

The Semantics of *How Come*: A Look at How Factivity Does It All

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Abstract

It has been noted that *why* and *how come* have different behavior (Collins 1991; Ochi 2004); and while a factive analysis has been proposed, it has not been exploited to describe all of the relevant facts. I support the claim that *how come* is factive, while *why* is not, using an analysis introduced by Fitzpatrick (2005). By introducing only a few modifications to the analysis, I will account for all of the distributional differences between *how come* and *why*. Additionally, presuming that *how come* is factive makes specific predictions concerning the types of complements that are available and these predictions are borne out with native-speaker judgments. Furthermore, the Italian *come mai* has similar behavior, suggesting the same analysis holds in this case as well. The factivity analysis is able to account for new data concerning *how come*, and also makes an interesting observation concerning acquisition.

Introduction

Why and *how come* are very similar in usage and meaning: they are both inquire about the reason or cause. Some syntactic differences; however, have been discussed (Collins, 1991). A suggestion was made at the end of Collins's paper that *how come* could presuppose the truth of its complement, endorsed by a factivity analysis by Fitzpatrick (2005). I follow up on this claim, and show that it is the only analysis that can account for the wide range of data. In this paper, I present additional English data, and show that a factivity analysis can account for the number of differences between *why* and *how come* with a few modifications. Additionally, this modified analysis is capable of explaining distributional facts concerning *come mai* in Italian, lending cross-linguistic support to the hypothesis.

The organization of this paper is as follows. First, I outline the current factivity analysis introduced by Fitzpatrick (2005). After a brief interlude with modals in English, I describe additional facts about English *how come*, which have not been accounted for by the analysis. I show that the current analysis, along with a few minor modifications is able to account for the remaining distributional facts. We then turn to Italian *come mai*, which is translated as *how come*, and has similar properties as the English version. The distributional facts in Italian will be detailed. I show that the modified analysis is able to fully describe the *come mai* facts. Additionally, a factivity analysis makes certain predictions concerning complement interpretations, and I show that an interesting prediction is borne out. Then, I touch on some acquisition data and the new light this analysis may shed on that data. Finally, I complete the *how come* discussion

by outlining the analyses that have been proposed, followed by an explanation of how these analyses can and can't handle the facts.

1 Current Analysis

Fitzpatrick develops a hint from Collins (1991) that *how come* is factive; that is, it presupposes the truth of its complement. Fitzpatrick uses supporting evidence from rhetorical questions, NPIs and question-quantifier interaction as support for *how come*'s factivity. The analysis is that there is a head in C, C_{FACT}, which requires its complement be presupposed, and also creates a factive island. This C head is a selectional requirement for *how come*; that is, *how come* must select a C headed by C_{FACT}. I will detail the points in Fitzpatrick's analysis in this section.

1.1 Rhetorical Questions It has been noted (Collins, 1991), that *why* and *how come* behave differently with respect to rhetorical questions: questions with a negative bias, as seen in (1) and (2).

- (1) Why would Joe leave?
- (2) *How come Joe would leave?

The example in (1) is felicitous in a rhetorical question since the negative bias in the question (*Joe would not leave*) does not interfere with any other factors. However, the same negatively biased question is not permitted with *how come*, as shown in (2). Fitzpatrick explains that this is an interaction between the presupposed truth of the complement *Joe would leave* and the negative bias in the complement *Joe would not leave*. Therefore, negatively biased questions are not permitted with *how come* due to contradiction with the presupposed truth of the complement.

1.2 NPI Licensing Fitzpatrick observes that *why* and *how come* behave differently with respect to licensing negative polarity items, as shown in (3) and (4).

- (3) Why did Joe say anything?
- (4) *How come Joe ever said anything?

Notice that a similar phenomenon is seen with factive verbs, as shown in (5)¹

- (5) *Joe didn't find out that anyone left

¹ Special care must be taken with "semifactives" like *find out*, which allow licensing of NPIs in their complement under a non-factive reading. A complete discussion appears in Fitzpatrick (2005).

It has been noted that NPI licensing must be a local relation (Linebarger, 1980; Progovac 1993) with a downward entailing operator (von Stechow, 1999). With *how come*, this local relation is blocked by C_{FACT}, which has created an island, as seen in (6).

(6) Joe didn't find out [_{Island} C_{FACT} that anyone left]

Therefore, the NPI is not able to be licensed, and a sentence with an NPI is not permitted with *how come*.

1.3 Question-quantifier Interaction *How come* does not permit a pair-list reading, which is obtained when the quantifier scopes over the question word, as shown in (8). This is acceptable with *why*, as shown in (7).

(7) Why does everyone like Joe?
why > every, every > why

(8) How come everyone likes Joe?
how come > every, *every > how come

A similar phenomenon is seen with factive verbs, as seen in (9) and (10).

(9) Who found out that everyone left?
who > every, *every > who

(10) Who said that everyone left?
who > every, every > who

It appears that the factive island in (9) and (8) does not allow the quantifier to move out to scope over the question word, which is needed to obtain a pair-list reading.

1.4 Summary of the Current Analysis Fitzpatrick presents an analysis in which *how come* takes a factive head as the head of its complement. This means that *how come* presupposes the truth of its complement, and its complement is an island to movement.

2 Modals in English

Before discussing additional data and the modified analysis, I will take a brief sidetrack to discuss the status of modals in English, since this distinction will be integral to the discussion of factivity facts. Primarily, I want to separate indicative modals, which are allowed under the scope of factive predicates, from

non-indicative modals, such as the sort which give rise to negative biases, which we have already seen in Fitzpatrick's analysis.

2.1 Indicative The first category modals are classified as indicative: that is, they are statements which can be given a truth value. There are two smaller subgroups, willingness and habitual interpretations. An example of the 'willingness' interpretation is shown in (11).

(11) Joe would go to the park with you

This has the meaning that *Joe* is in a world such that he is willing go to the park. Notice that this sentence can be given a truth-value, with no further real-world knowledge. Assuming the speaker is being cooperative, this utterance is true on its own. A second type is the 'habitual' meaning, as shown in (12).

(12) Joe would go to the store every day

The example in (12) states that *Joe had a habit of going to the store*, and this is also truth-evaluable, in the same way described above.

2.2 Non-Indicative The cases in section (2.1) can be contrasted with non-indicative cases, as described in this section. The key feature of the indicative modals is that they could be given a truth-value based upon the sentence alone. Let us now detail the non-indicative modal. There are various types of non-indicative modals, but I will address two main ones: conditional and rhetorical. We have already seen rhetorical modals (in section (1)), and not much more needs to be said other than that they generate a negative bias towards their complements, and are not indicative. I will not detail how a certain modal is interpreted in this way: this is just a description of the facts. The second type is conditional, and is seen in sentences such as (13).

(13) Joe would go to the park with you if you asked him.

In (13), *Joe would go to the park* cannot be given a truth-value, since its value is contingent upon the second clause in the sentence. This becomes clear when you make a yes/no question from it, as shown in (14).

(14) Would Joe go to the park?

One cannot give a yes/no answer to (14), the natural response would be *depends if you asked him*. Therefore, a sentence containing *would* in the conditional sense is

reliant upon a second clause, and therefore cannot be truth-evaluable on their own.²

It appears to be the case that factives do make this distinction. Consider the sentence in (16), as an answer to (15).

- (15) Why would Joe do that?
(16) I figured out why Joe would do that.

With (16) as an answer, (15) can no longer be interpreted as a rhetorical question, since it is presupposed that there is *a reason he would do that*. Additionally, it seems difficult to get any conditional reading; what most speakers would assume is either a willingness or habitual interpretation: both indicative uses of the modal. Therefore, this separation between presuppositionality of modals in English holds fast.

3 English Data

In this section, I present additional facts concerning *how come*, and its differences with *why*. Some of these facts have been previously observed (Collins, 1991; Ochi, 2004), and some are previously undocumented data.

One difference between *why* and *how come* is that *how come* only allows the local reading when it takes a sentential complement, while *why* is ambiguous in the same situation.

- (17) Why did Joe say Stacey ordered pizza?
(18) How come Joe said Stacey ordered pizza?

The example in (17) is ambiguous between the embedded reading and the local reading. That is, you could be asking why *Stacey ordered the pizza* or *why Joe said it*; however, (18) is unambiguous. It cannot have the embedded reading; only the local reading is available.

Another difference between *why* and *how come* is that while *why* can take a non-finite complement (19), *how come* cannot (20).

- (19) Why write a letter, when you could just call?
(20) *How come write a letter, when you could just call?

It has been observed that *how come* cannot be used in multiple questions (22), while these are fine (or at least marginal) with *why* (21).

² Naturally, the entire phrase *Joe would go to the park if you asked him* is truth-evaluable in the same way as the indicative cases shown in section (2.1).

- (21) Why did Joe eat what?
(22) *How come Joe ate what?

The data shown in ((21) and ((22) are dialectal, creating a spectrum. At one end of the spectrum, speakers do not allow multiple questions with *why* at all, in which case it is no surprise that multiple questions with *how come* are not allowed either. At the other end, speakers allow multiple questions with *how come* (c.f. Lasnik and Saito 1992 as reported in Ochi, 2004). A distribution of speakers will be detailed in section (4.3).

The data shown in (23) and (24) have not been noted in the literature. Making a suggestion to someone is another situation in which sentences using *why* and *how come* are different. A suggestion takes a complement that is not true by nature of the situation: you can't make a suggestion if what you are suggesting is known to have happened. The example in (23) is an example of a suggestion using *why*. This 'suggestion technique' cannot be used with *how come*, as shown in (24).

- (23) Why don't we go out tonight?
(24) #How come we don't go out tonight?

The example in (23) can be used as a suggestion *to go out*, while not presupposing anything about whether or not you actually plan *to go out*. The example in (24) does not have this reading available. The only way it could be asked is with the intention of (25), which has a true complement.

- (25) How come we aren't going out tonight?

This section presented a variety of English facts that have not all been accounted for by the factivity analysis. A full review of previous analyses and their adequacy is examined in section (9). We will explore the extension of the factivity analysis to these data in the next section.

4 Application of the Analysis to Additional Facts

In this section, I extend the factivity analysis to cover the facts presented in section (3).

4.1 Embedded Reading Since (18) does not have the embedded reading, it has been claimed that there is no lower trace which can be bound by *how come* (Collins, 1991). While this is a descriptive fact, it has not been given an explanation. We would like to see if there is a reason that *how come* cannot have a lower trace.

Using the analysis that *how come* is factive, I show how the lack of a lower trace could be derived from this analysis. Let us assume that the factive head does not only create an island for the clause it has as its complement, but it creates an island of the entire CP. This is an extension of an idea proposed by Melvold (1991), who claimed an *iota* operator is introduced in SPEC CP, licensed by the C. By making this extension, I assume that the SPEC, since it is a part of the entire CP, is also trapped in the island.

Let us look at a sample derivation in which *how come* originates in the embedded clause, as shown in (26):

(26) Joe said [_{CP} how come C_{FACT} [Stacey ordered pizza]]?

If the entire CP is an island to movement, then *how come* cannot move to the front of the sentence, and the derivation crashes because the Q feature of the question would not be checked (since in English, the question word must move to the front).

Therefore, the only derivation that would converge is the one in which *how come* originates at the head of the sentence. In this case, there is no lower trace, and the embedded reading cannot be obtained. Therefore, the factivity analysis can explain why we do not get an embedded reading with *how come*, with only the additional speculation that the entire CP is an island in the strict sense.

It is clear that with the stipulation that the entire CP is an island, we can derive the fact that *how come* cannot have a lower trace. However, let us now investigate the desirability of this stipulation. It appears, after further investigation, that this assumption is a natural extension of Melvold's proposal.

Melvold (1991) dealt only with verbs as factives, so the issue of whether or not the SPEC of the CP could move was not dealt with, since this contained only an *iota* operator, and no phonological element. An example of a sentence according to Melvold's analysis is shown in (27), where *i* is the *iota* operator.

(27) Joe confessed [_{CP} *i* [_C that [he likes Stacey]]]

However, there is one situation in which a lexical item merges with the *iota* operator, and that is with *wh*-phrases in the complement, as seen in (28).

(28) Joe regrets [_{CP} who+*i* [he hired]]

In this case, Melvold claims that the *iota* operator merges with the *wh*-phrase, so that the *wh*-phrase then assumes the function of the *iota* operator. Therefore, the

wh-phrase is then responsible for binding the event position that the iota operator would have done.

Since *wh*-phrases are capable of merging with an iota operator in the SPEC position, and then assuming the semantic responsibilities of the iota operator, there is no reason to prevent this from occurring with *how come*. *How come* is different than any other factive that we have seen, in that it sits in SPEC CP, and selects a C, whereas verbs select for a CP headed by a certain C. Additionally, it was noted that when the iota operator is merged with a *wh*, the C is not phonologically realized. While no explanation is provided, it is interesting that the same observation occurs with *how come*, as shown in (29).

(29) How come [_C [_{IP} Stacey likes dogs]]

How come is the only question word in English where I to C movement does not occur of the auxiliary.

Now we can see how a derivation involving *how come* would work, and why the entire CP is an island in this case. *How come* selects for a C headed by C_{FACT}, which licenses an iota operator in SPEC CP. As with *wh*-phrases that occur in complements, the iota operator merges with *how come*, and *how come* takes on the responsibilities of the iota operator. It becomes clear why *how come* cannot move: it carries a semantic responsibility; closing an open event position and is only licensed in the SPEC position. This is a restatement of an assumption throughout Melvold's paper, an iota operator does not move from its licensed position. *How come* now cannot move out of the CP, meaning that the entire CP is an island.

The factivity analysis explains the observation made by Collins (1991) that *how come* does not have a lower trace. By extending the analysis put forth by Melvold (1991), we see that since *how come* has merged with an iota operator, it is not able to move out of the CP, explaining why *how come* cannot have an embedded reading.

4.2 Non-finite Complements Before beginning an analysis, it is important to analyze what type of questions make use of a non finite complement. A sentence like (19) means something like (30), which has a negative bias close in meaning to *we shouldn't go to the store*.

(30) Why should we go to the store, when we already have milk?

Evidence for this negative bias is obtained when we see that the question, without the *when we already have milk* clause, is not felicitous. It is only allowed in rhetorical situations. If (20) contains a negative bias, then we already have the

explanation of why this complement is permitted with *how come*. It has nothing to do with the structure of a non-finite complement, but it is the negative bias that conflicts with the presupposed truth of *how come*.

One drawback is that this analysis only explains why *how come* cannot take a non-finite complement, it does not explain why no other *wh*-word can do so. Other *wh*-words can be rhetorical questions, so one would expect this construction to appear in these cases. However, these appear to be restrictions on the non-finite complement, not directly tied to the current issue.

4.3 Multiple Questions As stated in section (3), there is much variation in the data shown in (21) and (22). For the speakers who do not allow multiple questions with *why*, then this analysis does not give any interesting insight.

First, let us investigate the status of multiple questions with factive verbs, since we clearly expect the judgments to be intimately tied. An example is shown in (31).

(31) # Who forgot that Bill bought what?

For the author and some other speakers, (31) has the same status as (22): not very good. In this case, no additional analysis is needed: some people do not like multiple questions with factives, and *how come* is no exception.

There is another group of people who do accept (22) (c.f. Lasnik and Saito, 1984, 1992 as reported in Ochi, 2004), and a simple explanation is that this group of people do allow factives to be involved in multiple questions. Presumably, this is the same group of people who accept (31).

A problem occurs for this analysis if there are speakers who do not allow multiple questions with *how come*, but do allow them for factive verbs. In a survey taken, only one speaker was found to behave in this way.³ While this is a potential problem, it is difficult to base aspects of a theory on the judgments of one speaker. Further investigation needs to be done to attain a wider spectrum of judgments, and to determine further details concerning the speakers who show a divide between factives and *how come*. However, at the present time, most speakers surveyed pattern similarly on (22) and (31).

There appears to be a strong correlation (speaker by speaker) between the acceptance of multiple questions with factive verbs and *how come*: an expected result if *how come* is factive.

³ This survey included 5 adult native speakers of English. Although this is a limited number of speakers, there appears to be a strong correlation with dislike of multiple questions with *how come* and factive verbs.

4.4 Suggestion There does not seem to be any syntactic difference between (23) and (24). Therefore, this is support that the acceptability difference is related to a semantic factor. (24) can only receive the reading in (25), which presupposes *the person is not going out*. This analysis clearly explains why the suggestion reading is not available: an event that has not occurred cannot be presupposed to have happened.

4.5 English Summary That *how come* is a factive predicate describes all of the above observations, with only one minor extension of current theory. In order to account for the embedded facts, we required that *how come* perform like other *wh*-phrase complements, merging with the iota operator licensed by the factive head.

One potential counterexample to the idea that *how come* presupposes the truth of its complement is counterfactual statements, as in (32).

(32) How come if I had blond hair I'd be more popular?

In counterfactuals, although it may not appear on the surface, the complement is actually a true proposition. When (32) is uttered, it is not about an imaginary situation. The intent of (32) is similar to (33).

(33) How come (it is true that) if I had blond hair I'd be more popular?

The presupposition is that the world is such that this statement is true; that is, you cannot ask this question in a world where the speaker believes *brunettes are more popular*. Therefore, counterfactuals do not appear to be a counterexample to the idea that *how come* presupposes its complement.

Therefore, it appears that the factive analysis is capable of covering all of the facts concerning *how come* with very little modification.

5 Come mai and how come

Italian, like English, has *why*, (*perché*) and a lower-register form, *come mai*. *Come mai* is translated as *how come*, but in the literature, (Crain and Pietroski, 2002; Thornton 2004) it is claimed to 'have the same properties as *perché*'. I claim that *come mai* does not behave exactly as *why*, but instead, has the same differences from *perché* as does *how come* from *why* in English. Additionally, since *come mai* is translated as *how come*, we would like to see if they have the same properties.

5.1 Italian Data In the literature, the interpretation differences between the inversion and non-inversion readings of *perché* are discussed, and it is implied

that the facts stand the same for *come mai*. The discussion for *perché* is as follows: in ((34), where no inversion occurs, only the upper reading is available: that is, asking about why he said it. When inversion occurs, as in (35), then the reading is ambiguous between the upper and lower reading.

- (34) Perché Gianni ha detto che si è dimesso?
Why Gianni has said that he resigned
 ‘Why did Gianni say that he resigned?’
- (35) Perché ha detto Gianni che si è dimesso?
Why has said that he resigned
 ‘Why did he say that he resigned?’
- (36) Come mai Gianni ha detto che si è dimesso?
How ever Gianni has said that he resigned
 ‘How come Gianni said that he resigned?’
- (37) ?? Come mai ha detto Gianni che si è dimesso?
How ever has said that he resigned
 ‘How come he said that he resigned?’

What is interesting is what happens when we look at *come mai*. If it patterned exactly like *perché*, we would expect only the local reading with inversion and both readings (local and embedded) when no inversion occurs. What is interesting is that only the non-inverted sentence is available with *come mai*, as shown in (36) and (37). Therefore, since only the local reading is available with the non-inverted sentence, only the local reading is available with *come mai*.

As shown in (39), *come mai* cannot take a non-finite complement, while this is permitted with *perché* (38).

- (38) Perché andare al negozio quando abbiamo di già il latte?
Why go.INF to-the store when have.1pl already the milk
 ‘Why go to the store when we already have milk?’
- (39) *Come mai andare al negozio quando abbiamo di già il latte?
how ever go.INF to-the store when have.1pl already the milk
 ‘How come go to the store when we already have milk?’

In Italian, *come mai* cannot be used to make a suggestion as shown in (41). It is perfectly fine to make a suggestion using *perché*, as shown in (40).

- (40) Perché non andiamo al cinema?
why not go.1pl to-the movies
 ‘Why don’t we go to the movies?’

- (41) #Come mai non andiamo al cinema?
how ever not go.1pl to-the movies
 ‘How come we don’t go to the movies?’

Additionally, (41) has the meaning which presupposes the person is not going to the movies. This is the same intuition that is described for the English case.

Furthermore, *come mai* cannot be involved in questions with a negative bias, that is: rhetorical questions.

- (42) Perché dovrebbe partire?
why should.CONDITIONAL.3sg. leave.INF
 ‘Why should he leave?’
- (43) #Come mai dovrebbe partire?
how ever should.CONDITIONAL.3sg. leave.INF
 ‘How come he should leave?’

In Italian, the intuition is that (42) can only be interpreted as a question conveying a negative bias: *he shouldn’t leave* (or at least the reason *he should leave* is not visible to the speaker). If you the modal or the conditional is eliminated, the bias disappears. However, a question with the same bias is not allowed with *come mai*, as seen in (43).

5.2 Summary At first glance, it seems that Italian patterns in many of the same ways as English. Since we have used a factivity analysis to account for some facts concerning *how come* in English, we would like to see if the same analysis can extend to Italian.

6. Italian analysis

In this section, I show that the factivity analysis already required for English can describe the data shown in section (5) for Italian.

6.1 Embedded reading For purposes of this paper, we will put aside the observation that non-inversion with *perché* allows only the local reading⁴. What is interesting is that there is no embedded reading available with *come mai*.

The fact that inversion is non-preferable or not allowed could be a confounding factor. If a clear analysis is presented about why inversion allows a embedded reading, then this would then explain why *come mai* has only a local reading: since only the non-inverted question is available. However, a factivity

⁴ As an interesting note, it also appears that there are differences in inversion with respect to suggestion readings and *perché*. This is an interesting matter for further investigation. Some repercussions of this fact are discussed in Section (8).

analysis explains the same facts. The analysis would be the same as the one given for English: under the assumption that SPEC CP is included in the factive island, a derivation in which *come mai* originates lower will crash since the question word will be unable to move to the front.

The fact that *come mai* can only have the local reading raises interesting questions concerning the standard analysis in Italian. The facts concerning *perché* have been used to derive the story of how these both question words behave; however, since *come mai* patterns differently, a new analysis may need to be considered for *come mai*. I propose that, like *how come*, *come mai* is factive, which accounts for these distributional differences.

6.2 Non-finite complement The Italian case shown in (39) has the same analysis as the English case. The non-finite complement carries a negative bias, (like a hidden modal), and therefore, conflicts with the factivity of *come mai*.

6.3 Suggestion The analysis of (41), where *how come* cannot be used to make a suggestion, is straight-forward for a factivity analysis. This is an acceptable sentence in the grammar, it just does not have the suggestion reading; therefore, this cannot be a syntactic problem. A factivity analysis explains why the suggestion reading is not available in (41), and that is because a suggestion cannot be presupposed.

6.4 Rhetorical Questions The conditional tense is not permitted under *come mai*, as seen in (43). However, this is due to the fact that modal+conditional creates a negative bias, which is not allowed under *come mai*. This is the same thing that occurs with *how come* and rhetorical questions: where the negative bias conflicts with the presupposed truth of the complement.

6.5 Italian Summary A strong analog can be seen in the distribution of *how come* and *come mai*. The two words appear to have similar restrictions on what can be taken as their complements. The analysis that *come mai* is a factive predicate is able to explain the distribution seen. Additionally, the same restriction appearing cross-linguistically is more advantageous than separate accounts for each language. The data in (34) – (41) strongly suggest that *come mai* is factive, just as *how come* in English.

7 A Further Prediction

In this section, we explore what further facts can be predicted by assuming that *how come* requires a factive complement. We will describe the prediction, and see that it is borne out by native speakers.

7.1 The Prediction If it is true that *how come* is a factive predicate, then we would expect to find more cases in which a sentence is not presupposed, and these would not be interpretable under *how come*. If this is the case, then *how come* should not be able to take any sentences that contain a conditional tense, since these cannot be marked as true (that is, only the conditional clause). There are two situations which have the relevant construction.

The prediction for English concerning the conditional tense is that *Joe would eat*, taken from the sentence in (44), could not be put under *how come* because it is not possible for a conditional to be true.

In English, we have *if*-sentences comprise of two parts: a main verb part and the *if*-clause, as seen in (44).

(44) Joe would eat a snack if Stacey came to visit

It is not immediately clear that *would* in (44) is not indicative, since there are no morphological differences, but as claimed in section (2), modals that occur with *if*-clauses are non-indicative. Therefore, we would not expect *Joe would eat a snack* to be available under *how come* since uses a conditional modal, and not be presupposed to be true.

7.2 The Scenario A situation was set up in which the habitual reading and the conditional reading were available. The following is the situation:

People are standing at Joe's funeral, talking about all of the funny things about Joe. The topic of the conversation turned to his eating habits. One friend said, "Remember how Joe would eat apples for his health? He really liked them." Then another friend said, "Remember how Joe would eat a snack if Stacey came to visit? He really liked those snacks she brought".

This situation has two reasons why Joe would eat something: the conditional and the habitual.

(45) Why would Joe eat?

(46) How come Joe would eat?

The prediction is that if *how come* presupposes its complement, (46) could only be answered by the habitual, while (45) would be ambiguous. This prediction, in

fact bears out, as judged by native speakers⁵. Possible responses are shown in (47) and (48).

(47) Why: For his health, because Stacey came

(48) How come: For his health, *because Stacey came

The example in (49) can be asked, since the entire *if*-sentence is able to be presupposed. The answer would be something like *because he liked the snacks she brought*.

(49) How come Joe would eat if Stacey came?

Therefore, in this situation, the data support the claim that *how come* is factive.

7.3 Summary Based upon this hypothesis concerning the factivity of *how come*, we made a prediction about conditional modals. It turned out that this prediction was verified, further supporting this claim.

8 Acquisition

The acquisition of *why* questions has been a topic of interest in child language for decades. Any theory is enhanced when it provides an additional insight into acquisition. In this section, I discuss an observation in the current acquisition literature, and show how the factivity analysis may shed new light on the analysis of the facts.

8.1 Acquisition of *why* facts It has been observed that English-speaking children do not perform subject-auxiliary inversion consistently with *why* even after it has been mastered with other *wh*-words. Various studies have shown this divide, although the age varies with the child. Labov and Labov (1978) studied the questions produced by a young child named Jessie. While Jessie inverted regularly with *what*, *how*, and *where* by the age of 3;9, inversion did not occur regularly with *why* until around 4;6 years of age. This observation is corroborated by Thornton's (2004) study of a young child A.L. A.L. inverted with non-*why* questions successfully by 3;6. However, *why* did not undergo consistent

⁵ The author is included in the graduate students surveyed at the University of Maryland, which comprise the 'native speaker judgments'. Additionally, the author acknowledges the situation appears contrived, which may make the judgments odd for some speakers. *How come* (independently of facts presented here) has a surprise component, which makes it pragmatically odd to ask in standard information-seeking questions. This aside, the judgment holds.

inversion until 5;0 years.⁶ Therefore, it appears that there is a stage in language development (approximately a year long) where a child does not consistently invert with *why*, but does with other *wh*-words.

Thornton (2004) investigates the properties of the child's questions during this stage of development. In this stage, A.L. allowed subordinate clauses (51), topic (50) and focus (52) phrases to appear immediately following *why*. Additionally, infinitival complements did not have obligatory inversion (25 inverted, 39 non-inverted). Furthermore, it was found that A.L. consistently inverted when asking an embedded *why* question (17/17), a suggestion (16/16), or a rhetorical question (12/12), **Error! Reference source not found.** through (55), respectively (all examples quoted from Thornton (2004)).

- (50) Why *every day when I wake up* the hall light isn't on? (5;1)
- (51) Why *if he goes to jail* she can have his room? (5;0)
- (52) Why *SOME OF YOUR MAKEUP* I can't use (and some I can)? (5;2)
- (53) Why do you think Santa's not coming this year? (3;10)
- (54) Why don't you use this as a magic wand? (3;4)
- (55) I remember my name. Daddy, why would I forget my name? (3;4)

On the surface, embedded and rhetorical questions, and suggestions appear to be a strange set of situations in which a child would choose to invert. However, this analysis provides a clear distinction: these are situations in which the complement is not presupposed to be true.

We would like to see if a unified account can be found in light of the new semantic analysis of *how come* and *come mai*.

8.2 Current Account of Acquisition The continuity hypothesis claims that children can only make 'mistakes' that are actually found in other languages. In line with this hypothesis, Thornton (2004) claims that children are 'speaking Italian' when they are learning *why*. That is: children initially treat *why* as Italian speaking adults treat *perché* or *come mai*. Children base generate *why* such that it does not require I to C movement, and the base generation occurs higher than other *wh*-phrases, according to the left periphery devised by Rizzi (1997).

In Italian, *perché* originates in the embedded question to ask an embedded question. When *perché* moves to the front, it moves to the position all other *whs* do, SpecFoc, and requires inversion. This is why inversion is required to ask an embedded question. Additionally, Italian allows focus and topic phrases and subordinate clauses to appear immediately following *why*.

⁶ A.L. inverts by 5;0 for affirmative *why* questions. Negative *why* questions do not undergo consistent inversion until 6;0. However, the relevant issue is the delay concerning *why* questions: this paper abstracts away from the delay with negation.

8.3 Problems with Current Account There are a few problems with the current account. First, it glosses over the differences between *perché* and *come mai*, which as we have seen, are different in ways important to the relevant data. Secondly, while the data concerning rhetorical questions and suggestions were mentioned by Thornton, the analysis was not extended to explain these data. However, these are interesting data, and an account which incorporated them would be desirable. Lastly, if we extend the analog presented to adult Italian (that is, that children are speaking adult Italian), we make the wrong prediction concerning suggestions. Again, an analysis is most desirable if it explains a wide range of the data presented.

The Thornton account assumes that *perché* and *come mai* are treated equally, which as was shown in ((34)-(43) that they are not. Additionally, it has been shown that a semantic fact is available to account for the differences, which impact a wide range of constructions: including embedded questions, rhetorical questions and suggestions. In light of this ‘new’ data, what does this mean about kids who are ‘speaking Italian’? Let us assume that the analysis can be saved by saying that children are treating *why* like *perché*, simply because the differences about *come mai* were not investigated at the time. However, with this clarification, it is still not clear that this analysis covers the entire range of facts presented.

Additionally, this account cannot make any predictions about rhetorical questions or suggestions. Since interesting data was presented concerning these two constructions (that children always invert with these constructions), we would like an explanation for these data. We would like to have an account which can describe more than one phenomenon.

As mentioned, A.L. always inverted with suggestions. This data is not in line with what the Italian adult does. In Italian, suggestions with *perché* (recall, they are not available with *come mai*) are non-inverted, as shown in (56). The inverted reading cannot be used as a suggestion, as shown in (57).⁷

- (56) Perché Gianni non va al cinema?
why Gianni not go.3sg to-the movies
 why doesn't Gianni go to the movies?
- (57) #Perché non va Gianni al cinema?
why not go.3sg Gianni to-the movies

⁷ There is a possible suggestion reading available with the inverted form, but it is contrastive: that is *why doesn't GIANNI go, instead of Joe*. However, this is a different form than the sentential suggestion (without contrastive focus), so we will not detail this reading, here.

Therefore, the child is doing something different than the Italian adult. Thornton's claim concerns how children treat *why* with respect to syntactic position, so it is possible that the analysis still holds, with the facts concerning Italian suggestions is explained by some other phenomenon. However, it is a question what governs Italian suggestions and inversion, and how children, if adhering to all other aspects of Italian questions, would behave differently.

While many interesting data were presented by Thornton, it is not clear that all of the data are explained by the analysis. Primarily, rhetorical questions and suggestions were not factored into the analysis. Considering that Italian suggestions behave differently than suggestions in children, this is a possible weakness for the analog between acquisition and the structure of the Italian language. In the next section, we will see if the factivity analysis can account for the full range of facts.

8.4 New Proposal The new proposal is as follows: children first assume that *why* is factive. When children invert, this is an indication that they are no longer treating the *wh* as factive. This would explain why children invert for all of the non-factive complements: for embedded readings, a suggestion or a rhetorical question. This analysis is not incompatible with a Thornton analysis; in fact, the analysis with regards to positioning of *why*-type words appears to be correct. However, additional analysis must be added to explain the facts concerning rhetorical questions and suggestions.

The first question about this analysis is as follows: why would inversion be the indication that they are not treating the *wh* as factive? While this area needs further investigation, a glimmer of light may come from the fact that *how come* does not allow inversion, and that *come mai* prefers the non-inverted form, as seen in (37). Perhaps the factive head, C_{FACT} , is a blocker for inversion. Clearly, further repercussions of this claim would need to be explored, but it appears to be a starting point as to why inversion and factivity are related. Therefore, when a child hears evidence that *why* is not factive (such as when they hear an embedded question), they know there is no factive head in the CP, and they then produce these types of sentences with inversion. Later in development (around the age of 5), they learn that all questions with *why* behave similarly (not just construction-specific), and they invert with all *why* questions. Now, we also have an explanation for why the acquisition of inversion with *why* is delayed: it is the only *why*-class of words are the only ones which begin with a factivity setting. The child then must learn, by positive evidence, that *why* is not factive, which delays the acquisition of inversion facts.

This has the additional property of being an easy learning theory. All it takes for a child to learn otherwise is to hear instances of *why* being used with a

non-factive complement. However, from the late learning we see from *why*, this evidence may not be plentiful in the input.

Furthermore, since there adult languages with factive question words, this is a possibility for the child. Since factive question words are a subset of non-factive ones, children should begin at the subset according to the Semantic Subset Principle (Crain, Ni & Conway, 1994) to avoid overgeneralization.

There is additional data that children allow topic and focus phrases and subordinate clauses to directly follow *why*. Thornton attributes this to the position of *why*-type phrases, and it is interesting additional data to note that *how come* must be in the same position. The same observations concerning children and non-inversion are available in an adult's grammar using *how come*, with topic phrases (58), focus phrases and subordinate phrases (59)-(60)⁸.

- (58) How come *every time I have a problem*, you give me work to do?
- (59) How come *if this is a fishing village*, I don't see anybody fishing?
- (60) How come *when they're testing if you're anemic*, they draw more blood?

In these cases, inversion does not occur with a subordinate clause or topic phrase, the observation noted in child language. While a factivity analysis does not shed any more light on the situation, this data is important for investigating a syntactic location of *how come*.

One problem remains for the factivity analysis: why inversion is not required for infinitival complements in the grammars of young children. Under this analysis, since an infinitival cannot be presupposed, inversion should be required. There is one possible explanation for why this is not seen in the acquisition data. Recall that the factivity analysis did not disallow a non-finite complement directly, but they were prohibited since they contained an implicit modal. However, it is possible that children have not completely learned that a rhetorical connotation is involved, explaining why children may then alternate between inversion and non-inversion.

8.5 Acquisition Summary In this section, I presented an observation in the acquisition literature suggesting that children treat *why* differently with respect to inversion. This was previously accounted for by analyzing the children's behavior as correlated with that of Italian adults. However, I propose that a

⁸ All examples taken from author's corpus. There are no examples of a focus phrase occurring in adult grammar with *how come*; however, there was only one example in A.L.'s data of such a construction. Due to the limited amount of data in both groups, I will focus on topics and subordinate phrases.

factivity analysis yields the same results, perhaps with more explanatory adequacy.

9 Previous Analyses In this section, I will briefly outline the previous *how come* analyses. There are two main types of previous analyses of *how come*: that it is a form of *how* or that it is like *why*, with syntactical differences. I will outline these theories and describe why there are not adequate to explain the full range of distributional facts concerning *how come*.

9.1 Non-why Analyses In the literature *how come* has been treated as a form of *how*, either as a derivation of *how comes it that* (Zwicky & Zwicky, 1971) or as a special instance of *how* (Tsai, 1999). While this appears reasonable, considering the form of the word, this is the most accurate depiction of *how come*. I will address each of these approaches individually, although not to the extent other analyses will be considered.

9.1.1 Zwicky and Zwicky Zwicky and Zwicky (1971) was the first paper to take a look at *how come*, where it was analyzed it as a reduced clause of *how comes it that*. Collins (1991) explained the reasons such analysis is not sufficient; however, it is important to revisit this on a more general level, since similar analyses have been popular in the recent literature. This analysis explains the lack of an embedded reading, since this is also true in the extended form seen in (61).

(61) How comes it that you think Joe ate chicken

There are more particular arguments concerning where this analysis falls short (see Collins, 1991), but the most important point is the most general one: *how come* means the same thing as *why*, not the same thing as *how*, as examples show in (62) through (64).

- (62) Why did you go to the store?
- (63) How come you went to the store?
- (64) How did you go to the store?
- (65) How comes it that you went to the store?

The answers for (62) and (63) yield reasons for *going to the store*. The answer for (64) would give a manner, *by car*, and (65) would at best, give some sort of derivational reason (*I was going to the park, then Jane stopped by...*). With this

semantic evidence, it seems reasonable that *how come* should be put in the same camp as *why*, instead of being treated as a variant of *how*.⁹

9.1.2 Tsai Tsai (1999) recognizes two different types of *how*: manner *how* and method *how*. He then claims that *how come* is just another type of *how*: the causal *how*. Since the *how* used in (64) is a method *how*, this account needs to be addressed concerning the different types. Tsai is discussing data in Chinese and Tsou, so it is important to look at the facts closely when translating between languages. Tsai gives the examples shown in (66) and (67).

- (66) How come the sky is blue? (causal *how*)
(67) Why is the sky blue? (epistemic *why*)

The analysis states that (66) has “a change-of-state flavor” while (67) does not. That is, (66) is asking *how the sky came to be blue*. Most native speakers of English do not share these intuitions. There exist readings of (66) in English which do not have this change-of-state reading. Therefore, this analysis cannot account for the full range of readings concerning *how come*.

This paper has taken the approach of treating *how come* as a family member of *why*, and we will move on to discuss other approaches which have taken a similar stance.

9.2 Description of Available *why* Analyses There are three available analyses which attempt to explain the facts as described by the data in (17)–(22). I will outline their main points.

9.2.1 Collins Collins gives a syntactical analysis of *how come* which describes a number of the facts in (17)–(22) (1991). His analysis claims that *how come* occupies the head of CP, while *why* moves to SPEC-CP. It is this difference in where the two *wh*-words sit that account for the distributional differences. While this analysis accounts for a number of facts, it cannot account for the data in (23) and (24). This is because Collins’s analysis is syntactic, and therefore has no way to handle differences in readings.

However, the basis of Collins’s analysis is that something is a blocker in the head of the CP. This may not be too far from this analysis: recall that we may want the factive head, C_{FACT}, to be a blocker to describe inversion facts.

⁹ It is entirely possible that *how come* is derived from *how comes it that* at some point in history, but it has drifted from this meaning, and this analysis is no longer sufficient for modern-day English.

9.2.2 Only-why The ‘only-why’ explanation is not one specific theory, but is the idea behind a frequently available claim that *why* is special. In the cases in (17)–(24), we see sentences where *how come* is bad, and *why* is allowed. Many times, it appears to be the case that *why* is the only *wh*-word allowed in such sentences, so the explanation may concern why *how come* is not allowed, but more about what is special about *why* such that it is allowed. Some evidence that an explanation along these lines may be the case is that *why* is considered to be different in Korean/Japanese than other *wh*-words, and appears different distributionally (Ko, in press). Therefore, it is possible that *why* is treated differently in English as well. The specific story will need to vary accordingly along with what situation is claimed to be different for *why*. Claiming that *why* is different is not a sufficient for describing all the distributional differences between *why* and *how come*. One would like to have a more unified account of the facts.

9.2.3 Ochi Ochi gives an analysis following the observations of Collins (2004). Ochi does not believe that *how come* can be a head because there are other *wh*-elements that show similar distribution to *how come*, but are not heads (see Ochi, 2004 for details). Therefore, distributional differences are better described by feature checking. His modified VIRUS theory is as follows:

A strong feature must be checked off.

- a) As soon as possible
- b) In a local configuration (by MERGE or MOVE)

A regular adjunct *wh* phrase (like *why*) has a –strong *wh* feature, whereas a secondary *wh* phrase (like *how come*) is Alpha strong. This analysis runs into the same difficulty as Collins’s, in that it can only explain syntactic facts. It is not able to account for the new data shown in (23) and (24).

9.3 Summary of Previous Analyses As we have seen, there is no account which can account for all of the data shown in section (3), especially in light of the new data presented by the author, which appears to be a semantic phenomenon. It appears that a purely syntactic account will not be able explain these facts. Otherwise, these facts would otherwise need to be explained by a combination of the syntactical facts plus various ‘only-why’ stories. It appears that a factivity analysis is best able to capture the data describing the differences between *why* and *how come*.

10 Conclusions

Strong evidence has been shown that both *how come* and *come mai* have a semantic requirement of factivity. For Italian, It would be preferable if there were a standard analysis to compare this new analysis to, but that is not available. It is, however, unclear how a syntactic analysis would account for all of the facts, especially in (40) and (41), since these are grammatically acceptable, but one reading is not permitted. This idea lends support to a new proposal of language acquisition, which is able to take advantage of these facts, and additionally explain why children invert in embedded questions, suggestions and rhetorical questions when they are otherwise not inverting.

11 Further Questions

Previously, factive verbs and adverbs were the only class of words which were assumed to presuppose their complements. Now, it appears that a question word can have this semantic selectional property as well. This raises the question about whether or not there are question words in other languages (other than English and Italian) which presuppose their complement. Additionally, there are negative factives, like 'pretend' which presuppose their complement is false (Oh, 1974). Is this selectional possibility also available for question words?

Additionally, the data outlined in this paper outlined differences between *perché* and *come mai* which have been ignored in the discussion of these two items. Perhaps this opens up further questions for the analysis of Italian.

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