Focus Association by Movement: Evidence from Tanglewood

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We argue for the existence of covert focus movement in English focus association with *only.* Our evidence comes from *Tanglewood* configurations of the form in Kratzer 1991. We show that Tanglewood configurations are sensitive to syntactic islands, contrary to Kratzer's claims and predictions. We propose that Tanglewood configurations always involve covert movement of the focused constituent—possibly with covert pied-piping—to bind a bound variable in the ellipsis site. This availability of covert pied-piping explains examples such as Kratzer's where the Tanglewood construction appears to be island-insensitive. We show that covert focus movement is long-distance and not simply Quantifier Raising. Kratzer's proposal that ellipsis enforces the identity of focus indices and several other previous approaches are shown to overgenerate Tanglewood readings.

Keywords: association with focus, *only*, covert focus movement, covert pied-piping, island sensitivity, variable binding

This article studies the mechanism of *association with focus* in English: in particular, the relationship between the focus-sensitive adverb *only* and the associating focused constituent in its scope. We begin by briefly introducing the influential analysis of association with focus in Rooth 1985, 1992 and discussing the problem posed by Kratzer's (1991) famous *Tanglewood constructions.* We then present our proposal for explaining these constructions via covert focus movement, and we offer evidence supporting our proposal from island sensitivity and Tanglewood readings with overt bound variables. We discuss previous alternative analyses of Tanglewood readings and argue that they cannot explain the facts we present here. Finally, we show that covert focus movement can be long-distance, arguing that its effects cannot be reduced to Quantifier Raising.

1 The Problem of *Tanglewood*

Focused constituents, indicated by F-marking, are pronounced with prosodic prominence. Semantically, they introduce a set of *alternatives* into the computation. Focus-sensitive operators such as *only* then quantify over those alternatives.

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(1) I only wear $[\text{red}]_F$ shirts.
   a. *Alternatives to* red*:* green, blue, . . .
   b. *Presupposition:* I wear red shirts.
   c. *Assertion:* I do not wear green shirts, I do not wear blue shirts, . . .

Under the Alternative Semantics theory of focus in Rooth 1985, 1992—which continues to be the most widely adopted theory of association with focus—each syntactic node α has two "dimensions" of meaning: an ordinary semantic value $[\![\alpha]\!]^o$ as well as a *focus semantic value* $[\![\alpha]\!]^f$, which can be thought of as a set of alternative denotations and which includes $[\![\alpha]\!]^o$ as a member. Focus semantic values for complex phrases are computed compositionally using the meanings of their parts, just as ordinary semantic values are.

(2) *Recursive definition for focus semantic values (Rooth 1985:14)*[1]
   The focus semantic value of node α, $[\![\alpha]\!]^f$, is
   a. the set of objects in the model matching $[\![\alpha]\!]^o$ in type, if α bears the feature F;
   b. the unit set $\{[\![\alpha]\!]^o\}$, if α is a non-focused non-complex phrase;
   c. the set of objects which can be obtained by picking one element from each of the focus semantic values corresponding to the component phrases of α, and applying the semantic rule for α to this sequence of elements, if α is a non-focused complex phrase.

Rooth proposes that focused constituents such as *red* in (1) are interpreted in their pronounced position at LF. Following the procedure in (2), the alternatives introduced locally (3a) will be reflected in the focus semantic values of all dominating phrases, resulting in a corresponding set of propositional alternatives (3b) in the complement of focus-sensitive operators.[2] *Only* α then asserts the negation of all alternatives in $[\![\alpha]\!]^f$ that do not entail the prejacent proposition $[\![\alpha]\!]^o$ (see, e.g., Horn 1969); this results in the correct assertive content as in (1).

(3) *LF:* only $[_{VP}$ I wear $[\text{red}]_F$ shirts]
   a. $[\![\text{red}]\!]^f = \{\text{red, green, blue, . . .}\}$
   b. $[\![\text{VP}]\!]^f = \{\text{I wear red shirts, I wear green shirts, I wear blue shirts, . . .}\}$

Empirically, this article centers around the *Tanglewood* phenomenon first discussed in Kratzer 1991. Tanglewood examples were introduced as a challenge to the basic Roothian theory sketched above, motivating a minor but significant refinement to the theory. Kratzer's original example is given in (4).

[1] In Rooth 1985, focus semantic values were called *p-sets*, short for *presuppositional set* from Jackendoff 1972. The definition in (2) is a quotation from Rooth 1985:14 but modified to use the now standard terminology and notation of Rooth 1992. As noted in Rooth 1992:84n7, the recursion step in (2c) is equivalent to that for the compositional interpretation of *wh*-questions proposed in Hamblin 1973 (see Hamblin 1973:49, esp. n. 8).

[2] For convenience, here and elsewhere, we will ignore the contribution of tense and illustrate subjects in their VP-internal base positions. The categories we label *VP* could also, more precisely, be called *vP*. The denotations of propositional alternatives as in (3b) and (7a) should also be thought of as standing in for their intensions.

(4) *Tanglewood (Kratzer 1991:830)*
Context: Imagine now you are angry at me and start voicing the following accusations. "What a copycat you are! You went to Block Island because I did. You went to Elk Lake Lodge because I did. And you went to Tanglewood because I did." I feel you exaggerate and reply:

I only went to $[\text{Tanglewood}]_F$ because you did $\triangle$.

(5) *Paraphrase:* Tanglewood is the only place *x* such that I went to *x* because you went to *x.*

Kratzer's observation is as follows. Considering the interpretation of the ellipsis site in (4), indicated by $\triangle$, let us assume the LF structure for (4) to be as in (6). Now notice that (6) includes two instances of the F-marked constituent *Tanglewood.* According to Rooth's definition for focus semantic values in (2), the result will include all combinations of different values for the two positions of focus, as in (7a). The assertion of *only* in (4) is then predicted to be as in (7b).

(6) *Assumed LF structure for (4)*
only $[_{\text{VP}}$ I $[_{\text{antecedent}}$ go to $[\text{Tanglewood}]_F]$
[because you $[_{\text{ellipsis site}}$ go to $[\text{Tanglewood}]_F]]]$

(7) *Predicted interpretation of Tanglewood (4) using Rooth's (2)*

a. $[\![\text{VP}]\!]^f = \left\{ \begin{array}{l} \text{I go to Tanglewood because you go to Tanglewood,} \\ \text{I go to Tanglewood because you go to Block Island,} \\ \text{I go to Tanglewood because you go to Elk Lake Lodge,} \\ \text{I go to Block Island because you go to Tanglewood,} \\ \text{I go to Block Island because you go to Block Island,} \\ \text{I go to Block Island because you go to Elk Lake Lodge,} \\ \text{I go to Elk Lake Lodge because you go to Tanglewood,} \\ \text{I go to Elk Lake Lodge because you go to Block Island,} \\ \text{I go to Elk Lake Lodge because you go to Elk Lake Lodge} \end{array} \right\}$

b. $[\![\text{VP}]\!]^o$ = I go to Tanglewood because you go to Tanglewood

c. *Assertion of (4)*
it's not the case that [I went to Tanglewood because you went to Block Island],
it's not the case that [I went to Tanglewood because you went to Elk Lake Lodge],
it's not the case that [I went to Block Island because you went to Tanglewood],
it's not the case that [I went to Block Island because you went to Block Island],
it's not the case that [I went to Block Island because you went to Elk Lake Lodge],
it's not the case that [I went to Elk Lake Lodge because you went to Tanglewood],
it's not the case that [I went to Elk Lake Lodge because you went to Block Island],
it's not the case that [I went to Elk Lake Lodge because you went to Elk Lake Lodge]

Kratzer argues that this predicted assertion in (7c) does not reflect the actual interpretation of example (4). As the paraphrase in (5) indicates, the correct interpretation asserts only that *it is not the case that I went to Block Island because you went to Block Island* and *it is not the case*

that I went to Elk Lake Lodge because you went to Elk Lake Lodge. In other words, the set of alternatives must be computed so that the alternatives in the two positions of focus *covary* across the alternatives, as in (8). We will refer to such interpretations that require such covarying alternatives under an in-situ approach to focus as *Tanglewood constructions* or *Tanglewood readings.*

(8) *Covarying alternatives, to yield the correct interpretation of (4)*

$$[\![\text{VP}]\!]^f = \left\{ \begin{array}{l} \text{I go to Tanglewood because you go to Tanglewood,} \\ \text{I go to Block Island because you go to Block Island,} \\ \text{I go to Elk Lake Lodge because you go to Elk Lake Lodge} \end{array} \right\}$$

Kratzer proposes an amendment to Rooth's theory that allows for the natural derivation of covarying alternatives as in (8). In brief, Kratzer proposes that focused constituents bear distinguished *focus indices* and that ellipsis ensures their identity (9), resulting in the LF structure in (10a). Focused constituents are then interpreted as *distinguished variables* in the focus semantic value, ranging over different assignment functions h (10b).[3] This yields the desired covarying alternatives in (10c).[4]

(9) *Assumed LF identity condition on VP-ellipsis with focus indices*[5]
A VP (VP_E) can elide just in case the linguistic context provides an antecedent VP (VP_A), such that for any ordinary and distinguished variable assignments g and h, $[\![\text{VP}_\text{E}]\!]^{g,h} = [\![\text{VP}_\text{A}]\!]^{g,h}$

(10) *Tanglewood (4) with covarying alternatives under Kratzer's (1991) system*

a. *LF:* only $[_{\text{VP}}$ I $[_{\text{antecedent}}$ go to [Tanglewood]$_{\text{F7}}$]
[because you $[_{\text{ellipsis}}$ go to [Tanglewood]$_{\text{F7}}$]]] (cf. (6))

b. $H = \{h_0, h_1, h_2\}$; $h_0(7)$ = Tanglewood, $h_1(7)$ = Block Island, $h_2(7)$ = Elk Lake Lodge

c. $[\![\text{VP}]\!]^f = \{\text{I go to } h(7) \text{ because you go to } h(7) \mid h \in H\}$

$$= \left\{ \begin{array}{l} \text{I go to Tanglewood because you go to Tanglewood,} \\ \text{I go to Block Island because you go to Block Island,} \\ \text{I go to Elk Lake Lodge because you go to Elk Lake Lodge} \end{array} \right\} \quad (= (8))$$

d. *Assertion*
it's not the case that [I went to Block Island because you went to Block Island],
it's not the case that [I went to Elk Lake Lodge because you went to Elk Lake Lodge]

We make two notes here regarding Kratzer's (1991) theory. First, Kratzer retains from Rooth's work (a) the idea of a multidimensional semantics, with ordinary and focus semantic

[3] Note, however, that this requires a focused constituent to be elided, against the common prohibition on the ellipsis of focused constituents (see, e.g., Tancredi 1992, Heim 1997, Merchant 2001). As we will show, our proposal does not face a similar problem.

[4] Other solutions to the Tanglewood problem have also been proposed. See section 5 for discussion.

[5] We thank an anonymous *LI* reviewer for suggesting this phrasing for the LF identity condition assumed in Kratzer 1991, as well as the condition in (15).

values, and (b) the claim that foci are interpreted in situ at LF. Her Tanglewood argument challenges *how* focus semantic values are computed, motivating her focus index approach over Rooth's recursive procedure in (2). She also briefly considers and argues against an alternative account where the focused constituent covertly moves; we will detail this approach and her argument against it in section 2.

Second, we note that Kratzer's proposal that ellipsis can enforce the identity of focus indices is quite powerful. In particular, it predicts no locality restrictions between the focus-sensitive operator (*only*), the pronounced focus, and the ellipsis site. As long as the pronounced focus and its interpreted copy in the ellipsis site are both in the scope of the focus-sensitive operator, the Tanglewood effect is predicted: the operator will quantify over alternatives where the two focused positions covary.

In this article, we present previously unobserved restrictions on the distribution of Tanglewood readings that earlier accounts of the phenomenon do not predict. We concentrate first on Kratzer's account, as the most widely known account of Tanglewood readings, and discuss alternative accounts in section 5. Of particular importance are two findings: (a) that Tanglewood readings exhibit sensitivity to syntactic islands, and (b) that Tanglewood readings are possible in the absence of ellipsis.

In section 2, we present our own proposal for Tanglewood constructions. We maintain the Roothian multidimensional semantics for the computation of alternatives, but diverge from Rooth and Kratzer in arguing that foci are not interpreted in situ when associating with *only*: they move covertly to the higher operator, and it is this movement that makes Tanglewood readings possible. In sections 3–6, we present our new evidence that motivates this approach, discuss the nature of the movement, and examine alternative accounts.

2 Proposal

We propose that Tanglewood constructions such as (4) always involve covert movement of the focused constituent to a position from which it binds a bound variable in the ellipsis site.

We first illustrate a basic example of association with the English adverb *only* using covert focus movement; see (11).[6] For concreteness, we adopt the form of covert focus movement discussed briefly in Rooth 1985:31–32 and used in Wagner 2006.[7] This involves covert movement

[6] Again, we do not illustrate tense or movement of the subject out of its predicate-internal base position.

[7] Three notes on this movement. First, we present only the corresponding PF and LF representations in (11); for our purposes, this movement could be thought of as taking place in the narrow syntax, with pronunciation at the tail of the chain, or taking place after Spell-Out, feeding only LF.

Second, the movement in (11) can be derived without violating the Extension Condition (Chomsky 1993) by (a) first merging the focused constituent with *only*, resulting in an independent [only Tanglewood$_F$] tree in the workspace, (b) adjoining the λ-binder to the root of the tree containing the trace of the focused constituent, then (c) merging the results of steps (a) and (b). The necessity of such derivations has been independently claimed for cases of head movement (Bobaljik and Brown 1997) and sideward movement (Nunes 2001, 2004).

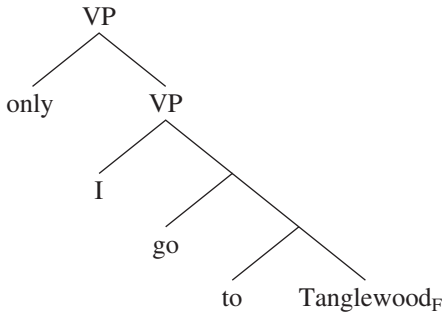
Third, the movement in (11) also does not violate the Proper Binding Condition (Fiengo 1977) if we think of this as a semantic condition requiring variables to be bound by their binders. Even though the landing site of movement does not c-command its trace position, the λ-binder associated with its movement does properly bind the trace position. See Keine and Bhatt 2016 for related discussion supporting this position of the λ-binder. See also Pesetsky 2007, 2013 and Yuan 2017a,b for independent motivation for overt movement of this form.

of a constituent containing the focus to a *complement* position of the attracting operator—also called *Undermerge* by Pesetsky (2007, 2013)—together with adjunction of the associated λ-binder to the complement from which the focused constituent is moved out.[8]

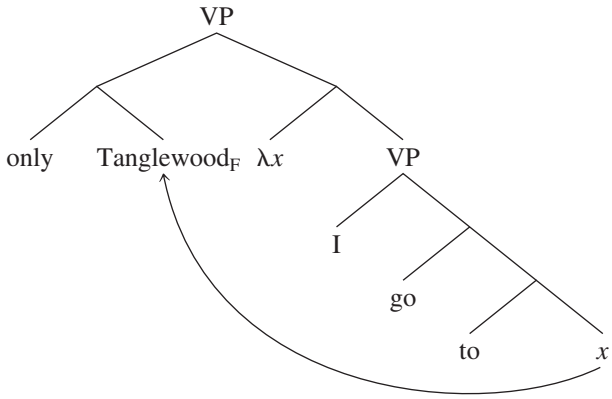
(11) *Covert focus movement*

a. I only went to [Tanglewood]$_F$.

b. *PF*



c. *LF*



[8] Other movement options are also conceivable. What is important for a two-place *only* is the position of the λ-binder in (11), so that *only* takes a derived predicate as an argument: here, λ*x* . *I go to x.* This would not occur if *only* attracts the focus-containing phrase to its specifier, together with common Heim and Kratzer 1998 assumptions on the position of λ-binders. A lower placement of the λ-binder as in (11), as independently proposed in Nissenbaum 2000, would however make movement to specifier position viable.

A reviewer notes that this two-place *only* is similar to the denotation of focus-sensitive particles in Structured Meaning theories of focus (see Jacobs 1983, von Stechow 1991a,b; also section 5). The availability of the movement proposed here is then subject to Rooth's (1996:278) criticism regarding the hypothetical verb *tolf.* An alternative would be to use a one-place *only* that triggers movement of the focus-containing phrase to the edge of *only*'s complement, resulting in a representation as in (i). This form of covert focus movement is compatible with the analysis here and avoids the *tolf* problem.

(i) [only [$_{VP}$ [Tanglewood]$_F$ [λ*x* [$_{VP}$ I go to *x*]]]]

We leave further discussion of the precise geometry of covert focus movement for future work.

Let (12) be the semantics of this two-place *only*, based on Horn's (1969) classic description of *only*'s meaning: *only* presupposes the truth of its prejacent (the combination of its first and second arguments) and asserts that, for all alternatives to the first argument in set *C*, if it is not equal to the stated (prejacent) value of the first argument, its combination with the second argument must be false.[9] The variable *C* must be fixed contextually to be equal to (or a subset of) the focus semantic value of the first argument of *only* at LF (see, e.g., discussion in Rooth 1992, Tancredi 2004, Wagner 2006). Here we let $C = [\![[\text{Tanglewood}]_F]\!]^f = \{\text{Tanglewood, Block Island, Elk Lake Lodge}\}$. The resulting interpretation of (11) is given in (13).

(12) *Semantics for two-place* only

$$[\![\text{only}]\!] = \lambda\alpha_\sigma \,.\, \lambda\beta_{\langle\sigma,\, t\rangle} : \underbrace{\beta(\alpha)}_{\text{presupposition}} \,.\, \underbrace{\forall\gamma \in C\, [(\gamma \neq \alpha) \rightarrow \neg\beta(\gamma)]}_{\text{assertion}}$$

(13) *Interpretation of* I only went to $[\text{Tanglewood}]_F$ *(11a) using (12)*

a. *LF:* $\text{only}([\text{Tanglewood}]_F)_{=\alpha}(\lambda x \,.\, \text{I go to } x)_{=\beta}$

b. *Presupposition:* $\beta(\alpha)$ = I go to Tanglewood

c. *Assertion*

$\forall\gamma \in \{\text{Tanglewood, Block Island, Elk Lake Lodge}\}[(\gamma \neq \text{Tanglewood}) \rightarrow \neg\beta(\gamma)]$

$\Leftrightarrow \neg\beta(\text{Block Island}) \wedge \neg\beta(\text{Elk Lake Lodge})$

$\Leftrightarrow$ it is not the case that [I go to Block Island], it is not the case that [I go to Elk Lake Lodge]

We now demonstrate how this covert focus movement helps derive the Tanglewood reading in Kratzer's original example, (4). We propose that the overt focus *Tanglewood* moves covertly to become the first argument of *only*, leaving the variable *x* in its trace position with a corresponding λ-binder. In the ellipsis site, we have a matching bound variable $there_x$, which will also be bound by the same λ-binder. Ellipsis is licensed by the LF identity condition in (15). This yields the correct interpretation for the Tanglewood example (4).[10]

[9] The semantics for (12) here is a naive formulation that blindly negates all nonprejacent alternatives. Formally, this must be modified so that it is all alternatives that are innocently excludable that are negated. See discussion in, for example, von Fintel 1997, Fox 2007, and Spector 2016. In the examples in this article, this issue will not arise, so we will continue to use the naive formulation in (12).

There are also debates in the literature regarding the status of the prejacent inference, which we call a presupposition here. This question is orthogonal to the present discussion.

[10] The coindexation in the configurations we propose (e.g., (14)) is allowed by Heim's (1997:202) No Meaningless Coindexing rule, because the trace and the pronoun in (14) are both bound by the same operator.

(i) *No Meaningless Coindexing*
If an LF contains an occurrence of a variable *v* that is bound by a node α, then all occurrences of *v* in this LF must be bound by the same node α.

As Charlow (2008) notes, the pronoun in the ellipsis site could also refer directly to the moved phrase, rather than being bound by the λ-binder of covert movement, contra Beaver and Clark 2008:112. Consider the following dialogue, based on an example from Charlow 2008:200:

(14) *Interpretation of Kratzer's Tanglewood example (4) using covert focus movement*

a. *LF:* only $([\text{Tanglewood}]_F)_{=\alpha}(\lambda x$. I $[_{\text{antecedent}}$ go to $x]$ because you $[_{\text{ellipsis}}$ go there$_x])_{=\beta}$

b. *Presupposition:* $\beta(\alpha)$ = I go to Tanglewood because you go to Tanglewood

c. *Assertion*

$\forall\gamma \in \{$Tanglewood, Block Island, Elk Lake Lodge$\}[(\gamma \neq$ Tanglewood$) \rightarrow \neg\beta(\gamma)]$

$\Leftrightarrow \neg\beta$(Block Island) $\wedge \neg\beta$(Elk Lake Lodge)

$\Leftrightarrow$ it is not the case that [I go to Block Island because you go to Block Island], it is not the case that [I go to Elk Lake Lodge because you go to Elk Lake Lodge]

(15) *LF identity condition on VP-ellipsis*

A VP (VP_E) can elide just in case the linguistic context provides an antecedent VP (VP_A), such that for any variable assignment g, $[\![VP_E]\!]^g = [\![VP_A]\!]^g$.

This approach ensures quantification over propositions with the same values in the position of pronounced focus and within the ellipsis site through general mechanisms of movement, abstraction, and variable binding. This takes away the need to generate alternatives that covary in two positions of focus, discussed in section 1. Note that, under this approach, ellipsis is not a crucial ingredient of Tanglewood readings; we discuss this point in section 4.

Note that there is an asymmetry between the two positions of x in the LF structure in (14a). The first variable x is a trace position of movement, and therefore the relationship between the LF position of *Tanglewood* and the λ-binder and the position of the variable x in the trace position should be subject to constraints on syntactic movement. The second variable *there*$_x$, however, is simply base-generated as a variable; it is not the product of movement and therefore should have no constraints beyond being in the scope of the matching λ-binder derived by movement. This asymmetry underlies the novel evidence we present in section 3: in brief, we will show that the position of overt focus (corresponding to the first variable x in (14a)) is sensitive to syntactic islands, whereas the hypothesized bound variable position, within the ellipsis site, is not.

Kratzer (1991:831) briefly considers this type of movement approach to Tanglewood readings but dismisses it, citing the availability of examples such as (16). As the paraphrase in (17) makes clear, this example has a Tanglewood reading where *only* quantifies over the possibilities that I contacted the person who chairs a certain group before you contacted the person who chairs that same group. It does not assert, for example, that *it's not the case that I contacted the person who chairs the Zoning Board before you contacted the person who chairs the Planning Board.*

(ii) A: You always try to show off how much you can eat by ordering the same thing I do plus something else. When I order soup, you order soup and salad. When I eat udon, you get udon and soba.

B: In general, I suppose you're right. But here's a counterexample: *Last week I only ate [brisket]$_F$ when you did* △. I didn't eat brisket and ribs or anything like that. I just got the same thing you did.

The ellipsis site of the italicized sentence in (iiB) is successfully interpreted as 'eat it (= brisket)', without a bound variable. In this article, we will concentrate on the derivation of Tanglewood readings, narrowly defined, where this variable is bound.

(16) *A Tanglewood construction with the focus inside an island (Kratzer 1991:831)*
Context: "You always contact every responsible person before me."
No, I only contacted [$_{\text{island}}$ the person who chairs [the Zoning Board]$_{\text{F}}$] before you did △.

(17) *Paraphrase:* The Zoning Board is the only *x* such that I contacted the person who chairs *x* before you contacted the person who chairs *x*.

What is important about example (16) is that the focus *the Zoning Board* is contained within a relative clause island. If Tanglewood readings require movement of the focus to a position to bind a variable in the ellipsis site, we might expect (16) to have the LF structure in (18). But this would be an island violation. To wit, corresponding overt movement of the focus as in (19) is ungrammatical.

(18) *LF structure for (16) using covert focus movement of* the Zoning Board
only ([the Zoning Board]$_{\text{F}}$) (λ*x* . I [$_{\text{antecedent}}$ contact [$_{\text{island}}$ the person who chairs *x*]]
before you [$_{\text{ellipsis}}$ contact [$_{\text{island}}$ the person who chairs *x*]])

(19) *Corresponding overt focus movement of* the Zoning Board *(Kratzer 1991:831)*
*It was [the Zoning Board]$_{\text{F}}$ that I contacted [$_{\text{island}}$ the person who chairs ____].

Therefore, Kratzer claims, the grammaticality of (16) with its intended Tanglewood interpretation shows that Tanglewood readings do not depend on covert movement of the focus. This then motivates Kratzer's proposal whereby ellipsis enforces identity of focus indices, briefly introduced in section 1.

What Kratzer did not consider is the possibility of covert focus movement triggering *pied-piping* (Drubig 1994, Tancredi 1997/2008, 2004, Krifka 2006, Wagner 2006, Erlewine and Kotek 2014).[11] Under the approach presented in this article—based on the work of the authors listed here—the first argument of *only* at LF, derived by covert movement, need only *contain* the focused constituent. In this case, we can covertly move the island containing the focus, *the person* . . . , leaving a variable and an associated λ-binder that is restricted to different persons chairing organizations. This binder will also bind the matching variable in the ellipsis site.

(20) *LF structure for (16) using covert focus movement with pied-piping* (cf. (18))
only ([$_{\text{island}}$ the person who chairs [the Zoning Board]$_{\text{F}}$])
(λ*x* . I [$_{\text{antecedent}}$ contact *x*] before you [$_{\text{ellipsis}}$ contact *x*])

No islands are violated in this LF structure. We note that parallel pied-piping is possible in overt focus movement, as in (21). Such structures have previously been described simply as clefts

[11] None of these previous authors specifically discusses—let alone argues for—the application of covert pied-piping to the problem of Tanglewood readings and Kratzer's challenge to the movement account. To our knowledge, the closest that anyone has come to this solution in previous literature is the last sentence of footnote 14 in Beaver and Clark 2008: 110–111 and footnote 27 in Griffiths and Lipták 2014:220.

where a subpart of the pivot is focused (Chomsky 1970:91ff., summarized in Jackendoff 1972: 232–234; see also Velleman et al. 2012, Erlewine and Kotek 2014).

(21) *Corresponding overt focus movement with pied-piping* (cf. (19))
✓ It was $[_{\text{island}}$ the person who chairs $[\text{the Zoning Board}]_{\text{F}}]$ that I contacted ____.

For completeness, we demonstrate the interpretation of Kratzer's Zoning Board example (16) under our approach to Tanglewood constructions, using the LF structure in (20) involving covert focus movement with pied-piping. Following the context discussed by Kratzer (1991:829), we let $[\![[\text{the Zoning Board}]_{\text{F}}]\!]^f = \{$the Zoning Board, the Planning Board, the Rent Control Board, the Conservation Commission$\}$. Using the simple Roothian procedure for the interpretation of focus semantic values (2), we yield the focus semantic values for the moved constituent—labeled *island* here—in (22b).

(22) *Interpretation of Kratzer's Zoning Board example (16) under our approach*
a. *LF (= (20)):* only $([_{\text{island}}$ the person who chairs $[\text{the Zoning Board}]_{\text{F}}])_{=\alpha}$
(λx . I $[_{\text{antecedent}}$ contact $x]$ before you $[_{\text{ellipsis}}$ contact $x])_{=\beta}$

b. $C = [\![\text{island}]\!]^f = \left\{ \begin{array}{l} \text{the person who chairs the Zoning Board,} \\ \text{the person who chairs the Planning Board,} \\ \text{the person who chairs the Rent Control Board,} \\ \text{the person who chairs the Conservation Commission} \end{array} \right\}$

c. *Presupposition:* $\beta(\alpha)$ = I contact the person who chairs the Zoning Board before you contact the person who chairs the Zoning Board

d. *Assertion:*
$\forall \gamma \in C\ [(\gamma \neq \alpha) \rightarrow \neg\beta(\gamma)]$
$\Leftrightarrow$ $\neg\beta$(the person who chairs the Planning Board) $\wedge$
$\neg\beta$(the person who chairs the Rent Control Board) $\wedge$
$\neg\beta$(the person who chairs the Conservation Commission) $\wedge$
$\Leftrightarrow$ it is not the case that [I contact the person who chairs the Planning Board before you contact the person who chairs the Planning Board],
it is not the case that [I contact the person who chairs the Rent Control Board before you contact the person who chairs the Rent Control Board],
it is not the case that [I contact the person who chairs the Conservation Commission before you contact the person who chairs the Conservation Commission]

The semantics for *only* here correctly reflects sensitivity to the placement of focus, even though the focus is a proper subpart of the constituent moved to be the first argument of *only*. This is because the set of alternatives C quantified over in (22d) is constrained by the focus semantic value of the first argument of *only*: here, $C = [\![\text{island}]\!]^f$. This is the domain restriction mechanism of Rooth (1985, 1992), adapted for the two-place *only* in (12), also used by Wagner (2006). The need for such sensitivity may be clearer in Merchant's (2008:150) example shown here, which can be similarly analyzed.

(23) I only played [$_{\text{island}}$ a song that [Ringo]$_{\text{F}}$ wrote] because you did △.

The demonstration in (22) shows that Kratzer's one argument against a covert movement account of Tanglewood readings is easily defeated by the possibility of pied-piping in covert focus movement, which has since been independently developed and argued for in works such as Drubig 1994, Krifka 1996, 2006, Tancredi 1997/2008, 2004, Wagner 2006, and Erlewine and Kotek 2014. At the same time, this discussion reflects the difficulty of testing for reflexes of movement such as island sensitivity in Tanglewood constructions, because of the possibility of covert pied-piping; hence, we have not yet given an argument *for* covert movement. In the next section, we present new evidence that focus association in Tanglewood constructions is island-sensitive in a manner predicted by our movement-based proposal but not by Kratzer's approach.

3 New Evidence from Island (In)sensitivity

Our proposal for Tanglewood constructions, presented above, involves covert movement of the overt focus—or a constituent properly containing it—which then binds a corresponding bound variable in the ellipsis site. This predicts an asymmetric pattern of island sensitivity: covert movement of the focus (possibly with pied-piping) is subject to island constraints, but variable binding is not. In this section, we will show that Tanglewood constructions exhibit precisely this pattern of island sensitivity, predicted by our covert focus movement account but unpredicted by alternative proposals, including Kratzer's.

In particular, in the examples in this section we isolate island sensitivity by controlling for pied-piping. We do this by constructing contexts in which the island-sized constituent that we predict moves to *only* is an inappropriate object for the verb in the ellipsis site, whereas the likely object is embedded inside an island and hence cannot be moved to *only.* When these conditions are met, island effects are revealed. We then show that, in contrast to the position of overt focus, the bound variable in the ellipsis site is not island-sensitive.

We begin with example (24). The context is designed to make the intended Tanglewood reading natural; nonetheless, the sentence does not have the intended Tanglewood reading, which we indicate with $*^{\text{TW}}$. We note that this sentence does have a number of other possible readings.[12]

(24) *Focus in a relative clause, without a matching island in the intended ellipsis site*

Context: Our son speaks Spanish, French, and Mandarin. At one point we hired a nanny that happened to speak French, but that wasn't why we hired her. Another time we hired a nanny that spoke Mandarin, but that too was a coincidence . . .

$*^{\text{TW}}$ We only hired [$_{\text{island}}$ a nanny that speaks [Spanish]$_{\text{F}}$] because our son does △.

Intended Tanglewood reading: Spanish is the only language *x* such that we hired [a nanny that speaks *x*] because our son speaks *x.* (△ = "speak . . .")

[12] In particular, there is another reading that we would call a Tanglewood reading: namely, a reading where the ellipsis is resolved to a higher VP, △ = "hire a nanny that speaks . . . ," paraphrasable as *Spanish is the only language* x *such that we hired [a nanny that speaks* x*] because our son hires [a nanny that speaks* x*].* The availability of this reading is predicted under our account, following a derivation parallel to (22) for Kratzer's Zoning Board example. This reading differs from our intended reading here, and is not supported by the context in (24).

Why is this intended reading unavailable? Under our approach, the intended Tanglewood reading requires covert movement of *Spanish* or a phrase properly containing *Spanish* to *only*, binding a corresponding bound variable within the ellipsis site. Consider first the LF structure in (25a): although movement of the focus *Spanish* would arrive at the intended Tanglewood reading, movement of *Spanish* alone violates the relative clause island. In (25b), we also consider movement of the entire island containing the focus. The problem here is that the bound variable in the ellipsis site is the object of *speak* and therefore should correspond to a language, but in order to yield the Tanglewood reading, this variable will be bound by the λ-binder introduced by covert focus movement, and this λ-binder ranges over different nannies, not languages.

(25) *Problematic LF structures for the unavailable Tanglewood reading of (24)*

a. only ($[\text{Spanish}]_F$) (λx . we hire $[_{\text{island}}$ a nanny that $[_{\text{antecedent}}$ speaks $x]]$

because our son $[_{\text{ellipsis}}$ speaks $x])$

b. only ($[_{\text{island}}$ a nanny that $[_{\text{antecedent}}$ speaks $[\text{Spanish}]_F]]$)

(λx . we hire x because our son $[_{\text{ellipsis}}$ speaks $x])$

The unavailability of the Tanglewood reading in (24) is unpredicted by Kratzer's account. Recall that under Kratzer's proposal, foci are interpreted in situ at LF (following Rooth 1985) with distinguished focus indices, and ellipsis enforces their identity. Focus association through focus indices and ellipsis are both insensitive to syntactic islands, as Kratzer explicitly claims, predicting the availability of a Tanglewood reading here.

(26) *Tanglewood reading of (24) under Kratzer's (1991) approach*

a. *LF:* only $[_{\text{VP}}$ we hire a nanny that $[_{\text{antecedent}}$ speaks $[\text{Spanish}]_{F5}]$

[because our son $[_{\text{ellipsis}}$ speaks $[\text{Spanish}]_{F5}]]]$

b. $H = \{h_0, h_1, h_2\}$; $h_0(5) =$ Spanish, $h_1(5) =$ French, $h_2(5) =$ Mandarin

c. $[\![\text{VP}]\!]^f = \{$we hire a nanny that speaks $h(5)$ because our son speaks $h(5) \mid h \in H\}$

$$= \left\{ \begin{array}{l} \text{we hire a nanny that speaks Spanish because our son speaks Spanish,} \\ \text{we hire a nanny that speaks French because our son speaks French,} \\ \text{we hire a nanny that speaks Mandarin because our son speaks Mandarin} \end{array} \right\}$$

d. *Assertion of* only

it is not the case that [we hire a nanny that speaks French because our son speaks French],

it is not the case that [we hire a nanny that speaks Mandarin because our son speaks Mandarin]

In (24), we placed the overt focus inside an island, without a corresponding island in the intended ellipsis site, and as a result the Tanglewood reading became unavailable. However, as we have shown, Kratzer's (1991) proposal of enforcing the identity of focus indices under ellipsis predicts this reading to be available. This is not a coincidence—this mechanism was explicitly designed to generate Tanglewood readings without locality restrictions or island sensitivity. As

a result, this mechanism will systematically overgenerate such Tanglewood readings and will not predict any island sensitivity.

We can similarly demonstrate sensitivity to adjunct islands, as in (27). Example (27a) is a grammatical Tanglewood baseline example, which is then modified in (27b) so that the focus is in an adjunct clause. The intended Tanglewood reading is then judged as unavailable in (27b).

(27) *Tanglewood reading blocked by adjunct island*

Context: Smith, Jones, and Stevens are all very famous scholars, but they cause trouble at conferences. When I heard that Stevens was being considered as a plenary speaker, I voiced concerns, but the organizers invited her anyway. I then decided to stay out of the invitation process. But after I learned that Smith and Jones had also been invited, I warned the organizers about them, too. The conference was a disaster. I wish I'd been more vocal in my opposition.

a. $\checkmark^{TW}$ I only told them that they shouldn't invite $[\text{Stevens}]_F$ before they did $\triangle$.

Intended Tanglewood reading: Stevens is the only person x such that I [told them that they shouldn't invite x [before they invited x]]. ($\triangle$ = "invite . . . ")

b. $*^{TW}$ I only told them that they would regret it $[_{\text{island}}$ if they invite $[\text{Stevens}]_F]$ before they did $\triangle$.

Intended Tanglewood reading: Stevens is the only person x such that I [told them that they would regret it if they invite x [before they invited x]]. ($\triangle$ = "invited . . . ")

Tanglewood readings are similarly unavailable with the overt focus in one conjunct and the ellipsis site in another conjunct (28). This reflects the fact that covert movement is subject to the Coordinate Structure Constraint, as has been independently argued by Bošković and Franks (2000).[13]

(28) *Tanglewood reading blocked by coordination*

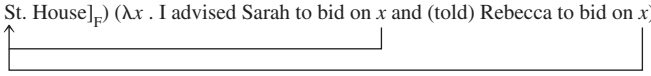
Context: I am under investigation by the Real Estate Board. Sarah and Rebecca claim that I advised them both to bid on many of the same houses, to raise their prices. I reply:

$*^{TW}$ I only advised Sarah to bid on $[\text{the Elm St. house}]_F$ and (told) Rebecca to $\triangle$ as well.

Intended Tanglewood reading: The Elm St. house is the only house x such that I advised Sarah to bid on x and (told) Rebecca to bid on x as well. ($\triangle$ = "bid on . . . ")

[13] As a reviewer notes, the coordinate structure in (28) could conceivably allow for an alternative derivation using across-the-board covert focus movement, schematized in (i).

(i) *LF:* only ($[\text{the Elm St. House}]_F$) ($\lambda x$. I advised Sarah to bid on x and (told) Rebecca to bid on x)



However, the LF structure in (i) is unavailable due to the unavailability of covert across-the-board movement, as Bošković and Franks (2000) argue.

Note that there is no independent subject of *tell* or *advise* in the right conjunct in (28), ensuring that the entire conjunction is below *only* as would be required for the Tanglewood reading both by our approach and by Kratzer's.

Kratzer's approach predicts no difficulty in deriving the intended Tanglewood readings in (27b) and (28), in the same way that it would overgenerate a Tanglewood reading without island sensitivity in (26). The examples above show that Tanglewood configurations are instead sensitive to syntactic islands in the manner our proposal predicts. Tanglewood readings involve covert focus movement and variable binding in the ellipsis site. The placement of an island around the overt focus will block covert movement of the focus and consequent variable binding, though movement of the island itself is possible, as in (20).

We furthermore predict that the strengths of these contrasts will correlate with the strengths of the islands themselves. For example, the availability of the Tanglewood reading in example (29) shows that covert focus movement can violate *wh*-islands, which have classically been observed to be of variable strength or weaker than many other islands in English (see, e.g., Ross 1967, Pesetsky 1982, Grimshaw 1986).

(29) *Tanglewood reading not blocked by* wh-*island*

Context: Reporters know a lot about Secretary Clinton's technology use. They know she uses a Blackberry, and they know she uses teleprompters, but they've never cared who else uses such things.

$\checkmark^{TW}$ Reporters only asked $[_{island}$ who else uses [a private e-mail server]$_F]$ after learning that Clinton does.

Intended Tanglewood reading: A private e-mail server is the only technology x such that reporters [asked who else uses x [after learning that Clinton uses x]].

($\triangle$ = "use . . . ")

Tanglewood constructions can thus be used to diagnose the sensitivity of covert (focus) movement to different islands. Note that the strength of individual islands is additionally subject to interspeaker variation. We predict a correlation: a Tanglewood sentence with an island should be as acceptable as a baseline example for that same island. For example, one anonymous *LI* reviewer reports being able to get the intended Tanglewood reading in the relative clause example (24) but also reports allowing exceptionally wide scope of quantifiers out of relative clause islands, such as the *every* > *some* reading of *Josh knows someone who speaks every Germanic language* from Sabbagh 2007:367.

Our analysis for Tanglewood constructions predicts island sensitivity due to the covert movement of the focus, but it does not predict any island sensitivity around the ellipsis site. To test this, we change the position of the island in our test sentences: we place the ellipsis site inside a syntactic island, without a corresponding island around the antecedent.[14] The intended Tanglewood reading is grammatical in this configuration in (30), based on (24).

[14] Note that the ellipsis site in Tanglewood examples is already inside an adjunct island such as that headed by *because* in (30), including in Kratzer's original example (4). However, because of possible differences in island strength, mentioned above, we insert the additional relative clause island here around the ellipsis site, to make (30) parallel to (24) both in the island involved and in overall complexity.

(30) *Ellipsis site in a relative clause island*

Context: I speak Spanish, French, and Mandarin. I also have many friends that speak these languages, but for the most part that's not why I studied these languages . . .

✓TW I only speak $[\text{Spanish}]_F$ because I have $[_{\text{island}}$ a friend that does △].

Intended Tanglewood reading: Spanish is the only language *x* such that I speak *x* because I have a friend that speaks *x*. (△ = "speak . . . ")

The grammaticality of this Tanglewood construction is predicted by our account. Covert movement of the focus *Spanish* in (30) is not constrained by any syntactic island. This movement introduces a variable and its λ-binder, which in turn binds the matching bound variable in the ellipsis site. This ellipsis site is inside an island, but this is not a problem: variable binding is not sensitive to syntactic islands. This LF structure for (30) is illustrated in (31).

(31) *LF structure for (30), involving variable binding into an island*

only $([\text{Spanish}]_F)$ $(\lambda x$. I $[_{\text{antecedent}}$ speak $x]$

because I have $[_{\text{island}}$ a friend that $[_{\text{ellipsis}}$ speaks $x]])$

The asymmetry in the availability of Tanglewood readings between (30) and (24) is exactly what our account predicts. The overt focus must move covertly—possibly with pied-piping—and is thus sensitive to islands, but the position of the ellipsis site, under our account, simply hosts a bound variable and is thus insensitive to islands. In contrast, Kratzer's account would predict no difference between these examples, predicting the availability of a Tanglewood reading in (24), as demonstrated in (26).

We conclude that Tanglewood constructions *are* island-sensitive, contrary to Kratzer's claim and prediction. The pattern of island sensitivity observed—where the position of overt focus is island-sensitive but the position of the ellipsis site is not—is precisely as predicted by our proposal, where Tanglewood readings involve covert movement of the focus, which then binds a bound variable in the ellipsis site. Kratzer's approach of enforcing identity of focus indices under ellipsis systematically overgenerates Tanglewood readings, as it is explicitly designed to not require syntactic movement for deriving them, as do other previous accounts of Tanglewood readings. Kratzer's approach of enforcing the identity of focus indices under ellipsis must not be available to the grammar.[15] Other previous approaches to Tanglewood constructions will be discussed in section 5.

[15] A possible stronger conclusion that we might entertain is that Kratzer's mechanism of computing focus alternatives using focus indices as a whole must not be available to the grammar. Aside from Kratzer's argument for this mechanism from Tanglewood readings, two additional arguments are found in the literature. The first comes from crossing focus dependencies in Wold 1996 (but see Krifka 1996, 2006, Tancredi 1997/2008, 2004 for arguments that such data are better captured by assuming covert focus movement). A second argument comes from the interaction of focus with the copy theory of movement (Erlewine 2014), in particular in so-called backward association configurations. Absent an alternative account for these data, the interaction of focus with copies discussed there would necessitate the use of Kratzerian focus indices. See Erlewine 2014 for details.

4 Tanglewood Readings with Overt Bound Variables

All of the Tanglewood examples we have discussed thus far have involved ellipsis. For Kratzer's (1991) proposal, the ellipsis is a crucial component of Tanglewood readings: the ellipsis site is interpreted under identity with the antecedent focus, yielding an LF structure with two foci (32). Matching focus indices between the two positions of focus yield covarying alternatives, as demonstrated in (10).

(32) *Kratzer's approach requires ellipsis to generate Tanglewood readings*
I only went to $[\text{Tanglewood}]_{F}$ because you did △.
LF (= (10a)): only [I $[_{\text{antecedent}}$ go to $[\text{Tanglewood}]_{F7}$]
[because you $[_{\text{ellipsis site}}$ go to $[\text{Tanglewood}]_{F7}$]]]

In contrast, our proposal derives Tanglewood readings through general mechanisms of (covert) movement and variable binding, and does not depend on ellipsis. This predicts that Tanglewood readings could also involve *overt* bound variables. Beaver and Clark (2008) observe that this is indeed the case.

(33) *Tanglewood construction with an overt bound variable and no ellipsis (Beaver and Clark 2008:112)*
$\checkmark^{\text{TW}}$ I only went to $[\text{Tanglewood}]_{F}$ because you went there.
Intended Tanglewood reading: Tanglewood is the only place x such that I went to x because you went to x. (= (5))

In the intended reading of (33), *there* is an overt bound variable and is not focused. The availability of this reading follows immediately from our account. This LF structure is equivalent to the one proposed in (14a) for the original Tanglewood example.

(34) *Covert focus movement LF structure for (33)*
only ($[\text{Tanglewood}]_{F}$) (λx . I go to x because you go there_{x}) (= (14a))

If we instead attempt to interpret (33) using Kratzer's proposal, *there* will have to be focused with the same focus index as on *Tanglewood*—but note that *there* in (33) is not focused. An unfocused *there* will not yield the intended reading if it is not a bound variable but simply refers to Tanglewood.

Such Tanglewood examples with overt bound variables allow us to explicitly observe the effects of the covert pied-piping proposed here. Recall Kratzer's original Zoning Board example (16), repeated in (35), which is a grammatical Tanglewood construction even though its focus is within an island. We proposed above that this example is grammatical because the island *the person . . .* undergoes covert movement, binding a variable over different persons; see (20). This is reflected explicitly by the bound variable in the grammatical ellipsis-less variant (36), which has the truth-conditionally equivalent Tanglewood reading from (35).

(35) *Kratzer's Zoning Board example, repeated from (16)*
Context: "You always contact every responsible person before me."

✓TW No, I only contacted [$_{\text{island}}$ the person who chairs [the Zoning Board]$_{\text{F}}$] before you did △.

Intended Tanglewood reading: The Zoning Board is the only *x* such that I contacted the person who chairs *x* before you contacted the person who chairs *x.*

(36) *Overt bound variable paraphrase of Kratzer's Zoning Board example (16)*
✓TW I only contacted [$_{\text{island}}$ the person who chairs [the Zoning Board]$_{\text{F}}$] before you contacted her/him/them.[16]

The example in (36) corresponds to a parse of (35) where the ellipsis site is resolved as △ = "contact her/him/them." In contrast, there is no grammatical equivalent of (35) that explicitly spells out the ellipsis site as △ = "contact the person who chairs . . . " This again reflects the fact that the focused constituent *the Zoning Board* cannot covertly move out of the island to a position where it can bind the bound variable *it.* Instead, the entire island must move.

(37) *Bound variable corresponding to the focus, not the island, is not possible*
*TW I only contacted [$_{\text{island}}$ the person who chairs [the Zoning Board]$_{\text{F}}$] before you contacted [$_{\text{island}}$ the person who chairs it].

To conclude, Tanglewood constructions can involve overt bound variables and do not depend on ellipsis, as our account predicts. This was previously observed by Beaver and Clark (2008), but without an explicit account that predicts the island sensitivity observed in section 3. Such data are problematic for Kratzer's account, which relies on ellipsis for generating Tanglewood constructions. Kratzer's proposal undergenerates the examples with overt bound variables in this section, while simultaneously overgenerating the island examples in section 3.

5 Alternative Analyses of Tanglewood Readings

Several alternatives to Kratzer's (1991) analysis of Tanglewood readings can be found in the literature. In this section, we briefly discuss these alternatives and their shortcomings in light of the evidence presented in this article. In particular, two common difficulties these accounts face are (a) the asymmetric island sensitivity we presented in section 3—a fact that has never been previously noted—and (b) the availability of Tanglewood readings with overt bound variables but without ellipsis, discussed in section 4.

We first discuss analyses in the Structured Meaning (SM) framework, beginning with Krifka 1991. This framework involves "projection" of the focused constituent in a separate "stack" of the computation, without requiring any movement. Krifka applies this approach to Kratzer's Tanglewood constructions, assuming a complete copy of the focus within the ellipsis site, together with a mechanism to equate the foci "projected" from the antecedent and ellipsis sites. Jäger (1999) then extends this analysis using a theory that directly equates the ellipsis content with its

[16] In the authors' English, (36) sounds best with the gender-neutral singular *them*, but we want to make it clear that this pronoun here is animate. Given sufficient contextual expectations that all persons chairing relevant organizations are female or male, the singular *her* or *him* becomes grammatical.

antecedent. Akin to our conclusions regarding Kratzer's enforcement of identical focus indices through ellipsis, these SM projection approaches fail to predict the island sensitivity of the position of overt focus in Tanglewood constructions, presented in section 3.

Krifka (2006) then proposes that the "projection" mechanism in the SM approach should in fact be thought of as syntactic movement, but this does not improve the situation. Updating the Krifka 1991 account for Tanglewood constructions using the movement approach to projection of Krifka 2006 will predict island sensitivity for both the position of overt focus and the ellipsis site, contrary to what we have shown in section 3.

Charlow (2008) presents an analysis of a subclass of Tanglewood constructions as involving variable binding, which is a component of our analysis as well. However, this Categorial Grammar approach uses the same type-shifting rules to abstract over the antecedent side and the ellipsis site or bound variable. This predicts island sensitivity on either both sides or neither side, thus failing to derive the asymmetric island sensitivity observed in section 3.

Another proposal is Sauerland's (2007a,b) structure-sharing account. Sauerland briefly relates Tanglewood constructions to more general effects of dependence on contrastive foci that can occur specifically in ellipsis, independently observed by Hardt (1999) and Schwarz (2000). Citing these other, non-Tanglewood examples, Sauerland claims explicitly that this structure-sharing mechanism is not subject to syntactic locality conditions (see Sauerland 2007a:46). Furthermore, his structure-sharing account would also fail to extend to Tanglewood readings with overt bound variables.

Finally, Beaver and Clark (2008) discuss Tanglewood constructions at some length and consider two possible approaches, each of which seems to capture some but not all of the properties of Tanglewood constructions. The first is a movement account, which differs significantly from ours in involving VP-movement as the mechanism for VP-ellipsis and using this movement to derive the Tanglewood effect (pp. 109–111). This approach is challenged by the availability of Tanglewood readings that involve overt bound variables, without ellipsis, which Beaver and Clark, too, observe (p. 112). They then present a proof-of-concept dynamic semantics approach to Alternative Semantics (pp. 111–115), with the aim of accounting for both overt pronouns bound by focused constituents and Kratzer's Tanglewood examples. However, this account predicts no sensitivity to syntactic islands and hence cannot be extended to model the data we have presented in section 3. Ultimately, Beaver and Clark do not commit themselves to either approach.

6 Covert Focus Movement Is Long-Distance and Is Not Quantifier Raising

In this section, we consider and argue against one final possible alternative analysis for the data we have presented. This is the possibility that Tanglewood readings indeed involve covert movement and variable binding, but that this movement is not covert focus movement but rather reflects a general-purpose operation such as Quantifier Raising (QR). We will show that the covert movement involved in Tanglewood constructions can be long-distance, across finite-clause boundaries, and in particular that this movement can be longer than that of quantifiers undergoing QR.

We first consider example (38), which is a grammatical Tanglewood construction. In the intended reading, the *because*-clause adjoins to and modifies *think.* Therefore, for the binder of the moved focus *anaphora* to bind the bound variable in the ellipsis site, *anaphora* must necessarily move outside of the embedded finite clause. (39) gives the LF structure that we propose for this sentence.

(38) *Tanglewood construction requiring long-distance covert movement*

Context: John, a first-year grad student, doesn't quite understand the field yet. He seems to think that everyone works on focus, on ellipsis, and on anaphora. Some people think he is just extrapolating from what his advisor works on. But actually . . .

$\checkmark^{TW}$ He only thinks [$_{CP}$ that everyone works on [anaphora]$_F$] because his advisor does △.

Intended Tanglewood reading: Anaphora is the only topic x such that John [thinks that everyone works on x [because his advisor works on x]]. (△ = "work on . . . ")

(39) *LF:* only ([anaphora]$_F$) (λx . he thinks [$_{CP}$ that everyone [$_{antecedent}$ works on x]]

because his advisor [$_{ellipsis}$ works on x])

Next, let us compare this with the behavior of variable binding by a quantifier that has undergone QR. Example (40) is a version of (38) with the focus replaced by the quantifier *at least one topic* and without the associating *only.* This sentence does not have the intended Tanglewood-like reading, which would involve *at least one topic* undergoing long-distance QR and binding into the ellipsis site. The baseline example in (41) shows that variable binding into a *because*-clause by an object quantifier *at least one topic* is possible, if the *because*-clause is attached to the local clause.

(40) *QR does not move as high as the focus in (38)*

$*^{TW}$ He thinks [that everyone works on at least one topic] because his advisor does △.

Intended Tanglewood-like reading: There is at least one topic x such that he [thinks everyone works on x [because his advisor works on x]]. (△ = "work on . . . ")

(41) *Baseline variable binding by at least one topic*

$\checkmark^{TW}$ He works on at least one topic because his advisor does △.

Intended Tanglewood-like reading: There is at least one topic x such that he [works on x [because his advisor works on x]]. (△ = "work on . . . ")

The contrast between (40), containing a quantifier, and (38), with focus association with *only*, shows that the covert movement in Tanglewood constructions cannot simply be reduced to QR's independent ability to covertly move arguments.[17] Covert focus movement is long-distance, crossing finite-clause boundaries, in environments where quantifiers cannot. Hence, we argue here for

[17] We recognize that there is some interspeaker variability in the locality of QR (see, e.g., Wurmbrand 2018). What is important here is that there is a contrast between these two examples in the availability of the intended reading.

the existence of covert focus movement, which is distinct from QR and must be available to the grammar alongside QR. This focus movement is necessitated in our analysis for simple reasons of semantic composition: the two-place formulation of *only* in (12) requires a first argument. This argument is supplied to the operator through covert movement of the overt focus—or a constituent properly containing it—as detailed in our proposal above.

7 Conclusion

In this article, we argued for covert focus movement in English focus association with *only*. Our evidence came from Tanglewood configurations of the form in Kratzer 1991. We showed that Tanglewood configurations are sensitive to syntactic islands, contrary to Kratzer's claims and predictions. In particular, we showed an asymmetric pattern of island sensitivity: the position of overt focus is island-sensitive but the position of the ellipsis site is not.

We propose that Tanglewood constructions are derived through covert movement of the focused constituent to the focus-sensitive operator, with binding of a bound variable in the ellipsis site. This movement may involve covert pied-piping of a larger constituent properly containing the focus (Drubig 1994, Krifka 1996, 2006, Tancredi 1997/2008, 2004, Wagner 2006, Erlewine and Kotek 2014). This availability of covert pied-piping explains examples such as Kratzer's, which are apparently island-insensitive: in such examples, the entire island undergoes covert movement to the operator, and hence there is no island violation. It also explains the asymmetric pattern of island sensitivity we describe above, since the ellipsis site contains a base-generated bound variable that does not undergo any movement and hence is not island-sensitive.

This proposal also severs the link between Tanglewood readings and ellipsis. Indeed, we showed that parallel Tanglewood readings are available in sentences with overt bound variables, which do not involve ellipsis. Additionally, we showed that covert focus movement is long-distance and may cross finite-clause boundaries, unlike QR in the same environment. Kratzer's influential proposal—that ellipsis enforces identity of focus indices—greatly overgenerates Tanglewood constructions. We also showed that alternative analyses of Tanglewood constructions fail to capture the facts presented here.

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