Bipartite Exhaustification: Evidence from Vietnamese

Tue Trinh(✉)

Leibniz-Zentrum Allgemeine Sprachwissenschaft, Berlin, Germany
trinh@leibniz-zas.de

Abstract. This short note presents an empirical puzzle: the Vietnamese counterpart of **any** has two morphological variants, only one of which, namely the more complex one, is acceptable under an existential modal. The note then discusses a theory of **any** whose explanation of the acceptability of **any** under existential modals requires exhaustification. The Vietnamese fact is then shown to follow from the theory under the assumption that exhaustification has a bipartite syntax. The note ends with some open questions for further research.

Keywords: NPI · exhaustification · Vietnamese

1 An Observation About Vietnamese

Wh-phrases in Vietnamese is ambiguous between an interrogative and an NPI reading [3].

(1) Nam không đọc quyển sách nào
Nam not read book which
'which book did Nam not read?' / 'Nam did not read any book'

In this note, we will not be concerned with the interrogative reading, and will gloss **quyển sách nào** simply as ANY BOOK. Our aim is to explain an observation relating to a particular morpheme which can be prefixed to the ANY phrase, namely the word **bất kỳ**, which we will gloss as BK.

(2) Nam không đọc bất kỳ quyển sách nào
Nam not read BK ANY BOOK
'Nam did not read any book'

Unsurprisingly, both the plain NPI, henceforth ANY, and its more complex variant with BK, henceforth BK-ANY, are acceptable in standard downward

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entailing (DE) environments, as exemplified in (1) and (2), and unacceptable in standard upward entailing (UE) environments, as exemplified in (3) [20,21].[1]

(3) a. *Nam đọc quyển sách nào
Nam read ANY BOOK
b. *Nam đọc (bất kỳ) quyển sách nào
Nam read BK ANY BOOK

Here is the puzzle we aim to resolve: under existential modals, ANY is deviant, while BK-ANY is acceptable and, just like English **any**, licenses the free choice inference [4].

(4) a. *Nam được đọc quyển sách nào
Nam may read ANY BOOK
b. Nam được đọc bất kỳ quyển sách nào
Nam may read BK ANY BOOK
'Nam is allowed to read any book'

Suppose, as the null hypothesis should be, that ANY has the same semantic and syntactic properties as **any**, a theory of **any** conducive to the explanation of the difference between ANY and BK-ANY should involve a grammatical formative X such that X is required for the well-formedness of (5a) and, at the same time, has no effect on either the well-formedness of (5b) or the deviance of (5c).

(5) a. John is allowed to read any book
b. John did not read any book
c. *John read any book

This theory will enable us to simply identify the presence of BK with that of X, say by positing an Agree relationship between the two, and derive the fact, observed for Vietnamese, that ANY under existential modals requires BK (cf. (4)), ANY in DE environment allows but does not require BK (cf. (1) & (2)), and ANY in plain UE environments is deviant with or without BK (cf. (3)).

The next section presents such a theory.

2 A Theory of "any"

2.1 Licensing

What follows is essentially a modified and simplified version of the theory of **any** which has been proposed and developed by Luka Crnič in a series of recent

[1] The intended reading for the verb in (3) is episodic, not generic. Thus, the deviance will be clearer when the progressive aspect marker **đang** is added and the sentence is embedded under **tôi nhìn thấy** 'I saw,' as exemplified in (i) below, whose intended reading is 'I saw Nam reading a book.'

(i) *Tôi nhìn thấy Nam đang đọc (bất kỳ) quyển sách nào
I saw Nam reading BK ANY BOOK

For an explanation of the acceptability of ANY under a generic reading of the verb which is compatible with what we will say below, see [23].

papers [6–8]. I am, of course, responsible for any misrepresentation and falsehood contained in the presentation.

We assume that **any** comes with a covert domain restriction, and its lexical meaning is that of the existential quantifier [4,11]. Thus, (6) will have the meaning in (6a), which is equivalent to (6b).

(6) John did not read any_D book
where $D \cap [\![\text{book}]\!] = \{a, b, c\}$
a. $\neg[\exists x \in D \cap [\![\text{book}]\!]: \text{John read } x]$
b. $\neg[a \vee b \vee c]$

For ease of exposition, we will often represent existentially quantified sentences as disjunctions. In a parallel fashion and for the same purpose, we will represent universally quantified sentences as conjunctions.

(7) John read every_D book
where $D \cap [\![\text{book}]\!] = \{a, b, c\}$
a. $\forall x \in D \cap [\![\text{book}]\!]: \text{John read } x$
b. $a \wedge b \wedge c$

We call the intersection of D and the NP complement of **any** its "domain," and say that S and S′ are "domain alternatives" if they differ only with respect to the domain of **any**. If, furthermore, the domain of **any** in S′ is a subset of the domain of **any** in S, we call S′ a "subdomain alternative" of S. Adopting the proposal made in [6–8], we take the distribution of **any** to be constrained by the following condition.[2]

(8) Licensing
Any is acceptable only if it is dominated by a sentence S which entails its subdomain alternatives

The condition requires that replacing the domain of **any** with a stronger, i.e. smaller, domain should result in a weaker sentence. To see how Licensing predicts the acceptability of **any** under negation, consider (9a) and its two subdomain alternatives, (9b) and (9c). The domain of **any** is represented extensionally.[3]

(9) a. John did not read any $\{a, b, c\} = \neg(a \vee b \vee c)$
b. John did not read any $\{a, b\} = \neg(a \vee b)$
c. John did not read any $\emptyset = \top$

Since $\neg(a \vee b \vee c)$ is stronger than $\neg(a \vee b)$ and $\top$, Licensing is satisfied: the smaller the domain, the weaker the sentence. Now consider (10a) and its two subdomain alternatives, (10b) and (10c).

[2] Crnič, in [6–8], formulates this condition not in terms of entailment but in terms of Strawson entailment. We come back to this point below.
[3] $\top$ and $\bot$ represent the tautology and the contradiction, respectively.

(10) a. *John read any {a, b, c} = a∨b∨c
b. *John read any {a, b} = a∨b
c. *John read any ∅ = ⊥

Since a∨b∨c is weaker than a∨b and ⊥, Licensing is not satisfied: the smaller the domain, the stronger the sentence. Thus, Licensing explains the grammaticality of (5b) and the ungrammaticality of (5c).

For (5a), however, Licensing makes the wrong prediction. Specifically, it predicts (5a) to be as unacceptable as (5c), since embedding the sentences in (10) under the existential modal, henceforth symbolized as ◊, does not change entailment relations between them.

(11) a. John is allowed to read any {a, b, c} = ◊(a∨b∨c)
b. John is allowed to read any {a, b} = ◊(a∨b)
c. John is allowed to read any ∅ = ⊥

Since ◊(a∨b∨c) is weaker than ◊(a∨b) and ◊(⊥), Licensing is not satisfied.

The next subsection presents an auxiliary hypothesis which enables the theory to make the correct prediction about **any** under ◊.

2.2 Exhaustification

The auxiliary hypothesis is that sentences may be interpreted "exhaustively" [5,12]. We implement this hypothesis by claiming that each sentence S may be parsed as [EXH(R)(F(S))(S)] which is interpreted as follows [1].[4]

(12) EXH(R)(F(S))(S) is true iff both (i) and (ii) hold:
(i) $\forall S' : S' \in \text{EXCL}(S, F(S)) \cap R \rightarrow S'$ is false
(ii) $\forall S' : S' \in \text{INCL}(S, F(S)) \rightarrow S'$ is true

R is the set of "relevant" sentences, i.e. those that count as possible answers to the question under discussion. As relevance is closed under conjunction and negation, R is the Boolean closure BC(A) of some set A of sentences [14,22].

F(S) is the set of "formal alternatives" of S in the sense of [13,19,26,29]. The formal alternatives of a sentence S containing $\textbf{any}_{\textbf{D}}$ are derived from S by replacing **any** with **any** or **every** and replacing **D** with any domain restriction **D'**. Thus, (13a) has (13b) as the set of its formal alternative, where E stands for the set of entities. We assume, for illustration, that a, b, c, d are all the books in the world. The existential modal is represented by ◊, so ◊a means 'John is allowed to read a,' for example.

[4] The background motivation for this theory is a conflict between the Gricean Maxims, especially Quality and Quantity, which seem to be truisms about linguistic communication, and the observable fact that people can convey a proposition p, for example 'John talked to Mary and not Sue,' by uttering a sentence S whose literal meaning is prima facie a proposition q which is weaker than p, for example the sentence **John talked to Mary**. Essentially, the proponents of the EXH theory resolve this conflict by denying that S is the sentence being uttered. What is uttered, they say, is really EXH(R)(F(S))(S), which in fact conveys the stronger proposition p as its literal meaning. For more discussion on this issue see [27] and references therein.

(13) a. S = John is allowed to read any$_{D}$ book
b. F(S) = {◊(John read any$_{D'\ book}$), ◊(John read every$_{D'}$book) | D′ ⊆ E} = {⊥, ◊a, ◊b, ◊c, ◊d, ◊(a ∨ b), ◊(a ∨ c), ◊(a ∨ d), ◊(b ∨ c), ◊(b ∨ d), ◊(c ∨ d), ◊(a ∨ b ∨ c), ◊(a ∨ b ∨ d), ◊(a ∨ c ∨ d), ◊(b ∨ c ∨ d), ◊(a ∨ b ∨ c ∨ d), ◊(a ∧ b), ◊(a ∧ c), ◊(a ∧ d), ◊(b ∧ c), ◊(b ∧ d), ◊(c ∧ d), ◊(a ∧ b ∧ c), ◊(a ∧ b ∧ d), ◊(a ∧ c ∧ d), ◊(b ∧ c ∧ d), ◊(a ∧ b ∧ c ∧ d)}

In fact, it follows from our assumption that S and its domain alternatives all have the exact same set of formal alternatives.

EXCL(S, F(S)) and INCL(S, F(S)) are the set of "excludable" and "includable" alternatives of S in F(S), respectively. The general definition of the functions EXCL(S, A) and INCL(S, A), for any sentence S and set of sentences A, is given in (14) [1].[5]

(14) a. EXCL(S, A) = ⋂{A′ | A′ is a maximal subset of A such that {S} ∪{¬S′ | S′ ∈ A′} is consistent}
b. INCL(S, A) = ⋂{A′ | A′ is a maximal subset of A such that {S}∪ {S′ | S′ ∈ A′} ∪ {¬S′ | S′ ∈ EXCL(S, A)} is consistent}

Now consider the sentence S_{abc} in (15a) and its two subdomain alternatives S_{ab} and $S_{\emptyset}$ in (15b) and (15c), respectively.

(15) a. S_{abc} = John is allowed to read any$_{D}$ book
where D ∩ ⟦book⟧ = {a, b, c}
(i) $F(S_{abc})$ = (13b)
(ii) $EXCL(S_{abc}, F(S_{abc}))$ = {⊥, ◊d, ◊(a∧b), ◊(a∧c), ◊(a∧d), ◊(b∧c), ◊(b∧d), ◊(c∧d), ◊(a∧b∧c), ◊(a∧b∧d), ◊(a∧c∧d), ◊(b∧c∧d), ◊(a∧b∧c∧d)}
(iii) $INCL(S_{abc}, F(S_{abc}))$ = {◊a, ◊b, ◊c, ◊(a∨b), ◊(a∨c), ◊(b∨c), ◊(a∨b∨c)}.
b. S_{ab} = John is allowed to read any$_{D'}$ book
where D′ ∩ ⟦book⟧ = {a, b}
(i) $F(S_{ab})$ = (13b)
(ii) $EXCL(S_{ab}, F(_{ab}))$ = {⊥, ◊c, ◊d, ◊(a∧b), ◊(a∧c), ◊(a∧d), ◊(b∧c), ◊(b∧d), ◊(c∧d), ◊(a∧b∧c), ◊(a∧b∧d), ◊(a∧c∧d), ◊(b∧c∧d), ◊(a∧b∧c∧d)}
(iii) $INCL(S_{ab}, F(S_{ab}))$ = {◊a, ◊b, ◊(a∨b), ◊(a∨b∨c)}
c. $S_{\emptyset}$ = John is allowed to read any$_{D''}$ book
where D″ ∩ ⟦book⟧ = ∅
(i) $F(S_{\emptyset})$ = (13b)
(ii) $EXCL(S_{\emptyset}, F(S_{\emptyset}))$ = ∩∅
(iii) $INCL(S_{\emptyset}, F(S_{\emptyset}))$ = ∩∅

[5] Thus, suppose we try to conjoin S consistently with the negation of as many sentences in A as possible. Those sentences which feature in every such trial that are not S are the elements of EXCL(S, A). Then, suppose we try to conjoin S and the negation of every sentence in EXCL(S, A) with as many sentences in A as possible. The sentences which feature in every such trial that are neither S nor elements of EXCL(S, A) are the elements of INCL(S, A).

Since $S_{abc} = \Diamond(a \vee b \vee c)$ is weaker than its subdomain alternatives $S_{ab} = \Diamond(a \vee b)$ and $S_{\emptyset} = \bot$, Licensing is not satisfied. Now let us ask whether Licensing is satisfied by the exhaustified variant. Specifically, let us ask (16).

(16) Is there a parse of $\phi = \text{EXH}(R)(F(S_{abc}))(S_{abc})$ such that ϕ entails its subdomain alternatives?

Among the elements of $\text{EXH}(R)(F(S_{abc}))(S_{abc})$, only R, which denotes the set of relevant sentences, is "pronominal" in the sense that it has a contextually determined interpretation. This means that the question in (16) can be formulated more concretely as (17).

(17) Can R be assigned a value such that (17a) entails (17b) and (17c)?
- a. $\text{EXH}(R)(F(S_{abc}))(S_{abc})$
- b. $\text{EXH}(R)(F(S_{ab}))(S_{ab})$
- c. $\text{EXH}(R)(F(S_{\emptyset}))(S_{\emptyset})$

If the answer is affirmative, then we predict (18) to have a parse which is grammatical, which means we predict (18) to be grammatical, as observed.[6]

(18) John is allowed to read any book

And the answer is, in fact, affirmative. Suppose we parse R as the Boolean closure of $\text{EXCL}(S_{abc}, F(S_{abc}))$, then the following holds.

(19) Let $R = \text{BC}(\text{EXCL}(S_{abc}, F(S_{abc})))$
- a. $\text{EXH}(R)(F(S_{abc}))(S_{abc}) = \Diamond a \wedge \Diamond b \wedge \Diamond c \wedge \neg\Diamond d \wedge \neg\Diamond(a \wedge b) \wedge \neg\Diamond(a \wedge c) \wedge \neg\Diamond(b \wedge c)$
- b. $\text{EXH}(R)(F(S_{ab}))(S_{ab}) = \Diamond a \wedge \Diamond b \wedge \neg\Diamond d \wedge \neg\Diamond(a \wedge b) \wedge \neg\Diamond(a \wedge c) \wedge \neg\Diamond(b \wedge c)$
- c. $\text{EXH}(R)(F(S_{\emptyset}))(S_{\emptyset}) = \bot$

Since (19a) is stronger than (19b), Licensing is satisfied by these two sentences. However, (19c) is stronger than both. Thus, what we need to add to the theory is the presupposition that the domain of **any** is non-empty. Under this presupposition, and the construal of entails in (8) as 'Strawson-entails' (see footnote 2), we predict both the grammaticality of **any** under existential modals and its universal interpretation [6–8].

[6] We assume that a sentence is grammatical if it has one parse which is grammatical, and is ungrammatical if it has no parse which is grammatical. Crnič, in [6–8], proposes formal constraints on R to guarantee that no parse which violates the licensing condition for **any** can be generated by the grammar. As far as I can see, this is necessary only if we want the grammar to be "crash-proof." Note, also, that the account we are proposing does not concern how the value of R is determined. What it tells us is which values of R would make the sentence grammatical. In this sense it is similar to Binding Theory, which does not tell how a certain pronoun comes to carry an index in a discourse context, but does tell us which indices make the sentence grammatical.

2.3 Summary

We have seen that when **any** is embedded under an existential modal, there is an exhaustified meaning of the sentence which satisfies Licensing. If the sentence is parsed without EXH, there is no meaning for it which satisfies Licensing. The reader is invited to verify for himself that exhaustification has no effect on Licensing with respect to sentences containing no existential modals. We thus have (20), where ✓ indicates satisfaction and ✗ indicates violation of Licensing.

(20)

	without EXH	with EXH
John read any book	✗	✗
John did not read any book	✓	✓
John is allowed to read any book	✗	✓

3 Accounting for the Observation About Vietnamese

Let us come back to the puzzle about Vietnamese presented in Sect. 1. The puzzle, to repeat, is this: BK is required for ANY under existential modals, but makes no difference when there is no modal. The situation is thus (21), where ✓ indicates acceptability and ✗ indicates unacceptability.

(21)

	without BK	with BK
John read ___ ANY BOOK	✗	✗
John did not read ___ ANY BOOK	✓	✓
John is allowed to read ___ ANY BOOK	✗	✓

Given the discussion in the last section, it should be clear what we can say to account for the Vietnamese facts: BK-ANY implies the presence of EXH, while simple ANY implies the absence of EXH. To implement this by familiar syntactic machineries, let us say that EXH bears a feature [F] which needs to agree with another instance of [F] in its c-command domain, and BK, which is semantically transparent, bears [F] for the whole DP headed by ANY. This situation is represented below, where ~~strikethrough~~ indicates semantic transparency.[7]

(22) $[_S\ \text{EXH}_{[F]} \quad \ldots \quad [\text{DP}\ \sout{\text{BK}}_{[F]}\ \text{ANY NP}]]$

We note that this kind of bipartite syntax for semantic functions, where an interpreted operator at one structural position is associated with a morphological reflex at another remote structural position, is a fact about natural language which has been observed before. It has been proposed, for example, that

[7] An anonymous reviewer asks why not say that BK carries EXH itself. The question is justified, and my answer would be that there is no reason not to say that BK is EXH itself if semantics is all we care about. However, we also care, minimally, about phonology: we do want to take into account at least the fact that BK is pronounced inside the DP, not clause initially. Saying that BK is an agreement reflex of a clause initial EXH is just a way of saying that BK is EXH but is not pronounced where it is interpreted, a prevalent phenomenon in natural language. Alternatively, we could say that BK undergoes covert movement. Discussing the relative merits and disadvantages of these two analyses would take us beyond the scope of this note.

the quantifier **no one** is by itself an existential quantifier which agrees with a covert, structurally higher, sentential negation. Split scope phenomena such as the ambiguity of (23) have motivated such analyses [24,30].

(23) The company needs to fire no employee
  a. $\text{NOT}_{[F]}$ [need [$\exists_x$ the company fire ~~no~~$_{[F]}$ employee$_x$]]
  = it is not necessary for the company to fire any employee
  b. need [$\text{NOT}_{[F]}$ [$\exists_x$ the company fire ~~no~~$_{[F]}$ employee$_x$]]
  = it is necessary that the company fires no employee

Even the word **only**, which seems to be as semantically contentful as any word can be, has been analyzed as a semantically transparent element which agrees with a remote covert sentential operator which is semantically contentful [2,18]. On this view, (24a) has the analysis in (24b). [8]

(24) a. Mary talked to only John
  b. $\text{ONLY}_{[F]}$ [Mary talked to ~~only~~$_{[F]}$ John$_{\text{focus}}$]

Thus, the analysis we propose for BK, therefore, may not be as extraordinary as it first seems. Note that our account provides a straightforward explanation of another fact about Vietnamese: this language, just like English, does not allow ANY under universal modals.[9]

(26) *Nam phải đọc (bất kỳ) quyển sách nào
Nam must read (BK) ANY BOOK
(Nam must read a book)

The readers are invited to verify for themselves that (26), with or without exhaustification, fails to satisfy Licensing.

4 Open issues

It goes without saying that this short squib leaves issues open regarding the two variants of the Vietnamese NPIs. Here are three. First, when the NP sister of ANY is modified by a numeral, the ANY phrase is in fact licensed under universal modals, provided BK is present.[10]

[8] In fact, a bipartite analysis for ONLY has been proposed for Vietnamese [10].

[9] Here is the English example.

(25) *John is required to read any book

[10] English exhibits the same phenomenon, as pointed out by [8], which acknowledges it to be an unsolvable problem for the account proposed there.

(27) John is required to read any two books

The fact that in Vietnamese the presence of BK is obligatory might be instructive as it suggests exhaustification must play a part.

(28) Nam phải đọc *(bất kỳ) hai quyển sách nào
Nam must read *(BK) ANY TWO BOOK
'Nam is required to read any two books'

Second, only BK-ANY allows the "supplementary" use [9].

(29) Nam phải đọc một quyển sách, *(bất kỳ) quyển nào
Nam must read a book *(BK) ANY BOOK
'Nam is required to read a book, any book'

Third, while both ANY and BK-ANY allow the existential reading in neutral yes/no questions, only ANY allows this reading in biased yes/no questions.[11]

(30) a. Nam có đọc (bất kỳ) quyển sách nào không?
Nam YES read (BK) ANY BOOK NO
'Does Nam read any book?' (neutral)
b. Nam đọc (*bất kỳ) quyển sách nào à?
Nam read (*BK) ANY BOOK Q?
'Nam read a book?' (biased)

Given our hypothesis that BK cooccurs with EXH, the question naturally arises as to how these phenomena relate to exhaustification.[12] We leave this interesting issue to future research.

References

1. Bar-Lev, M., Fox, D.: Free choice, simplification, and innocent inclusion. The Hebrew University of Jerusalem and MIT, Manuscript (2019)
2. Barbiers, S.: Syntactic doubling and deletion as a source of variation. In: Picallo, C.M. (ed.) Linguistic Variation in the Minimalist Framework. Oxford University Press (2014)
3. Bruening, B., Tran, T.: Wh-questions in Vietnamese. J. East Asian Linguist. **15**(4), 319–341 (2006)
4. Chierchia, G.: Logic in Grammar. Oxford University Press, Oxford (2013)
5. Chierchia, G., Fox, D., Spector, B.: The grammatical view of scalar implicatures and the relationship between semantics and pragmatics. In: Portner, P., Maienborn, C., von Heusinger, K. (eds.) Semantics: An International Handbook of Natural Language Meaning. De Gruyter (2012)
6. Crnič, L.: Any, alternatives, and pruning. The Hebrew University of Jerusalem, Manuscript (2019)

[11] The English translations of (30a) and (30b) capture rather precisely the "neutrality" of the former, which corresponds to a subject aux inversion question, and the "bias" of the latter, which corresponds to a "declarative question" in English [16,17,25]. One difference is that the biased question implies that there is contextual evidence for a 'yes' answer, while the neutral question does not have this implication.

[12] [28] proposes an account of this fact which is based on [15]. The account assumes that BK comes with a covert EVEN and that the question particle **à** has a semantics that is incompatible with EVEN. A unification of [28] and the account of BK-ANY under existential modals provided in this paper remains to be worked out.

7. Crnič, L.: Any: logic, likelihood, and context. Lang. Linguistic Compass **13**, 1–20 (2019)
8. Crnič, L.: Number in NPI licensing. The Hebrew University of Jerusalem, Manuscript (2020)
9. Dayal, V.: The universal force of free choice any. Linguistic Variation Yearbook **4**(1), 5–40 (2004)
10. Erlewine, M.Y.: Vietnamese focus particles and derivation by phase. J. East Asian Linguistics **26**(4), 325–349 (2017). https://doi.org/10.1007/s10831-017-9156-y
11. von Fintel, K.: Restrictions on quantifier domains. Ph.D. thesis, University of Massachussetts at Amherst (1994)
12. Fox, D.: Free choice disjunction and the theory of scalar implicatures. In: Sauerland, U., Stateva, P. (eds.) Presupposition and Implicature in Compositional Semantics, pp. 71–120. Palgrave-Macmillan (2007)
13. Fox, D., Katzir, R.: On the characterization of alternatives. Nat. Lang. Semant. **19**, 87–107 (2011)
14. Groenendijk, J., Stokhof, M.: Studies on the semantics of questions and the pragmatics of answers. Ph.D. thesis, University of Amsterdam (1984)
15. Guerzoni, E.: Even-NPIs in Yes/No questions. Nat. Lang. Semant. **12**(4), 319–343 (2004)
16. Gunlogson, C.: Declarative questions. Proc. SALT **12**, 144–163 (2002)
17. Gunlogson, C.: True to form: Rising and falling declaratives as questions in English. Routledge (2003)
18. Hirsch, A.: Only as a concord phenomenon. Minicourse taught at the Hebrew University of Jerusalem (2020)
19. Katzir, R.: Structurally-defined alternatives. Linguist. Philos. **30**, 669–690 (2007)
20. Klima, E.S.: Negation in English. In: Fodor, J.A., Katz, J.J. (eds.) The Structure of Language: Readings in the Philosophy of Language, pp. 246–323. Prentice Hall (1964)
21. Ladusaw, W.: Polarity sensitivity as inherent scope relations. Ph.D. thesis, University of Texas Austin (1979)
22. Lewis, D.: Relevant implication. Theoria **54**(3), 161–174 (1988)
23. Nickel, B.: Generically free choice. Linguist. Philos. **33**(6), 479–512 (2011). https://doi.org/10.1007/s10988-011-9087-4
24. Penka, D.: Negative Indefinites. Oxford University Press (2011)
25. Trinh, T.: How to ask the obvious - A presuppositional account of evidential bias in English yes/no questions. MIT Working Papers Linguist. **71**, 227–249 (2014)
26. Trinh, T.: Keeping it simple. Nat. Lang. Semant. **26**(2), 111–124 (2018). https://doi.org/10.1007/s11050-018-9143-5
27. Trinh, T.: Exhaustification and contextual restriction. Front. Commun. **4**, 1–7 (2019)
28. Trinh, T.: A puzzle about free choice and negative bias. Talk given the Conference on Tense and Speech Acts, 16/01/2020, Vietnam Institute of Linguistics, Hanoi (2020)
29. Trinh, T., Haida, A.: Constraining the derivation of alternatives. Nat. Lang. Semant. **23**(4), 249–270 (2015). https://doi.org/10.1007/s11050-015-9115-y
30. Zeijlstra, H.: Sentential Negation and Negative Concord. LOT, Utrecht (2004)