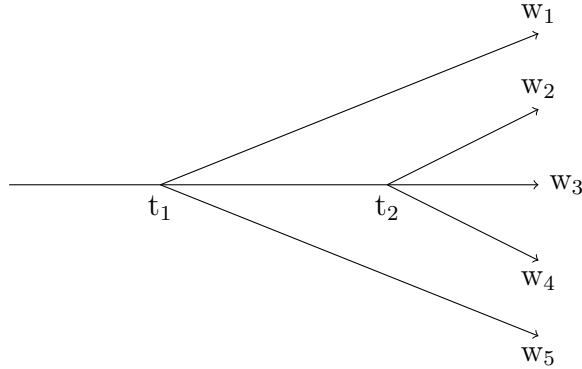
- (46) John might have finished his essay.
- a. Epistemic reading: John might have already finished his essay (# but he hasn't).
 - b. Metaphysical reading: At that point, John might still have finished his essay but he didn't in the end.

While the surface syntax of the two interpretations is the same (hence the ambiguity), the author proposes that these readings correspond to two different logical forms: the epistemic meaning arises when the perfect “have” takes scope below the modal, whereas the metaphysical one is triggered when the perfect outscopes the modal. It is this second reading that interests me here because it is associated with the counterfactual inference that the prejacent of the modal did not take place.

The way in which Condoravdi (2002) derives this meaning is as follows. By outscoping the modal in the semantics, the perfect anchors its modal base in the past. Assuming a time-branching model where the range of available possibilities decreases over time, if the modal is anchored in the past, this means that it will range over a larger set of worlds than when it is anchored in the present.¹⁷ This can be graphically seen in Figure 1.4 below. According to this diagram, worlds w_1 through w_5 are historical alternatives of each other up to t_1 (i.e. they share the same history up to that point in time). At that instant, w_1 and w_5 diverge so that, at a later time t_2 , only w_2 through w_4 are historically indistinguishable.

¹⁷ “[A]s time advances the set of metaphysical alternatives to any given world decreases and, therefore, at any given time fewer things remain possible than were possible before that time” (Condoravdi, 2002: 81).

Figure 1.4: Time-branching model



Given that “might” is a possibility modal, its logical properties entail that the larger its domain of quantification, the weaker an assertion it will express. According to Condoravdi (2002), this might trigger a Gricean scalar implicature-like reasoning in the addressee: the speaker could have opted for a stronger statement by anchoring the modal in the present, but he anchored it in the past (where the range of possibilities was larger) thus settling for a weaker assertion. Therefore, assuming that the speaker is being co-operative, this must mean that the state of affairs expressed by the prejacent could not be verified in the present (i.e. the prejacent is false at utterance time).¹⁸ This pragmatic derivation certainly suggests that counterfactuality in Condoravdi’s model arises as a Quantity-implicature (Grice, 1975).

While initially appealing, I believe that Condoravdi’s (2002) proposal does not accurately capture the counterfactual meaning of the metaphysical sentences that she set out to account for. This is because it is not clear that the counterfactuality of (46b)

¹⁸ In Condoravdi’s (2002: 86) own words, the addressee reasons that the speaker would only backtrack if he intended to communicate that

“the relevant state of affairs could not be verified in the common ground. In recovering the speaker’s intention, the hearer can reason as follows: why would the speaker use an expression that requires backtracking in order to enlarge the domain of quantification, unless the speaker cannot take it for granted that the relevant state of affairs is verified in a domain that is a subset of the common ground?”

is cancellable, something that should be possible if it is derived through purely Gricean means (Portner, 2009: 226). For this same reason, I do not think this would be a good starting point for an analysis of either SCCs or RIs.

On the other hand, a pragmatic approach might be just strong enough to explain the behavior of cFCs like (47) below. As said at the beginning of this chapter, these sentences can be interpreted as conveying either an actuality or a counterfactuality meaning. In Chapter 4, I will argue that one possible analysis of these Spanish constructions is that these non-asserted inferences are pragmatically derived: counterfactuality through Quantity-reasoning (but not exactly along the lines of Condoravdi’s (2002) proposal just explained), and actuality through Informativeness-reasoning.

- (47) *Jon pudo jugar.*
 J could._{Pfv} play
 “Jon was able to play.”
- a. Actuality effect: Jon did play.
 - b. Counterfactual effect: Jon did not play.

Looking ahead, one of the main reasons why I do not think Condoravdi’s (2002) approach is translatable to cFCs is that the two aforementioned readings are also present with the Spanish necessity modal *deber*. This is shown in (48).

- (48) *Jon debió jugar.*
 J must._{Pfv} play
 “Jon had to play/ Jon should have played.”
- a. Actuality effect: Jon did play.
 - b. Counterfactual effect: Jon did not play.

The problem in this case (already mentioned in Portner (2009) as well) is that, if the counterfactual reading is derived via the domain-widening mechanism described above for the possibility modal, this interpretation would not be available in the case of the necessity modal. The reason is that, the larger their domain of quantification, the stronger the claim that necessity modals express because they range over *all* of the worlds in the domain. Hence, anchoring *deber* in the past would result in a stronger statement

being made than if it were anchored in the present. And this would preclude Quantity-reasoning from being triggered. Therefore, it appears that something else must be going on in cFCs. In Chapter 4, I will suggest that the Question under Discussion (QUD) model might provide a better account of these facts.

Summing up, in the preceding discussion in section 1.3, I have tried to show that counterfactuality is not as monolithic a concept as has been traditionally assumed, in the sense that there might be different means through which it arises. This, in turn, also means that there might be counterfactual inferences that differ in some of their properties, cancellability being one of them. The chapters that follow present Spanish constructions that support both of these claims.

Chapter 2

STRONGLY COUNTERFACTUAL MODALS

2.1 Introduction

This chapter deals with what I will call Strongly Counterfactual Circumstantial constructions (SCCs) in Spanish. Structurally, these sentences consist of a circumstantial modal verb that bears past or conditional morphology, followed by the present perfect marker *haber* (“have”) in its infinitival form. In addition, SCCs are *strongly counterfactual* because they express the non-cancellable presupposition that the prejacent did not take place in the actual world.¹⁹ These SCCs are reminiscent of the metaphysical constructions that Condoravdi (2002) dealt with, but I thought it necessary to use a slightly different name for three reasons. First, I will argue that the modal verbs in SCCs are *pure circumstantials* in the sense described by Thomas (2013):

(49) *Relevant facts for pure circumstantial modals*

The facts that are described by the modal base of a pure circumstantial modal operator O are all the facts f such that knowing whether f obtains is relevant to assessing the truth of the prejacent of O .

(Thomas, 2013: example [26])

This assumption is based on Abusch (2012), who convincingly shows that counterfactual readings of structures with “could have” in English are not dependent on a

¹⁹ Throughout this chapter I use the term SCC to refer both to the *construction* that has the properties just described and to the counterfactual *interpretation* that a structure of the form circumstantial modal + *haber* gives rise to when the perfect marker has a modal contribution. I hope this sloppiness will be tolerated. In cases where I think that it is important to be precise and make a distinction between the construction and the interpretation (such as in priority cases, when a temporal reading of *haber* is possible, cf. section 2.3.1.2), I will explicitly refer to the SCC interpretation and the Temporal *haber* Circumstantial (or THC) interpretation.

metaphysical modal base (the view espoused by Condoravdi (2002)).²⁰ In this chapter, I will show that such a metaphysical modal base is not necessary for a SCC to convey counterfactuality, and that the modal base that SCCs combine with bears the same properties as ordinary root modal bases (like being anchored at the time denoted by the tense in which the verb is conjugated).

The second reason to analyze SCCs separately is that the counterfactual inference they give rise to is not cancellable, unlike what Condoravdi (2002) seems to suggest given the conversational mechanism by which she derives it in her metaphysical modals (discussed in section 1.3.3). Finally, the constructions that she investigated can be translated into Spanish by using past perfective, past imperfective, or conditional morphology on the modal. As will be shown in this chapter, each of these possible translations has different nuances of meaning that get obscured in the English sentences that Condoravdi investigated. Therefore, the challenge presented by this translatability issue further supports not considering Condoravdi’s (2002) constructions equivalent to SCCs.

These three properties of SCCs are highlighted in the example below, where the context provided brings up the circumstantial flavor of the modal (rather than epistemic), and the infelicity of the continuation shows that the counterfactuality conveyed is impossible to cancel. The only difference between the use of past indicative and conditional is in the anchoring time of the modal: past in the former case, utterance time in the latter (I will justify that conditional morphology does indeed anchor the modal in the present in section 2.3.2.2).

- (50) (Context: Violeta happened to be in NYC for the weekend, where her friend Jose lives. She considered calling him to meet up, but instead she chose to go on a tour of the Statue of Liberty):

- a. *Violeta pudo/podía haber visitado a Jose (# y lo hizo).*
V could.*PstPfv/PstImpfv* have visited to J and CL.*3Sg* did
“Violeta could have visited Jose (# and she did).”

²⁰ A metaphysical modal base selects worlds that have the exact same history as the actual world up to the utterance time. Thus, these worlds are completely indistinguishable from w^* up to t^* . Such modal bases are assumed to be non-circumstantial in Condoravdi (2002).

Paraphrase: According to the circumstances in the past, Violeta had the opportunity to visit Jose, but she didn't do it.

- b. *Violeta podría haber visitado a Jose (# y lo hizo).*
 V could.*Cond* have visited to J and CL.*3Sg* did
 “Violeta could have visited Jose (# and she did).”

Paraphrase: According to the circumstances up to the utterance time, Violeta had the opportunity to visit Jose, but she didn't do it.

In order to show even more clearly the impossibility to cancel the counterfactual component of SCCs, consider the overall infelicity of (50a) in the following alternative scenario where the common ground includes the proposition that Violeta and Jose did see each other that weekend:

- (51) (Context: Violeta happened to be in NYC for the weekend, where her friend Jose lives. Because they hadn't met in a long time, she got in touch with him and they went for dinner together):

Violeta pudo/podía haber visitado a Jose.
 V could.*PstPfv/PstImpfv* have visited to J
 # “Violeta could have visited Jose.”

As is probably apparent at this point, there are a number of puzzles associated with constructions like (50), both syntactic and semantic. On the syntax part, if Spanish modals are no different from ordinary verbs (as I argued in the introduction), it might come as a surprise that the perfect marker *haber* appears below the modal in SCCs like the sentence above.²¹ As far as semantics is concerned, the main question refers to the presence of counterfactuality in (50) and the exact denotation of *haber*. As said in the opening chapter, the study of this kind of inference has usually been limited to subjunctive conditionals (cf. Lewis, 1973a; Arregi, 2009; von Stechow, 2012; Ippolito, 2013; and references therein). In Romance languages like Spanish, these constructions are morphologically identified by marking the antecedent with subjunctive mood, and the

²¹ Note that this would also be surprising if I were to adopt a Cinque-style hierarchical split between epistemic and circumstantial modals, given that the latter are supposed to scope below the tense and aspect projections.

consequent with conditional tense.²² The interesting thing about SCCs like (50) is that they can convey counterfactuality outside this conditional environment; that is, even when the modal bears past indicative morphology. The example below shows how trying to have (50) as the consequent of a conditional with past indicative tense is ungrammatical.²³ Example (53) is the grammatical counterpart of (52).

(52) # *Si hubiera querido, Violeta **pudo** haber visitado a Jose.*
 If had._{Sbjv} wanted V could._{PstPfv} have visited to J

(53) *Si hubiera querido, Violeta **podría** haber visitado a Jose.*
 If had._{Sbjv} wanted V could._{Cond} have visited to J
 “If she had wanted to, Violeta could have visited Jose.”

Of course, these subtleties are obscured in English, where the same verb form “could” is used as the translation of the past perfective, past imperfective, and conditional forms of the Spanish possibility modal. It is for this reason that I believe that resorting to a language like Spanish, with its richer temporal morphology on modal verbs, can help us understand their behavior much more clearly.

This chapter is structured as follows. The next section deals with the structural puzzle and shows that there is strong evidence that a bi-clausal analysis of modal constructions is warranted at least in Spanish. This section also serves as an introduction to the ontology of semantic types and conversational backgrounds I will be assuming.

²² When I further discuss the variant of SCCs that bear conditional morphology later in the chapter, it will be crucial to distinguish between a conditional construction (i.e. one that has an antecedent and a consequent) and indicative sentences that bear conditional morphology.

²³ A difference in viewpoint aspect (perfective vs. imperfective) does not typically play a role in SCCs as far as counterfactuality is concerned. Its only contribution is its ordinary asserted meaning of marking a predicate as bounded/unbounded, so I will use either aspect marking interchangeably throughout this work depending on what sounds more natural given the context. I should say that there is one exception to this claim though: when the necessity semi-modal bears perfective aspect (*tuvo que*), it appears to convey an actuality entailment in the sense of Hacquard (2006). This blocks the SCC reading so that when the perfect is found below the modal, an epistemic interpretation is the only one available. I will elaborate more on this issue in section 2.3.3.1 in this chapter, and later in Chapter 4, where I deal with actuality effects.

The main body of this chapter corresponds to section 2.3, where I present my analysis of SCCs. The emphasis will be on how counterfactuality is derived, on the differences among kinds of SCCs (past indicative vs. conditional), and on how conditional SCCs are different from subjunctive conditional constructions. Even though I will mainly be making use of the possibility and necessity modals *poder* (“can”) and *deber* (“must”), this analysis also applies to other intensional verbs that give rise to counterfactual readings like *querer* (“want”), *desear* (“wish”), *necesitar* (“need”), or the semi-modal *tener que* (“have to”) – but cf. section 2.3.3.1.

Section 2.4 investigates the nature of the counterfactual inference. Against much previous literature (Iatridou 2000, and references therein), I will argue that counterfactuality should actually be seen as a non-asserted, conventional kind of meaning, akin to a semantic presupposition. The purpose of section 2.5 is to contrast Spanish to other related and unrelated languages (French, Basque, Korean, etc.) in order to determine why SCCs are not available in them. The chapter finishes in section 2.6 with some conclusions.

2.2 Structural and semantic preliminaries

2.2.1 Clausal puzzle

The literature on the syntax of modal verbs contains contradictory claims regarding the scaffolding they project. In much of the literature, modals are thought to be part of biclausal structures, either raising or control. According to Brennan (1993), epistemic modals are always raising verbs, dynamic modals are always control, and deontics are split into two categories: *ought-to-be* ones, which are raising; and *ought-to-do* ones, which are control. Bhatt (1997) provides some evidence that both kinds of deontic modals should actually be considered raising verbs. Hackl (1998), who focuses on the opportunity reading of “can”, also pushes the idea that it should be associated with a raising structure. This view was taken to the extreme by Wurmbrand (1999), who suggests that *all* modals should be considered raising verbs. Contrary to all this body of work, more recently Hacquard (2006, 2009, 2010) referred to modal verbs as *auxiliaries*, thus analyzing them as being part of monoclausal constructions.²⁴

²⁴ “Assuming that a sentence with a modal like ‘*Jane can run*’ is monoclausal [...]” (Hacquard, 2009: 285).

In this dissertation, I will follow the literature that proposes a raising account of modal verbs, as opposed to control. One reason for this is that the most salient interpretation of the existential modal in SCCs is the same opportunity reading that Hackl (1998) convincingly argued to have a raising structure. The examples in (54) show that the subject *un equipo sueco* (“a Swedish team”) can appear both in its raised position or in the lower one, while maintaining its ambiguity between a wide- and a lower-scope reading in either configuration.

- (54) a. *Un equipo sueco pudo haberse encontrado con el Atlético.*
a team Swedish could._{PstPfv} have met with the A
“A Swedish team could have played against Atlético.”
- b. *Pudo haber habido un encuentro entre un equipo sueco y el Atlético.*
could._{PstPfv} have been a meeting between a team Swedish and the A
A
“‘There could have been a match between a Swedish team and Atlético.”

Under the wide-scope reading, there is one team (e.g. Malmö) that could have played against Atlético but didn’t in the end (maybe because they were eliminated in the previous round). As far as the lower-scope reading is concerned, a possible scenario could be the following: suppose that every year the UEFA organizes a tournament where southern European teams play against northern European ones and the match-ups are decided through a draw. As it turns out, Atlético will be playing Rosenborg (a Norwegian team), but it was possible for the game to have been against a Swedish one given the rules of the tournament. In these two contexts, either sentence in (54) could be used. Provided that the scenarios are slightly adapted to account for a deontic interpretation, the same scope-ambiguity holds in (55) with the universal modal.

- (55) a. *Un equipo sueco debió haberse encontrado con el Atlético.*
a team Swedish must._{PstPfv} have met against the A
“A Swedish team should have played against Atlético.”
- b. *Debió haber habido un encuentro entre un equipo sueco y el Atlético.*
must._{PstPfv} have been a meeting between a team Swedish and the A
A
“‘There should have been a game between a Swedish team and Atlético.”

However, more than the raising vs. control debate, the only truly crucial assumption with regards to this point for my work is that modals project biclausal structures. This is because, given that I intend to provide an analysis of SCCs where each head is interpreted where it appears on the surface, it would be contradictory under a Cinque-style, monoclausal structure to claim both that the modal in SCCs is a root one and that it occurs above the TP or PerfP projections headed by *haber*.

In order to go around that problem, one could certainly argue that the modal in SCCs only linearly precedes *haber* on the surface and that some scope-reversal mechanism (in the spirit of Condoravdi (2002), for example) ensures that the tense marker actually outscopes modal at LF. Nonetheless, there are some structural reasons to disprefer such a proposal.²⁵ First, and most generally, such covert movement of the perfect head over the modal would violate the Head Movement Constraint (Travis, 1984). Even if the main focus of this work is on the semantics of modal constructions, I believe that an analysis that respects as many syntactic considerations as possible should be favored. The comparison between (56) and (57) below brings up the second reason:

- (56) *El fiscal podía haber acusado a los jóvenes del delito.*
the prosecutor could._{PstImpfv} have accused to the young of-the crime
“The prosecutor could have charged the young people with the crime.”
- (57) *El fiscal había podido acusar a los jóvenes del delito.*
the prosecutor have._{PstImpfv} could accused to the young of-the crime
“The prosecutor had been able to charge the young people with the crime.”

If *haber* in SCCs is not semantically interpreted below the modal but above it, we would predict the two examples above to be equivalent. In this case, (57) would simply be the transparent configuration of (56), where each head is pronounced where it is interpreted. Unfortunately, this correspondence does not hold. Whereas (56) can only be interpreted as a SCC (it conveys a counterfactual claim about the prejacent), the sentence in (57) is most prominently interpreted as expressing that the prejacent did indeed occur sometime in the past (i.e. the prosecutor did actually charge the young

²⁵ On top of the semantic issue discussed in section 1.3 that Condoravdi’s (2002) proposal does not properly account for how counterfactuality arises in SCCs.

people).²⁶ We must be able to differentiate between the two configurations, but the scope-reversal mechanism does not provide an obvious way of doing so.

When I discuss *conditional* SCCs in section 2.3.2, I will provide two additional reasons against scope-reversal based on the semantics of these structures. But such arguments require the introduction of concepts to be developed below, so I will have to withhold them until the necessary background has been provided.

Summing up, if *haber* makes its contribution below the modal, but we also want to assume that root modals are interpreted below the tense projections, the monoclausal account is not an option anymore. Together with the scopal evidence provided in (54-55), I would like to argue that there is a strong case for a biclausal analysis of SCCs.

Before concluding this section, I would like to provide a final piece of evidence in favor of treating modals as regular verbs instead of as auxiliaries. Unlike English, the morphological richness of Spanish shows that modal verbs in this language conjugate just like any other verb: they exhibit all the tense, aspect, and mood configurations available in the paradigm. This morphological fact has the semantic correlate pointed out by Homer (2011) that modals can be targeted by temporal adjuncts independently from the main verb in the prejacent. This suggests that modals bring their own event variable into the semantic computation:

- (58) (Context: Yesterday the professor said that students could hand in their homework next week, but today she changed the requirements and they have to hand it in this week.)

Ayer *Tomás aún podía* *entregar sus deberes* *la semana que*
yesterday T still could._{PstImpfv} hand-in his homework the week that
viene.
come

“Yesterday Tomás could still hand in his homework next week.”

²⁶ It appears that when the perfect outscopes the modal in the surface, an actuality effect is rather salient. This is the case regardless of the perfect being conjugated in the present (*ha podido*) or in the past imperfective (*había podido*). The past perfective has fallen out of use in contemporary Peninsular Spanish at least. I will deal with these actuality effects in Chapter 4.

In the example above, *la semana que viene* (“next week”) modifies the event introduced by the verb in the prejacent: *entregar* (“hand in”). This must be unambiguously so because the modal bears past morphology, which means that it cannot be modified by a future-oriented adjunct. Therefore, it must be the adverb *ayer* (“yesterday”) that is modifying it. I believe that the presence of two event arguments in (58) should be seen as additional evidence that these sentences are biclausal.

2.2.2 Ontology of semantic types and conversational backgrounds

In this work, I will be making use of a typed language with the following basic types:

Table 2.1: Ontology of semantic types

| Name | Variable | Type denotation |
|---------------|--------------------|-----------------|
| Individual | x, y, z | e |
| World | $w, w', w'' \dots$ | s |
| Event | $e, e', e'' \dots$ | ε |
| Time interval | $t, t', t'' \dots$ | i |
| Truth value | — | t |

Following Kratzer (1977, 1981), I assume that modal verbs combine with pragmatically supplied conversational backgrounds. I will not represent them at LF, but they will be present in the denotation of the modal. This means that I will not take them to be parameters of the interpretation function, but nothing crucial hinges on this (cf. Hacquard, 2011). The reason for me not to include them at LF is simply that being that explicit does not contribute to the main discussion. As far as these conversational backgrounds are concerned, I assume the naming convention shown below, inspired by Portner’s (2009: 140) own division.

Table 2.2: Ontology of conversational backgrounds

| | | | | | | |
|-----------|---------------------|--------------|----------|-------------|---------|--|
| Epistemic | Root/Circumstantial | | | | | |
| | Priority | | | Dynamic | | |
| | Deontic | Teleological | Bouletic | Opportunity | Ability | |

The main split above (determined by the modal base) is between epistemic and root/circumstantial modals. As mentioned in the introduction, this basic distinction is necessary for my work because all the constructions dealt with here bear circumstantial modal bases. With regards to the compositional particulars of modal verbs, I follow recent literature (Hacquard, 2006, 2010; Homer, 2011) in assuming that the modal bases they combine with are relative to events.²⁷ As Homer (2011: 109) suggests, this eventuality is probably best regarded as a state signaling “the existence of certain conditions, rules or circumstances” that determine the propositions that will make up the conversational backgrounds that the modal verb combines with.

The denotations below are adopted from Hacquard (2010), with a slight modification to make explicit that the modals themselves should also be relativized to worlds.

- (59) a. $\llbracket \text{must} \rrbracket = \lambda f_{\langle \varepsilon, stt \rangle} . \lambda g_{\langle \varepsilon, stt \rangle} . \lambda q_{\langle st \rangle} . \lambda e . \lambda w . \forall w' \in \max_{g(e)} (\cap f(e)(w)) : q(w') = 1$
b. $\llbracket \text{can} \rrbracket = \lambda f_{\langle \varepsilon, stt \rangle} . \lambda g_{\langle \varepsilon, stt \rangle} . \lambda q_{\langle st \rangle} . \lambda e . \lambda w . \exists w' \in \max_{g(e)} (\cap f(e)(w)) : q(w') = 1$

The finer-grained split within the group of root modals (which is determined by the ordering source they combine with) will be of use when discussing the role that *haber* has in SCCs. This is because, when the modal expresses an opportunity reading, the SCCs can only be interpreted as counterfactual with respect to its prejacent (and not temporally). Intuitively, this makes sense because one cannot do something (in this case, the event in the prejacent), before he has the opportunity to do so. Conversely, the

²⁷ This proposal is closer to Homer (2011) in that I take the event argument of the modal to be introduced by itself. For Hacquard (2006, 2010), this event argument actually corresponds to the event in the prejacent.

particularities of the ordering sources grouped under the priority label will allow both a counterfactual reading and an interpretation where the prejacent is temporally situated *before* the anchoring time of the modal itself. Next, I explain how these readings come about.

2.3 Analysis of SCCs

In this section, I provide the compositional derivation of SCCs. I split these constructions into two groups: the indicative tenses (past perfective and imperfective) on the one hand, and the conditional tense on the other. While structurally very alike, these two groups differ importantly with respect to the anchoring time of their conversational backgrounds. Moreover, I think that the similarities between conditional SCCs and conditional constructions (i.e. “if... then...” sentences) require special attention in order to clarify whether the former should be treated as the consequents of conditional constructions, for example.


2.3.1 Indicative tenses: past perfective and imperfective

2.3.1.1 The opportunity reading

The pet-example for SCCs is (51) repeated below, where the context provided both brings up the opportunity reading and unequivocally shows the non-cancellability of the counterfactual inference that the visiting did not happen:

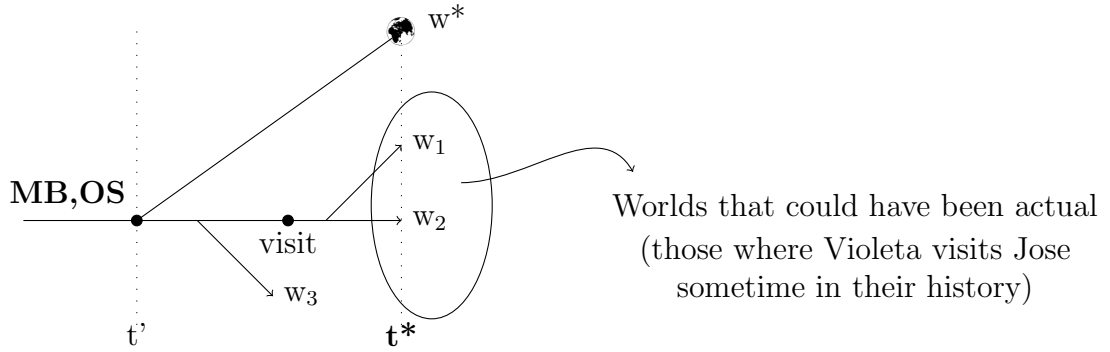
- (51) (Context: Violeta happened to be in NYC for the weekend, where her friend Jose lives. Because they hadn’t met in a long time, she got in touch with him and they went for dinner together):

Violeta pudo/podía haber visitado a Jose.
 V could.*PstPfv/PstImpfv* have visited to J
 # “Violeta could have visited Jose.”

The following time-branching diagram in Figure 2.1 captures the interpretation of (51) in a more intuitive way. The actual historical state of the world at the time when the sentence is uttered is represented by  (the world-time pair $\langle w^*, t^* \rangle$). What (51) expresses is that there is a past instant t' in the history of w^* when it was possible for Violeta to have visited Jose. In other words, at that past time t' , it was possible for w^*

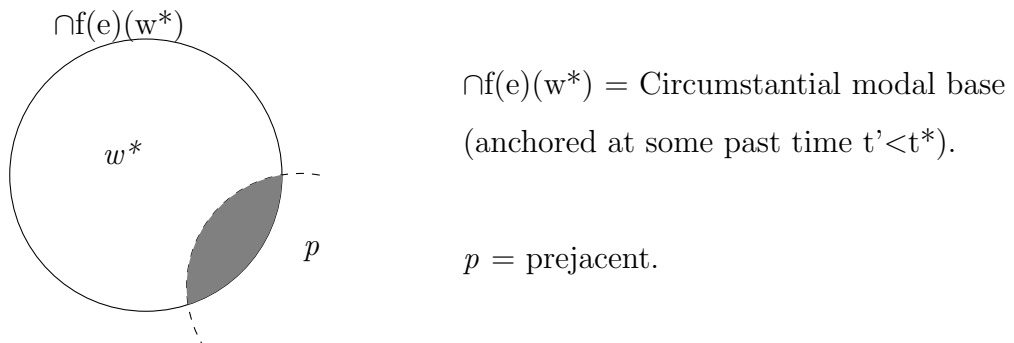
to become a world where the visiting event was realized. As it happened, that possibility did not materialize and the histories of w^* on the one hand; and w_1 , w_2 , and w_3 on the other, diverge after that point t' .

Figure 2.1: Time-branching of opportunity



The formalization of what is graphically shown in Figure 2.1 is a bit more complex. Assuming that the opportunity modal has a circumstantial modal base and an empty ordering source, the relationship between the accessible worlds and the prejacent is one of compatibility (i.e. at least *some* worlds where the prejacent p is true are accessible). The configuration that we wish to obtain is one where the actual world w^* is *not* one of those compatible worlds. That is, we want to ensure that w^* is not a p -world. A graphic representation of the desired result is shown below:

Figure 2.2: Opportunity modal base



Because the circumstantial modal base is realistic (Kratzer, 2012: 32), w^* must be found within $\cap f(e)(w^*)$. In addition, since the actual world in (51) is one where the prejacent is not true, w^* must be found in the non-shaded portion above. The role of the ExclF is to guarantee that this second condition is enforced by appealing to the notion of Topic Worlds.

In modal constructions without antecedents like SCCs, the most uncontroversial move would be to assume that the Topic Worlds are those quantified over by the modal. Then, the ExclF would express that the actual world is not a member of that set. But this straightforward solution cannot be right because I just explained that the modal base in these constructions is realistic, so the actual world must be included in it.

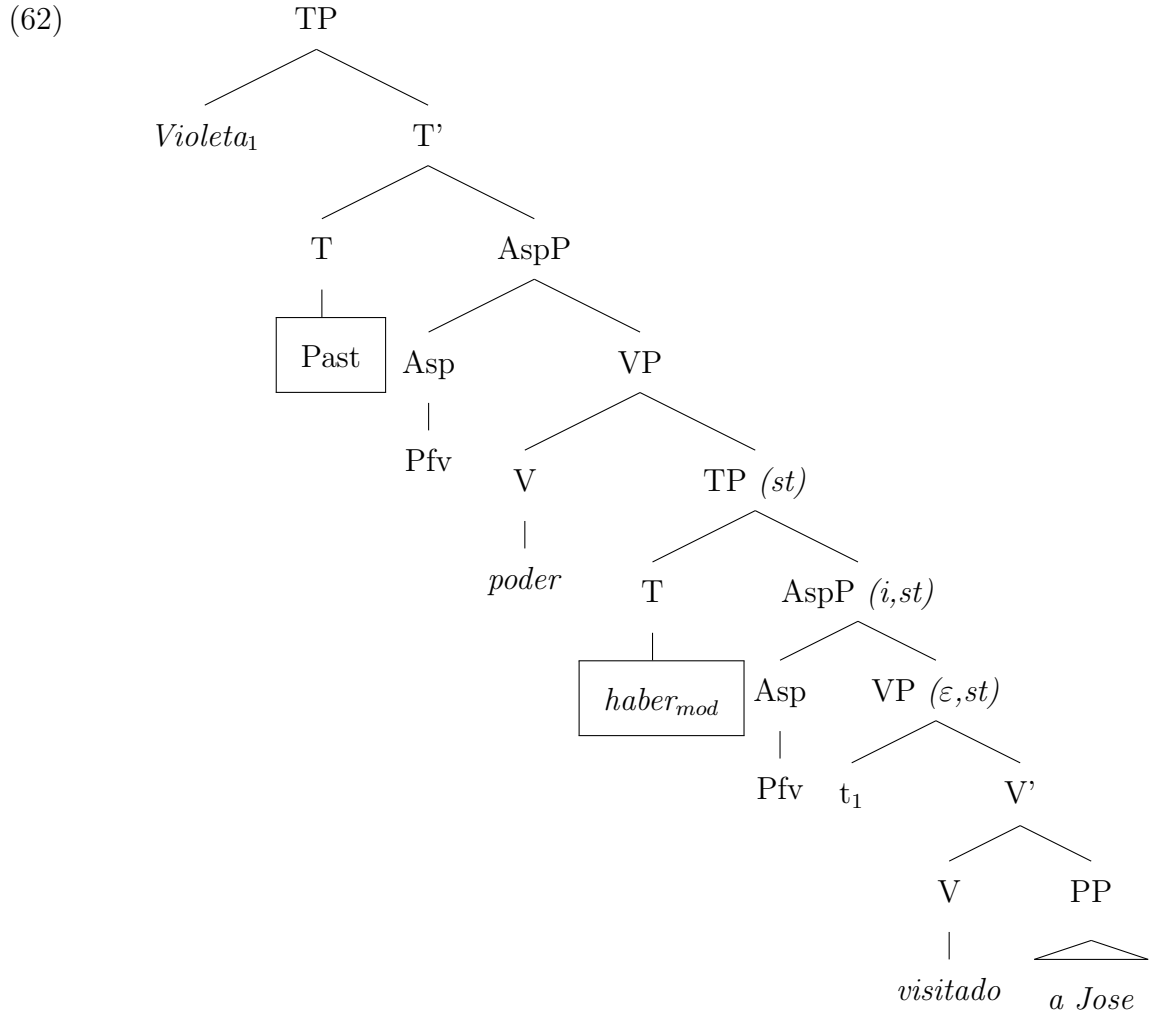
In what follows, I would like to motivate my assumption that the Topic Worlds in SCCs indeed correspond to the shaded intersection in Figure 2.2, namely, the intersection between the worlds in the modal base and the prejacent worlds. This might sound somewhat surprising given that the prejacent of a modal is typically considered to be new information and so, not part of the *topic* of a sentence but of the *comment* in information structure terms. However, the range of acceptable responses to a question that has the form of a SCC like (51) highlights the fact that what these constructions focus is the possibility expressed by the modal. Conversely, the content of the prejacent is backgrounded information and so, it cannot be targeted directly in the answer.

- (60) A. *¿Pudo Violeta haber visitado a Jose?*
 could._{PstPfv} V have visited to J
 “Could Violeta have visited Jose?”
- B. *No, no pudo.*
 no no could._{PstPfv}
 “No, she couldn’t.”
- B’. # *No, sí que lo visitó.*
 no yes that CL._{3Sg} visited
 # “No, she did visit him.”

Hence, SCCs like (51) can actually be paraphrased as (61), where the prejacent is overtly marked as topic information.

- (61) *Sobre si Violeta visitó a Jose, sí, lo pudo haber hecho.*
 about if V visited to J yes CL.3_{SG} could._{PstPfv} have done
 “Speaking of Violeta visiting Jose, yes, she could have done it.”

I hope that this semi-formal account of (51) has been of use in understanding what the sentence means as well as my reasoning in assuming that the Topic Worlds in SCCs refer to the intersection between the worlds in the modal base and the prejacent worlds. Actually, since we know that the actual world has to necessarily be in $\cap f(e)(w^*)$, we could simplify this by saying that the Topic Worlds are the prejacent worlds. In order to complete the analysis, I now provide the syntactic structure and truth conditions of (51). For conciseness, I only show the denotation with *perfective* aspect, but this does not alter the truth-conditions in any significant way for our purposes here. The denotation of the main heads is repeated below for clarity as well:



a. Denotations:

- i. $\llbracket \text{Past}_{temp} \rrbracket^{g,c} = t_{<i>} \mid t_{<t^*>}$
- ii. $\llbracket \text{Past}_{mod} \rrbracket^{g,c} = \llbracket \text{haber}_{mod} \rrbracket^{g,c} = \lambda p_{<st>}. \lambda w. \mid w^* \notin \text{TopicWs} \mid \exists t. p(t)(w)$
- iii. $\llbracket \text{Pfv} \rrbracket = \lambda P_{\varepsilon,st}. \lambda t. \lambda w. \exists e [\tau(e) \subseteq t \ \& \ P(e)(w)]$
- iv. $\llbracket \text{poder} \rrbracket = \lambda f_{<\varepsilon, stt>}. \lambda g_{<\varepsilon, stt>}. \lambda q_{<st>}. \lambda e. \lambda w. \exists w' \in \max_{g(e)}(\cap f(e)(w)): q(w')=1$
- v. $\llbracket \text{visitar} \rrbracket = \lambda y. \lambda x. \lambda e. \lambda w. \text{visit}(y)(x)(e)(w)$

b. Truth-conditions:

$$\begin{aligned} \llbracket (62) \rrbracket^{g,c} = 1 \text{ iff} \\ \exists e. [\tau(e) \subseteq t \mid t_{<t^*>} \ \& \ \exists w' \in \max_{g(e)}(\cap f(e)(w^*)): \\ \mid w^* \notin \text{TopicWs} \mid \exists t'. \exists e'. [\tau(e') \subseteq t' \ \& \ \text{visit}(\text{Violeta})(\text{Jose})(e')(w')]] \end{aligned}$$

c. **Paraphrase:** Some of the worlds accessible from w^* at a past time t' are such that Violeta visits Jose in them. But w^* is not one of those worlds.

I believe that the truth-conditions above capture the desired interpretation. Still, I would like to briefly comment on the existential closure contributed by the modal past *haber*, whose role is to bind the time variable t' in the embedded clause that had been left free (Heim, 1982). The main function of this operation is to allow for the successful continuation of the compositional derivation. But in addition, I also think that its presence is justified on the grounds that the preajacent can be temporally anchored virtually at any point in time, independently of the modal. Therefore, the vague notion that there exists *some* contextually relevant time at which Violeta could have visited Jose explicit in the truth-conditions seems to be exactly what is required in this case. The example below highlights this (where the temporal adverbs should be understood as modifying “visit”):

- (63) *Violeta pudo haber visitado a Jose ayer/hoy/mañana.*
V could. $P_{st}P_{fv}$ have visited to J yesterday/today/tomorrow
“Violeta could have visited Jose yesterday/today/tomorrow.”

Next, I proceed to discuss the other possible interpretation that indicative SCCs might have when they combine with a priority conversational background.

2.3.1.2 The priority reading

Whereas SCCs are most saliently interpreted as bearing an opportunity reading, it is also possible to find contexts where they combine with priority ordering sources. Whenever this happens, the *haber* in the prejacent can express both a counterfactual or a past meaning, even though the latter requires a bit more of a convoluted scenario. I deal first with the counterfactual reading, which is illustrated in (64).

- (64) (Context: María met all the conditions to enter the country without a visa, so she was granted free access. Even so, she decided to get one anyway just to be safe because she had a bad experience in the past.)

María podía/pudo haber entrado sin visado (# y lo hizo/
M could.*PstImpfv/PstPfv* have entered without visa and CL.*3Sg* did
y entró sin él).
and entered without it.

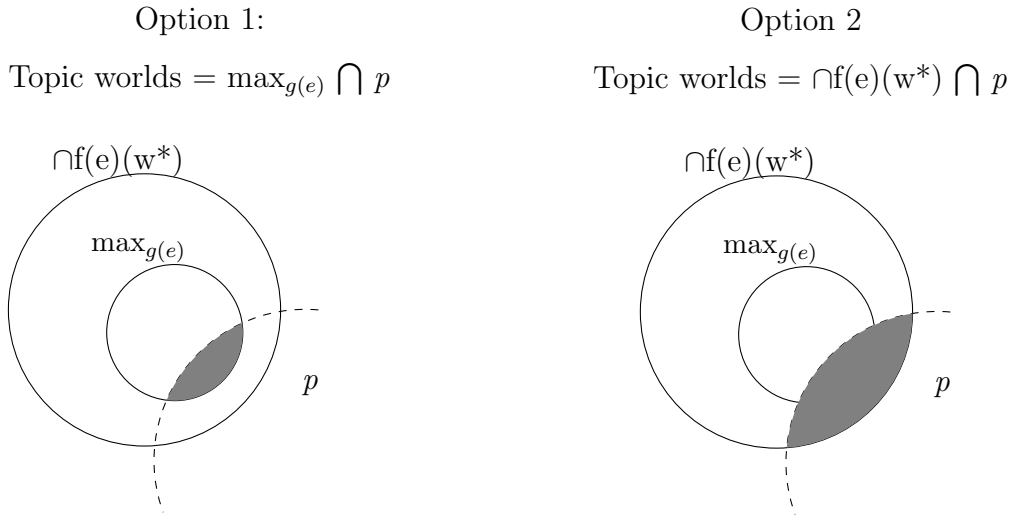
“María could have entered without a visa (# and she did/ # and she entered without it).”

I think that the discussion in the previous section should be sufficient to understand how the contribution of *haber* brings in counterfactuality in (64). However, in this case the modal base *does* combine with an ordering source (unlike in (50a), where I argued that the ordering source was empty). Therefore, we have to be particularly careful when identifying what the right Topic Worlds are.

Remember that the way the ExclF was defined in Iatridou (2000), the Topic Worlds it makes reference to are those in the intersection between the worlds selected by the covert conditional modal and the antecedent worlds. Since there is no antecedent in SCCs and I argued above that the prejacent in these structures is backgrounded based on evidence like (60), I am assuming that the Topic Worlds in SCCs correspond to the intersection between the modal base and the prejacent worlds. Nevertheless, this assumption was also partially based on the fact that the opportunity cases analyzed until now were not relative to an ordering source. This is different from the current cases under discussion, which are indeed relative to a priority conversational background on top of the circumstantial one. Because of this, the question of what the Topic Worlds are in these examples must be explicitly

addressed. Given the realistic nature of the modal base there could in principle be two candidates to act as the Topic Worlds in priority SCCs. One could be the intersection between the subset of the modal base selected by the ordering source and the prejacent worlds. The other could be the intersection between all the worlds in the modal base and the prejacent worlds. These two options are represented in set form below:

Figure 2.3: Alternative Topic Worlds for the priority reading



The difference between the two options is subtle but crucial. Given this graphic representation, it should be clear that only Option 2 is strong enough to capture the desired interpretation of (64), because this is the only way to ensure that the actual world is *not* a p -world. If we equated the Topic Worlds with the intersection between the accessible ones and p , as in Option 1, everything the ExclF would say is that w^* cannot be found in $\max_{g(e)} \cap p$. But nothing would preclude it from being located in the intersection between the modal base and the p -worlds. Given a context like that in (64), such a situation would be verified if some law or other is broken in w^* (thus, it is a sub-optimal world with respect to the ordering source), but María does enter without a visa. But intuitively (64) would not be judged as true in that situation. Therefore, we must opt for the stronger interpretation of Topic Worlds, namely, that shown in Option 2.

This makes intuitive sense because, in order to determine whether a sentence is counterfactual or not, what matters is the circumstances that hold in the actual world and not necessarily whether laws and regulations are followed in it. This was also the case in conditional constructions (cf. Figure 1.3 above), where the relevant set that the ExclF operated on was the intersection between the antecedent worlds and the most circumstantially similar ones to w^* . Finally, this supports the conclusion in the previous subsection that the definition of what the Topic Worlds are can be simplified to say that they amount to the prejacent worlds (because w^* must be in the realistic modal base regardless).

Still, I would like to provide additional motivation to choose Option 2 over Option 1 based on independent facts. For that, I want to capitalize on the observation in section 1.3.1 regarding the temporal relationship between the situation, topic, and utterance times when perfective or imperfective aspect are used. Examples (38-39) repeated below showed that, when perfective aspect is used, there is necessarily no overlap between the situation and the utterance times. This is because perfective aspect makes the situation time be fully contained within the topic time, which excludes the utterance time through the presence of past tense. As a result, cancelling the inference that John is no longer in the classroom in (39) is impossible:

- (38) a. *John **estaba** en la clase.*
 “John was.*PstImpfv* in the classroom.”
 b. *De hecho, todavía está.*
 “*In fact, he still is.*”
 (39) a. *John **estuvo** en la clase.*
 “John was.*PstPfV* in the classroom.”
 b. # *De hecho, todavía está.*
 # “*In fact, he still is.*”

Based on evidence from infinitival subjects, I suggest that temporal perfect *haber* marks that the event is bounded and completed in past. In other words, that in its non-finite form its contribution is analogous to the combination of past with perfective in (39). In the example below, the event of arguing with the advisor is fully contained in the past:

it does not overlap with the present event of causing trouble. This corresponds to the relation of exclusion between the situation time and the utterance time expressed in (39).

- (65) *Haberme peleado con mi supervisor me está causando problemas.*
have-CL._{1sg} argued with my advisor CL._{1sg} is causing trouble
“To have argued with my advisor is causing me trouble.”

Extending the analogy to the modal interpretation of *haber*, we could expect it to enforce the same relationship of containment between the situation and Topic Worlds that was just described in the temporal domain between the situation and topic times. For this relationship to hold in the modal reading, the relevant situation worlds (the circumstantially closest to w^* where the prejacent holds) would have to be a subset of the Topic Worlds. The only way to enforce this is by identifying the Topic Worlds with the intersection between the prejacent and the modal base (i.e. the shaded section of Option 2 in Figure 2.3). This is because, if the Topic Worlds were identified with the intersection between the prejacent and $max_{g(e)}$ as in Option 1, there would still be relevant situation worlds outside the Topic Worlds and the desired subset relation would not hold.

Having argued for the strongest version of what the Topic Worlds are in priority SCCs, I will now focus on the priority constructions where *haber* does not behave modally (thus introducing counterfactuality) but rather as the temporal perfect marker. While the surface form in these cases is identical to that of SCCs (a circumstantial modal followed by infinitival *haber*), there is no counterfactuality involved here. Because of this, I will refer to these sentences simply as Temporal *haber* Circumstantials (or THCs). Such interpretation is made salient by the context provided in (66).

- (66) (Context: Yesterday, a software error retrospectively legalized a past situation that had been illegal at the time. This error was very short-lived, so now everything is back to normal. I’m now explaining this whole situation to a friend.)

Ayer, durante 5 minutos y debido a un error informático, la ley dijo
yesterday during 5 minutes and due to a error computer the law said
que podías haber entrado en el país sin visado la semana
that could._{PstImpfv} have entered in the country without visa the last

pasada. María se percató y regularizó su situación en ese período
 week M Refl realized and regularized her situation in that period
mínimo.
 minimum

“Yesterday, only for 5 minutes and due to a computer error, the law said that you could have entered the country without a visa last week. María realized and regularized her situation in that short period.”

In this sentence, we have a permission anchored at the past time *ayer* (“yesterday”), that makes reference to an event of entering the country that took place even further in the past, namely, *la semana pasada* (“last week”). What makes this example interesting is that permission was not granted at the time when the prejacent occurred. Thus, María entered illegally in the country (she did not have a visa back then), but as luck would have it, she managed to fix her situation thanks to this unexpected possibility once she was inside the country.

It is easy to see that this reading can be ruled out on purely pragmatic grounds under the opportunity interpretation, because one can clearly not accomplish something before he has the opportunity to do so. In this priority (deontic) case, however, shifting the prejacent further back into the past becomes available because it is perfectly possible to do something *before* one has the permission to do it, and priority conversational backgrounds are not sensitive to the Diversity Condition (Thomas, 2013). Furthermore, it is also important to notice that, when this reading obtains, counterfactuality does not ensue. This is correctly predicted by my approach, where an ExclF can range over times or worlds, but not both of them simultaneously.²⁸

Because the presence of the temporal expressions might muddle the truth-conditions, I will provide the denotation for the following stripped-off variant of (66) which should nevertheless be interpreted with respect to the same context as the original one.

²⁸ At the same time, it could also be argued that precisely because the modal and temporal *haber* correspond to two separate heads, nothing in my system precludes the unattested case where both of them appear simultaneously: temporal *haber* in PerfP below modal *haber* on TP. I suggest that the impossibility to have such a construction follows from a general crosslinguistic ban on the stacking of perfects since the surface realization of such sentence would show the sequence “[modal] *haber haber* [verb]”.

- (67) (Context: Yesterday, a software error retrospectively legalized a past situation that had been illegal at the time. This error was very short-lived, so now everything is back to normal. I'm now explaining this whole situation to a friend.)

Podías haber entrado en el país sin visado.
 could._{PstImpfv} have entered in the country without visa
 “You could have entered the country without a visa.”

- (68) Truth-conditions (preliminary):

$\llbracket (67) \rrbracket^{g,c} = 1$ iff
 $\exists e. [\tau(e) \subseteq t_1 \mid t_1 < t^* \mid \& \exists w' \in \max_{g(e)}(\cap f(e)(w^*))]:$
 $\exists t. \exists t'. \mid t' < t \mid \exists e'. [\tau(e') \subseteq t' \& \text{enter}(\text{you})(\text{country})(e')(w')]$

Intended paraphrase: Sometime in the past, you were allowed to have entered the country without a visa at some time further back in the past.

Unfortunately, it turns out that these truth-conditions are too weak to account for the intended paraphrase, because the existential closure over t in the embedded clause does not guarantee the temporal precedence relationship required between the prejacent and the modal in the main clause. In other words, we need the reference time t to be co-referential with t_1 , but nothing in (68) above guarantees that.

In order to make sure that this temporal relation gives, I suggest that a zero tense in the sense of Kratzer (1998) must be available. According to the author,

“zero tenses are lexically indexed variables that have no presuppositions and must be bound by a local antecedent. Since there is only one tense per clause, a zero tense must be anaphoric to the tense in the next higher clause, since this will always be the closest possible antecedent.”

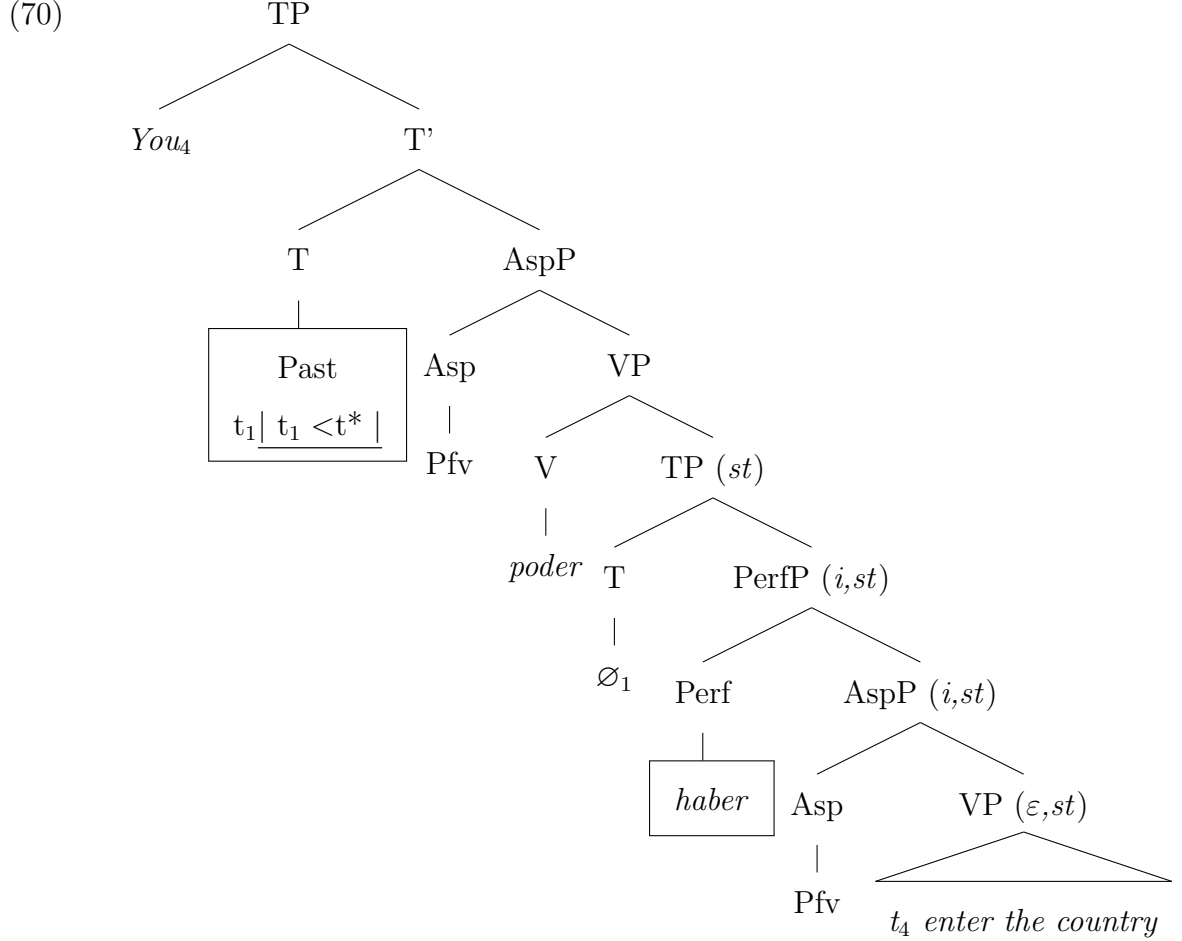
(Kratzer, 1998: 11)

A zero tense is then like a third person pronoun that receives its denotation from an assignment variable. Given that Kratzer (1998) was not explicit about whether zero tenses require of semantic binding to receive their interpretation, I will assume for simplicity that being co-indexed with their antecedent will be enough for them receive an interpretation. In any case, semantically binding the zero tense would be but a technical exercise (cf. Heim and Kratzer, 1998).

(69) *Denotation for zero tense:*

$$\llbracket \emptyset_n \rrbracket^{g,c} = g(n)$$

Assuming the presence of a zero tense in the structure, the tree structure and final denotation for (67) would now be the following:



(71) *Truth-conditions (final):*

$$\llbracket (70) \rrbracket^{g,c} = 1 \text{ iff}$$

$$\exists e. [\tau(e) \subseteq t_1 \mid t_1 < t^* \mid \& \exists w' \in \max_{g(e)}(\cap f(e)(w^*))]:$$

$$\exists t'. \mid t' < \emptyset_1 \mid \exists e'. [\tau(e') \subseteq t' \& \text{enter}(\text{you})(\text{country})(e')(w')]$$

Paraphrase: Sometime in the past, you were allowed to have entered the country without a visa at some time further back in the past.

With the help of zero tenses, the required co-reference between the reference time in the embedded clause and the anchoring time of the modal is ensured, and the truth-conditions in (71) are just as strong as we need them to be.

A question that might now arise is whether we require the presence of zero tense (over simple existential closure) in every single case. Given the evidence from the SCC examples in the previous subsection where *haber* behaves modally, the answer is unequivocally negative. The reason is that, as shown in (63) repeated below, in these counterfactual cases the prejacent can be temporally anchored at any point in time independently of the modal.

- (63) *Violeta pudo haber visitado a Jose ayer/hoy/mañana.*
 V could.*PstPfv* have visited to J yesterday/today/tomorrow
 “Violeta could have visited Jose yesterday/today/tomorrow.”

Thus, it appears that both operations must co-exist. On the one hand, THC's must make use of zero tense in order to ensure that the appropriate temporal relationship is achieved. On the other hand, SCC's could in principle make use of either zero tense (if the prejacent and the modal are co-temporal), or existential closure (when the prejacent is anchored independently of the modal).

Before concluding this section, I should emphasize that both SCC's and THC's are also available with priority *necessity* modals. The first case is exemplified by (72) and the second by (73).

- (72) (Context: I left home at noon and by the time I arrived at the box office, there are no more tickets left. My friend is upset at me:)

Sabes que debías/debiste haber salido a las 9am de casa.
 know that must.*PstImpfv/PstPfv* have left to the 9am of home
 “You know you had to have left home at 9am.”

- (73) (Context: Yesterday it was decided by the organizers that only those who bought their tickets last month would be able to access the VIP area. After people complained, the lifted that limitation:)

Ayer debías haber comprado las entradas el mes pasado para
yesterday must.*PstImpfv* have bought the tickets the month last for
acceder a la zona VIP. Ahora ya no hace falta.
access to the zone VIP now already no make lack

“Yesterday you had to have bought tickets last month in order to be able to access the VIP zone. Now this is not necessary anymore.”

One has to be particularly careful in selecting the appropriate contexts for the necessity examples because, when the modal *deber* (“must”) is followed by *haber*, it can easily slip into an epistemic reading. Additionally, there are times when imperfective aspect simply seems to fit the context better than the perfective, like in (73). Finally, while sometimes interchangeable, nuances in meaning between *deber* and the semi-modal *tener que* (“have to”) make the latter preferred in certain contexts. In Chapter 4, I focus on the differences between the two aspects and the two kinds of necessity modals. Until that point, I will assume that they are all interchangeable in the examples that follow.

In this section, I have provided an analysis of past indicative SCCs. Moreover, I showed that the non-finite perfect marker *haber* can also have a temporal interpretation in what I called THC constructions, provided that the reading obtained is pragmatically acceptable. With the opportunity reading, only SCCs are available because the temporal reading of *haber* would violate the Diversity Condition and moreover, it is simply impossible to do something before one has the opportunity to do it. Conversely, with a priority ordering source, both SCCs and THCs may occur given that such conversational backgrounds are not subject to the Diversity Condition. Finally, I showed that in the priority THC cases a zero tense must be present in the structure in order to derive the adequate truth-conditions.

2.3.2 Conditional tense

SCCs with conditional tense are extremely interesting because they are structurally more ambiguous than the ones with past indicative tense discussed in the previous section and the precise contribution of conditional morphology is quite hard to pin down. When conditional tense is mentioned in the literature, the topic under discussion is, nearly always, conditional constructions (one exception I found in recent literature is von Fintel

and Iatridou, 2008). I believe part of the problem is a labeling one: since this particular declension is typically restricted to “if-then” statements, the name “conditional” is used for both the specific morphological marking that the verb in the consequent has in languages like Spanish, and for the construction as a whole. This is unfortunate because there are indeed cases where conditional morphology is found outside the consequent of a conditional. One of these other environments is the future-in-the-past construction, as in (74). Another one are conditional SCCs, an example of which is (75). My objective in the next section will be to show that, contrary to what might seem, (75) is not the consequent of a conditional construction with a missing antecedent, but a main clause of its own.

(74) Future-in-the-past:

Años después, Daniel volvería a encontrarse con su amor rumano.
 years later D return.*Cond* to meet with his love Romanian
 “Years later, Daniel would meet his Romanian love again.”

(75) Conditional SCC:

Philipp podría haber sido campeón olímpico de remo.
 P could.*Cond* have been champion olympic of rowing
 “Philipp could have been an Olympic rowing champion.”

2.3.2.1 Conditional morphology and scope

In their discussion of weak necessity, von Fintel and Iatridou (2008) note that Romance languages like Spanish and French resort to a combination of the strong necessity modals *deber* (“must”) or *tener que* (“have to”) plus conditional morphology in order to express the meaning of English “ought to”. This means that the Spanish sentence (78) is ambiguous between the readings in (76) and (77):²⁹

(76) (If Fred had a car) he would have to register it. (vF&I, 2008: example [58])

(77) He ought to register his car. (vF&I, 2008: example [61])

(78) *Fred debería registrar su coche.*
 F must.*Cond* register his car

²⁹ von Fintel and Iatridou (2008) call languages like Spanish “transparent”, which I find somewhat confusing given that the truly unambiguous sentences are the English ones.

The difference between (76) and (77) is that, whereas the former expresses strong necessity in some possible world potentially different from the actual one (after all, the construction is a subjunctive conditional); the latter expresses weak necessity in the actual world. Given that von Stechow and Iatridou (2008) assume that conditional morphology is a marker of counterfactuality that is syntactically present, they represent this meaning variation in terms of scopal facts. In the case of (76), counterfactual/conditional morphology would outscope the modal ($CF < Modal$), thereby shifting the anchoring of the modal base to some other possible world. On the other hand, the modal would outscope the counterfactual/conditional morphology in (77) ($Modal < CF$), thus placing the obligation in the actual world. What would have to be clarified in this latter case is why counterfactual/conditional morphology weakens the necessity modal in this configuration. The authors suggest that this declension might be marking the promotion of some secondary ordering source, which would be allegedly absent from cases where simple indicative conjugation is used. Ultimately however, this option is not formalized further and left as a tentative proposal (cf. Rubinstein (2012) for a possible implementation of this idea).

These examples also show that the analysis of sentences involving weak necessity modals in Spanish is less straightforward than in English, because the morphology obscures the aforementioned scope relations: what is overtly represented in the surface syntax in English, must be somehow contextually disambiguated in Spanish.

This being said, I disagree with von Stechow and Iatridou (2008) in associating conditional morphology with counterfactuality. I believe their choice for this label to be confusing because there is no counterfactuality involved in the weak necessity examples like (77). Actually, in some cases counterfactuality is more tied to the *Aktionsart* of the prejacet. Thus, the combination of conditional morphology on a modal with a stative prejacet triggers a counterfactual interpretation that is more salient than when the prejacet is dynamic (activity, accomplishment, etc.). The contrast between (79) and (80) captures this:

- (79) *Deberías pesar menos de 80kg.*
 must.*Cond* weigh less of 80kg
 “You should weigh less than 80kg.”

- (80) *Deberías ir de paseo.*
 must.*Cond* go of walk
 “You should go for a walk.”

Example (79) is most normally understood as a recommendation based on a fact (weighing less than 80kg) that does not hold at utterance time. On the other hand, (80) is a recommendation about what the speaker thinks should happen in the future (i.e. about the kind of world that w^* should become). This well-known difference in behavior between stative predicates and dynamic ones suggests that there is a settledness or decidedness component present in (79) that is absent from (80), and this appears to be a crucial ingredient in triggering counterfactual interpretations.

However, even stative examples like the above do not always have to be interpreted counterfactually. In the right context, (79) can be interpreted as a suggestion that is agnostic with respect to whether the prejacent actually holds or not.

- (81) *Para disfrutar mejor de esta atracción deberías pesar menos de 80kg.*
 for enjoy better of this attraction must.*Cond* weigh less of 80kg
¿Cuánto pesas?
 how-much weigh
 “In order to best enjoy this ride, you should weigh less than 80kg. What is your weight?”

In addition, I believe that von Stechow and Iatridou’s (2008) scopal representation of the relationship between conditional morphology and the modal might be misleading because it implies that both heads are represented syntactically at LF. Nonetheless, in this section I will argue that conditional morphology does *not* have a syntactic realization and so, that it does not intervene in scope relations. Instead, I will take the conditional to signal that the speaker is considering worlds beyond the CG. While providing a unitary account of the contribution of conditional morphology goes beyond the scope of this work, I will propose that what its different uses have in common (in conditionals, weak necessity, and SCCs) is not necessarily counterfactuality, but a somewhat more fuzzy notion that the conversational backgrounds that the modal verb combines with are being affected (in a way to be elaborated below).

Should this be correct, what contributes counterfactuality in conditional constructions and conditional SCCs, if this morphology is not responsible but a simple by-product of it? As argued in the previous section, I believe that this is precisely the contribution of *haber*. In the case of conditional SCCs, I will show how the ExclF expressed by this functional head leads to the same non-cancellable counterfactual inference seen in indicative SCCs. In the rest of this section, I elaborate my claim that the perfect marker *haber* is responsible for the counterfactual meaning. Then, in the upcoming two sections, I continue explaining the relationship between conditional morphology and the CG introduced above.

Haber in consequent and root clauses

Having pointed out the ambiguity that exists between weak necessity and other-worldly-necessity in the so-called “transparent” languages like Spanish, I would like to argue that this form syncretism also affects pluperfect subjunctive conditionals. This is important to mention because it makes conditional SCCs indistinguishable from the consequents of conditional constructions on the surface. Relevant examples are provided below:

- (82) a. (*Si Fred hubiera tenido un coche*) habría *podido conducirlo hasta*
 if F had._{sbjv} had a car have._{Cond} can driven to
Canadá.
 C
 “(If Fred had had a car) he would have been able to drive it to Canada.”
- b. (*Si Fred hubiera tenido un coche*) *podría* haberlo *conducido hasta*
 if F had._{sbjv} had a car can._{Cond} have-CL._{3Sg} driven to
Canadá.
 C
 “(If Fred had had a car) he could have driven it to Canada.”

Let us assume that this additional layer of pastness that defines pluperfect conditionals (underlined above) is interpreted modally, thus expressing counterfactuality (CF). After all, it appears in an intensional environment in both cases in (82). In these constructions, it seems as though the difference between transparent and English-type languages goes away. On the one hand, Spanish can express the CF < Modal scope on surface word

order just like English.³⁰ This is shown in (82a): *habría podido* \approx “would have been able”. On the other hand, English can also become more Spanish-like in that it can express the CF<Modal scope relation covertly, as (82b) exemplifies: *podría haber* \approx “could have”. The reason why I take the CF head to semantically outscope the modal in both sentences is that in both of them the modal possibility is displaced to some other world. The speaker is conveying that the possibility would have arisen in the actual world *if* the antecedent had held, which is implicated not to. How this meaning can be syntactically represented without violating the Head Movement constraint is something that I cannot address here, but an adequate analysis of the equivalence between the two configurations in (82) should certainly have to tackle this issue.

While both sentences in (82) express the same meaning in Spanish,³¹ if we concentrate on their consequents, there is still an asymmetry between the two: even if the antecedent were missing, the *habría podido* configuration in (82a) must necessarily be interpreted as the consequent of a conditional. This is expected from the overt CF<Modal configuration, which expresses possibility in some possible world that is not necessarily the actual one. Conversely, and this is the interesting point, in the absence of an overt antecedent the *podría haber* configuration observed in (82b) can lead to the two possible readings that were also attested in (78): when the whole sentence is understood to be embedded in a conditional construction, it expresses the same meaning as (82a); but when it is understood as a main clause without an antecedent, it expresses the possibility in the actual world to carry out a prejacent that was never materialized. This second reading is the one that I argue conditional SCCs like (83) convey. Since the surface form of this sentence is identical to that of (82b), I indicate the scope relation that corresponds to the SCC reading next to it.

³⁰ Laca (2012; fn. 12) explains that while this word order is indeed possible, a corpus search indicates that it is the dispreferred option. There are also differences on frequency depending on the particular modal verb. Hence, whereas *habría podido* (“would have been able to”) is relatively common, she couldn’t find even a single instance of *habría debido* (“would have had to”). My own intuitions agree with Laca’s (2012) claims.

³¹ Possibly in English as well, but I do not want to commit myself to such a claim at this point. See section 2.5.1 for a more detailed look at English SCCs.

- (83) *Fred podría haber conducido su coche hasta Canadá.* (Modal<CF)
 F can.*Cond* have drive his car to C
 “Fred could have driven his car to Canada.”

Paraphrase: Fred had the opportunity to drive his car to Canada, but he did not do it.

A final piece of evidence for a scope reversal analysis of the consequents of pluperfect conditionals comes from examples like (84) below. Ignoring the absence of the antecedent below, this sentence is just a formal variation of (82a). Both of them express possibility in some possible world. The only difference is that (84) has two instantiations of *haber*: one above the modal (conjugated with conditional morphology), and one below it (in its infinitival form). The remarkable thing about this lower, non-finite copy is that it is completely vacuous: it does not express any kind of additional temporal or modal displacement. Hence, I take it to be a remnant copy that marks the based-generated position of *haber*, before it was raised to obtain the consequent interpretation.

- (84) *Fred habría podido haberlo conducido hasta Canadá.*
 F have.*Cond* could have-CL.*3sg* driven to C
 “Fred would have been able to drive it to Canada.”

Summing up the data, Spanish provides a good many ways to express the modal consequents of subjunctive conditionals, and this offers us a privileged vantage point into the inner workings of the syntax of these constructions. One can opt for the transparent form where the heads are pronounced where they are interpreted (i.e. (82a)); for the opaque consequent where scope reversal occurs covertly (i.e. (82b)); or for the mixed form which overtly shows the scope reversal mechanism (i.e. (84)).

The upshot of this section is thus the following. Whereas the consequents of pluperfect conditionals in Spanish can show three different surface configurations, underlyingly the counterfactual head must outscope the modal in all cases because these sentences do not express possibility in the actual world. This means that *haber* in alternatives like (82b) must move covertly to a position above the modal. Now, when a sentence with the Modal<CF surface order appears without an antecedent, it can be read as a consequent or as a root sentence. In this latter case, I argue that the surface word order does indeed match the order at LF: the possibility is anchored in the actual world, and the CF

morpheme takes scope over the preajacent. This is precisely the meaning that conditional SCCs convey.

Notice that I still have not said anything about what conditional marking does or why it is there. Counterfactuality in these instances was attributed to the extra layer of past morphology that is absent from present tense conditionals. Explaining the relationship between conditional morphology and tense is the purpose of the next section, which will provide additional evidence that *haber* should be analyzed below the modal in SCCs.

2.3.2.2 Conditional SCCs and conversational backgrounds

The difference between past indicative and conditional SCCs is brought to light particularly well by the necessity semi-modal in the scenario in (85), where both the circumstances that make up the modal base and the priorities that the ordering source consists of change over time.

- (85) (Context: John wants to go on vacation, but he doesn't have the money. He has two options: he either sells his car or he sells his piano. He needs his car to go to work, so he decides to sell the piano. When he comes back from his holidays, he finds two letters in his mailbox: a notice from his employer that he is fired, and a job offer as a pianist from the local orchestra that rehearses next door. Assuming that he doesn't regret having taken the vacation, we can say:)

- a. # *John tenía que haber vendido el coche.*
J had.*PstImpfv* that have sold the car
“John had to have sold his car.” (given his priorities then)
- b. *John tendría que haber vendido el coche.*
J had.*Cond* that have sold the car
“John should have sold his car.” (given his priorities now)

Evaluated with respect to the context provided, (85a) is not a felicitous claim because the past morphology on the modal anchors the priority to sell the car in the past. But John's priorities then did not include selling his car because he needed it to go to work! So the claim in (85a) is a false one. Conversely, (85b) is a felicitous sentence given the context. This indicates that both conversational backgrounds of the conditional modal *tendría* are anchored at the time of utterance.

As expected, these acceptability judgments remain constant independently of the quantificational force of the modal. The example below shows how the same facts obtain when the possibility modal is used instead in the same scenario. The only issue in this case is that the difference between *podía* and *podría* is obliterated in English, where “could” is used in all cases.³²

(86) (Context: John wants to go on vacation, but he doesn’t have the money. He has two options: he either sells his car or he sells his piano. He needs his car to go to work, so he decides to sell the piano. When he comes back from his holidays, he finds two letters in his mailbox: a notice from his employer that he is fired, and a job offer as a pianist from the local orchestra that rehearses next door. Assuming that he doesn’t regret having taken the vacation, we can say:)

- a. # *John podía/pudo haber vendido el coche.*
J could.*PstImpfv/PstPfv* have sold the car
“John could have sold his car.” (given his priorities then)
- b. *John podría haber vendido el coche.*
J could.*Cond* have sold the car
“John could have sold his car.” (given his priorities now)

In more formal terms, we could say that the similarity between the past indicative and the conditional examples in (85-86) is that both kinds of SCCs express a necessity/possibility that held in the actual world, but whose precedent did not materialize in either case. What makes these examples different is that, whereas the conversational backgrounds of the past indicative forms are anchored in the past with respect to the utterance time, they are anchored in the present in the case of the conditional.

In section 2.2.1, I argued against a scope reversal analysis of SCCs where *haber* is interpreted above the modal in the semantics by focusing on evidence from indicative SCCs. I believe that the present tense orientation of the modal with conditional morphology presents additional evidence against a scope reversal analysis of SCCs in general.

³² Even so, we could say that the past morphology of “could” in (86a) is *real* since the sentence can be paraphrased as “John was able to have sold...” or “It was possible for him to...”. In (86b), however, said morphology seems *fake* (in the sense of Iatridou, 2000) because the possibility is anchored in the present.

Why is this? Let's assume for a moment that *haber* does take scope over the conditional modal. In this configuration, *haber* cannot express temporal displacement: as shown in (85-86), the conditional modal is anchored in the present so it cannot be contributing pastness. But *haber* cannot express modal displacement either because, unlike in conditional constructions, conditional SCCs express modal necessity/possibility *in the actual world*. Thus, it seems as though *haber* has to be semantically interpreted in its surface position below the modal in SCCs. Furthermore, since both past indicative and conditional SCCs seem to behave exactly the same (modulo the anchoring time of their conversational backgrounds), it would be reasonable to have the same scopal analysis for both kinds of SCCs.

This section has argued that evidence from the anchoring time of the conversational backgrounds in conditional SCCs supports the presence of a present tense morpheme right above the modal. In turn, this must mean that *haber* does not outscope the modal in these cases, so it must be semantically interpreted below it (i.e. in the same position where it appears on the surface). I now move on to providing the compositional semantics of conditional SCCs.

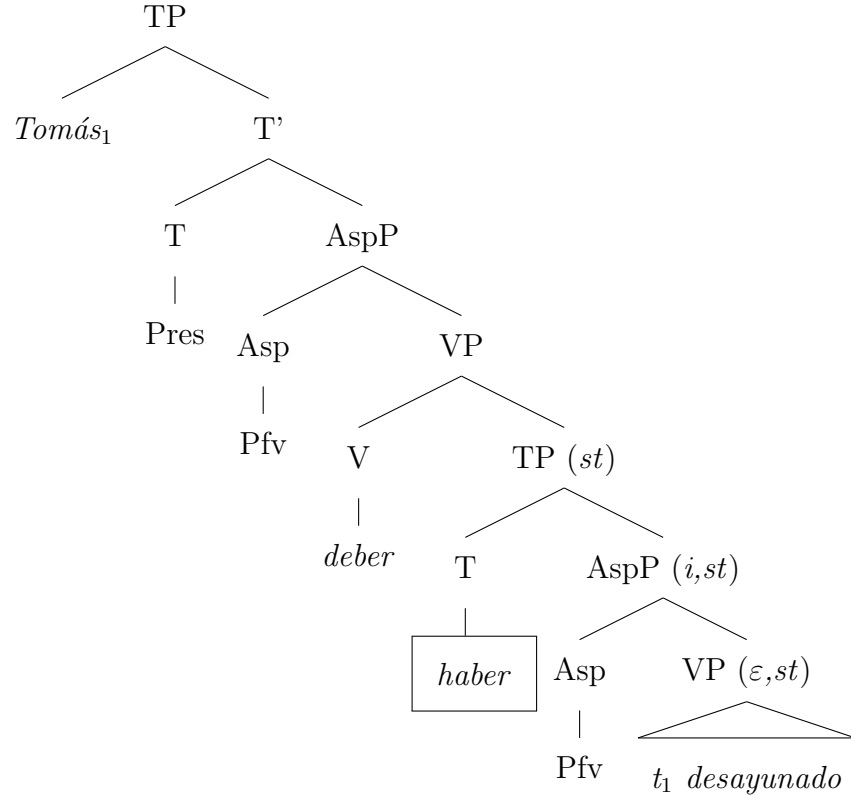
2.3.2.3 Derivation of conditional SCCs

Just like their past indicative counterparts, conditional SCCs can lead to both opportunity and priority readings. Below I provide the derivation for a priority interpretation with the necessity modal *deber*. As pointed out in the previous section, the conversational backgrounds in conditional SCCs are evaluated with respect to the utterance time. I will assume that this follows from the presence of a present tense marker right above the modal (but see Laca (2012) for a different account where the conditional gets its temporal meaning through an anaphoric relation).

- (87) *Tomás debería haber desayunado.*
 T must.*Cond* have have-breakfast
 “Tomás should have had breakfast.”

Paraphrase: Given the priorities at utterance time, all the best (i.e. accessible) worlds are such that Tomás had breakfast in them, but the actual world is not in that set.

(88)



(89) Truth-conditions:

$$\llbracket (87) \rrbracket^{g,c} = 1 \text{ iff}$$

$$\exists e. [\tau(e) \subseteq t^* \ \& \ \forall w' \in \max_{g(e)}(\cap f(e)(w^*))]:$$

$$\underline{| w^* \notin \text{TopicWs} |} \ \exists t. \exists e'. [\tau(e') \subseteq t \ \& \ \text{have}(T)(\text{breakfast})(e')(w')]$$

As can be seen in (88), there is no significant difference between the structure of conditional and past indicative SCCs apart from the present head in the TP of the matrix clause. One interesting semantic difference is that conditional structures like the one above always express the SCC meaning – even in the priority cases, which were shown in section 2.3.1.2 to also allow the THC interpretation when the modal had indicative mood. In the next section I summarize the discussion of SCCs (and THCs) so far, and tackle the issue of why the conditional cases only express the former, counterfactual meaning, but not the latter, temporal one.

2.3.3 The importance of tense and aspect

My intention in this section is to sum up the different kinds of constructions that have been previously introduced, and to accompany them by diagrams that explain graphically the meanings they express. It is my hope that this will facilitate the understanding of the temporal relationship between events and conversational backgrounds in the SCCs and THC's discussed thus far. The relevant readings in all these examples are the circumstantial priority ones, because these are the ones that can give rise to both interpretations of the prejacent. I resort to the necessity modal *deber* in the following because I believe that it allows for a clear exposition of priority, but the necessity semi-modal *tener que* and the possibility *poder* would work just as well.

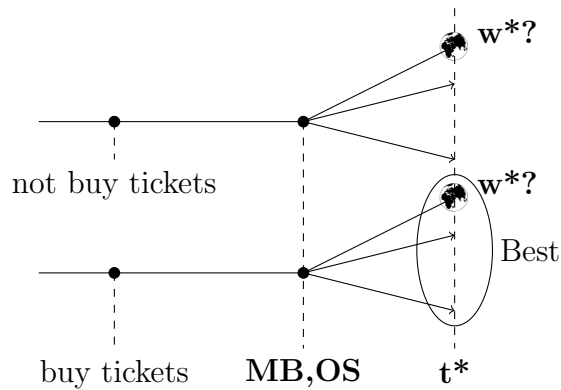
2.3.3.1 Past indicative

Let us focus first on the structure where the modal bears past indicative, of which (90) is an example analogous to the ones covered in section 2.3.1. As argued above, these sentences are ambiguous between a temporal and a counterfactual reading.

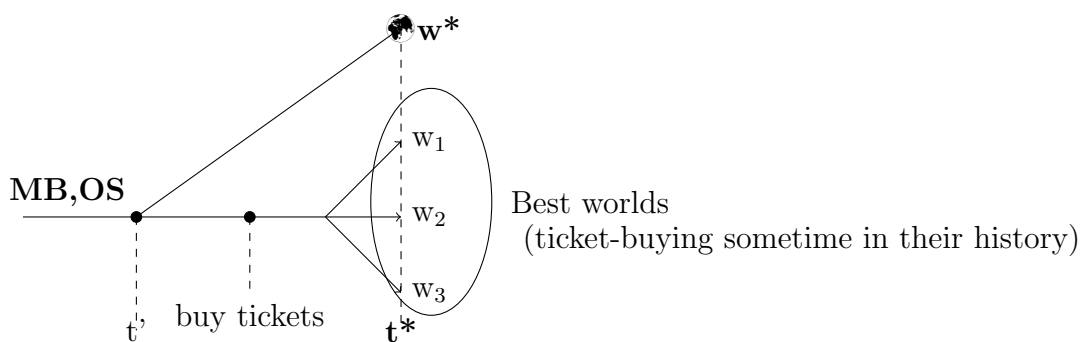
(90) Past indicative modal+haber:

- a. *Debías haber comprado entradas para estar en la zona VIP.*
 must._{PstImpfv} have bought tickets to be in the zone VIP
 “You had to have bought tickets to be in the VIP zone.”

- b. THC reading:



c. SCC reading:



The diagram in (90b), which corresponds to the temporal interpretation of (90a), illustrates a past obligation to have bought tickets in order to be granted the right to be in the VIP area. In this case, past tense on the modal makes it clear that both the modal base and the ordering source are anchored in the past. The past interpretation of *haber* modifies the prejacent so that the best among all the accessible worlds are those where the ticket-buying event happened sometime in their past with respect to the conversational backgrounds (a temporal relation obtained through the use of a zero tense in the prejacent). Since the prejacent is anchored in the past, the possibilities that open at the temporal orientation of the modal are actually deterministic: you either bought the tickets or did not, and there is nothing you can do about this. The reason why the modality in this case is not trivial (despite this determinism) is that such a sentence would be used in a context where the speaker does not know what time-line the actual world is in. Thus, (90a) is agnostic with regards to whether the prejacent actually took place or not. Note that, in spite of this lack of knowledge about what kind of world w^* is, this is not an epistemic reading because the modal is relative to the circumstances of the subject and to a body of laws (and not to the epistemic state of the speaker).

I believe that the diagram in (90c) that captures the counterfactual reading of (90a) should be straightforwardly interpretable at this point. In this situation, the speaker is not agnostic about where w^* is located and uses the ExclF to mark that the actual world is not among the best possible worlds as selected by the conversational backgrounds anchored at past time t' . Note that, as illustrated in (63) repeated below, the prejacent can be temporally anchored at any salient point in time – even in the future. Hence, it

does not really matter where in the time-line the event of ticket-buying is, as long as it is not part of the history of w^* .

- (63) *Violeta pudo haber visitado a Jose ayer/hoy/mañana.*
 V could._{PstPfv} have visited to J yesterday/today/tomorrow
 “Violeta could have visited Jose yesterday/today/tomorrow.”

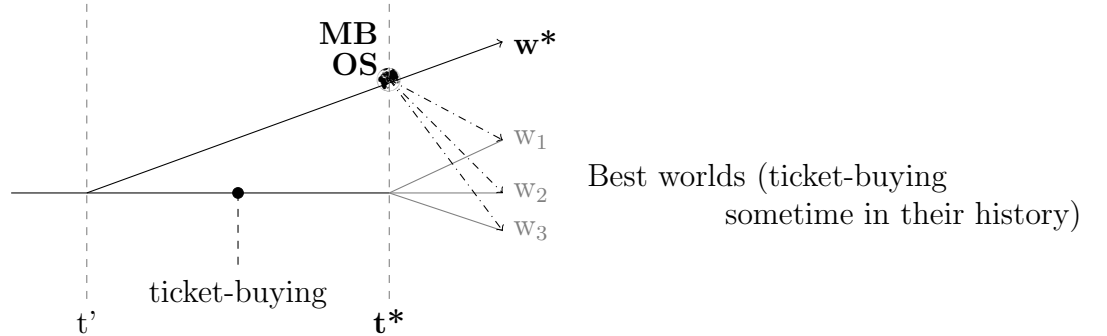
2.3.3.2 The conditional

Moving on to the conditional cases, in the previous section I argued that their conversational backgrounds are anchored in the present and that their only available reading is the counterfactual one.

- (91) a. *Deberías haber comprado entradas para estar en la zona VIP.*
 must._{Cond} have bought tickets to be in the zone VIP
 “You should have bought tickets to be in the VIP zone.”

Paraphrase: Every world that is as close to w^* as possible regarding the circumstances and priorities in force at the time of utterance in w^* , is one where there is an event of the addressee buying tickets. But w^* is not among those optimal worlds.

b. SCC reading:



I will emphasize again that in these cases where *haber* has a modal meaning the prejacent itself need not have taken place in the past: it can be located at any point in time, including the future. In (91b), I represented the ticket-buying event in the past for convenience, but it could be anchored anywhere along the shared history of w_1 , w_2 , and w_3 . What is crucial is that, for whatever reason, it is impossible either for w^* to become a prejacent world outright (as in (91)), or for w^* to become a *valid* prejacent

world. This latter case corresponds to instances where, even if the prejacent takes place, it is not acceptable anymore.

Example (92) below, based on Ogiwara (2002), illustrates what I mean by a *valid* prejacent world. Imagine that John’s girlfriend’s birthday is tomorrow, but he mistakenly gave chocolates to her yesterday. There is nothing that prevents John from giving her chocolates again tomorrow, but she is already upset with him and so, doing that will not be of any use. It is in this sense that I think we can refer to these cases as counterfactual: it is impossible for w^* to be a world where the right prejacent event happens at the right time.


- (92) *John debería haberle regalado bombones mañana.*
 J must.*Cond* have-CL.*3Sg* gift chocolates tomorrow
 “John should have given her chocolates tomorrow.”

The existence of such a past point in time where histories diverged could potentially be associated with a temporal contribution of *haber*, something that I have been denying to be the case in these constructions. Instead, I will claim that this meaning component can be pragmatically derived from *haber* expressing that carrying out the prejacent is not possible *in the future*. Given that this reading is also available in Retrospective Imperatives (the focus of the next chapter), in section 3.8 I elaborate in detail how this pragmatic meaning is triggered by appealing to Rooth’s (1992) theory of focus semantics.

The take-home message of this section is that when *haber* behaves intensionally (hence conveying counterfactuality), it does not express any temporal relation between the circumstantial modal and the prejacent. As mentioned in section 1.3.1 when I provided the denotation for the past and perfect morphemes, the modal and the temporal interpretation of these heads are in complementary distribution.

Now, here is the conundrum. The way the circumstantial modal base is defined in (91), it selects the worlds that most closely resemble w^* up to the utterance time. This means that the modal base is realistic (i.e. w^* has to be found in it because the closest world to the actual one is itself). Therefore, as far as the worlds in the modal base are concerned, either they will all be worlds where the ticket-buying happened, or they will all be worlds where the ticket-buying did not happen, depending on what obtains in w^* . With this premise, when the ExclF contributed by *haber* expresses that the prejacent did

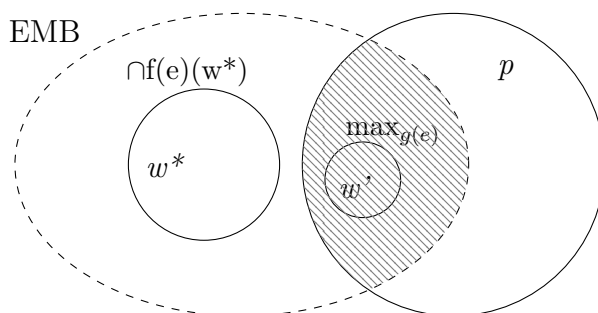
not take place in w^* , then it must be that *no* world in the modal base is such that the ticket-buying event took place in it. In other words, there should be *no* accessible worlds from w^* where the ticket-buying happens, so sentences like (91) would invariable come out as true (because the universal quantifier quantifies over an empty set of worlds) and possibility SCCs would always come out as false.

But this is extremely counter-intuitive. What we want to say is that there *are* some worlds which are optimal: namely, worlds which are as close as possible to w^* (ignoring the ticket-buying), and which satisfy the priority that we make it to the VIP zone. In order for such a set of worlds to be available, we would have to look back in history to the point where these target worlds diverted from the actual one (at a pragmatically determined time t') and allow for the modal to quantify over them. Or put slightly differently: the modal base has to be able to *look* into an alternative time-line from the actual one (which is what I tried to represent in (91b) with the dotted arrows going from  to worlds w_1 , w_2 , and w_3).

In order to formalize this, I borrow Mari's (2015) concept of the *Extended Modal Base* (EMB) and suggest that what conditional morphology marks is precisely that we are considering a time-line different from the actual one at utterance time. This EMB would correspond to a larger domain of quantification than $\cap f(e)(w^*)$, which is anchored at some pragmatically salient time t' where the time-line where the ticket-buying takes place diverges from the time-line leading up to w^* . Conditional morphology is then but a grammatical marker that a history different from the actual one is being considered. I believe that this can be considered analogous to Stalnaker's (1975) idea that one might use subjunctive/conditional marking in conditional constructions to go outside the common ground.

Figure 2.4 below is an attempt to graphically capture this intuition, where w^* is excluded from the shaded intersection between the EMB and the set of prejacent worlds p . In this figure, w' stands for any of the best possible worlds from above (w_1 , w_2 , w_3) where the prejacent holds.

Figure 2.4: Extended modal base



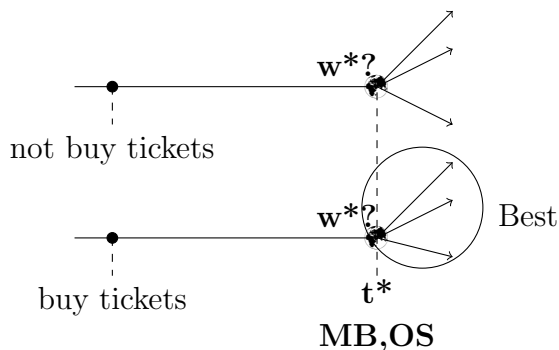
The intersection between the EMB and p captures the fact that, at some previous salient time, the possibility existed for w^* to become either a p -world or a non p -world. As history progressed, it is the latter scenario becomes actual (as the non-overlap between $\cap f(e)(w^*)$ and p shows). Finally, conditional SCCs express that, at utterance time, the best possible worlds are p -worlds, so they must be found somewhere in the intersection between EMB and p . Finally, this goes on to show that what really matters for the Topic Worlds is what the prejacent worlds are, which the actual world cannot belong to.

2.3.3.3 Present indicative

Having presented my analysis of conditional SCCs such as (91), I would like to suggest that the reason why the embedded *haber* in those structures does not express the temporal displacement associated with the THC reading is that conditional morphology indicates that *haber* is being interpreted modally. Should we want to use the non-finite perfect marker to express the THC interpretation, we need to conjugate the modal in the present indicative tense like (93) below. It is interesting to note that, far as their asserted truth-conditional content is concerned, conditional SCCs and present indicative THCs are identical: they both express universal quantification over the $g(e)$ -best worlds in the modal base. This is the reason why I argued in section 2.3.2 that I would analyze conditional SCCs as bearing a present tense morpheme in the TP of the matrix clause.

The temporal counterpart of (91) is shown below:³³

- (93) a. *Debes haber comprado entradas para estar en la zona VIP.*
 must.*Pres* have bought tickets to be in the zone VIP
 “You must/need to have bought tickets to be in the VIP zone.”
- b. THC reading:



The circumstantial reading expressed by (93) is very interesting because it has been explicitly ruled out in previous literature.³⁴ This sentence denotes a generic obligation to have bought tickets in order to be granted the right to be in the VIP area. Here, morphological present tense on the modal clearly indicates that both the modal base and the ordering source are anchored at utterance time, and that the best among all the accessible worlds are those where the ticket-buying event happened sometime in their past history. The reasoning here is parallel to that of (90b): since the prejacent is anchored in the past, the possibilities that open at t^* are actually deterministic: you either bought the tickets or did not, and there is nothing you can do about this. The modality in this sentence is not trivial because the speaker does not know what time-line the actual world belongs to. Thus, (93) is agnostic with regards to whether the prejacent actually took

³³ When present indicative tense is used (as in (91)), *deber* easily slips into an epistemic reading, so using *tener que* would have been better here. I decided to keep *deber* in order to maintain the parallel with the previous examples in this section. In Chapter 4, I will elaborate more on the differences between these two necessity modals.

³⁴ In contrast, Portner (2007: fn. 10) claims that such sentences are acceptable, provided that the prejacent occurs *after* the utterance time due to the presence of modifiers like “by the time I get back” in (iii) below. I disagree with this constraint, as (93) shows that the event described in the prejacent can very well be located in the past of both the utterance time and the temporal orientation of the modal.

- (iii) Sam must have gone to confession by the time I get back.

place or not. Just as I argued in the case of past indicative THC's, the lack of knowledge about what kind of world w^* is in (93) does not make its modality epistemic, because the modal is relative to the circumstances of the subject and to a body of laws (and not to the epistemic state of the speaker).

2.3.3.4 Summary

To conclude, I present the following table, which summarizes the readings that the constructions just explored might convey based on the temporal anchoring of their conversational backgrounds.

Table 2.3: Readings of circumstantial modal + *haber*

| Tense | Temporal perspective of the modal | Reading |
|--------------------|-----------------------------------|---------|
| Past indicative | $t' < t^*$ | THC/SCC |
| Present indicative | t^* | THC |
| Conditional | t^* | SCC |

Before closing off this section, I would like to comment on why past SCC's do not require conditional morphology in order to convey their counterfactual interpretation. In my view, the reason is that, by locating the modal base in the past with respect to the utterance time, we already gain access to time-lines different from the one where the actual world is located. The worlds in these other time-lines represent possibilities open at that time, but which did not become actual. Therefore, the past tense already allows us to pry into those other alternatives by default, without having to mark the modal verb with conditional morphology.

2.3.4 Other intensional verbs

So far, my discussion of SCC's has focused on the possibility modal verb *poder* and the necessity modals *tener que* and *deber*. But this kind of counterfactual meaning can also be triggered with a range of other intensional verbs. The following examples

correspond to Internet and corpus searches, which show that verbs like *querer* (“want”), *desear* (“wish”), *preferir* (“prefer”), *necesitar* (“need”), *esperar* (“hope”), etc. can also give rise to SCCs.

- (94) *El gol que Fayne quiso haber marcado.*

“The goal that Fayne wanted.*PstPfv* to have scored.”

<http://tinyurl.com/ohcnv9t>

- (95) *Muchas veces deseó haber nacido loco para ignorar al mundo desde un principio.*

“Many times he wished.*PstPfv* to have been born crazy to ignore the world from the beginning.”

(Davies, 2002-)

- (96) *En cuanto entra, comprende que está equivocado, que venir a este café era precisamente lo que no le apetecía, que él prefería haber seguido evocando fantasmas de hombres que derramaron sus propios cánceres sobre papeles blancos.*

“The moment he comes in, he understands that he is wrong, that coming to this café was exactly what he did not want to, that he preferred.*PstImpfv* to have continued remembering the ghosts of men that poured their own cancers on blank sheets of paper.”

(Davies, 2002-)

- (97) *Bueno quiero decirte una cosa: el año que viene, bueno este año, yo me quería haber apuntado a tenis, aunque sea a competición.*

“Well, I want to tell you something: next year; well, this year, I wanted.*PstImpfv* to have signed up for tennis, even if it’s a competition.”

(Davies, 2002-)

- (98) *Esperaba haber dado más vueltas.*

“I hoped.*PstImpfv* to have run more laps.”

<http://tinyurl.com/hh49965>

It is important to point out that so far I have pretended that the presence of perfective vs. imperfective aspect in past SCCs was irrelevant and that either configuration led to the exact same readings as far as counterfactuality is concerned. Unfortunately, this

was a bit of a simplification. While it is true that in most cases it truly does not matter what aspect the modal verb bears, it is nonetheless false to say that it *never* matters. Take the semi-modal *tener que* (“have to”) for example. At times in this chapter, I have used it in priority constructions with an SCC interpretation, but always with imperfective aspect. The reason is that, when *tener que* bears perfective aspect and it is followed by *haber*, the only available reading is an epistemic one – the modal cannot be understood as circumstantial:

- (99) *Rafael tuvo que haber comprado aguacates.*
 R had._{PstPfv} that have bought avocados
 “Rafael must have bought avocados then.”

Paraphrase: It must be the case that Rafael bought avocados then.

I believe that the explanation behind the absence of the circumstantial reading in (99) follows from the fact that, in a non-epistemic context, perfective *tener que* plus infinitive triggers an actuality entailment in the sense of Hacquard (2006). In (100), where the necessity semi-modal takes an infinitival complement without *haber*, it is entailed that the prejacent actually took place. Therefore, if *tener que* with perfective aspect triggers an actuality entailment, trying to use it in a SCC configuration where the opposite (i.e. counterfactual) conventional inference is derived would cause a contradiction. In order to avoid it, the circumstantial reading is blocked in (99) and only the epistemic one is available.

- (100) *Rafael tuvo que comprar aguacates (# pero no lo hizo).*
 R had._{PstPfv} that buy avocados but not CL._{3Sg} did
 “Rafael had to buy avocados, but he didn’t do it.”

This behavior of the necessity semi-modal is interesting because it is different from the necessity modal *deber*, which does not trigger actuality *entailments*. Instead, the prejacent in the sentence below can be understood as actual or counterfactual. In Chapter 4, I will elaborate more on the actuality effects that necessity and possibility modals give rise to under different aspectual conjugations.

- (101) *Rafael debió comprar aguacates.*
 R had.*PstPfv* buy avocados
 “Rafael had to buy avocados but didn’t.”
 “Rafael had to buy avocados and did so.”

Some other intensional verbs that come with their conversational backgrounds pre-specified from the lexicon add an interesting twist to this puzzle. When the modal *necesitar* (“need”) bears past perfective morphology, it entails its prejacent, exactly like *tuvo que*. However, in this case the conversational backgrounds of *necesitar* cannot be epistemic because the teleological meaning is already pre-loaded into the core meaning of the verb. In this case, *haber* is allowed to function temporally and trigger a THC reading that locates the prejacent at a time that precedes the temporal evaluation of the modal. Compare (102), where the prejacent is entailed (and so, trying to cancel its coming about is infelicitous), against (103), where conjugating the verb with imperfective aspect suspends said entailment relation.

- (102) *Tomás necesitó haber comprado entradas para poder entrar en el club (#*
 T need.*PstPfv* have bought tickets for can enter in the club
pero no las compró).
 but not CL.*3Sg* bought
 “Tomás had to have bought tickets to be able to get in the club (# but he did not buy them).”
- (103) *Tomás necesitaba haber comprado entradas para poder entrar en el club*
 T need.*PstImpfv* have bought tickets for can enter in the club
(pero no las compró).
 but not CL.*3Sg* bought
 “Tomás had to have bought tickets to be able to get in the club (but he did not buy them).”

Unfortunately, I have no explanation for why this option of reinterpreting *haber* temporally is available for *necesitó* but not for *tuvo que*. I can only suggest the hypothesis that a pragmatic reinterpretation of the conversational backgrounds a modal combines with is somehow less costly than reinterpreting the non-asserted, conventional meaning of the ExclF. Since the former option is not available to *necesitar* because its conversational backgrounds are lexically pre-specified, it resorts to interpreting the ExclF temporally.

But because *tener que* can easily be understood epistemically, it is this option that is primed in this case. I will discuss the interactions between tense, aspect, and modal verbs more extensively in Chapter 4. For now, I conclude that the modals *poder* (“can”) and *deber* (“must”) with both past perfective/imperfective and conditional tense, as well as the semi-modal *tener que* with past imperfective and conditional tense give rise to SCCs.

2.4 On the nature of counterfactuality

As shown in (50) at the beginning of the chapter (repeated below), one of the points that I have emphasized the most throughout is that trying to cancel the counterfactuality triggered by SCCs leads to infelicity:

- (50) (Context: Violeta happened to be in NYC for the weekend, where her friend Jose lives. She considered calling him to meet up, but instead she chose to go on a tour of the Statue of Liberty)

Violeta pudo/podía haber visitado a Jose (# y lo hizo).
 V could.*PstPfv/PstImpfv* have visited to J and CL.*3sg* did
 “Violeta could have visited Jose (# and she did).”

Paraphrase: There is some past time when Violeta had the opportunity to visit Jose, but she didn’t do it.

This fact strongly suggests that this inference cannot be a conversational implicature (as proposed in Iatridou (2000) and Condoravdi (2002)), and it is the main reason that led me to assume that this kind of counterfactuality (understood as an exclusion feature that ranges over worlds) is part of the denotation of *haber*. In other words, that it is conventional in nature. With that in mind, we could look at what other properties this inference has in order to have a better idea of what kind of conventional meaning it is. A good place to start could be the “family of sentences test” from Chierchia and McConnell-Ginnet (1990). As it turns out, when a sentence with an SCC interpretation is embedded under negation, a question, or the antecedent of a conditional, the counterfactual inference projects past the embedding operators to become an inference associated with the whole construction.³⁵

³⁵ Note that if the universal modal is used in SCCs, it seems as though counterfactuality

- (104) *María pudo haber ganado.*
 M could.*PstPfv* have won
 “María could have won.”

- (105) a. Negation:

María no pudo haber ganado.
 “María could not have won.”

- b. Question:

¿Pudo María haber ganado?
 “Could María have won?”

- c. Antecedent of conditional:

Si María pudo haber ganado, su entrenador estará triste/ #contento.
 “If María could have won, his coach will be sad/ #happy.”

While survival (i.e. projection) in the family of sentences is sometimes used as evidence to classify an inference as a presupposition, Chierchia and McConnell-Ginnet (1990) nevertheless claim that this test does not necessarily check for presupposition status, but rather for *backgroundedness*. The backgrounded property of our counterfactual inference seems clear given the impossibility for it to be directly targeted by a negative answer, for example:

does not project. Instead, the inference is reversed: (iv) expresses that María did win but that she should not have done so.

- (iv) *María no debió haber ganado.*
 M not must.*PstPfv* have won
 “María should not have won.”

I believe the reason for this is the neg-raising behavior typical of the universal modal, whereby negation is actually interpreted as having narrow scope in (iv). If the wide-scope interpretation of negation is forced (as in (v) below) the counterfactual inference arises and projects exactly as in (105a).

- (v) *No es cierto que María debió haber ganado.*
 Not is true that M must.*PstPfv* have won
 “It’s not the case that María should have won.”

- (106) A. *¿Pudo Tomás haber corrido?*
 could.*PstPfv* T have run
 “Could Tomás have run?”
- B. *No, no pudo.*
 no no could.*PstPfv*
 “No, he couldn’t.”
- B’. # *No, sí que corrió.*
 no yes that ran.*PstPfv*
 # “No, he did run.”

Hence, what (105-106) above show is that counterfactuality in SCCs projects and that it is backgrounded, but not necessarily that it is a presupposition. In order to be able to classify this inference more precisely, in Rubio Vallejo (2015) I proposed that we look at Tonhauser et al.’s (2013) typology of projective content.

In their study, these authors consider two dimensions along which projective content may vary: obligatory local effects and strong contextual felicity. The former diagnostic checks whether the projective content contributes its meaning “to the local context of interpretation” (Tonhauser et al., 2013: 94). In order to understand this better, let’s have a look at an example:

- (107) Jane believes that Bill has stopped smoking. (Adapted from example [38a])

In (107), the presuppositional trigger “stop” is embedded under the propositional attitude verb “believe”. To say that the presupposition that “stop” triggers is *obligatorily local* means that this presupposition is attributed to the belief holder (and not to the speaker, for example). Hence, if Jane believes that Bill has stopped smoking, it is Jane who believes that Bill smoked at some point in the past. The unacceptability of (108) demonstrates that this is the case, because it attributes Jane two contradictory beliefs:

- (108) # Jane believes that Bill has stopped smoking and that he never smoked.

Just like the presupposition triggered by “stop”, counterfactuality in SCCs also has an obligatory local effect. (109) below is deviant because two contradictory thoughts are attributed to María, the belief holder: that Jon did not win the race, and that he was given a medal for arriving first. As always, for this infelicity to hold one must make sure that the modal is not reinterpreted epistemically.

- (109) # *María cree que Jon pudo haber ganado la carrera y que le*
M thinks that J could._{PstPfv} have won the race and that CL._{3sg}
dieron una medalla por llegar el primero.
give one medal for arrive the first
“María thinks that Jon could have won the race and the he was given a medal
for arriving first.”

As far as the second diagnostic is concerned, Tonhauser et al. (2013) propose that if a sentence that expresses a certain projective content p can only be felicitously uttered in a context that entails or implies p , then said projective content is subject to what they call a *strong contextual felicity* constraint.

That the counterfactual inference in SCCs does not require a context that entails or implies it can be clearly seen in (110) below. In the context provided, the addressee has no beliefs whatsoever about the retired athlete, so no proposition about him has been added to the common ground yet. In this setting, uttering the SCC is completely fine.

- (110) (Context: A friend and I are walking down the street when I spot a retired athlete who, in a sudden twist of bad luck, infamously did not win a competition he was sure to. My friend is from a different country and generation, so he is totally unaware of the story. I turn to him and say:)

Aquel hombre pudo haber ganado una medalla en los Juegos Olímpicos.
that man could._{PstPfv} have won one medal in the games olympic
“That man could have won a medal in the Olympic Games.”

The projective behavior of this counterfactual inference, together with its obligatory local effect and lack of strong contextual felicity, put it in the Type C group within Tonhauser et al.’s (2013) typology. This is a rather heterogeneous group that includes the polar adverb *almost*, the factive verb *know*, the presuppositional trigger *stop*, and the exhaustive adverb *only*. Unfortunately, providing a more comprehensive breakdown of the differences between these lexical items is well beyond the scope of this work. To show but an example, the compilation of the different analyses that have been proposed for the adverb *almost* in Horn (2002: 60) is particularly telling. Throughout the literature, the polar contribution of this adverb has been argued to be a presupposition, a conversational implicature, an entailment, not-quite-an-entailment, etc. This wide variety of accounts

is certainly amusing and it highlights how complicated it is to pin down exactly how a particular inference should be classified.

In any case, the properties we have described so far and which are shared by the members of the Type C group do seem to suggest that counterfactuality in SCCs is somewhere between a semantic presupposition and a Gricean conventional implicature:³⁶ it is a non-cancellable projective inference, it appears to survive negation, and it is certainly detachable. The only property with respect to which this meaning component seems different from standard presuppositional triggers is in its reinforceability (i.e. the overt expression of the presupposed proposition). It is generally believed that overtly expressing the presupposed meaning of a trigger leads to a sense of redundancy. This can be seen in (111) below, where conjoining the existence presupposition of the definite description to the asserted meaning of the sentence results in an infelicitous claim for some speakers. This is certainly not the case in SCCs like (112), where asserting counterfactuality is perfectly acceptable:

(111) (#) The king of France is bald and there is a king of France.

(112) *María pudo haber visitado a Tomás pero no lo hizo.*
M could.*PstPfv* have visited to T but not CL.*3Sg* did
“María could have visited Tomás but she didn’t do it.”

To the extent that reinforceability can be ignored (and we might be justified to do so given that not all speakers seem uncomfortable overtly expressing the content of a presupposition), I believe it appropriate to consider this counterfactual inference a presupposition. Unfortunately however, while the literature on the different kinds of conventional and presuppositional triggers is vast, there is little agreement on how to classify them or even about what general categories of meaning there should be. Some questions that still remain to be answered include the following: Is there a distinction between soft and hard presuppositions? Are soft presuppositions collapsable into conversational implicatures? Are some conventional implicatures actually hard presuppositions? Recent theoretical

³⁶ Importantly, not a *Pottsonian* one because we saw that this kind of counterfactuality is obligatorily local.

and experimental work has focused on this issue, but little consensus seems to emerge yet (Abbott, 2006; Abusch, 2010; Schwarz, 2014; Romoli, 2015; Abrusan, 2015; a.o.).³⁷

For these reasons, and until we can come up with more precise diagnostics, I will simply refer to the counterfactuality of SCCs as a semantic presupposition, while highlighting that this is a non-asserted, conventional inference belonging to the Type C kind of projective content. Finally, and to tie this conclusion with part of the opening discussion of this dissertation, this also seems to suggest that the counterfactual inference conveyed by SCCs cannot be derived through Condoravdi’s (2002) domain-widening mechanism (which is purely pragmatic in nature and follows from conversational maxims).

2.5 Comparison with other languages

Before finishing this chapter, I would like to provide an overview of languages which could be argued to have SCCs (or rather similar constructions).³⁸ English, Albanian, Uzbek, and Korean are included in this group. In addition, I will also present some other languages where nothing like SCCs are found and provide possible explanations for why this is the case. Basque, French, Hebrew, and Palestinian Arabic are included in this second category.

2.5.1 Languages with candidates for SCCs

2.5.1.1 English

As seen in the translations of the Spanish SCCs throughout this chapter, it seems as though these constructions are indeed attested in English. The ingredients for English SCCs seem to be exactly the same as for their Spanish counterparts: a root modal with past morphology³⁹ that outscopes the perfect marker both on the surface syntax and

³⁷ I would also like to point out that the counterfactual inference of SCCs fails both Romoli’s (2015) “explicit ignorance test” (as expected for *hard* presuppositions), and his “quantificational test” (as expected for *soft* presuppositions). Therefore, the picture that emerges from these diagnostics is not quite clear either.

³⁸ I thank my consultants from the Department of Linguistics at the University of Delaware and the Graduate House.

³⁹ Since English does not have a conditional form separate from the past one, I assume that the same morphological marking can derive the two possible anchoring times for

semantically. As said at the beginning of this chapter, these could be identified with the constructions that Condoravdi (2002) discussed and which she called “metaphysical”.

My hope is that the evidence presented throughout this chapter will be seen as convincing proof that even the English examples are better reinterpreted in terms of my proposal for Spanish SCCs. This is because the counterfactual inference that English SCCs like (113-114) trigger seems to share the same properties as those observed in Spanish SCCs: it is non-cancellable, it projects, it has an obligatory local effect, and it does not require of strong contextual felicity.

(113) John could have arrived on time, # and he did.

(114) Jane should have brought the books, # and she did.

In Chapter 4, the similarity in behavior between English and Spanish modal verbs will also be shown to hold with respect to the actuality effects that the possibility modal *poder* triggers. This will provide additional evidence for a surprising claim, namely, that Spanish modal verbs seem closer to the English ones as far as the non-assertions they give rise to, than to the more historically related French or Italian modals.

2.5.1.2 Albanian

Albanian, one of the rarest members of the Indo-European family, also has structures that resemble SCCs. I say *resemble* because the constructions that are presented below differ from SCCs in two important respects. First, modal verbs appear in their base form since Albanian modals do not inflect for tense. Second, whereas circumstantial modals can be followed by the perfect (as in English or Spanish), this has to bear past morphology. These two differences notwithstanding, these sentences express the by-now familiar non-cancellable counterfactual inference relative to their prejacent.

Before describing such a configuration, I want to introduce the contrast between the present and past forms of the perfect. Example (116) shows that the functional head *kishte* corresponds to the English past perfect.

the modal base discussed in section 2.3. In other words, “could” can be translated into Spanish as either *pudo/podía* or *podría*.

- (115) *Meri ka vrapuar.*
M have.*PresPerfect* run.*PstParticiple*
“Mary has run.”
- (116) *Meri kishte vrapuar.*
M had.*PstPerfect* run.*PstParticiple*
“Mary had run (by then).”

Next, I want to support my claim above regarding the fact that modals in Albanian do not inflect for tense. As examples (117-120) below illustrate, pastness is marked on the preajcent (where the past imperfective form of the verb must be used).

- (117) *Meri mund të vrapojë.*
M can to run.*Fut*
“Mary can run.”
- (118) *Meri duhet të vrapojë.*
M must to run.*Fut*
“Mary must run.”
- (119) *Meri mund të vraponte/*vrapoi.*
M can to run.*PstImpfv/PstPfv*
“Mary was able to run.”
- (120) *Meri duhet të vraponte/*vrapoi.*
M must to run.*PstImpfv/PstPfv*
“Mary had to run.”

Finally, the closest Albanian equivalents to SCCs are shown below. As expected, the modals *mund* and *duhet* remain uninflected, but the preajcent now bears past perfect morphology. As far as their meanings are concerned, both (121) and (122) express that the preajcent did not come about in the actual world and this inference is impossible to cancel.

- (121) *Meri mund të kishte vrapuar.*
M can to had.*PstPerfect* run.*PstParticiple*
“Mary could have run (but she didn’t/ # and she did).”
- (122) *Meri duhet të kishte vrapuar.*
M must to had.*PstPerfect* run.*PstParticiple*
“Mary should have run (but she didn’t/ # and she did).”

The fact that modals are uninflected in these examples raises interesting questions about how the anchoring time of their conversational backgrounds is determined. One possibility is that this is made on purely pragmatic terms. For example, one could paraphrase (119) as “Mary be able to [run in the past]”, which can only have a felicitous reading if the ability held at that past time as well. But most importantly for my current interests, these constructions provide further evidence for the correlation between non-cancellable counterfactuality and having the perfect head follow a modal verb.

2.5.1.3 Uzbek

The interaction between modal constructions and tense in Uzbek is very interesting because this language appears to give rise both to actuality entailments and to a non-cancellable counterfactual inference analogous to that of SCCs. To my knowledge, there is no previous literature on Uzbek that addresses these facts.

As expected from a Turkic language, Uzbek makes heavy use of agglutination. This can be seen in the contrast between past perfective and imperfective, which is realized through the use of the habitual suffix *-r*:

- (123) *Mary guruch ye-di-Ø.*
M rice eat-Pst-3SG
“Mary ate rice.” (perfective)
- (124) *Mary guruch ye-r-di-Ø.*
M rice eat-Hab-Pst-3SG
“Mary used to eat rice.” (imperfective)

Evidence for a perfect tense in this language is somewhat less straightforward, since my informant reported that she would also use (123) as a translation for “Mary has eaten rice”. Still, there exists the morpheme *-gan* which, according to my informant, conveys the meaning of anteriority associated with the past perfect in English. The following example where the adverb *already* is used exemplifies this meaning.

- (125) *Mary allaqachon yugur-gan-di-Ø.*
M already run-PstPerf-Pst-3SG
“Mary had already run.”

Moving on to intensional constructions, Uzbek does not seem to have a dedicated existential modal, but it resorts to the stem *ol*, which my informant translated as “to take”. Example (126) shows how ability/opportunity relative to the time of utterance is realized.⁴⁰

- (126) *Mary yugur-a ol-a-di.*
 M run-Particle take-Pres-3SG
 “Mary can run”

Most remarkably, when the stem *ol* is modified by the past tense morpheme, the construction asserts that the embedded event did take place in actuality. The unacceptability of the given continuation in (127) suggests that past perfective on *ol* leads to actuality entailments.

- (127) *Mary yugur-a ol-di-Ø (# lekin yugur-ma-di-Ø).*
 M run-Particle take-Pst-3SG but run-Neg-Pst-3SG
 “Mary was able to run (# but she didn’t).”

Such actuality entailments are also triggered in Uzbek with the necessity modal *majbur*, which my informant translated as “have to”. This is shown in (128), where the context offered highlights the circumstantial interpretation of the modal. The infelicity of the continuation supports the hypothesis that *majbur* together with the past perfective auxiliary asserts the realization of its complement in actuality (note that necessity modals in Uzbek do not themselves inflect and rely on auxiliaries to convey tense and aspectual information).

- (128) (Context: John and I were hiking in the forest. Suddenly a bear starts chasing us. In order to escape...I had to jump into the river and **John had to run.**)

John yugur-ish-ga majbur bōl-di-Ø (# lekin yugur-ma-di-Ø).
 J run-Ger-Dat have-to be-Pst-3SG but run-Neg-Pst-3SG
 “John had to run (# but she didn’t).”

⁴⁰ A quick note regarding the contribution of the suffix *-di*, which seems to be used to express two clearly differentiated meanings. When it appears in a sentence in the present tense, *-di* behaves as the 3rd person singular agreement marker. On the other hand, it can also be used as the past tense marker, in which case it would be followed by the corresponding agreement marker (the 3rd person suffix in the past happens to be null).

Conversely, there is another necessity operator, *kerak* (translated as “should” by my informant), which does not lead to actuality entailments. Hence, uttered in a context like that in (128), (129) could be used to express either that John did run or that, while he had to do so, he did not.

- (129) *John yugur-ish-i kerak edi-Ø.*
 J run-Ger-Poss should be._{Pst}-3SG
 “John had to run.”

Moving on to SCCs, the surprising picture that arises is that only structures with the existential modal meaning allow something that resembles such a construction. The example below displays past perfect morphology on the stem *ol* in addition to further past marking through the presence of the verb “to be”. Of course, the presence of the “instead” clause in the context already expresses that John did not run but, even in its absence, it would be impossible to continue (130) by something like ...*va John yugurdi* (“...and John ran”).

- (130) (Context: John and I were hiking in the forest. Suddenly a bear starts chasing us. In order to escape... **John could have run**, but instead he decided to climb a tree.)

John yugur-a ol-gan bōl-ar-di-Ø.
 J run-Particle take-PstPerf be-Particle-Pst-3SG
 “John could have run.”

It is important to notice that the lexical verb *yugur* (“run”) in this construction does not bear any kind of past morphology, so the comparison with Spanish SCCs is not quite as straightforward. However, I think that the relationship between the presence of a second layer of pastness and counterfactuality granted a discussion of these structures in the light of the Spanish data.

Actually, the impossibility to have double past marking with necessity operators expressing circumstantial meanings might be the reason why they do not express counterfactuality. Hence, in contexts where one would use the English structure “should have” (which I argued above in section 2.5.1.1 that should be considered analogous to Spanish necessity SCCs), my informant would produce the construction shown in (129) with *kerak*.

In sum, the data provided in this short section suggests that Uzbek has actuality entailments and that it has an existential modal construction with two layers of past morphology that expresses a counterfactual meaning analogous to that of SCCs. With respect to this second meaning, the structural configuration that triggers it in Uzbek is clearly different from the SCCs that this chapter discussed. Still, the noteworthy parallel between the two is the need for two layers of past for counterfactuality to arise.

2.5.1.4 Korean

As shown in Mun (2014), the Korean necessity modal *-eya ha-* (“must”) in combination with an embedded past tense expresses the same kind of counterfactuality with respect to its complement that Spanish necessity SCCs do.

- (131) *Chelswu-nun swukcey-lul hay-ss-eya ha-n-ta.*
 Ch-Top homework-Acc do-Past-must-Pres-Decl
 “Chelswu should have done his homework (but he didn’t).”

(Adapted from Mun, 2014: 371)

Furthermore, the fact that both modal and embedded verb inflect for tense suggests that Korean modal constructions should be given a biclausal analysis. This hypothesis is reinforced by the possibility to have temporal adverbs that modify the embedded event independently from the modal verb itself:

- (132) *Chelswu-nun Mary-eykey kkoch-ul nayil cwu-Ø-eya ha-yess-ta.*
 C-Top M-Dat flower-Acc tomorrow give-Pres-must-Past-Decl
 “Chelswu should have given flowers to Mary tomorrow.”

Following with the comparison with Spanish, I find it interesting that in (131) the present morpheme *-n-* modifying the modal allows the construction to have a counterfactual deontic reading. As argued in section 2.3, the Spanish counterpart of the Korean sentence above is ambiguous between an epistemic and a deontic reading where *haber* is interpreted temporally, but not counterfactually.

- (133) *Juan debe haber hecho sus deberes.*
 J must._{Pres} have done his homework
 “Juan must have done his homework (because he passed).” [epistemic reading]
 “Juan must have done his homework (by Monday).” [deontic temporal reading]

Most remarkably, Korean also allows the modal itself to be modified by past morphology, thus creating a construction that is formally identical to Spanish SCCs. This is shown in (134), where the context provided is meant to make the circumstantial interpretation of the modal salient.

- (134) (Context: Mary and I were hiking in the forest. Suddenly a bear starts chasing us. In order to escape... **Mary should have run**, but instead she decided to climb a tree.)

Mary-nun talli-ess-eya ha-yess-ta.
M-Top run-Past-must-Past-Decl
“Mary should have run.”

What I find most striking is that, according to my informant, it seems more felicitous to cancel the counterfactual inference in (134) than in (131). Granted, the context itself in (134) presupposes that Mary did not run. The point is that the same sentence can be used in an alternative context where it is known that Mary did in fact run. Therefore, a better translation of (134) into English might be “Mary had to run”. This is exactly the behavior of the possibility modal in (135), a sentence that is potentially ambiguous between the epistemic and circumstantial readings. But even when the circumstantial interpretation is intended, (135) can be followed by “...and she did” or something to that effect.

- (135) *Mary-nun talli-ess-ul swuiss-ess-ta.*
M-Top run-Past-can-Past-Decl
“Mary could have run” (epistemic and circumstantial readings available)

In conclusion, Korean appears to have a construction where the prejacet of the modal bears past tense and which conveys the same non-cancellable counterfactual meaning as Spanish SCCs (namely, (131)). However, such sentences do not have past tense on the modal. When both the modal and the embedded verb bear past morphology, the whole construction is compatible with continuations that express either the actualization or non-actualization of the prejacet.

2.5.2 Languages that lack SCCs

2.5.2.1 Perfect-less languages: Basque, Hebrew, Palestinian Arabic

In section 1.2, I used evidence from Basque to argue for the particular temporal syntax I follow in this work. In addition, I put forward the hypothesis that Basque does not have a dedicated perfect morpheme analogous to the Spanish *haber*, because the present simple in this language already expresses perfectivity and completion. In the absence of such a head, it follows that SCCs will be impossible to obtain in Basque. This conclusion seems to be correct in the light of example (136), which is ambiguous between the SCC interpretation in (137) and the modal reading with an infinitival prejacet in (138).

- (136) *Jon etorri ahal izan zen.*
J arrive able be 3SgPst

- (137) *Jon pudo haber venido.*
J could.*PstPfv* have arrived
“Jon could have arrived.”

- (138) *Jon pudo venir.*
J could.*PstPfv* arrive
“Jon was able to arrive.”

Further evidence that sentences like (136) do not necessarily convey counterfactuality (and so, that they are not SCCs) is provided by (139), where the second conjunct can only be true if the prejacet in the first conjunct is true as well. Since we did spend all afternoon playing soccer, it must be that Miren did bring the football after all:

- (139) *Mirenek pilota ekarri ahal izan zuen eta arratsalde osoa futboleant aritzen eman genuen.*
M ball bring able be 3SgPst and afternoon all soccer playing
give 2PlPst
“Miren was able to bring the football and we spent all afternoon playing soccer.”

The conclusion I want to propose then is that Basque does not have constructions that lead to the SCC reading because its syntax lacks a perfect projection. Such a structural constraint is probably the most straightforward reason why a language might not have the exact same construction as another one. This appears to be exactly the same

reason behind the absence of SCCs in Hebrew and Palestinian Arabic, which exhibit the same ambiguity as (136):

- (140) Hebrew
Meri yaxla lalexet.
 M can.*Pst* walk
 “Mary was able to walk” / “Mary could have walked.”

- (141) Palestinian Arabic
Meri ?idrat tirmaħ.
 M can.*Pst* run
 “Mary was able to run” / “Mary could have run.”

Nonetheless, as will be shown next, not having a dedicated perfect head is but one possible explanation for the absence of SCCs across languages.

2.5.2.2 French

Comparing the behavior of modal verbs in French and Spanish is very interesting because there are far more differences than might be expected at first. As pointed out by Laca (2012), when the possibility modal with conditional morphology appears above the perfect (i.e. the configuration of a conditional SCC in Spanish) only an epistemic interpretation is available in French:

- (142) *Marie pourrait avoir gagné la course (# mais elle l’a perdue).*
 M can.*Cond* have won the race but she it-have lost
 “Marie possibly/allegedly/reportedly won the race.”

(Laca, 2012: adapted from example [33b])

If one wants to express counterfactuality, the perfect with conditional morphology has to outscope the modal verb in the surface.

- (143) *Marie aurait pu gagné la course (mais elle l’a perdue).*
 M have.*Cond* could won the race but she it-have lost
 “Marie could have won the race.”

(Laca, 2012: adapted from example [33a])

Identical effects were pointed out by Hacquard (2006, 2010) with respect to the *passé composé*. That is, (144) can only be understood epistemically and not with a circumstantial reading.

- (144) *Marie a pu avoir gagné.*
 M has.*PresPfv* could have won
 “Marie might have won.”

This same conclusion holds for the past imperfective configuration. If we consider a context where Mary had the opportunity to visit Tokyo (maybe because she won tickets in a raffle) but she chose to stay at home to save money instead, (145) would not be an appropriate utterance. Instead, (146) must be used.

- (145) *Elle pouvait avoir visité Tokyo (# mais elle a préféré rester chez elle).*
 she could.*PstImpfv* have visited T but she has preferred stay home
 her
 “She might have visited Tokyo (# but she preferred to stay at home).”

- (146) *Elle aurait pu visiter Tokyo, mais elle a préféré rester chez elle.*
 she have.*Cond* could visit T but she has preferred stay home her
 “She could have visited Tokyo, but she preferred to stay home.”

Given this data, it might be concluded that French does not have SCCs because embedded clauses in this language do not contain a PerfP projection. Under this hypothesis, (142) and (144) can only be interpreted with the modal verb being located above the tense projections, in the region Cinque (1999) reserved for epistemic verbs. Nevertheless, a wider look at the data suggests that this would be a hasty conclusion. First, as Laca (2012) points out, the necessity modal *devoir* (“must”) with conditional morphology can be understood as expressing counterfactuality while preceding the perfect. As the author points out, this is probably not the preferred configuration, but it is still acceptable.⁴¹

- (147) *Marie devrait avoir déjà mis son adversaire hors-jeu. Je ne comprends pas pourquoi elle traîne.*
 M must.*Cond* have already put her rival off-game I NE understand
 not why she waits
 “Marie should have already defeated her rival. I don’t understand what she’s waiting for.”

(Laca, 2012: adapted from example [35a])

⁴¹ A more natural way of expressing this would be with the configuration in (143); that is, with the perfect with conditional morphology outscoping the modal.

Second, as my own elicitations from native speakers have confirmed, when the necessity modal has past imperfective morphology, the perfect embedded below it can be given a temporal interpretation. This is identical to the THC reading discussed in the case of Spanish in section 2.3.1.2.

- (148) (Context: Yesterday the rules said that you had to have bought the tickets last week in order to go through the main entrance. Today the organizers changed the regulations, so that anybody can use that entrance.)

Hier, tu devais avoir acheté tes billets la semaine dernière
 yesterday you must._{PstImpfv} have bought your tickets the week before
pour entrer par ici. Aujourd'hui, ce n'est plus important.
 to enter through here now this not-is more important

“Yesterday, you had to have bought your tickets the week before in order to enter through here. Today, that doesn’t matter anymore.”

Therefore, a better hypothesis would be that there is no difference between French and Spanish as far as the size of their embedded clauses is concerned. Furthermore, for reasons that go beyond the scope of this work, it appears that the construction where the French perfect *avoir* follows a circumstantial modal verb can only receive a THC interpretation and not a SCC one. This contrasts with the Spanish perfect which, as shown throughout this chapter, allows for both readings. This is not to say that the French past tense can *never* behave modally, because it is used in counterfactual conditional constructions. But, it just so happens that it cannot receive that interpretation in this embedded position. The ultimate reason why this is the case will have to await further research.

2.6 Conclusion

This chapter began with a number of puzzles regarding what appeared to be a mismatch between the surface syntax and semantic interpretation of some Spanish structures I named SCC. I pointed out that the syntactic hallmark of these constructions is the presence of a circumstantial modal (with past indicative or conditional morphology) that linearly precedes the perfect marker *haber*. Semantically, the interesting aspect of

these sentences is that they express a counterfactual meaning that appears to behave in a way similar to a semantic presupposition.

After careful exposition, I argued that there was actually no mismatch and that each head makes its semantic contribution exactly where it appears on the surface. Drawing from Iatridou's (2000) proposal, I suggested that it was the embedded perfect marker that brought in counterfactuality as part of its non-at-issue contribution. Moreover, I justified that the variation on the morphology that the modal bore (past perfective, past imperfective, conditional) resulted from the different anchoring times of the conversational backgrounds it merged with.

Evaluated more globally, the main contribution of this chapter is that it proposes an analysis of a kind of non-cancellable counterfactuality derived through purely conventional means. This is different from previous approaches in the literature, which view this sort of meaning as pragmatically triggered. Next, Chapter 3 provides additional support for my account of SCCs by showing a performative Spanish construction that exhibits the same non-cancellable inference.

Chapter 3

RETROSPECTIVE IMPERATIVES

3.1 Introduction: Comparison between Retrospective Imperatives and SCCs

Let's consider the following scenario. A friend of mine arrived late at a concert and, because of that, he had to watch it from a far location with very poor sound and visibility. After the show, we meet outside the concert hall and he complains to me about how bad his seat was. Even though I feel for him, I still think that he should have got there earlier and I utter (149).

- (149) *¡Haber llegado a tiempo!*
have arrived at time
“You should have arrived on time!”

It is sentences like (149) that I will refer to as retrospective imperatives (RIs). Structurally, these constructions look like the prejacent of a SCC. As far as their function is concerned, they serve the same purpose as a conditional SCC performatively used. Interestingly, this is in spite of RIs showing no overt modal morphology. Hence, given the same context as above, I might as well have uttered (150) with the same purpose as (149).

- (150) *¡Deberías haber llegado a tiempo!*
must.*Cond* have arrived at time
“You should have arrived on time!”

Something that I should put forward right away is that the counterfactual event referred to by RIs need not be necessarily anchored in the past. Exactly as with conditional SCCs, whose prejacent can be located at any point in time (cf. section 2.3.2), all kinds of temporal modifiers can be used in RIs. In this sense, the use of the term *retrospective* in RIs might be slightly misleading. However, my describing these kinds of constructions by

using that term follows from the fact that they can indeed refer to a past event (unlike regular imperatives, which have to be forward-shifted). In section 3.5 I elaborate on this point and provide evidence that the temporal adverbials in sentences like (151) do modify the event referred to and not the temporal perspective of the covert modal, for example.

- (151) *¡Haber llegado a tiempo ayer/hoy/mañana!*
 have arrived at time yesterday/today/tomorrow
 “You should have arrived on time yesterday/today/tomorrow!”

Continuing with the similarities between RIs and conditional SCCs, the former express the same ranking of alternatives that SCCs do, while conventionally expressing that the event denoted by the main predicate did not take place in actuality. In other words, both (149) and (150) assert that, among all the possible worlds, the best ones are those where you arrive on time. At the same time, they presuppose that arriving on time is not something that took place in the actual world. Trying to cancel this inference in RIs is just as infelicitous as I showed it to be in the case of SCCs.

- (152) *¡Haber llegado a tiempo! # Y sé que lo hiciste.*
 have arrived at time and know that CL._{3Sg} did
 “You should have arrived on time! # And I know that you did.”

In light of these similarities between RIs and SCCs, it might be tempting to suggest a modal ellipsis account whereby RIs are analyzed as having a necessity modal underlyingly that gets deleted on the surface. However, counterexamples to this hypothesis are not hard to find. First, as Vicente (2013) says, auxiliary ellipsis is typically restricted to embedded clauses, but RIs are a root phenomenon. Moreover, as noted also by Bosque (1980), auxiliary or VP-ellipsis are not processes that generate grammatical sentences in Spanish, so it is mysterious why they would be allowed exclusively in the case of RIs.

- (153) **Jesús está mintiendo y Rafael está ~~mintiendo~~ también.*
 J is lying and R is lying too
 Intended: “Jesús is lying and Rafael is too.”

- (154) **Jesús ha llegado e Irene ha ~~llegado~~ también.*
 J has arrived and I has arrived too
 Intended: “Jesús has arrived and Irene has too.”

What is more, it is not that this specific ellipsis process would target *modals* in general, but it would have to apply exclusively to those that have a circumstantial necessity reading and are conjugated in the conditional. Vicente (2013) shows that using a RI with the intention of expressing epistemic necessity is infelicitous.

- (155) *Has llegado a tiempo. Debes haber cogido el metro.*
 have._{2Sg} arrived to time must._{Pres} have taken the subway
 “You have arrived on time. You must have taken the subway.”

- (156) *Has llegado a tiempo. # Haber cogido el metro.*
 have._{2Sg} arrived to time have taken the subway
 “You have arrived on time. # You should have taken the subway!”

(It can’t mean: “You have arrived on time. You must have taken the subway.”)

(Adapted from Vicente, 2013: example [83])

Given this evidence, I believe that a modal deletion analysis of RIs is not justified. In the next section I review evidence in favor of considering RIs a kind of imperative construction (which I already took for granted by using the label retrospective *imperatives*). Arguments against the most developed alternative analysis that has been proposed (namely, Biezma’s (2011) interpretation of RIs as reduced optative clauses) will be put forward as well.

3.2 Arguments for an imperative analysis of RIs

Both Bosque (1980) and Vicente (2013) present very compelling evidence for treating RIs as a sub-kind of imperatives. In what follows, I summarize the arguments that Vicente gives in his work.

3.2.1 Lack of embeddability

The first similarity between regular imperatives and RIs is that both constructions resist embedding.⁴² Here, I exemplify this with a verb of saying.

⁴² Except after adverbs like *así que* or *por lo tanto* (“so” or “therefore”): cf. Vicente (2013) example (8). But so can regular imperatives.

- (157) **Ana dijo que vete de aquí.* [Imperative]
 A said that go.*Imp* of here
 Intended: “Ana said that you must leave.”
- (158) **Ana dijo que haberte ido de aquí.* [RI]
 A said that have-CL.*2Sg* gone of here
 Intended: “Ana said that you should have left.”

3.2.2 Restriction on addressees

Second, the potential addressees of imperatives and RIs are similarly restricted. The Spanish imperative form can only be conjugated in the second person (singular or plural), but the speech act of commanding more generally speaking can be directed to specific third person addressees using the subjunctive and to generic addressees using the infinitive. First person targets on the other hand are completely impossible, even with the suppletive subjunctive form.

- (159) *¡Sal (tú) a tiempo!* [2Sg subject]
 leave.*Imp* you at time
 “Leave on time!”
- (160) *¡Que salga (él) a tiempo!* [3Sg specific subject]
 that leave.*Sbjv* he at time
 “I order him to leave on time.”
- (161) *¡Coger el metro!* [3Sg generic subject]
 take.*Inf* the subway
 “Someone take the subway!”

(Vicente, 2013: example [11])

- (162) *¡*Sal/ *Que salga yo a tiempo!* [1Sg subject]
 leave.*Imp* that leave.*Sbjv* I at time

RIs have the exact same range of possible addressees. The only difference is that, because *haber* is an infinitive, there is no difference in conjugation between the second and third persons.

- (163) *¡Haber salido tú/él a tiempo!* [2Sg/3Sg subject]
 have left you/he at time
 “You/He should have left on time!”

- (164) (Context: A boss shouting to his employees at the office)

¡Habérme avisado antes! [3Sg generic subject]

have-CL.1Sg warm before

“Somebody should have warned me beforehand!”

- (165) **¡Haber salido yo/nosotros a tiempo!* [1Sg/Pl subject]

have left I/we at time

Intended: “I/We should have left on time!”

Still, a critic might say that imperatives can only target 2nd person addressees strictly speaking, because whenever a command is directed to a different audience, imperative morphology cannot be used. This is certainly different from the behavior of RIs which, as shown in (163), can be directed to both 2Sg and 3Sg addressees with no difference in form. Such a narrow view of what makes an imperative might cast some doubt on an analysis that views RIs as a kind of imperative.

I believe that the source of this possible criticism is rooted on the disagreement regarding the boundaries between verbal mood, sentence mood, and clause types (cf. Portner, forthcoming). Hence, I believe this to be more of a definitional issue than a deeper, conceptual one. To give but a quick counterargument to the claim above, it would be far-fetched to maintain that negative imperatives are not imperatives because they do not show the morphology that we typically call *imperative* in Spanish, but rather the subjunctive.

- (166) *¡No vengas!*

not come.2SgSbjv

“Don’t come!”

More generally, in this chapter I will use the term *imperative* to refer to a performative clause type whereby the speaker uses the event denoted in his utterance to establish a ranking of worlds based on whether said event is realized or not.⁴³ It is easy to see that, understood in this way, the precise morphology of the verb is not a very reliable indicator of what makes an imperative. After all, I have shown that the verb in an imperative

⁴³ This definition is purposely vague enough to cover not only sentences like exhortatives and promissives but also the disinterested advice examples mentioned in Condoravdi and Lauer (2012).

sentence can show imperative morphology (e.g. (159)), subjunctive (e.g. (166)), infinitive (e.g. (161)), or even indicative, as the following performative example shows:

- (167) *¡Tienes que saltar ya!* (\approx *¡Salta ya!*)
have._{2SgPresIndic} that jump already jump._{2SgImp} already
“You have to jump now!” \approx “Jump now!”

Given that I have ruled out verbal morphology as a definite marker of what constitutes an imperative sentence, I have to disagree with the argument that RIs cannot be imperatives because they are conjugated in the infinitive.

A related question (yet orthogonal to this main issue here) one might ask is what is the reason behind the extremely limited imperative verbal paradigm, which only exhibits forms for the second person in Spanish. A possible speculative explanation might be following⁴⁴. Typically, standard imperatives either serve as an incitement to action towards the addressee or express a preference for some (yet unknown) state of affairs to hold.⁴⁵ What these uses have in common is the requirement for an addressee to be present (physically or figuratively) in order for the imperative to be successfully uttered. This might be the reason behind the obligatoriness of 2nd person addressees in imperative constructions.

Conversely, because the prejaçant in RIs cannot be accomplished (its counterfactuality is presupposed), these sentences might not need for the addressee to be present in order to be grammatical. The fact that RIs normally express a notion of reproach (instead of incitement to action) and that they refer to a state of affairs that cannot hold in the actual world might result in this strict restriction on the kinds of possible addressees seen in regular imperatives to be lifted. After all, one does not need somebody to be present in order to complain about them.

⁴⁴ Suggested by Satoshi Tomioka (p.c.) on 03/14/2016.

⁴⁵ As will be discussed next, in Condoravdi and Lauer’s (2012) terminology, the first category gathers directives, permissions/invitations, and disinterested advice uses. The second category covers so-called absent wishes.

3.2.3 Speech act variability

Continuing with the uses that imperatives can have, it is well-known that these constructions can be employed to express a variety of speech acts. Condoravdi and Lauer (2012) suggest four possible groupings: directives, wishes, permissions and invitations, and disinterested advice. The group of directives includes all those uses where imperatives are uttered to elicit an action from the addressee. Most prototypically, this translates into commands, but also requests, warnings, or advice. The latter two cases are exemplified below in the form of RIs:

- (168) *¡Haberme dicho todo eso a la cara, gilipollas!* [warning/threat]
have-CL._{1sg} said all that to the face asshole
“You should have said that in front of me, asshole!”

(Adapted from Vicente, 2013: example [23])

- (169) *¡Haberme pedido ayuda!* [advice]
have-CL._{1sg} asked help
“You should have asked me for help!”

The second kind of speech act that imperatives and RIs can be used to express is wishing. In the example below, the context is perfectly compatible with the speaker genuinely caring about the outcome of the match (maybe the addressee is his daughter) but, as Condoravdi and Lauer (2012: 39) say “these uses [...] occur precisely in contexts in which it is taken for granted that the addressee (if there is one) cannot do anything about the realization of the content of the imperative”. This condition holds in (170) because the game is understood to have finished already.

- (170) *¡Haber marcado dos goles más y habríais ganado!* [wish]
have scored two goals more and have-*Cond* won
“You should have scored two more goals and you would have won!”

The third group includes permissions and invitations, that is, cases where the “speaker does not mind something happening” (Condoravdi and Lauer, 2012: 39). I believe that invitations can be borderline with the directive cases because, when you invite someone, you kind of want them to accept (even though that need not follow in all cases: you might just be trying to save face and be polite). For that reason, I think the example below, which illustrates an offer, provides a better case for this use.

- (171) (Context: You live abroad. A friend from home, who you knew was visiting your city, just told you by email that he had a bad experience at the hotel he was staying. You didn't know about the problem until now.)

¡Habermé llamado! No me habría importado ayudarte. [offer]
 have-CL.1Sg called not CL.1Sg have.Cond matter help-CL.2Sg
 “You should have called me! I wouldn't have minded helping you.”

The fourth and last kind of speech act imperatives can convey is disinterested advice. In this use, the speaker has no interest in the addressee carrying out the action expressed. This is captured below, where the speaker could not care less about her friend's story: she just wants her to shut up.

- (172) (Context: A friend is bothering you with the events last night. She didn't want to go out, but her friends dragged her to a party which wasn't very good. She keeps going on about how bad the party was until you say:)

¡Pues haberte quedado en casa, hija! Pero no me des más
 so have-CL.2Sg stayed in home daughter but not CL.1Sg give.Imp more
la lata. [disinterested advice]
 the can
 “You should have stayed home then! But stop annoying me.”

As has just been shown, RIs can appear in the same kinds of contexts as regular imperatives and can be used to convey the same range of speech acts. Actually, this parallelism goes a step further. Portner (2007) shows that the kind of speech act performed by a sequence of imperatives has to remain constant in the immediate discourse. Thus, if the first sentence in (173) is understood as a command by your boss, it is distinctively odd to interpret the second sentence as a suggestion. Instead, either both sentences are interpreted as commands (which makes the boss look like a control-freak), or both are interpreted as suggestions. But a mix-and-match reading seems impossible.

- (173) Be there two hours in advance! Then have a bite to eat!

(Adapted from Portner, 2007: 367)

As it turns out, RIs are subject to the same kind of restrictions. In the following example, which can be read with respect to the same context above, either both sentences are interpreted as commands, or both are taken as suggestions.

- (174) *¡Haber llegado con dos horas de antelación! ¡Quizás haber tomado algo!*
 have arrived with two hours of advance perhaps have taken something
 “You should have arrived two hours in advance! Then perhaps you should have had a snack!”

(Adapted from Vicente, 2013: example [28])

3.2.4 Epistemic uncertainty

Moving on, the fifth similarity between regular imperatives and RIs has to do with Kaufmann’s (2012: 156) Epistemic Uncertainty Constraint (EUC). According to this principle, uttering an imperative is only felicitous if the speaker believes it possible that the addressee might carry out his command/request. The distinct oddity of the following sentences supports this point:

- (175) # *¡Coge el metro! Pero no vas a cogerlo.*
 take the subway but not go to take-CL._{3Sg}
 “Take the subway! But you’re not going to take it.”

(Adapted from Vicente, 2013: example [30b])

- (176) # *¡Haber cogido el metro! Pero ya sabía que no ibas a cogerlo!*
 have taken the subway but already knew that not go to take-CL._{3Sg}
 “You should have taken the subway! But I already knew you were not going to.”

(Adapted from Vicente, 2013: example [31])

However, I would like to point out that these examples become much more acceptable provided that the imperative/RI is uttered after the declarative part, as below. These sentences strike me as the classical way in which mothers would address a rebellious teenage son or daughter, hoping that they will do something the mother has little faith they will actually carry out. In any case, I still think that these cases respect the EUC in that one would not utter them unless they expected to make an impact in the decision-making of the addressee (even if that possibility is actually a very remote one).

- (177) *Sé que nunca me haces caso, pero aun así te lo tengo que*
 know that never CL._{1Sg} make case but even so CL._{2Sg} CL._{3Sg} have that
repetir: ¡coge el metro y así llegarás a tiempo, anda!
 repeat take the subway and so arrive at time come-on
 “I know you never listen to what I tell you, but I have to say it anyway: come on, take the subway and you’ll be on time!”

- (178) *Sabía que no me ibas a hacer caso pero, ¡haber tomado el metro, hombre!*
 knew that not me go to make case but have taken the subway man
 “I knew that you were not going to listen to me but, you should have taken the subway!”

3.2.5 Lack of linguistic antecedents

Continuing with the discourse properties of RIs, Vicente (2013) claims that they have a tendency not to be available as discourse initial utterances. This is a weaker statement than that espoused by Bosque (1980) and Biezma (2011) who claim that they *always* need linguistic antecedents. This contrasts with regular imperatives, which can be easily uttered discourse-initially. My native-speaker intuitions align more with Vicente’s views, but I would go further in claiming that RIs might require *no* linguistic antecedents provided that the extra-linguistic context is rich enough. Even the cases that he thought to be infelicitous (like (179)) are fine for me:

- (179) (Context: You are about to make your first soufflé and you would like John (soufflé expert) to help you, but you think he will be away until next Tuesday. You decide not to wait and the result is a fiasco. Sarah, who knows all this, comes into the kitchen and sees the obviously unsuccessful soufflé. Before you can say anything, she tells you:)

¡Haber hecho el soufflé el martes!
 have made the soufflé the Tuesday
 “You should have made your soufflé on Tuesday!”

(Adapted from Vicente, 2013: example [50])

3.2.6 Need for agentive addressees

Another common characteristic between imperatives and RIs that Vicente points out is the need for agentive addressees:

“[I]f we utter an imperative ϕ !, the felicity of the utterance usually requires that the addressee be capable of deliberately performing actions that cause ϕ to happen. If we build an imperative on a predicate that prototypically takes a theme or an experiencer subject, then that predicate has to be coerced into an agentive reading”

(Vicente, 2013: 12).

Actually, as Condoravdi & Lauer (2012) highlight, imperatives can be felicitously used even when the potential addressee cannot do anything to satisfy the imperative. They refer to these examples as *absent wishes*, an example of which is (180). Fortunately, RIs can also be used in such contexts (e.g. (181)), so the parallel between regular imperatives and RIs is not broken in this case either.

(180) (Context: A girl waiting for her blind date, saying to herself:)

¡Sé alto!
be tall
“(Please) be tall!”

(181) (Context: A friend is complaining about how he would have liked to play in the NBA. I say:)

¡Haber sido alto!
have been tall
“You should have been tall!”

3.2.7 Lack of truth values

To conclude this overview of the parallels between RIs and regular imperatives, I would like to talk about the property of imperatives that I have most blatantly ignored until now: their lack of truth values. As (182) shows, imperatives cannot be challenged as false. This observation prompted analyses that either propose that imperatives do not denote propositions (Portner, 2004, 2007); or that, while denoting them, their truth or falsity is not accessible (Kaufmann, 2012).

(182) A. *¡Dame una aspirina!*
give.*Imp* an aspirin
“Give me an aspirin!”

B. # *¡Mentira!* / # *¡Eso no es cierto: sabes que no te la vas a*
lie that not is true know that not CL.2*Sg* CL.3*Sg* go to
tomar!
take
“You’re lying!” / # “That’s not true: you know you won’t take it.”

(Example inspired by Condoravdi and Lauer, 2012: 43)

As far as this property is concerned, RIs might seem to behave somewhat differently from regular imperatives, but I believe this to be just a false impression. Bosque (1980), Biezma (2011), and Vicente (2013) all seem to agree that RIs can also not be challenged as lies, but I find these judgments not as clear cut as they take them to be. In my view, challenging the speaker of (183) as being insincere is perfectly felicitous.

(183) (Context: *A* had a bad headache all day, which made him complain a lot and be moody. This prevented *B* from enjoying their sightseeing and she is upset at *A* for ruining her day. *A* is strongly against taking any kind of medicine and he always tries for aches to go away by themselves. After *B* has complained a few times about their wasted day, *A* gets tired of it and retorts:)

A. *Bueno, si tanto te molestaba ¡haberme dado una aspirina!*
 well if so CL._{2Sg} annoy have-CL._{1Sg} give an aspirin

“Well, if you were so annoyed, you should have given me an aspirin!”

B. *¡Estás mintiendo! Bien sabes que odias que te ofrezca medicinas.*
 are lying well know that hate that CL._{2Sg} offer medicines

“You’re lying! You know full well that you hate it when I offer you medicine!”

If my judgment is accurate, this would show at the very least that Kaufmann’s (2012) approach is correct in not predicting the automatic sincerity of imperatives, something that Condoravdi & Lauer (2012: 53) criticized her account for. Nonetheless, this feels more like a challenge on the part of *B* that *A* is *using* the RI truthfully. That is, that while *A* actually believes otherwise, he is pretending to make *B* believe that he really wanted her to give him an aspirin. This would correspond to an insincere use of the RI (a cheap conversational move that somebody might want to make to try to win an argument), but it would not show that RIs have truth-conditions.

Arguably, at least part of the problem with pushing the idea that imperatives have truth-conditions is that, since they most typically express the desires of the speaker, it is just odd for the addressee to claim that the speaker is talking falsely. After all, who is going to know better than the speaker what she herself wants! This issue is exemplified by pure declarative sentences involving a bouletic modal too.

(184) A. I want a truck for Christmas.

B. ?No, you don't!

Still, I believe that examples like (184) get much better when the *challenger* provides evidence as to the reasons that made him reject the original assertion. In these cases, it is the denotation of *A*'s original assertion (the particular preference ordering) that is being claimed to be false.

(185) A. I want a truck for Christmas.

B. No, you don't! I know that you are a convinced environmentalist and trucks burn so much gas!

A. Yeah, you're right. I wouldn't really want that.

Going back to imperatives, it just does not seem possible to reject a RI in the same manner. In (186) below, *B*. unsuccessfully tries to argue that the original ranking of worlds on which the assertion of the RI was based was actually wrong:

(186) (Context: A relative of *A* and *B* had an accident and is currently at the hospital.)

A. ¡*Habermé avisado!*
have-CL.1_{Sg} told

“You should have told me!”

B. # ¡*Mentira! Si te hubiera avisado, habrías sufrido mucho y lo*
lie if CL.2_{Sg} have told have.*Cond* suffer much and CL.3_{Sg}
habrías pasado mucho peor que no sabiendo nada.
have.*Cond* passed much worse than not knowing nothing

“That’s a lie! If I had told you, you would have suffered a lot and you would have had a much worse time than not knowing about it.”

A. *Sí, tienes razón. Lo prefiero así.*
yes have reason CL.3_{Sg} prefer this-way

“Yes, you’re right. It’s better this way.”

This is exactly the behavior that would be expected from RIs if they are indeed imperative clauses whose propositional contribution (the ranking of worlds) remains inaccessible along the lines of Kaufmann’s (2012) proposal. Therefore the parallel between RIs and imperatives is not broken in this case either.

In the next section, I present some of Biezma’s (2011) arguments against considering RIs a kind of imperatives. In her view, these constructions should be considered reduced optative clauses instead. However, I will also try to show that most of her complaints do not hold upon deeper scrutiny.

3.3 Arguments against an imperative analysis (Biezma 2011)

The first of Biezma’s (2011) arguments against classifying RIs as imperatives is that they do not show imperative morphology. Instead, I have claimed that the hallmark of these constructions is the presence of the perfect marker *haber* in its infinitival form. From a morphological perspective, this seems like the most straightforward criticism towards an imperative analysis. I already talked extensively on this matter in the previous section though, and concluded that I do not think that the specific verbal conjugation can be a very reliable indicator for *imperativehood*.

In any case, it should be remembered that even regular imperatives can appear in the infinitive when directed to a generic third person addressee. This was already as exemplified in (161) and I provide an additional illustration here:

- (187) *¡Cerrar la puerta!*
 close.*Inf* the door
 “Someone close the door!”

So the issue is then not that *haber* is in its infinitival form in RIs but rather, that this perfect marker *cannot* appear in the imperative. Based on speakers’ intuitions and corpus data, Biezma (2011) argues that the Spanish *haber* does not have an imperative form and that trying to conjugate it in the 2nd person plural is ungrammatical, unlike the regular imperative.

- (188) *¡Traed el libro!*
 bring.*2PlImp* the book
 “Bring the book (you guys)!”

- (189) **¡Habad traído el libro!*
 have.*2PlImp* brought the book
 Intended: “You guys should have brought the book!”

A possible explanation could be that *haber* just lacks such a form in Spanish. That is, this could be analyzed as a gap in the lexicon. As I elaborate below, certain Spanish verbs like *saber* (“know”) simply do not have an imperative form. It is true that in these cases where the gap affects a lexical element the infinitival form does not replace the putative imperative conjugation of the verb and the command remains ineffable. In other words, *saber* (“to know”) cannot be used instead of a hypothetical **¡sabe!* (“know it!”).

However, one might hypothesize that the fact that *haber* is a functional head, together with its immense productivity, might have allowed for Spanish to find a way to fill that gap in the lexicon. Possible evidence for this could be the dialectal differences between RIs used in Spain and Latin America, which might illustrate the different strategies that could have been used in order to salvage such a construction. The RIs presented so far (and which I will keep referring to) use the infinitival *haber* and they are the ones typically uttered in Spain. On the other hand, Latin American speakers of Spanish normally resort to the subjunctive form of the perfect instead.

- (190) *¡Hubieras traído el libro!*
 have._{2SgSbjv} brought the book
 “You should have brought the book!”

Incidentally, the use of the subjunctive in Latin American RIs might seem to support Biezma’s (2011) analysis of these constructions as reduced optative clauses, given that it is this precise mood that is used in the reduced optatives that she provides as paraphrases of RIs:

- (191) *Si tan solo hubieras traído el libro...*
 if so only have._{2SgSbjv} brought the book
 “If only you had brought the book...”

But we also saw above that negative imperatives in Spanish use subjunctive mood on the verb, yet it would be rather unusual to suggest that they are not imperatives. Moreover, and regarding the optative form in (191), it should be emphasized that there is nothing special about RIs that allows them to be paraphrased as the antecedent of a conditional. After all, it is well known that this is a general property of imperatives across the board (Russell, 2007; Kaufmann, 2012; von Fintel and Iatridou, 2015; a.o.). So-called “conditional conjunction” sentences are a good example of this:

- (192) Arrive early and you will be given a prize.
 (≈ If you arrive early, you will be given a prize)
- (193) *¡Haber llegado pronto y te habrían dado un premio!*
 have arrived early and CL._{2Sg} have._{Cond} given a prize
 “If you had arrived early, they would have given you a prize.”

Continuing with the relationship between infinitival marking and imperatives sentences, the second complaint that Biezma (2011) has against considering RIs imperatives is that, whereas the latter can have a “default 3rd person interpretation that is not specified for number” (Biezma, 2011: 17), she claims that RIs do not. I already mentioned this in (187) above, but I will emphasize this point with another example in context. In (194), the idea is that the priest does not have any particular person in mind who he wants to close the windows. Rather, he will be satisfied as long as the windows get closed regardless of who carries out the action.

- (194) (Context: Old country home. Summer time. A group of novices is spending the weekend there, doing spiritual exercises. The old house has a lot of windows, and being summer, they are all open. Suddenly, it begins to rain heavily. The priest in charge notices it while talking to the bishop in his study and yells so he can be heard outside:)

¡Cerrar las ventanas!
 close._{Inf} the windows
 “Close the windows!”

(Adapted from Biezma, 2011: example [28])

Contrary to what Biezma claims, I showed in the previous section that such generic addressees are available in RIs. This is illustrated again in the example below, where the speaker does not want any particular housemate to open the door: he just wants for the postman to be attended.

- (195) (Context: I live in a house with 4 other housemates. Upon coming home in the evening they tell me that the postman knocked on the door but that nobody came out of their rooms to open the door. I’m waiting for a package so I get a bit upset:)

¡Haberle abierto la puerta!
 have-CL._{3sg} opened the door
 “Somebody should have opened the door!”

The third criticism of the imperative analysis is that, according to Biezma (2011), RIs are compatible with stative predicates but regular imperatives are not. Unfortunately, this is just untrue. In order to prove her point, she gives an example with the verb *saber* (“know”), which is ungrammatical in the imperative but not in the RI configuration.

(196) *¡Haberlo sabido antes!*
 have-CL._{3sg} known before
 “You should have known it earlier!”

(197) **¡Sábelo!*
 know-CL._{3sg}
 Intended: “Know it!”

(Adapted from Biezma, 2011: examples [29] and [30])

In order to prove her point, however, she just happens to have picked a verb (i.e. “know”) that does not seem to have an imperative form in Spanish. Hence, I believe this should be seen more as a gap in the lexicon than as a genuine constraint against stative imperatives. Actually, there are plenty of other stative verbs that do have an imperative form. Below I provide examples with arguably the most stative Spanish verbs: *ser* and *estar* (“to be”).

(198) *¡Estate en la estación 1 hora antes de la salida!*
 be._{Imp} in the station 1 hour before of the exit
 “Be at the station 1 hour before the departure!”

(180) (Context: A girl waiting for her blind date, saying to herself:)

¡Sé alto!
 be tall
 “(Please) be tall!”

Next, Biezma (2011) considers a use of RIs where they are uttered sarcastically. She claims that, in example (199) below, one could not have uttered “an equivalent imperative in the past [because] it is not possible to order to someone to born (*sic.*) in

a certain way (Biezma, 2011: 18). While I agree with her that the regular imperative counterpart of the RI in (199) would make for a very strange order, I do not fully follow her argumentation here. The difference between regular imperatives and RIs is that the latter *can* be interpreted with respect to the past, but regular imperatives are future-oriented. So it makes sense that imperatives cannot be used to command or suggest that somebody should have done something differently in the past.

(199) John: I have so much work to do and nobody helps me, my boss is very demanding..., life is so hard!

Izaskun: *¡Haber nacido patata!*
have born potato

“You should have been born a potato!”

(Biezma, 2011: example [32])

The fifth property of RIs that Biezma points out is that, according to her, these sentences can only be used as replies because they need some linguistic/contextual cue to be felicitously used. I already pointed out when discussing example (179) that I disagree with this observation and that RIs are perfectly fine for me in such situations, so I will not spend more time on this issue.

Towards the middle of her overview of the characteristics of RIs, Biezma presents some experimental results that are meant to show how these constructions can only be uttered provided that they are in line with the desires of the addressee. In other words, that for a speaker to be able to use a RI felicitously, she has to take into account the desires of the addressee and her utterance cannot go against them. Nonetheless, I believe that the results of her experiment show that RIs can indeed be connected to desires, but they do not show that they *have to* be. Examples (171-172) (repeated below) illustrate this. First, the offer in (171) can be put forward while assuming that the addressee did not contact his friend because he did not want to bother him. Second, the disinterested advice in (172) can be uttered even when it is not clear what the addressee wanted, or even if she held contradictory wishes (wanting to stay home, and wanting to go out at the same time).

- (171) (Context: You live abroad. A friend from home, who you knew was visiting your city, just told you by email that he had a bad experience at the hotel he was staying. You didn't know about the problem until now.)

¡Haberme llamado! No me habría importado ayudarte. [offer]
 have-CL._{1Sg} called not CL._{1Sg} have-*Cond* matter help-CL._{2Sg}
 “You should have called me! I wouldn't have mind helping you.”

- (172) (Context: A friend is bothering you with the events last night. She didn't want to go out, but her friends dragged her to a party which wasn't very good. She keeps going on about how bad the party was until you say:)

¡Pues haberte quedado en casa, hija! Pero no me des más
 so have-CL._{2Sg} stayed in home daughter but not CL._{1Sg} give-*Imp* more
la lata. [disinterested advice]
 the can
 “You should have stayed home then! But stop annoying me.”

The seventh issue brought up is that, in the author's view, for RIs to be felicitous they have to refer to “the weakest alternative that would have made X's desires true” (Biezma, 2011: 23). This constraint, she claims, does not apply in the case of regular imperatives. She provides the following examples in order to support her argumentation.

- (200) (Context: There are many taxi companies in the city, and they only differ with respect to the color of their cars (they all have the same speed/efficiency record). You did not take a taxi, and you are late for a meeting. You are now apologizing to John:)

You: I am sorry I am late.

John₁: *¡Haber tomado un taxi!*
 have taken a taxi
 “You should have taken a taxi!”

John₂: *# ¡Haber tomado un taxi rojo!*
 have taken a taxi red
 “You should have taken a red taxi!”

(201) (Context: You are at risk of being late for a meeting on the other side of the city and your officemate John advises you:)

John₁: *¡Toma un taxi!*
take a taxi
“Take a taxi!”

John₂: *¡Toma un taxi rojo! Pero asegúrate de que sea rojo, esos son más bonitos.*
take a taxi red but ensure of that is_{subj} red those are more pretty
“Take a red cab! But make sure it’s red, those are prettier.”

(Adapted from Biezma, 2011: examples [40] and [41])

In all fairness, I am not completely sure what these examples are meant to show. The context in (200) already makes it clear that the color of the taxi makes no difference whatsoever as far as speed is concerned, so it is naturally understood as superfluous information. Conversely, if red taxis are known to be faster than the rest, John’s second utterance would have been perfectly acceptable.

Likewise, John’s second utterance option in (201) is only felicitous because the reason for preferring a red taxi is given immediately after the imperative. In the absence of such a reason, the imperative would be judged just as odd as its RI counterpart in (200). Actually, this very utterance appears borderline infelicitous to me in that, given a context where what matters is speed, John’s comment regarding the aesthetics of red taxis seems rather irrelevant. In any case, this alleged requirement for RIs to express the weakest possible alternative does not seem to hold any more than it does for regular imperatives: both constructions have to follow from the context in which they are used.

Lastly, Biezma (2011) claims that RIs “are pretty rude” (p. 24). Again, exactly as happened with her assertion that RIs have to take into account the desires of the addressee, I believe that RIs *can* be rude but they *need not* be. In my opinion, the offer to help in (171) above illustrates this very clearly.

(171) (Context: You live abroad. A friend from home, who you knew was visiting your city, just told you by email that he had a bad experience at the hotel he was staying. You didn’t know about the problem until now.)

¡Habermé llamado! No me habría importado ayudarte. [offer]
 have-CL._{1Sg} called not CL._{1Sg} have-*Cond* matter help-CL._{2Sg}
 “You should have called me! I wouldn’t have mind helping you.”

In this section, I have tried to refute Biezma’s (2011) arguments against considering RIs to be analogous to regular imperatives that refer to a past event. I showed that all of her criticisms disappeared or became non-issues upon careful consideration. Next, I look at arguments *against* her proposal to consider RIs a kind of reduced optative clause. As I hope will become apparent, the difficulties faced by such an account are much harder to overcome than the alleged problems that an imperative-based analysis did.

3.3.1 Against an optative clause analysis

The first reason against assimilating RIs to optative clauses is a distributional restriction on the latter: whereas RIs can perfectly function as consequents in conditional constructions, optatives cannot.

- (202) a. **Si querías haber llegado a tiempo, ¡si tan sólo hubieras cogido el metro!*
 if wanted have arrived to time if so only have-*Sbjv* taken the subway
 *“If you wanted to have arrived on time, if only you had taken the subway!”
- b. *Si querías haber llegado a tiempo, ¡haber cogido el metro!*
 if wanted have arrived to time have taken the subway
 “If you wanted to have arrived on time, you should have taken the subway!”

(Adapted from Vicente, 2013: example [86])

The behavior of RIs in this case is not at all surprising if they are considered as a subclass of imperatives, which can also be smoothly used as consequents.

- (203) *Si quieres llegar a tiempo, ¡coge el metro!*
 if want arrive to time take the subway
 “If you want to arrive on time, you should take the subway!”

(Adapted from Vicente, 2013: example [87])

There is another interesting point regarding the possibility of imperatives to be restricted by *if*-clauses. In (203), the antecedent tentatively adds to the Common Ground the assumption that the addressee wants to arrive on time. The following imperative is thus evaluated with respect to this preference of the addressee (which need not be a

preference of the speaker). Hence, imperatives do not necessarily have to express the preferences of the speaker in every occasion: the context can be adapted so that the addressee’s desires are taken into account.

This is quite different from optative clauses which, because they are a particular kind of antecedent clause, they are *necessarily* associated with the ranking of preferences of the speaker. It is simply impossible to interpret a reduced optative with respect to the desires/wishes/will of any other conversational participant but its utterer. The impossibility to achieve that through modification by an additional *if*-clause (as attempted in (202a)) overtly illustrates this point. Conversely, as already shown in (202b), RIs pattern with regular imperatives in allowing for them to be uttered with respect to the ranking of preferences of the addressee. In the light of this important difference, it just does not seem promising to assimilate RIs to reduced optatives.

Third, as I have shown in the preceding sections, RIs can express a number of speech acts, including threats and recriminations. Optative clauses on the other hand “are restricted to the expression of wishes and hopes” (Vicente, 2013: 44). Hence, in a context where the speaker bakes some cookies and the addressee eats all of them except one behind the speaker’s back, (205) cannot be an adequate paraphrase of the scolding expressed by (204). The reason is that (205) expresses the genuine wish of the speaker for the addressee to have finished all of the cookies. But this is contrary to the meaning that the context is trying to convey, namely, upset at the thoughtlessness of the addressee.

(204) *¡Haberte comido la última también, tragaldabas!*

have eaten the last too glutton

“Why didn’t you eat the last one too, you pig?”

Lit.: “You should have eaten the last one too, you pig!”

(205) # *¡Si tan sólo te hubieras comido la última también, tragaldabas!*

if so only CL._{2Sg} had._{sbjv} eaten the last too glutton

“If only you had eaten the last one too, you pig!”

(Adapted from Vicente, 2013: examples [88] and [89])

Fourth, I mentioned in section 3.2.2 that RIs (and imperatives in general) cannot be addressed to the first person. On the other hand, reduced optatives can be directed to

any person of the verbal paradigm, including the first singular/plural. This is impossible to accomplish with a RI:

- (206) *¡Si tan sólo me hubiera comprado un coche!*
 if so only CL._{1sg} had._{subjv} bought a car
 “If only I had bought myself a car!”

- (207) *¡Haberme comprado un coche!*
 have-CL._{1sg} bought a car
 “You should have bought me a car!”

(Impossible reading: “I should have bought myself a car!”)

Fifth, and more generally, reduced optatives are subordinate clauses: they constitute the restriction of a covert conditional modal (Vicente, 2013: 47). But I argued above in section 3.2.1, that RIs pattern just like regular imperatives in that they cannot be embedded. Therefore, if one were to classify RIs as reduced optatives, the difference in embeddability between one kind of construction and the other would have to be explained.

Finally, I already showed above that RIs cannot be challenged as lies. Biezma (2011: 88) claims that reduced optative clauses cannot be either, but this does not sound accurate. As the discourse in (208) clearly exemplifies, it is completely natural to claim that a reduced optative is false:

- (208) A. *Si tan solo fuera más alto...*
 if so only were more tall
 “If only I were taller...”
 B. *¡Mentira! Si fueras más alto, nada cambiaría.*
 lie if were more tall nothing change
 “That’s a lie. If you were taller, nothing would change.”

If my judgment is correct, this constitutes a very strong final point against Biezma’s (2011) account, because it appears that while the truth-conditions of RIs are not accessible, those of reduced optative clauses are. Together with all the previous criticism, it just does not seem promising to assimilate RIs to optative clauses.

3.3.2 Interim summary

Throughout this section, I have presented an overview of the two main analyses that have been proposed to account for RIs in Spanish. I tried to argue that RIs are

actually imperative sentences that convey a counterfactual meaning component, based on evidence from Bosque (1980) and Vicente (2013). I then presented some of the criticism that Biezma (2011) put forward against such a proposal, but suggested that the points she brought up do not stand upon careful examination. Finally, I put forward some important inadequacies of Biezma’s own proposal. All in all, I believe to have provided enough compelling evidence to support the conclusion that an analysis of RIs in terms of imperative constructions is better motivated than the reduced optative alternative. Next, I briefly discuss English present perfect imperatives which, despite being superficially similar, are also not analogous to RIs.

3.4 RIs are not present perfect imperatives

Even though the discussion so far should have made my following observation clear, I believe it appropriate to be completely explicit: RIs are not the Spanish counterparts of the present perfect imperatives found in English or German. While formally very similar to RIs in that both constructions have what looks like the perfect marker, this functional head is not used to express counterfactuality in present perfect imperatives, but a purely temporal/resultative meaning. This might be taken as support for the view that when *haber* has a counterfactual meaning in SCCs, it is actually the realization of past tense in a non-finite context.

The pastness contributed by the perfect can be seen in the German imperative below. Here, one might think of a parent who has heard the noise of something falling and cracking, and wishes that his over-active children have not destroyed any more furniture.

- (209) *Bitte hab nicht noch eine Vase zerbrochen!*
 please have.*ImpSg* not PRT a vase broken
 “Please don’t have broken another vase!”

(Kaufmann, 2012: example [74])

In English, these constructions can also be used with a forward-shifted meaning. In (210-211), the role of the perfect is to pick out a salient reference time in the future (“Tuesday” and the more vague “then” respectively) and locate the time of the event in the past from that reference time.

(210) Have completed the assignment before Tuesday!

(211) Please have called me by then!

The aforementioned uses are typical of the perfect (Bhatt and Pancheva, 2005) and there is clearly no trace of the counterfactuality that defines RIs. If one wants to express the meaning conveyed by present perfect imperatives in Spanish, the use of *haber* is not as straightforward. This is because the literal translations below can only be interpreted with a 2nd person *plural* addressee. They are infelicitous if the addressee is singular.

(212) *¡Haber terminado el ejercicio para el martes!* (2Pl add./ # 2Sg add.)
have finished the exercise for the Tuesday
“Have finished the assignment by Tuesday!”

(213) *¡Haberme llamado para entonces!* (2Pl add./ # 2Sg add.)
have-CL.1Sg called for then
“Have called me by then!”

Instead, in order for these sentences to be addressed to a singular 2nd person, the simple imperative forms must be used:

(214) *¡Termina el ejercicio para el martes!* (# 2Pl add./ 2Sg add.)
finish.ImpSg the exercise for the Tuesday
“Finish the assignment by Tuesday!”

(215) *¡Lláname para entonces!* (# 2Pl add./ 2Sg add.)
call.ImpSg-CL.1Sg for then
“Call me by then!”

Incidentally, notice that sentences (212-213) can still be understood with a RI meaning. For this reading to obtain in (213) for example, *entonces* (“then”) has to refer to a time in the past from the utterance situation. If the intended interpretation is that of the RI, both singular and plural addressees become available in each case.

In the discussion so far I have shown that English and German present perfect imperatives are not RIs, and that RIs behave differently from Spanish present perfect

imperatives. There is, however, a construction in Dutch that does appear to be functionally equivalent to Spanish RIs. These structures, described by Mastop (2005, 2011), are indeed counterfactual and display a sentence-initial perfect.⁴⁶

- (216) *Had je mond maar gehouden!*
 had your mouth PART hold-PP
 “You should have kept your mouth shut!”

(Mastop, 2005: example [16a])

The difference between Dutch and Spanish RIs is that the perfect in the former case is conjugated in the past, whereas in Spanish it remains in its infinitival form. Apart from that detail, their formal and functional properties seem to be identical.

The puzzle that remains to be explained is the correlation between the possibility for modal *haber* to modify the prejacent of a circumstantial modal verb and the availability of RIs across languages. The ideal strong claim that I would like to put forward is that you cannot have one without the other. Unfortunately, the survey on the crosslinguistic availability of SCCs from Chapter 2 already provides evidence against this strong claim. In section 2.5, I stated that both Albanian and English might be argued to have SCCs. But neither of these languages have RIs, so the strong hypothesis cannot be maintained. The elaboration of a more refined one will have to await further data gathering from a wider sample of languages.

Having elaborated on the typological status of RIs, I now move on to developing my own account of these constructions. While following Vicente (2013) in spirit, the following is a more elaborate compositional analysis that builds up on my proposal for SCCs.

3.5 Analysis

3.5.1 Denotation and presuppositions of the imperative modal

Following Kaufmann’s (2012) account of imperatives, I propose that RIs have a covert performative modal in their denotation. The at-issue contribution of this operator

⁴⁶ The author also highlights that Syrian Arabic and Frisian have similar constructions as well (Mastop, 2005: fn. 12).

in RIs is identical to its contribution in regular imperatives. This can be seen in the denotation of the imperative modal (*ImpMod*) provided in (217), which only differs from that in Kaufmann (2012: 100) in that I made it relative to an event rather than a time.⁴⁷

$$(217) \quad \llbracket \text{ImpMod} \rrbracket^{g,c} = \lambda f. \lambda g. \lambda P. \lambda e. \lambda w. (\forall w' \in O(f, g, e, w)) [P(w')]$$

As the denotation in (217) shows, the *ImpMod* is basically like a Kratzerian necessity modal verb, only covert. It asserts that every possible world w' included in the set O is a world where the prejacent holds. The set of possible worlds O is established by the two conversational backgrounds (a modal base f , and an ordering source g), and is relative to an event and a world of evaluation (exactly like *must*, for example).

The main difference between the behavior of *ImpMod* in imperatives vs. RIs is in the felicity conditions it is associated with (Kaufmann, 2012: 162). The first of these presuppositions is that, according to the author, the time at which the prejacent is anchored cannot precede the time of evaluation of the modal. I will refer to this as the temporal presupposition, which seems to hold for imperatives, but not for RIs:

- (218) * *¡Visita a Mario ayer!*
 visit to M yesterday
 *“Visit Mario yesterday!”
- (219) *¡Haber visitado a Mario ayer!*
 have visited to M yesterday
 “You should have visited Mario yesterday!”

However, the acceptability of (219) does not automatically show that RIs are not subject to the temporal presupposition. First, it could be that the adverb *ayer* (yesterday) is actually modifying the covert modal and not the prejacent. This turns out not to be the case though because, contrary to what Vicente (2013) assumes, the covert modal in RIs is actually anchored at utterance time (exactly as in regular imperatives). Evidence for this is that RIs are equivalent to the performative utterances of modal sentences with conditional morphology (*debería*, *tendría que*) and not past tense (*debía*, *tenía que*). The following adaptation of (85) illustrates this:

⁴⁷ After Hacquard’s (2006, 2010) and Homer’s (2011) event-relativity, which I adopt in this work.

(220) (Context: John wants to go on vacation, but he doesn't have the money. He has two options: he either sells his car or he sells his piano. He needs his car to go to work, so he decides to sell the piano. When he comes back from his holidays, he finds two letters in his mailbox: a notice from his employer that he is fired, and a job offer as a pianist from the local orchestra that rehearses next door. Assuming that he doesn't regret having taken the vacation, we can tell him:)

- a. *¡Deberías haber vendido el coche!*
have.*Cond* have sold the car
“You should have sold the car!” (given the priorities of the addressee now)
- b. *¡Haber vendido el coche!*
have sold the car
“You should have sold the car!”

In fact, the flexibility of the prejacent to be modified by any kind of temporal adjuncts shows that the relationship between the anchoring times of the covert modal and the prejacent is not subject to any kind of constraints. Exactly as shown in SCCs throughout Chapter 2, this suggests that simple existential closure over the time interval during which the prejacent holds actually derives the correct truth-conditions.

(221) *Unai debería haber vendido el coche ayer/hoy/mañana.*
U must.*Cond* have sold the car yesterday/today/tomorrow
“Unai should have sold the car yesterday/today/tomorrow.”

(222) *¡Haber vendido el coche ayer/hoy/mañana!*
have sold the car yesterday/today/tomorrow
“You should have sold your car yesterday/today/tomorrow!”

Additionally, given that RIs are performative, it would be very unexpected for their covert modal to be anchored in the past. This is because past sentences cannot have a performative use. I elaborate this point further in section 3.6.3, where I study Vicente's (2013) proposal further.

Taking these points into consideration, it appears that the temporal presupposition present in regular imperatives is not at work in RIs. The existence of such a presupposition makes sense for imperatives given that it would be futile to demand of somebody to do something in the past. Conversely, because when somebody utters a RIs she already

knows that the prejacent was not realized, it seems fine to express what she thinks would have been a better option in the past.

Secondly, with respect to the Epistemic Uncertainty Constraint, which is meant to limit the contexts where an imperative can be uttered, I already argued in section 3.2 that RIs are indeed subject to it. For a RI to be felicitous, it must be the case that carrying out the prejacent was at least possible at some time in the past.

Finally, there is a third presupposition that Kaufmann (2012) associates with the imperative modal: the Authority Presupposition. According to it, an imperative can only be felicitously uttered if the speaker is an epistemic authority in the conversational background at hand.⁴⁸ In the words of the author,

“if in a given context it is taken for granted (i.e. presupposed) that the speaker is in a privileged position with respect to the truth of proposition p , then the addressee will accept p as true if the speaker expresses p (and there is no reason to suspect that she is lying)”.

(Kaufmann, 2012: 147)

The requirement for this presupposition to be satisfied essentially shields the truth-conditions of the imperative from being accessible, so that the utterance can only be interpreted performatively. I already touched upon this point above, when discussing challenges to RIs in examples like (183). At that point, I defended the similarity between regular imperatives and RIs by pointing out that all the discourse in (183) shows is that RIs are not subject to the automatic sincerity constraint that Condoravdi and Lauer (2012: 43) take to be a property of imperatives. This is because B ’s reply challenges the sincerity of A ’s utterance, but not his authority with respect to what are the best possible accessible worlds according to A . Because of that, it does seem to be the case that RIs respect Authority.

⁴⁸ The speaker is an epistemic authority on a property P “if she believes P of all and only those individuals that are indeed P at the actual world.”

(vi) **Authority on a property** P in a context c (*ignoring temporality*):
 $(\forall w \in \text{Bel}_{c_s}(c_w))(\forall x)[w \in P(x) \leftrightarrow c_w \in P(x)]$

(Kaufmann, 2012: 148)

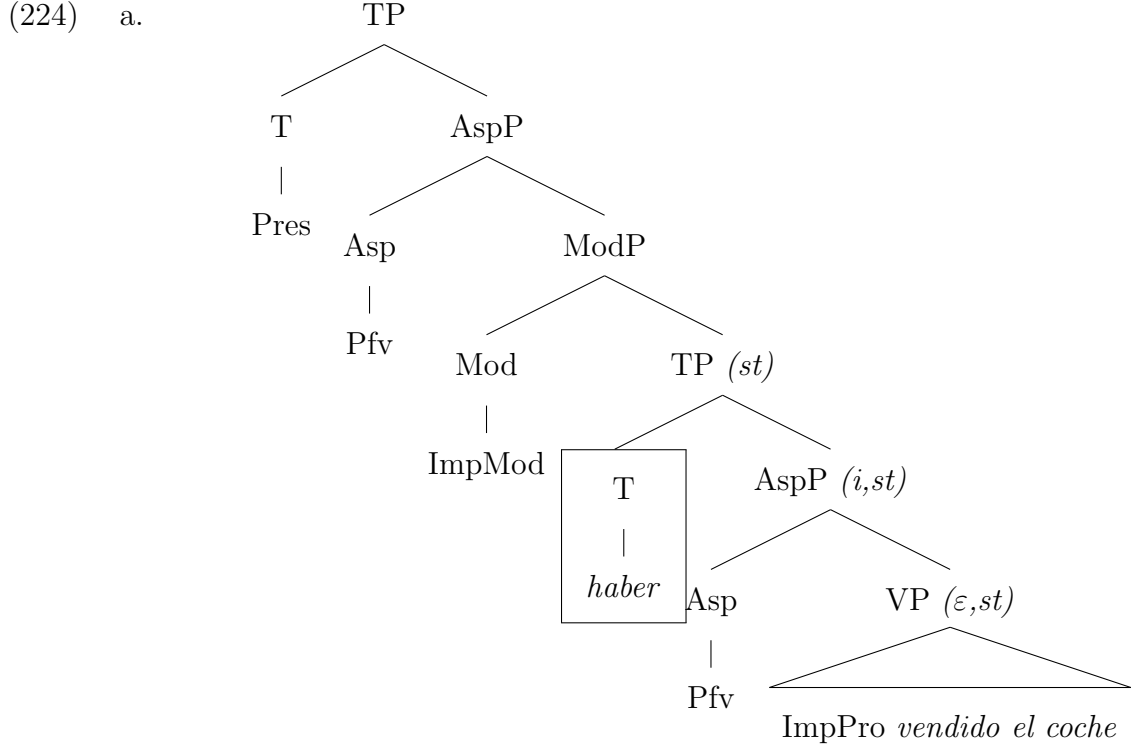
Summing up this section, I argued that RIs are subject to the Authority Presupposition and the Epistemic Uncertainty Constraint (exactly like regular imperatives). On the other hand, I showed that the possibility to anchor the prejacent of RIs virtually at any point in time means that they are not subject to the temporal presupposition that regular imperatives must respect. Given the similarities between SCCs and RIs, I believe this could be attributed to the counterfactual inference that these two constructions trigger. When a RI is uttered, the speaker is not commanding the addressee to carry out an event, but rather expressing that the world would have been better if he had done it. Contrary to calls to action (i.e. imperatives), which are future-oriented, reproaches or counterfactual claims look back in time. Thus, it is reasonable that the temporal presupposition be irrelevant for RIs.

3.5.2 Derivation

Having discussed the felicity conditions that RIs must satisfy, I move on now to providing a sample derivation of their asserted content. The denotations of all the heads have already been introduced, to the exception of the imperative subject *ImpPro*. This imperative version of *little pro* is a referential pronoun that picks out the addressee of the imperative in the context in which it is uttered:

- (223) $\llbracket \text{ImpPro} \rrbracket^{g,c}$ is only defined if it selects the addressee A in context c . If defined,
 $\llbracket \text{ImpPro} \rrbracket^{g,c} = c_A$.

Now that all the heads have been defined, I provide the suggested tree structure and denotation of (220b). For simplicity, and just like in the case of SCCs, I do not represent the conversational backgrounds that the modal combines with in the tree.



b. $\exists e. [\tau(e) \subseteq t^* \ \& \ \forall w' \in O(f,g,e,w^*)]:$

$\underline{|w^* \notin \text{TopicWs}|} \ \exists t'. \exists e'. [\tau(e') \subseteq t' \ \& \ \text{sell}(c_A)(\text{car})(e')(w')]$

What (224b) expresses is that all the best possible worlds according to the conversational backgrounds f and g anchored at utterance time are those where the addressee sells his car at some contextually salient time t' . But, and this is the felicity condition associated with the counterfactual contribution of *haber*, the actual world w^* is not one of those worlds.

In effect, this is the same meaning that a performatively understood utterance of (225) would convey. I believe this to be precisely the desired result.

(225) *¡Deberías haber vendido el coche!*
 must.*Cond* have sold the car
 “You should have sold the car!”

Something that needs mentioning is the fact that *haber* in RIs must necessarily be interpreted counterfactually and not temporally. I believe that the reason for this is related to RIs not being sensitive to the temporal presupposition discussed in the previous section. If *haber* were to be interpreted temporally, the meaning of the construction would

be that of a regular imperative requesting the addressee to do something in the past. This is precisely the kind of situation where the temporal presupposition would be violated, because the counterfactual component would simply be absent. The only way to fix this is for *haber* to be read counterfactually: if the speaker already assumes that the addressee did not realize the action referred to, the prejacent can be anchored in the past without violating the temporal presupposition.

Additionally, to elaborate on the similarities between conditional SCCs and RIs, I argued in section 2.3.2 that *haber* in the former construction is always understood modally and that conditional morphology was a marker of precisely this modal displacement. Because the proposed modal in RIs is covert, I cannot appeal to a similar morphological argument in this case. However, given that RIs and performatively used conditional SCCs have the same meaning, it is to be expected that their building blocks (particularly *haber* here) make identical semantic contributions in both constructions.

3.6 Alternative accounts

3.6.1 Portner (2004, 2007)

Portner (2004, 2007) proposes an alternative account of imperatives that does away with any kind of intensionality. For him, imperatives are not modal sentences, but properties of individuals (i.e. predicates of type $\langle e, t \rangle$) where the subject is a logophoric pronoun that refers to the addressee. Since imperatives no longer denote propositions under this view, this automatically accounts for the fact that they seem to lack truth-conditions. An example denotation of an imperative under this view can be seen in (226):

(226) $\llbracket \text{Stand up!} \rrbracket = \lambda w. \lambda x: x = \text{addressee}. [x \text{ stands up in } w]$

More generally, Portner (2007) takes the conversational context to be minimally a triple consisting of the Common Ground (CG, a set of propositions), a Question Set (QS, a set of sets of propositions), and a To-Do List (TDL, a set of properties). As the conversation unfolds, these sets are updated with elements that match their content. For example, every time a proposition is uttered and accepted by the conversational participants, it is added to the CG. The QS and TDL work in the same way with sets of propositions and properties respectively.

Focusing now on TDLs, the premise is that each participant in the conversation has a personal TDL, whose content they are committed to materializing if they are to be cooperative. In more technical terms,

“The To-Do List functions to impose an ordering on the worlds compatible with the Common Ground, and this ordering determines what actions an agent is committed to taking (Portner 2004):

(16) Partial ordering of worlds:

For any $w_1, w_2 \in \cap CG$ and any participant i , $w_1 <_i w_2$ [i.e. w_2 is better than w_1] iff for some $P \in TDL(i)$, $P(w_2)(i) = 1$ and $P(w_1)(i) = 0$, and for all $Q \in TDL(i)$, if $Q(w_1)(i) = 1$, then $Q(w_2)(i) = 1$.

(17) Agent’s commitment:

For any participant i the participants in the conversation mutually agree to deem i ’s actions rational and cooperative to the extent that those actions in any world $w_1 \in \cap CG$ tend to make it more likely that there is no $w_2 \in \cap CG$ such that $w_1 <_i w_2$.”

(Adapted from Portner, 2007: 358)

Given these definitions, a striking similarity with modal semantics emerges: the role of TDLs turns out to be analogous to that of ordering sources in that both of them are used to rank the worlds in the CG. In light of this parallelism, one might wonder if anything is gained from taking imperatives to be modal constructions. After all, Portner’s (2004, 2007) theory is simpler in that it relies on less covert structure and it seems to account for the data without positing layers of meaning that appear superfluous in imperatives (like truth-conditions).

I do not intend this work to be taken as an endorsement of Kaufmann’s (2012) modal framework over Portner (2004, 2007). Actually, I believe that the reference made to topic worlds in my denotation of *haber* might allow for a reformulation of its counterfactual contribution by appealing to the interaction between the CG and the TDL, the key ingredients in Portner’s model. The main reason why I decided to provide an analysis of RIs based on Kaufmann is a comparative one: since I have emphasized the relationship between conditional SCCs and RIs both in meaning and overt form (RIs look exactly like the prejacent of SCCs), I find it reasonable to suggest that these two structures share the same ingredients all throughout their derivations. And this includes the presence of a covert modal operator in RIs.

Still, I do want to mention a couple of issues that might be challenging for an analysis of RIs under Portner’s framework. Let us begin by considering the following example, where the utterance in (228) (which presupposes that the addressee, Tom, went outside) is uttered with respect to the CG in (227).

(227) Common Ground (CG) =

{It’s been raining for days, It’s cold, Tom is sick, Tom went outside}

(228) *¡Haberte quedado en casa!*

have-CL._{2sg} stayed in house

“You should have stayed at home!”

Upon uttering (228) the speaker is ranking the worlds where Tom stays at home in the past as better than those where he does not stay at home then. The issue here is that all worlds in the CG are such that Tom went out, so we cannot use (228) to rank them with respect to each other: they are all equally ranked. Yet the utterance of this RI does not feel vacuous. The denotation of (228) still feels like it is providing an ordering, namely, one where the worlds where Tom stayed at home are better than the ones where he did not. To accomplish this, it must be possible for the RI to look outside the CG and consider those other non-actual worlds in the ranking.

This follows neatly from Iatridou (2000) together with the appeal to Mari’s (2015) Extended Modal Base discussed in section 2.3.3.2. In order to account for this under Portner’s (2004, 2007) framework, that model would have to be modified slightly to account for these cases where the speaker goes beyond the CG. As pointed out by Portner (p.c.), one way of doing this could be by adopting van der Torre and Tan’s (1998) distinction between the context of deliberation (the set of actually realisable worlds) and the context of justification (the set of all possible worlds that are deemed relevant for the deontic judgment at stake). It is the consideration of the latter set that grants access to worlds beyond the CG, precisely what would be necessary to explain the contribution of (228). But looking outside the CG does not automatically lead to counterfactuality (as its cancellation in subjunctive conditionals shows), so the role of *haber* would be to ensure that this inference is enforced – exactly as in my proposal in section 3.5.

In my opinion, the challenge under the imperatives-as-properties approach is to be able to predict when the *haber* that presupposes the exclusion of w^* from the topic worlds is licensed. In the case of my proposal based on Iatridou (2000), the interaction with a modal operator with a realistic conversational background (either as modal base like in SCCs, or as ordering source like in the conditional modal) seems to be a necessary condition. Under Portner’s analysis, this parallelism is broken, since imperatives do not have a modal operator in the first place.

One might try to reformulate the licensing of world-exclusion *haber* in terms of the TDL: whenever a set of worlds has to be ranked, this version of *haber* might be invoked. If one looks at subjunctive conditionals, this fits with Portner’s suggested refinement based on van der Torre and Tan’s (1998) context of justification in that the presence of subjunctive morphology could be seen as a way to indicate that this set of worlds beyond the CG is being accessed. This might be a promising way to try to homogenize Portner’s account of imperatives with conditional constructions. One minor outstanding quibble is that, when I presented my analysis of SCCs with the opportunity reading in section 2.3, I argued that these constructions have an empty ordering source. So technically no ranking of worlds is provided in those cases, yet *haber* still makes a modal contribution.

Given the appeal to topic worlds in my denotation of modal *haber*, I believe that a Portner-inspired account based on the interaction between the CG and the TDL might indeed be possible. The issue with the licensing environment brings in a somewhat undesirable break with conditional constructions, but a solution might be within reach.

3.6.2 Vicente (2010)

Alternatively, one could still try to maintain that *haber* does provide a temporal interpretation after all and account for the counterfactual inference by some other means. This is precisely the route that Vicente (2010) takes in his implementation of Portner (2007), where he assumes that the contribution of *haber* in RIs is to mark that the event that it takes as a complement is already completed at the time of utterance. To capture this, he assigns to the perfect marker the same denotation as perfective aspect:

$$(229) \quad \llbracket \text{PERF} \rrbracket = \lambda P. \lambda t. \exists e. [\tau(e) \subseteq t \ \& \ P(e)]$$

(Vicente, 2010: example [31])

The way in which *haber* would trigger counterfactuality in this case is as follows. A RI was uttered, so the speaker wants the addressee to add it to her TDL. But, due to the contribution of *haber*, the event referred to by the RI is claimed to be already completed at utterance time. If the actual world is in the set of worlds with respect to which the RI is evaluated, this would result in a vacuous move: why would the speaker ask the addressee to carry out an event that she already did in the past? So, in order to prevent this vacuous conversational move, it must be that the actual world is actually *not* among the set of accessible worlds. In other words, the event described in the RI is counterfactual with respect to the actual world. Counterfactuality in RIs is then a last-resort pragmatic mechanism to prevent discourse from stalling.

Let me provide a concrete illustration of how this mechanism would work. According to Vicente (2010), upon uttering (228), the addressee is expected to add the proposition (230) to her TDL.

- (228) *¡Haberte quedado en casa!*
 have-CL._{2sg} stayed in house
 “You should have stayed at home!”

- (230) $p = \text{You stayed at home at } t' \text{ } (t' < t^*) \text{ in } w^*.$

Now, since *haber* asserts that the staying-at-home event is completed by utterance time, either p is in the CG, or it is not. If p were indeed in the CG, the utterance of (228) would be infelicitous because, why would anybody ask the addressee to do something that we already know she did? In other words, upon (228) being uttered, the addressee will be judged as rational if she strives to make w^* a p -world. But if p is in the CG, the conversational participants already presuppose that w^* is a p -world! Given that the sentence is felicitous, it must be that p is actually *not* in the CG and therefore, that w^* is not a p -world.

First, I would like to point out that, in order for this proposal to work, Vicente (2010) must assume that RIs are evaluated within the CG (i.e. that the context set must entail the content of the imperative). This would be a way to ensure that whatever is not in the CG is false. But I already argued above that examples like (228) suggest that

RIs must be allowed to look outside the CG so that the ranking of worlds induced by the TDL can resolve ties.

Second, it is unclear to me that assimilating the contribution of *haber* in RIs to *perfective* aspect as in (229) would provide the required past contribution. This is because the perfective only states that the running time of the event is fully contained within the reference time. Since Vicente (2010) considers that the reference time is equal to the utterance time in these cases, I’m not sure how the necessary notion of pastness would be introduced.⁴⁹ One might be better off by taking *haber* at face value and say that it is the perfect (even though below I argue that such an alternative is also hard to maintain).

Third, I would like to argue that counterfactuality in RIs is not contingent on the interaction with the CG in the way that Vicente proposes. I suggest that we focus on the following example, which illustrates the point I want to convey.

(231) Common Ground (CG) =

{It’s been raining for days, It’s cold, Tom is sick, If Tom gets wet he gets sick}

(232) Belief set of the speaker (Bel_{Sp}) =

$\text{CG} \cup \{\text{Tom went out}\}$

(233) ¡*No haber salido!*

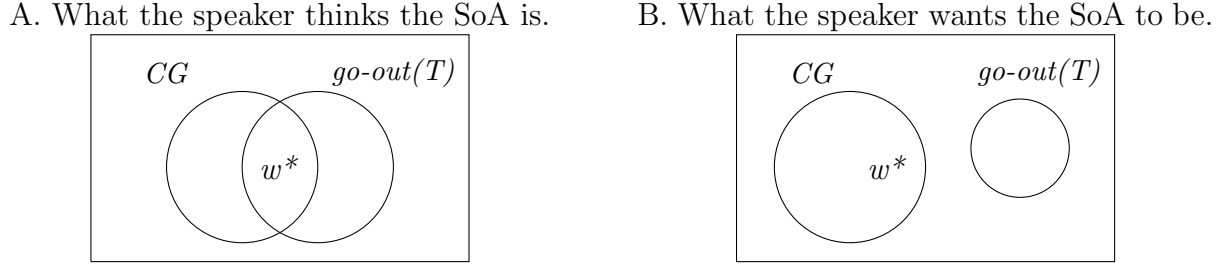
not have left

“You shouldn’t have gone outside!”

In saying (233), the speaker is judging his utterance with respect to the set of propositions in Bel_{Sp} . Note that the CG is agnostic with respect to whether Tom went outside or not: the speaker believes that he did, but this piece of information has not been accepted by all the conversational participants yet. Thus, by working within Bel_{Sp} , the speaker is ranking the worlds where Tom did not go outside higher than those where he did go outside. And moreover, he is presupposing that Tom did go outside. The figures below capture graphically this contrast between what the speaker believes the state of affairs (SoA) is and what he wants it to be.

⁴⁹ “Assume that, in the absence of a (morphological) specification to the contrary, utterance and reference time are the same [...] Since the utterance time is, by definition, the present, it follows that the reference time is also the present.” (Vicente, 2010: 8)

Figure 3.1: Belief vs. desire in RIs



Now, imagine that the addressee, Tom, replied to (233) by claiming that he actually never left the house (i.e. B in Figure 3.1 actually corresponds to the facts). In this case, the utterance of (234) updates the CG by adding to it the proposition that Tom stayed indoors:

- (234) *¡Pero si no salí!*
 but if not left
 “But I didn’t go outside!”

- (235) Updated Common Ground (CG’) =
 $CG \cup \{\neg(\text{Tom went out})\}$

What happened in (233) is that the speaker evaluated the RI with respect to a set of worlds that did not correspond to the facts. That is, he assumed that the actual world was not a member of the set of worlds where Tom did not go out, when it was actually in it. The issue is that, even in these cases where it becomes clear that Tom didn’t leave the house (like after his complaint in (234)), the RI still holds on to its counterfactuality. It seems to me then that this counterfactual meaning has to be conventionally associated with the construction, rather than conversationally derived through the aforementioned last-resort mechanism to prevent a vacuous move. Or put in slightly different terms: the discourse exemplified by (233-234) shows that vacuous conversational moves can indeed occur when RIs are deployed in conversation. But even when they occur, RIs still express counterfactuality. Thus, counterfactuality and vacuous conversational moves cannot be in

complementary distribution in RIs. So something else must be triggering counterfactuality in (233) that is not discourse-related like Vicente (2010) proposes.

Finally, I would like to mention one last problem associated with taking *haber*'s contribution in RIs to be temporal. Example (236) illustrates how RIs can be modified by future-oriented adverbs.

- (236) *¡Haber comprado leche mañana!*
have bought milk tomorrow
“You should have bought milk tomorrow!”

Sentences like this are interesting because they show that RIs need not only refer to past events. In (236), the whole RI is still relative to the body of knowledge available at utterance time, but the event of buying milk is modified by the adverb *mañana* (“tomorrow”). If, as Vicente (2010) proposes, the role of *haber* is to temporally locate the event entirely within the utterance time, examples like (236) should be ungrammatical because of the clash between the contribution of *haber* and the meaning of the adverb. But it turns out that such sentences are actually very common and perfectly grammatical.

One last attempt to salvage this proposal could be to suggest that this problem might be overcome if one assumes that *haber* behaves exactly like a perfect head in introducing a reference time that is anchored at the time interval denoted by the adverb. The event time would then be temporally located at some time previous to that reference time. Nevertheless, it is not the case that (236) asserts that the buying of milk should have happened at some time *before* tomorrow. Rather, it is tomorrow that the buying event should have happened: as discussed in section 3.4, RIs are not present perfect imperatives.

All in all, examples like (236) make it clear that *haber* cannot introduce any past temporal displacement in an extensional account that does not postulate the existence of any covert heads which could be modified independently by different time operators. The available alternatives involve going back to a conception of *haber* that explicitly addresses the interaction between the actual world and the worlds under discussion. This is the route that Vicente himself took in later work.

3.6.3 Vicente (2013)

My own analysis of RIs in section 3.5 draws heavily from Vicente (2013), but it clarifies and refines some aspects of his work that remained questionable. To begin, Vicente argued that the difference between regular imperatives and RIs could be reduced to the temporal anchoring of the *ImpMod*: whereas imperatives are evaluated in the present, RIs are evaluated in the past. I believe this proposal to be inappropriate in two respects.

First, I argued in (220) repeated below that RIs are analogous to SCCs with conditional morphology. Thus, they are relative to the circumstances at *utterance time* so their conversational backgrounds need to be anchored then. One way to ensure this is for the *ImpMod* to have a present head in TP.

(220) (Context: John wants to go on vacation, but he doesn't have the money. He has two options: he either sells his car or he sells his piano. He needs his car to go to work, so he decides to sell the piano. When he comes back from his holidays, he finds two letters in his mailbox: a notice from his employer that he is fired, and a job offer as a pianist from the local orchestra that rehearses next door. Assuming that he doesn't regret having taken the vacation, we can tell him:)

- a. *¡Deberías haber vendido el coche!*
have.*Cond* have sold the car
“You should have sold the car!” (given the priorities of the addressee now)
- b. *¡Haber vendido el coche!*
have sold the car
“You should have sold the car!”

The infelicity of the following example provides additional evidence in favor of this argument. If the RI were anchored in the past, (237) could count as a case where the speaker changed his mind over time: according to the facts in the past, I believe that you should have sold the piano but, according to the facts now, I'm glad that you did not. However, this interpretation is completely unavailable as the juxtaposition of these two sentences attributes two contradictory beliefs to the speaker at utterance time.

- (237) # *¡Haber vendido el piano! Me alegro de que no lo hicieras.*
 have sold the piano CL._{1sg} glad of that not CL._{3sg} did
 # “You should have sold the piano! I’m glad you didn’t do it.”

Second, there is something distinctly odd in claiming that performative utterances like RIs can be evaluated with respect to the past: it just impossible to do that! Even the most stereotypical performative utterances (naming acts reinforced by *hereby*) are impossible to use with that intention in the past.

- (238) I hereby name you Vesper. (✓ performative reading)

- (239) I hereby named you Vesper. (# performative reading)

Due to this evidence, I argue that we cannot explain the difference between regular imperatives and RIs by appealing to the temporal perspective of the covert modal, as in both cases we need present tense to head the TP.

If tense is not the answer, the most obvious alternative is to focus on the only overt piece that is present in RIs, but absent in regular imperatives: the perfect marker *haber*. With respect to this functional head, I find it surprising that it does not seem to play any role in Vicente’s (2013) proposal: the author appears to treat it as a vacuous morpheme located within the VP. It might be that he considers it a morphological reflex of his proposed past tense above the modal, but he does not make this explicit.

With regards to the counterfactual inference, he suggests that it is triggered in RIs through the presence of two Exclusion Features (in the sense of Iatridou (2000)): the aforementioned past tense and a putative perfective aspect right below the *ImpMod*. Unfortunately, I do not think that this can be right. First, I just reasoned above that there cannot be a past head above the modal given the performative meaning of these constructions. Second, it is unclear why perfective aspect should contribute an ExclF given that it does not express temporal displacement, but rather boundedness. If it did express counterfactuality, we would expect *any* sentence where the past and the perfective coincide to potentially trigger such an inference. But this is certainly not the case, as the impossibility to obtain a counterfactual reading in (240) illustrates:

- (240) *Irene tuvo que arreglar el coche (# y no lo hizo).*
 I had._{PsPfv} that fix the car and not CL._{3sg} did
 “Irene was forced to fix the car (# but she didn’t).”

Instead, I believe my proposal presented in the previous section to be better motivated. If the locus of counterfactuality is in the non-asserted contribution of *haber*, the difference between regular imperatives and RIs can be readily explained. Moreover, this also accounts for the conventional nature of this inference and, even more importantly, for the close connection between the meaning expressed by conditional SCCs and RIs.

3.6.4 Condoravdi and Lauer (2012)

Condoravdi and Lauer (2012) present an alternative account of performative utterances based on preferences. Interestingly, the starting point of their approach is not based on the split across sentence types (e.g. declaratives vs. imperatives), but on the difference between performative vs. non-performative uses. Thus, their framework is intended to account for performative uses of sentences in general, regardless of their type.

Concentrating on imperative clauses, the authors suggest that these sentences are headed by a covert imperative operator that takes a proposition p as an argument. This is reminiscent of Kaufmann (2012), but their theory differs from hers in important respects, beginning with the denotation of said imperative operator itself:

$$(241) \quad \llbracket \text{Imp} \rrbracket^c = \lambda p. \lambda w. [PEP_w(\text{Sp}, p)]$$

The key component in the denotation in (241) is $PEP_w(\text{Sp}, p)$, which the authors define as follows:

$$(242) \quad PEP_w(\text{Sp}, p) := \text{The speaker } (Sp) \text{ is publicly committed at } w \text{ to act as though } p \text{ is a maximal element of } Sp\text{'s effective preference structure.}$$

$$(243) \quad \text{A preference structure relative to an information state } W \text{ is a pair } \langle P, \leq \rangle, \text{ where } P \subseteq \wp(W) \text{ and } \leq \text{ is a partial order on } P.$$

(Condoravdi and Lauer, 2012: example [28])

Applied to an actual imperative example like (244a), we obtain the denotation below, which can be paraphrased as “the speaker is publicly committed to act as though he has the preference for the addressee to open the window”.

- (244) a. Open the window!
- b. $\llbracket (244a) \rrbracket^c = \lambda w. [PEP_w(\text{Sp}, \lambda v. [\textit{Addressee} \text{ opens the window in } v])]$

This approach is appealing for its formal simplicity and because it appears to explain some of the presuppositions of imperative sentences that are elusive for Kaufmann’s (2012) theory according to the authors. One of these presuppositions is the consistency requirement pointed out by Portner (2007: 367), and which I mentioned in example (173) repeated below from section 3.2. To remember, the point here was that if the first imperative is taken as a command, it is very odd to interpret the second one as a simple suggestion. Either both are read as commands, or both are interpreted as suggestions.

- (173) Be there two hours in advance! Then have a bite to eat!

(Adapted from Portner, 2007: 367)

According to Condoravdi and Lauer (2012), their theory naturally explains this restriction because they take it to originate on the consistency requirement on preferences:

“When an agent utters an imperative with content p , he is committed to p being a *maximal* element of his effective preference structure. Maximal elements, by definition, are unranked with respect to each other, which entails that they must be compatible. Two successive imperatives with contradictory contents thus indicate that the speaker has changed his mind about his effective preferences from one utterance to the next.”

(Condoravdi and Lauer, 2012: 48)

While expressed in different terms, I believe this would also follow from Kaufmann’s (2012) proposal given that it makes use of a very similar imperative operator. Remember that for this author, the imperative modal *ImpMod* is but a regular modal in that it combines with a modal base and an ordering source. Exactly as in preference structures (which function basically like a ranking of worlds), the maximal elements as established by the ordering source that *ImpMod* combines with are unranked with respect to each other. As far as I can tell, the same explanation of the consistency requirement could then be offered within Kaufmann’s (2012) approach.

As mentioned in the previous section, I do not intend this discussion to turn into a defense of one account of imperatives over another. However, I do want to point out some aspects of Condoravdi and Lauer (2012) that would require some extra work in order to

provide a sound analysis of RIs. First of all, I believe the denotation of the imperative modal in (241) to be too strong for some of the contexts in which imperative sentences can be used, specifically, those cases that do not involve speaker endorsement. It is claimed by both Kaufmann (2012) and Condoravdi and Lauer (2012) that “imperatives, in *all* their uses, imply that the speaker endorses the realization of the content some way.” (Condoravdi and Lauer, 2012: 41-42). This constraint accounts for the infelicity of examples like the following, where the speaker tries to overtly express that he does not endorse the fulfillment of the imperative:

(245) # Call him at home! I don’t want you to but he is fine with that.

(Condoravdi and Lauer, 2012: example [17])

The authors claim that even in disinterested advice cases like (246), where the speaker does not have any motivation for the addressee to achieve her goals, the principle in (247) is at play. For them, the fact that the speaker endorses the content of the imperative (even if just for the sake of being cooperative) is then part of the conventional meaning associated with performative utterances. Because Kaufmann (2012) cannot account for cases like (245), Condoravdi and Lauer (2012) criticize her approach as being too weak.

(246) A. How can I get to the Linguistics Department?

B. Go down Main St. and then take a right before a restaurant called Taverna.

(247) Cooperation by Default

An agent A is cooperative-by-default iff he adds any topical goal g of another agent to his effective preference structure, such that for any preference structure P_A : for no $p \in P_A$: $p < g$.

(Condoravdi and Lauer, 2012: 50)

Contrary to their view, I argue that speaker endorsement should not be conventionally associated with the meaning of imperatives. Instead, I believe that it should arise pragmatically because there are indeed cases where the speaker can utter an imperative or a RI when he genuinely does *not* want the addressee to carry out the action. This is a stronger case than that exemplified in concessive uses of imperatives like (248), which

can be denied but only if it is indicated that the speaker has changed his opinion on the matter (as shown in the use of the past tense in the felicitous continuation).

(248) OK, go to Paris then since you want it so much!

- a. # But, don't forget, I don't want you to.
- b. But, don't forget, I didn't want you to.

(Condoravdi and Lauer, 2012: example [21])

Concessive uses then still respect speaker endorsement, because the speaker does favor the realization of the content of the imperative at the time of utterance. The only difference with respect to other imperative uses is that these cases convey the aforementioned change of opinion of the speaker.

Nonetheless, there are stronger cases where the speaker genuinely wishes *against* the content of the imperative or RI, as the contexts surrounding the examples below emphasize. The following cannot be understood as disinterested advices where *Cooperation by Default* applies. And they cannot be analyzed as concessive uses where the speaker changed his mind over time either. These are examples where speaker endorsement is completely absent:

(249) *Si quieres la última entrada, ¡llega antes de las 12! Pero te advierto de*
 if want the last ticket arrive before of the 12 but CL._{2Sg} warn of
que yo también la quiero y prefiero que no vayas.
 that I also CL._{3Sg} want and prefer that not go

“If you want the last ticket, arrive before 12! But I should warn you: I also want it and I'd rather you don't go.”

(250) (Context: Somebody who arrived late to a concert is complaining that I took the seat that he thinks he is entitled to. I say to him:)

¡Ah, haber llegado antes!
 ah have arrived before

“Ah, you should have arrived earlier!”

In order to make the RI case even more obvious, the speaker could even overtly voice his preference for the addressee not to have arrived on time. This would most likely

be interpreted as very rude, so I personally would only address it to a close friend who I know can take it:

- (251) *Hombre, sinceramente, me alegro de que no llegaras a tiempo porque*
 man sincerely CL.1Sg happy of that not arrive to time because
así he tenido mejores vistas. ¡Haber llegado a tiempo!
 this-way have had better views have arrive to time
 “Well, in all honesty, I’m happy that you did not arrive on time because that way
 I’ve had a better view. You should have arrived on time!”

Summing up, Condoravdi and Lauer’s (2012) proposal is intuitively appealing for its simplicity, but I believe that their denotation of the covert imperative modal turns out to be too strong because it comes pre-loaded with the meaning that the speaker has a preference for the complement of the modal to come about. As I showed for both regular imperatives and RIs in (249-250), this layer of meaning is not always conveyed in these constructions and so, it should not be part of their conventional meaning. Contrary to their criticism, I believe Kaufmann (2012) to be just strong enough to adequately predict these readings to be available. Eventually however, both accounts are very close in spirit and so, reformulating my current analysis in terms of Condoravdi and Lauer (2012) should be a feasible task.

3.7 Properties of counterfactuality in RIs

In this section, I want to show that the counterfactual inference triggered by RIs has the exact same properties as that triggered by SCCs. Unfortunately, testing for backgroundedness using the family-of-sentences test will not be possible in this case, given that RIs cannot be embedded. Likewise, this structural restriction will make it impossible to check for obligatory local effects. All the rest of features however can be properly accounted for.

To begin, the examples below once again show how cancelling this counterfactual meaning component is impossible even when a variety of alternative means are tried (coordination in (252), and subordination in (253)):

- (252) * *¡Haber llegado a tiempo y lo hiciste!*
 have arrived to time and CL.3Sg did
 Intended: ?? “You should have arrived on time and you did!”

- (253) * *¡Haber llegado a tiempo como lo hiciste!*
 have arrived to time as CL._{3Sg} did
 Intended: ?? “You should have arrived on time like you did!”

Secondly, I showed in example (112) repeated below, that the counterfactuality in SCCs can be reinforced (i.e. be expressed overtly without a sense of redundancy):

- (112) *María pudo haber visitado a Tomás pero no lo hizo.*
 M could._{PstPfv} have visited to T but not CL._{3Sg} did
 “María could have visited Tomás but she didn’t do it.”

Whereas (254) shows that trying to replicate the same structure as in (112) is ungrammatical, the alternative structure in (255) supports the idea that this ungrammaticality is not connected to the semantic properties of counterfactuality but to the difficulty of coordinating imperatives with other sentence types:

- (254) * *¡Haber llegado a tiempo pero no lo hiciste!*
 have arrived to time but not CL._{3Sg} did
- (255) *No lo hiciste pero, ¡haber llegado a tiempo!*
 not CL._{3Sg} did but have arrived to time
 “You didn’t, but you should have arrived on time!”

Third, it also became obvious through comparison with regular imperatives that counterfactuality in RIs is detachable. It is the perfect marker *haber* that introduces the counterfactual component and removing this lexical items makes the inference disappear:

- (256) *¡Llega a tiempo!* (Regular imperative, not counterfactual)
 arrive._{Imp} to time
 “Arrive on time!”

To conclude, I would like to argue that counterfactuality in RIs also meets the criteria to be classified within the Type C group in Tonhauser et al’s (2013) typology. This means that RIs should not require strong contextual felicity (i.e. a context that entails or implies their counterfactuality) for the sentence to be felicitously uttered. I believe the context in (257) adequately exemplifies the lack of such a requirement.

- (257) (Context: A woman is in her office and sees a co-worker come into the room completely drenched, with an umbrella in his hand. She knows that he lives nearby and that he typically walks to work. She says to him:)

¡Haber venido en coche!
have come in car
“You should have taken the car!”

First, notice that (257) can perfectly be a discourse-initial utterance. Second, for this RI to be felicitous, it is enough for the speaker to *assume* that her co-worker did not take the car. But this might well be a false conclusion: maybe he did take the car but upon getting off, another car splashed him (or something of the sort). The point is that the proposition that the co-worker did not take the car need not be in the CG for (257) to be uttered, but just among the set of beliefs of the speaker.

Finally, as discussed in section 2.4, the second diagnostic in Tonhauser et al. (2013) (called “obligatory local effect”) was meant to check whether an inference projects past its local embedded context, to become a global projective content associated with the matrix level. Unfortunately, the aforementioned impossibility to embed RIs prevents me from applying this test, in the same way that I could not check the backgroundedness of the counterfactual inference using the family-of-sentences criterion. Because of this impossibility to embed it, the counterfactual component is unsurprisingly always attributed to the speaker of a RI.

Summing up, I have shown that the behavior of counterfactuality in RIs (particularly with regards to its non-cancellability, reinforceability, and detachability) justifies its assimilation to the counterfactual projective content of SCCs discussed in Chapter 2. It is true that the impossibility to apply some tests that check the projective behavior the target inference weakens my conclusion somewhat. However, when the syntactic and formal parallelisms that exist between SCCs and RIs are also taken into account, I believe that this provides enough compelling evidence overall to support the claim that both types of constructions actually give rise to the same counterfactual inference.

3.8 Focus effects

There is one loose end that I have not tackled since section 2.3.3.2 in Chapter 2. This refers to the fact that the preajcent in conditional SCCs and RIs alike can be modified by a future-oriented adverbial on which focus falls. In that section, I explained that these constructions can also be considered counterfactual in that they express that

carrying out the prejacent in the future does not count as a *valid* realization of the event. The reason why the future event is not valid anymore is because of the assumption that the addressee only had one appropriate time at which to perform it and he already used up that opportunity. Thus, the puzzle is to explain how this inference arises if the contribution of *haber* is only counterfactual and not temporal.

Let me illustrate this with some actual examples. The conditional SCC in (258) and the RI in (259) both show once again that these structures can be modified by any kind of temporal adverb.

- (258) *¡Deberías haber salido AYER/MAÑANA!*
 must.*Cond* have left yesterday/tomorrow
 “You should have left YESTERDAY/TOMORROW!”
- (259) *¡Haber salido AYER/MAÑANA!*
 have left yesterday/tomorrow
 “You should have left YESTERDAY/TOMORROW!”

Notice that in both of the examples above the presence of *haber* does not clash with a future-oriented adverb like “tomorrow”, which was one of my original arguments against attributing any temporal contribution to *haber* in the first place. These constructions appear to be the main clause equivalents of the mismatched past subjunctive conditional constructions that Ogihara (2002) and Ippolito (2013) discuss in their work (*mismatched* in the sense that the future-oriented adverb contrasts with the past perfect morphology in the antecedent).

- (260) If John had given flowers to Mary TOMORROW_F, she would have been pleased.
 (Ogihara, 2002: example [1])

For Ogihara, the contribution of the perfect in (260) is indeed temporal: its role is to pick out a past time “at which some proposition contrasted with the one specified by the antecedent is true” (Ogihara, 2002: 124). Thus, according to his analysis, (260) presupposes that there is a contextually salient past time when John gave flowers to Mary. In later work, Ippolito (2013) convincingly argued that such kinds of mismatched subjunctive conditionals actually do not require that any past focus alternative of the

antecedent be true in the actual world. In order to show that this is the case, she provides the following contextualized example.

(261) (Context: Charlie, a Red Sox fan, died a month ago before ever going to Boston. Lucy and Sally are talking about Charlie, and Lucy says that if Charlie had gone to Boston tomorrow, he would have seen the Red Sox play. Sally disagrees and replies:)

No. If Charlie had gone to Boston THE DAY AFTER TOMORROW_F, he would have seen the Red Sox play.

(Ippolito, 2013: example [18])

As Ippolito (2013: 29) explains, "[b]y hypothesis, Charlie never went to Boston. Therefore, there is no past proposition of form 'Charlie goes to Boston at x ', where x 's value is a contextually salient past time". Yet an utterance of (261) in such a context is perfectly felicitous. So Ogihara's (2002) claim about the perfect must be ill-founded. Having said that, Ippolito (2013) also goes on to propose that the perfect in such conditional constructions has a past contribution, albeit not inside the antecedent but on the accessibility relations of the conditional modal. Introducing the rest of her analysis is not necessary to understand my main focus here however.

Now, how are Ogihara's (2002) and Ippolito's (2013) proposals relevant to my discussion of conditional SCCs and RIs? Introducing this literature was important because, while Ippolito's observation regarding mismatched subjunctive conditionals also holds for SCCs and RIs (i.e. none of their focus alternatives need be true), I believe that the temporal location of their focus alternatives can be derived pragmatically without appealing to a temporal contribution on the part of *haber*.

As shown in Chapter 2, a sentence like (262) presupposes that the addressee cannot leave tomorrow. Moreover, in apparent support of Ogihara (2002), it also suggests that the addressee left sometime in the past (which can be overtly expressed by a continuation like *...en vez de haber salido ayer* ("...instead of having left yesterday")). The same holds for the future-oriented RI equivalent in (263).

(262) *¡Deberías haber salido MAÑANA!*
 must.*Cond* have left tomorrow
 “You should have left TOMORROW.”

(263) *¡Haber salido MAÑANA!*
 have left tomorrow
 “You should have left TOMORROW.”

In fact, the infelicity of the example below where the context explicitly denies that the addressee carried out the prejacent in the past (which I will refer to as the previous accomplishment of the prejacent) seems to lend further support to Ogihara’s (2002) claim that one of the focus alternatives of the sentence is true in the actual world. This is because a straightforward way to account for the unacceptability of (264) would be to say that the context in which it is used clashes with the presupposition that the addressee left already expressed by the sentence.⁵⁰

- (264) (Context: You are at home. There is a festival you want to attend tomorrow in Tokyo, but your plane ticket for Japan is for next week. You are still at home. Your friend tells you:)
- a. % *¡Deberías haber salido MAÑANA!*
 must.*Cond* have left tomorrow
 “You should have left TOMORROW!”
 - b. % *¡Haber salido MAÑANA!*
 have left tomorrow
 “You should have left TOMORROW!”

⁵⁰ My consultations with other native speakers resulted in mixed opinions regarding whether (264) is infelicitous or not (hence the %). For those who found it acceptable, I had to make sure to emphasize that (264) is not read to mean something along the lines of “you should have bought the tickets for the plane that leaves tomorrow”. In this case, uttering the future-oriented RI would be ok because the addressee did indeed buy some tickets in the past. When I made that point clear, some people changed their mind to considering unacceptable. Still, those who find (264) felicitous provide evidence that the previous accomplishment can be cancelled. Furthermore, some attendants of *MACSIM 6* also disagreed with my judgment in that they considered the English translation of (264) acceptable in the context provided. Hence, it would appear that there is a considerable range of speakers who feel comfortable accepting counterfactual facts about the future.

However, I will argue that attributing the unacceptability of (264) to such a clash between presuppositions would be a hasty conclusion. An important piece of evidence in favor of this view is the perfect acceptability of dialogs like the one below, where A’s utterance asserts from the start that he has not left yet.

- (265) A. *Salgo de viaje mañana.*
 leave.*Pres* of trip tomorrow
 “I’m leaving on a trip tomorrow.”
- B. *¡Haber salido AYER!*
 have left yesterday
 “You should have left YESTERDAY!”

Assuming that there can only be one event of leaving (i.e. of setting off) per trip, if B’s reply presupposed that A left at some contextually relevant past time, it would contradict A’s own claim that he is in fact leaving tomorrow. So, no matter how strongly focused RIs convey that one of their (past) focus alternatives is true, it must be the case that this inference is cancellable. In fact, the following variant of (264), where the conditional SCC is perfectly acceptable but the RI is not, suggests that the infelicity of these examples must be related to other factors unrelated to an incompatibility between the propositions in the Common Ground and the counterfactual presupposition expressed by *haber*.

- (266) (Context: The new stadium was originally scheduled to be completed tomorrow. It is now obvious that it won’t be finished until next year:)
- a. *¡El estadio debería haberse terminado MAÑANA!*
 the stadium must.*Cond* have-CL.*Refl* finished tomorrow
 “The stadium should have been finished tomorrow!”
- b. *# ¡Haber terminado el estadio MAÑANA!*
 have finished the stadium tomorrow
“You should have finished the stadium tomorrow!”

If both conditional SCCs and RIs with focused temporal adverbs presupposed that the prejacent had already taken place in the past, the perfect acceptability of (266a) would be puzzling. What accounts for the different between (266a) and (266b) then? First, it is important to note that the context makes it clear that finishing the stadium tomorrow

is impossible at this point. Given our world knowledge about construction processes, it truly seems impossible for a stadium to be completed in 24 hours if the estimates indicate that a whole year will be necessary. Thus, while the future is still open and nothing precludes a miracle from happening, we are happy to accept a deterministic conception of it where it is truly impossible that the stadium will be finished tomorrow. I would like to argue that the unacceptability of (266b) is related to this counterfactual statement in that, because of the performative function of RIs, the sentence implies that it is entirely due to the lack of volition of the addressee that the stadium was not built in time. But this is quite an illogical accusation to make. On the other hand, (266a) expresses a much more generic accusation that does not single out the addressee explicitly and therefore matches our intuitions about the variables that construction projects are subject to in a much better way.

Going back to (264), I believe that the reason behind its infelicity lies precisely on the point just described. The main presupposition of these sentences is that it is impossible for the addressee to leave tomorrow, thus assuming that the future in this case is deterministic and that there is positively nothing that the addressee can do to change this. But leaving tomorrow is not comparable to building a stadium, because the coming about of the former seems to rely much more on the actual volition of the addressee: he could call the airline and try to change the flight, find another means of transportation, etc. Hence the preference in that context to use an actual suggestion that does not presuppose that carrying out the prejacent is truly impossible in the future.

(267) (Context: Same as in (264))

- a. *¡Deberías salir MAÑANA!*
must.*Cond* leave tomorrow
“You should leave TOMORROW!”
- b. *¡Sal MAÑANA!*
leave.*Imp* tomorrow
“Leave TOMORROW!”

In the preceding discussion, I have shown that conditional SCCs and RIs with a focused temporal adverbial do not *presuppose* that any of their focus alternatives is true. Still, whenever the context does not block it, the weaker *implicature* that the prejacent

has previously happened seems to be generated. How this inference arises still has to be accounted for. In the spirit of Ogihara (2002), the way in which I will explain how the previous accomplishment implicature is triggered is based on the exhaustiveness effect that focused particles or structures trigger (e.g. *only* and *it*-clefts respectively). As pointed out in a wealth of previous literature (cf. Atlas and Levinson, 1981; Horn, 1981; Kiss, 1999; Krifka, 2008; a.o.), examples like (268) convey that nobody else but John stole a cookie. This intuition is supported by the ungrammaticality that ensues when the additive particle *too* is inserted:

- (268) a. Only John stole a cookie.
 b. It's John that stole a cookie.
- (269) a. * Only John, too, stole a cookie.
 b. * It's John, too, that stole a cookie.

(Adapted from Drenhaus et al., 2011: examples [1-2])

When intonation focus is used, the same exhaustiveness effect follows.⁵¹ Therefore, example (270) below (where “John” bears intonation focus) also expresses that John is the only person that stole the cookies.

- (270) JOHN stole the cookies.

One way to derive the exhaustiveness presupposition in (270) is by appealing to Rooth's (1992) framework, Alternative Semantics.

“The idea of alternative semantics is to take [a] semantic account of focus by adding an additional semantic value. Informally, the focus semantic value for a phrase of category S is the set of propositions obtainable from the ordinary semantic value [denotation] by making a substitution in the position corresponding to the focused phrase.”

(Rooth, 1992: 76)

⁵¹ I will remain agnostic about the semantic properties of the exhaustiveness inference in sentences like (268-270). Actually, different triggers have been argued to convey exhaustivity in different ways: truth-conditionally, presuppositionally, as a conversational implicature, etc. (cf. Drenhaus et al. (2011) for a theoretical overview and an experimental investigation). So when I talk about “the same exhaustiveness effect”, I mean that intonation focus gives rise to an exhaustivity reading just like *only* or *it*-clefts do, without necessarily meaning that the triggered inference has the same properties in all cases.

For example, the focus semantic value of (270) would correspond to (271): that is, the set of propositions of the form “ x stole the cookies”, where x is a member of the domain of individuals. By placing the focus on “John”, the extra-asserted meaning of this construction is that saturation of the x variable in (271) by any other value (i.e. Jane, Mary, Tom, etc.) results in a false proposition (via Gricean Quantity-reasoning).

$$(271) \quad \llbracket \text{JOHN stole the cookies} \rrbracket^f = \{ \text{stole}(x, \text{cookies}) \mid x \in D_e \}$$

Going back now to RIs like (263) and their performative counterparts with an overt necessity modal like (262), we could provide the following focus alternatives respectively:

- (262) *¡Deberías haber salido MAÑANA!*
 must_{Cond} have left tomorrow
 “You should have left TOMORROW.”

- (272) Focus alternatives of (262):

{ *¡Deberías haber salido HACE-2-DIAS!*, *¡Deberías haber salido AYER!*,
¡Deberías haber salido PASADO-MAÑANA!, ... }

“You should have left

(2-DAYS-AGO / YESTERDAY / THE-DAY-AFTER-TOMORROW / ...)!”

- (263) *¡Haber salido MAÑANA!*
 have left tomorrow
 “You should have left TOMORROW.”

- (273) Focus alternatives of (263):

{ *¡Haber salido HACE-2-DIAS!*, *¡Haber salido AYER!*,
¡Haber salido PASADO-MAÑANA!, ... }

“You should have left

(2-DAYS-AGO / YESTERDAY / THE-DAY-AFTER-TOMORROW / ...)!”

What happens next is the key point. As said above, the presence of focus in (262-263) triggers the negation of their alternatives upon application of the Gricean principle of Quantity. This results in the following negated focus alternatives, where negation scopes above the both the overt and covert modals:

(274) Negated focus alternatives of (262):

{ \neg *¡Deberías haber salido HACE-2-DIAS!*, \neg *¡Deberías haber salido AYER!*,
 \neg *¡Deberías haber salido PASADO-Mañana!*, ... }

“It’s not the case that you should have left

(2-DAYS-AGO / YESTERDAY / THE-DAY-AFTER-TOMORROW / ...)!”

(275) Negated focus alternatives of (263):

{ \neg *¡Haber salido HACE-2-DIAS!*, \neg *¡Haber salido AYER!*,
 \neg *¡Haber salido PASADO-Mañana!*, ... }

“It’s not the case that you should have left

(2-DAYS-AGO / YESTERDAY / THE-DAY-AFTER-TOMORROW / ...)!”

Furthermore, I suggest that the Epistemic Step can be invoked to strengthen *one* of the focus alternatives based on the counterfactual presupposition that the addressee will not be leaving tomorrow in (262-263). Such a strengthening results in the additional presupposition that the addressee already carried out the event of leaving at some time in the past. This provides a conversational explanation for why it is impossible for the addressee to leave tomorrow, given the assumption that the same event cannot be repeated twice in the same world. This effect is parallel to the contribution that a covert *en vez de...* (“instead”) would have in (262-263), a modifier that Ogihara (2002) suggested to be at work in mismatched past subjunctive conditionals. An example of what a possible such strong negated alternative might look like in each case is the following:

(276) Possible strong negated focus alternative of (262):

¡No deberías haber salido AYER!

“You shouldn’t have left YESTERDAY!”

(= *¡Deberías (no) haber (no) salido AYER!*)

(277) Possible strong negated focus alternative of (263):

¡No haber salido AYER!

“You shouldn’t have left YESTERDAY!”

(= *¡Haber no salido AYER!*)

Note that, due to the neg-raising properties of *deber*, negation is semantically interpreted below it in these strong negated alternatives, even though negation linearly precedes *deber* in the surface. Interestingly, the equivalences provided in parentheses above illustrate that, regardless of where it is pronounced with respect to the modal and *haber*, once negation is under the scope of the former, it is interpreted below the latter as well. Because of the modal contribution of *haber* in these examples, this means that the non-asserted presuppositional meaning it generates in these strong negated focus alternatives is that the actual world is not a member of the set of worlds where the addressee did not leave yesterday. Simplifying the double negation, (276-277) express that the addressee *did* leave yesterday.

Crucially, this actuality effect that obtains upon simplifying the double negation further supports the assumption above that the Epistemic Step should only apply to *one* of the focus alternatives. This is because otherwise, if it applied to all of them, the strong negated alternatives taken together would express that the addressee left at every single temporal interval represented in the alternatives (e.g. the addressee left two days ago *and* yesterday *and...*). But this is an incongruous result.

Finally, notice that the inclusion of narrow-scope negation in examples of this sort leads to an interesting incompatibility with future-oriented adverbs, since the resulting focus alternative is simply not assertable (which I marked by the symbol \ominus (instead of ‘#’) because the negated focus alternatives are semantic objects after all).

(278) Unassertable strong negated focus alternative of (262):

\ominus ¡No deberías haber salido MAÑANA!

“You shouldn’t have left TOMORROW!”

(279) Unassertable strong negated focus alternative of (263):

\ominus ¡No haber salido MAÑANA!

“You shouldn’t have left TOMORROW!”

In other words, the sentence “You shouldn’t have left tomorrow” cannot be felicitously uttered in any context.⁵² This effectively limits the potential focus alternatives

⁵² Why such sentences are infelicitous I am not sure about. A possible explanation might

of (262) and (263) to those which refer to a past time – exactly the point in time where histories diverged and the actual world became one where the addressee cannot leave tomorrow anymore. Thus, the apparent past contribution of *haber* can be derived indirectly from the incompatibility between negation and future-oriented adverbs under the necessity modal.

Moreover, notice that the optionality of the Epistemic Step means that sentences with future-oriented adverbs like (262-263) can still be uttered in contexts where the addressee never actually left in the past. This suggests that, as mentioned above, this previous accomplishment is indeed a conversational implicature. Suitable examples of this could be introduced by contexts similar to that devised by Ippolito (2013) and shown in (261) above. The RI equivalent of it could be the one below where, by hypothesis, John did not watch any rugby game while in the Basque Country:

- (280) (Context: John, a rugby fan, was recently visiting the Basque Country but he is back in the USA now. Mary, John, and I are now chatting over the computer. Mary knows that John would have loved to watch a rugby match while on vacation and suggests to him that he should have gone to watch the Biarritz Olympique yesterday, while he was still visiting. I know that Mary is mistaken because Biarritz is actually playing tomorrow. I intervene and say:)

No. ¡Haber ido MAÑANA! El Biarritz juega entonces.

No have gone tomorrow the B plays then

“No. You should have gone TOMORROW! Biarritz plays then.”

It is important to remark that an utterance of a future-oriented RI still presupposes that carrying out the event referred to is impossible, regardless of whether the reason for its impossibility is that the addressee already carried out said event in the past or not. As argued throughout, this counterfactual presupposition is due to the contribution of *haber* in the original assertion, and not necessarily connected to the focus alternatives. Thus,

be that such examples seem to express that the addressee already left *tomorrow*, which is obviously impossible at utterance time. In any case, I will have to investigate the relationship between negation and future-oriented adverbs in these construction before coming up with a well-motivated explanation.

the appropriate conversational use of a RI (as opposed to that of a regular imperative) is that the future must be taken to be settled with respect to the impossibility to perform the event under consideration.

Having explained how the previous accomplishment implicature can be derived, I want to backtrack a bit and bring the discussion back to the infelicitous example (264) repeated below for clarity.

(264) (Context: You are at home. There is a festival you want to attend tomorrow in Tokyo, but your plane ticket for Japan is for next week. You are still at home. Your friend tells you:)

- a. % *¡Deberías haber salido MAÑANA!*
 must.*Cond* have left tomorrow
 “You should have left TOMORROW!”
- b. % *¡Haber salido MAÑANA!*
 have left tomorrow
 “You should have left TOMORROW!”

The crucial difference between this example and (280) is that, in the latter, the addressee has already used up his opportunity to watch the game: his vacation did not overlap with the date of the match, and he is back at home after finishing his days off. In the current case in (264), it still seems possible for the addressee to do something and try to modify the departure date. Therefore, the use of a simple imperative is preferred.

Before moving on, I think that I should elaborate on the expression “used up his opportunity”. If the event in question is unquestionably something that can only be done once, things are relatively straightforward. Take the following dialog, for example:

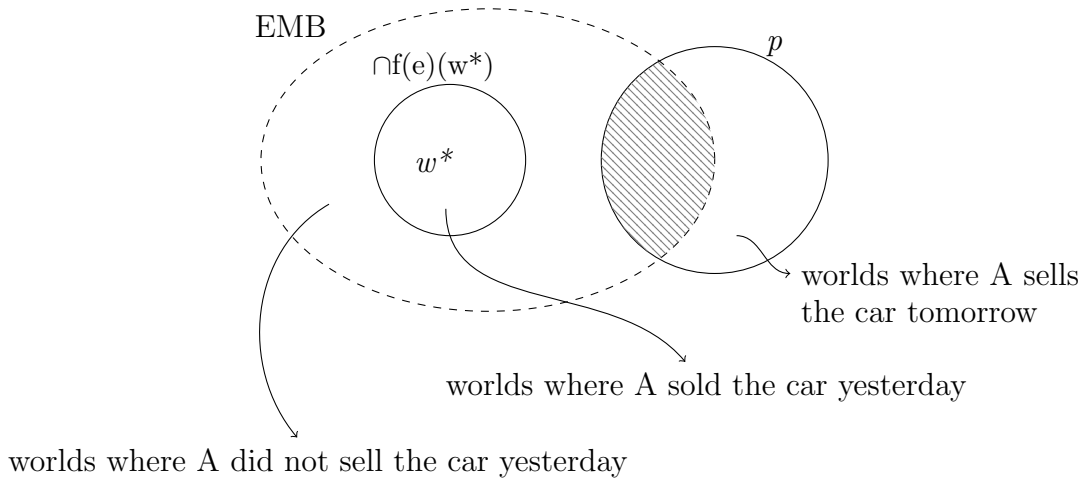
- (281) A. *Vendí el coche ayer.*
 sold the car yesterday
 “I sold the car yesterday.”
- B. *¡Haberlo vendido MAÑANA!*
 have-CL.*3sg* sold tomorrow
 “You should have sold it TOMORROW.”

Throughout Chapters 2 and 3, I have argued that the Topic Worlds in SCCs and RIs correspond to the worlds maximally similar to w^* where the prejacent is true (i.e.

the intersection between the worlds in the modal base and the prejacent worlds). I also said that, because the actual world must be found inside the realistic modal base, this is equivalent to saying that the Topic Worlds correspond to the prejacent worlds. But this equivalence is broken in (281), because in B's response there is no possible overlap between the modal base (which includes the proposition that A sold his car yesterday) and the proposition that A sells his car tomorrow. This means that the set of best worlds quantified by the modal will not include any world where A sells the car tomorrow and not yesterday. There are just no such worlds to be ranked in the modal base! In order to be able to maintain the aforementioned equivalence, I suggest that we appeal to Mari's (2015) notion of the Extended Modal Base (EMB), introduced in section 2.3.3.2.

I propose that future-oriented focused RIs like B in (281) make use of an EMB which is anchored at the pragmatically salient past time in the history of w^* right before the prejacent took place in the past (the time when the car was sold). This EMB thus includes both worlds where the prejacent took place and where it did not. Hence, the Topic Worlds will correspond to the worlds where A sells his car tomorrow and not yesterday (i.e. the shaded intersection between p and the EMB below).

Figure 3.2: Representation of the future-oriented RI in (281)



However, things get somewhat more complicated if we consider Ogihara’s (2002) example repeated below. In a context where John mistakenly gave flowers to Mary yesterday, there is a sense in which the antecedent does not quite preclude him from giving her flowers tomorrow *again*. The only thing that this sentence would express in such a scenario is that the world turned out to be sub-optimal because the ideal would have been for John to give Mary flowers tomorrow *for the first time*.

- (260) If John had given flowers to Mary TOMORROW_F, she would have been pleased.
(Ogihara, 2002: example [1])

Going back to RIs, these constructions can also be used in such sub-optimal contexts where the preadjacent event is allowed to happen again. The following dialog is an example of that. The key here is that, unlike selling a car, going out is an action that can be easily repeated multiple times (just like giving flowers). But this does not mean that there is not an optimal time to do such an action.

- (282) A. *Salí ayer.*
left yesterday
“I went out yesterday.”

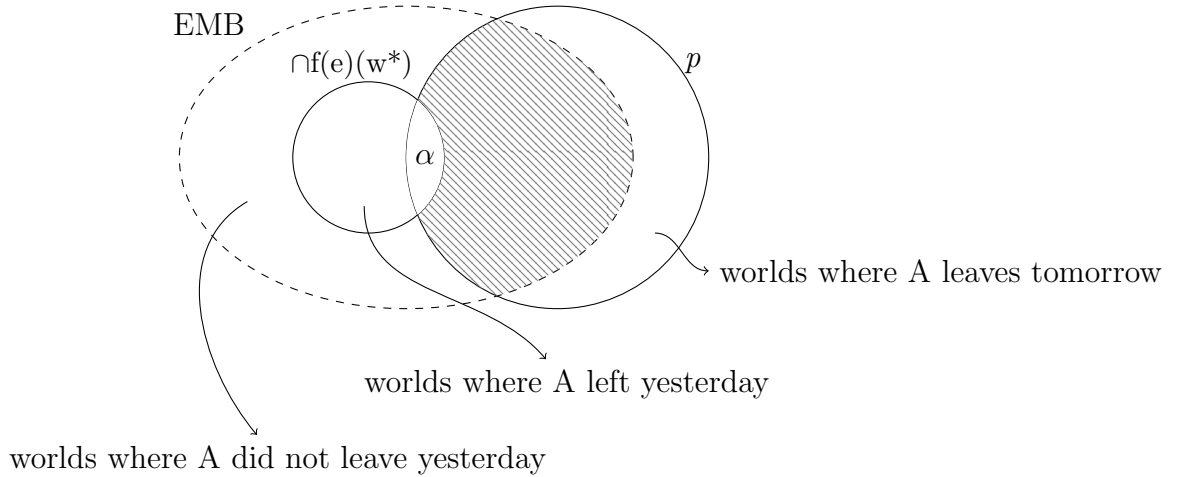
B. *¡Haber salido MAÑANA!*
have left tomorrow
“You should have gone out TOMORROW.”

A. *Bueno, entonces ¡salgamos mañana también!*
well then leave tomorrow too
“Well then, let’s go out tomorrow too!”

To repeat, what is interesting about (282) is that B’s utterance does not really exclude the possibility for A to leave tomorrow again. Rather, the RI is reinterpreted to mean that *even* if A somehow leaves tomorrow again, this would not be acceptable anymore because he already did it once before at the *wrong* time. I believe that RIs used in these scenarios can also be represented using an EMB. However, the difference here is that the preadjacent worlds must be allowed to overlap with the (narrow) modal base, since the actual world might well turn out to be one where A goes out *both* yesterday and tomorrow (the section labeled α in Figure 3.3). Because of this, the Topic Worlds

in these contexts will have to be constrained a bit more to correspond with the worlds in the intersection between the prejacent worlds and the EMB that exclude those in the (narrow) modal base.⁵³

Figure 3.3: Representation of the future-oriented RI in (282)



Given all the examples presented so far, I believe that the following generalization for the appropriate usage of performative conditional SCCs and RIs with a focused adverbial can be stated. Such constructions can be felicitously uttered in contexts where the speaker believes that the addressee should have taken a course of action different from the one that she actually took. This can correspond to cases where the addressee chose to carry out the prejacent event in the past, but the speaker thinks that she should have

⁵³ Alternatively, one could take the strong view that both A and B in (282) are actually referring to the very same event. This interpretation would make the parallel with the car-selling example in (281) more straightforward: just like A can only perform the same car-selling action once (i.e. he cannot sell it both yesterday and tomorrow), it could be argued that A can only perform the same going-out event once. If the RI in (282) is interpreted that way, the representations in Figures 3.2 and 3.3 would be identical in that there would be no overlap between p and the modal base. Furthermore, this would allow the definition of Topic Worlds to remain unaltered as the intersection between p and the EMB in both cases, which I think is a point in favor of this view. Ultimately however, I believe it is an ontological question (at least in (282)) whether B is referring to exactly the same event that A carried out in the past or to a different one, so I will remain agnostic as to what should be the correct interpretation.

done it in the future (e.g. (282)). Or cases where the speaker thinks that the addressee should have done something in the past, but she did not do it then (e.g. (265)). In either case, it is crucial that the speaker believes that “an opportunity was missed” and that we are now in a less-than-optimal world with respect to what should have been according to his beliefs. This suggests that determinism plays a vital role in limiting the contexts where these constructions can be used, because the addressee cannot undo what she did at the time that the performative SCC or RI is uttered.

Before concluding this section, I would like to show how the mechanism proposed here can account for cases where the focused constituent is other than a temporal adverb. For example, sentence (283) below presupposes that the addressee did not arrive in Berlin yesterday. In addition, it also conveys the previous accomplishment implicature that the addressee arrived somewhere else through the negation of its focus alternatives.

- (283) *¡Haber llegado A BERLIN ayer!*
 have arrived to B yesterday
 “You should have arrived IN BERLIN yesterday!”

Even more interesting are the following cases where focus on a non-temporal constituent interacts with a *future-oriented* adverb. The comparison between (284) and (285) highlights an interesting asymmetry between the two: RIs with a future-oriented adverbial (or the equivalent conditional SCCs) are only felicitous if it is the very future adverbial that bears focus. I would like to argue that (284) is infelicitous for the same reason that (264) was, namely, that this sentence presupposes that arriving in Berlin is impossible for the addressee in a way that it seems to take the future to be already settled. To make things worse, none of its focus alternatives are acceptable either since all of them presuppose that the addressee already arrived somewhere else tomorrow – by all means an infelicitous statement.

- (284) # *¡Haber llegado A BERLIN mañana!*
 have arrived to B tomorrow
 “You should have arrived IN BERLIN tomorrow!”
- (285) *¡Haber llegado a Berlin MAÑANA!*
 have arrived to B tomorrow
 “You should have arrived in Berlin TOMORROW!”

On the other hand, (285) also presupposes that arriving in Berlin tomorrow is not possible for the addressee, but this presupposition about the settledness of the future can be rescued by appealing to the focus alternatives of the sentence (unlike in (284)). In (285), the negation of its focus alternatives expresses that the addressee arrived in Berlin at some other past time. I suggest that such meaning can be used to salvage the sentence in the same way that B's response in (282) was. That is, by reinterpreting (285) as stating that w^* is not among the best possible worlds where the addressee arrives in Berlin tomorrow but not in the past.

In sum, in this section I have argued that the pastness that *haber* seems to express in SCCs and RIs is not part of its denotation, but that it can be derived from the counterfactuality it brings in together with the restriction on the assertability of focus alternatives generated via Rooth's (1992) theory of focus semantics and negation. In addition, the data presented offered additional evidence for Ippolito's (2013) argument that focus does not introduce an existential presupposition. Finally, I proposed that in instances where RIs or conditional SCCs have a prejacent anchored in the future, the topic worlds are reinterpreted to allow for the possibility that w^* will become a prejacent world, it will just not be an optimal one.

3.9 Conclusion

In this chapter, I extended the analysis elaborated for SCCs to the kind of performative constructions known as RIs. I began by providing evidence that RIs should indeed be considered a subclass of imperatives and that even the most developed alternative analysis (which argues in favor of viewing RIs as reduced optative clauses) does not fare as well.

Then, I presented my own account of RIs based on a modal view of imperatives. While the elaborate covert structure that such an approach posits can certainly be seen as a drawback, I tried to show that it is hard for simpler formalisms to explain all the facts about RIs. In the last two sections, I focused on the non-asserted contribution of RIs. First, I argued that the counterfactual inference of RIs has the same range of properties as the one in SCCs. And second, picking up on a loose end from Chapter 2, I dealt with

cases where RIs and SCCs have a focused future-oriented adverb, which can give rise to the inference that the addressee already carried out the preadjacent event in the past.

With respect to the more general aims of this work, the content of this chapter should be seen as supporting the conclusion in Chapter 2 regarding the existence of stronger kinds of counterfactuality than previously observed. In the discussion that follows, I switch gears slightly to concentrate on a different range of actuality and counterfactuality effects in Spanish that exhibit properties that set them apart from the pre-suppositional meaning dealt with up to this point.

Chapter 4

(COUNTER)FACTUALITY IN SPANISH MODALS

4.1 Introduction

This chapter deals with what I will call (counter)factual constructions (cFCs) in Spanish. These sentences are the Spanish counterparts of the French structures that Hacquard (2006, 2009) investigated, which consist of a circumstantial modal with past (im)perfective morphology followed by a non-finite prejacent (without *haber*, which sets cFCs apart from SCCs). In spite of the typological proximity between the two languages, the behavior of these constructions is dramatically different between Spanish and French. As shown in previous literature (Bhatt, 1999; Hacquard, 2006, 2009; Homer, 2011; a.o.), when a French circumstantial modal bears past perfective morphology,⁵⁴ it loses its intensionality and behaves like an implicative predicate (“manage”, “remember”) in that the prejacent is asserted to hold in the actual world. Consequently, trying to cancel the content of the prejacent results in a contradiction. There is no such restriction when imperfective aspect is used, because this lexical head does not trigger what has become known in the literature as an “actuality entailment”.

- (286) *Jean a pu ouvrir la porte (# mais il ne l’a pas fait).*
 J have.*Pres* could open the door but he NEG it-have not done
 “Jean managed (lit. was able to) open the door (# but he didn’t do it).”
- (287) *Jean pouvait ouvrir la porte (mais il ne l’a pas fait).*
 J can.*PstImpfv* open the door but he NEG it-have not done
 “Jean was able to open the door (but he didn’t do it).”

⁵⁴ Just a quick note on the tense paradigm in French. Nowadays, the *passé composé* (or present perfect) has taken the place of the *passé simple* (or simple past) in colloquial speech. Therefore what look like present perfect examples below can be understood as equivalent to the past perfective in Spanish.

Note that I said that these effects apply to circumstantial modals in general. The ability interpretation above has accrued most of the attention in the literature, but priority readings of the modal (both possibility and necessity) also give rise to actuality entailments. A teleological example of each is offered below.

- (288) *Jean a pu prendre le bus pour aller à l'hôpital (# mais il ne J have.Pres could take the bus to go to the-hospital but he NEG l'a pas pris).*
it-have not taken

“Jean managed to take the bus to go to the hospital (# but he didn’t take it).”

- (289) *Jean a dû prendre le train pour aller à l'hôpital (# mais il J have.Pres must take the bus to go to the-hospital but he ne l'a pas pris).*
NEG it-have not taken

“Jean has had to take the bus to go to the hospital (# but he didn’t take it).”

Given this behavior of French modals when they express past perfective, one might expect that a closely related language like Spanish would behave exactly the same. Surprisingly however, this is not the case across all comparative dimensions. When a Spanish modal is conjugated in the past perfective, additional meanings arise beyond the purely asserted ones – but these are not like the ones seen in French. As it turns out, a Spanish version of (288) can trigger either an actuality reading of the prejacent, or a counterfactual one (Borgonovo and Cummins, 2007; Borgonovo, 2011). The possible continuations below highlight these options.

- (290) *Juan pudo coger el bus... pero no quiso/ y tuvo un viaje fantástico.*
J can.PstPfv take the bus but not want and had a trip wonderful

“Juan was able to take the bus...but he didn’t want to/ and he had a wonderful trip.”

It is important to remark that sentences like (290) will typically be understood as expressing either of the two aforementioned readings (actuality or counterfactuality). In some specific cases (when the perfective cFC is a full answer to the Question Under Discussion (QUD), cf. section 4.4.3), perfective cFCs can be used to convey a pure possibility meaning that is agnostic with respect to whether the prejacent materialized or not. These instances can be somewhat difficult to distinguish from epistemic readings

like (291) and so, imperfective aspect is normally used to express agnosticity with a circumstantial interpretation (as in (292)).

- (291) *Según dicen, Juan pudo coger el bus pero no sabemos si lo hizo.*
 according say, J can.*PstPfv* take the bus but not know if CL.*3Sg* did
 “According to what they say, Juan might have taken the bus, but we don’t know if he did.” (= \Diamond Juan took the bus, $\Diamond\neg$ Juan took the bus)
- (292) *Juan podía coger el bus, pero no sé si lo hizo.*
 J can.*PstImpfv* take the bus but not know if CL.*3Sg* did
 “Juan was able to take the bus but I don’t know if he did.”

In any case, it should be emphasized that in the absence of any contextual cues, (290) is perfectly ambiguous between either actuality or counterfactuality. Nevertheless, as will be discussed further when I present my analysis, there are constraints that can favor one interpretation over the other. In order for the actuality reading to arise, for example, the temporal anchoring of the modal and that of the prejacent have to coincide. The fact that (293) can only be understood counterfactually supports this constraint (the adverb “tomorrow” below can only modify the prejacent given that the modal bears past morphology):

- (293) (Context: Yesterday Juan had the opportunity to buy tickets for the bus that leaves tomorrow)
- Juan pudo coger el bus mañana. (#actuality/CF)*
 J can.*PstPfv* take the bus tomorrow
 “Juan was able to take the bus tomorrow.”
 (= “Juan had the opportunity to take the bus tomorrow.”)

Another interesting point is that the actuality reading seems strongly connected to goal-oriented modality. This means that, in order for actuality to obtain, it is not enough for the circumstances surrounding the event to enable its realization or for the subject to have the ability to do it: for the prejacent to come about, it must be that either the

prejacent itself is the goal of the agent of the event (cf. (294)),⁵⁵ or there is another goal to be fulfilled whose accomplishment requires the realization of the prejacent (cf. (295)). Note that this goal does not have to be necessarily associated with the subject of the sentence either, but with the understood agent of the event (cf. (296)). If any of these conditions is absent, the actuality reading disappears and counterfactuality kicks in.

- (294) *Tomás pudo ganar la carrera.*
 T can.*PstPfv* win the race
 “Tomás managed to win the race.”

- (295) *Juan pudo tomar el tren para ir a Francia, a pesar de que prefería viajar en avión.*
 J can.*PstPfv* take the train for go to F to sad of that preferred
 travel in plane
 “Juan managed to take the train to go to France, even though he preferred to travel by plane.”

- (296) *El barco pudo entrar en el puerto.*
 the ship can.*PstPfv* enter in the harbor
 “The ship managed to enter in the harbor.”

(Mari, 2015: adapted from example [81])

As the examples just discussed highlight, the interplay between the abilities of the agent and the circumstances surrounding the event turns out to be crucial in determining whether an actuality or a counterfactuality reading is obtained. This is clearly related to the kinds of propositions that the modal base of *pudo* (“can.*PstPfv*”) includes in each case, and which leads to the different sub-flavors that the modal can have in these cases. The relationship between goals and actuality was touched upon by Mari (2015) in her discussion of the related notion of *teloi*. However, she included deontic interpretations among the ones that trigger these effects, which I will argue is not the case in Spanish. This is because, for actuality to obtain with animate subjects, it is not enough to have permission to do something: the agent must also *want* to carry out the prejacent.

⁵⁵ Example (294) could also be continued by ...*pero se retiró antes de empezar* (“...but he retired before starting”), which would obviously trigger a counterfactual interpretation even though winning the race was arguably his goal. The reason why (294) allows the counterfactual reading in this case is that the requirement that the circumstances surrounding the event have to enable its realization is not fulfilled here.

4.2 Ability or opportunity?

Focusing exclusively on the meaning of the modal for now, it could be that the possibility to lift the weight in (297) arose because of a number of different reasons.

- (297) *María pudo levantar la pesa de 200kg.*
 M can.*PstPfv* lift the weight of 200kg
 “María was able to lift the 200kg weight.”

For example, María might be a very strong weight-lifter who has been training for years and for whom lifting a 200kg weight is quite an easy thing to do. In this case, María’s physical abilities should probably be included in the modal base, as they seem to be the key in explaining how this possibility arises. On the other hand, (297) could also be used to describe a scenario where María’s physique is that of an average woman, but the weight just happens to be connected to a contraption consisting of an elaborate system of pulleys through which even a child could lift the weight. In this alternative situation, the possibility arises, not because of any intrinsic property of María herself, but because of a property of the utterance scenario.

Clarifying the often blurry distinction between these two interpretations is the aim of Hackl (1998), who uses the terms *ability-can* and *opportunity-can* respectively.⁵⁶ One of the diagnostics that he uses to differentiate between the two readings is substituting the modal for the periphrastic construction “be capable of”. According to the author, this periphrasis “can be used only to express *ability*” (Hackl, 1998: 15). This generalization appears to hold in Spanish as well:

- (298) *María fue capaz de levantar la pesa de 200kg.* (ability/#opportunity)
 M be.*PstPfv* able of lift the weight of 200kg
 “María was capable of lifting the 200kg weight.”

⁵⁶ “Intuitively, having an ability means being in control/having the potential of bringing about a situation or an event of some kind.” (Hackl, 1998: 15. Quotation marks removed). Thus, *ability-can* is typically relative to some non-accidental properties of the agent. On the other hand, for *opportunity-can* “the relevant facts are not properties of the subject of the [Ability Attribution]. Typically they are accidental or stable properties of the utterance situation.” (Hackl, 1998: 26).

The reason why I brought up this distinction between ability-*can* and opportunity-*can* is that some authors disagree on whether actuality effects arise under both interpretations of the modal. Mari and Martin (2008), for instance, argue that opportunity-*can* (which they refer to as the “purely circumstantial” one) does not trigger actuality entailments in French. They claim that this is contrary to Hacquard’s (2006) view, who seems to assume that it does (Mari and Martin, 2008: fn. 10). The following example, where the modal is most naturally interpreted as expressing opportunity, shows that there are indeed cases in French where actuality does not automatically follow from the presence of *passé composé*.⁵⁷

(299) *Pierre a pu prendre le train pour Londres, et cet imbécile ne l’a pas fait.*

“Pierre could have taken the train for London, and this imbecile didn’t do it.”

(Mari and Martin, 2008: example [26])

In Spanish, however, I believe the data to be more straightforward in that both the counterfactual and the actuality meanings are available whenever *pudo* is interpreted circumstantially, regardless of its particular sub-flavor. One example that highlights the availability of the two readings with opportunity-*can* is the following (where I think that the opportunity interpretation of the modal is quite salient):

(300) *Unai pudo acceder al concierto sin problemas...*

U can.*PstPfv* access to-the concert without problems

“Unai was able to access the concert without trouble...”

a. *...y se lo pasó genial.*

...and Refl CL.*3sg* pass great

...and he had a great time.”

b. *...pero se puso a discutir con el portero y no le dejaron entrar.*

...but Refl put to argue with the bouncer and no CL.*3sg* let enter

⁵⁷ In Hacquard (2014), the author replies that what “Mari & Martin show is not that perfective on a root modal doesn’t force actuality entailments, but rather that the *passé composé* (which is used to express past perfective in French) doesn’t [...] The *passé composé* is ambiguous between past perfective and present perfect.” (p. 14). Based on evidence from languages with actuality entailments *and* with an overt distinction between these two tenses (like Bulgarian), Hacquard (2014) claims that it is the present perfect (and not the perfective) that allows the cancellation of the entailment.

...but he started arguing with the bouncer and they didn't let him through."

With respect to ability-*can*, it tends to be harder to come up with an unambiguous ability interpretation when the modal bears perfective aspect because abilities are typically understood as stable properties that extend in time. Therefore, they typically combine better with imperfective aspect. Still, it was already shown above that the first scenario provided for (297) favored the ability interpretation. The following contextualized examples arguably trigger an ability reading too. Inanimate subjects like that in (301) tend to provide the most clear-cut cases because they can easily be understood as having temporally bounded abilities. Examples like (302) with animate subjects are nonetheless perfectly felicitous as well.

- (301) *Durante un corto periodo de tiempo, esta máquina pudo exprimir*
during a short period of time this machine can.*PstPfv* squeeze
naranjas...
oranges

"During a short period of time, this machine was able to squeeze oranges..."

- a. *...y el zumo resultó excelente.*
...and the juice turn-out excelent
...and the juice turned out excellent."
- b. *...pero eliminamos esa función antes de probarla por razones de*
...but eliminate that function before of test-CL.*3Sg* for reasons of
seguridad.
security
...but we removed that function before ever testing it for safety reasons."

(Inspired by Mari and Martin, 2008: example [7])

- (302) *Puesto que tenía una fuerza casi sobrehumana, María pudo levantar*
since that had a strength almost superhuman M can.*PstPfv* lift
esa roca gigante...
that rock giant

"Since she had almost superhuman strength, María was able to lift that giant rock..."

- a. *...y lo hizo sin esfuerzo.*
...and CL.*3Sg* did without effort
...and she did it without any effort."

- b. ...*pero ni se molestó porque no quiso arriesgarse a lesionarse.*
 ...but even Refl bother because not want risk to injure
 ...but she didn't even bother because she didn't want to risk getting injured.”

The upshot after considering the Spanish examples so far is then that *any* kind of circumstantial modal base triggers actuality or counterfactuality effects in this language when the modal bears past perfective morphology.

4.3 Previous proposals

In recent years, research on actuality entailments has resulted in a large body of work. As it turns out, most of these proposals have very little in common, which underscores the elusiveness of this phenomenon. To name but a few, actuality entailments have been attributed to the interaction between perfective aspect and monoclausality (Hacquard, 2006, 2009, 2014), scope ambiguity (Borgonovo, 2011), an ontological distinction between kinds of abilities (Mari and Martin, 2008), etc. In this section I provide a quick overview of the accounts that I consider most relevant for my own analysis to be put forward later on. For the reader interested in a more complete list of the different theories, Hacquard (2014) and Mari (2015) present rather detailed reviews of these and additional alternatives.

4.3.1 Hacquard (2006, 2009)

Hacquard (2006, 2009) is credited with having brought the notion of actuality entailments to the forefront after Bhatt (1999) re-discovered them in his dissertation.⁵⁸ For Hacquard (2006, 2009) modal verbs like “can” or “must” are auxiliaries that head their own modal projection and which can sit in either of the two positions mentioned in the introduction: above the tense and aspect projections (for the epistemic interpretation), or below them (for the circumstantial reading). This means that sentences that include such modals will be monoclausal in that the only event variable in their denotation will be introduced by the main lexical verb. This is an essential component of her work, since it is used to explain why modal verbs that are bi-clausal do not trigger actuality entailments

⁵⁸ As far as I can tell, the discussion of the actuality inferences associated with the ability modal can be traced back to Horn (1976), who analyzed them as implicatures in English.

even with perfective aspect (e.g. French *vouloir* (“want”)). Finally, she also proposes an enriched denotation for perfective aspect which, apart from locating the running time of its event complement within a time interval, it also locates the event in a world.

(303) *Hacquard’s (2009) denotation for perfective aspect:*

$$\llbracket \text{Pfv} \rrbracket = \lambda P_{et} . \lambda t_i . \exists e . [\mathbf{e \text{ in } w} \ \& \ \tau(e) \subseteq t \ \& \ P(e)]$$

Because the aspectual projection outscopes circumstantial modals, the event quantified over by perfective aspect will be located in the actual world (the conjunct in bold in (303) above). This means that there will be one single event in the structure, which is anchored both in the actual world (through the contribution of aspect) and in some other world w' (because the event in the prejacent is in an intensional context below the modal). The issue is that, strictly speaking, the truth conditions of a sentence with a perfective modal will only assert that the event in the actual world is an event that gets realized as the prejacent in some possible world or other. In order to ensure that both events get the same description (and so, for the actuality entailment to be triggered), Hacquard (2006, 2009) introduces a principle called *Preservation of event description across worlds (PED)*, which states that if the same event occurs in multiple worlds, it retains the same properties across all of them. Hence, the event in the actual world will be the same prejacent event that occurs in the intensional environment.

One of the strong points of this analysis is that it neatly predicts why neither epistemic verbs nor imperfective aspect trigger actuality entailments. With regards to the first case, since Hacquard (2006, 2009) assumes that epistemic modals are high ones (i.e. that they merge above the tense and aspect projections following work by Cinque (1999)), the event quantification of the aspectual head will fall within the scope of the modal. Therefore, this event will always be asserted to take place in some possible world, but not necessarily the actual one. With respect to imperfective aspect, Hacquard (2006, 2009) assumes that this head is intrinsically modal in nature (i.e. it involves generic quantification over worlds), so the event in the prejacent will, again, always be relative to some possible world.

In spite of the noteworthy merits of this proposal, it has two important drawbacks that I would like to point out. First, as already noted by Hacquard (2014) herself, there is

the stipulative nature of the PED. Second, and more pressingly for my own proposal, there is the issue that modal verbs arguably introduce their own event variable, which Homer (2011) showed can be targeted by temporal modifiers. This is contrary to Hacquard’s (2006, 2009) assumptions in that she argues that modals do not contribute their own event. Section 2.2.1 above dealt with this issue and, at that point, I provided (58) as an example to argue for Homer’s (2011) proposal. This suggests that the event variable that aspect quantifies over should probably be the modal’s own event, and not the one corresponding to the prejacent. If this is so, it is not obvious anymore how to derive actuality entailments through Hacquard’s (2006, 2009) proposal.

- (58) (Context: Yesterday the professor said that students could hand in their homework next week, but today she changed the requirements and they have to hand it in this week.)

Ayer Tomás podía entregar sus deberes la semana que viene.
 yesterday T can.*PstImpfv* hand-in his homework the week that comes

“Yesterday Tomás could hand in his homework next week.”

Finally, this theory might be adequate for languages where actuality effects are entailed (French, Hindi, Greek, etc.). However, I showed at the beginning of this chapter that the actuality inference is cancellable in Spanish, so the mechanism through which it arises must be intrinsically different in this case. The proposals discussed next try to offer a way around this quibble.

4.3.2 Mari and Martin (2008)

Mari and Martin (2008) opt for a purely semantic account of actuality entailments founded on an ontological distinction between abilities. They distinguish Action-Dependent Abilities (ADAs) from Generic Abilities (GAs) based on the following criteria.

(304) Action-Dependent Abilities (ADAs)

- a. ADAs ontologically depend on an action to exist.
- b. ADAs are weaker than GAs because a unique and non-repeatable performance suffices to imply the corresponding ADA.

- c. ADAs are bounded because they have the same temporal boundaries as the action on which they depend.
- d. It is because the agent carries out an action that we say he has the ADA to perform it.

(305) Generic Abilities (GAs)

- a. GAs don't require verifying instances.
- b. GAs are ascribed to an agent only if he could perform the action repeatedly if he wanted.
- c. GAs are unbounded by default.
- d. An agent has a GA and then performs the action.

Since the role of perfective aspect is to mark an event as bounded, speakers will typically understand the modal as conveying an ADA when such an aspectual head is used. This triggers an actuality entailment because ADAs are only attributed to an agent if the corresponding action exists. Conversely, when imperfective aspect is used, the modal is understood as unbounded (the ability prolongs itself in time) thus favoring the understanding of the ability as a GA.

Nevertheless, Mari and Martin (2008) argue that this stereotypical relationship between aspect and kind of ability can be overridden provided that the adequate contextual cues are provided. In the French example below, the modal bears perfective aspect, but the context makes it clear that we are still talking about a GA that the robot was endowed with. In this case, the perfective does not trigger an actuality entailment.

- (306) *Notre nouveau robot a même pu repasser les chemises à un stade*
 our new robot have.Pres same could iron the shirts at one state
bien précis de son développement. Mais on a supprimé cette fonction
 well precise of its development but we have suppressed this function
(qui n'a jamais été testée) pour des raisons de rentabilité.
 which not-have ever been tested for the reasons of rentability
 “Our new robot could even iron shirts at a particular stage of its development.
 But we suppressed this function (which was never tested) for rentability reasons.”

(Mari and Martin, 2008: adapted from example [7])

By capitalizing on the distinction between kinds of abilities, Mari and Martin (2008) are able to account for these cases where the presence of the perfective does not directly trigger an actuality entailment. This feels like an improvement from Hacquard’s (2006, 2009) approach which, in light of examples like (306), seems to over-generate.

Mari (2015) voices some concern that this new proposal might be slightly too weak, however. Her worry is connected to point (304b): if an action implies the corresponding ADA, why is it that we feel a difference between (307) and (308)?

(307) When his turn came, John was able to dive into the pool.

(308) When his turn came, John dove into the pool.

An utterance of (307) seems to suggest that the possibility for John *not* to be able to jump was real, whereas in (308) no such extra layer of meaning is conveyed. In my view, this only shows that the modality contributed by the “be able to” or “could” is *real* even when they trigger actuality entailments. That is, that even if the ability modal asserts its complement in these cases, it does not behave as a purely extensional predicate: reference to some other possible worlds where the action might not have taken place is still made even if as backgrounded information.

A second worry of Mari (2015) regarding the aforementioned ontological distinction refers to the requirement that an action exist for an ADA to be attributed to an agent. She argues that actuality entailments arise “even when the existence of the action is not certain, as in questions” (p. 6), and offers the following example:

(309) *Il devait partir. Est-ce qu’il a pu prendre le train?*
 he must.*PstImpfv* leave is-it that-he have.*Pres* could take the train
 “He had to leave. Did he manage to take the train?”

(Mari, 2015: example [13])

The author states that in (309) “the speaker is not asking whether John had the possibility of taking the train but whether he actually took it.” (*ibid.*). While this does indeed seem to be the case, there is no actuality entailment in (309) and so, no ability attribution either: the speaker does not know if the person referred to even had the possibility to take the train. Therefore, since it is not presupposed that he had the possibility to take the train, it seems logical that no actuality entailment would follow.

In short, I do not think that the criticisms of Mari and Martin (2008) put forward by Mari (2015) are too definitive. Unfortunately however, this proposal makes no predictions about the kinds of counterfactual effects that arise with past perfective in Spanish. In order to account for the Spanish data, a more tailored framework appears to be necessary.

4.3.3 Borgonovo and Cummins (2007)

Borgonovo and Cummins (2007) focus primarily on Spanish and their objective is to account for both the actuality and counterfactuality readings that cFCs give rise to. In order to explain the latter inference, they adopt Condoravdi's (2002) domain-widening approach, which I discussed in the introduction and in section 2.1 (where I pointed out that there are times when it makes the wrong predictions). Most pressing, I claimed that the logical properties of necessity modals would not allow for the counterfactual interpretation to be triggered. This is because, by increasing their domain of quantification, one would actually be making a stronger statement, which would prevent Condoravdi's pragmatic mechanism from applying. But this counterfactual reading is certainly available below.

- (310) *Unai debió bailar (pero no lo hizo)*
 U must.*PstPfv* dance but not CL.*3Sg* did
 “Unai should have danced (but he didn’t).”

With regards to the actuality reading, the authors also propose an explanation based on the size of the quantificational domain. They suggest that perfective aspect is able to restrict the modal base in such a way that it will only contain the actual world (i.e. it will be a totally realistic modal base). This has the effect of trivializing the modal so that the event in the prejacent is asserted to have taken place only in the actual world. While this certainly gets the job done, it is completely mysterious how and why perfective aspect could affect the modal base in such a way. So, unfortunately, this proposal comes across as purely stipulative.

One aspect of the paper that does prove enlightening however, is their realization that the present perfect in Spanish triggers an even stronger actuality reading than the past perfective in some native speakers. This is interesting because the Spanish present perfect is formally identical to the French *passé composé*. Yet in Spanish the present perfect and the simple past are definitely distinct.

- (311) *Unai ha podido saltar la valla (% pero no lo hizo).*
 U have.*Pres* can jump the fence but not CL.*3Sg* did
 “Unai has been able to jump the fence (% but he didn’t do it).”

Nonetheless, it seems to me that this might be because the perfect favors a resultative interpretation in these cases. If the context is such that the modal clearly expresses simple opportunity in the recent past, I believe that the counterfactual interpretation becomes perfectly available again.

- (312) (Context: An upset professor talking to a student who is not putting enough effort in class)

Tuviste el examen la semana pasada, te di la opción de repetirlo dos días después, y después incluso te propuse hacerlo de forma oral.
 had the exam the last week CL.*2Sg* gave the option of repeat two
 day later and later even CL.*2Sg* proposed doing of form oral
*Vamos que **has podido aprobar** 3 veces y en ninguna te has esforzado.*
 so that have.*Pres* can pass 3 times and in none CL.*2Sg* have.*Pres*
 put-effort.

“You had the exam last week, you had the option to repeat it two days later, and after that I even suggested taking it orally. So basically **you have been able to pass 3 times** and in none of them have you put any effort.”

4.3.4 Borgonovo (2011)

In later work, Borgonovo proposed an alternative analysis of Spanish cFCs that combined scope ambiguity with aspectual coercion. Under this new proposal, the actuality reading arises when both tense and aspect outscope the modal at LF. The counterfactual interpretation is triggered when the modal joins the derivation right below tense, but immediately before aspect.

Let me focus first on the actuality reading. It is widely attested that when stative predicates bear perfective aspect, they tend to receive change-of-state or ingressive meanings that are typically explained through the presence of covert coercion operators (cf. de Swart, 1998; Bary, 2009; Homer, 2011). This can be seen below, where the stage-level predicate “to be rich” is understood not to hold anymore. Hence, Ana is taken to have

gone from the state of being rich in the past, to the state of not being rich at utterance time.

- (313) *Ana fue rica.*
 A be.*PstPfv* rich
 “Ana was rich.”

Given that modals are stative, the suggestion is that they should undergo similar kinds of coercive interpretations. Borgonovo (2011) makes the comparison with the verb *conocer* (“meet”) which, when it bears perfective aspect, is interpreted with the ingressive meaning that Juan went from not knowing Marta to knowing her.

- (314) *Juan conoció a Marta en la fiesta.*
 J meet.*PstPfv* to M in the party
 “Juan met Marta at the party.”

(Borgonovo, 2011: 213)

According to the author, when we conjugate a Spanish modal in the past perfective, this same ingressive interpretation obtains. Thus, (315) below is read as saying that Juan became able to escape. In addition, the author says that this ingressive reading cannot obtain unless there is a verifying instance (in the sense of Mari and Martin (2008), I presume).

- (315) *Juan pudo escapar.*
 J can.*PstPfv* escape
 “Juan was able to escape.”

(Borgonovo, 2011: example [18])

Contrary to what Borgonovo (2011) suggests, I do not think that there need be such a connection between ingressive coercion and verifying instances, because one might very well become able to do something without having to perform that action. For example, one could perfectly utter (315) in a context where Juan has been kidnapped and somebody comes to the rescue, but he has developed Stockholm’s syndrome. His rescuers made it possible for him to escape but he still refuses. The ingressive meaning is there, but there is no verifying instance. Therefore, I do not think that the actuality meaning can be adequately derived through these means. On the other hand, the account I present

in this chapter would be able to explain the lack of actuality in this particular scenario because the will to escape is not included among the priorities of the agent.

What about the counterfactual interpretation? As said above, Borgonovo (2011) claims that this reading arises when the modal appears in between tense and aspect. The role of tense is to anchor the modal evaluation time in the past, which would trigger Condoravdi's (2002) pragmatic mechanism. As far as perfective aspect is concerned, the author argues that its function in this case is to mark the prejacent as already completed by the utterance time so that whether it happened or not is already settled. When these two requirements are met, the hearer reasons that if the prejacent's occurrence is already settled, the reason that the speaker backtracked must be that the state of affairs could not be verified in actuality.

As mentioned before, Condoravdi's (2002) mechanism struggles with necessity modals because widening their domain of quantification will not trigger the intended Gricean reasoning. On top of that, I have an additional concern regarding the second component of Borgonovo's proposal for how actuality arises (namely, the one regarding the effect of perfective aspect on the prejacent event). This is because it is not at all clear that perfective aspect in these cases has the effect of locating the running time of the prejacent wholly before the utterance time. Temporal modifiers transparently show this:

- (316) (Context: A short-lived mistake in the regulations posted online allowed students to submit their take-home exam tomorrow. But this typo was quickly fixed and now they have to submit it today, as originally intended.)

Ayer durante unas horas Juan pudo entregar su trabajo mañana.
yesterday during some hours J can.*PstPfv* submit his work tomorrow

"Yesterday for a few hours, Juan was able to hand in his work tomorrow."

(316) is paraphraseable to mean that during a short time-interval in the past it became possible for Juan to submit his take-home exam tomorrow. The context makes it explicit that the prejacent should be understood as counterfactual, and the fact that the potential submission is anchored in the future does not preclude this interpretation as Borgonovo (2011) would predict. Actually, even in this case, perfective aspect seems to be interpreted as modifying the modal: the fact that we used *pudo* (instead of the

imperfective *podía* for example) strongly conveys that the possibility no longer holds in the present.

Actually, as mentioned in section 4.1, an interesting insight related to the relationship between the anchoring time of the modal and that of the prejacent is that, in order for the actuality reading to be available, both time intervals have to coincide. That is, there is no context that would allow (316) to be read with an actuality interpretation.⁵⁹ I believe this provides strong evidence in favor of Mari and Martin (2008), particularly with respect to property (304c) of ADAs.

Finally, I think there is also an important learnability issue for Borgonovo's (2011) proposal. When one is presented with a perfective cFC, the sentence is always potentially ambiguous between the counterfactual and the actuality readings. It is only through further elaboration that one is able to determine which interpretation should be favored by establishing what conversational backgrounds the modal is relative to. This means that, from the perspective of a child that is learning a language, there is no positive evidence for him to be able to internalize that one reading corresponds to a particular scopal relationship between the relevant heads and not the other.

To conclude, while initially interesting, I have shown Borgonovo's (2011) account to be afflicted by some serious drawbacks that cast doubt on its appropriateness to derive both the actuality and counterfactual readings of cFCs.

4.3.5 Kratzer (2011)

Based on evidence from Gitksan collected in Matthewson (2012), Kratzer (2011) emphasizes that actuality entailments are only available when the circumstantial modal and the prejacent coincide in time. Her account relies on two basic assumptions. First, in her analysis, modal verbs express counterpart relations across worlds. Thus, she assigns the following denotation to the possibility modal, where $f(\langle x, t \rangle)$ refers to the set of individual-time pairs that are counterparts of $\langle x, t \rangle$ in the anchoring world of the modal.

$$(317) \quad \llbracket \text{can} \rrbracket = \lambda R. \lambda x. \lambda t. \exists x'. \exists t'. [\langle x', t' \rangle \in f(\langle x, t \rangle) \ \& \ R(x')(t')]$$

⁵⁹ Assuming that one excludes time-travel scenarios for example.

Second, aspect is interpreted below the modal, where it directly modifies the preja-cent. The two aspectual heads that the author introduces are perfective and prospective aspect. The former expresses inclusion in some yet-unsaturated reference time t , whereas the latter expresses inclusion in some contextually salient future time:

$$(318) \quad \llbracket \text{Perfective} \rrbracket = \lambda P. \lambda t. \exists e. [P(e) \ \& \ e \leq t]$$

$$(319) \quad \llbracket \text{Prospective} \rrbracket = \lambda P. \lambda t. \exists e. [P(e) \ \& \ e \leq \text{future}_t]$$

Let me illustrate how her proposal works with the following example from Kratzer (2011), whose surface form can correspond to either of the two simplified LFs below it.

(320) Mary could climb the Everest.

a. Past [Mary can Perf [climb the Everest]]

b. Past [Mary can Prosp [climb the Everest]]

In the case of (320a), perfective aspect makes the preja-cent to be included within the past time at which the modal is anchored. This means that every counterpart of Mary who lives in a world where the same circumstances as in w^* held at some past time must have climbed the Everest, because climbing the Everest is included in the circumstances that determine the worlds that are accessible. Since the modal base is realistic, it must be that climbing the Everest also took place in the actual world. Thus is the actuality entailment derived.

Conversely, the presence of prospective aspect removes the actuality entailment. The reason is that “when prospective aspect is present, Mary’s counterpart is only asserted to have (had) the potential to do something after the [reference time]. This does not entail that she does it.” (Matthewson, 2012: 11).

Strong evidence for this proposal comes from languages where prospective aspect is overtly realized on the preja-cent. In Gitksan, for example, every circumstantial modal has to be accompanied by the future/prospective marker *dim* (Matthewson, 2012). Exactly as predicted by Kratzer (2011), actuality entailments are not obligatory in Gitksan.

While certainly appealing, I believe that there are open questions about this analysis that call for further clarification. The first of my concerns has to do with the unusual scopal relation between tense, aspect, and the modal. In this proposal, tense takes scope

over the modal, which, in turn, takes scope over aspect. As said above, this means that aspect modifies the prejacent directly. For languages like Spanish this does not seem quite correct given that the denotation of viewpoint aspect modifies the modal and is morphologically realized on it. This is clearly seen in example (321), where imperfective aspect marks that the *ability* to run prolonged over time. In other words, it is the ability that is described as unbounded, and not the running event.

- (321) *María podía correr.*
M can.PstImpfv run
“María was able to run.”

In an attempt to go around this criticism, one might say that there are two different syntactic positions for aspectual markers: one below the modal and one above it. This might indeed be a possibility since, after all, in my analysis of SCCs I proposed that Spanish has a syntactic position for the perfect in the prejacent. My concern here is that I have seen no evidence that other aspects besides prospective occur overtly in that embedded position. Matthewson (2012) provides data that shows how *dim* can occur twice (both on the modal and on the prejacent, thereby expressing double future displacement). But no similar evidence is offered for the perfective or the imperfective.

- (322) *dim da'akxw-i-t dim jam-t.*
Prosp CircPoss-Trans-3Sg Prosp cook-3Sg
“He will be able to cook.”

Paraphrase: There is a future time t' and a world w' which is circumstantially accessible at t' , such that there is a time t'' which follows t' , and he cooks in w' at t'' .

(Matthewson, 2012: example [27])

An interesting case in this respect is Basque, which does have a prospective aspect marker, but it has to be marked on the modal. Hence, it appears that Basque may not have dedicated aspectual positions in the syntax below circumstantial modals.

- (323) *Maria etorri ahal izan-go da.*
M come can be-Prosp 3SgPres
“Maria will be able to come.”

- (324) * *Maria etorri-ko ahal izan-go da.*
 M come-**Prosp** can be-Prosp 3SgPress

All in all, I find this proposal intriguing and, as far as I can tell, it does seem to make the right predictions regarding English and the languages of the Pacific Northwest that Matthewson (2012) investigated. Still, this analysis has nothing to say about the Spanish facts regarding cFCs, where the triggering of the actuality effect vs. the counterfactual one does not seem connected to a difference in aspectual information (since both are available even when the prejacent is understood to be co-temporal with the ability). Instead, in Spanish, the answer appears to be more related to the different conversational backgrounds that the possibility modal combines with. I now turn to developing this claim.

4.4 Analysis: A pragmatic account

Let me reiterate the effects we want to explain. When the Spanish possibility modal has past perfective morphology, either of two opposite readings are conveyed with respect to the prejacent: a counterfactual one, or an actuality one. This is captured again in the example below.

- (325) *Juan pudo coger el tren.*
 J can.*PstPfv* take the train
 “Juan was able to take the train.”

- a. Actuality effect: Juan was able to take the train and did so.
- b. Counterfactual effect: Juan was able to take the train, but did not do it.

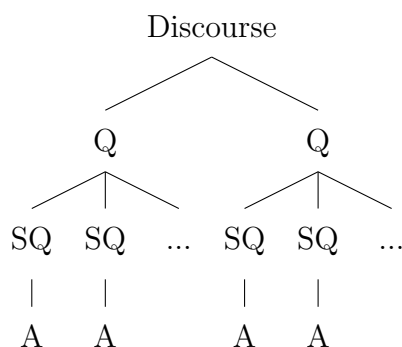
Thus, the same set of syntactic heads arranged in arguably the same scopal relation (cf. section 4.3.4) can convey either that the prejacent materialized in the actual world, or that it did not. Given that lexically and structurally there does not seem to be a difference between the two alternatives, it is reasonable to expect that the explanation of these effects be found in pragmatics. My first step in working towards such an account will be to determine what are the potential questions under discussion (QUDs) that a sentence like (325) can be a felicitous answer to. In order to formalize this notion of QUD, I adopt the discourse-tree representation introduced in Büring (2003). According to this model,

“The discourse is conceived of as a sequence of issues, the current issue at any point is the Question under Discussion (QUD), which corresponds to a question sentence. The QUD may be divided into a set of Subquestions (SQs), each also corresponding to a question sentence [...] Each QUD and SQ in turn relates directly or indirectly to declarative sentences which form their answers. Viewed thus, a discourse is structured in a D-tree, with declaratives (A) occupying the terminal nodes, and questions (Q) which they answer dominating them.”

(Wilder, 2013: 162)

A graphic representation of such a tree structure would look like Figure 4.1, where each question Q corresponds to a QUD to be resolved for the discourse to proceed smoothly.

Figure 4.1: Discourse tree



With this formalism in mind, there are two obvious QUDs that a sentence like (325) could be an answer to. The first one seeks to determine whether Juan had the possibility to take the train, whereas the second one inquires about whether he actually took it or not.

- (326) *¿Pudo Juan coger el tren?*
 can.*PstPfv* J take the train
 “Was Juan able to take the train?”

- (327) *¿Cogió Juan el tren?*
 take.*PstPfv* J the train
 “Did Juan take the train?”

Notice that, if the QUD is taken to be (326), a response of the form of (325) constitutes a global answer to the QUD. Thus, no pragmatic mechanism (like the Gricean Quantity reasoning, for example) is expected to be triggered because the participant that asked the question obtained the exact answer he was looking for. In such cases, the difference between *pudo* and *podía* is limited to the purely aspectual notion of whether the possibility situation is conceptualized as being included in the reference time (perfective) or vice-versa (imperfective). The felicity of both positive and negative answers to the perfective and imperfective cases is shown below.

- (328) a. *¿Pudo Juan coger el tren?*
 can.*PstPfv* J take the train
 “Was Juan able to take the train?”

Sí, sí pudo. / No, no pudo.
 yes yes can.*PstPfv* no no can.*PstPfv*
 “Yes, he was able to.” / “No, he wasn’t able to.”
- b. *¿Podía Juan coger el tren?*
 can.*PstImpfv* J take the train
 “Was Juan able to take the train?”

Sí, sí podía. / No, no podía.
 yes yes can.*PstImpfv* no no can.*PstImpfv*
 “Yes, he was able to.” / “No, he wasn’t able to.”

The more interesting scenario is when the QUD is about determining whether the prejacent is true or not (i.e. when the QUD corresponds to the question in (327)). This is because responding to such an inquiry with a modalized sentence would in principle not count as a full answer but as a partial one. Since the inquirer has not obtained a complete answer to her question, she might reason as follows: “the addressee did not answer my question directly: why might this be?”. The assumption is that such a partial answer will trigger the application of Gricean reasoning in the participant who asked the question. In the rest of my analysis, these are the cases that I will be focusing on.

Beyond the QUD formalism, the second point I would like to bring the attention to is that the situations that make an unmodalized sentence true are a subset of those

that satisfy its counterpart with the possibility modal. That is, the situations that make (330) true will always be a subset of those that make (329) true.

- (329) *Juan pudo coger el tren.*
 J can._{PstPfv} take the train
 “Juan was able to take the train.”
- (330) *Juan cogió el tren.*
 J took the train
 “Juan took the train.”

Therefore, if a speaker utters the modal sentence as a response to a QUD that seeks an answer for the unmodalized one, we can say that she is settling for the weaker alternative. As already said above, this amounts to providing a partial answer to the QUD, a conversational move that licenses the application of Quantity and Informativeness reasoning (Carston, 1998; Levinson, 2000).

Note that it might be suggested that (329-330) are not quite in a superset-to-subset relation because (329) expresses (possibly at a presuppositional level) that carrying out the prejacent involved some sort of effort – an implication that is absent from (330) (Hacquard, 2014: 5). Nevertheless, the perfect acceptability of example (331) below shows that this is not necessarily the case. Instead, I endorse Mari’s (2015: 4) idea that the use of the modal conveys that “at a contextually determined time, it is possible that the event described in the prejacent is not realized at a time in the future of this contextually determined time”. In other words, the choice of (329) over its extensional counterpart emphasizes the idea that the prejacent not materializing was indeed an open possibility in the past. This is but an alternative way to claim that the superset-to-subset relation proposed above holds.

- (331) *Juan pudo coger el tren sin ningún esfuerzo.*
 J can._{PstPfv} take the train without any effort
 “Juan was able to take the train without any effort.”

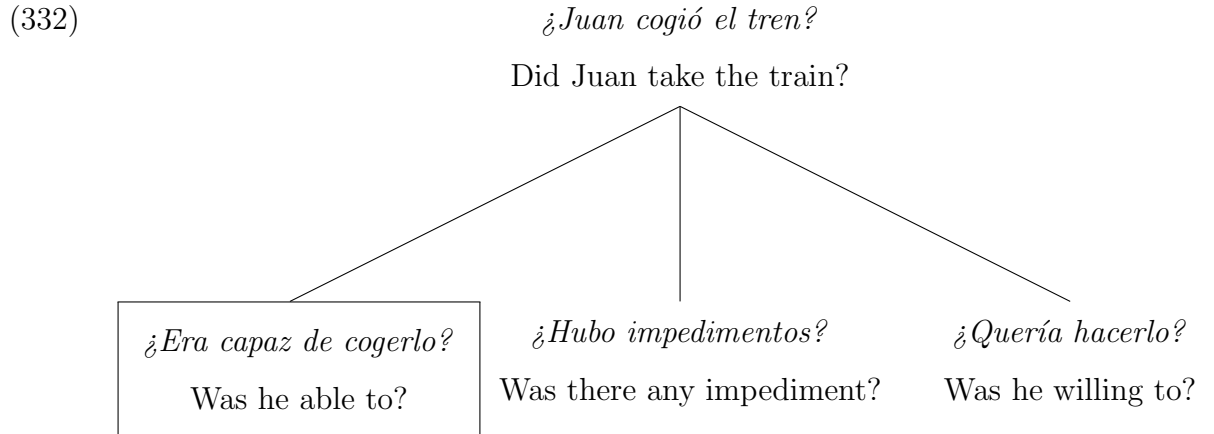
Finally, as far as the distinction between perfective and imperfective cFCs is concerned, I will argue in section 4.4.4 that these additional meanings of the former arise via a strategy comparison with the latter. The genericity associated with imperfective will

typically prevent the actuality or the counterfactuality enrichments from taking place, so the choice for the perfective will mean that the speaker wanted to convey either of the two aforementioned extra inferences.

Next, I put together the observation regarding the logical relation between (329-330) with the discourse-tree model, in order to pragmatically derive the two opposite enrichments that cFCs can be subject to.

4.4.1 Counterfactuality through Q-reasoning

In the previous section, I argued that perfective cFCs like (329) can be used as responses to questions that aim to determine whether Juan took the train or not. A potential discourse-tree structure that represents such a scenario could look like this:



In (332), fully answering the QUD (“Did Juan take the train?”) is dependent on having access to the answers of the (non-exhaustive set of) subquestions shown. Now, we know that when somebody utters (333), it can readily be interpreted as conveying that, while Juan was able to, he did not take the train. In this case, it seems as though the speaker is providing an answer to the first subquestion (in the box above), instead of tackling the QUD directly. In other words, it feels as though he is avoiding to provide an answer to the QUD.

(333) *Juan pudo coger el tren. ∼ No lo hizo.*

“Juan was able to take the train.” ∼ “He didn’t do it.”

I believe that evidence for this interpretation can be found in the base that the possibility modal has in (333). Here, the modal seems to be expressing a pure opportunity reading (i.e. a circumstantial base with no/empty ordering source), so additional information like his willingness to perform the action, for example, is not yet part of the Common Ground (CG). Upon interpreting the assertion in such a way, the Quantity (Q-) reasoning process mentioned above would arguably be triggered in the mind of the addressee. Let me explain how this would take place.

Levinson's (2000) Neo-Gricean Q-principle is an expansion on the classical Gricean maxim of the same name in that it not only refers to what the speaker's contribution should be, but it also specifies the kind of reasoning that is expected from the addressee in interpreting the utterance. The so-called "speaker's maxim" and "recipient's corollary" are defined below:

(334) Levinson's Q-principle (simplified):

a. Speaker's maxim:

Do not say less than is required (bearing the I-principle in mind).

b. Recipient's corollary:

What is not said is not the case.

(Adapted from Huang, 2007: 41)

As said above, examples (329-330) asymmetrically entail each other because the extensional sentence entails the modal one, but not the other way around. Therefore, when the speaker settles for the weaker (modal) alternative, the addressee is licensed to reason as follows:

- (335)
- a. The speaker could have expressed the informationally stronger proposition that Juan took the train in order to directly answer the QUD.
 - b. Instead, he just said that Juan *was able* to take the train.
 - c. Given the Speaker's maxim, if he had a reason to express the stronger proposition, he would have. But he didn't.
 - d. Therefore, given the Recipient's corollary, it must be that the extensional sentence is false: Juan did not take the train.

Thus, the QUD model provides the basis for a rather intuitive application of the Neo-Gricean Q-principle that triggers the counterfactual reading of the Spanish possibility modal when it bears past perfective morphology. I now move on to explaining my proposal for how the actuality reading arises.

4.4.2 Actuality through I-reasoning

Given that both Quantity and Informativeness reasoning can be triggered by the aforementioned relationship of asymmetric entailment between two propositions, one might wonder if it is predictable when one kind of enrichment is going to take place instead of the other. This is where I believe the QUD model can provide a rather elegant explanation.

When somebody utters (336) with the intention of conveying that Juan *did* manage to take the train, the flavor of modality expressed is slightly different from the pure opportunity mentioned in the previous section. The actuality reading feels goal-oriented (i.e. a circumstantial modal base with a bouletic/teleological ordering source) in that the agent seems to be actually invested in the coming about of the prejacent. In other words, knowledge about his will to carry out the embedded event is included in the conversational backgrounds with respect to which (336) is to be evaluated.

(336) *Juan pudo coger el tren. ~> Lo hizo.*

“Juan managed to take the train.” ~> “He did it.”

In such a scenario, the modal base will contain all the information regarding the circumstances surrounding the embedded event. Furthermore, the ordering source will include the propositions about the agent’s goals and intentions (in other words, his willingness to perform the action in the prejacent). Under these circumstances, asserting that the agent had the ability/opportunity to carry out the prejacent through an utterance of (336) can amount to globally answering the QUD, because the answers to all the sub-questions appear to be already in the CG. In other words, if we know that the agent was actively engaged in making the embedded event occur and that the circumstances surrounding such event favor its realization (there are no impediments, etc.), knowing that

the agent was indeed able to perform the event becomes the final piece of information needed to answer the QUD.

I believe that this pragmatic enrichment of understanding an answer to a sub-question as a global answer to a QUD can be formalized in terms of Levinson’s (2000) Informativeness (I-) principle:

(337) Levinson’s I-principle:

a. Speaker’s maxim: the maxim of minimization.

“Say as little as necessary”, that is, produce the minimal linguistic information sufficient to achieve your communicational ends.

b. Recipient’s corollary: the rule of enrichment.

Amplify the informational content of the speaker’s utterance, by finding the most specific interpretation [...]. Specifically,

(i) Assume the richest temporal, causal and referential connections between described situations or events, consistent with what is taken for granted.

(ii) Assume that stereotypical relations obtain between referents or events, unless this is inconsistent with (i).

(iii) Avoid interpretations that multiply entities referred to (assume referential parsimony) [...].

(iv) Assume the existence or actuality of what a sentence is about if that is consistent with what is taken for granted.

(Adapted from Huang, 2007: 46)

From the speaker’s perspective, his hope is that the hearer will enrich the meaning of his utterance (that Juan *was able* to take the train) to the strongest possible reading compatible with it (that Juan *did* take the train) – where strength is understood in terms of an entailment relation. The way in which the hearer can accomplish such enrichment is principally via points (i) and (iii) in (337).

Throughout this work, I have assumed that every modal sentence like (336) contains two event variables: the possibility event, and the embedded event. According to (i) and (iii) above, the richest temporal and referential connection between two event

variables is that they actually refer to the same event. If this enrichment takes place, the ability and the embedded event become intensionally non-detachable. Therefore, since the ability took place in the actual world, it must be that the embedded event did too.

Before moving on, I should emphasize that, if my proposal for how the two opposite readings of cFCs arise is on the right track, the conversational backgrounds that the modal combines with must be considered as the main factor in disambiguating between one extra inference and the other. This is because they determine whether the Q- or I-principles will be invoked. When the counterfactual reading associated with Q-reasoning is retrieved, the flavor of the modal is that of pure ability/opportunity: the desires, goals, or any other mental state of the agent are left out of the computation. That he had the opportunity to carry out the prejacent is the only piece of information that matters. On the other hand, when a cFC leads to an actuality reading through I-reasoning, it is presupposed that the agent did indeed want for the embedded event to materialize. Thus, the worlds in the modal base are ranked according to his preferences, which are presupposed to hold in the actual world.

The following algorithmic derivation summarizes the discussion so far and it illustrates the process that leads to the computation of each pragmatic enrichment.

- (338) If a perfective cFC is a partial answer to a QUD,
- a. If the modal is teleological and there are no known impediments,
 - i. Actuality effect (I-reasoning).
 - b. Otherwise, the modal expresses ability/opportunity,
 - i. Counterfactual effect (Q-reasoning).

If a perfective cFC is a complete answer to a QUD,

- a. Agnostic reading (focus is on the possibility).

4.4.3 Further evidence

4.4.3.1 Cancelling Q-inferences

The most developed accounts of actuality entailments (Bhatt, 1999; Hacquard, 2006) are structural in the sense that they associate the triggering of such inferences

to the presence of certain functional heads, specific scopal relations between them, or general properties of the syntactic scaffolding. Even some approaches intended to capture the facts in Spanish (like Borgonovo, 2011) follow this trend.

In my view, one strong point in favor of the Levinsonian pragmatic account of cFCs just presented is that the disappearance of the counterfactual reading in downward-entailing contexts cannot be explained by a structural proposal. It is well-known that conversational implicatures derived through Q-reasoning (which I argued is at play in deriving counterfactuality in cFCs) are affected in such contexts.⁶⁰ This is precisely what happens in the examples below, where only an agnostic or an actuality interpretation is available for the prejacent of the ability modal.⁶¹

(339) Antecedent of a conditional

Si Juan pudo ganar la carrera, su madre estará contenta/ #triste.
 if J can.*PstPfv* win the race his mother be.*Fut* happy sad
 “If Juan was able to win the race, his mother will be happy/ # sad.”

(340) Scope of \forall

Todo el mundo que pudo bailar lo pasó bien.
 all the world that can.*PstPfv* dance CL.*3sg* passed well.
 “Everybody who was able to dance had a good time.”

In (339), the antecedent of the conditional can be understood as expressing either of two meanings. One is that if Juan was able to *and did* win the race, his mother will be happy. This corresponds to the actuality enrichment. The second meaning is the pure possibility interpretation where the only thing that matters is that Juan had the ability/possibility to win the race. A context in which this reading would be salient is one where there is such a difference between Juan (an amateur newcomer) and the rest

⁶⁰ The literature is somewhat split between those who believe that scalar implicatures are suspended in downward-entailing contexts (Horn, 1989; Chierchia, 2004; Geurts, 2009), and those who argue that, while still present, the direction of entailment is reversed (Levinson, 2000; Russell, 2006; Horn, 2006). This debate will not affect the main point that I want to put across though.

⁶¹ I had ignored the agnostic reading until now. The upcoming section 4.4.4 elaborates more on it.

of the runners (professional athletes), that Juan’s mother will be satisfied provided that Juan can put up a fight and be in a position to win, regardless of the final outcome.

The reading that is banned in (339) is the one where the prejacent of the modal in the antecedent is interpreted counterfactually (i.e. #“If Juan was able to but didn’t win the race...”). The oddity that results from trying to have the adjective *sad* in the consequent underscores the impossibility for the Q-implicature to arise. Similarly, (340) is most saliently about all those people who could *and did dance*. It is not about those who, while able to dance, chose to remain in their seats. Here, the modal is embedded in the restriction of the universal quantificational determiner which is also a downward-monotonic environment.

If the enriched meaning of cFCs was lexicalized in the sense that it were triggered by some syntactic head, the absence of the counterfactual meaning in (339-340) would be surprising. Conversely, this result is predicted to follow naturally if this interpretation arises through Q-reasoning. Likewise, these sentences also support the argument that perfective cFCs exemplify a case of ambiguity instead of simply vagueness. The principled unavailability of the Q-enrichment in downward-entailing contexts suggests that this environment blocks one of the readings thus disambiguating the construction. If cFCs were just underspecified (i.e. vague), it would be mysterious why the right extra-linguistic context could not be rich enough for (339-340) to express counterfactuality even in these cases.

4.4.3.2 Cancelling I-inferences

Moving on to the actuality inference that originates via the I-principle: is there any principled way in which it be cancelled? I argued above that an explanation for how this extra meaning originates could be found in points (i) and (iii) of Levinson’s Recipient’s corollary in (337). To recall, if one relies on referential parsimony by assuming the richest temporal and referential connections between two events, the possibility and the embedded events would become one and the same.

One way to prevent its generation could be to block referential parsimony from applying by locating the embedded event at a time different from that at which the

modal is anchored. Such an example was provided in (293) repeated below. In this case, the actuality reading becomes unavailable as predicted:

- (293) (Context: Yesterday Juan had the opportunity to buy tickets for the bus that leaves tomorrow)

Juan pudo coger el bus mañana. (#actuality/CF)

J can.*PstPfv* take the bus tomorrow

“Juan was able to take the bus tomorrow.”

(= “Juan had the opportunity to take the bus tomorrow.”)

Moreover, it appears that in (293) only the counterfactual interpretation where Juan will not take the train tomorrow is salient (i.e. the agnostic reading does not seem possible). I believe that the reason for this can be attributed to the past perfective morphology on the modal. The role of perfective aspect is to locate the running time of an event entirely within the time interval denoted by tense. In (293), this means that the possibility to take the train is found wholly in the past from the utterance time. That is to say, at the time when the sentence is uttered, it is no longer possible for Juan to take the train tomorrow. In order for the speaker to say something like this, it must be that he knows that the prejacents is not a live possibility anymore, so he is not agnostic about it. If the possibility were not totally contained in the past, agnostic interpretations could in principle become more salient. This is precisely what happens when imperfective aspect is used.

4.4.4 Imperfective cFCs

Spanish cFCs with imperfective aspect seem less interesting than their perfective counterparts in that they appear not to give rise to counterfactual or actuality enrichments like the ones just discussed. This is what occurs in Hindi, French, or any of the languages that lead to actuality entailments. Thus, the example below from French, where the modal bears imperfective aspect, has an agnostic reading with respect to the prejacents: maybe Jean took the train, maybe he did not.

- (341) *Jean pouvait prendre le train.*

J can.*PstImpfv* take the train

“Jean was able to take the train.”

Previous accounts of actuality entailments explained the lack of this extra inference in different (yet related) ways. Structural proposals like Hacquard’s (2006, 2009) rely on the presence of a covert generic morpheme *GEN* introduced by imperfective aspect that does away with actuality by bringing in an additional layer of modality above the modal verb. A more purely semantic theory like Mari and Martin’s (2008) attributes the lack of actuality to the fact that imperfective aspect is typically used to express Generic Abilities, which do not require verifying instances. As can be seen, the common denominator of these accounts is the connection between imperfectivity, genericity, and the absence of actuality.

I believe that a similar appeal to genericity can explain the absence of counterfactual and actuality effects in Spanish as well. As mentioned in section 4.1, the Spanish sentence below is just as agnostic about the coming about of the prejacent as its French version in (341).

- (342) *Juan podía tomar el tren.*
 J can.*PstImpfv* take the train
 “Juan was able to take the train.”

However, under the right contextual assumptions, even Spanish sentences where the modal bears past imperfective morphology can be enriched to express the same meanings that their perfective counterparts do. Here, said *right contextual assumptions* typically correspond to punctual repeated instances in the past (i.e. a habitual meaning).

- (343) *En aquel entonces, Juan podía tomar el tren para ir a trabajar todas las mañanas.*
 in that then J can.*PstImpfv* take the train for go to work every
 the mornings
 “Back then, Juan was able to take the train to go to work every morning.”

In (343), the adverbial modifiers ensure that the possibility event is located in an extended past time (“back then”) and, moreover, that it refers to a repeated instantiation (“every morning”). In addition, the prepositional phrase “to go to work” suggests that taking the train was among Juan’s goals in that situation. When these ingredients are put together, an actuality reading becomes salient – as predicted in section 4.4.2.

Even though I believe that the I-principle discussed above is involved in these cases too, the actuality effect does not seem quite as strong here as it is in perfective cFCs. A possible reason for this is that habitual sentences do not assert the existence of a single event, but of a collection of events, which would allegedly make the application of referential parsimony harder. Nonetheless, while evaluating a habitual statement, we do still go over a “mental checklist” of specific relevant events to determine whether we should take said habitual sentence as true or not. It is at this point that I think referential parsimony might apply, but the extra computation of going from a collection of events to each particular member of the set might account for the weakness of the actuality inference.⁶²

The fact that this actuality meaning is a conversational implicature suggests that it should be cancellable. Temporally misaligning the anchoring time of the modal and that of the prejacent as in (293) above was one way to do it. Another way of achieving this effect is to explicitly state that the speaker does not have enough information to vouch for the subject’s actions. The following examples show how this can be the case for both perfective and imperfective.

- (344) *En aquel entonces, Juan podía tomar el tren para ir a trabajar todas las mañanas, pero no sé si lo hacía.*
in that then J can.*PstImpfv* take the train for go to work every
the mornings, but not know if CL.3*Sg* do.*PstImpfv*
“Back then, Juan was able to take the train to go to work every morning but I don’t know if he did it.”

⁶² I find this idea of the “mental checklist” analogous to sentences with generic DPs like (62):

- (i) Graduate students are hard-working.

Here, while the example does not refer to any specific student, before accepting it, the hearer must ensure that the property of being a hard-worker applies to specific graduate students that she knows. I would like to thank an anonymous reviewer from the *Journal of Pragmatics* for having brought to my attention the analogy between generic DPs and referentiality on the one hand, and habitual events and actuality on the other.

- (345) *En aquel momento, Juan pudo tomar el tren para ir a trabajar, pero*
 in that momento J can.*PstPfv* take the train for go to work but
no sé si lo hizo.
 not know if CL.*3Sg* do.*PstPfv*
 “At that point, Juan was able to take the train to go to work but I don’t know if he did it.”

Still, not every attempt at cancelling this I-implicature is successful. If the speaker does have enough information about the agent *and* the agent is actively trying to carry out the event in the prejacent (i.e. the ordering source of the modal is bouletic/teleological) saying that he was able to perform such event must amount to saying that he did do it. As example (346) shows, conjoining a statement that contradicts the propositions in the modal base results in infelicity.⁶³

- (346) *Antes de mudarse lejos de la estación, Juan siempre podía tomar el*
 before of moving far of the station J always can.*PstImpfv* take the
tren para ir a trabajar todas las mañanas, # pero nunca lo conseguía.
 train for go to work every the mornings but never CL.*3Sg* managed
 “Before moving far away from the station, Juan was always able to take the train to go to work every morning but he never managed to do it.”

With regards to the counterfactual Q-implicatures, a possibility modal with past imperfective morphology can also give rise to them. In the conversation below, it seems clear that imperfective aspect makes a habitual contribution (instead of a generic one) because of the modifier *every morning*. The intended counterfactual reading arises via the same Q-reasoning mechanism mentioned in section 4.4.1: instead of directly answering the QUD, participant *B* chose to answer a sub-question, so *A* is led to assume a negative response to his original question.

- (347) A. *¿Cogía Juan el tren todas las mañanas cuando vivía en Londres?*
 take.*PstImpfv* J the train all the mornings when live in L
 “Did Juan use to take the train every morning when he lived in London?”

⁶³ The intended infelicitous interpretation in (346) might be somewhat difficult to obtain, even though I believe that the addition of the adverb “always” helps. The reason is that it is hard to control for the propositions that the modal base contains: allegedly, upon reading the second conjunct there can be an attempt to revise the modal base so that the continuation makes sense.

- B. *Lo podía coger.*
 CL._{3Sg} can._{PstImpfv} take
 “He was able to take it.”
- A. *Oh, así que no lo cogía. ¿Y eso?*
 oh so that no CL._{3Sg} take._{PstImpfv} and that
 “Oh, so he didn’t use to take it. Why was it?”

4.4.5 Summing up the difference between perfective and imperfective cFCs

In the preceding sections I have argued that irrespective of the viewpoint aspect that Spanish cFCs show, both kinds of constructions can express actuality, counterfactuality, and agnostic readings with regards to the prejacent. This might have given the impression that the presence of one kind of aspect versus the other does not have a crucial impact on the available enrichments in Spanish, contrary to what happens in French, where continuing a perfective cFC with “...but he didn’t do it” is infelicitous. This is not quite accurate though: there is still a crucial difference between perfective and imperfective in Spanish, which lies on what kinds of meanings these constructions express in isolation. In other words, I want to argue that there is bias towards interpreting perfective cFCs as partial answers to the QUD (leading to the pragmatic enrichments discussed above), and interpreting imperfective cFCs as complete answers to the QUD (leading to the agnostic reading). In addition, I argue that **perfective cFCs** are **ambiguous** with respect to whether they express actuality or counterfactuality, whereas **imperfective cFCs** are **vague** and can therefore express these additional meanings provided that the right contextual assumptions are in place.

When perfective cFCs are presented without a specific context like (325) repeated below, they have to be interpreted as conveying either an actuality or a counterfactual inference. These pragmatic enrichments are obligatory, unless contextual assumptions block them (cf. section 4.4.3).

- (325) *Juan pudo coger el tren.*
 J can._{PstPfv} take the train
 “Juan was able to take the train.”

- a. Actuality effect: Juan was able to take the train and did so.
- b. Counterfactual effect: Juan was able to take the train, but did not do it.

With imperfective cFCs, the opposite happens: by default, these constructions are vague and so they are interpreted as agnostic with respect to the prejacent because the generic interpretation is salient. Nonetheless, when they are used in contexts that favor a habitual interpretation of the embedded event (as in examples (343-344)) actuality or counterfactuality inferences are possible too.

- (342) *Juan podía tomar el tren.*
 J can.*PstImpfv* take the train
 “Juan was able to take the train.”

The last question that needs to be addressed then is why each kind of cFC is associated with these default readings. I believe that the absence of enrichments in the case of imperfective cFCs can be attributed to the presence of a generic operator brought in by said viewpoint aspect. An isolated utterance of a sentence like (342) seems to express a generic statement about what happens in ideal or stereotypical situations from the perspective of the actual world. But since the actual world might deviate from what can be considered ideal or stereotypical, no commitment is expressed with regards to the state of the prejacent in the actual world. Of course, this assumption can be overridden by referring to particular (habitual) situations in the actual world, which is precisely what happens in (343-344). As mentioned in section 4.4.4 however, the fact that habitual events are not referential might account for the weakness of these effects compared to perfective cFCs.

This final point also provides an explanation for what goes on with perfective cFCs. In these cases, there is no layer of modality above the modal: we are not talking about ideal or stereotypical worlds, but about the actual world itself. Thus, in the case of the actuality reading for example, when referential parsimony applies, the embedded event can be assimilated to the actual-world event of the modal. I believe that this relationship between imperfective and perfective cFCs might be seen as a case of strategy comparison: if the speaker had not wanted to convey any extra meaning with respect to the prejacent, he would have chosen an imperfective cFC. But he chose a perfective cFC instead, so it must be that he does want to express an additional inference after all. Viewed in this

way, the default obligatoriness of the enrichments of perfective cFCs could be argued to result from a *conventionalization* of the contrast between these two viewpoint aspects.⁶⁴

4.5 The Spanish necessity modals

4.5.1 General facts

The behavior of necessity modals in Spanish with respect to actuality effects is not quite parallel to that of the possibility modal *poder* described throughout this chapter. Spanish has two basic necessity modals: *deber* (translated as “must” or “should” depending on the context) and *tener que* (“have to”). As I will show shortly, these verbs differ vastly in terms of the conversational backgrounds they can be relative to, and their interaction with negation. Before looking at all those properties however, I would like to begin by providing the basic facts regarding the interaction between these modals and actuality effects.

The (semi-)modal *tener que* (“have to”) appears to trigger actuality *entailments* (exactly in the sense of Hacquard, 2006) when conjugated in the past perfective. The impossibility to cancel this inference, its reversal with negation, and disappearance in questions, do suggest that it is indeed an entailment:

- (348) *María tuvo que donar su fortuna (# pero no lo hizo).*
M have.*PstPfv* that donate her fortune but not CL.*3Sg* did
“María had to donate her fortune (# but she didn’t).”
- (349) *María no tuvo que donar su fortuna → No la donó.*
M not have.*PstPfv* that donate her fortune not CL.*3Sg* donated
“María did not have to donate her fortune.” → “She didn’t donate it.”
- (350) *¿Tuvo que donar María su fortuna? ↗ La donó.*
have.*PstPfv* that donate M her fortune CL.*3Sg* donated
“Did María have to donate her fortune?” ↗ “She did.”

⁶⁴ One way to think about this is in terms of Lauer’s (2013) Need-A-Reason implicatures (NARIs), which arise via conversational means yet they are not cancellable. Still, I do not think that the conventionalized relationship between perfective and imperfective in cFCs that I am suggesting exemplifies a NARI *sensu stricto*. First, because I showed above that the actuality and counterfactuality inferences can be cancelled in the right contexts, whereas NARIs seem always truly obligatory. And second, because the relationship between both kinds of cFCs is hard to conceive in terms of a difference in informational strength, which is a pre-requisite for NARIs to be triggered (Lauer, 2013: 273).

Furthermore, when the perfect marker *haber* (“have”) is embedded below *tener que* with past perfective morphology, only an epistemic reading is available. A potential circumstantial SCC reading that expresses counterfactuality with respect to the prejacent is ungrammatical. This would allegedly follow from the conflict between the entailed actuality meaning contributed by *tuvo que*, and the non-cancellable counterfactual presupposition contributed by the embedded perfect. As already covered in Chapter 2, both such readings are available with the possibility modal.

- (351) *María tuvo que haber donado su fortuna.* (Epistemic/*Circums.)
 M have._{PstPfv} that have donated her fortune
 “María must have donated her fortune.”

- (352) *María pudo haber donado su fortuna.* (Epistemic/Circumstantial)
 M can._{PstPfv} have donated her fortune
 “María might have donated her fortune.” (Epistemic)
 “María could have donated her fortune (but she didn’t).” (Circums.)

On the other hand, the modal *deber* with past perfective morphology is compatible with both actuality and counterfactuality enrichments of the prejacent, the latter being more salient (particularly when contrasted with (348)). This corresponds to the behavior of the possibility modal observed in cFCs. Notice too that in the counterfactual case, *deber* is translated as the weak necessity modal “should” into English. Below I elaborate on this apparent force variability of *deber*.

- (353) *María debió donar su fortuna.*
 M must._{PstPfv} donate her fortune
 “Maria had to donate her fortune and she did.”
 “María should have donated her fortune but she didn’t.”

Moreover, exactly as shown in (352) with the possibility modal, when the perfect is embedded below *deber*, both an epistemic and a circumstantial (SCC) reading are available:

- (354) *Maria debió haber donado su fortuna.* (Epistemic/Circumstantial)
 M must._{PstPfv} have donated her fortune
 “María must have donated her fortune.” (Epist.)
 “María should have donated her fortune.” (Circums.)

To sum up, whereas the semi-modal *tener que* triggers actuality entailments, the modal *deber* is closer to the behavior of the possibility modal in that both actuality and counterfactuality enrichments are possible. In what follows, I highlight a number of other differences between the two necessity modals that will provide evidence for my final account.

Lack of alternatives

At an intuitive level, *tener que* feels stronger than *deber* in that the former seems to convey the absence of alternatives: carrying out the event in the prejacent appears to be unquestionable. These intuitions have been reported by native speakers of different Spanish dialects⁶⁵ and they are captured in a wealth of previous literature:

“*Tener que* + infinitive semantically differs from semi-auxiliary *deber*, which also expresses Participant-oriented Deontic Necessity, in the sense that with *tener que* + infinitive the obligation is categorical: the participant has no choice but to engage in the [State-of-Affairs] in question”
(Olbertz, 1998: 384)

En el uso radical de deber se puede señalar también otro significado contextual, a saber el de lo que llamaríamos “conveniencia”.

“In the root meaning of *deber* another contextual meaning can be highlighted, namely, what we would call “convenience”.”

En contraste con deber, tener que (en su lectura radical) parece expresar más bien un significado de necesidad inexorable, de condición sine qua non para el cumplimiento de la acción.

“In contrast to *deber*, *tener que* (in its root reading) seems to express a meaning of inexorable necessity, of a *sine qua non* condition for the action to come about.”

(Dumitrescu, 1988: 141. My translation)

“*Tener que* can be said to convey higher strength in Spanish because it denotes that the proposition contained in the clause is the *only* possibility available given existing evidence and/or our knowledge of the world [...] In contrast, the use of *deber* [...] would present the proposition as an inference based on available evidence and/or our knowledge of the world, but lacking the excluding element present in *tener que*.”

(Lavid et al., 2010: 289)

⁶⁵ I checked with Spanish, Colombian, Chilean, and Mexican speakers.

Interaction with negation and variable force

One of the most well-known structural differences between *deber* and *tener que* is that the former is a neg-raising verb. Thus, whereas the negation adverb linearly precedes the modal in (356), it is interpreted as taking narrow scope over the prejacent.⁶⁶

- (355) *No tienes que entrar en la sala.* ($\neg\forall$)
not have.*Pres* that enter in the room
“You don’t have to enter the room.”

- (356) *No debes entrar en la sala.* ($\forall\neg$)
no must.*Pres* enter in the room
“You mustn’t enter the room.”

This phenomenon causes *deber* to exhibit variable quantificational force (cf. Kratzer et al., 2014), so that it can be paraphrased by means of the possibility modal when a negative-polarity item (NPI) is in the sentence. As can be seen below, (357) and (358) can refer to the same situation rather interchangeably.

- (357) *Nadie debe entrar en la sala.*
nobody must.*Pres* enter in the room
“Nobody must enter the room.”

- (358) *Nadie puede entrar en la sala.*
nobody can.*Pres* enter in the room
“Nobody can enter the room.”

Conversely, when no such NPI is present, *deber* expresses the same universal quantification as *tener que*:

- (359) *Todos deben pagar impuestos.*
all must.*Pres* pay taxes
“Everybody must pay taxes.”

⁶⁶ Surprisingly, *tener que* also becomes a neg-raising verb when it is conjugated in the past, and *haber* is present in the prejacent. The reason why this happens is unclear to me:

- (vii) *No tenías que haber entrado en la sala.* ($\forall\neg$)
not have.*PstImpfv* that have entered in the room
“You didn’t have to have entered the room.”

- (360) *Todos tienen que pagar impuestos.*
 all have.*Pres* that pay taxes
 “Everybody has to pay taxes.”

Note, by the way, that *tener que* does not have variable force. This is shown in (361), which is certainly not equivalent to (358):

- (361) *Nadie tiene que entrar en la sala.*
 nobody have.*Pres* that enter in the room
 “Nobody has to enter the room.”

Conversational background restriction

An interesting restriction on the use of the Spanish necessity modals that I have not found overtly mentioned in previous literature is that *deber* feels infelicitous in pure circumstantial readings (i.e. in contexts where there is an empty ordering source). Examples of such a restriction can be seen in (362).

(362) Pure circumstantial necessity

a. (Context: Tomás is blind)

- i. *Tomás tiene que llevar su bastón a todos lados.*
 T have.*Pres* that carry his cane to every places
 “Tomás has to carry his cane everywhere.”
- ii. ? *Tomás debe llevar su bastón a todos lados.*
 T must.*Pres* carry his cane to every places
 “Tomás must carry his cane everywhere.”

b. (Context: My nose itches)

- i. *Tengo que estornudar.*
 have.*Pres* that sneeze
 “I have to sneeze.”
- ii. ?? *Debo estornudar.*
 must.*Pres* sneeze
 “I must sneeze.”

(Inspired by Kratzer (2012: 58), example [44])

What had been noted previously is the connection between the use of *deber* and the appeal to moral or legal obligations.

Concluimos que tienen razón Espinosa y Wonder 1976 al considerar que deber indica “una obligación moral o una obligación impuesta por las circunstancias”.

“We conclude that Espinosa and Wonder 1976 are right in considering that *deber* indicates “a moral obligation or an obligation imposed by the circumstances.”

(Dumitrescu, 1988: 141. My translation.)

“Although it is often claimed in the manuals that the expression of deontic necessity in the sense of moral, social and legal mandatoriness is the primordial domain of *deber* [...] I have found quite a few examples in which *tener que* + infinitive expresses deontic necessity [...] However, Event-oriented Deontic Necessity is expressed much more frequently by means of *deber* than by means of *tener que*.”

(Olbertz, 1998: 391-392)

I concur with these observations in that it is distinctly odd to use *deber* in non-deontic priority contexts: the following teleological and bouletic necessity examples are fine with *tener que*, but feel degraded with *deber*.

(363) Teleological necessity

- a. (Context: Tomás lives far away from his job and there is no public transportation.)

i. *Tomás tiene que ir en coche.*
 T have.*Pres* that go in car
 “Tomás has to go by car.”

ii. ? *Tomás debe ir en coche.*
 T must.*Pres* go in car
 “Tomás must go by car.”

(364) Bouletic necessity

- a. (Context: I want to become Chair of the department. Fred is a very respected professor among our faculty whose advice and support can be extremely helpful.)

i. *Fred tiene que ayudarme.*
 F have.*Pres* that help-CL.1*Sg*
 “Fred has to help me.”

- ii. ?? *Fred debe ayudarme.*
F must.*Pres* help-CL.1*Sg*
“Fred must help me.”
- b. (Context: In conversation with a friend.)
 - A. *Mañana voy a pasar el día a Oxford.*
tomorrow go to spend the day to O
“Tomorrow I’m going to spend the day in Oxford.”
 - B. *Ah, entonces tienes que/?? debes tomarte un batido en*
ah then have.*Pres* that must.*Pres* take-CL.2*Sg* a milkshake in
MooMoo’s.
M
“Ah, then you have to take a milkshake at MooMoo’s!”

On the other hand, the deontic example in (365) appears natural with both kinds of modals. Still, and contrary to what might seem, it is actually complicated to find *purely* deontic cases because they can easily slip into a teleological interpretation (i.e. “you must X, *in order to respect the law*”), which I get from (365a-i) but not from (365a-ii). Therefore, I will argue that *tener que* can have a purpose clause associated with it and so, that it expresses non-deontic priority. Sentence (365a-i) can then probably be better classified as teleological in any case.

(365) Deontic necessity

- a. (Context: At the library.)
 - i. *Tienes que guardar silencio (para respetar las normas).*
have.*Pres* that keep silence to respect the rules
“You have to be silent (to follow the rules).”
 - ii. *Debes guardar silencio.*
must.*Pres* keep silence
“You must be silent.”

This restriction on the kinds of conversational backgrounds that *deber* combines with make it similar to the German necessity modal *sollen*, which also requires a non-empty ordering source (Kratzer, 2012: 58). Another crosslinguistic parallel between the two modals is that *sollen* apparently also exhibits variable modal strength. This behavior with respect to conversational backgrounds appears to have its correlate in French as

well, where the impersonal modal *falloir* (“be necessary”) can be used to express purely circumstantial necessity. The French necessity modal *devoir* (“must”), on the other hand, seems to be dispreferred in such contexts, which suggests that it cannot combine with an empty ordering source.

With regards to the oddity that results from trying to use *deber* in non-deontic priority contexts, Haverkate (1979) highlighted that commands using *tener que*

“easily admit subordinate clauses specifying the reason for the order being issued. Such expansions, however, are not likely to occur with [*deber*-commands] since these inherently refer to obligations of the hearer which are preexistent to the moment at which they are issued. Thus, of the following pair of sentences, the first one is perfectly well-formed, while the second one is more or less deviant, or, at any rate, unusual:

- (366) *Tienes que ir por el médico, porque papá se ha herido.*
 You have to go get the doctor, because dad got injured.
- (367) ?? *Debes ir por el médico, porque papá se ha herido.*
 You must go get the doctor, because dad got injured.”

(Haverkate, 1979 in Dumitrescu, 1988: 141. My sentence numbering.)

While I agree with the reported infelicity of (367), I am not convinced that the reason behind it lies necessarily on the “preexistence of the obligation” as Haverkate (1979) suggests. After all, a sentence like (363a-ii) does not become any more felicitous if everybody in the common ground knows that Tomás has had to take his car to go to work for the last 5 years and I just happen to utter that sentence. In my view, the problem with (367) is related to the teleological flavor of the construction: you have to go get the doctor, *in order to help your father*. But, as argued above, this clashes with the requirement of *deber* for a purely deontic ordering source.⁶⁷

⁶⁷ Brinton (1991) discusses an interesting distinction between “must” and “have to” in English:

“[...] *must* is generally subjective, while *have to* is always objective. That is, with *must* the speaker is normally expressing his or her authority; the deontic source is the speaker. With *have to* the deontic source is always external to the speaker, either the authority of another or the constraint of circumstances. [...]

- (viii) My children **must** eat an apple after their meals.

Combination with conditional morphology

The last important difference I will refer to between *tener que* and *deber* is related to their behavior when they bear conditional morphology, which is similar to what happens with negation. When *tener que* is conjugated in the conditional, it typically expresses necessity in some possible world (i.e. it is understood as if it were the consequent of a conditional construction: *would have to*). In the case of *debería* (*deber* + conditional), this entry in the paradigm is more lexicalized in that it expresses weak necessity analogous to English “should”. The following sentences inspired by Rubinstein (2012: example [129]) bring up this distinction.

- (368) (Context: New city regulations mandate that all properties have to be separated from the sidewalk by a fence or a wall. We are happy without any separation, but we have to follow the legislation. Putting up a fence is cheaper than building a wall.)

Podríamos poner un muro...

can.*Cond* put a wall

“We could build a wall...”

a. *...pero deberíamos poner una valla.*

...but must.*Cond* put a fence

...but we should put up a fence.”

b. # *...pero tendríamos que poner una valla.*

...but have.*Cond* that put a fence

...but we would have to put up a fence.”

-
- (ix) My children **have to** eat an apple after their meals.

In [(viii)] the speaker seems to be compelling the children to eat an apple, while in [(ix)], some outside authority, or an internal drive, compels the children.”

(Brinton, 1991: examples [3a-b])

While I agree that (viii-ix) express different nuances, I’m not convinced that her account of what the distinction is applies to Spanish. If anything, I am of the impression that it would be the opposite in this language: as argued in the discussion preceding (365), it is the example with *deber* that seems to refer to outside impositions (like the rules of the library in that case).

The infelicity of (368b) originates in that this continuation makes it seem as though if we build a wall, we will also be forced to erect a fence. But this is certainly not what the regulations require. The following example illustrates the same point:

- (369) *Podríamos ir de vacaciones...*
 can.*Cond* go of vacation
 “We could go on vacation...”
- a. *...pero deberíamos ahorrar.*
 ...but must.*Cond* save
 ...but we should save.”
- b. *...pero tendríamos que ahorrar.*
 ...but have.*Cond* that save
 ...but we would have to save.”

(369a) says that we have the possibility to go on vacation, but a wiser decision for us to make would be to save. On the other hand, the second conjunct in (369b) does not put forward an alternative to the possibility in the first conjunct. Instead, it refers to a situation that must hold as a precondition for us to be able to go on vacation.

Finally, one might wonder what happens when *debería* is used in the consequent of a subjunctive conditional construction. As already seen in Chapter 2, this position requires the main verb to bear conditional morphology in Spanish. Hence, it could be that the contribution of this declension be understood in two different ways in this context. On the one hand, *debería* could be interpreted as weak necessity (i.e. as “should”). This would correspond to the more lexicalized behavior of the word just mentioned above. Alternatively, *debería* could be understood as expressing necessity in some possible world (i.e. in the same way that *tendría que* does). An appropriate sentence to test this could be the following:

- (370) *Si tuviéramos un perro...*
 if have.*PstSbjv* a dog
 “If we had a dog...”
- a. *...deberíamos alimentarlo bien.*
 ...must.*Cond* feed-CL.*3Sg* well
 ...we would have.*weak* to feed it well.”

- b. ...*tendríamos que alimentarlo bien*.
 ...have.*Cond* that feed-CL.*3Sg* well
 ...we would have.*strong* to feed it well.”

As far as my own intuitions are concerned, (370a) expresses *both* of the possible meanings described above: namely, weak necessity in some possible world. This is interesting because it is evidence that *debería* expresses weak necessity even in environments where it could potentially be understood as strong necessity in some other possible world.⁶⁸ This is certainly different from the contribution of *tendría que*.

4.5.2 Taking stock: *tener que*, *deber*, and *debería*

The evidence presented above suggests that there are three rather clearly distinct kinds of necessity operators in Spanish:

- *Debería*: Analogous to weak necessity “should”. It could be treated as a degree modal (cf. Kratzer 2012: 58-59) with at least one ordering source that expresses personal commitments of the speaker that are not necessarily held by all the conversational participants (Rubinstein, 2012). It does not trigger actuality effects.
- *Deber*: Strong necessity. Deontic ordering source. Incompatible with empty ordering source, degraded with any other non-deontic priority ones. It exhibits variable-force effects and it can trigger actuality effects with past morphology (but counterfactual readings seem preferred).
- *Tener que*: Strong necessity. It is compatible with empty, teleological, and bouletic ordering sources. It does not show variable-force effects and it triggers actuality entailments with past perfective morphology.

Before moving on, I would like to clarify that the difference between *deber* and *tener que* does not pattern with the distinction between “ought-to-be” and “ought-to-do” deontics (Feldman, 1986; Hacquard, 2006: 40), as both modals can lead to either interpretation. The following, multiply ambiguous examples illustrate that. The noted ambiguity arises from the clitic *se*, which can be understood as a reflexive (leading to the “ought-to-do” reading), or as a reflexive passive (leading to the “ought-to-be” reading).

⁶⁸ There is something odd about the sentence “If we had a dog, we should feed it well”, which I think can be attributed to the presence of the weak necessity modal: *should* expresses weak necessity in the actual world, but the consequent of a subjunctive conditional requires that we talk about necessity in some other possible world. Literally understood, what (370a) expresses is a kind of modality that could be paraphrased as **would should* if this were grammatical in English.

- (371) *Los transeúntes se* **tuvieron** *que mover para dejar paso al*
 the passersby CL.Refl/ReflPass have.PstPfv that move for leave pass to-the
coche oficial.
 car official

“The passersby had to move/be moved to let the official car go by.”

- (372) *Los transeúntes se* **debieron** *mover para dejar paso al* *coche*
 the passersby CL.Refl/ReflPass must.PstPfv move for leave pass to-the car
oficial.
 official

“The passersby had to move/be moved to let the official car go by.”

“The passersby should have been moved to let the official car go by.”

The third interpretation available with *deber* (the one where it is translated as “should have been moved”) corresponds to the possibility to read it counterfactually. The analysis that I present in the next section will propose an explanation for why *deber* triggers these counterfactual inferences, but *tener que* only leads to actuality entailments.

4.5.3 Formalization

The explanation for the contrast between *deber* and *tener que* with respect to actuality effects should ideally be related to the other set of differences between these two modals discussed above, such as the lack of alternatives or the restrictions on conversational backgrounds. Actually, I believe this latter property to be the key in accounting for the actuality *entailment* that *tener que* leads to when conjugated with past perfective. In this respect, I will take the possibility for this verb to express pure circumstantial necessity as an indication that it combines with an empty ordering source whenever it takes a circumstantial modal base. Since circumstantial conversational backgrounds are realistic, in the absence of a ranking-inducing ordering source, *tener que* will quantify over all the worlds in the modal base. Provided that there is no additional modal layer outscoping *tener que* (which I suggest is what happens in the presence of imperfective aspect), an actuality entailment ensues in this configuration. Conversely, the requirement for *deber* to combine with a deontic ordering source prevents the automatic triggering of this inference because it is not guaranteed that the actual world will be optimal with regards to the laws in force. Thus, either an actuality or a counterfactuality enrichment will be available.

The proposal that *tener que* always combines with an empty ordering source raises the question of why it can also be used to express teleological necessity, as illustrated in the preceding subsection. In order to explain this, I rely on another one of the properties discussed above: the lack of alternatives that this verb conveys, which I propose that it arises because *tener que* expresses a causal relation between its prejacent and an overt or contextually-understood *because*-clause. The teleological interpretation takes place when such a clause refers to a goal of the subject, which can be paraphrased as a purpose *to*-clause, as in (374):

(373) (Pure circumstantial reading)

María tuvo que estornudar [porque le picaba la nariz].
 M have._{PstPfv} that sneeze because CL._{3sg} itched the nose
 “María had to sneeze [because her nose itched].”

(374) (Teleological reading)

María tuvo que coger el avión [porque quería ir a Londres].
 M have._{PstPfv} that take the plane because wanted go to L
 “María had to take the plane [because she wanted to go to London].”
 (= “María had to take the plane [to go to London]”).

Under the current analysis, the meaning of (374) can be broken down into the following three statements: (i) María took the plane, (ii) there was a reason for her to have to take the plane (in this case, the fact that she wanted to go to London), and (iii) the existence of that reason meant that there was no alternative but to take the plane (i.e. the prejacent necessarily follows from the reason). The actuality entailment that is clause (i) is already accounted for by assuming that *tener que* takes an empty ordering source, as argued above. In order to capture clauses (ii) and (iii), I put forward the following Kratzerian denotation for *tener que*, which includes a semantic presupposition inspired by von Stechow et al.’s (2006) analysis of anankastic conditionals as counterfactuals which, in turn, is based on Lewis’s (1973b) theory of causation:⁶⁹

⁶⁹ For simplicity, and because I argued that the ordering source of *tener que* is empty, I simply did not represent it in its denotation: the argument *f* corresponds to the modal base.

$$(375) \quad \llbracket \text{tener que} \rrbracket = \lambda f_{\langle \varepsilon, stt \rangle} . \lambda q_{\langle st \rangle} . \lambda e . \lambda w . \forall w' \in (\cap f(e)(w)) : q(w') = 1$$

Presupposition: There is a reason p such that $\neg p \Box \rightarrow \neg q$.

The key component of the presupposition is the counterfactual conditional operator ($\Box \rightarrow$), which represents a causal connection between the *because*-clause and the prejacent of the modal. The resulting formula is to be read as “if it were not the case that p , it would not be the case that q ”. With this denotation in hand, the simplified truth-conditions of (374) could be represented as in (376) below.

$$(376) \quad \llbracket (374) \rrbracket = 1 \text{ iff } \exists e. [\tau(e) \subseteq t \mid \underline{t < t^*} \mid \& \forall w' \in (\cap f(e)(w^*)) : \text{María took the plane in } w']$$

Presupposition: There is a reason p (p = María wanted to go to London), such that $\neg(\text{María wanted to go to London}) \Box \rightarrow \neg(\text{María took the plane})$.

These truth-conditions can be paraphrased as follows. First, (374) asserts that in every world where the same circumstances as in the actual one held, María took the plane in it. Since the actual world is among such a set of worlds, María also took the plane in w^* . Second, there is the presupposition that the reason why María took the plane is that she wanted to go to London *and* that if she had not wanted to go to London, she would not have taken the plane.

It is important to mention that this presupposition has an effect similar to having an ordering source that contains the *because*-clause as its only proposition (as in analyses of anankastic conditionals like von Stechow and Iatridou’s (2005) or Huitink’s (2008)). However, I do not think that such alternatives would work for the present Spanish data for the following reason. According to these approaches if the actual world were one where the reason p holds, the prejacent of the modal would also hold (i.e. q would be among the best worlds as established by the ordering source). Since we saw that *tener que* in these constructions leads to actuality entailments, we would have to ensure that w^* is always included in that set of best worlds. This would allegedly be the function of the complementizer *because*, which would assert that the actual world is a p -world. But this alternative also predicts that it should be possible to use *si* (“if”) instead of *because*, without triggering an actuality entailment. As it turns out, this prediction is not borne out because in such a case *tener que* could only be read epistemically (that is, (377) does not have a circumstantial interpretation):

- (377) *Si quería ir a Londres, María tuvo que coger el avión.*
 if wanted go to L M have.*PstPfv* that take the plane
 “If she wanted to go to London, María must have taken the plane.”

This suggests that the direction of the explanation should go from the actuality entailment to the *because*-clause. Since the at-issue component asserts the truth of the prejacent in the actual world and the presupposition conveys that *there is* a reason behind the actuality of *q*, the use of *because* becomes necessary when introducing said reason.

Another piece of evidence against the analysis whereby (373-374) are interpreted as anankastic conditionals with presupposed antecedents comes from the distinction between determinative and indeterminative *to*-clauses mentioned in von Stechow et al. (2006), which they attribute to Bech (1955/57). As demonstrated in the following examples, both anankastic conditionals and *because*-clauses with a teleological reading can be paraphrased with a purposive *to*-clause:

- (378) Anankastic conditional:

- a. *Si quiere ir a Londres, tiene que coger el avión.*
 if want go to L have.*Pres* that take the plane
 “If she wants to go to London, she has to take the plane.”
- b. *Para ir a Londres, tiene que coger el avión.*
 for go to L have.*Pres* that take the plane
 “To go to London, she has to take the plane.”

- (379) *Because*-clause with actuality:

- a. *Porque quería ir a Londres, tuvo que coger el avión.*
 if want go to L have.*PstPfv* that take the plane
 “Because she wanted to go to London, she had to take the plane.”
- b. *Para ir a Londres, tuvo que coger el avión.*
 for go to L have.*PstPfv* that take the plane
 “To go to London, she had to take the plane.”

Given the equivalence between (378a) and (378b), von Stechow et al. (2006) argue that the role of the *to*-clause in these cases is to restrict the modal, exactly in the same way that the antecedent of the conditional does. They call this interpretation *determinative*.

On the other hand, (379b) illustrates the *indeterminative* interpretation, where the *to*-clause “expresses a goal”, it “has nothing to do with the overt modal”, and it “expresses a *causa finalis*” (p. 153). In fact, they explain that under the *indeterminative* reading “we can omit the modal and still obtain a purpose reading” (*ibid*). This can be seen below, where the counterpart of (378a) feels degraded without the modal:⁷⁰

- (380) ? *Si quiere ir a Londres, coge el avión.*
 if want go to L take the plane
 ? “If she wants to go to London, she takes the plane.”
- (381) *Porque quería ir a Londres, cogió el avión.*
 if want go to L took the plane
 “Because she wanted to go to London, she took the plane.”

It is this indeterminative interpretation that I argue the *to*- and *because*-clauses in (379) have. Therefore, I believe this justifies not considering the proposition expressed by them as part of the restriction of the modal.

4.5.4 More on the presupposition of *tener que*

A question that remains addressing is what the difference is between a sentence with *tuvo que* that triggers an actuality entailment and its extensional counterpart. In other words, how are (373) and (382) different if both assert that María sneezed in the actual world?

- (373) *María tuvo que estornudar [porque le picaba la nariz].*
 M have.*PstPfv* that sneeze because CL.*3Sg* itched the nose
 “María had to sneeze [because her nose itched].”
- (382) *María estornudó [porque le picaba la nariz].*
 M sneezed because CL.*3Sg* itched the nose
 “María sneezed [because her nose itched].”

I would like to suggest that what sets both kinds of sentences apart is the semantic presupposition of *tener que*. In the extensional case, no reason is invoked that *necessarily* caused the sneezing to take place. Even if such a sentence is followed by a *because*-clause

⁷⁰ The insurance company Geico uses this construction in their tag line however: *If you want to save 15% or more, you call Geico. That’s what you do.*

(as in (382)), the continuation explains why María acted in the way he did, but no claim is made about sneezing not taking place if María's nose were not to itch. In other words, (373) presupposes that the sneezing would not have taken place if María's nose had not itched, but (382) does not.

Additional evidence that *tener que* conveys the backgrounded meaning that there is causal relation between the prejacent and the proposition in the *because*-clause was provided in section 4.5.1 above, where I discussed the interaction between this modal and conditional morphology. In (369) repeated below, the continuation with *tener que* expresses that the reason to save would be going on vacation. Conversely, no such reading is imposed by *deber*, which simply proposes an alternative to the first conjunct.

- (369) *Podríamos ir de vacaciones...*
 can.*Cond* go of vacation
 “We could go on vacation...”
- a. *...pero deberíamos ahorrar.*
 ...but must.*Cond* save
 ...but we should save.”
- b. *...pero tendríamos que ahorrar.*
 ...but have.*Cond* that save
 ...but we would have to save.”

To conclude this section, I want to emphasize that this meaning is indeed a pre-supposition and not some other kind of not at-issue contribution such as a secondary entailment, for example. In order to support this claim, I will show that this causal relation survives under negation and in interrogatives. With respect to the former, the example below illustrates how regardless of whether negation scopes over the overt *because*-clause or not, the causal presupposition is still there:

- (383) *María no tuvo que volar a Londres porque cancelaron la reunión.*
 M not have.*PstPfv* that fly to L because cancelled the meeting
 “María did not have to fly to London because her meeting was cancelled.”
- a. NOT [María have to travel [because meeting was cancelled]] [but because...]
- b. María NOT [have to travel] [because meeting was cancelled]

In (383a), since the *because*-clause falls within the scope of negation, it refers to a non-reason why María had to travel to London: the actual reason is some other one. On the other hand, in (383b), the *because*-clause establishes the reason why María did not have to travel in the end. No matter what interpretation is assigned to (383), the presupposition that there is a reason outside the scope of negation without which the prejacent of the modal would not take place is conveyed.

Question environments are slightly more challenging to account for because the actuality entailment is suspended in them (as expected from such a logical relation). Thus, (384) does not entail that María traveled to London: it just asks whether she had the obligation to do so. But should the answer to it be affirmative, the actuality entailment will also be retrieved.

- (384) *¿Tuvo María que volar a Londres?*
have._{PstPfv} M that fly to L
“Did María have to fly to London?”

Given that it is not known in (384) if María was under the obligation to fly or not, there is no way of knowing what the cause might have been for her to either have to do it or to not have to do it. But the use of *tener que* still presupposes the existence of some reason or other that lead to the actual real-world situation. Once it becomes clear if María flew, it will be possible to establish what was behind her obligation.

4.5.5 Other necessity modals

In the preceding sections, it has been observed that when the possibility modal *poder* or the necessity modal *tener que* trigger actuality effects, they are associated with a teleological or bouletic flavor (i.e. a non-deontic priority interpretation). Given this evidence, one might wonder if other modals that lexically encode such meanings (rather than pragmatically, through conversational backgrounds) also lead to actuality effects. The following examples with the verbs *preferir* (“prefer”) and *necesitar* (“need”) show that this is indeed the case.

- (385) *María prefirió donar su fortuna (# pero no lo hizo).*
M prefer._{PstPfv} donate her fortune but not CL.3Sg did
“María preferred to (and did) donate her fortune (# but she didn’t).”

- (386) *María necesitó donar su fortuna (# pero no lo hizo).*
 M need.*PstPfv* donate her fortune but not CL.*3Sg* did
 “María needed to (and did) donate her fortune (# but she didn’t).”

However, not every single Spanish necessity modal follows the same pattern. The bouletic verbs *querer* (“want”), *desear* (“wish”, “desire”), and *temer* (“fear”) do not trigger actuality entailments.

- (387) *María quiso donar su fortuna (pero no le dejaron).*
 M want.*PstPfv* donate her fortune but not CL.*3Sg* leave
 “María wanted to donate her fortune (but they didn’t let her).”

- (388) *María deseó donar su fortuna (pero no le dejaron).*
 M wish.*PstPfv* donate her fortune but not CL.*3Sg* leave
 “María wished to donate her fortune (but they didn’t let her).”

- (389) *María temió no aprobar el examen (pero finalmente lo hizo).*
 M fear.*PstPfv* not pass the exam but finally CL.*3Sg* did
 “María feared not passing the exam (but finally she did).”

The case of *querer* (“want”) is particularly puzzling. It is rather uncontroversial that wanting to do something does not lead to actually doing it. This is shown in (387). Nonetheless, it is also the case that the presence of negation makes the cancellation of the prejacent less felicitous. Thus, the continuation in (390) feels degraded when *querer* bears past perfective. This is particularly so when (390) is compared to (391), where past imperfective is used and the continuation is perfectly acceptable:⁷¹

- (390) *María no quiso salir de casa (#? pero le obligaron).*
 M not want.*PstPfv* leave of house but CL.*3Sg* force
 “Maria didn’t want to leave her house (but they forced her to).”

- (391) *María no quería salir de casa (pero le obligaron).*
 M not want.*PstImpfv* leave of house but CL.*3Sg* force
 “Maria didn’t want to leave her house (but they forced her to).”

⁷¹ Incidentally, notice that the modal verb in the continuation *obligar* (“to force somebody”) also triggers an actuality entailment.

This data is very interesting because it shows that perfective aspect alone cannot be responsible for triggering actuality entailments and I know of no previous account that points out the effect of negation in its generation. Moreover, appealing to a difference between mono- and bi-clausality in order to explain the presence vs. absence of actuality in (385-389) does not seem promising either. The reason is that syntactic and semantic tests like the possibility for clitic climbing or modification by *again* (cf. Hacquard, 2006) do not yield any distinction between either subgroup of verbs. Instead, I suspect that these actuality facts might be connected to the flavor of modality that each verb expresses. For example, a tentative explanation of the contrast between (390) and (391) might be the following. In these sentences, “want” must be interpreted as referring to the effective preferences of María and not just to a mere desire of hers (Condoravdi and Lauer, 2016: section 5). As such, and because “want” is a neg-raising verb, these examples are read as saying that María actively refused to leave the house. In (391), the lack of settledness conveyed by imperfective aspect allegedly allows for something unexpected to happen like María being finally convinced to leave, for example. Conversely, perfective aspect on the modal in (390) expresses that the matter was settled in the past: María’s effective preference was to stay at home and nothing would make her change her mind. Arguably, there must be some pragmatic component here that derives actuality from a settled effective preference in the past. That is why I’m hesitant to call the inference in (390) an entailment (hence the #[?] symbol, meaning that this infelicity might be possible to override).

All in all, this whole section 4.5 has provided additional evidence that there is a connection between actuality effects and teleological/bouletic conversational backgrounds. More precisely, I suggest that such priority ordering sources are necessary in order to derive actuality. At the same time, examples (387-389) also showed that this is not a sufficient condition for actuality. A deeper understanding of the differences between *preferir*-like verbs and *querer*-like verbs will have to await further research.

4.6 The perfect

When I discussed Borgonovo and Cummins’s (2007) proposal of cFCs in section 4.3.3, I echoed their claim that perfect (not *perfective*) morphology on the possibility

modal makes the actuality reading more salient, even non-cancellable for some speakers. At that point, I suggested that it might be the resultative flavor of the perfect that favors the actuality interpretation, even though it does not force it as example (312) repeated below shows.

- (312) (Context: An upset professor talking to a student who is not putting enough effort in class)

Tuviste el examen la semana pasada, te di la opción de repetirlo dos días después, y después incluso te propuse hacerlo de forma oral.
 had the exam the last week CL._{2Sg} gave the option of repeat two
 day later and later even CL._{2Sg} proposed doing of form oral
*Vamos que **has** **podido aprobar** 3 veces y en ninguna te **has***
 so that have._{Pres} could pass 3 times and in none CL._{2Sg} have._{Pres}
esforzado.
 put-effort.

“You had the exam last week, you had the option to repeat it two days later, and after that I even suggested taking it orally. So basically **you have been able to pass 3 times** and in none of them have you put any effort.”

Here, I would like to elaborate on this by comparing the different interpretations of the perfect and showing that not all of them give rise to the kind of strong actuality that Borgonovo and Cummins (2007) mention. I take Bhatt and Pancheva (2005) as the reference point, who describe up to four separate types of perfects:

- (392) a. The UNIVERSAL perfect asserts that the event holds *throughout* an interval, delimited by the reference time and a certain time prior to it.
 b. The EXPERIENTIAL perfect asserts that the event holds *prior to* the reference time.
 c. The RESULTATIVE perfect asserts that the result state of the event holds *at* the reference time.
 d. The RECENT PAST perfect asserts that the event holds *prior to*, and *sufficiently close to*, the reference time.

(Bhatt and Pancheva, 2005: Note 2, example [36])

Of these four, it is the resultative that triggers the strongest kind of actuality effect, which appears impossible to cancel.

(393) Denotation of the RESULTATIVE perfect:

$$\llbracket \text{RESULTATIVE} \rrbracket = \lambda P_{\varepsilon, t} . \lambda t_i . \exists e_1 . \exists e_2 [\text{Result}(e_2, e_1) \ \& \ t \subseteq \tau(e_2) \ \& \ P(e_1)]$$

(Bhatt and Pancheva, 2005: Note 3, adapted from example [7c])

When the resultative modifies the modal, it *asserts* the existence of the result state of the ability eventuality at utterance time (because remember that I assumed that modals introduce their own event variable). What is the result state of having an ability? Most normally, I believe this event would be interpreted as having materialized the ability into carrying out the prejacent. An example that highlights this interpretation through the contribution of the adverb *finalmente* is provided in (394)

(394) *Finalmente, Alex ha podido vender su moto.*
 finally A have.*Pres* could sell his motorcycle
 “Finally, Alex has been able to sell his motorcycle.”

In the way it was just described, this actuality effect is pragmatically derived. However, trying to cancel this meaning is rather complicated and even attempts that appeal to an agnostic element in the context sound odd. I am unsure as to how to classify this inference, but it does appear more robust than the I-implicature that simple past *pudo* gives rise to.

(395) (Context: After trying for a long time, Alex has been able to find a buyer for his motorcycle. He met with him today, but I still haven’t heard back so I don’t know if the transaction went through.)

Finalmente, Alex ha podido vender su moto (# pero no sé si
 finally A have.*Pres* could sell his motorcycle but not know if
lo ha conseguido).
 CL.*3Sg* have.*Pres* managed

“Finally, Alex has been able to sell his motorcycle (# but I don’t know if he has managed to do it).”

As for the rest of the perfects, intuitions are even less clear-cut. For both the universal and the experiential perfects, it seems that the *Aktionsart* of the event in the

prejacent might prime actuality readings in some cases, and counterfactual ones in others. More specifically, activities appear to favor actuality readings, whereas accomplishments tend to prefer counterfactual enrichments. But neither sentence would definitely exclude a continuation that explicitly expressed the opposite kind of enrichment:⁷²

(396) Universal perfect

- a. (Accomplishment prejacent. Counterfactuality favored.)

Desde 2010, Alex ha podido obtener su carnet de identidad de
 since 2010 A have.*Pres* could obtain his card of identity of
Delaware, puesto que vive en Newark desde entonces.
 D given that live in N since then

“Since 2010, Alex has been able to obtain a Delaware state ID, given that he has been living in Newark since then.”

- b. (Activity prejacent. Actuality favored.)

Desde que compró la cortacesped automática, Alex ha podido segar
 since that bought the lawnmower automatic A have.*Pres* could mow
la hierba mucho más rápidamente.
 the grass much more fast

“Since he bought the automatic lawnmower, Alex has been able to mow the lawn much faster.”

(397) Experiential perfect

- a. (Activity prejacent. Actuality favored.)

Alex ha podido ver a The National en concierto este año.
 A have.*Pres* could see to T N in concert this year

“Alex has been able to see The National live this year.”

⁷² For example, the following variant of (396a) feels perfectly natural:

- (396a') *Desde 2010, Alex ha podido obtener su carnet de identidad de*
 since 2010 A have.*Pres* could obtain his card of identity of
Delaware, puesto que vive en Newark desde entonces. De hecho, lo
 D given that live in N since then of fact CL.*3Sg*
obtuvo durante su primer mes allí.
 obtained during his first month there

“Since 2010, Alex has been able to obtain a Delaware state ID, given that he has been living in Newark since then. Actually, he got it during his first month there.”

The case of the necessity modal *tener que* is somewhat more straightforward, since the presence vs. absence of actuality boils down to the kind of priority ordering source it bears (as discussed in preceding sections) and not to the contribution of the perfect. Thus, regardless of the kind of perfect featured, a teleological or bouletic use of *tener que* will lead to an actuality entailment of the prejacent, whereas a deontic use will allow for both actuality or counterfactuality enrichments. The reason why *tener que* can express a more deontic meaning in this case (in apparent violation of my generalization regarding the conversational backgrounds it combines with presented in section 4.5) is that the pure deontic modal *deber* is really dispreferred in combination with the perfect. As investigated in Laca (2012), when *deber* bears perfect morphology an epistemic interpretation becomes much more salient.

As put forward in section 4.5, I suggest that the actuality effect obtained with *tener que* in these non-deontic priority readings is attributable to the lack of an ordering source. The following example with two variations of the universal perfect should suffice to illustrate the point.

(398) Universal perfect

- a. (Deontic reading. Actuality/Counterfactuality possible.)

Desde 2010, Alex ha tenido que cotizar en EEUU por
 since 2010 A have.*Pres* had that pay-contributions in USA for
vivir allí (y se ha beneficiado de los bajos impuestos/ pero no
 living there and Refl has benefited of the low taxes but not
lo ha hecho y ahora está en problemas).
 CL.*3Sg* has done and now is in problems

“Since 2010, Alex has had to pay contributions in the USA because he lives there (and he has taken advantage of the low taxes/ but he hasn’t and now he is in trouble).”

- b. (Teleological reading. Only actuality possible)

Desde 2010, Alex ha tenido que pagar impuestos anualmente para
 since 2010 A have.*Pres* had that pay taxes annually for
no romper la ley.
 not break the law

“Since 2010, Alex has had to pay taxes annually in order not to break the law.”

4.7 Criticism and outlook

The objective of this chapter has been to attain a better understanding of actuality effects in Spanish. It was noted that most of the previous literature had a focus on French, where possibility and necessity modals trigger actuality *entailments* when they bear past perfective morphology. Given the typological proximity between Spanish and French, it seemed reasonable for both languages to behave identically on this issue, but this turned out not to be the case.

I began by focusing on the Spanish possibility modal and argued that the actuality and counterfactuality effects it gives rise to with past perfective are better explained as being pragmatically derived. One question that might be asked is why this pragmatic account does not apply in *every* language with an overt perfective/imperfective distinction, since the Gricean apparatus I appealed to is taken to be universal. As work by Bhatt (1999) and Hacquard (2006, 2009, 2011) has highlighted, this pragmatic explanation would be too weak for the range of languages that pattern with French (Hindi, Greek, Bulgarian, etc.), but it seems just strong enough for those languages that pattern with Spanish (Basque, Albanian). Thus, a possible take on the question might be the following. It could be hypothesized that my proposed pragmatic mechanism could in principle be available in *all* languages where perfective and imperfective are distinguished. However, the French-like languages might have additional semantic components that essentially override the aforementioned pragmatic inferences. One possible such semantic difference could be the enriched denotation of the perfective that Hacquard (2006) proposed for French, which would be absent in Spanish. Another possibility would be an actuality coercion operator in the sense of Homer (2011) which, again, would be at work in French but unavailable in Spanish.

The behavior of Spanish necessity modals proved to be even more puzzling, as it introduced additional degrees of variation into the typology of actuality entailments. First, it was demonstrated that the necessity modal *tener que* triggers French-style actuality effects. This is extremely interesting because it shows that there is variation in the properties of actuality effects even within the same language. Second, I also pointed out that not all Spanish necessity modals behave like *tener que*. In particular, *deber* (“must”)

was shown to strongly prefer a counterfactual reading with respect to its prejacent. The cornerstone of my analysis was the proposal that there is a difference in the kinds of conversational backgrounds that *deber* and *tener que* are compatible with, and that the latter carries a causal presupposition.

Much work is still needed to fully understand the properties of actuality effects in different languages. Recent work is underscoring the fact that these inferences are much more varied than originally envisioned in the seminal work of Bhatt (1999) and Hacquard (2006). In this respect, I would like this chapter to have provided evidence that, in addition to tense, aspect, or genericity, the kinds of ordering sources that modals combine with (or even negation) play a key role in the triggering of actuality effects as well.

Chapter 5

CONCLUSIONS

This dissertation has looked into the effect that tense and viewpoint aspect have on modal verbs in Spanish. The starting point of this investigation was the realization that when modal verbs interact with past morphology, they behave in unexpected ways: they express counterfactual commitments with respect to their prejacent that can be cancellable (Chapter 4) or not (Chapters 2 and 3), and they can even lose their intensionality and operate like implicative predicates (Chapter 4).

Along the way, I also used the shared non-cancellable counterfactual meaning between SCCs and RIs in order to point out the similarities between modal sentences and imperatives. In the next few sections, I briefly discuss and summarize the main points that I intended to put across in this work.

5.1 Kinds of counterfactuality

One of the main purposes of this dissertation was to propose that not all counterfactual inferences are the same. Previous literature discussed in the introduction viewed counterfactuality as a monolithic phenomenon that always exhibited the same range of properties. Most importantly, whether it was described as a conversational implicature (Iatridou, 2000) or a presupposition (Stalnaker, 1975; von Stechow, 1997; etc.), the existing body of work assumed that all counterfactual meanings were cancellable. In my view, the source of this misguided assumption is that counterfactuality has almost exclusively been studied within the context of (subjunctive) conditional constructions. As a result, the properties shown by this inference in this specific construction were extrapolated and taken to apply to *all* such inferences.

However, the existence of structures like SCCs and RIs in Spanish, which are associated with a non-cancellable counterfactual component, is strong evidence that the

environment where counterfactuality is generated has an impact on the kinds of properties it will show. On top of this, the analysis of cFCs in Chapter 4 highlighted that even the mechanisms through which counterfactuality is triggered can vary.

In Chapters 1 through 3, I proposed that the counterfactuality present in SCCs, RIs, and subjunctive conditionals can be treated as a presupposition based on Iatridou’s (2000) Exclusion Feature. I attributed the possibility to cancel this inference in conditionals to the presence of subjunctive mood, which allows to consider worlds beyond those in the Common Ground (CG). As the temporal examples from section 1.3.1 repeated below showed, it is not that the Exclusion Feature itself is ever cancelled as Iatridou suggested. Rather, it is always there because it is part of the conventional meaning of past tense. It only seems to be canceled in cases like (38b) because of the contribution of imperfective aspect.

- (38) a. *John **estaba** en la clase.*
 “John was._{PstImpfv} in the classroom.”
 b. *De hecho, todavía está.*
 “*In fact, he still is.*”
- (39) a. *John **estuvo** en la clase.*
 “John was._{PstPfv} in the classroom.”
 b. # *De hecho, todavía está.*
 # “*In fact, he still is.*”

According to my proposal, cancellation of counterfactuality in conditionals comes through the interaction between the domain of quantification of the conditional modal and the CG. By using subjunctive morphology, the speaker is marking that there might be some antecedent worlds maximally similar to w^* that lie outside of the CG as far as he is concerned. It is this looking outside the CG that leads to the counterfactual inference through comparison with indicative conditionals (which remain within the CG). Essentially, the use of the subjunctive allows the speaker to make a claim without necessarily taking a stance as to where he thinks w^* is. Drawing a parallel between the counterfactual and the temporal realms, subjunctive marking is thus the modal analogous of imperfective aspect.

Conversely, the lack of subjunctive morphology in SCCs prevents us from leaving the CG. Hence, when the speaker conveys that the actual world is excluded from the set of worlds where the prejacent of the modal takes place, he does so from within the CG. As such, there is no chance to cancel this counterfactual meaning (unless any of the other participants in the conversation want to challenge him for speaking falsely, of course).

Later on, in Chapter 4, I presented a new set of structures, cFCs, which also express counterfactuality. In apparent contradiction to my claim above, these constructions can express a cancellable counterfactual inference even when they bear indicative mood. I argue that the difference in this case with respect to the previous ones is counterfactuality is not triggered by an Exclusion Feature here, because there is not a functional *haber* head in an intensional context that might lead to that meaning. Instead, I proposed that this inference is cancellable in cFCs because it arises via a completely conversational mechanism involving discourse notions like the QUD and Gricean reasoning.

In short, the take-home messages that I wanted to put forward in this work as far as counterfactuality is concerned are summarized in the following bullet points:

- There is no *single* mechanism that triggers counterfactuality.
- Counterfactuality can be conventional or conversational in nature.
- Even when it is conventional, it might seem to be cancelled through interaction with other components of a sentence like verbal mood.

5.2 RIs are imperatives and can be future-oriented

Following previous work by Bosque (1980) and Vicente (2013), I defended that RIs should indeed be considered as a subclass of imperatives. In order to do so, I expanded on their own arguments and provided some new evidence against the most developed alternative to this approach, namely, Biezma's (2011) reduced optative analysis. This discussion was couched within the larger issue of how to classify sentences within a particular theory of clause typing. In the view espoused here, I take the imperative clause type as a cover term for performative sentences whereby the speaker uses the event denoted in his utterance to establish a ranking of worlds based on whether said event is realized or not. Given this definition, RIs certainly classify as imperatives. Along the same lines, exhortatives or commissives (to name but two other kinds of performatives) would also be grouped

within the clause type of imperatives. I believe this to be a welcome result, since all these constructions are closely related as far as their discourse properties are concerned. If we accept that they are all imperatives, we could differentiate further subgroups within this clause type: the exhortative one, the commissive one, even the reproachative subgroup for RIs.

With respect to the compositional semantics of RIs, I capitalized on the structural similarity between them and SCCs (RIs look exactly like the prejacent of the latter), and on the fact that both constructions express the same kind of counterfactuality, to present a modal analysis of these imperatives in the sense of Kaufmann (2012). In addition, I also provided new data that showed how RIs can be modified by future-oriented adverbs. This suggests that the contribution of the overt past morphology in these structures is not actually behaving temporally, but modally. In this cases, the adverb modifier is focused, which triggers the generation of a number of focus-alternatives understood to be false. Interestingly, whenever this happens, the counterfactual inference conveyed does not express that the event in the prejacent was never accomplished. Instead, what is conveyed is that the addressee already carried out the event in the prejacent at some time previous to utterance time and so, that she cannot carry it out at the time expressed by the adverbial. Thus, future-oriented RIs are counterfactual not with regards to the occurrence of the event *per se*, but with regards to the occurrence of the event at the time expressed by the adverbial.

5.3 Actuality effects and priorities in Romance

When summarizing her account of actuality entailments at the end of her dissertation, Hacquard (2006: 199) wrote:

“The prediction is that, as long as a language shows an overt perfective/imperfective distinction, we should get actuality entailments with perfective. However, perfective on a root modal in Spanish yields an additional counterfactual reading.”

In Chapter 4 of this work I took up the torch and tried to shed some light on the particular realization of actuality effects in Spanish that Hacquard described. Throughout my dissertation I argued that modal verbs (at least in Spanish) are to be considered

regular verbs (and not auxiliaries) given that there is no limitation on their conjugational paradigm that should make us think otherwise. In order to be consequential with this view, I followed Homer (2011) in arguing that Spanish modal verbs introduce their own event variable. This resulted in a bi-clausal analysis of Spanish modal constructions where at least two events are present: the modal event and the prejacent event. The most immediate consequence of such assumption is that Hacquard’s (2006, 2009) proposal cannot be directly applied to derive actuality effects in Spanish because it relies on modal constructions being monoclausal. In any case, I did not think of this as a source of worry, since it is clear that Spanish behaves differently from the Romance languages that were the focus of Hacquard’s investigation.

What makes Spanish even more interesting is that Hacquard’s quote above is only partially accurate. As it turns out, *some* Spanish modal verbs do behave in the French way (i.e. they trigger actuality *entailments*). These are the necessity modals *tener que* (“have to”), *preferir* (“prefer”), and *necesitar* (“need”). Other necessity modals like *deber* (“must”), *querer* (“want”), *desear* (“wish”), as well as the possibility modal *poder* (“can”) lead to both actuality and counterfactuality effects.

In conclusion, the main point that I would like to emphasize regarding this topic is that actuality effects are connected to teleological/bouletic conversational backgrounds. Purely deontic interpretations on the other hand do not seem to give rise to them. This can be attributed to the fact that, for the prejacent to materialize, it is not enough that the circumstances surrounding it favor its realization. The agent’s goals must be directed towards making the prejacent come about as well.

5.4 Looking ahead

Beyond the potential contribution of this work to the area of linguistic modality, there are undoubtedly many points that need to be investigated further. For example, I was not able to provide an explanation for why it is that some bouletic modals convey actuality entailments in Spanish (*preferir*), but not others (*querer*, *desear*). I defended that non-deontic priorities are necessary for these effects to arise, but such conversational backgrounds seem not to be sufficient.

More generally, this work has introduced an additional dimension to the literature on actuality effects in that I showed that the ingredients that were thought necessary for them to arise (e.g. perfective aspect, monoclausality, etc.) might not be enough to predict when they are triggered. Given that specific ordering sources condition the availability of such additional meanings at least in Spanish, it feels necessary to return to languages where actuality effects had been reported in order to see whether such constraints also exist there. Actually, I believe that this task of revising previous insights should be taken even further, because I also showed that actuality effects can obtain even with imperfective aspect. We might have been too quick in rejecting the association between actuality and imperfectivity because of the generic flavor typically connected to the latter. When a modal with imperfective aspect is read with a habitual interpretation for example, it might be that actuality is also obtained. If anything then, I hope that this dissertation will contribute to a more careful consideration of assumptions that we took for granted.

As far as the realm of counterfactuality is concerned, I believe that many other constructions that give rise to it remain to be properly studied and formalized across the world's languages. The limited crosslinguistic availability of RI-like sentences is a reminder of that. In the light of this assumption, it would not be surprising to find that the counterfactual inferences conveyed by these hypothetical constructions exhibit properties different from those found in the counterfactuality expressed by SCCs, RIs, or subjunctive conditionals. In this work, emphasis was put on whether a particular inference was cancellable or not. But one might expect additional differences with regards to projection or backgroundedness, to name but two other dimensions.

Lastly, I do not want to finish without pointing out an obvious fact: this is a dissertation on theoretical linguistics. As such, the predictions of the accounts developed here have to (*tienen que*, not *deben*) be confirmed empirically if this work is to be more than just a (rather long) mental exercise. Hopefully I or some other researcher will take on this task in the future.

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