Emphasis and (anti-)additivity in polarity particles: Sakha *da(ghany)* and *emie*[*]

TripleA 8 (National University of Singapore)

Ian L. Kirby
(Harvard University)

June 24, 2021

1 Introduction

• This paper examines two quantifier particles from the Turkic language Sakha:[1] (I) ***da(ghany)*** and (II) ***emie*** (§A.1 on romanization, §A.2 on alternation)

(I) **daghany** [daʁanɨ] ∼ **da** [da]
- a. NPIs
  - (i) kim **da(ghany)**
    who *da*
    'anyone'
  - (ii) biir **da** kinige
    one *da* book
    'any book(s)'
- b. Scalar additive focus
  - (i) X **da(ghany)**
    'even X'
  - (ii) p **da(ghany)** q
    'even though p, q'
  - (iii) elbex **da** kihi
    many *da* person
    'SO many people'
- c. Coordination
  - (i) X **da(ghany)** ... Y **da(ghany)**
    'both X and Y'
  - (ii) NEG < [X **da(ghany)** ... Y **da(ghany)**]
    'neither X nor Y'

(II) **emie** [ɛmiɛ] ∼ **eme** [ɛmɛ] ∼ **emit** [ɛmɪt]
- a. Non-specific (epistemic) indefinites
  - (i) kim **eme/emit**
    who *emie*
    'someone', 'some guy'
  - (ii) biir **eme** yrya-ny
    one *emie* song-ACC
    'some song / any song'
- b. Additive focus
  - (i) X **emie**
    'Also X', 'X, too'
  - (ii) NEG < [X **emie**]
    'not X, either'
  - (iii) X **emie**
    'again X', 'X, again'

[*]I am deeply grateful to Daria Boltokova for Sakha elicitations. I would also like to thank Ankana Saha for Hindi judgments. For helpful discussions, I would like to thank Jonathan Bobaljik, Lucas Champollion, Gennaro Chierchia, Kate Davidson, Niels Kuehlert, Gunnar Lund, Dora Mihoc, Ankana Saha, Uli Sauerland, and Tamisha Tan. I would also like audiences at the *Harvard Linguistics Cirlce* as well as reviewers for *SALT31* and *TripleA 8.*
Author: Ian. L Kirby
E-mail: ikirby@g.harvard.edu
Website: scholar.harvard.edu/ikirby

[1]Sakha (ISO: sah), occasionally romanized as <Saxa>, is often referred to by its Russian exonym Yakut. Sakha is spoken by around 450,000 native speakers, mainly in the Sakha Republic in the far east of Russia. Along with Dolgan, it belongs to the Northern Siberian sub-branch of Turkic (Johanson 1998).

• There is very little (accessible) work on Sakha quantifier particles:

- Sakha ("Yakut") included Haspelmath's (1997: 1997) *Indefinite Pronouns* (drawing from Afanas'ev and Xaritonov 1968, Ubrjatova 1982)
- Vinokurova (a native Sakha linguist) makes reference to various uses of the particles in her dissertation (2005: *da(ghany)*pp. 202–3, 209, 245, 282–3, 363–4, *emie*: pp. 309, 311, 329), as well as her work with Mark Baker where *daghany* diagnoses embedded subject position (2010: 615–20)
- Brief descriptions in handbook articles (Pakendorf and Stapert 2020: 436, Stachowski and Menz 1998: 423, 429), cursory mentions in Krueger's *Yakut Manual* (1962: 108–9, 115) and Landmann's compiled grammar (2016: 27, 33, 80, 108–11). Very brief discussion of scalar additive *even*-use of *da(ghany)* in (Gast and van der Auwera 2013: 130–1). Numerous examples of the particles in Pakendorf (2007: glossed PTL), though does not discuss particles themselves.

• Present data from elicitations with a native Sakha speaker (Vilyuy dialect), conducted in person (Cambridge, Massachusetts) & online from 2019–2021, supplemented with entries from the online Sakha dictionary sakhatyla.ru, forum posts (forum.ykt.ru), news sites (e.g., kyym.ru), and translations of the bible (ibtrussia.org), checked with consultant.

• As has been shown in much work on particle-based indefinites,[2] typologically common to build NPIs out of a low-scalar existential host (e.g., a WH-word, a numeral meaning 'one', and/or a plain *some*) in concert with an *even/also* particle.
• E.g., Japanese *-mo* (1) and Hindi/Urdu *bhii* (2).[3]

(1) Japanese *-mo*

a. Focus: Additive ∼ scalar additive

(i) [sono syoonin-**mo**] damatteita
that witness-*mo* was.silent
(scalar reading): 'Even THAT WITNESS was silent'
(additive reading): 'THAT WITNESS was silent, also/too' (Shimoyama 2006: 145)

b. NPIs

(i) Yoko-ga [gakusei-o dare-**mo**] syootaisi-*(nakat)-ta
Yoko-NOM student-ACC who-*mo* invite-(NEG)-PST
'Yoko didn't invite any student' (Shimoyama 2011: 416)

(ii) [hito-ri-**mo**] {ko-na-katta / *ki-ta}
one-CL-*mo* {come-NEG-PST / come-PST}
'Not even one person came.' (Nakanishi 2006: 150)

(2) Hindi/Urdu *bhii*

a. Focus: Additive ∼ scalar additive

(i) Main-ne [kitaab **bhii**] padhee
1SG-ERG book *bhii* read.PST
(scalar reading): 'I even read THE BOOK'
(additive reading): 'I also read THE BOOK'

[2] For overviews on quantifier particles cross-linguistically see: (Haspelmath 1997, Szabolcsi 2015, 2017, 2018, Mitrović and Sauerland 2014, 2016, Mitrović 2021). In particular languages—Dharamsala Tibetan: (Erlewine and Kotek 2016); Hindi/Urdu: (Lahiri 1998); Hungarian: (Tóth 1999, Halm 2016, Szabolcsi 2015, 2017); Japanese: (Kratzer and Shimoyama 2002, Shimoyama 2006, 2011, Nakanishi 2006, 2012, Kobuchi-Philip 2009, Mitrović and Sauerland 2014, 2016); Serbian/Bosnian/Croatian: (Progovac 1994, Szabolcsi 2017, 2018, Mitrović and Sauerland 2014, 2016).

[3] **Glossing key:** Particles are left untranslated in glosses. 1SG, 2SG, etc.=person agreement, ACC=accusative case, AOR=aorist/non-past ("Aorist" following Turkological convention), AUX=auxiliary, CMPR=comparative case, COND=conditional mood, CVB=converb, DAT=dative case, ERG=ergative case, FUT=future, HAVE=derivational suffix indication possession of noun, INDIR=indirective, NEG=negation, POSS=possessor agreement, PST=past, PTPL=participle, Q=question particle or clitic.

(ii) Main-ne [kitaab **bhii**] nahin padhee
1SG-ERG book *bhii* NEG read.PST
(scalar reading): 'I didn't even read THE BOOK'
(additive reading): 'I didn't read THE BOOK, either' (Ankana Saha, p.c.)

b. NPIs
(i) [koii **bhii**] *(nahiiN) aayaa
somebody *bhii* (NEG) came
'Nobody came' (Lahiri 1998: 60)
(ii) [ek **bhii** aadmii] *(nahiiN) aayaa
one *bhii* man (NEG) came
'No man came' / (Lahiri 1998: 61)
'Not even one man / not a single man came' (Ankana Saha, p.c.)

• This paper focuses on two potentially typologically unique details about Sakha that are puzzles for a theory of quantifier-particle-based NPIs.

Puzzle 1: Sakha NPIs are not emphatic (§2).

• WH-*da(ghany)* (3) and *biir da* (4a) NPIs are judged to be pragmatically quite weak, unemphatic.

(3) Min [tugu **da(ghany)**] aax-*(pa)-t-ym
I what.ACC *da* read-(NEG)-PST-1SG
a. 'I didn't read anything'
b. 'I didn't read ANYTHING'

• In contrast Japanese and Hindi/Urdu *even-one* (1b-ii), (2b-ii), Sakha *one*-based NPIs lack an 'even one' reading (4a-ii)
• *biir da*'s emphasis is judged as similar to bare noun under negation (4b) (though *biir da* is slightly less tolerant of marginal exceptions).
• In fact, *biir* 'one' WITHOUT *da* yields the 'even one' reading (4c):

(4) a. Min [biir **da** kinige] aax-*(pa)-t-ym
I one *da* book read-(NEG)-PST-1SG
(i) 'I didn't read any books'
(ii) #'I didn't read even one book / a single book'
b. Min [kinige] aaxpatym
'I didn't read books' / 'I didn't read any books' / 'I didn't do any book-reading'
c. Min [biir kinige] aaxpatym
'I didn't read even one book / a single book / ONE BOOK'

• (4a), (4c) is surprising—focused hosts (e.g. bare nouns), *da(ghany)* yields an emphatic, counter-expectational reading, similar to Japanese *-mo* (1a), Hindi/Urdu *bhii* (2a)!

(5) Min [kinige **da(ghany)**] aax-$^{?/??}$(pa)-t-ym
I book *da* read-(NEG)-PST-1SG
'I (didn't) even read BOOKS / A BOOK'
(scalar presupposition): 'I was very unlikely to have (not) read books / a book'

• Unexpected on exhaustification-based theories of NPIs (Chierchia 2013, Mitrović 2021). Chierchia analyzes *even*-particle-based NPIs (dubbed *even-one, even-WH*, or *even-some*) as INHERENTLY EMPHATIC, exhaustified with E(ven), similar to Minimizer NPIs (e.g., English *give a damn, lift a finger*).
• As I will show in §2.4.1, the emphatic scalar presupposition cannot be suspended in Hindi.

• Sakha *biir da* presents a challenge. *Biir* 'one' is a numeral, so we must exhaustify NPIs constructed with it with E(ven), following Chierchia's (2013: 153) economy principle OPTIMAL FIT.

(6) OPTIMAL FIT (INFORMAL): If a proposition has active alternatives, exhaustify it first with O(nly).[4] If this produces a trivial result (a contradiction or the same thing as what you started with) AND you have a salient probability metric, try E(ven)
A probability metric is salient if (6a) and/or (6b) is satisfied:
   a. There is a pragmatically/contextually salient ranking to the alternatives
   b. The alternatives are totally ordered by an entailment relationship

• O-exhaustification of *biir da* 'any' (4a-i) will yield a vacuously true statement regardless of polarity. Because the alternatives of *one* {1, 2, 3, ...} are totally ordered {1⇐2⇐3,...,}, (6b) says proceed with E(ven). Return an interpretable LF only if alternative-bearing element scopes below a downward-entailing operator.

Proposed Solution to Puzzle 1: (slightly?) relax assumptions about OPTIMAL FIT (6), the connection between E-exhaustification and emphasis.

- E-exhaustification correlates with pragmatic emphasis if condition (6a) is met.
- Meeting condition (6b) alone does produce emphasis.

(7) Proposed categorization of emphatic/unemphatic NPIs ('σ'=scale)

	language	item	(6a) pragm. σ?	(6b) rich σ?	Reading under NEG
a.	Eng	*any* N$_{\{PL,MASS\}}$	✗	✗	Potentially Emphatic NPI
b.	Sah	(i) bare N	✗	✗	
		(ii) *biir da*	✗	✓	
		(iii) *biir* N	✓	✓	Inherently Emphatic NPI
c.	Jpn	*hito..-mo*	✓	✓	
d.	Hin/Urd	*ek bhii*	✓	✓	

Puzzle 2: *da(ghany)* lacks a basic additive *also/too* reading (§3)

• Unlike Japanese *-mo* (1a-i) and Hindi *bhii* (2a), Sakha *da(ghany)* combined with a focused host never produces a plain additive *also/too* reading. Instead, *emie* is used, in both positive and negative sentences:

(8) a. Studjen [kinige-ni {**emie / #da(ghany)**}] aax-ta
student book-ACC {*emie / da*} book-PST
'The student also read THE BOOK', 'The student read THE BOOK, too/also'
(additive presupposition): The student read something other than the book
   b. Studjen [kinige-ni {**emie / #da(ghany)**}] aax-pa-ta
student book-ACC {*emie / da*} read-NEG-PST
'The student didn't read THE BOOK, either'
(additive presupposition): In addition to not reading the book, the student also failed to read something else

• With *da(ghany)* the sentences in (8) would have a scalar *even*-like reading.
• At the same time, *even*-like readings typically bear an additive presupposition (Abrusán 2014, 2016, Szabolcsi 2017). This is true in Sakha, as well as English:[5]

[4] The exhaustifier O(nly) is equivalent to EXH used in much other work (e.g., Chierchia et al. 2012, Fox 2007).

[5] Note that the positive counterpart of (9) absent of negation is marginal without *onnooghor* 'even, especially', while the negative does not require it. Further, *da(ghany)* is not required here: *onnooghor studjen iti kinigeni aax(pa)ta* 'even THE STUDENT read / did not read that book'.

(9) Onnooghor [studjen **da(ghany)**] iti kinige-ni aax-(pa)-ta
even student *da* that book-ACC read-(NEG)-PST
'Even THE STUDENT read / did not read that book'

a. (Scalar presupposition): It is very unlikely that this particular student would / would not read that book
b. (Additive presupposition): In addition to the student, there is somebody else who did read / did not read that book

• I explore a blocking account of this pattern.

2 Sakha NPIs and emphasis

2.1 Exhaustification approaches to NPIs

• I adopt an exhaustification-based, alternative-semantics view of polarity items, largely following Chierchia's (2013) theory and formalism.[6]

(10) Ingredients of an NPI

a. NPIs are low-point existentials with obligatorily active semantic alternatives
b. The alternative-enriched LFs of sentence containing an NPI are interpreted by a covert exhaustifier:
   (i) O(nly)= covert *only*
   (ii) E(ven)= covert *even*
c. Because the alternatives are obligatory (i.e. grammatical), they cannot be pruned by Gricean Relevance.
   (i) exhaustification may produce uninterpretable LFs (=ungrammatical)
   (ii) Typically, obligatory ALTs will only be interpretable in the scope of a downward monotone operator (e.g., negation)

• In some sense, quantifier particles like *da(ghany)* CREATE polarity-sensitive elements:

(11) Sakha interrogatives without *da(ghany)* are plain interrogatives:

a. Djulus [tugu] aax-(pa)-ta*(?)
Djulus [what.ACC] read-(NEG)-PST
'What did Djulus (not) read?'
b. Djulus [tugu **da(ghany)**] aax-*(pa)-ta
Djulus [what.ACC *da(ghany)*] read-(NEG)-PST
'Djulus didn't read anything'

(12) Hungarian: *vala*-words are PPIs without particle *is*

a. *(Nem) hiszem, hogy [vala-ki **is**] el jön
(NEG) believe.1SG that [some-who *is*] VB.PTCL come.3SG
'I didn't think that anyone will come'
b. (*Nem) hiszem, hogy [vala-ki] el jön
(NEG) believe.1SG that [some-who] VB.PTCL come.3SG
'I think that someone will come' (Halm 2016: 144)

• **One function of quantifier particles like Sah. *da(ghany)*, Jpn. *-mo*, Hin./Urd. *bhii* is to activate the alternatives of their host (=make them obligatory)**, as I have explored in other work (2020, 2021a, 2021b. See Szabolcsi 2017, Mitrović 2021 for similar claims)

[6] See also Krifka 1995, Lahiri 1998, Chierchia 2004, 2006, Chierchia et al. 2012, Fox 2007, Fox and Katzir 2011, Crnič 2011, 2014, Mitrović 2021.

• *da(ghany)*+low-point existential= NPI

• Definition of O(nly)-exhaustifier:

(13) $[\![O_{ALT}(\phi)]\!] = \phi \wedge \forall\psi \in \text{ALT}[\psi \rightarrow \phi \subseteq \psi]$
where '$\subseteq$' means 'entails'

a. O(nly) asserts a propositions with alternatives ϕ and negates all the alternatives of ϕ which ϕ does not entail.

2.1.1 Exhaustification of WH+*da(ghany)*

WH+*da(ghany)*, positive

(14) *Djulus kim-i da(ghany) kör-d-üm
Djulus who-ACC *da* see-PST-1SG
'*Djulus saw anybody'

(15) Some definitions.

a. $[\![\text{kim}]\!] = [\![\text{who/-body}]\!] = \lambda P_{\langle e,t\rangle}.\ \exists x[\text{PERSON}(x) \wedge P(x)]$
b. $[\![\text{kim da(ghany)}]\!] = [\![\text{anybody}]\!] = \lambda P_{\langle e,t\rangle}.\ \exists x[\text{PERSON}(x) \wedge P(x)]_{[+\text{ALT}]}$
c. $[\![(14)]\!] = \exists x[\text{PERSON}(x) \wedge \text{SEE}(\text{djulus}, x)]_{[+\text{ALT}]}$

• Assume there are three entities in the Domain of individuals: {djulus, tujara}. (15c) is thus the same as ($p \vee q$), where p ='Djulus saw himself' and q ='Djulus saw Tujara'. The set of alternatives for ($p \vee q$) is (16):

(16) $\text{ALT}(p \vee q) = \{p \vee q, p, q, p \wedge q\}$

a. Entailed–ALTs of $(p \vee q) = \{p \vee q\}$

• Because (15c) has active alternatives, we exhaustify the prejacent ($p \vee q$) w.r.t. the alternatives in (16):

(17) $O_{ALT}(p \vee q) = \{p \vee q, \neg p, \neg q, \neg(p \wedge q)$

a. $= (p \vee q) \wedge \neg p \wedge \neg q \wedge \neg(p \wedge q)$
b. $= \underbrace{(p \vee q) \wedge \neg(p \vee q)}_{\perp} \wedge \neg(p \wedge q)$

• The result of O-exhaustification (17b) contradicts the prejacent ($p \vee q$). Uninterpretable (thus ungrammatical).

WH+da(ghany), negative

(18) Djulus kim-i da(ghany) kör-bö-t-üm
Djulus who-ACC *da* see-NEG-PST-1SG
'Djulus didn't see anybody'

(19) a. $[\![\text{kim}]\!] = [\![\text{who/-body}]\!] = \lambda P_{\langle e,t\rangle}.\ \exists x[\text{PERSON}(x) \wedge P(x)]$
b. $[\![\text{kim da(ghany)}]\!] = [\![\text{anybody}]\!] = \lambda P_{\langle e,t\rangle}.\ \exists x[\text{PERSON}(x) \wedge P(x)]_{[+\text{ALT}]}$
c. $[\![(18)]\!] = \neg\exists x[\text{PERSON}(x) \wedge \text{SEE}(\text{djulus}, x)]$

• Where D_e = {djulus, tujara}, (19c)= $\neg(p \vee q)$, where p ='Djulus didn't see himself', q ='Djulus didn't see Tujara'. This yields the set of ALTs in (20).

(20) $\text{ALT}(\neg(p \vee q)) = \{\neg(p \vee q), \neg p, \neg q, \neg(p \wedge q)\}$
a. Entailed–ALTs of $\neg(p \vee q) = \{\neg(p \vee q), \neg p, \neg q, \neg(p \wedge q)\}$

• All of the alternatives in (20) are entailed by the prejacent $\neg(p \vee q)$. O-exhaustification will simply return the prejacent and all of its negated alternatives:

(21) $O_{\text{ALT}}(\neg(p \vee q)) = \{\neg(p \vee q), \neg p, \neg q, \neg(p \wedge q)\}$
a. $= \neg(p \vee q) \wedge \neg p \wedge \neg q \wedge \neg(p \wedge q)$

2.2 One problem: Numeral-based NPIs

• Chierchia's theory relies on an economy constraint called OPTIMAL FIT to mitigate whether alternatives are to be interpreted by the O-exhaustifier (13) or E-even (defined shortly).[7]

(22) OPTIMAL FIT: In exhaustifying ϕ, use O unless O(ϕ) is trivial (=contradictory or vacuous) and there is a salient probability metric μ.
A probability metric μ is salient iff one of the following holds:
a. μ is salient in the context
b. ALT is totally ordered by '$\subseteq$'
(Chierchia 2013: 153)

• Condition (22a) satisfied if contextually, there is a probability ranking of the alternatives (which are ranked along a likelihood scale).
• Condition (6b) if the alternative-bearing element element has a richly ordered scale (i.e., belong to the scale of numeral scale, rather than a reduced scale like non-numeral based NPIs $< \exists, \forall > \equiv < \vee, \wedge >$)
• OPTIMAL FIT stipulates that if these conditions are met, exhaustification with E(ven) proceeds

(23) $[\![E_{\text{ALT(p)}}]\!] = \phi \wedge \forall\psi \in \text{ALT}[\phi <_\mu \psi]$
Where '$\phi <_\mu \psi$' says that ϕ is less likely than ψ with respect to a contextually relevant probability metric μ.
a. E(ven) asserts a proposition ϕ with alternatives ALT(ϕ) and returns an interpretable LF if and only if ϕ is less likely than any member of ALT(ϕ) (aside from those which ϕ entails, i.e. a

[7] Among other reasons, OPTIMAL FIT is partly postulated as a means for which a polarity-sensitive item can be simultaneously an NPI and a free-choice item (e.g. English *any*). Free-choice effects are explained by recursive exhaustification with O (Chierchia 2013: chs. 4, 5. See also Chierchia et al. 2012, Fox 2007, Fox and Katzir 2011 on deriving the free-choice effect via recursive exhaustification with O(nly)). Rather than stipulating that an item has a definition that includes something like "I want O(nly)" or "I want E(ven)", OPTIMAL FIT allows the grammar to decide automatically, based on the nature of the alternatives. See Mitrović (2021: 144) for a recent revision of Optimal Fit that adds a second round of O-exhaustification before checking for a salient probability metric.

proposition cannot be less likely than itself).

• Considering *biir da* NPIs, even without OPTIMAL FIT, to explain the NPI effect**, we need to use E(ven) if *biir* 'one' is truly a numeral.**
• In positive sentences like (24), the most salient reading of *biir* is essentially the same as English 'one', where it would be infelicitous if it meant more than one.

(24) a. Kini biir yt-taax ebit
3SG one dog-HAVE INDIR
'He had one dog'

b. Min biir kinige aax-t-ym
I one book read-PST-1SG
'I read one book'

• Indefinite *a/an*-like readings occur with bare noun. Further, like many Turkic languages, Sakha is a GENERAL NUMBER language: morphologically singular nouns can have a singular or plural indefinite reading (25a), and further nouns modified by numerals are ungrammatical with plural marking on the noun (25b).

(25) a. Min ynax atyylax-pyt-ym
I cow buy-PST-1SG
(i) 'I bought a cow'
(ii) 'I bought (some) cows'

b. Min ikki yt-(*tar)-ym
my two dog-(PL)-1SG
'My two dogs'

c. Min yt-tar-ym
'my dogs'

• Thus, we can give a denotation for *biir* 'one' as a cardinality predicate:

(26) $[\![\text{biir}]\!] = [\![\text{one}]\!] = \lambda P_{\langle e,t\rangle}.Q_{\langle e,t\rangle}.\exists x[P(x) \wedge Q(x) : |n| = 1]$

2.2.1 Exhaustication of *biir da* NPIs

biir da NPIs, positive sentence

(27) *Djulus biir da kinige aax-ta
Djulus one *da* book read-PST
'*Djulus read any book'

(28) Some definitions
a. $[\![\text{biir}]\!] = [\![\text{one}]\!] =$(26)
b. $[\![\text{biir da}]\!] = \lambda P_{\langle e,t\rangle}.\ Q_{\langle e,t\rangle}.\ \exists x[P(x) \wedge Q(x) : |n| = 1]_{[+\text{ALT}]}$
c. $[\![\text{biir da kinige}]\!] = \lambda Q_{\langle e,t\rangle}.\ \exists x.\ [\text{BOOK}(x) \wedge Q(x) : |n|| = 1]_{[+\text{ALT}]}$
d. $[\![(27)]\!] = \exists x.\ [\text{BOOK}(X) \wedge \text{READ}(\text{djulus}, x) : |n| = 1]$

• Because numerals are richly ordered along a scale, the alternatives of (28d) are correspondingly richly ordered. Where 'one'='Djulus read one book', etc., the following represents our set of alternatives:

(29) ALT((28d)) = {one, two, three, ..., }
a. Entailed-ALTs of 'one'= {one}

• Following OPTIMAL FIT, we begin with O-exhaustification:

(30) $O_{ALT}(\text{one}) = \{\text{one} \wedge \neg\text{two} \wedge \neg\text{three} \wedge \neg\text{three} \wedge ...\}$

• The result of (30) is NOT a contradiction; it is a regular Gricean Quantity implicature (i.e., it would produce a reading of 'Djulus read exactly one book'). At the same time, the truth-conditions of (30) are

identical to the prejacent 'one' (28d), because *one* does not entail any numerals greater than *one*. That is, this is a vacuous result.
• Unlike with the WH+*da(ghany)* cases above, our alternatives here (28d) are a rich, totally ordered scale. Thus, condition (22b) of OPTIMAL FIT are met, and we proceed to exhaustify with E(ven):

(31) E_{ALT}(one) = one $\wedge \forall \psi \in$ ALT[one $<_{\mu} \psi$],
where ALT(one) =< one, two, three, ..., >

• The result in (31) is unsatisfiable, hence a contradiction. This is because each alternative of *biir* 'one' entails *one*: you cannot read *two books* without reading *one book*, etc. A proposition cannot be less likely than a proposition that entails it (see Crnič 2014).

biir da NPIs, negative sentence

(32) Djulus biir da kinige aax-pa-ta
Djulus one *da* book read-NEG-PST
'Djulus didn't read any book(s)'

(33) Definitions same as (28), except ⟦(32)⟧
⟦(32)⟧ = $\neg$[$\exists$x[BOOK(x) $\wedge$ READ(djulus, x) : |n| = 1]$_{[+ALT]}$]

(34) ALT(33)= {$\neg$one, $\neg$two, $\neg$three, ..., }

a. Entailed-ALTs of (33)= {$\neg$one, $\neg$two, $\neg$three, ..., }

• Like with WH+*da(ghany)*, all of the alternatives of a negated existential are entailed **??**.

(35) Exhaustification with O(nly)
O_{ALT}(33) = {$\neg$one $\wedge$ $\neg$two $\wedge$ $\neg$three}

• Like with positive *biir da*, the result of O-exhaustification in a negative sentence (35) is vacuous. Again, because the numeral is richly ordered, we move onto E(ven):

(36) Exhaustification with E(ven)
E_{ALT}($\neg$one) = $\neg$one $\wedge \forall \psi \in$ ALT[$\neg$one $<_{\mu} \psi$]

• E-exhaustification of a negated numeral (36) is interpretable, unlike in positive sentences. This is because $\neg$one entails $\neg$two, $\neg$three, etc., but not vice-versa.

2.3 NPIs and emphasis in general

• All NPIs seem to involve some degree of "emphasis," though emphasis is a murky notion
• Kadmon and Landman (1993) characterize the emphatic degree of NPIs in terms of **tolerance of marginal exceptions**, which is also adopted by Chierchia (2013), Mitrović (2021).
• PI *any* combining with a plural head nouns ((i) sentences in (37)) feel "stronger" than bare plurals (ii):

(37)
a. (i) Djulus will not take **classes** next semester.
(ii) Djulus will not take **any classes** next semester.
b. (i) If Djulus takes **classes** next semester, he will be sad
(ii) If Djulus takes **any classes** next semester, he will be sad
c. (i) Is Djulus taking **classes** next semester?
(ii) Is Djulus taking **any classes** next semester?
d. (i) Djulus would rather do research than teach **classes** next semester.
(ii) Djulus would rather do research than teach **any classes** next semester.

• That is, the (i) sentences are more acceptable if followed up with something like *well other than the required seminar.*
• Chierchia (2013) characterizes the effect in (37) as having to do not with probability-ranked alternatives, but rather by the fact that (weak) NPIs like English *any* have **active alternatives**. Check each domain for a hit, and (and subdomains of those domains; DOMAIN WIDENING).
• BUT, *any*'s relationship with marginal exceptions is complex; we can induce further emphasis on the already widened domain. When we compare unstressed *any* with plural nouns to its stressed counterpart[8] AND TO a minimizer like *an iota of a class* and *even one / a single*, the latter feel even stronger:

(38)
a. (i) Djulus will not take **an iota of a class** next semester
(ii) Djulus will not take **ANY class / ANY classes** next semester
(iii) Djulus will not take **even one class / a single class** next semester
b. (i) If Djulus takes **an iota of a class** next semester, he will be sad
(ii) If Djulus takes **ANY class / ANY classes** next semester, he will be sad
(iii) If Djulus takes **even one class / a single class** next semester, he will be sad
(i) Is Djulus taking **an iota of a class** next semester?
(ii) Is Djulus taking **ANY class / ANY classes** next semester?
(iii) Is Djulus taking **even one class / a single class** next semester?
(i) Djulus would rather do research than teach **an iota of a class** next semester
(ii) Djulus would rather do research than teach **ANY class / ANY classes** next semester
(iii) Djulus would rather do research than teach **even one class / single class** next semester

• Compared to the unstressed *any* options in (37), the options in (38) are even less tolerant of exceptions. That is, (37) would relatively acceptable if, say, Djulus were given the option of teaching a really low-workload course, but (38) would not.

(39)
TOLERANCE OF MARGINAL EXCEPTIONS ⟸
DEGREE OF EMPHASIS ⟹

classes > *any classes* > *ANY class(es),*
even one class
a single class
an iota of a class

• We can see these "degrees of emphasis" further in Q&A pairs. Unstressed *any*+plural noun and bare plural nouns are essentially parallel (40a). Unstressed *any* does not carry a negative bias, and follow-up questions about marginal exceptions (e.g. the required seminar) are perfectly normal.
• When *any* is stressed, it carries more negative bias, and marginal exceptions are less tolerated, unless Speaker B clarifies that they don't really think of the seminar as a class.

(40)
a. Bare Plural/unstressed *any* with plural
(i) **Speaker A:** Is Djulus taking [{classes / any classes}] next semester?
(ii) **Speaker B:** No.
(iii) **Speaker A:** Not even the required seminar?
(iv) **Speaker B**:
Negative:
#He is not taking [classes] next semester.
#He is not taking [any classes] next semester.
He is not taking [{ANY class / ANY classes}] next semester.
He is not taking [{ANY class at all / ANY classes at all}] next semester.
Affirmative:
Well, other than the seminar, he's not taking any classes.
b. *any*+singular / stressed any+plural
(i) **Speaker A:** Is Djulus taking {ANY class / ANY classes} next semester?

[8] At least in American English, NPI *any* typically bears stress with a singular count noun head. In my dialect, stressed *any*=[ɛ́ni], unstressed *any*=[ɪni]. Free-choice *any* is typically stressed (and if unmodified, also preferred with singular count nouns).

(ii) **Speaker B:** No.
(iii) **Speaker A:** Not even the required seminar?
(iv) **Speaker B:**
Negative:
#He is not taking [classes] next semester.
#He is not taking [any classes] next semester
He is not taking [ANY class(es)] next semester.
He is not taking [ANY class(es) at all] next semester.
Affirmative:
?Well, other than the seminar, he's not taking any/ANY classes.
Well, yeah, but that's not really a class (changing domain of *class*)

• In contrast, the same exchange with *even one*, *a single* in the initial question (41a) changes the picture slightly. While a follow-up to a negative answer is felicitious and parallel stressed *any*, an affirmative that grants that Djulus is taking the seminar (but no other classes) (41a-iv) much stranger than stressed *any* (40b-iv), though changing the domain is still an option.

(41) a. With *even one*, *a single*
(i) **Speaker A:** Is Djulus taking [{even one class / a single class}] next semester?
(ii) **Speaker B:** No.
(iii) **Speaker A:** Not even the required seminar?
(iv) **Speaker B:**
Negative:
#He is not taking [classes] next semester.
#He is not taking [any classes] next semester.
?He is not taking [ANY class(es)] next semester.
He is not taking [ANY class(es) at all] next semester.
Affirmative
#Well, other than the seminar, he's not taking any/ANY classes
Well yeah, but that's not really a class (changing domain of *class*)

• Questions with minimizer NPIs like *an iota* require negative bias, such that A's question in (42a) would be infelicitious out of the blue. Rather, there would have to be a discourse-salient reason to think that Djulus is taking no classes. Hence, if answered negatively, it is quite strange to keep pushing the issue (42c)[9]

(42) Minimizer *an iota*
a. **Speaker A:** Is Djulus taking [an iota of a class] next semester?
b. **Speaker B:** No.
c. **Speaker A:**??Really? Not even the required seminar?

2.4 Emphasis in Sakha NPIs

• Unfortunately, Sakha *da(ghany)*-based NPIs are not licensed in questions (43) (unless the question also contains negation). Instead, interrogatives appear with *emit* (<*emie* 'also') (43a), and carry no negative bias. For an *even one* reading of *biir* 'one', an *sataar* 'even' is used with *biir*, absent of *da* (43b).

(43) a. {Kim emit / *kim da(ghany)} kofje ih-er=yj?
who *emie* / who *da* coffee drink-AOR=Q
'Does anyone drink coffee?'
b. (i) Saatar [biir (*da) kinige-ni] aax-pyt-yŋ duo?
even one *da* book-ACC read-PST-2SG 1
'Did you read even one book?'
(ii) *Biir da kinigeni aaxpytyŋ duo?
int: 'Did you read even one book?' / 'Did you read any book(s)?'

[9]Further, minimizer questions can be answered by negating the presupposition of the question. E.g. **Speaker A:** *Is Djulus taking an iota of a class next semester?* **Speaker B:** *Where'd you hear that he's not taking classes? He's taking the required seminar!*

• Nor are they licensed in conditionals, which can also induce a negative bias with minimizers (*If you take an iota of a class...*).
• Again, *emie*-based forms instead:

(44) Tujara [{tugu emit / *tugu da(ghany)}] oŋor-doghuna, Djulus čaj kut-an
Tujara what.ACC *emie* / what.ACC *da* repair-COND.3SG Djulus tea pour-CVB
bier-iexteex
give-FUT.3SG
'If Tujara repairs anything, Djulus will serve (her) tea'

• Thus, accounting for reported "weakness" or lack of emphasis is a bit tricky in Sakha.

How emphasis was gauged in Sakha

• In addition to asking about the speaker's impressions of how emphatic/strong statements with *da(ghany)*-NPIs are, I primarily gauged emphasis in two ways. Consider the following series:

(45) a. Bihigi [balyk] ilimnee-be-bit
we fish catch-NEG-1PL
b. Bihigi [biir **da** balyk] ilimnee-be-bit
we one *da* fish catch-NEG-1PL
c. Bihigi [biir balyk] ilimnee-be-bit
We one fish catch-NEG-1PL
'We didn't catch fish / any fish / a single fish'

(I) Inquiring about tolerance of marginal exceptions when a sentence provided in isolation. E.g. asking for a member of (45), whether it would be acceptable to say in the context that they caught a small fish but threw it back (etc.).

(II) Giving sentences side-by-side, asking which felt "stronger" (and if it felt more tolerant of exceptions)

• **Consistently, neither WH+*da(ghany)* nor *biir da* NPIs rated to be inherently emphatic.**

• Interrogative-based NPIs do require, but are compatible with emphasis. For example, with emphatic intonation on the polarity item, (46) gets an emphatic 'anything at all' reading.

(46) Kini [tugu **da**] bil-bet
3SG what.ACC *da* know-NEG.AOR
a. 'S/he doesn't know anything'
b. 'S/he doesn't know ANYTHING at all'

• With *olox* 'totally, absolutely, at all':

(47) Kini [olox tugu **da**] bil-bet
3SG at.all what.ACC *da* know-NEG.AOR
'S/he doesn't know anything at all'

• Information structure movement. Very clear with VP-adverbials:

(48) a. Djulus türgennik [tugu **da(ghany)**] sie-be-te
Djulus quickly what.ACC *da* eat-NEG-PST
'Djulus didn't eat anything quickly'

b. Djulus [tugu **da(ghany)**] türgennik sie-be-te
Djulus what.ACC *da* quickly eat-NEG-PST
'Djulus didn't eat ANYTHING quickly'

• On the other hand, *biir da* NPIs seem to disfavor emphatic interpretations. Consistently, plain *biir* alone was reported to have a stronger, less exception-tolerant option, regardless of position:

(49) a. Djulus {**kinige / biir da kinige / biir kinige**} aax-pa-t-ym
Djulus {book / one *da* book / one book} read-NEG-PST-1SG
(i) *kinige/biir da kinige*: 'Djulus didn't read any book(s)'
(ii) *biir kinige*: 'Djulus didn't read a SINGLE BOOK' / 'Djulus didn't read EVEN ONE book'

b. {**kulaxy / biir da kulaxy / biir kulaxy**} miigin ytyr-ba-ta
bug / one *da* bug / one bug 1SG.ACC bite-NEG-PST
(i) *kulaxy:*
'The bug didn't bite me'
'No bug(s) bit me'
(ii) *biir da kulaxy:* 'No bugs bit me' (lit: 'any bug(s) didn't bit me')
(iii) *biir kulaxy:* 'Not A SINGLE bug bit me' / 'Not EVEN ONE bug bit me'

• Nevertheless, *biir da* was rated as slighly more emphatic than bare nouns. Thus, it seems that the picture in Sakha, compared to English is as follows:

(50)

TOLERANCE OF MARGINAL EXCEPTIONS ⟸

DEGREE OF EMPHASIS ⟹

(English)	*classes*	>	*any classes*	>	*ANY class(es),* *even one class* *a single class* *an iota of a class*
(Sakha)	bare noun	>	*biir da* Noun	>	*biir* noun

• This is surprising—When *da(ghany)*'s host is not *biir* or an interrogative, it routinely results in an emphatic *even*-like reading, as well as some NPI effects.

(51) a. onnooghor studjen [kinige-ni **da(ghany)**] aax-(pa)-ta
even student book-ACC *da* read-(NEG)-PST
'The student (didn't) even read THE BOOK'

b. Studjen [kinige-ni **da(ghany)**] aax-$^{??}$(pa)-ta
student [book-ACC *da*] read-(NEG)-PST
'The student didn't even read THE BOOK'

c. Onnooghor [studjen **da(ghany)**] kinige-ni aax-(pa)-ta
even student *da* book-ACC read-(NEG)-PST
'Even THE STUDENT didn't read the book'

d. [(Onnooghor) bu **da** studjen] kinige-ni aax-*(pa)-ta
(even) this *da* student book-ACC read-(NEG)-PST
'Even THIS STUDENT didn't read the book'

(52) Minimizer reading

a. keppieke-m **da** suox
kopek-1SG.POSS *da* NEG.COP

'I don't have even one penny!' (*sakhatyla.ru*)

(53) Intensifying *so* reading

a. [elbex **da** kihi] kinige aax-(pa)-ta
many *da* person book read-(NEG)-PST
'SO MANY people (didn't) read the book' (with negation, regretful: 'I regret that so few people read the book; I expected more')

b. [elbex kihi] kinige aax-(pa)-ta
'Many people read / didn't the book' (neutral)

• The behavior of *da(ghany)* in (51) seems to suggests that *biir* inherently has a probability ranked scale. So why then does this emphatic effect disappear when the host is *biir* 'one'?

2.4.1 Aside on Hindi/Urdu NPIs

Hindi/Urdu *bhii*

• NPIs formed with Hindi/Urdu *bhii* carry a negative bias (54), hence Chierchia (2013: ch. 3) considering them to be INHERENTLY NEGATIVE.

(54) tumheN {koii **bhii** kitaab / ek **bhii** kitaab} pasand aayi kyaa?
you some *bhii* book / one *bhii* book like AUX Q
'Do you like any book?' (negative answer expected) (Lahiri 1998: 98)

• Further, *bhii*-based NPIs that I have examined seem to be extremely intolerant of marginal exceptions. Compare the following:

(55) Main kaksha mein gaya, lekin...
I class inside go but...
'I went into the classroom, but...'

a. (i) ... main-ne [kisee ko] *(nahin) dekha
1SG-ERG someone.OBL DAT (NEG) see.PST
'... (but) I didn't see anyone'

(ii) ... mainne [kisee ko **bhii**] *(nahin) dekha
1SG-ERG see.OBL *bhii* (NEG) see.PST
'... (but) I didn't see ANYONE (at all)' / '... (but) I saw absolutely no-one'

b. ... main-ne [ek **bhii** chhaatr ko] *(nahin) dekha
1SG-ERG one *bhii* student DAT (NEG) see.PST
'... (but) I didn't see EVEN ONE single student'

(Ankana Sakha, p.c.)

• (55) was constructed as a sentence where marginal exceptions could easily be tolerated. E.g. if one says *I went into the classroom but I didn't see anyone*, it is totally felicitious in a context where you saw somebody, just not who you expected to see (e.g., if you a saw a student, but not YOUR student).
• Similarly *I went into the classroom, but I didn't see any students* is felicitious if say, uttered by a teacher who saw a marginal student (e.g. a student not taking the class for credit).
• In the examples with *bhii* (55a-ii), (55b), any degree of marginal exception is deemed to be infelicitous.
• Further, **with *bhii*, there is reported to be an expectation that the speaker *would* see somebody.** This is the case even with *ek bhii* (a morphosyntactic parallel to Sakha *biir da*).

2.5 Proposal: Different Paths to E-Exhaustification

• Revise our assumptions about the scale related to OPTIMAL FIT (rep. from (22)) and the choice of scale.

(56) OPTIMAL FIT: In exhaustifying ϕ, use O unless O(ϕ) is trivial (=contradictory or vacuous) and there is a salient probability metric μ.
A probability metric μ is salient iff one of the following holds:
a. μ is salient in the context
b. ALT is totally ordered by '$\subseteq$'
(Chierchia 2013: 153)

• Specifically, I propose that meeting (56b) to the exclusion of (56a) does NOT automatically produce what we call "emphasis".
• While the original formulation of OPTIMAL FIT presents the 'totally ordered' entailment condition (56b) to be on par with pragmatically ranked alternatives (56a), I think it is quite plausible that the semantics of a numeral does not in and of itself entail that we (pragmatically) rank its alternatives in the same way as pragmatic expectations.
• Further, if satisfying (56b) always resulted in emphasis, diachronically losing emphasis would entail losing the ordering of the numeral scale, e.g., for Sakha a change in the status of *biir* 'one' from numeral to indefinite determiner. Does not seem accurate.[10]
• Rather, EVEN particles like *da(ghany)* can be **bleached**, losing their requirement that alternatives are ranked along a scale of pragmatically ranked probability alternatives.
• That is...

- Hindi/Urdu *bhii* does (at least) two things: it activates the alternatives of its host (as I suggested above for all such quantifier particles) AND it requires that those alternatives be ranked along a salient scale (thus resulting in E-exhaustification AND and emphatic interpretation).
- Sakha *da(ghany)* only activates its hosts alternatives, not requiring them to be ranked along a pragmatically salient scale. Because *biir* 'one' has a rich scale, it gets exhaustified with E(ven).

• There are two final questions related to this claim:

(I) Why does *da(ghany)* maintain an emphatic even-like with non-end of scale existentials?
- Proposed answer: *da(ghany)* isn't picky about whether the scale is richly ordered, reduced (e.g., for WH-words), or pragmatically ordered. It simply requires alternatives to activate (potentially requring a scalar alternative in all cases. See §3)

(II) Why is plain *biir* the most emphatic option?

• The second question is tricky.
• To begin with, considering this purely on informal pragmatics, the opposition we should be considering is not *biir da* vs. plain *biir*, but rather *biir* vs bare noun:

(57) Min kinige aax-pa-t-ym
I book read-NEG-PST-1SG
'I didn't read (any) books'

(58) Min biir kinige aax-pa-t-ym
I one book read-NEG-PST-1SG
'I didn't read A SINGLE book'

• Recall that Sakha is a GENERAL NUMBER language (25)—Bare nouns are ambiguous between singular and plural reference. If a speaker of such a language is choosing to widen the domain (to exclude exceptions under negation), then why would they choose to utter (58) rather than (57)? An (informal) answer is that *biir*

[10] *biir* always retains its long vowel *biir da* [biːr̪ da]. If *biir da* were univerbated, we would expected [biːrdɛ], following Sakha consonant and vowel assimilations. Note though, that Gast and van der Auwera (2013: 133) reports a few examples where *da* assimilates with the preceding vowel (e.g. *kini onnooghor tigr-ga-**da** ehe-ge-**de** bulta-nar* [3SG even tiger-DAT-*da* bear-DAT-*da* hunt-AOR.3SG] 'He even hunts bears and tigers', where the *da* is assimilating in frontness in the right coordinand.

'one' would induce a pragmatically salient scale (you expected at least one, but even such a small number doesn't obtain).
• The emphasis felt is a reflection of the fact that a speaker of (58) specified the cardinality of the domain.
• Correspondingly, if we compare *biir da* (59) to bare nouns under negation (59) as a separate pattern, we can obtain a reasonable explanation.

(59) Min [biir da kinige] aax-pa-t-ym
I one *da* book read-NEG-PST-1SG
'I didn't read any books'

• By choosing to utter (59) rather than (57), the speaker is specifying diminished tolerance of exceptions to the domain, and
• **Crucially, *da* is NOT activating the alternatives of *biir kinige* (58), but rather the alternatives of *biir* itself. In doing so, it doesn't really care about whether the scale it is creating is salient: all it sees is that *biir* has a scale.**

3 Why does *da(ghany)* lack a basic additive reading?[11]

• Something that I have been grappling with for a while is that, unlike similar quantifier particles (e.g., Hindi/Urdu *bhii* see above, Japanese *-mo* see above, Hungarian *is/sem* Szabolcsi 2017, BCS *i* Szabolcsi 2017), Sakha *da(ghany)* is not acceptable as a plain additive *too/also/either* particle.
• Rather, there is another particle *emie* used instead:

(60) a. Studjen [kinige-ni {**emie / #da(ghany)**}] aax-ta
student book-ACC {*emie / da* book-PST
'The student also read THE BOOK', 'The student read THE BOOK, too/also'
b. Studjen [kinige-ni {**emie / #da(ghany)**}] aax-pa-ta
student book-ACC {*emie / da*} read-NEG-PST
'The student didn't read THE BOOK, either'

(61) a. Djulus kofje is-te. [Min {**emie / #da(ghany)**}] is-t-im
Djulus coffee drink-PST I {*emie / da*} drink-PST-1SG
'Djulus drank coffee. I did, too.'
b. Djulus kofje is-pe-tegh-e. [Min {**emie / #da(ghany)**}] is-pe-tegh-im
Djulus coffee drink-NEG-PST-3SG I {*emie / da*} drink-NEG-PST-1SG
'Djulus didn't drink coffee. I didn't, either'

• Further, *da(ghany)*-based NPIs are licensed only in (a subset of) ANTI-ADDITIVE licensers, e.g. negation and clausal comparatives (following Hoeksema 1983 on clausal comparatives), hence they are Strict NPIs (Gajewski 2011).

(62) a. Licensing under negation
(i) Min [**tugu da(ghany)**] aax-*(pa)-t-ym
I what.ACC *da* read-(NEG)-PST-1SG
'I didn't read anything'
(ii) Min [**biir da** kinige] aax-*(pa)-t-ym
I [one *da* book] read-(NEG)-PST-1SG
'I didn't read any book(s)'
b. Licensing in comparatives
(i) En [**kim-neegher da(ghany)**] öjdööx-xön
You who-CMPR *da* smart-2SG

[11] This section is very much a work in progress, so feedback would be appreciated.

'You are smarter than anyone'

c. Anti-licensed in conditionals:

(i) Tujara [{**tugu emit** / *tugu **da(ghany)**} oŋor-doghuna, Djulus čaj kut-an
Tujara what.ACC *emie* / what.ACC *da* repair-COND.3SG Djulus tea pour-CVB
bier-iexteex
give-FUT.3SG
'If Tujara repairs anything, Djulus will serve (her) tea'

d. Anti-licensed in polar questions:

(i) {**Kim emit** / ***kim da(ghany)**} kofje ih-er=yj?
who *emie* / who *da* coffee drink-AOR=Q
'Does anyone drink coffee?'

• Identifying the source of additive presuppositions is particularly challenging. For particles that are so heavily sensitive to alternative-bearing environments like *da(ghany)*, *emie*, Japanese *-mo*, Hindi/Urdu *bhii*, it is a potentially even greater challenge.
• If *da(ghany)* is stipulated to **itself** mean *even*, (64) would be difficult to explain by exhaustification. Appears to be quite similar to free-choice readings of *or* strengthened to *and*, analyzable as recursive exhaustification with O(nly) (Fox 2007, Fox and Katzir 2011).
• **It is too much to say that da(ghany) is incompatible with additive presuppositions.** The scalar *even* reading of *da(ghany)* typically has an additive presupposition.

(63) a. **Question:** En studjen-nar-yn beghehee kel-e syldjy-byt-tara duo?
you student-PL-2SG.POSS yesterday come-CVB AUX-PST-3PL Q
'Did your students come over yesterday?'

b. **Answer:**

(i) onnooghor Sardaaana **da(ghany)** kel-e syjdjy-byt-e
even Sardaana *da* come-CVB AUX-PST-3SG
'Even Sardaana came'
(=Sardaana must be a student; implies she's lazy, thus unlikely to come)
additive presupp=Some student(s) other than Sardaana came

(ii) Uhuh. [Sardaana **emie**] kel-e syldjy-byt-e
yes Sardaana *emie* come-CVB AUX-PST-3SG
'Yes, Sardaana also came'
(=Sardaana is not a student)
additive presupp=somebody other than Sardaana came

• I have thus far given *da(ghany)* a very underspecified semantic contribution: it simply activates its host's alternatives. This is partly to account for its *both...and* reading that it obtains in certain contexts:[12]

(64) Djulus [kofje **da(ghany)** čaj **da(ghany)**] is-(pe)-te
Djulus coffee *da* tea *da* drink-(NEG)-PST

a. (Positive): 'Djulus drank both coffee and tea'
b. (Negative): 'Djulus drank neither coffee nor tea'

• At the same time, all considered, if *da(ghany)* simply activated its host's alternatives, we would predict free-choice indefinite readings with modals. This is not the case.

(65) [{kim emit / *kim *da(ghany)* / kim bagharar}] alaadjy si-en söp
{who *emie* / who *da* / who *bagharar*} pancake eat-CVB can

a. (*kim emit*): 'Someone (or other) can eat pancakes'

[12]The *both...and* reading of (64) is potentially another context where *da(ghany)* needs an additive presupposition, as it can be analyzed as two mutually-satisfying presuppositions (see Kobuchi-Philip's (2009) proposal for Japanese *-mo...-mo*).

b. (*kim bagharar)*: 'Anyone can eat pancakes'[13]

• *Prima facie*, this resembles a blocking effect. Consider now *da(ghany)* and *emie* compared ALSO/EVEN particles in Japanese, Hungarian, BCS, and Hindi/Urdu (Table 1):

			LANGUAGE								
			Sah		Jpn	Hun		BCS		Hin
	⇓Role	PTCL⇒	*da*	*emie*	*-mo*	*is*	*sem*	*i*	*ni*	*bhii*
(I)	a. ∀–GQ		✗	✗	✓	✗	✗	✗	✗	✗
	b. NPI		✓	✗	✓	✓	✓	✓	✓	✓
	(Environ.)⇒	i. DIR. NEG	✓	✗	✓	✗	✓	✗	✓	✓
		ii. INDIR. NEG	??	??	✗	✓	✗	✓	✗	
		iii. CMPR	✓		✗	✗	✗	✓	✗	
		iv. COND	✗	✓	✗	✓		✓		✓
		v. QUE	✗	✓	✗	✓	✗	✓	✗	✓
		vi. RESTR-∀	✗							✓
	c. FCI		✗	✓	✓	✓	✗	✗	✗	✓
(II)	d. ADD	i. 'also'	✗	✓	✓	✓	✗	✓		✓
		ii. 'either'	✗	✓			✓		✓	✓
		iii. 'even'	✓	✗	✓	✓		✓		✓
(III)	e. DOUBLED	i. (p ∧ q)	✓	f.n.14	✓	✓		✓		✓
		ii. 'nor' (w/ neg)	✓	✗	✓		✓		✓	✓
		iii. 'nor' (0 neg)	✗	✗			✗			✗

Table 1: Distribution of **Sakha *da(ghany)* and *emie***, **Japanese *-mo*** (Shimoyama 2006, 2011, Nakanishi 2006, 2012, Szabolcsi 2015, 2017), **Hungarian *is/sem***, (Tóth 1999, Szabolcsi and Haddican 2004, Szabolcsi 2015, 2017, 2018, Halm 2016, Kiss 2004, Tamás Halm, p.c.) **BCS (Bosnian-Croatian-Serbian) *i/ni*** (Progovac 1994, Szabolcsi 2017, Mitrović and Sauerland 2014, 2016, Mitrović 2021), and **Hindi/Urdu *bhii*** (Lahiri 1998, Szabolcsi 2017, Ankana Saha, p.c.).
• a.∀ – GQ =Universal generalized quantifier,
• d.ADD=additive focus particle (i. also=additive reading in positives, ii.'either'=additive negative reading, iii. 'even'=scalar additive).
• DOUBLED=doubled in a coordination construction(i. (p ∧ q) ='both...and', ii 'nor' (w/ neg)= negated disjunction with overt negation scoping over, iii. 'nor' (0 neg)='neither...nor' without neation scoping over.)

• blank (white) cells indicate contexts I lack positive or negative evidence for.[14]

• Hungarian *sem* and BCS *ni* are negative-concord variants of *is*, *i* respectively. Note that they lack the basic "core of NPI"-licensing: grammaticality in the scope of negation, a phenomenon characterized by Pereltsvaig (2008) for Russian as "The Bagel Problem"
• At the same time, what direction could blocking go in? Intuitively, because *da(ghany)* has a wider distribution (more environments, seemingly more varied readings), this seems like the most likely (i.e., *emie* blocks *da(ghany)*).

[13] *Bagharar* is another Sakha quantifier particle that appears in universal free-choice items.
[14] emie and *da* CAN be used together in bisyndetic conjunction:

(i) emie da bulčut, emie da balkysyt
emie da hunter *emie da* fisherman
'He is both a hunter and a fisherman', 'As he is a hunter, he is also a fisherman'

This is reported to have a particularly rhetorical flavor, like out of a folktale, and does not appear to be productive. *Emie* cannot serve this function by itself *emie X emie Y.

- If ***emie*** blocks ***da(ghany)***...
  - *emie* is lexically specified to activate subdomain alternatives PLUS induce an additive presupposition (see Szabolcsi 2017 for an account of how to do so using O-exhaustification)
  - *emie* is also morphologically marked to behave like a free-choice item (perhaps for the same reason it activates additive presuppositions).
  - *da(ghany)*, on the other hand, is lexically specified only to activate all the alternatives of its host. If its host is an existential, it creates an NPI. If its host is a focused element, it cannot induce an additive presupposition, because *emie* blocks it from doing such (its use as a scalar 'even'-marker "falls out" as an elsewhere condition because *emie* is not specified for a scalar alternative.

A Appendix

A.1 Sakha romanization conventions

• Sakha does not have a standardized romanization, so there is significant variation in transcriptions in the literature. At the same time the native script is highly phonetic (as opposed to phonemic), so I base my transcriptions on orthographic values of the script.
• At the same time, the script does not distinguish between place of articulation of velar obstruents [k, g, ɣ, x] and uvular obstruents [χ, ʁ, q^h]. Due to numerous historical sound changes (see Stachowski and Menz 1998, Pakendorf 2007, Pakendorf and Stapert 2020) and extensive consonant assimilation (regressive, progressive), accurate transcription of these segments is difficult.
• I follow a mixture of IPA values with departures based either on Turkological convention (e.g., *ö* for [ø]), or standard transcription conventions for romanizing Cyrillic (e.g. *y* for [ɨ,ɯ], Cyrr. <Ы>, *č* for [t͡ʃ]).
• Relevant non-IPA values, with Turkological alternatives where they exist, are as follows

Cyrillic	My convention	IPA	Turkological	Notes
Ҕ, ҕ, 5	Gh, gh	[ɣ, ʁ]	Ğ, ğ	<q> in Vinokurova (2005); <5>=key location
Х, х	X, x	[x, χ, q^h]	X, x, Kh, kh; Q, q	
Р, р	R, r	[ɾ, r̥]	R, r	[r̥] syll. final, [ɾ] intervocalic. [r] syll. initial (Russian loans only)
Ы, ы	Y, y	[ɨ, ɯ]	Ï, ï, I, ı	
Ч, ч	Č, č	[t͡ɕ, t͡ʃ]	Ç, ç	
Дь, дь	Dj, dj	[d͡ʑ, d͡ʒ, dʲ]	J, j	
Е, е	E, e; Je, je	[e, je]	Ye, ye	Russian loans only
Э, э	E, e	[e, ɛ]	E, e	
Ө, ө	Ö, ö	[ø, œ]	Ö, ö	
Ү ү	Ü, ü	[y, ʏ]	Ü, ü	
У, у	U, u	[u, ʊ]	U, u	
О, о	O, o	[o, ɔ]	O, o	
И, и	I, i	[i, ɪ]	İ, i	
Й, й	J,j	/j/, /j̃/	Y, y; Ỹ, ỹ	Nasal glide j̃/ distinct phoneme from /j/, (not orthographically distinguished)
Ь, ь	j	[ʲ]		palatalization (Russian loans)
Ыа, ыа	Ya, ya	[ɨa]		(Diphthongs)
Ыэ, ыэ	Ye, ye	ɨɛ, ɯɛ		
Уо, уо	Uo, uo	[ʊɔ, wɔ]		
Үө, үө	yö	[ʏø]		

• Long vowels are transcribed as doubled (consistent with native orthography): *aa* [aː], *ii* [iː], *uu* [uː], *yy* [ɨː], *ee* [ɛː], öö [oː], *üü* [yː], *oo* [ɔː]

A.2 On alternation of *daghany* ∼ *da*, *emie* ∼ *eme* ∼ *emit*:

The alternation between full *daghany* and reduced *da* is poorly understood. It has been noted since the earliest descriptive work on Sakha (Böhtlingk 1851: §670). Native speakers have a strong intuition that they are the same morpheme. From the examples I have examined, there are a few generalizations about where the full or reduced form is available and it largely depends on the morphosyntactic position that *da(ghany)* appears. Wherever full *daghany* is acceptable, reduced *da* is largely acceptable as well (but not vice versa). When the particle is hosted by a noun phrase, its position depends on the presence or absence of determiner-like elements (e.g. quantificational adjectives, possessive pronouns, demonstratives, and of course *biir* 'one' in the NPIs). With a determiner, *da* immediately follows the determiner. Otherwise, the particle invariantly follows the head noun.

This position-based alternation is especially salient with possessive pronouns, which are optional (e.g., *min uolum* 'my son', *uolum* 'my son'). When a possessive pronoun is present, *da(ghany)* follows it (66a). It is ungrammatical to appear following the noun (66b).

(66) 'even my grandfather'

a. min **da(**??**ghany)** ehe-em
my *da* g.fthr.-1SG.POSS

b. (*min) ehe-em **da(ghany)**
(my) g.fthr.-1SG.POSS *da*

The full *daghany* form in (66a) is judged as extremely awkward, though not ungrammatical. Interestingly, when the determiner-like element is three-syllables or more, the full *daghany* form becomes acceptable:

(67) Bihigi **da(ghany)** ehe-bit
our *da* grandfather-1PL.POSS
'even our grandfather'

Note that there are contexts where reduced *da* is dispreferred. E.g., when a focused-element is an entire clause (68):

(68) uol olor-but-un bil-bet **da*(ghany)**
boy sit-PTPL-ACC know-NEG.AOR *da*
'He didn't even KNOW that the boy was sitting there'

Positive *da(ghany)...da(ghany)* coordination also shows interesting patterns (69). In more neutral contexts, either one or both coordinand can appear reduced (69a)–(69c). In contexts where the speaker is correcting an exclusive disjunction it is slightly preferred for both coordinads to be marked with full *daghany* (69d) (e.g., if (69) is said after somebody has claimed that Djulus would drink only one of coffee or tea, not both).

(69) Djulus [kofje **da(ghany)** čaj **da(ghany)**] is-te
Djulus coffee *da* tea *da* drink-PST
'Djulus drank both coffee and tea'

a. ... kofje **da** čaj **da** ...
b. ... kofje **daghany** čaj **da** ...
c. ... kofje **da** čaj **daghany** ...
d. ... kofje **daghany** čaj **daghany** ...

These facts seem to indicate that full *daghany* is more conducive to emphasis, likely because it is long (and hence more stressable) and serves to highlight its focus better than reduced *da*.

Historically, *da(ghany)* is undoubtedly related to Old Turkic *taqï/takï*, which was used as a conjunction meaning 'and' (Tekin 1997: 169, Erdal 2004: 337, 348, 509) and a scalar additive (Tekin 1997: 158, Erdal

2004: 150, 348–9, 478). It does not form NPIs in Old Turkic. The source of the final *-ny/-nï* is mysterious. It resembles the synchronic accusative case allomorph following a vowel-final syllable in /a/: e.g. *Tujara-ny* 'Tujara (accusative)'. Haspelmath (1993), citing Ubrjatova (1982: 202) notes that colloquially, Sakha actually allows inflectional morphemes to follow both the interrogative and its particle:

(70) a. kim-i eme(%-ni)
who-ACC PTCL-(ACC)
'somebody/anybody'
b. kim-ten eme(%-tten)
who-ABL PTCL-(ABL)
'from somebody/anybody'
c. tuox-ta eme(%-te)
what-LOC PTCL-(LOC)
'at something/anything'

Assuming the pattern in (70) was productive historically, it is possible that *daghany* derives from an etymological stem **dagha* suffixed with accusative *-NI*, yielding *daghany*.

As for the *emie* ∼ *eme* ∼ *emit* alternation, as a focus particle 'also/too/either', 'again', the form *emie* is always used. The difference between *eme* and *emit* seems to be dialectal, and also seems to depend on the host word. All examples in Haspelmath (1997) for WH+PTCL contain the *eme* form. Further, the *sakhatyla.ru* entry for *emie* makes no reference to its combination with WH-words or *biir* 'one'. Similarly, the entry for *eme* suggests that it is exclusively used as a particle quantifier particle. Regarding *emit*, it appears to be a feature of my consultant's dialect for *emie/eme* combining with interrogative pronouns. It lacks an entry on *sakhatyla.ru*, though google searches of interrogatives combined with it produce numerous hits. The source of the final *-t* is mysterious, though following the possiblity of inflected particle (70) for the [nɨ] in *daghany*, it is possibly derived from an eroded case ending.

References

Abrusán, M. (2014). *Weak Island Semantics*. Oxford University press.

Abrusán, M. (2016). Presupposition cancellation: explaining the 'soft-hard' trigger distinction. *Natural Language Semantics*, (24).

Afanas'ev, P. and Xaritonov, L. (1968). *Russko-jakutskij slovar'*. Izdatel'stvo, Moscow.

Baker, M. C. and Vinokurova, N. (2010). Two modalities of case assignment: Case in sakha. *Natural Language and Linguistic Theory*, 28.

Böhtlingk, O. (1964 [1851]). *Über die Sprache der Jakuten*. Indiana University Publications: Uralic and Altaic Series, Vol. 35.

Chierchia, G. (2004). Scalar implicatures, polarity phenomena, and the syntax/pragmatics interface. In Belletti, A., editor, *Structures and Beyond*. Oxford University Press.

Chierchia, G. (2006). Broaden your views: Implicatures of domain widening and the "logicality" of language. *Linguistic Inquiry*, 37(4).

Chierchia, G. (2013). *Logic in Grammar: Polarity, Free Choice, and Intervention*. Oxford University Press, Oxford.

Chierchia, G., Fox, D., and Spector, B. (2012). Scalar implicature as a grammatical phenomenon. In von Heusinger, K., Maienborn, C., and Portner, P., editors, *Semantics (HSK33.3)*, pages 2297–2331. de Gruyter.

Crnič, L. (2011). *Getting even*. PhD thesis, Massachusetts Institute of Technology.

Crnič, L. (2014). Non-monotonicity in npi licensing. *Natural Language Semantics*, 22:169–217.

Erdal, M. (2004). *A Grammar of Old Turkic*.

Erlewine, M. Y. and Kotek, H. (2016). Even-npis in dharamsala tibetan. *Linguistic Analysis: Special Issue on South Asian morphosyntax*, 40(1–2):129–166.

Fox, D. (2007). Free choice disjunction and the theory of scalar implicatures. In Sauerland, U. and Stateva, P., editors, *Presupposition and Implicature in Compositional Semantics*. Basingstoke: Palgrove Macmillan.

Fox, D. and Katzir, R. (2011). On the characterization of alternatives. *Natural Language Semantics*, (19):87–107.

Gajewski, J. (2011). Licensing strong npis. *Natural Language Semantics*, 19(2):109–148.

Gast, V. and van der Auwera, J. (2013). Scalar additive operators in transeurasian languages: A comparison with europe. In Robbeets, M. and Cuyckens, H., editors, *Shared Grammaticalization: With special focus on the Transeurasian languages*, pages 113–147. John Benjamins, Amsterdam.

Halm, T. (2016). *The Grammar of Free-Choice Items in Hungarian*. PhD thesis, Pázmány Péter Catholic University.

Haspelmath, M. (1993). The diachronic externalization of inflection. *Linguistics*, 31:279–309.

Haspelmath, M. (1997). *Indefinite Pronouns*. Clarendon Press.

Hoeksema, J. (1983). Negative polarity and the comparative. *Natural Language and Linguistic Theory*, 1(3):403–434.

Johanson, L. (1998). The history of turkic. In Johanson, L. and Éva Á. Csató, editors, *The Turkic Languages*.

Kadmon, N. and Landman, F. (1993). Any. *Linguistics and Philosophy*, 15.

Kirby, I. (2020). Sakha *da(qany)*: Negative polarity, conjunction, and focus. *Proceedings of the Workshop on Turkic and Languages in Contact with Turkic*, 5:71–85.

Kirby, I. (2021a). Exhaustification, free-choice, and additivity: Evidence from sakha *da(ɣanɨ)*. *Proceedings of the Linguistics Society of America*, 6:663–675.

Kirby, I. (2021b). Extending the typology of quantifier particles: Sakha *da(ghany)*. Unpublished Manuscript (Harvard University).

Kiss, K. E. (2004). *The Syntax of Hungarian*. Cambridge University Press, Cambridge, UK.

Kobuchi-Philip, M. (2009). Japanese *Mo*: Universal, additive, and npi. *Journal of Cognitive Science*, 10.

Kratzer, A. and Shimoyama, J. (2002). Indeterminate pronouns: The view from japanese. In Otsu, Y., editor, *The Proceedings of the Third tokyo Conference on Pyscholinguistics*. Hituzi Syobo, Tokyo.

Krifka, M. (1995). The semantics and pragmatics of polarity items. *Linguistic Analysis*, 25.

Krueger, J. R. (1962). *Yakut Manual*. Indiana University Publications.

Lahiri, U. (1998). Focus and negative polarity in hindi. *Natural Language Semantics*, 6:57–125.

Landmann, A. (2016). *Jakutisch: Kurzgrammatik*. Harrassowitz, Wiesbaden.

Mitrović, M. (2021). *Superparticles: A Microsemantic Theory, Typology, and History of Logical Atoms*. Springer.

Mitrović, M. and Sauerland, U. (2014). Decomposing coordination. In Iyer, J. and Kusmer, L., editors, *NELS 44*.

Mitrović, M. and Sauerland, U. (2016). Two conjunctions are better than one. *Acta Linguistica Hungarica*, 63.

Nakanishi, K. (2006). *Even*, *only*, and Negative Polarity in Japanese. In Gibson, M. and Howell, J., editors, *SALT XVI*, pages 138–155.

Nakanishi, K. (2012). The scope of *even* and quantifier raising. *Natural Language Semantics*, 20.

Pakendorf, B. (2007). *Contact in the prehistory of Sakha (Yakuts): Linguistic and Genetic Perspective*. PhD thesis, Universiteit Leiden.

Pakendorf, B. and Stapert, E. (2020). Sakha and dolgan, the north siberian turkic languages. In Robbeets, M. and Savalyev, A., editors, *The Oxford Guide to the Transeurasian Languages*, pages 430–445. Oxford: Oxford University Press.

Pereltsvaig, A. (2008). Negative polarity items in russian and the “bagel problem". In Brown, S. and Przepiorkowski, A., editors, *Negation in Slavic*.

Progovac, L. (1994). *Negative and Positive Polarity: A Binding Approach*. Cambridge University Press.

Shimoyama, J. (2006). Indeterminate phrase quantification in japanese. *Natural Language Semantics*, 14.

Shimoyama, J. (2011). Japanese Indeterminate Negative Polarity Items and their scope. *Journal of Semantics*, 28.

Stachowski, M. and Menz, A. (1998). Yakut. In Johanson, L. and Éva Ágnes Csató, editors, *The Turkic Languages*. Routledge.

Szabolcsi, A. (2015). What do quantifier particles do? *Linguistics and Philosophy*, 38:159–204.

Szabolcsi, A. (2017). Additive presuppositions are derived through activating focus alternatives. In Cremers, A., van Gessen, T., and Roelofsen, F., editors, *Proceedings of the 21st Amsterdam Colloquium*, pages 455–464.

Szabolcsi, A. (2018). Two types of quantifier particles: Quantifier-phrase internal vs. heads on the clausal spine. *Glossa*, 3(1):1–32.

Szabolcsi, A. and Haddican, B. (2004). Conjunction meets negation: A study in cross-linguistic variation. 21:219–249.

Tekin, T. (1997). *A Grammar of Orkhon Turkic*. Indiana University Press, Bloomington.

Tóth, I. (1999). Negative polarity item licensing in hungarian. *Acta Linguistica Hungarica*, 46(1/2).

Ubrjatova, E. (1982). *Grammatika sovremennogo jakutskogo literaturnogo jazyka*. Nauka, Moscow.

Vinokurova, N. (2005). *Lexical Categories and Argument Structure: A Study with Reference to Sakha*. PhD thesis, Universiteit Utrecht.