A reassessment of the semantics and pragmatics of English rise-fall-rise intonation

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Outline

Introduction

English rise-fall-rise intonation (RFR) is marked by a rising pitch accent followed by a final rising boundary tone. I adopt the notation of Constant (2012), using italics to indicate the placement of stress, underlining to indicate the extent of semantic focus, and an ellipsis to mark the boundary tone (1).

(1) A: Did Fred and Mary leave early?
B: *Fred* left early. . .
L*+H L-H%

- By focusing upon previously understudied usages of this intonation with property ascriptions and modal verbs, I argue that RFR operates over a kind of scale – specifically, a *structured* set of focus alternatives.

Overview of the data: entailed cases

Assertions using RFR can be divided between those that are located upon an entailment scale with respect to the question under discussion (QUD), and those that are not. We begin with the entailed cases (2)-(3).

(2) A: Was the food good?
B: It was *okay*. . .

(3) A: Did you read the dissertation?
B: I read the first *chapter*. . .

Entailed cases

- The assertion cannot be semantically stronger than the QUD (4).

(4) A: Was the food okay?
B: #It was *good*. . .

- But considering that antonyms are also unacceptable (5), it appears that the asserted value must be drawn from the same Horn set (Horn 1972) as that made salient by the QUD.

(5) A: Was the food good?
B: #It was *bad*. . .

Entailed cases

- The assertion may, however, be of equal strength to the QUD (6).

(6) A: Was the food good?
B: It was *good*. . .

- In (6), the speaker implicates that the food is no more than *good*.
- This implicature cannot be cancelled (7).

(7) A: Was the food good?
B_1: It was good. In fact, it was great.
B_2: It was *good*. . . #In fact, it was great.

Non-entailed cases

In addition to obviously scalar usages, however, one can also find examples in which an RFR response does not appear to be related via any lexical scale to the QUD (8)-(9).

(8) A: Do you speak Ladino?
B: I speak *Spanish*... (Ward and Hirschberg 1985:765)

(9) A: Did John buy any shoes?
B: He bought *socks*...

Non-entailed cases

By way of comparison, these sorts of exchanges are felicitous even when the QUD and response are inverted (10)-(11).

(10) A: Do you speak Spanish?
B: I speak *Ladino*. . .

(11) A: Did John buy any socks?
B: He bought *shoes*. . .

Non-entailed cases

However, even for these non-scalar cases, it is not in fact the case that "anything goes." Interesting minimal pairs can be still be adduced.

(12) *Context: A is a waiter in a restaurant, and B is a customer.*
A: Would you like a water?
B_1: I'll have a *beer*...
B_2: #I'll have a *burger*...

(13) *Context: A and B are sitting in the lounge of the linguistics department*:
A: Do you speak Ladino?
B_1: I speak *Spanish*...
B_2: #I speak *German*...

- Thus, for both scalar and non-scalar cases, acceptable usages of RFR are constrained (in some sense still to be defined) by the QUD.
- Before moving on to my own account of this intonational contour, I will first summarize one relatively recent explanation of it.

Constant (2012)

Constant (2012) approaches RFR from the perspective of unstructured focus alternatives (Rooth 1992).

- He defines the contour as a quantifier over such alternatives within the domain of conventional implicature (ci) (14).

(14) $[\![\text{RFR } \phi]\!]^{\text{ci}} = \forall p \in [\![\phi]\!]^{\text{f}}$ s.t. p is assertable in C: the speaker can't safely claim p. (Constant 2012: 408)

Constant (2012)

Constant also seeks to make his proposal more restrictive via the exclusion of "alternative dispelling" foci.

(15) The focus of clause ϕ is **alternative dispelling** iff the proposition denoted by ϕ resolves all alternative propositions generated by the focus. Using Rooth's notation: The focus of ϕ is alternative dispelling iff $\forall p \in [\![\phi]\!]^{f} : [\![\phi]\!]^{o}$ resolves p. (Constant 2012: 415)

- Examples include (16)-(17).

(16) #The food was *perfect*... (Constant 2012: 415)

(17) #*All* of my friends liked it... (Constant 2012: 416)

Constant (2012)

Because the definitions provided in (14) and (15) make no specific reference to scales, they have difficulty accounting for the infelicity of particular scalar examples, such as (4) (repeated as (18)).

(18) A: Was the food okay?
B: #It was *good*...

- The adjective *good* does not dispel all possible alternatives; it only dispels this particular QUD.
- Constant's definitions also don't seem to explain certain non-scalar minimal pairs, like (13) (repeated as (19)).

(19) *Context: A and B are sitting in the lounge of the linguistics department*:
A: Do you speak Ladino?
B_1: I speak *Spanish*...
B_2: #I speak *German*...

The proposal: structured alternatives

We can now move on to present proposal.

- Rooth's (1992) alternative semantics offers some promise for RFR, in that this intonational contour does seem to be a way of relating an asserted value to others in a given context.
- However, if our account is to be suitably predictive of both acceptable and unacceptable usages of RFR, we need some means of structuring these alternatives.
- Here, I invoke the notion of **structured alternatives** from Ippolito (2019).

The proposal: structured alternatives

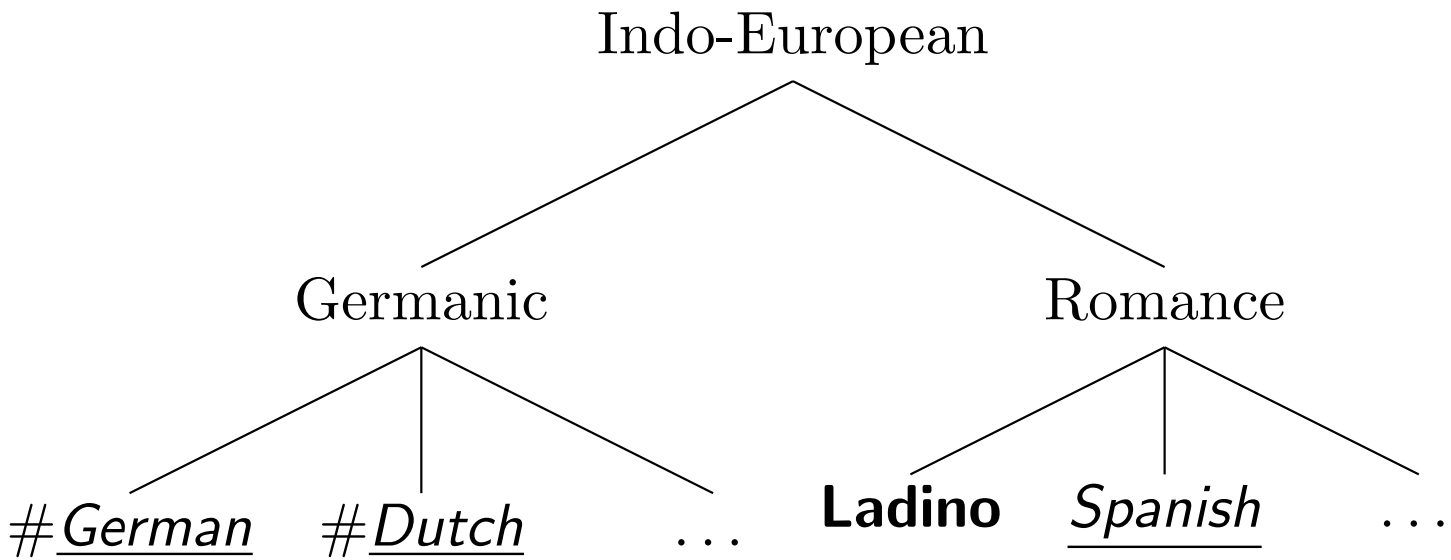
- Assume with Rooth (1992) that a focus-marked phrase α yields at LF a set of focus alternatives $\mathbb{A}_\alpha$ composed of all phrases of the same semantic type.
- Ippolito proposes that a structured set $T_{\mathbb{A}_\alpha}$ may then be formed according to the following three conditions (20).

(20)
1. Strength: for any two alternatives α, $\beta \in \mathbb{A}$, β is the daughter of α in $T_{\mathbb{A}}$ just in case $[\![\beta]\!] \subset [\![\alpha]\!]$.
2. Disjointness: for any two alternatives β_1, $\beta_2 \in \mathbb{A}$, if β_1 and β_2 are sisters in $T_{\mathbb{A}}$, then $[\![\beta_1]\!] \cap [\![\beta_2]\!] = \emptyset$
3. Exhaustivity: for any alternative α with daughters $\beta_1, \ldots, \beta_n$ in $T_{\mathbb{A}}$, $[\![\beta_1]\!] \cup \ldots \cup [\![\beta_n]\!] = [\![\alpha]\!]$. (Ippolito 2019: 640)

The proposal: structured alternatives

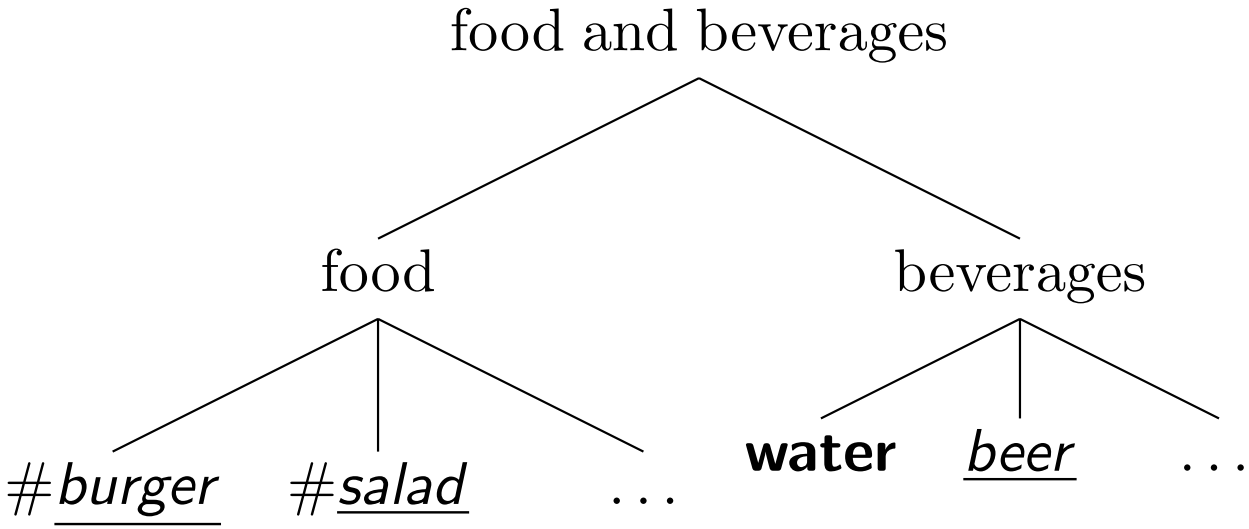
To begin, we can construct such sets for two non-scalar examples.

(21) A: Do you speak Ladino?
B: I speak *Spanish*. . .



The proposal: structured alternatives

(22) A: Would you like a water?
B: I'll have a *beer*...



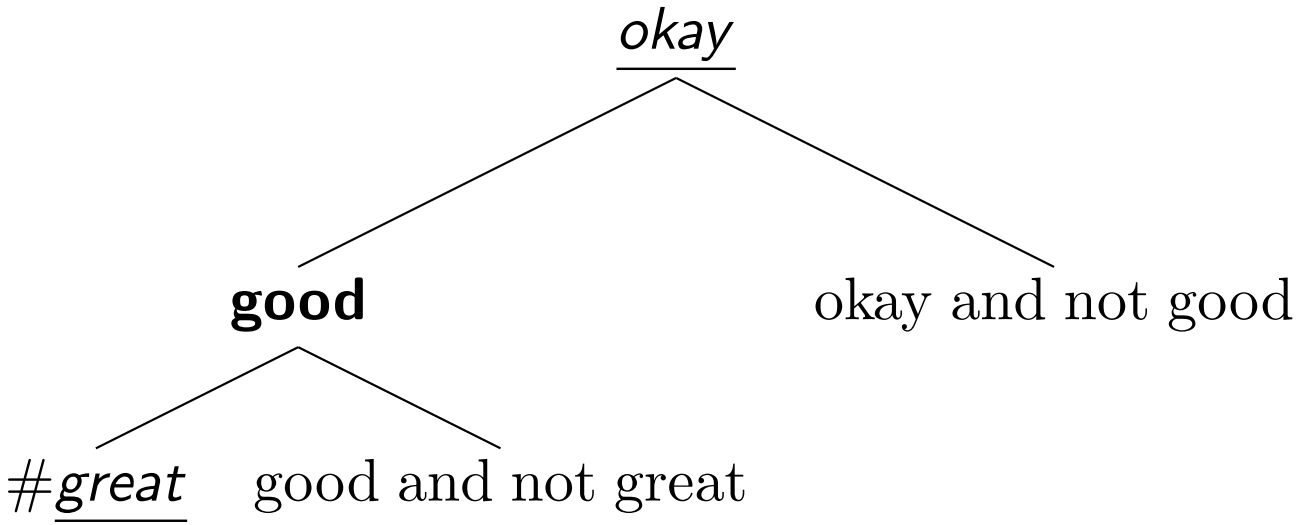
The proposal: structured alternatives

- Both the felicitous and infelicitous responses in (21)-(22) are explained by restricting the domain of quantification to only those terms dominated by the same nodes as the term introduced by the QUD.
- The unacceptable responses in (21)-(22) can be considered violations of Relevance: these values are not sister to that made salient by the QUD, meaning that an utterance containing them will be perceived as irrelevant to this question.

The proposal: structured alternatives

But once we move to the scalar cases, our sister constraint is no longer sufficient.

(23) A: Was the food good?
B: It was *okay*. . .



The proposal: structured alternatives

- In theory, we might attempt to salvage the sister constraint by hypothesizing that the value *okay* in (23) is covertly strengthened to yield *okay and not good* (cf. Ippolito 2019: 644-646).
  - This seems too strong however, because a speaker using RFR might simply be uncertain about the value *good*.
- Nevertheless, we can still offer a succint definition of this intonational contour with two felicity conditions (24).

(24) $[\![\mathrm{RFR}\ \alpha]\!]^{\mathrm{f}} = \exists\beta \in T_{\mathbb{A}_\alpha}$ made salient in C such that the speaker cannot assert β without violating Quality, and either (i) or (ii) is true of α and β:

(i) α is the mother node to β.
(ii) α and β are sisters.

The proposal: salience

I will comment first on the notion of **salience** employed in (24).

- Salience is either directly or indirectly connected to the local QUD.
- For cases in which the asserted value α differs from that found in the QUD – as with the majority of our examples – the relationship is a direct one: the speaker is comparing α to a value β present within this question.
- But for cases in which α is the same as the value in the QUD, the relationship between β and the QUD is indirect.

The proposal: salience

- It is important to recognize that these usages are restricted to scalar values.

(25) A: Was the food good?
B: It was *good*...
Inference: B believes that the food was no more than good (i.e., not great).

(26) *Context: A is a waiter in a restaurant, and B is a customer:*
A: Would you like a water?
B: #I'll have a *water*. . .

- Without a lexical scale, this kind of response cannot be accomodated.
- Based on the evidence, **the salient values in C comprise the one present in the QUD along with values relevant to further pragmatic processes**, such as exhaustification.

The proposal: quantificational force

Previous accounts of RFR have understood it as a universal quantifier (Constant 2012; Westera 2019).

- The decision hinges on the felicity of the second element in lists like (27) (adapted from Constant 2012: 435).
- Because there does seem to be a legitimate distinction between the acceptability of the second and third element in B_2, I have opted to define RFR as existential.

(27) A: Did Elizabeth, Persephone, and Antonio pass the test?
B_1: *Elizabeth* passed... (?)*Persephone* passed... But Antonio failed.
B_2: *Elizabeth* passed... (?)*Persephone* passed... #Antonio passed...

The proposal: Quality

Making direct reference to the Maxim of Quality within our definition allows us to capture both those cases in which the speaker is legitimately uncertain about the truth value of the alternative β, as well as those in which the speaker knows that β is false.

- Either is possible given an utterance with RFR (28) (adapted from Constant 2012: 424).

(28) A: Did Charles and Ginevra pass the test?
B$_1$: *Charles* passed... But I don't know about Ginevra.
B$_2$: *Charles* passed... But Ginevra flunked.

The proposal: class of meaning

With Constant (2012: 431-437), I believe that RFR is best classified as a conventional implicature.

- Its meaning can be calculated independently of at-issue content, unlike a presupposition.
  - One need not accept the contribution of the intonation before evaluating the assertion.
- The contribution of RFR is not blocked by typical presupposition plugs like *say*.

(29) John said that *Mary* came. . . (Constant 2012: 434)

- If RFR were a presupposition, we would expect the unassertable alternatives in (29) to be attributable to *John*, rather than the speaker, but this is not an available reading.

A loose end: RFR and contrastive topic

Büring (2003) and Constant (2014) have both sought to collapse the meaning of RFR and contrastive topic (CT) due to similarity in phonological form.

- However, due to the existence of certain minimal pairs (30), I argue (with Wagner 2012) that they must be treated separately.

(30) *Context: A and B are at a potluck dinner. A left to use the washroom before the salad and the cake arrived, but now returns and sees them on the table.*
A: Who brought the salad and the cake?
B_1: John brought the *salad*. . . , and the *cake*. . . , Sally brought.
B_2: John brought the *salad*. . . , ?and Sally brought the *cake*. . .

Modals

Modals can be found with RFR quite commonly, but have not received a detailed treatment before in the literature.

- In this section, I examine a series of different modals in order to test how well our theory can account for them.
- I consider, in turn, *might*, *must*, *can*, and *want*.

Modals: possibility and necessity

- In the simplest case, we have the use of *might* as another example of condition (i), with the stronger alternative ϕ entailing *might* ϕ.

(31) A: Is it raining outside?
B: It *might* be. . .

- But whether or not *must* can be used with RFR is a more interesting question.
  - The answer may bear on whether *must* ϕ is actually a weaker assertion than ϕ (for support for this position, see Kartunnen 1972 and Groenendijk and Stokhof 1975, but cf. von Fintel and Gillies 2010, 2021).
- This kind of usage turns out to be unacceptable, perhaps supporting the work of von Fintel and Gillies.

(32) A: Is it raining outside?
B: #It *must* be. . .

Modals: *can*

Next, we can consider the ability modal *can* (33).

(33) *Context: Jill notices that the family dog, Buddy, is very energetic. John is sitting on the couch, watching his favorite TV show.*
Jill: Can you take Buddy for a walk?
John: I *can*. . .
Inference: John is unsure whether he will take Buddy for a walk.

- It is important to recognize that Jill's question is a kind of indirect speech act: she is actually more concerned with John's commitments than his abilities.
- With RFR, John assents to the literal content while casting doubt on the conversationally implicated one: whether he *will* take Buddy for a walk.
  - This would conform to condition (i), as it seems reasonable to assume that *will* asymmetrically entails *can* (i.e., individuals do not plan to undertake actions which they believe they are incapable of).

Modals: *want*

We may also consider the bouletic modal *want*.

(34) Ann: Are you going to see the new Batman movie tonight?
Bill: I *want* to. . .

a. but I need to study for an exam.

b. #and I'm planning on getting to the theater at eight o'clock.
Inference: Bill is unsure whether he will go see the new Batman movie tonight.

- Desires are clearly relevant for future plans – Copley (2009) in fact suggests that future modals actually encode a kind of weighted bouletic modality.
- However, does Bill's assertion in (34) conform to condition (i) or (ii)?

Modals: *want*

- *Want* does not seem to be in an entailment relation with any future modal, considering that it is possible for us to carry out actions which we do not want to.
- Yet curiously, *want* behaves as if it were entailed by *will*.
  - For example, it can be used to assent to the literal QUD.
  - This pattern is infelicitous for alternatives in a sisterhood relation (compare (25) and (26)).

(35) Ann: Do you want to get some ice cream?
Bill: I *want* to...
Inference: Bill is unsure whether he will get some ice cream.

A potential solution

I believe that the solution to this problem may lie in allowing a contextual domain restriction.

- Contexts in which we carry out an action against our desires (as with *want*) are atypical.
- If these worlds are excluded, then we are simply left with those worlds in which the subject ends up doing what he wants to do, and those in which he does not.
- The reasoning from *will* to *want* would then follow without issue.

A potential solution

- We find some support for this hypothesis in that, if the speaker adds to the common ground that they are uncertain about their desires, then inverting the question and response – i.e., including a future modal in the response – is possible (36).
- This behavior is expected for two terms that are not actually in a relation of entailment (cf. (10)-(11)).

(36) A: Do you want to do the dishes?
B: I don't know if I *want* to. . . , but I *will*. . .

Conclusion

- I have argued that standard focus alternatives, in the mold of Rooth (1992), cannot account for the distribution of rise-fall-rise intonation in English.
- But utilizing the structured alternatives of Ippolito (2019), I outlined a proposal that provides an explanation for an interesting set of minimal pairs drawn from sets of both scalar and non-scalar terms.
- I also sought to extend this account to the realm of modal verbs, and although this data did present unique problems, a possible account was formulated given a contextual domain restriction.

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Another loose end: the QUD or the focus alternative?

I have built my proposal around the focus alternative, but some accounts of RFR – such as Büring (2003) and Westera (2019) – argue that the QUD is a more appropriate mechanism.

- However, the QUD approach has difficulty explaining the "reverse polarity implicature" associated with this intonation.
- RFR seems to implicate not only that there is an additional unanswered question, but also that this question does not have the same answer as the one already addressed (37) (see also (28)).

(37) A: Can Tom and Sarah come to the party?
B: *Tom* can...
a. but Sarah can't.
b. #and in fact, Sarah can too.
c. #and I believe Sarah can too.

The QUD or the focus alternative?

- If RFR only makes reference to the question structure of a discourse, then it is difficult to account for such a restriction on further assertions.
- In theory, one could explain this effect as simply a conversational implicature.
  - The idea would be that a speaker complying with the Maxim of Manner would not package information as in (37-b) or (37-c).
- However, identical assertions are then predicted to be equally unacceptable with neutral falling intonation.
- This prediction is not borne out (38-a)-(38-b).

(38) A: Can Tom and Sarah come to the party?
B: Tom can,

a. ?and in fact, Sarah can too.
b. and I believe Sarah can too.

The QUD or the focus alternative?

Focus alternatives can capture the reverse polarity implicature much more easily.

- For (37), all alternatives would take the form of *x can come to the party*.
- In order to conform to the felicity conditions for RFR outlined in our definition (24), there would simply have to be another person in C for whom the speaker could not assert that they can come to the party.
- Only (37-a) conforms to this condition.