All focus is contrastive
On polarity (verum) focus, answer focus, contrastive focus, and givenness

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Abstract

I develop a general theory of focus and givenness that can account for truly contrastive focus, and for polarity focus, including data that are sometimes set apart under the label "verum focus". I show that polarity focus creates challenges for classic theories of focus (e.g. Rooth, 1992, a.o.) that can be dealt with by requiring that all focus marking is truly contrastive, and that givenness deaccenting imposes its own distinct requirement on prominence shifts. To enforce true contrast, I employ innocent exclusion (Fox, 2007). A key, novel feature of my account is that focal targets are split into two kinds, those that are contextually supported and those that are constructed ad hoc, and that the presence of a contextually supported target can block the ability to construct an ad hoc target. This enables a novel explanation of the data motivating true contrast, and enables polarity focus to be brought into the fold of a unified and truly contrastive theory of focus. I then compare the account to theories of verum focus that make use of non-focus-based VERUM operators, and make the argument that the focus account is more parsimonious and has better empirical coverage.

1   Introduction

This paper explores the prospects for accounting for polarity focus, including phenomena often referred to as verum focus, within a general theory of focus and without appealing to VERUM operators. A straightforward application of a classic theory of focus such as Rooth 1992 quickly raises two questions: Why does polarity focus require a contrast with its polarity alternative, and why isn't polarity focus obligatory in answers to polar questions? Answering these two questions requires us to expand our empirical sights beyond polarity focus, and leads to two general conclusions about the semantics/pragmatics of prosodic prominence shifting: All focus marking in

English requires true contrast, and all deaccented expressions must be given.

My account builds on work by Wagner (2006, 2012) by taking all focus marking to be truly contrastive. It also builds on work by Büring (2016b, 2019) by taking prominence shifts to require both true contrastive focus and givenness deaccenting, and by taking givenness deaccenting, but not contrastive focus marking, to require a salient antecedent. Since focus marking does not require a salient antecedent, I will adopt Büring's term, *focal target*.[1]

A key novel claim of my account depends on a cut between two kinds of focal targets: those that are contextually supported (either salient in the context or inferable from the context), and those that are constructed ad hoc on the basis of the focus utterance itself. The claim is that the presence of a contextually supported target can block the ability to construct an ad hoc target. This claim is crucial to explaining the key data that motivates the view that all focus is truly contrastive, and bringing polarity focus into the fold of a unified and truly contrastive theory of focus.

This paper is divided into two parts. Part I develops the unified account of contrastive focus, answer focus, and givenness, and it can be read independently of Part II. It proceeds as follows: In section 2, I demonstrate challenges for treating polar questions as the focal target for polarity focus, then suggest in section 3 that the target of polarity focus is always the opposing polarity alternative. In search of an explanation, I explore recent work on true contrastive focus motivated by Wagner's puzzle in section 4, where I develop a theory of focus that predicts all focus marking to be truly contrastive. In section 5, I argue that a set of novel examples of polarity focus in negative sentences speaks in favor of maintaining distinct requirements on focus and givenness, which in turn enables a novel explanation for why focus is obligatory in answers to constituent questions, but optional in answers to polar questions.

Part II turns to verum focus to make the argument that it can be accounted for via the general theory of focus from Part I as applied to polarity focus. In section 7, I show that the emphasis on truth inference that is usually ascribed to verum focus can be made to follow from my account

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[1]Focal targets might still be fruitfully thought of as antecedents to anaphoric focus marking if we take non-salient targets to be a case of presupposition accommodation, as I will suggest below. However, whether or not such targets are best thought of as accommodation is not central to the main thesis here.

of polarity focus. In section 8, I compare accounts of verum focus to my account, pointing out challenges for VERUM operator approaches and arguing that they may not be needed to account for verum focus.

Part I

Polarity focus, contrastive focus, answer focus, givenness

2 Polar questions as targets for polarity focus utterances

Polarity focus in English is characterized by prominence on the auxiliary verb, signaling focus marking on the polarity head of the sentence as in (1a) and (1b).[2]

(1)   A is looking through the groceries B just bought. Here are four possible conversations:

a.   A: Did you buy yogurt?
      B: I DID buy yogurt.

c.   (i)   B: # I DID buy yogurt.
      (ii)   B: I bought YOGURT.

b.   A: You didn't buy yogurt.
      B: (No,) I DID buy yogurt.

d.   A: You bought sour cream.
      (i)   B: # (No,) I DID buy yogurt.
      (ii)   B: (No,) I bought YOGURT.

In (1a), B uses polarity focus in reply to A's polar question, while in (1b), it marks a contrast in polarity between B's and A's utterances. (1c-i) shows that polarity focus cannot be used out of the blue. Default prominence on the object as in (1c-ii) is preferred in such contexts. In (1d), only the

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[2]Small caps indicate the nuclear (final) pitch accent aligned with an F-mark. In a few cases, a second pre-nuclear pitch accent indicates a second F-mark. I assume falling contours throughout, though other contours may also be felicitous in some cases.

expressions in the object positions of A's and B's sentences differ in meaning. The result is that the polarity focus utterance in (1d-i) is infelicitous. (1d-ii) is the preferred intonational pattern.

These examples show that, like other kinds of focus prominence shifting accounted for in classic work (e.g. Kratzer, 1991; Rooth, 1992; Schwarzschild, 1999), polarity focus (PolF) requires an appropriate focal target. Both Wilder (2013) and Samko (2016a) argue that the focal target required by PolF is a corresponding polar question. I will articulate this view, and demonstrate a challenge for it: PolF appears to be unexpectedly optional in some responses to polar questions.

I assume that the polarity of a sentence is encoded in a polarity head, Pol (cf. Laka, 1990; Roelofsen & Farkas, 2015; Holmberg, 2016). Pol is a functional projection that c-commands the *v*P and is dominated by the TP. The polarity phrase (PolP) can only be headed by either positive polarity ($+$) or negative polarity ($-$). Positive polarity denotes the identity function from propositions to propositions, while negative polarity is negation (cf. Wilder 2013 for a similar assumption).

(2)   a. $[\![+]\!] = \lambda p_{\langle s,t \rangle}.\ p$
          b. $[\![-]\!] = \lambda p_{\langle s,t \rangle}.\ \neg p$

In agreement with Wilder (2013) and Samko (2016a), I take polarity focus to be F-marking on the polarity head. Let's explore how a polar question could serve as the focal target for PolF in terms of Rooth's (1992) alternative semantics. In addition to the ordinary semantic value of a structure ϕ, ϕ also has a focus semantic value, $[\![\phi]\!]^f$. $[\![\phi]\!]^f$ is calculated by replacing the denotation of the F-marked constituent within ϕ with the set of all objects of the same semantic type, and combining sets of semantic objects via pointwise composition, producing a set of focus alternatives. A presuppositional operator *squiggle* ($\sim$) adjoins to ϕ along with a variable (Γ for sets of semantic objects, or γ for individual objects), which gets its content from a focal target in the context. $\sim$ requires that the set of focus alternatives $[\![\phi]\!]^f$ relate to Γ/γ in one of the two following ways.

(3)   Rooth's (1992, p. 93) disjunctive presupposition for $\sim$:
          a. $\phi \sim \Gamma$ presupposes that a contextually given Γ is a subset of the focus semantic value of ϕ ($\Gamma \subseteq [\![\phi]\!]^f$), and that Γ contains both the ordinary semantic value of ϕ and an

        element distinct from it.

  b. $\phi \sim \gamma$ presupposes that a contextually given γ is a member of the focus semantic value of ϕ ($\gamma \in [\![\phi]\!]^f$), and that γ is distinct from the ordinary semantic value of ϕ.

To see how this can be applied to polarity focus in reply to a polar question, consider again the dialogue in (1a). Suppose that the semantics of a polar question is a set of two propositions, the positive and negative answers, $\{p, \neg p\}$ (Hamblin, 1973, a.o.). Therefore by (3a), the focus semantic value of B's PolF utterance needs to minimally be the set $\{p, \neg p\}$.

(4)   Structure of B's sentence in (1a)[3]

           PolP $\sim \Gamma$

     Pol_F vP
     $+ \textit{did}$
           I buy yogurt
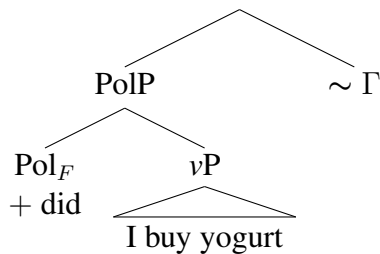
I assume that the set of focus alternatives for $+ \textit{did}$ is the domain of functions from propositions to propositions, $D_{\langle st,st \rangle}$, restricted down to just the meanings of the polarity heads $+$ and $-$.[4] Composing the focus semantic value of vP with that of Pol via pointwise function application results in a set of focus alternatives at the PolP node, {*that I bought yogurt*, *that I didn't buy yogurt*}. This set is identical to the denotation of A's polar question, thus the presupposition in (3a) is met and (1a) is predicted to be felicitous. This is how Rooth's (1992) set case presupposition in (3a) can be applied to polarity focus.[5]

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[3]When pronounced, the subject raises to spec-TP. I assume that at LF the subject reconstructs to its lower position.

[4]Cf. Krifka (1998) and Rullmann (2003), who both assume that the only relevant alternative to the identity function is negation. See also Samko 2016a for an argument that modal focus and polarity focus are distinct phenomena, and therefore that modals should not be among the alternatives to focused polarity heads. Modals aside, it is clear that the set of alternatives to polarity heads cannot include just any function imaginable in $D_{\langle st,st \rangle}$. Otherwise many infelicitous dialogues would be incorrectly predicted to be felicitous, since for every proposition, there is a constant function mapping any input proposition to it. For example, (1d-i) would be incorrectly predicted felicitous if the function from any proposition to the proposition *that you bought sour cream* were included as an alternative to the polarity head, since the focal target in (1d) would then satisfy (3b). This is a general problem for F-marked constituents denoting higher types, as discussed previously by Fox & Katzir (2011), Büring (2016a, p. 117ff), and Bruno (2017). Focus alternatives minimally need to be restricted to those denoted by natural language expressions.

[5]Samko (2016a) also uses a Roothian framework, but assumes a third value for polarity heads, null polarity, assigning it to polar questions. She then applies Rooth's individual case presupposition in (3b), arguing that null and

The problem for Wilder's and Samko's view that the target for PolF is always a corresponding polar question is that there is an unexpected asymmetry between answers to polar questions and constituent questions. The use of focus to make an answer congruent to a constituent question appears to be obligatory, while PolF does not appear to be obligatory in response to polar questions.

(5)   A: Who submitted her paper?

  a. B: IVY submitted her paper.
  b. B: ?? Ivy submitted her paper.

In (5), focus prominence must be shifted to the constituent corresponding to the interrogative pronoun in the question. Compare this to a similar dialogue with a polar question.

(6)   A: Did Ivy submit her paper yesterday?

  a. B: % (Yes,) She DID submit her paper.
  b. B: (Yes,) She submitted her paper.   (based on Gutzmann et al., 2020, 12)

Gutzmann et al. (2020) report that (6b) is felicitous, and that (6a) is not unless A's question conveys some bias for the negative answer. I call the latter judgment into question in fn. 6 below, which is why I mark (6a) and (7a) with '%' instead of '??'.

 Wilder also gives examples demonstrating this effect:

(7)   A: Does she work hard?

  a. B: % (Yes,) She DOES work hard.
  b. B: (Yes,) She works hard.   (based on Wilder, 2013, 169)

For comparison, I've constructed a similar constituent question dialogue:

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positive polarity contrast in the relevant way to satisfy the presupposition. Samko doesn't provide semantic values for these polarity heads, but the assumption is clearly that the polar question target is a member of the focus semantic value of the PolF utterance, distinct from the latter's ordinary semantic value because it has null polarity. This approach faces a technical challenge: supposing positive polarity is the identity function and null polarity means that the polarity head is empty, the target and the PolF utterance will each denote p. Thus they will not contrast semantically as required by (3b), and the focus presupposition will not be satisfied. Perhaps the account could be revised so that null polarity is instrumental in producing the denotation of a polar question, but then the account should rely on the set case presupposition, as described in the main text above.

(8)   A: Who works hard?

    a.   B: IVY works hard.

    b.   B: ?? Ivy works hard.

Again, (7b) is felicitous, certainly much more so than (8b). Prior work explains the obligatory prominence shifts in examples like (5) and (8) in which the preceding constituent question is the only available focal target via a mechanism like maximize presupposition (I'll rehearse how in a moment). Thus if the polar question is the target for polarity focus, we expect obligatory PolF in (6) and (7) as well, contrary to fact.[6, 7]

Note that Wilder (2013) and Gutzmann et al. (2020) use positive answers to demonstrate the non-obligatoriness of PolF in response to polar questions, and Wilder explicitly notes that his comments are restricted to positive answers. In contrast, PolF is preferred in negative answers to

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[6]Beyond this unexpected asymmetry, Wilder (2013) takes the same view as Gutzmann et al. (2020), that the use of PolF in response to a polar question as in (7a) is either infelicitous or at least degraded. Both suggest that it needs to be motivated by a prior dispute over p or some bias for $\neg p$. I agree that making p contentious in the context increases the likelihood of a PolF response, and in fact will argue below that $\neg p$ is always the focal target of PolF on p. However, like (1a), (6a) and (7a) do not strike me as obviously infelicitous in the absence of such context. I believe this is because the speaker is able to signal contrast against targets that are not obviously salient in the context, perhaps via a process of presupposition accommodation (von Fintel, 2008). From the perspective of hearers, this makes the speaker's use of PolF in response to a neutral polar question look optional. I'll return to the issue of contextually salient vs. accommodated focal targets in section 4. But it is not crucial whether PolF in (6a) and (7a) is infelicitous or merely optional. The key facts are that the salience of a contrastive focal target improves PolF in answers to polar questions, and that PolF is *not required* in answers to polar questions, i.e. that (6b) and (7b) are felicitous, which is enough to cause concern for an account that takes questions to trigger obligatory focus marking in their answers.

[7]Complicating the comparison between answers to constituent questions and polar questions is the fact that focus is the only means to demonstrate question-answer congruence in the former case, but not in the latter. The polar particles *yes* and *no* are anaphoric to discourse referents made available by the question (e.g. Krifka, 2013; Roelofsen & Farkas, 2015). Ellipsis in the following clause would also connect the answer to the question. This multiplicity of ways in which answers cohere to polar questions may make judging examples like (6) and (7) more challenging than (5) and (8). However, even with a polar particle and ellipsis, there is still a detectable effect of polarity focus:

(i)   A: Do you sing?

    a.   B: Yes, I DO.

    b.   B: Yes, I do.   (Gutzmann et al., 2020, 11)

In both (ia) and (ib), the nuclear pitch accent necessarily falls on *do*, and yet there is still a prosodic distinction to have intuitions about. (ia) has a rising contrastive pitch accent, indicative of narrow focus, while (ib) has a high pitch accent signaling default prominence (in ToBI, the distinction is between L+H* and H* respectively, though I remain agnostic about whether this intonational distinction is truly phonological or merely phonetic, see Ladd 2008, p. 151ff. and references therein). This intonational distinction corresponds to an interpretational one: Gutzmann et al. report (ia) to be infelicitous unless "the speaker expects that somebody might doubt her ability to sing". As mentioned above, I will weaken this slightly. But the key question is, why is PolF not obligatory here? And why does it signal that the answer contrasts against its negative alternative?

polar questions.

(9)   A: Did Ivy submit her paper yesterday?

    a.   B: (No,) She DIDN'T submit her paper.
    b.   B: ?? (No,) She didn't submit her paper.

(10)   A: Does she work hard?

    a.   B: (No,) She DOESN'T work hard.
    b.   B: ?? (No,) She doesn't work hard.

This again points to the key role of contrast, since the negative answers contrast against the pre-jacent propositions of the positive polar questions. The role of contrast will be explored in the following, and I return to this specific data point below in section 5.2.

Here is how maximize presupposition can be used to explain the judgments in (5) and (8) (cf. e.g. Schwarzschild, 1992, 1999; Truckenbrodt, 1995; Williams, 1997; Wagner, 2005, 2006; Sauerland, 2005; Mayr, 2010): The principle of maximize presupposition says that a sentence S is preferred to its competitor S' if they are truth-conditionally equivalent, their presuppositions are met, and S has a stronger presupposition than S' (Heim, 1991; Percus, 2006; Sauerland, 2008; Schlenker, 2012). Since focus marking induces a presupposition, maximize presupposition should make focus marked utterances with satisfied focus presuppositions preferable to truth-conditionally equivalent but non-focus marked utterances. For example, (5a)'s presupposition is met in (5) since the set of propositions representing A's constituent question is a subset of the focus semantic value of (5a). (5b) lacks this presupposition, so maximize presupposition requires the speaker to use (5a) rather than (5b).[8] But if this is the account of the judgments in (5) and (8), and if polar questions are

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[8]Maximize presupposition depends on a means of identifying which expressions compete with one another. Perhaps the right approach for generating alternatives for maximize presupposition calculation relative to focus marking is to compare all possible focus markings for a structure (cf. Schwarzschild 1992, Truckenbrodt 1995, Wagner 2020). The prospects for further restricting the alternatives are not obvious, as Kratzer & Selkirk (2020) note. In the case of focus in answers to constituent questions as in (5), the scale of alternatives should at least include the focus-marked answer (5a), overfocused answers like "IVY submitted her PAPER", and the non-focus-marked counterpart (5b). This latter alternative is a null case (lack of focus marking), which may be undesirable though not unprecedented (see Eckardt & Fränkel (2012), who take sentences with the additive particles *too* to compete with those that lack them). Another possibility is to avoid scales altogether, and, following Rouillard & Schwarz (2017), determine alternatives structurally à la Katzir 2007. However more work is needed. Katzir's algorithm generates stronger competitors by

the targets of PolF utterances, then it is surprising that PolF is in fact not obligatory in response to overt polar questions as in (6) and (7). This is a challenge to Wilder's (2013) and Samko's (2016a) accounts, as well as the one I just gave above using Rooth's (1992) set case presupposition.[9]

3 Contrasting alternatives as targets to polarity focus utterances

In search of a way forward, let's consider examples of uncontroversially felicitous uses of PolF in answers to polar questions.

(11)   A: I hear that he might not work hard. DOES he work hard?
       B: (Yes,) he DOES work hard.   (Wilder, 2013, 169)

(12)   A: Did Ivy really submit her paper yesterday?
       B: (Yes,) she DID submit her paper.   (Gutzmann et al., 2020, 12)

What these examples have in common is the presence of a salient alternative to the PolF utterance with contrasting polarity. In (11), the possibility that he does not work hard is contextually salient thanks to A mentioning it. A's question in (12) conveys a bias for the negative answer, *that Ivy didn't submit her paper* (Romero & Han, 2004). This commonality between (11) and (12), combined with the facts from the prior section, points to the following hypothesis.

(13)   *PolF licensing condition*:
       Polarity focus is only felicitous in the presence of a focal target with opposing polarity.

If (13) is correct, then (11) and (12) are predicted to be felicitous. (13) would also explain Wilder's

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making substitutions or deletions, but crucially not additions. This works for overfocussing since the stronger alternative is the one with fewer F-markers. However, the weakest structure will be the non-focus-marked one as in (5b). Finding a presuppositionally stronger alternative to compare it against such as (5a) requires the *addition* of an F-marker and $\sim \Gamma$, not a substitution or deletion.

[9]Lohnstein (2016) argues that verum focus is focus on sentence mood, and that the relevant alternatives are declarative, y/n-interrogative, wh-interrogative, and imperative. Thus, on the view that preceding examples exhibit verum focus, the alternatives to them include polar questions, and so Lohnstein's account is also subject to this challenge.

(2013) and Gutzmann et al.'s (2020) intuitions that conflict over p with some bias toward $\neg p$ in the context renders PolF felicitous in response to otherwise neutral polar questions.

For additional evidence that (13) is on the right track, consider that in cases where the contrastive polarity alternative is the only obvious target, PolF is strongly preferred to default prominence. For example:

(14)   A: Aïda hasn't eaten breakfast.
     a.   B: She HAS eaten breakfast.
     b.   B: ?? She has eaten breakfast.

The PolF utterance in (14a) is strongly preferred to the default prominence of (14b) in this context. This is predicted by contrast with A's utterance, salient in the context, coupled with the focus presupposition and the principle of maximize presupposition.[10]

We can also consider repetitions of assertions such as in (15).

(15)   A: Dinah likes Ivy.
     a.   B: ?? Dinah likes Ivy.
     b.   B: DINAH likes Ivy. (...But MOIRA does NOT.)
     c.   B: Dinah DOES like Ivy. (...Anyone who thinks otherwise is a fool.)

The sentence *Dinah likes Ivy* is somewhat odd when repeated with default prominence as in (15a). This is perhaps due to the fact that that proposition has just been asserted by A, so it is not clear what B's assertion contributes. Prominence shifts as in (15b) and (15c) save a re-assertion of p by making informative contributions via their focus presuppositions (Schlenker, 2012). They presuppose the presence of an alternative that the focus utterance contrasts with, such as *Moira likes Ivy* for (15b), or *Dinah does not like Ivy* for (15c). Doing so conveys the relevance of the focus contrast. Cf. the intuition reported by Gutzmann et al. (2020, 13) that examples like (15c)

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[10]The relevant contrast is between a PolF utterance with otherwise standard declarative intonation in (14a) and a default prominence utterance with standard declarative intonation in (14b). A close variant of (14b) could bear other intonational tunes such as the contradiction contour (Liberman & Sag, 1974; Goodhue & Wagner, 2018) which would render it felicitous despite lacking PolF.

are felicitous in a context in which the issue was previously being discussed, which would supply the needed contrast hypothesized in (13).[11] Samko (2016b) notes that the following example, parallel to (15c), is felicitous if we imagine that B has forgotten about the event:

(16)   A: [Speaking of a field-goal kicker] He hit a career-long 53-yarder against Washington.
       B: (That's right) He DID hit a career-long 53-yarder against Washington.

(Samko, 2016b, 8)

I submit that B's forgetfulness matters here because it can be strengthened into the inference that B has accidentally come to believe that he did *not* hit a career-long field goal against Washington, which is the proper contrastive target for PolF according to (13).

In one way or another, the examples in this section make the contrastive polarity alternative $\neg p$ available as a focal target, and thus (13) accurately predicts PolF to be strongly preferred in them, but not in responses to neutral polar questions like (6) and (7). But we still don't know *why* (13) holds. If Rooth's (1992) individual case presupposition in (3b) were the only means to license focus, then (13) would be explained. But the set case presupposition in (3a) provides an alternative means that predicts a neutral polar question to be a felicitous target too, so (13) is not yet explained. My goal is for (13) itself to play no official role in the grammar, but to just fall out as a consequence of the general theory of focus.

Besides the question of why (13) holds, we have a second question: Why is PolF optional in responses to polar questions? On the assumption that (13) is correct, the fact that polar questions themselves do not make the contrastive target available would seem to predict PolF to be infelicitous. The answer will be related to the explanation for another case of optional focus marking:

(17)   A: Yesterday, Jolene and Dolly pitched the tent. What happened today?

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[11]A reviewer argues that more needs to be said to understand how focus is used intentionally to convey the relevance of a contrast. However, it is not immediately clear to me that we need a theory of the intentional use of focus here. It may just be that B takes the contrastive alternative to be available as a target (through no intentional choice of their own), and so has to mark focus, and in so doing, signals the contrast to the hearer. That said, this is a subtle case that raises questions about why speakers "emphasize" certain contrasts, and how that notion fits with a purely grammatical view of focusing. Section 7 is also related to this point.

    a.   B: JOLENE pitched the tent.

    b.   B: Jolene pitched the tent.   (Klassen & Wagner, 2017, 310)

In (17), B's utterance can contrast with A's target utterance in the subject position, leading to the prominence shift in (17a). On the other hand, B can take their utterance not to stand in contrast with A's, in which case default prominence is the preferred option as in (17b). Klassen & Wagner (2017) demonstrate experimentally that naïve speakers produce both prominence patterns in the context of (17).[12] The reason is that B can optionally see their utterance as standing in contrast to A's or not. In section 5.2, I will argue that something similar is happening with answers to polar questions.

4   All focus requires true contrast

So we have two questions:

1. Why does polarity focus require a contrastive target?

2. Why is focus obligatory in answers to constituent questions, while polarity focus is not obligatory (but is apparently optional) in answers to polar questions?

To answer question 1, I will argue that the hypothesis in (13) that polarity focus is necessarily contrastive holds because *all focus marking requires true contrast*. This argument will build on work on the proper characterization of contrastive focus by Wagner (2006, 2012), Katzir (2013), and Büring (2016b, 2019). Careful consideration of the data that motivates that work as well as new data will help to clarify how focal targets are made available, and the relationship between contextually salient or inferable targets vs. accommodated or ad hoc targets. This, in combination

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[12]They also demonstrate experimentally that repeated sentences as in (i) normally bear default prominence:

(i)   A: Yesterday, Jolene pitched the tent. What happened today?

           B: Jolene pitched the tent.   (Klassen & Wagner, 2017, 309)

Default prominence is felicitous in (i)B unlike in (15a) because while *Jolene pitched the tent* is given by A, that she did so today is not asserted or presupposed. Moreover, the PolF utterance *Jolene* DID *pitch the tent* would be infelicitous in (i), unlike in (15c). If a contrastive target is not available, then all-given sentences bear default prominence.

with givenness deaccenting will enable an answer to question 2 in section 5.

4.1 Wagner's puzzle

Wagner (2006, 2012) argues that examples like (18) suggest that focus marking requires not only contrast, but *true* contrast.[13]

(18)   A: Casey's aunt, who has been known to sometimes give new convertibles as presents on special occasions, is coming to Casey's wedding. I wonder what she brought as a present.

    a.   B: She brought a USED convertible.
    b.   B: # She brought a RED convertible.
    c.   B: She brought a red CONVERTIBLE.   (based on Wagner, 2006, 2012)

A's utterance makes the target *that she brought a new convertible* available. Given this, Rooth's (1992) individual case presupposition in (3b) is met by (18a), thus it is accurately predicted to be felicitous. However, if (18a) is predicted to be felicitous, then so is (18b), contrary to fact. Rooth's ∼ requirement is too permissive: *new*, *used*, and *red* all have the same semantic type, which is enough for the target to satisfy the focus requirement for both (18a) and (18b). Other general theories of focus marking are also too permissive to explain (18) (e.g. Kratzer, 1991; Schwarzschild, 1999; Steedman, 2014; Rooth, 2015; Kratzer & Selkirk, 2020; Schlöder & Lascarides, 2020).[14]

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[13]Intuitions for these kinds of examples have been verified via questionnaire by Büring (2008), via corpus of naturally occurring German speech by Riester & Piontek (2015), and via experiment by Wagner (2016).

[14]Schlöder & Lascarides (2020) propose that focus with a falling contour presupposes its background with an existentially bound variable in place of the focus. Rooth (1999) introduces an example that challenges such background presupposition semantics for focus in general, but the intonational sophistication of Schlöder & Lascarides 2020 handles Rooth's counterexample. However, consider the following modification of Rooth's example, which reintroduces the same challenge for the background presupposition view.

(i)   A: Did anyone win the football pool this week?
    B: Probably not, because neither MARY nor ALI won it, and it's unlikely that SUE won it.
    B′: # Probably not, because neither MARY nor ALI won it, and it's unlikely that it's SUE who won it.

Note that (i)B most naturally ends with falling intonation on the final conjunct. So according to Schlöder & Lascarides, the final conjunct of (i)B should presuppose that someone won the football pool. Since B just said that probably no one did, that presupposition should result in a contradiction. But (i)B is perfectly felicitous. Cf. (i)B′, in which the cleft presupposes that someone won it, and which is clearly infelicitous. Thus, (i) demonstrates that focus with a falling contour cannot introduce an existential presupposition.

4.2 Implementing true contrast and challenges for Katzir 2013

How to account for this puzzle? Wagner (2006, 2012) suggests that the focus requirement be strengthened to one that requires a true contrast between the focus utterance and the target in that each are a distinct cell in a single partition. The sets of new and used convertibles are each cells in a partition of convertibles and so (18a) is felicitous, but the sets of red and new convertibles overlap, and so are not and (18b) is infelicitous. In reply, Katzir (2013) argues that Rooth's original formulation does not need to be strengthened if we understand the focus utterance to be exhaustified via an EXH operator like that in Fox 2007, which filters out non-innocently excludable alternatives. I will posit a novel strengthened focus requirement, in friendly amendment to Wagner, rather than outsourcing the enforcement of true contrast to EXH. But my technical implementation is inspired by Katzir's EXH account, as it exploits the formal definition of innocent exclusion to strengthen $\sim$.

If a speaker says, "She only brought a RED convertible," the utterance excludes that she brought any convertibles of other colors, but it does not exclude that the convertible she brought was new or that it was used. Colors are "innocently excludable" here, but whether the car is new or used is not. Chierchia et al. (2012, 2314ff.) describe finding the innocently excludable alternatives as a two step process. If A is the set of alternatives to a proposition p, then the first step is to find each of the largest subsets of A such that all of the propositions in a given subset can be negated and then consistently combined with p. Second, collect together all of the propositions in common across all of those maximal subsets. These are the innocently excludable alternatives, defined in (19). Note that while (19) defines which alternatives are innocently excludable, it does not actually exclude them. That is the job of an operator like *only* or EXH.

(19)   *Innocent exclusion*
       Let ϕ be a constituent containing a focus such that $[\![\phi]\!] = p_{\langle s,t \rangle}$, and $[\![\phi]\!]^f = A$.
       $\text{IE}(p, A) := \bigcap \{M \mid M$ is a maximal set of excludable alternatives in A given $p\}$
       a. $M \subseteq A$ is a set of excludable alternatives in A given p iff $\{\neg q \mid q \in M\} \cup \{p\}$ is
            consistent.[15]

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[15]Let $P = \{\neg q \mid q \in M\} \cup \{p\}$. P is consistent iff there are states of affairs relative to which all propositions in P are simultaneously true. If we think of propositions as sets of possible worlds, then P is consistent iff $\bigcap P \neq \varnothing$.

b.   A set M that satisfies (19a) is maximal iff there is no M' such that $M \subset M'$ and M'
satisfies (19a).   (Fox, 2007; Chierchia et al., 2012)

Consider how (19) works when ϕ is the focus utterance in (18a), "She brought a USED convertible."

According to (19), the proposition *that she brought a new convertible* is innocently excludable

because it is present in every maximally large set of focus alternatives to (18a) that, when negated

as in (19a), can be consistently combined with the meaning of (18a). Now consider if ϕ were (18b),

"She brought a RED convertible." Both *that she brought a new convertible* and *that she brought*

a used convertible are focus alternatives to (18b). Since all convertibles are either new or used,

clearly it is impossible for both of these alternatives to be present in any given maximal set of

alternatives that, when negated and combined with the meaning of (18b), is consistent. That is,

there are no states of affairs that render all three propositions true.[16] So some sets M will contain

that she brought a new convertible, and the others *that she brought a used convertible*. Thus, (19)

says that neither is an innocently excludable alternative to (18b).

  With (19) in hand, here is a first pass at the proposed focus requirement.

(20)   *Focus condition (preliminary)*
        $\phi \sim \gamma$ is felicitous only if there is a target with meaning γ such that
        $\gamma \in \text{IE}(p, A)$

The focus requirement imposed by (20) is that γ is a member of the innocently excludable alterna-

tives to ϕ. The focal target in (18) is *that she brought a new convertible*. We just saw that this target

is an innocently excludable alternative to (18a), but not to (18b), so (20) explains Wagner's puzzle

so far ((18c) will be discussed in detail in section 4.5). Note that, crucially, (20) does not impose

exhaustification, and therefore it does not require the focus utterance to reject the focal target γ.

(20) just means that, *if* ϕ were to be exhaustified, then it would entail the negation of γ.

  However, Katzir (2013) shows that just assuming that the focus utterance is *actually* exhaus-

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[16]In terms of sets of possible worlds: $\bigcap\{$*that she did not bring a new convertible*, *that she did not bring a used*
convertible, *that she brought a red convertible*$\} = \varnothing$.

tified by an EXH operator achieves the same result for (18).[17] The idea is that an EXH operator associates with a focus, which is in turn subject to the weaker Roothian presupposition in (3), and only if the exhaustified utterance successfully excludes the target is the focus utterance felicitous, as in (18a). Otherwise we can't tell how the focus utterance relates to the prior discourse, leading to infelicity as in (18b). So why have I baked innocent exclusion into the requirement imposed by $\sim$, instead of just allowing the independently motivated EXH operator to supply it? Consider (21):

(21)   A: Casey's aunt brought a new convertible.
        B: Yeah, and she brought a USED convertible.

B's use of focus here can be thought of as additive (*too* could easily be added to the end of B's utterance, though it doesn't have to be). B is agreeing with A and adding another fact. If the second conjunct of B's utterance were parsed with an EXH operator, it would be incorrectly predicted to exclude the focal target, A's utterance. (20) makes no such prediction for (21); it requires the focal target to be innocently excludable (and it is), but it does not exclude it.

   In defense of Katzir's account, one could argue that (21) simply isn't parsed with EXH, and the weaker requirement of Rooth's $\sim$ is satisfied. However then we could ask why (18b) cannot also be parsed without EXH, which would render it felicitous on this view, but which appears to be impossible. (22) makes the challenge more explicit.

(22)   A: What kind of books do you sell?
        a. (i)   B: I sell NEW books, and I sell USED books.
            (ii) B: I sell SYNTAX books, and I sell SEMANTICS books.
        b. (i)   B: ?? I sell NEW books, and I sell SEMANTICS books.
            (ii) B: ?? I sell SYNTAX books, and I sell USED books.

Each of B's responses in (22a) are felicitous, while each of them in (22b) are infelicitous. For the

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[17]EXH has roughly the same meaning as the word *only*. Assuming IE(p, A) as defined in (19):

(i) $[\![\text{EXH}]\!](p)(A)(w) \Leftrightarrow p(w) \mathbin{\&} \forall q \in \text{IE}(p, A)[\neg q(w)]$

EXH account to work, EXH must be *absent* from the conjuncts in the (22a) examples, otherwise each conjunct would entail the falsity of the other, incorrectly predicting each of the (22a) examples to be contradictions. But to predict the infelicity of the (22b) examples, EXH must be *present* in each conjunct so that each is required to entail the falsity of its focal target, the other conjunct. They will fail to do this since the focal targets are not innocently excludable, thus correctly predicting infelicity according to Katzir's account because we can't understand how the exhaustified conjuncts relate to their targets. The problem for the EXH account of true contrast is that there is no principled motivation for these different parses, the necessary absence of EXH in (21), (22a-i) and (22a-ii), and its necessary presence in (18b), (22b-i) and (22b-ii).[18]

The true contrast focus condition in (20) offers a simpler story. The asymmetry between (22a) and (22b) is caused by the fact that the pairs ⟨*new*, *used*⟩ and ⟨*syntax*, *semantics*⟩ truly contrast, but ⟨*new*, *semantics*⟩ and ⟨*syntax*, *used*⟩ do not. (20) captures this directly since the focal targets of each conjunct in the (22a) examples are innocently excludable, while those of each conjunct in the (22b) examples are not. Again, note that (20) does not require a focus utterance to reject, deny or negate its target, thus the innocently excludable alternatives in each conjunct of the (22a) examples can be simultaneously claimed to be true by B.

Thus what we see is that sometimes focus utterances are exhaustive as in (18), and sometimes they are not as in (21) and (22), but either way, they require true contrast. I conclude that true contrast cannot be accounted for via EXH, but is a requirement inherent to focus marking itself.

4.3 Revising the account

While (20) makes the right predictions so far, it is still not quite right. Consider the following example.

(23)   A: Casey's aunt either brought a blue convertible or a yellow convertible.

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[18] While Schwarzschild (2019) does not discuss true contrast, his account also relies on EXH operators and cannot explain the facts here. Bade (2016) gives an account of exhaustivity in conjunctions based on Fox 2007 that predicts a single wide-scope EXH because exhaustifying the individual conjuncts leads to a contradiction. This would correctly predict (22a), however it leaves unexplained why the (22b) examples must be parsed with exhaustified conjuncts.

B: No, she brought a RED convertible.

The focal target for B's utterance appears to be A's utterance, which is the union of a subset of the innocently excludable alternatives. Since this target is not itself a member of the innocently excludable alternatives, (23) motivates a revision of the focus requirement (20) to allow the focal target to be the generalized union of any subset of the innocently excludable alternatives (several examples below will further motivate this revision).

(24)   *Focus condition (final)*
       $\phi \sim \gamma$ is felicitous only if there is a target with meaning γ such that
       $\gamma \in \{\bigcup X \mid X \in \mathcal{P}(\text{IE}(p, A))\}$

Since each proposition in $\text{IE}(p, A)$ is in $\{\bigcup X \mid X \in \mathcal{P}(\text{IE}(p, A))\}$,[19] (24) covers previous examples in which γ is a member of $\text{IE}(p, A)$, as well as new examples like (23) just above. In the following, I will still speak of "the innocently excludable alternatives" with the understanding that this includes not just individual members of $\text{IE}(p, A)$ but also the generalized union of any subset of $\text{IE}(p, A)$.[20]

(24) still resolves Wagner's puzzle by strengthening the focus requirement via innocent exclusion.[21] It also answers question 1 from the beginning of this section, explaining why a polarity focus utterance requires its contrastive polarity alternative as target, as hypothesized in (13). The only innocently excludable alternative to a polarity focus utterance is its opposing polarity alternative. Thus (13) falls out as a consequence of the theory of true contrastive focus in (24).

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[19]Because the power set of the innocently excludable alternatives, $\mathcal{P}(\text{IE}(p, A))$, contains singleton sets of each member of $\text{IE}(p, A)$, and the generalized union of a singleton set is just the member of that set itself.

[20](24) predicts the empty set to be a valid target for any focus marking. It is not obvious that this causes any trouble, but if so, we could simply revise (24) to stipulate that X cannot be the empty set.

[21]Technically, (24) is not strictly stronger than Rooth's (1992) individual case presupposition in (3b). (24) does make some members of $[\![\phi]\!]^f$ unacceptable as focal targets since $\text{IE}(p, A)$ lacks many of the alternatives in $[\![\phi]\!]^f$. But then it expands on $\text{IE}(p, A)$ (and $[\![\phi]\!]^f$) by including generalized unions of subsets of $\text{IE}(p, A)$. So the set of possible focal targets in (24) both includes some targets ruled out by, and excludes some targets predicted by, Rooth's theory.

4.4 Where do focal targets come from? Büring's (2019) answer, and challenges for his account

Where exactly do focal targets come from? Consider the following example, brought to my attention by Michael Wagner (p.c.).

(25)   A: I heard Casey's aunt brought a convertible.
         B: Yeah, she brought a RED convertible.

B's utterance in (25) doesn't contrast with A's, but elaborates on it ("elaboration focus", Büring 2016a). One potential explanation for (25) is to say that it is a case of pure givenness deaccenting—that *convertible* is deaccented because it is given in A's utterance, and there is no focus marking on *red*. However, we cannot allow pure givenness deaccenting into the theory, otherwise (18b) would be incorrectly predicted to be felicitous. I will address (25) via an idea in Büring 2019: It is felicitous because it contrasts against the most general contrastive focal target, *that she brought a non-red convertible*, constructed ad hoc on the basis of the focus utterance. In terms of my account, the most general contrastive focal target is the generalized union of the whole set of innocently excludable alternatives, $\bigcup \text{IE}(p, A)$. This target satisfies the condition in (24) but not (20). So (25) is another example motivating the revision of the focus condition to (24).

However, if we allow the most general contrastive focal target to *any* focus utterance to be constructed ad hoc, then Wagner's puzzle comes back with a vengeance. Reconsider (18b). If *that she brought a non-red convertible* can be constructed ad hoc on the basis of the focus utterance, then (18b) should be felicitous contrary to fact. To resolve this problem, it will be instructive to consider challenges for Büring's (2019) account of true contrast. These challenges will lead me to treat focal targets as propositions, rather than questions as Büring does, and to observe that contextually salient focal targets can restrict the construction of ad hoc ones. This will resolve the asymmetry between examples like (18b) and (25) in a novel way in section 4.5, and will be relevant in turn to answering question 2 above in section 5 below.

Büring (2019) proposes that focus requires focal targets to be "proper questions", which are answer sets such that for any proposition p in the set, "p and none of the other answers" is consistent. While the notion of a proper question is the part of Büring's focus requirement that is spelled out formally (Büring, 2019, 23ff.), it is not the component that explains Wagner's puzzle. The reason is that Büring assumes that the ability to identify a proper question target ad hoc is quite powerful: upon hearing the focus utterance, any listener can immediately identify a proper question by forming a set containing the meaning of the focus utterance and the exhaustified disjunction of its focus alternatives. For (18a), this would be {*that she brought a used convertible, that she brought a non-used (new) convertible*}, while for (18b), this would be {*that she brought a red convertible, that she brought a non-red convertible*}. These are clearly proper questions, e.g. "She brought a red convertible and not a non-red convertible" (and vice versa) is consistent. So this requirement does not yet predict the infelicity of (18b).

According to Büring, (18b) is infelicitous because the identifiable proper question is not relevant. The idea is that a question Q counts as relevant if the true answer would matter to the discourse participants. Given that Casey's aunt has been known to make gifts of new convertibles in (18), whether she brought a new convertible or a used convertible matters, as bringing a used convertible would be surprising. It is less clear how it matters whether she brought a red or a non-red convertible. "The point is that [the color of the convertible] is not *crucial*. Nothing else of interest would follow if the convertible had been non-red." (Büring, 2019, 21) But if it had been non-new, something of interest would follow (e.g. Casey's aunt has become stingy, or Casey's aunt has a grudge against Casey's parents and she finally got back at them, etc.). Büring points out that the notion of relevance here must be stronger than informativity, since saying that she brought a red convertible as in (18c) is informative enough to be felicitously asserted. It is also relevant enough to be asserted. So Büring's account of true contrast boils down to making proper question focal targets trivially identifiable, and appealing to a perhaps special notion of contrastive relevance to explain the infelicity intuitions.

However, now consider (26), which is a challenge for Büring's account, and is telling about its

prospects for accounting for polarity focus.

(26)   A: Casey's aunt, who has been known to sometimes give new convertibles as presents on special occasions, is coming to Casey's wedding. I wonder what she brought as a present.
B: # She brought a NEW convertible.

The question {*that she brought a new convertible, that she brought a non-new convertible*} is just as identifiable, proper, and relevant here as it is relative to (18a), so Büring's account predicts (26)B to be acceptable contrary to fact. If we were to change the context of (26) so that the aunt is known to give *used* convertibles, then (26)B would be perfectly felicitous. This contrast, as well as the contrast between (18a) and (26), shows that an identifiable, proper, and relevant question is not enough. Whether there is a contrastive target salient in the context makes a difference.

Two conclusions can be drawn from this. First, focal targets are better treated as contrastive propositions than questions, as I have done (24). A minimal change to Büring's account to address this would be to require that the focal target be a proposition that, when added to a set along with the denotation of the focus utterance, produces a proper question. But the result would still fail to predict the infelicity of (26), since the target *that she brought a non-new convertible* would still be identifiable, and when combined with B's utterance it would produce a proper and relevant question. This leads to the second conclusion. Under Büring's account, it is too easy to identify focal targets. We need a way to constrain the identifiability of ad hoc targets dependent on what is salient in the context.

Büring's account runs into a similar problem with optional polarity focus in response to polar questions, discussed in sections 2 and 3. The issue is that a relevant proper question is easy to identify from a polarity focus answer to a polar question, namely the polar question itself. With the assumption maximize presupposition forces focus marking, polarity focus is incorrectly predicted to be required. What seems to matter in answers to polar questions and in (26) is whether or not the contrastive focal target is salient, as I suggested in section 3. But Büring's account makes no provision for the priveleged role of salience in identifying a focal target.

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I believe that the infelicity of (18b) is also due to what is salient in the context, rather than relevance. The focus marking of (18b) conveys that there should be a true focus contrast at the location of the adjective *red*, but the focal target salient in the context does not contrast truly in that location.

Thus my account will differ from Büring 2019 in three key ways: First, focal targets are truly contrastive propositions, not proper questions, as is already captured by (24). Second, I will not appeal to relevance to explain the key contrasts here. And third, I will constrain the ad hoc identification of focal targets in a principled way.

4.5 Contextually supported targets vs. accommodated targets

To explain the various contrasts we have seen so far, I propose that salient targets can block the construction or accommodation of ad hoc targets. To preview the explanation, (18a), (18b), and (26) all have the same salient target, *that she brought a new convertible*. That target is innocently excludable relative to (18a), so (18a) is correctly predicted to be felicitous by (24). But it is not an innocently excludable alternative to (18b) or (26), and apparently we are not free to identify ad hoc a different, innocently excludable target. Thus (18b) and (26) are infelicitous according to (24).

However, given the acceptability of examples like (18c) and (25), we still need to identify precisely when a salient targets blocks an ad hoc one. For example, A's utterance in (25) appears to be a salient but non-innocently excludable target. Since B's focus utterance is in fact felicitous, A's utterance must not be able to block an appropriate ad hoc target from being accommodated. Why is the salient target unignorable in (18b) and (26), while it is ignorable (18c) and (25)?

What I will argue in a nutshell is that ad hoc targets cannot be accommodated when the focus utterance *seems like it should contrast with* a salient target. When it doesn't, the salient target may be ignored in favor of an ad hoc one. There are two situations in which a focus utterance "seems like it should contrast with" a salient target: when the salient target truly contrasts with (is an innocently excludable alternative of) the focus utterance, and when the focus utterance is pronounced as if it should contrast narrowly with the salient target. I will use these two restrictions

to translate "seems like it should contrast with" into a precise relation.

Before doing so, a brief aside about salient and accommodated targets: It is commonly accepted that focal targets can become available either through contextual salience or a process of accommodation (e.g. Rooth, 1992; Büring, 2019; Wagner, 2020, a.o.). I draw the dividing line between the two kinds of targets as follows.

(27)   a.   *Contextually supported target* γ: The context makes a meaning γ salient or otherwise inferable.

        b.   *Accommodated target* γ': The focus utterance itself enables the most general contrastive target γ' to be constructed ad hoc and accommodated.

I intend the term "contextually supported" to include "salient": all salient targets are contextually supported but not vice versa. I officially use the term "contextually supported" in (27a) because, as a matter of empirical fact, the key dividing line appears to be between those targets that are constructed out-of-the-blue, without any help from the context beyond the focus utterance itself, and those targets that receive some contextual support, even if they don't clear the high-bar required to be counted as "salient". For example, while (18) makes the target *that she brought a new convertible* salient or at least highly expected, this seems less likely in the original context that Wagner used to motivate his puzzle in (28). And yet (28) elicits the same pattern of focus in B's answers as (18) (with *high-end* and *cheap* replacing *new* and *used* respectively).

(28)   A: Casey's aunt, who produces high-end convertibles, is coming to Casey's wedding. I wonder what she brought as a present.   (Wagner, 2006, 297)

This context makes *that she brought a high-end convertible* a live possibility, but it doesn't make it salient enough to license givenness deaccenting. For example, B cannot reply to (28)A with, "I DOUBT she brought a high-end convertible," (cf. Büring, 2019, 32). A reviewer suggests that (28) only makes us expect that the aunt will bring an expensive gift. I think this is right, but even so, this plus the fact that she brought a convertible (as is entailed by any of B's answers) implies that it should be expensive/high-end. Thus, the context in (28) including B's answer provides support

for the expectation *that she brought a high-end convertible*, which distinguishes it from a focal target that is completely accommodated. Therefore everything said below about (18) could also be said about (28). That said, I frequently use "salient" when discussing examples above and below because the contexts discussed support the relevant targets via salience.

To explore how salient targets restrict ad hoc ones, it will be helpful to complete the original convertibles pattern in (18) with one more data point in (29b). I make the various focal targets explicit.

(29)   A: Casey's aunt, who has been known to sometimes give new convertibles as presents on special occasions, is coming to Casey's wedding. I wonder what she brought as a present.
         Salient target γ: *that she brought a new convertible*   ($\gamma^{\text{a new convertible}}$)

  a.   B: She brought a $[\text{USED}]_F$ convertible.
         Ad hoc target γ': *that she brought a non-used (new) convertible*
                                                                ($\gamma'^{\text{ a non-used convertible}}$)

  b.   B: # She brought a $[\text{used CONVERTIBLE}]_F$.
         Ad hoc target γ': *that she brought something other than a used convertible*
                                                                ($\gamma'^{\text{ not a used convertible}}$)

  c.   B: # She brought a $[\text{RED}]_F$ convertible.
         Ad hoc target γ': *that she brought a non-red convertible*
                                                                ($\gamma'^{\text{ a non-red convertible}}$)

  d.   B: She brought a $[\text{red CONVERTIBLE}]_F$.
         Ad hoc target γ': *that she brought something other than a red convertible*
                                                                ($\gamma'^{\text{ not a red convertible}}$)

If the salient $\gamma^{\text{a new convertible}}$ were the only available target, then the contrast between (29a) and (29b) would be straightforwardly predicted on the account I have developed so far. (29a) truly contrasts with $\gamma^{\text{a new convertible}}$ according to (24). (29b) also truly contrasts with $\gamma^{\text{a new convertible}}$, but it is overfocused, that is, it encodes a strictly weaker focus presupposition than (29a) and so is ruled out by maximize presupposition.

But we can still ask why the ad hoc target for (29b) $\gamma'^{\text{ not a used convertible}}$ can't be used instead of $\gamma^{\text{a new convertible}}$. If it could, we would expect (29b) to be felicitous, since it is not overfocused relative to $\gamma'^{\text{ not a used convertible}}$. The reason it can't is that the salient target $\gamma^{\text{a new convertible}}$ is itself an innocently excludable alternative to (29b). Given this, it makes little sense to accommodate

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the weaker ad hoc target $\gamma'^{\,not\,a\,used\,convertible}$.[22] (29b) seems like it should contrast with the salient $\gamma^{\,a\,new\,convertible}$. Thus I propose that a salient innocently excludable γ blocks the accommodation of an ad hoc γ'.

Unlike (29b), $\gamma^{\,a\,new\,convertible}$ is not an innocently excludable alternative to the focus utterance in (29d), and so nothing I've said so far blocks (29d) from being evaluated relative to its ad hoc target $\gamma'^{\,not\,a\,red\,convertible}$. This is good, since (29d) is intuitively felicitous, and if it had to be evaluated relative to the salient $\gamma^{\,a\,new\,convertible}$, it would be incorrectly predicted infelicitous. But this now raises a puzzle: $\gamma^{\,a\,new\,convertible}$ is also not an innocently excludable alternative to (29c), so nothing I've said so far blocks (29c) from being evaluated relative to its ad hoc target $\gamma'^{\,a\,non\text{-}red\,convertible}$. But this is bad, since (29c) is intuitively infelicitous. We want to force (29c), but not (29d), to be evaluated relative to the salient $\gamma^{\,a\,new\,convertible}$.

Here is the key difference in how the salient target $\gamma^{\,a\,new\,convertible}$ relates to each of (29c) and (29d): (29c) is F-marked *as if it were supposed to contrast narrowly with* $\gamma^{\,a\,new\,convertible}$ while (29d) is not. In this sense, we can think of $\gamma^{\,a\,new\,convertible}$ as a "strong focus alternative" to (29c) but not (29d), despite that it isn't an innocently excludable alternative to either. Let's make the notion of "strong focus alternative" precise:[23]

(30)   *Strong focus alternative*:
        γ is a strong focus alternative to a constituent ϕ containing a focus $\Leftrightarrow$
        a. $\gamma \in [\![\phi]\!]^f$, and
        b.   there is no ϕ' such that $[\![\phi']\!]^f \subset [\![\phi]\!]^f$ & $\gamma \in [\![\phi']\!]^f$

A salient target γ being a strong focus alternative to a focus utterance ϕ is the second way that the use of an ad hoc target γ' is blocked. Because $\gamma^{\,a\,new\,convertible}$ is a strong focus alternative to (29c), (29c) seems like it should contrast with the salient $\gamma^{\,a\,new\,convertible}$. And then, since they don't

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[22]Note that any innocently excludable alternative will entail the most general contrastive alternative as it is defined at the end of section 4.3.

[23]The formulation of (30) is very similar to the contrast constraint in Schwarzschild (1992, 12) and Truckenbrodt (1995, 173), although it is put to very different use. There, the contrast constraint is meant to play the role that I have given to maximize presupposition here, namely enforcing that the strongest possible focus presupposition is marked. Here, the definition of strong focus alternative in (30) is merely a means of precisely identifying a relationship between a focus utterance ϕ and a non-innocently excludable salient target γ such that γ cannot be ignored.

contrast truly according to (24), the use of focus marking is infelicitous.

Upon hearing (29d), on the other hand, it is natural to assume that the red convertible is also new, that is, that $\gamma^{\text{a new convertible}}$ is true. Because $\gamma^{\text{a new convertible}}$ is not a strong focus alternative to (29d) (and also isn't innocently excludable), (29d) does not seem like it should contrast with the salient $\gamma^{\text{a new convertible}}$. So we assume B is marking the contrast with the ad hoc $\gamma'^{\text{not a red convertible}}$.

Here are the two conditions on how the contextually supported target restricts the availability of the ad hoc target, collected together.

(31)   *Constraint on ad hoc focal targets*:
       A target γ' cannot be accommodated ad hoc based on a constituent ϕ containing a focus if ϕ seems like it should contrast with a contextually supported target γ.

       a. ϕ seems like it should contrast with a contextually supported target γ iff at least one of the following is true:
            (i) γ is among the innocently excludable alternatives to ϕ
            (ii) γ is among the strong focus alternatives to ϕ

To recap: For (29a), $\gamma^{\text{a new convertible}}$ is both an innocently excludable alternative and a strong focus alternative, so (29a) seems like it should contrast with $\gamma^{\text{a new convertible}}$. And in fact it does, as it satisfies (24). For (29b), $\gamma^{\text{a new convertible}}$ is an innocently excludable alternative, so (29b) seems like it should contrast with it. And (29b) also satisfies (24), but it imposes a weaker presupposition than (29a), so maximize presupposition renders (29b) infelicitous. For (29c), $\gamma^{\text{a new convertible}}$ is a strong focus alternative, so (29c) seems like it should contrast with $\gamma^{\text{a new convertible}}$. But it doesn't satisfy (24), so (29c) is predicted to be infelicitous. For (29d), $\gamma^{\text{a new convertible}}$ is neither an innocently excludable alternative nor a strong focus alternative, so (29d) does not seem like it should contrast with $\gamma^{\text{a new convertible}}$. $\gamma'^{\text{not a red convertible}}$ is accommodated ad hoc, and it satisfies (24), so (29d) is predicted to be felicitous. Finally, we can now see why B's utterance in (25) does not seem like it should contrast with with A's: A's utterance is neither an innocently excludable alternative, nor a strong focus alternative to B's focus utterance, so the most general contrastive target, *that she brought a non-red convertible*, can be accommodated.

In summary, a focus utterance must truly contrast with its focal target, and if the focus utterance

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seems like it should contrast with a salient target, then an ad hoc one cannot be accommodated. (24) defines true contrast by making use of alternative semantics to define the set of alternatives A, and innocent exclusion to constrain them. (31) defines the relation "seems like it should contrast with". This is a pragmatic notion that may need to be expanded upon in future work, as I will return to briefly in section 6.[24] These components come together to explain the problem with (18b). The problem isn't that the color of the convertible that she brought isn't relevant. The problem is that (18b) seems like it should contrast with the salient target but doesn't, as predicted by (24) and (31).

5   The role of givenness

The ability to construct an ad hoc target when it is not blocked by a contextually supported target raises a question: Why can't focal targets just be accommodated whenever there is no contextually supported target present? The account so far seems to suggest that they can, incorrectly predicting all sorts of focus markings that aren't felicitous in the context. The answer is that there is an independent givenness condition that requires deaccented expressions to be salient, as previously argued for by various researchers (e.g. Rooth, 2015; Rochemont, 2016; Büring, 2019; Kratzer & Selkirk, 2020). Like Büring (2019), I will take prominence shifts to require the conditions of both focus and givenness to be met: There can be no focus prominence shifts without givenness deaccenting, and there can be no givenness deaccenting without focus marking.

In section 5.2, I will use this fact to explain the asymmetry in question-answer congruence between answers to constituent questions and polar questions. But first in section 5.1, I will introduce novel evidence from polarity focus that speaks in favor of having a separate givenness requirement.

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[24]One remaining puzzle is examples like (15c) and (16), where there is a salient target that is a strong focus alternative to the focus utterance, since A has just asserted the same content that B then asserts with focus. Why can these targets be ignored in favor of an accommodated contrastive target? Compare them to (i) from fn. 12 and (26), in which the content of the focus utterance is given and these salient targets cannot be ignored. The intuitive asymmetry is stark. The fact that the content of B's focus utterances in (15c) and (16) was just asserted by A, as opposed to being merely given, seems to provide an escape hatch to avoid the salient target in favor of an accommodated one. This may be because the prior assertion renders the current one irrelevant—unless the speaker intends to add more information via a focus presupposition, as suggested in section 3. And this means that we as listeners are already looking past the prior assertion for some contrastive target to accommodate that will explain why speaker B is bothering to re-assert A's proposition.

5.1 Evidence from polarity focus for distinct givenness deaccenting

The theory I have developed so far can only make different predictions for a pair of examples if they differ from one another along at least one of three dimensions: (i) the ordinary semantic value of the focus utterance ϕ, (ii) the focus semantic value of ϕ, or (iii) the focal target (the value of γ). Consider the pair of examples (32) and (33), which give rise to different intuitions, but that I will argue do not differ along any of these three dimensions.

(32)   A: Does Dinah eat cheese?
      a.   B: Dinah DOESN'T eat cheese.
      b.   B: Dinah does NOT eat cheese.
      c.   B: # Dinah DOES not eat cheese.

The ordinary semantic value of each of B's utterances in (32) is $\neg p$, and their focus semantic values are $\{p, \neg p\}$, as I will demonstrate below. According to the theory developed above, the target has to be the contrastive polarity alternative, p. (32) demonstrates that this configuration allows the pitch accent to land on *doesn't* and *not*, but not *does*.

However, if there is an overt *not* in A's question, the pattern changes:
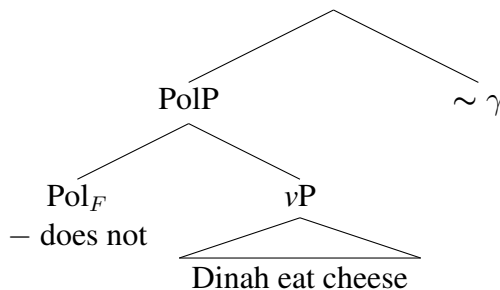
(33)   A: Does Dinah not eat cheese?
      a.   B: Dinah DOESN'T eat cheese.
      b.   B: Dinah does NOT eat cheese.
      c.   B: Dinah DOES not eat cheese.

The addition of *not* to A's question enables *not* to be deaccented in (33c), with the pitch accent landing felicitously on *does*. However, (33) does not differ from (32) along any of the three crucial dimensions: the ordinary and focus semantic values of B's utterances are the same in (33) as in (32), and the theory I proposed above again requires the polarity focal target to be the contrastive polarity alternative, p. Thus the theory developed so far does not yet explain the contrast between (32) and (33).
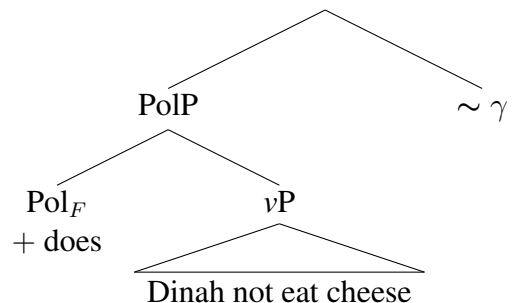
To unpack this a bit more, I am assuming that the structure of the (a) and (b) sentences differs

from that of the (c) sentences.

(34)   Syntactic structure for the (a)/(b) sen-   (35)   Syntactic structure for the (c) sen-
tences: tences:

In the (a)/(b) sentences there is an F-marked negative polarity head $-$, which contributes propositional negation at logical form, while the (c) sentences have an F-marked positive polarity head $+$, and a lower, constituent negation *not* that modifies the VP directly.[25]

However, the differences between (34) and (35) do not predict the empirical asymmetry between (32) and (33). First, the ordinary semantic values of the (a)/(b) sentences and the (c) sentences are identical on these structural assumptions. Each of them convey contradictory negation,

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[25]There is independent evidence from polar particle responses that support (34) and (35).

(i)   A: Does Dinah not eat cheese?

    a.   B: Yes, she does NOT eat cheese.
    b.   B: No, she does NOT eat cheese.
    c.   B: Yes, she DOES not eat cheese.
    d.   B: #No, she DOES not eat cheese.

On the assumption that the (a)/(b) examples in (i) feature sentential negation, while the (c)/(d) examples feature constituent negation, recent theories of polar particles such as Krifka 2013 and Roelofsen & Farkas 2015 accurately predict the intuitions in (i). A complete description of these theories would take us too far afield, especially since the difference between the two structures in (34) and (35) will not resolve the intuitive asymmetry between (32) and (33). However the interaction between polar particles and polarity focus may be of independent interest, so here is a brief explanation just focusing on (id): Krifka (2013) argues that sentences with constituent negation only introduce one propositional discourse referent with content $\neg p$. *No* in (id) can only pick this up and assert its negation, $\neg\neg p$ (i.e. p). Thus, *no* is infelicitous in (id) because it contradicts the meaning of the clause that follows it, $\neg p$. Goodhue & Wagner (2018, 10ff) more directly predict the infelicity of (id) by modifying Krifka's theory so that *no* requires its complement clause to contradict the antecedent. For Roelofsen & Farkas (2015), *no* spells out both $[-]$ and [REVERSE] features that require it to c-command a clause that either has negative polarity, or has opposite polarity and content from the antecedent clause respectively. Neither requirement is met in (id) ($[-]$'s requirement isn't met because the following clause has a positive polarity head with a lower constituent negation), so it is predicted to be infelicitous. (ia)-(ic) are accurately predicted to be felicitous by each theory. Since the accurate prediction of the intuitive interactions between polar particles and polarity focus in (i) depends on the correspondence between the prominence patterns in (32)/(33) and sentential vs. constituent negation in (34) and (35), this provides some independent evidence that these structures are on the right track.

$\neg p$, regardless of the syntactic position of *not*. For the (c) sentences, I assume the VP denotes a function, $\lambda x_e.\lambda w_s.$ *x eats cheese in* w, that characterizes the set of individuals who eat cheese. The constituent negation denotes a function, $\lambda P_{\langle e,\langle s,t\rangle\rangle}.\lambda x_e.\lambda w_s.\neg P(x)(w)$, that takes the VP as input and returns a function that characterizes its complement, the set of individuals who do not eat cheese. Once this negated property composes with the subject argument *Dinah*, the result will be the same proposition as is produced by applying propositional negation in the (a)/(b) sentences.

Second, while the focus semantic value is calculated differently for these two structures, they nevertheless both result in $\{p, \neg p\}$ because the only two focus alternatives are $+$ and $-$. The result is obvious for the (a)/(b) sentences. For the (c) sentences, since the vP denotes $\neg p$, the alternatives $+$ and $-$ each receive the proposition $\neg p$ as input, producing the propositions $\neg p$ and $\neg\neg p$ ($= p$) respectively as the resulting members of the focus alternative set. So for both (34) and (35), the ordinary semantic value is $\neg p$, and the focus semantic value is $\{p, \neg p\}$.

Third, given that the polarity focus utterances in (32) and (33) each denote $\neg p$, the focus presupposition of $\sim$ in (24) requires the same target for each of them, p. So even with the assumption that the structures of the (a)/(b) sentences differ from that of the (c) sentences, the asymmetry cannot be explained by the theory developed so far.

One solution to this asymmetry might be to take only the (a)/(b) examples as genuine polarity focus, and treat the (c) examples as verum focus. The problem for a VERUM operator approach is that VERUM is supposed to be a common ground management operator high in the left periphery of the matrix clause, but the prominence patterns explored above can be replicated in embedded contexts:

(36)　　A: Does Dinah eat cheese?
　　　　a.　　B: I don't know. But if she does NOT eat cheese, we're in trouble.
　　　　b.　　B: # I don't know. But if she DOES not eat cheese, we're in trouble.

(37)　　A: Does Dinah not eat cheese?
　　　　a.　　B: I don't know. But if she does NOT eat cheese, we're in trouble.
　　　　b.　　B: I don't know. But if she DOES not eat cheese, we're in trouble.

VERUM accounts will be discussed in more detail in section 8.

The account I will pursue is based on the idea that givenness deaccenting requires the contextual salience of the deaccented expression. The contrast between (32c) and (33c) is due to the lack of overt negation in A's question in (32) and its presence in (33).

A simple implementation of a givenness requirement distinct from focus marking based on Kratzer & Selkirk 2020 will suffice here.[26] I assume that given constituents are syntactically G-marked. G-marks impose a felicity condition on ordinary semantic values.

(38) $[\![\alpha_G]\!]^c$ is felicitous only if c provides an antecedent a such that $[\![\alpha]\!] = a$.

The requirement in (38) says that a G-marked constituent α_G presupposes a contextually given a such that a is identical to the ordinary semantic value of α. On this approach, G-marking works in tandem with F-marking. The same drive to maximize presuppositions by F-marking constituents that contrast also causes the G-marking of given constituents. In (32c) and (33c), the negative adverb *not* is G-marked (along with *Dinah*, *eat*, *cheese*, and larger sub-constituents, all of which I won't discuss further since their licensing does not vary across the two examples). The felicity condition in (38) thus requires that the context provide an antecedent meaning a that is identical to $[\![not]\!]$. This antecedent is available in A's question in (33), but not (32), thus predicting the intuitions.[27]

On this view, focal targets and givenness antecedents can be distinct, and moreover, seem to be made available in different ways. As argued in sections 3 and 4, the target for polarity focus is always the contrastive polarity alternative, even when that alternative is not overtly uttered. Thus, the target for PolF in (39a) is $\neg p$, *that Dinah does not like Ivy*, despite that that proposition has not been uttered. Meanwhile, the PolF target for (39b) and (39c) is p, *that Dinah likes Ivy*. However, one of the antecedents needed for givenness deaccenting in (39c) is *not*. Since that antecedent isn't

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[26]See Rooth 2015 for an interesting unification of the theory in Rooth 1992 with a givenness requirement. The result can explain examples like (32) and (33), as demonstrated in Goodhue 2018.

[27](38) assumes that identity is the relevant relation between G-marked expressions and antecedents, but for discussion on whether or not entailment/hyponymy is more appropriate, see Schwarzschild 1999, Keshet 2013, Büring 2016a, Rochemont 2016, and Wagner 2020.

available, (39c) is infelicitous.

(39)   A: Does Dinah like Ivy?

   a.   B: She DOES like Ivy   F-target = $\neg p$
   b.   B: She does NOT like Ivy   F-target = p
   c.   B: # She DOES not like Ivy   F-target = p, G-antecedent = *not*

What these examples show is that F-targets and G-antecedents can be distinct from one another, and that F-targets can be accommodated or constructed ad hoc in a way that G-antecedents perhaps cannot. In particular, despite that $\neg p$ is the target licensing PolF in (39a), apparently that does not mean that the denotation of *not* is available for givenness deaccenting in (39c). It seems that linguistic salience is needed to deaccent negation. Compare this to examples demonstrating cases in which non-linguistic salience is enough to license givenness deaccenting.

(40)   B sees A with a new pack of cigarettes.
        B: I thought you QUIT smoking.   (Büring, 2016a, 18)

(41)   A and B are eating a kale salad.
        A: We eat the same thing every week.
        B: I LIKE kale salad.

(42)   A: Why do you think he hasn't played soccer before?
        B: He THREW the ball into the goal.   (Wagner, 2020, 22)

In none of these examples are the deaccented expressions linguistically given. Instead, their meanings seem to be non-linguistically salient in the context as in (40) and (41), or even just accommodated or evoked as in (42). It seems intuitive that non-linguistic objects or events can make expressions denoting those objects and events salient. It is harder to imagine an aspect of non-linguistic context that could make the negation-denoting *not* salient, hence an antecedent for the givenness deaccenting of *not* in (32)/(33) does not seem to be available unless overtly uttered in the context.

An anonymous reviewer points out that negation can be felicitously deaccented even when not overtly given:

(43)   Yesterday, I heard Kim was ill, and today, SAM is not feeling well.

Note that while *not* is not overtly salient in the context (and neither is *feeling* or *well*), there is an overt expression *ill* that is a hyponym of the expression *not feeling well*. This may be what matters for deaccenting negation here. Consider the parallel polarity focus example:

(44)   A: I heard Kim is ill.
         B: Yeah, she IS not feeling well.

While (44)B is clearly felicitous, there is some flexibility in where the final pitch accent could land in this sentence. To foreshadow an issue to be explored further in section 5.2, these facts may be due to B's utterance being all-given in (44) while the second conjunct in (43) is not.

Dissociating givenness from focus allows us to explain the givenness deaccenting facts in this section while retaining the theory of focus developed in sections 3 and 4. Thus, polarity focus provides novel evidence that some amount of theoretical independence between focus and givenness marking must be maintained. In particular, we have to allow givenness to impose its own separate requirement, and to have salient antecedents distinct from the focal target. As mentioned in the introduction to this section, the distinct requirements of both focus and givenness need to be met for a prominence shift to be felicitous, which helps to further constrain the marking of focus contrasts against accommodated targets.

5.2   Obligatory and optional focus in answers

Now that we have a theory of truly contrastive focus supplemented with givenness, we're ready to return to question 2 from the beginning of section 4: Why is focus marking in answers to constituent questions obligatory, while it is optional in answers to polar questions? My account

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builds on both Büring 2019 and Kratzer & Selkirk 2020, as well as my account of the availability of focal targets in section 4.5.

Building on Büring's (2016b; 2019) explanation of answers to constituent questions, I take the focus marking in the answer to contrast against the most general contrastive target, the generalized union of the set of innocently excludable alternatives.

(45)   A: Who likes Ivy?
    a.   B: DINAH likes Ivy.
    b.   B: ?? Dinah likes IVY.

For (45a), the target is *that someone other than Dinah likes Ivy*. The contrast between this target and (45a) is relevant since when combined in a set, they produce a subquestion of the question under discussion (QUD) set up by A's constituent question (a question q is a subquestion of another question Q iff any complete answer to Q also answers q, Roberts 1996/2012, 7). Focus on the object as in (45b) does not produce a subquestion of (45)A, so is irrelevant to the QUD and therefore infelicitous.

So far so good. However, my explanation needs to go beyond this. The reason is that all of this holds for polarity focus answers to polar questions as well: The polarity contrast is relevant since the most general contrastive target is just the contrastive polarity alternative, which, when combined in a set with the answer, produces a subquestion of the polar question, namely the polar question itself. Therefore, polarity focus in answers to polar questions is predicted to be just as obligatory as answer focus in (45a), contrary to fact.

The difference depends on an asymmetry in givenness. The focus marked constituents in answers to constituent questions are not given, while the rest of the answer is, as in (45a). Pressure to mark givenness via deaccenting, combined with the fact that marking focus on the remaining non-given constituent signals a contrast that is relevant to the QUD, produces the requirement of focus marking in answers to constituent questions. This view builds on that in Kratzer & Selkirk 2020, with the difference that on my account there is no pure givenness deaccenting; all prominence

shifts must also include focus marking, as pointed out in the last section.

In answers to polar questions, on the other hand, the whole answer is given in the prior polar question. Thus givenness applies no pressure to use polarity focus. Whether the answer bears polarity focus depends on whether there is a contextually supported contrastive target. If there is one, then F-marking is preferred. We saw that this is indeed the case in (11) and (12). In answers to polar questions in unbiased contexts such as (6) and (7), there is no contextually supported contrastive target. The result is that polarity focus does not have to be marked. If the speaker takes there to be a contrastive polarity focal target, then they mark PolF, and we hearers can easily accommodate what they intend to contrast against. But if the speaker does not mark PolF, we don't bat an eye. We only notice a lack of focus marking if the context supports the contrastive target.

Now recall (9) and (10): negative answers to polar questions more naturally bear PolF than positive answers. The account just given predicts this observation, since in negative answers, the negation is not given in the question, and so there is pressure to mark givenness deaccenting on the given expressions following negation, and to mark focus on the negative polarity head. Moreover, the proposition that contrasts with the negative answer may be made salient by the positive polar question itself, providing further reason to mark the polarity contrast in negative answers to positive questions.[28]

The explanation of example after example here has depended on the salience vs. accommo-

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[28]These facts could interact with recent work on the semantics of polar questions in a few ways. One possibility is that polar questions denote sets of their positive and negative answers $\{p, \neg p\}$, but they make only their prejacent proposition salient due to it being uttered overtly (cf. Roelofsen & Farkas's (2015) formal highlighting algorithm). Another possibility is that polar questions at least sometimes denote singleton sets of their prejacent, $\{p\}$, which would be responsible for making only p available as the salient contrastive target (see e.g. Roberts, 1996/2012; Biezma & Rawlins, 2012; Truckenbrodt, 2012; Krifka, 2015, a.o.). Nathan Klinedinst (p.c.) points out that if we were to take polar questions to *always* denote singleton sets that make only their prejacents salient, then it would be possible to maintain a disjunctive focus presupposition as in (3) (with the individual case presupposition (3b) sufficiently strengthened to explain the true contrast data discussed in section 4). On such an analysis, polar questions would never satisfy the set case presupposition (3a), thus avoiding the incorrect prediction discussed in section 2 that answers to polar questions should always bear PolF. Then, the individual case presupposition would correctly predict the patterns just discussed. Meanwhile, the set case presupposition would still be available to explain obligatory focus marking in answers to constituent questions. This route may be of interest to those who wish to maintain the Roothian view of focus in answers to constituent questions. I prefer the account I have developed above both because I am not convinced that polar questions should be modeled as singleton sets (in fact, I have crucially reserved that denotation for declaratives elsewhere, Goodhue 2021), and because a unified account in which all focus marking is subject to a single true contrast requirement, including answers to constituent questions, is more parsimonious.

dation of focal targets. If there is a contextually supported target, focus needs to be marked. In the absence of such a target, givenness deaccenting can clinch a prominence shift as in answers to constituent questions. But absent that, the prominence shift seems to be up to how the speaker views the context. If they view their utterance as contrastive then they mark focus; if not, they don't.

6 Conclusion to Part I

Part I began by considering the prospects for explaining polarity focus phenomena within a general theory of focus. This raised the question of why focus in answers to constituent questions is obligatory, while polarity focus in answers to polar questions is not. Further data suggested that polarity focus is always contrastive, and that its use in answers to polar questions depends on the contextual availability of the required contrastive target.

But this tentative explanation raised questions that go to the heart of a general theory of focus. Why would polarity focus be required to be understood contrastively, that is, why can't it be subject to Rooth's set case presupposition in (3a)? Do we need to retain the set case presupposition, or can we simplify the theory of focus? What is the nature of focal targets such that they could be optionally available in some cases? What makes focus marking obligatory in the first place?

The approach I took to getting a handle on the seemingly contrastive nature of polarity focus was to expand the empirical landscape under consideration to include examples from the literature on true contrast (Wagner, 2006, 2012; Katzir, 2013; Büring, 2016b, 2019). This led me to propose a strengthened focus condition based on innocent exclusion, and to argue that contextually supported focal targets can restrict the accommodation of ad hoc targets. The result rethinks the general theory of focus, doing away with a Roothian set case presupposition and treating all focus marking as requiring true contrast, which explains why polarity focus is always contrastive.

I also showed that polarity focus provides novel data motivating a distinct requirement on givenness deaccenting, which in turn explains why focus in answers to constituent questions is

obligatory while in answers to polar questions it is optional. The constituents that dominate the constituent in the answer corresponding to the interrogative pronoun in the question are not given, while the rest of the constituents in the answer are given. Moreover, marking focus on the non-given constituent in the answer marks a contrast that is relevant to the question, and so due to both focus and givenness it must bear the pitch accent. Many answers to polar questions on the other hand are all-given, and so whether polarity focus is marked depends entirely on whether the speaker takes there to be a contrastive polarity target available.

There are a few avenues for future work. One is that the account above was constructed relative to English and can likely be applied to Germanic languages more broadly, but an exploration of truly contrastive focus crosslinguistically is still needed. As a starting point, note that truly contrastive focus is distinct from Kiss's (1998) "identificational focus". The latter involves syntactic movement that results in an exhaustive interpretation in many languages (Hungarian, English, Romanian, Italian, Catalan, Greek, and Arabic). This is incompatible with the argument in section 4.2 that true contrast does not require exhaustivity. Instead, the true contrast requirement proposed above holds on what Kiss calls "information focus", and whether it holds in a broader range of languages still needs to be explored.[29]

Second, more work on the availability of focal targets is needed. How a speaker understands the context affects what they say and how they say it. The principle of maximize presupposition should force speakers to mark presuppositions when they can. Cases of optional presupposition marking therefore raise questions. I have attempted to address those questions for polarity focus here. The idea is that, if there is no salient or contextually inferable contrastive focal target, a speaker may nevertheless have one in mind. If so, then maximize presupposition will force them to mark focus in the appropriate way, and the listener will have to accommodate the correct focal target, or the most general contrastive focal target. From the listener's perspective, the use of focus marking appears optional. But from the speaker's perspective, it may not be optional at all.

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[29]Kiss also discusses crosslinguistic variation on whether or not identificational focus is necessarily contrastive, but her notion of contrast is distinct from true contrast. For Kiss, if identificational focus is "contrastive", it means that the focal target is required to be contextually salient. See Repp (2010, 2016) for discussion of the crosslinguistic picture and notions of contrastive focus distinct from true contrast.

As mentioned in section 4.5, the constraint on ad hoc focal targets in (31) is a first step that may need to be revisited. For example, all relevant examples above have falling intonation. What about other contours? Consider (46), which features the rise-fall-rise contour (RFR; Ward & Hirschberg, 1985, a.o.).

(46)   A: Did Jane buy a new convertible?
        B: She bought a RED convertible.
                        L*+H   L-H%

(46) is perfectly felicitous, but if we take *red* to be F-marked, then it is predicted to be infelicitous on the account developed above. One possibility is that the true contrast requirement in (24) does not apply to all focus marking: different contours would impose different requirements on the context, and the account above would not apply to the RFR.[30] However, another possibility is that (24) *does* apply to all focus marking including (46), and the RFR contributes a meaning that modulates the ability to construct ad hoc targets, complicating the constraint laid out in (31). That is, B's RFR utterance in (46) truly contrasts against the ad hoc target *that she brought a non-red convertible*, and the RFR plays a key role in allowing that contrast to occur, despite that A's question makes a different strong focus target salient, perhaps by implying something about the salient target like "I'm not sure whether it is new or not". A full account of the meaning of RFR and how it interacts with focus is beyond the scope of this paper, and I leave it to future work.

Finally, (24) employs innocent exclusion as a check on which alternatives count, much like EXH, without then excluding those targets, unlike EXH. This suggests that innocent exclusion may serve as a general filter on what counts as a valid alternative, regardless of what an operator then goes on to do with those alternatives. EXH excludes them. $\sim$ requires one to be available as a focal target.

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[30]Cf. several accounts that have taken contour to interact with focus marking (e.g. Büring, 2003; Steedman, 2014; Westera, 2017; Schlöder & Lascarides, 2020).

Part II

Verum focus as polarity focus

7 Explaining the emphatic effect of polarity focus

Höhle (1992) and others since (Richter, 1993; Romero & Han, 2004; Gutzmann & Castroviejo Miró, 2011; Wilder, 2013; Taniguchi, 2017; Gutzmann et al., 2020) have claimed that polarity focus utterances give rise to the intuition that the speaker emphasizes the truth of their propositional content. Some researchers have taken this as evidence that polarity focus data cannot be explained by a general theory of focus, claiming that focus theory has nothing to say about this emphasis on truth inference. Instead, polarity focus must signal the presence of an operator whose semantics is responsible for this emphasis (Romero & Han, 2004; Gutzmann & Castroviejo Miró, 2011; Taniguchi, 2017; Gutzmann et al., 2020). Given this line of argument, it is incumbent on a theory of polarity focus as focus to offer an explanation for this pragmatic effect. My explanation is a specific instance of a more general fact about focus marking: Using focus marking to signal a contrast between the focus utterance and its target can have pragmatic effects. That is, information structural packaging impacts meaning.

Here is an example of the intuitive asymmetry to be accounted for:[31]

(47) A: Are you happy?

    a. B: I AM happy.
          ⤳ B emphasizes the truth of the proposition *that B is happy*

    b. B: I'm happy.
          ⤳̸ B emphasizes the truth of the proposition *that B is happy*

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[31]The intuition about emphasis on truth is not as sharp as more typical intuitions about e.g. truth vs. falsity, or felicity in a context. For example, if B produces (47b) with a contrastive L+H* pitch accent on *happy*, it is not immediately obvious that they are less emphatic about the truth of the proposition *that B is happy* than they are when they use PolF in (47a). See Ladd 2008, p. 40, on the general difficulty of determining whether distinctions in emphasis are linguistic or paralinguistic. Despite this murkiness, the centrality of the truth emphasis intuition in the verum focus literature means it needs to be addressed here.

If polarity focus is reducible to a more general theory of focus, then the inference in (47a) cannot be hardcoded into "the meaning of polarity focus". It has to be derived via the pragmatics. Since the only difference between (47a) and (47b) is PolF, PolF must provide some extra input to the pragmatics that produces the contrast. Richter (1993, 18) suggests the following: "[T]he proposition of a sentence with verum focus [...] is not merely confirmed but especially emphasized by expressing the opinion that it is false to confirm its negation." In other words, PolF *somehow* emphasizes the propositional content of an utterance by claiming the falsity of its negative alternative. The question is, how? After all, if a speaker asserts p, it follows that they take $\neg p$ to be false, so there is no predicted asymmetry in emphasis between a PolF utterance like (47a) and a regular assertion like (47b). Wilder's (2013) explanation of emphasis faces a similar challenge. Wilder claims that the target of PolF is the polar question $?p$, and emphasis arises because the PolF utterance answers $?p$ with p, thereby eliminating its negative alternative $\neg p$. Again, this predicts no asymmetry between (47a) and (47b), since (47b) also answers $?p$ with p, thereby eliminating its negative alternative $\neg p$.

I explain polarity focus emphasis as follows: I have argued that PolF requires a contrastive polarity target. So what a PolF utterance with content p adds, above and beyond a non-PolF utterance, is that it references $\neg p$ via focus marking. PolF emphasis arises because a PolF assertion of p like (47a) contradicts the contrastive polarity alternative $\neg p$, while also targeting $\neg p$ focally. A non-PolF assertion of p like (47b) also contradicts $\neg p$, but it has not targeted $\neg p$ via information structure. Using focus to signal that your assertion of p contrasts with the focal target $\neg p$ while also entailing that it is false produces the intuition that the truth of p is emphasized.

This account predicts that emphasis is not restricted to polarity focus. All that is required is that one utterance entails the falsity of a contrasting alternative, and focus signals the contrast between the utterance and the false alternative. For example:

(48)   A and B are arguing about whether Dinah or Moira likes Ivy more.
        A: Moira likes Ivy more.
        B: DINAH likes Ivy more.

⤳ B emphasizes the truth of the proposition *that Dinah likes Ivy more*

B's utterance entails the falsity of the sole, salient alternative required by the focus structure of the utterance, thereby emphasizing the truth of the content of her utterance. This effect is not intuitively different from the emphasis effect of PolF:

(49)   A: Dinah doesn't like Ivy.
         B: Dinah DOES like Ivy.
         ⤳ B emphasizes the truth of the proposition *that Dinah likes Ivy*

Emphasis does not necessarily depend on assertion. Consider Wilder's demonstration of PolF on a proposition that is presupposed.

(50)   A: If only Sue hadn't left her husband.
         B: I was surprised that she DID leave her husband.   (Wilder, 2013, 153)

In (50), A and B presuppose the proposition *that Sue left her husband*, and this presupposition entails the falsity of the proposition *that Sue did not leave her husband*. Despite that this information is presupposed, the information structure of B's utterance references this false alternative while presupposing its converse, producing the pragmatic effect of emphasis.

In summary, focus marking conveys information structure, and information structure has pragmatic effects. The pragmatic effect of claiming p while targeting the opposing $\neg p$ via information structure is to emphasize the truth of p. That is, emphasis on truth is just signaling contrast with a focus alternative via information structure while claiming the truth of a proposition that (contextually) entails the falsity of that alternative. This is how emphasis on truth can be explained by appealing to the basic notions of focus marking, without use of a VERUM operator.

8 Comparison to VERUM focus accounts

Instead of accounting for polarity focus fully within a general theory of focus as I have done above, some researchers take emphasis on truth as the point of departure, and posit a notion "verum focus" that is distinct from polarity focus and that may not be focus at all. On this view, prominence on the auxiliary in Germanic languages is ambiguous between polarity focus and verum focus. The latter is handled by a VERUM operator with a semantics that explains optionality in reply to polar questions, the contrast requirement, and emphasis on truth. In the following, I briefly review two VERUM accounts from the literature and compare them to the focus account.

8.1 Romero & Han 2004, and a challenge for unifying verum focus and high negation

Romero & Han's (2004, R&H) account is based in part on the empirical observation that polar questions with polarity focus such as (51) and those with preposed negation such as (52) both convey epistemic bias.

(51)   B: Ok, now that Stephan has come, we are all here. Let's go!
        A: Wait, Jane's coming too.
        B: IS Jane coming?
        ↝ B previously believed that Jane isn't coming

The epistemic bias of B's polarity focus question in (51) can be characterized as a speaker belief that the answer with opposite polarity from the question is true.

(52)   A: Ok, now that Stephan has come, we are all here. Let's go!
        B: Isn't JANE coming?
        ↝ B previously believed that Jane is coming   (Romero & Han, 2004, 610)

I will call polar questions with preposed negation like B's in (52) *high negation questions*. B seems to be epistemically biased here as well, this time toward the positive answer.

R&H analyze both kinds of questions as containing verum focus, and propose a VERUM operator that is meant to explain the distribution of both high negation and verum focus, as well as epistemic bias in questions containing them. Here is the operator's semantics:

(53) $[\![\text{VERUM}]\!] = \lambda p_{\langle s,t\rangle}.\lambda w_s.\forall w' \in Epi(w)[\forall w'' \in Conv(w')[p \in CG_{w''}]]$
(Romero & Han, 2004, 627)

According to (53), VERUM says that in all worlds w' compatible with what is known in w ($Epi(w)$), the worlds w'' compatible with the conversational goals in w' ($Conv(w')$) are such that p is in the common ground in those w'' worlds ($CG_{w''}$). This semantics captures emphasis on truth: VERUM(p) goes beyond a regular assertion of p by making explicit reference to the speaker's epistemic state and conversational goals, thus insisting on the truth of p. R&H take this to be a crucial feature distinguishing verum focus from non-verum uses of polarity focus. This is similar to my proposal in section 7 in that explicit reference to something implicit in non-verum focus utterances is held responsible for emphasizing truth.

To explain the restricted distribution of verum focus, R&H argue that by making reference to conversational goals, utterances with VERUM are meta-conversational moves, which makes them subject to the following constraint:

(54)   Principle of Economy:
         Do not use a meta-conversational move unless necessary (to resolve epistemic conflict or
         to ensure Gricean Quality).   (Romero & Han, 2004, 629)

Due to the constraint in (54), VERUM can only be used when p conflicts with an interlocutor's epistemic state, or when the speaker's evidence for p is not strong enough to satisfy Gricean Quality. (54) is meant to block VERUM from being used out of the blue. The conversation in (55), however, is in a state of epistemic conflict over p, so according to (54) VERUM is licensed, and by (53), B is saying that p is in the common ground in all worlds compatible with B's conversational goals, given her epistemic state.

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(55)   A: Jane didn't discover the theorem.
             B: Jane DID discover the theorem.

Thus, (54) can explain why verum focus is not obligatory in answers to polar questions, and why presence of a contrast in the context improves verum focus, and may even make it required.

The second half of the parenthetical in (54) is designed to explain the felicity of high negation questions in suggestion contexts. For example:

(56)   A: Who discovered the theorem?
             B: Didn't JANE discover it?

The bias of B's question conveys that she believes that Jane discovered the theorem, which would answer A's question. R&H argue that B didn't assert *Jane discovered it* because her evidence was not good enough to respect Gricean Quality. The use of VERUM in the form of the high negation question enables B to suggest an answer while avoiding asserting something she doesn't have strong enough evidence for.

Now I will show that Romero & Han's theory of VERUM neither supplies sufficient nor necessary conditions on the use of polarity focus. Note that R&H assume that only some instances of what I would call polarity focus include the VERUM operator. Nevertheless, seeing why the theory cannot account for PolF will help us compare it to my positive proposal, while revealing the drawbacks of treating verum focus as a unique phenomenon.

First, to see that VERUM does not supply a sufficient condition for PolF, reconsider suggestion contexts. While VERUM is predicted to be felicitous in (56), note that polarity focus is not felicitous:

(57)   A: Who discovered the theorem?
        a.   B: # DIDN'T Jane discover it?
        b.   B: # DID Jane discover it?

Neither (57a) nor (57b) are felicitous in this suggestion context. Though R&H's theory predicts

that the context is sufficient to license the use of VERUM, the context is apparently not sufficient to license the prominence shift that marks verum focus. The reason is that verum/polarity focus, like other kinds of prominence shifting, requires givenness antecedents to deaccent material following the auxiiliary, but there is no antecedent for *Jane* in the context.

Here is another example of a suggestion context that licenses high negation but not polarity focus:

(58)   Dialog between two editors of a journal in 1900:
        A: I'd like to send this paper out to a senior reviewer, but I'd prefer somebody new.

  a.   B: Hasn't FREGE not reviewed for us? He'd be a good one.

                                                                (Romero & Han, 2004, 619)

  b.   B: # HAS Frege reviewed for us? He'd be a good one.

R&H use this example to demonstrate the felicitous use of a high negation question like (58a) in a suggestion context. This question expresses bias toward the negative answer *that Frege has not reviewed for us*, and is claimed to meet the constraint in (54) by ensuring Quality. However, note that the polarity focus question in (58b) is supposed to convey the same bias but is intuitively infelicitous. The reason cannot be that VERUM is not predicted to be licensed here, since it is predicted to be licensed in (58a).[32] Again, my view is that the prominence shift is not licensed

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[32]R&H argue that only certain verum focus questions can be used in suggestion contexts like (58). The key condition is that B cannot ask A about a proposition that A has just claimed to be ignorant about. For example, A's utterance in (58) raises the implicit QUD "Who hasn't reviewed for us?". By raising this question, A conveys that she doesn't know the answer to it, namely she doesn't know any (relevant) individuals such that they did not review for them. Let's refer to propositions representing such answers as $\neg p$. This leaves open the possibility that A does know some propositions of the form p, namely A may know some individuals who have reviewed for them. R&H observe that it would be infelicitous for B to ask (i) in this context.

(i)   [Context as in (58)]
        B: # Hasn't Frege reviewed for us?

Their proposed explanation is that (i) asks A to confirm an answer $\neg p$, *that Frege has not reviewed for us*, to the implicit QUD, a proposition A has just implied that she is ignorant of. (58a) on the other hand is felicitous because B is asking A to confirm $\neg\neg p$, *that it's not the case that Frege has not reviewed for us*, i.e. *that Frege has reviewed for us*, a proposition of the form p that A may possibly know. I'm skeptical of this explanation since it is in opposition to the clear intuition that by asking (58a), B asks A to confirm *that Frege has not reviewed for us*. We can set this intuition aside however, since my point here is that R&H's proposed explanation for the asymmetry between the two high negation questions (58a) and (i) cannot be extended to explain the infelicity of (58b). By R&H's own lights, (58b) should pattern with (58a) as it asks A about a proposition p, which she may well know. The asymmetry between (58a)

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because an antecedent is missing.

So far the evidence that (54) is not sufficient to explain the distribution of polarity focus has come only from suggestion contexts. However there are also epistemic conflict contexts that license high negation but not PolF:

(59)   A: Ok, now that Stephan has come, we are all here. Let's go!
   a.   B: Isn't JANE coming too?   (Romero & Han, 2004, 610)
   b.   B: # ISN'T Jane coming too?

(59a) is felicitous, and R&H's theory explains this by claiming that VERUM is licensed by epistemic conflict between B's belief that Jane is coming, and A's contextually implied belief that she is not. However, the same question with a polarity focus prominence shift in (59b) is not felicitous. Again, the proper antecedent is lacking.

R&H do not say whether they expect every context in which VERUM is felicitous to also be one in which polarity focus is felicitous. The preceding examples demonstrate that they aren't. The economy constraint in (54) that is meant to regulate the use of VERUM does not provide a sufficient condition for the use of polarity focus. A possible solution to this issue might be to say that verum/polarity focus has extra licensing requirements in addition to those imposed by the presence of the meta-conversational operator VERUM. Perhaps it is also subject to the requirements of a general theory of focus marking and givenness deaccenting.

However it turns out that Romero & Han's economy principle in (54) also does not impose a necessary condition on the use of polarity focus. There are felicitous examples of PolF that do not seem to meet the restrictions laid out in (54).

(50)   A: If only Sue hadn't left her husband.
        B: I was surprised that she DID leave her husband.   (Wilder, 2013, 153)

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and (58b) will have to be explained by other means. I suggest it is that (58b) is a kind of focus, thus requires focus and givenness antecedents, while (58a) is not and so does not.

(60)   A: Yesterday, Jolene didn't pitch the tent. What happened today?
        B: Jolene DID pitch the tent.

In neither of these examples is there any epistemic conflict between A and B. Moreover, since ensuring Quality only applies to verum/polarity focus in questions, it is irrelevant here. Thus, the constraint in (54) does not provide a necessary condition on the use of verum/polarity focus.

Since R&H do not take all instances of auxiliary prominence to be verum focus, a possible explanation for (50) and (60) is that they aren't subject to (54) because they do not include a VERUM operator. However, this rebuttal is challenged by the fact that (50) and (60) display the emphasis on truth effect, one of the key phenomena that R&H's VERUM operator is meant to explain. Thus, the claim that (50) and (60) lack a VERUM operator would leave an undesirable gap in the account's empirical coverage.

Taking the above challenges together, and given that I developed an account that provides complete explanations for the phenomena associated with both PolF and verum focus without any appeal to a special VERUM operator, I believe that the VERUM operator is not needed to account for polarity/verum focus. An account purely in terms of focus, givenness, and general pragmatic principles provides a more empirically accurate and parsimonious account.

There is the remaining issue of epistemic bias in polar questions such as (51) and (52), for which R&H provide a unified account. While a complete discussion of epistemic bias is beyond the scope of this paper, it will be helpful to consider empirical asymmetries that speak against a unified account. We have already seen one asymmetry: polarity focus questions require givenness antecedents in a way that high negation questions do not. There is another asymmetry: bias in PolF questions is context dependent, whereas bias in high negation questions is necessary and triggered by the preposing of negation.

(61)   B wants to know whether Jill will be at a meeting for members of a club. But B lacks an opinion about whether Jill is a member.
B: Will Jill be at the meeting?
A: If she's a member, she will.

   a.   B: IS she a member?
        ↛ B believed she isn't a member
   b.   B: # ISN'T she a member?
        ⤳ B believed she is a member

The context in (61) stipulates that B is unbiased with respect to whether or not Jill is a member. The verum/polarity focus question in (61a) is compatible with this stipulation. The high negation question in (61b) is not compatible with it. It seems that (61b) *must* convey a bias and so is infelicitous in the context. The two asymmetries lead me to conclude that the bias of verum/polarity focus questions and that of high negation questions require separate theoretical accounts. See Goodhue 2018, under review for further discussion.

I have argued that verum focus should be subsumed under polarity focus, and that PolF should not be accounted for via R&H's VERUM operator. This claim is consistent with R&H's claim that a VERUM-like operator is present in high negation questions, but it also calls into question the particular truth-emphasizing semantics of VERUM that R&H posit. For a related but alternative view of the crucial operator in high negation questions, see Goodhue 2018, under review.

8.2   Gutzmann et al. (2020), and a challenge for non-focus, operator accounts

Gutzmann & Castroviejo Miró (2011, G&C) analyze verum focus as a use-conditional operator that takes a proposition p as input and conveys that the speaker wants to answer the polar question $?p$ so that it is no longer the QUD.

(62) $[\![\text{VERUM}]\!](p) \approx$ The speaker wants to answer the QUD $?p$.

                                                         (Gutzmann & Castroviejo Miró, 2011, 160)

This explains the fact that verum/polarity focus cannot be used out of the blue since the question $?p$ already needs to be the QUD in order to use VERUM. Moreover, treating VERUM as a use-conditional operator explains why verum/polarity focus does not affect the at-issue content of an utterance, much like the presuppositional focus account I developed above.

G&C also argue that (62) explains why verum focus emphasizes truth, since asserting p while also using a special operator to signal the desire to answer $?p$ results in a "double assertion" that has the effect of emphasizing that p is true. However, it is not clear that assertions of p without VERUM are any less explicit about signaling a desire to answer a salient question $?p$. Just like Wilder's (2013) account of emphasis, G&C's does not clearly explain what PolF adds above and beyond a non-PolF utterance.

Another challenge for G&C's account is that it makes similar if not indistinguishable predictions from accounts such as Wilder 2013 or Samko 2016a, since both claim that verum/polarity focus requires a polar question $?p$ as antecedent. The first problem this creates for G&C is that it is unclear why a special VERUM operator is needed if an independently motivated general theory of focus delivers the same results. The second problem is that, just like focus accounts that take $?p$ to be the target, while G&C's account explains why verum/polarity focus cannot be used out of the blue, it does not explain why it is optional in response to overt polar questions.

Gutzmann et al. (2020, GHM) recognize that G&C's account is more or less indistinguishable from a focus account that takes $?p$ as target. To improve on it, GHM say that VERUM should impose a stronger felicity condition than the one in (62). The guiding idea is that verum/polarity focus requires that an interlocutor has previously sought to answer $?p$ with $\neg p$, or has at least implied this possibility. They propose the following semantics:[33]

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[33]There is a way of reading "prevent" in (63) that causes it to fail to deliver on GHM's guiding idea: A speaker could want to prevent the QUD from being answered with $\neg p$ even if no one has previously suggested that $?p$ be answered with $\neg p$. For example, if A asks $?p$ and B wants to answer it with p, this could be taken to imply that B wants to prevent $?p$ from being answered with $\neg p$, given that p and $\neg p$ are contradictory. On this way of understanding "prevent" in (63), (62) may actually be stronger than (63). First, any speaker who wants to answer $?p$ with p wants to prevent it being answered with $\neg p$, thus when (62) is met, (63) is met. And second, if a speaker believes that neither the truth of p nor $\neg p$ has been established, then they could want to prevent $?p$ from being answered with either proposition, thus meeting the condition set out in (63) but not (62).

(63) $[\![\text{VERUM}]\!](p)$ is felicitous if the speaker wants to prevent that the QUD is answered with
         $\neg p$.   (Gutzmann et al., 2020, 39)

GHM assume that the prevention of an action requires a previous attempt to perform that action to have been made. I make this explicit in (64).

(64) $[\![\text{VERUM}]\!](p)$ is felicitous only if an interlocutor has previously sought to answer $?p$ with
         $\neg p$, or has at least implied this answer.

(64) places a stronger requirement on the context than (62).[34] (64)'s requirement is similar to the focus presupposition of the account I developed in sections 3 and 4 in that both require contrast against a salient or accommodated contrastive alternative. However, GHM's proposal is meant to be stronger in that it requires an interlocutor to want to answer $?p$ with the opposing polarity alternative. I think this is too strong, given that I believe that auxiliary prominence can optionally be used in reply to polar questions even when no interlocutor has committed to (or implied commitment to) the opposing alternative, such as in (1a). We have seen other examples as well in which the condition in (64) is too strong, such as (15c), (16), and (50).

Still, GHM note that (64) is a preliminary sketch, and it is at least possible that it could be extended to handle such examples and others that the focus account predicts. I think this points to a more general problem in distinguishing these accounts, which is that it will be hard, perhaps impossible, to distinguish an account that requires the contrastive alternative as a focal target from one that requires an interlocutor (real or imagined) to try to answer, or merely imply an answer, $\neg p$ to an issue $?p$. This is because both accounts will likely need to rely on a process of accommodation to explain some relevant examples, and where my account requires accommodation of $\neg p$, GHM's would require accommodation of a hypothetical interlocutor who is leaning toward $\neg p$.

Luckily, examples of embedded verum/polarity focus provide a further opportunity to distinguish VERUM operator accounts like GHM's from a focus account.

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[34]A further requirement that "the speaker wants to answer $?p$ with p" could be added to (64) to make it more parallel to (62), though it is perhaps already implied by the usual pragmatics of an assertion of p, so I leave it out.

(65) A: Jill doesn't like cheese.
　　　 B: I didn't say that she DOES like cheese.

(66) A: Did Jack do his homework?
　　　 B: I don't know. But if he DID do his homework, he can have a treat.

In (65), the clause embedded under *say* has verum/polarity focus, while in (66), the clause embedded in the antecedent of the conditional bears verum/polarity focus. However, it is quite clear that speaker B is not trying to answer $?p$ with p as predicted by G&C's proposal in (62), nor is B trying to prevent $?p$ from being answered with $\neg p$ as predicted by GHM's proposal in (63). Thus these accounts cannot explain the presence of verum/polarity focus here.

However, the focus account does, since the proper targets for F-marking of the polarity heads of the embedded clauses, as well as all the relevant givenness antecedents, are available. Moreover, there is obviously no emphasis on truth in the embedded clauses here, since in each case, B clearly is not committed to the truth of the verum/polarity focus clause. This is predicted by the account I developed in section 7, since emphasis on truth only arises in contexts in which the speaker asserts or otherwise commits to p while targeting $\neg p$ via information structure. This shows that emphasis on truth is not central to the phenomenon, contrary to the implications of calling it "verum", and that it should be handled within the broader theory of focus.

Examples of embedded verum/polarity focus reveal a problem for the general approach that undergirds VERUM operator accounts like Gutzmann & Castroviejo Miró 2011 and Gutzmann et al. 2020, as well as Romero & Han 2004, Repp 2013, and Taniguchi 2017. Such accounts all treat the effects of verum/polarity focus as managing the common ground or updating contexts with the content of the verum/polarity focus utterance.[35] That is, they analyze verum/polarity focus as being about the pragmatic effects of the speaker's view that the argument of VERUM is true (or in

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[35]In the case of Repp's FALSUM operator, the content of the clause embedded under negation is denied admission to the common ground. Examples like (36), (37) and (i) demonstrate that FALSUM faces the same challenge as VERUM:

(i) A: Jill likes cheese.
　　　 B: I didn't say that she DOESN'T like cheese.

the case of FALSUM, false). Embedding examples like (36), (37), (65) and (66) challenge this view. VERUM operator accounts can be shielded from such data if it is assumed that these embedded clauses do not exhibit verum focus, but rather polarity focus, and the two are distinct phenomena. This is perhaps a viable route to take, but then much of focus theory needs to be recreated within the felicity conditions of the VERUM operator for matrix verum focus, as I have shown repeatedly above. Moreover, I have shown that treating polarity focus as focus already provides all the tools needed to offer a unified account, including a context sensitive analysis of emphasis on truth, thus the replication of focus effects by a VERUM operator are unnecessary.

8.2.1 Gutzmann et al.'s (2020) crosslinguistic argument

The main thrust of Gutzmann et al. 2020 is a crosslinguistic argument in favor of using a VERUM operator instead of focus. GHM argue that the sorts of contexts that elicit verum/polarity focus in English and German elicit non-focus, overt operators in Gitksan, Chadic (Bura, South Marghi, and Hausa), and Kwak'wala. GHM take the data from these languages as evidence that *all* languages employ a VERUM operator. They claim that in English and German, VERUM is realized by a pitch accent on the auxiliary that only accidentally looks like focus prominence shifting.

The crosslinguistic evidence brought to light by Gutzmann et al. (2020) is an important contribution. At the same time, given all of the ways in which verum/polarity focus in English and German appears to be subject to the usual requirements of focus and givenness, I urge caution before deciding in favor of an operator account for Germanic on the basis of evidence from other languages. After all, it is possible for different languages to make use of different grammatical constructions to achieve similar functional ends. Even within English, contexts that elicit verum/polarity focus may also elicit other grammatical constructions and intonations. For example, Goodhue et al. (2016) demonstrate experimentally that contexts in which one interlocutor directly disagrees with another reliably elicit both verum/polarity focus and the contradiction contour (Liberman & Sag, 1974). For another example, consider the relationship between verum/polarity focus and the adverb *really*. Romero & Han (2004) argue that both of these contribute a VERUM

operator. However, the two phenomena exhibit the following asymmetries:

(67)   A: Did you buy yogurt?

     a.   B: I DID buy yogurt.
     b.   B: # I really DID buy yogurt/I really bought yogurt.

(68)   B wants to know whether Jill will be at a meeting that is for members only. But B lacks
     an opinion about whether Jill is a member.
     B: Will Jill be at the meeting?
     A: If she's a member, she will.

     a.   B: IS she a member?
     b.   B: # Is she really a member?

While answering a polar question as in (67) allows for the use of verum/polarity focus, *really*

is strange in this context. If we keep in mind that in the context in (68), B has no opinion about

whether or not Jill is a member, then the use of verum/polarity focus in (68a) is perfectly felicitous,

while the use of *really* in (68b) is quite strange. The latter seems to necessarily convey that B has

some previous reason to doubt that Jill is a member, which clashes with the context.

     GHM also note this asymmetry. Consider (69), which doesn't license verum/polarity focus.

Interestingly, *really* appears to be felicitous here:

(69)   A: Hey Blair, I have to ask you something:

     a.   #ARE morphemes a part of syntax?
     b.   Are morphemes really a part of syntax?   (Gutzmann et al., 2020, 17, fn. 7)

Verum/polarity focus is infelicitous in (69a) because the proper givenness antecedents are not

present in the context. (69b) does not impose such a requirement. Nevertheless, *really* does seem

to impose its own requirements. In particular, we infer that A is skeptical that morphemes are a

part of syntax (negative bias), and we accommodate that A has heard someone make this claim.

Interestingly, Blair doesn't need to have heard the claim being made, but can accommodate it

too. (69a) on the other hand isn't licensed by this accommodation. What these asymmetries re-

veal is that, despite the similarity in function between verum/polarity focus and *really* in English, the two are nevertheless distinct grammatical phenomena that come apart when examined more closely. The point here is that, given the grammatical variation for achieving similar functional ends within a single language, it is not immediately obvious that the crosslinguistic evidence adduced by GHM leads to the conclusion that verum/polarity focus in English and German is not a focus phenomenon.

It would be fruitful to see how Gitksan, Chadic, and Kwak'wala behave with respect to embedding examples like (65) and (66). If they make use of the same strategies reported in matrix contexts by Gutzmann et al. (2020), that suggests that whatever these operators contribute, it is unlikely to be the semantics proposed in (63). On the other hand, perhaps these embedded contexts will produce behavior very different from that seen in the matrix contexts. If so, this suggests that the discourse operator approach might be on the right track for these languages. These questions are left to future research.

9   Conclusion to Part II

In Part II, I turned to challenges for my account of polarity focus from the verum focus literature. I showed how a general theory of focus as contrastive focus could be used to explain why polarity focus seems to emphasize truth in many cases. The explanation is a novel instantiation of a general fact, which is that marking an utterance as standing in contrast with a target in a particular way has pragmatic implications. Then I showed that theories of verum focus fall short in their ability to explain polarity focus phenomena, and that they duplicate much of focus theory within the felicity conditions for the proposed VERUM operators. I believe that once we have a proper general theory of focus, and its application to polarity focus is clearly demonstrated, we don't need VERUM operators in order to explain the phenomena associated with polarity focus discussed in this paper.

Acknowledgements

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