

# Exhaustification, free-choice, and additivity

Evidence from Sakha *da(yani)*

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01/10/21

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*95th Annual Meeting of the Linguistics Society of America*

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  - Negative Polarity Items (NPIs) with WH-words, numeral *biir* 'one' (1):
    - (1) [Kim da(ɣani)] [biir da kinige-ni] aax-\*(pa)-ta  
[who *da(ɣani)*] [one *da* book-ACC] read-(NEG)-PST.3SG  
'Nobody read any book(s)', lit: 'Anybody didn't read any book(s)'
  - Grammatical in negative sentences, ungrammatical in positive
  - Full *da(ɣani)* or reduced *da* both acceptable with WH-NPIs. The short form is preferred following quantificational adjectives like *biir* 'one'.

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  - Scalar focus particle (2):
 

(2) [Onnooyor studjen da(ɣani)] iti kinige-ni aax-(pa)-ta  
 [even student *da(ɣani)*] that book-ACC read-(NEG)-PST.3SG  
 ‘Even the student (didn’t) read that book’
  - *da(ɣani)* outside of WH-words, *biir* is not as sensitive to polarity
  - (2) Expresses that it is unexpected that the student would (or would not) read the book.

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 'Even the student (didn't) read that book'

- Doubled in coordination constructions (3):

- (3) Djulus [kofje *da(ɣani)*] [čaj *da(ɣani)*] is-(pe)-te  
 Djulus [coffee *da(ɣani)*] [tea *da(ɣani)*] drink-(NEG)-PST.3SG  
 a. Without NEG *-pe*: 'Djulus drank both coffee and tea'  
 b. With NEG *-pe*: 'Djulus drank neither coffee nor tea'

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- NPIs built out of numeral 'one' and/or an existential quantifier like a WH-word (or 'some-') combined with an 'even'-like particle are well attested
  - *even-some* / *even-WH* / *even-one* NPIs (Chierchia 2013)
  - Lahiri (1998) on Hindi *bhii*, Szabolcsi (2015, 2017) on Hungarian *is/sem*, Japanese *-mo*, Serbo-Croatian *i/ni*, Haspelmath (1997) on many others

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- NPIs are existentials which obligatorily scope below their licenser (e.g. negation) (Fauconnier 1975, Ladusaw 1979, Progovac 1993, Chierchia 2013, Crnič 2014)
  - Why does positive *da(yani)...da(yani)* resolve to a conjunction 'both...and' meaning?

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  - b. Additional operators? “Are the particles aided by additional elements, overt or covert, in fulfilling their varied roles? If yes, what are those elements?”
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    - **Semantic alternatives of a disjunction/existential, interpreted by a covert exhaustifier** (Sauerland 2004, Chierchia, Fox, Spector 2008, Crnič 2011, Szabolcsi 2017)
    - **Chierchia’s Grammatical Theory of Polarity Sensitivity** (2004, 2013)
  - c. Cross-linguistic comparison? “What do we make of the cross-linguistic similarities and differences in the distribution and interpretation of the particles?”

## 2. Distribution: Sakha *da(yani)*, Hungarian *is/sem*, Japanese *-mo*

Role	Sakha <i>da(yani)</i>	Hungarian <i>is/sem</i>	Japanese <i>-mo</i>	see slide
NPI,				
<i>even X</i>				
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<i>even X</i>	✓ — ( <i>onnooyor</i> ) ... <i>X da(yanɨ)</i>	✓ — <i>még X is</i>	✓ — <i>X-mo</i>	(37)
<i>both X and Y</i>	✓ — <i>X da(yanɨ)</i> ... <i>Y da(yanɨ)</i>	✓ — <i>X is Y is</i>	✓ — <i>X-mo Y-mo</i>	(38)
<i>neither X nor Y</i>	✓ — <i>X da(yanɨ)</i> <i>Y da(yanɨ)</i>	✓ — <i>X sem Y sem,</i> <i>sem X sem Y</i>	✓ — <i>X-mo Y-mo</i>	(39)

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- Hun. *sem*=negative concord variant of *is*. *-ki*='who'. *senki*=*sem+ki*. JPN *dare*='who'

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neither X nor Y	✓ — X <i>da(yanɨ)</i> Y <i>da(yanɨ)</i>	✓ — X <i>sem</i> Y <i>sem</i> , <i>sem X sem Y</i>	✓ — X- <i>mo</i> Y- <i>mo</i>	(39)
X <i>too/either</i>	<b>X</b>	✓ — X <i>is</i> , X <i>sem</i>	✓ — X- <i>mo</i>	

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X <i>too/either</i>	✗	✓ — X <i>is,</i> X <i>sem</i>	✓ — X- <i>mo</i>	
FCI, <i>anybody</i>	✗	✓ — <i>akárki is,</i> <i>bárki is</i>	✓ — <i>dare-de-mo</i>	

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No universal quantifier uses

- (4) [Donó hito-mo] hashitta  
[which person-*mo*] run.PST  
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- a. [Tugu da(yani)] aax-\*(pa)-t-im  
[what.ACC *da(yani)*] read-(NEG)-PST-1SG  
'I didn't read anything'
- b. [Xas biirdii kinige-ni] aax-t-im  
[how.much each book-ACC] read-PST-1SG  
'I read every single book'
- c. [Tuox baar kinige-ni bari-tin] aax-t-im  
[what exist book-ACC every-ABL] read-PST-1SG  
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- Shimoyama (2011)— Japanese *-mo* quantifier particle forms universals
  - so-called NPI WH-*mo* actually PPI (i.e.  $[\forall < \neg]$  rather than  $[\neg < \exists]$ )

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- *X also, X too/either*—**additivity**. Presupposition that, in addition to the ordinary value of a proposition,  $\geq 1$  additional alternative is (also) true

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  - (6) a. DJULUS drank coffee, too/also.  
**Additive presupp.** = Somebody other than D. drank coffee.
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**Additive presupp.** = Somebody other than D. didn't drink coffee.
- Basic additive use possible for Hungarian *is/sem* (7)
  - (7) Bill {is / sem} ásított  
Bill {*is* / *sem*} yawned
    - a. (Positive, *is*): 'BILL yawned, too'  
[Presupposition= Somebody other than Bill yawned]
    - b. (Negative, *sem*): 'BILL didn't yawn, either'  
[Presupposition= Somebody other than Bill didn't yawn]

(Hungarian, Szabolcsi 2017: 461)



## 2. Distribution

*Da(yani)* lacks a basic additive reading (II)

- Sakha *da(yani)* is infelicitous for such a reading:<sup>1</sup>

- (8) Djulus {#*da(yani)* / *emie*} kofje is-(pe)-te  
Djulus { *da(yani)* / *also*} coffee drink-(NEG)-PST.3SG  
(Positive, *emie*): 'DJULUS drank coffee, too'  
(Negative, *emie*): 'DJULUS didn't drink coffee, either'

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- With *da(yani)* (8) can only mean 'Even DJULUS (didn't) drink coffee' (i.e. the scalar focus reading)

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  - Part of the meaning is an additive presupposition: somebody other than Djulus (did drink/didn't drink) coffee (in addition to scalar presupposition)

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- With *da(ɣanɨ)* (8) can only mean 'Even DJULUS (didn't) drink coffee' (i.e. the scalar focus reading)
  - Part of the meaning is an additive presupposition: somebody other than Djulus (did drink/didn't drink) coffee (in addition to scalar presupposition)
  - Basic additive present in *da(ɣanɨ)*'s cognates in many other Turkic languages, e.g. Turkish *dA* (Kornfilt 1997: 109–14, Kamali and Karvovskaya 2013, Szabolcsi 2018). No NPI uses in Turkish (i.e. not a quantifier particle)

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*Da(yanı)* lacks a basic additive reading (II)

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Djulus { *da(yanı)* / *also*} coffee drink-(NEG)-PST.3SG  
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  - Basic additive present in *da(yanı)*'s cognates in many other Turkic languages, e.g. Turkish *dA* (Kornfilt 1997: 109–14, Kamali and Karvovskaya 2013, Szabolcsi 2018). No NPI uses in Turkish (i.e. not a quantifier particle)
- Lacking a basic additive use makes *da(yanı)* a unique quantifier particle

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*Da(ɣani)* does not appear in FCIs

- (9) [Kim { \**da(ɣani)* / *bayarar* }] *alaadji sie-n söp buoluo*  
[who { *da(ɣani)* / PTCL }] *pancake eat-CVB can maybe*  
(With *bayarar*): ‘Anyone can eat pancakes’ (Sakha)
- (10) [Bárki (is)] *jön meg, engedd be*  
[anyone *is*] *come.3SG VRB.MODIFIER let.2SG.IMP VRB.MODIFIER*  
‘Whoever arrives, let him in’ / ‘Let anybody who arrives in’  
(Hungarian, Halm 2016: 130)

## 2. Distribution

*Da(ɣani)*'s scalar focus reading is compatible with free-choice implicature

(11) Sakha

- a. Iti kinige-ni [ehe-em da(ɣani)] aay-ian söp  
that book-ACC [grandfather-1SG *da(ɣani)*] read-FUT can  
(i) 'Even MY GRANDFATHER can read that book'  
(ii) 'Anyone can read that book, even MY GRANDFATHER'

(12) Hungarian (Szabolcsi 2017: 460)

- a. [Akár Mari is] nyerhet  
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'Anyone can win; to pick an arbitrary example, Mari'

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- *da(yani)* does not form FCIs, unlike Hungarian *is* in (12-a). (11-a) is a free-choice implicature over the *even*-use

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- *da(yani)* marks alternatives of its host obligatorily active (Chierchia 2013)
  - In most cases, *da(yani)* is interpreted by simple (non-recursive) exhaustification

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## 2. Distribution

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  - Szabolcsi (2017)— additive *too* quantifier particles cause recursive exhaustification of a subset of the alternatives
    - *Da(yani)* does not do so
  - Recursive exhaustification IS responsible for the 'both...and' reading of *da(yani)...da(yani)*, though it is caused by each instances of the particle activating the alternatives of its host disjunct

### 3. NPIs and focus

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where ' $\subseteq$ ' means 'entails' (Chierchia 2013: 31)

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- If negation of  $ALT(\phi)$  contradicts  $\phi$ : ordinary scalars prune contradiction (Relevance); PIs become uninterpretable (ALTs not subject to Relevance)

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- First, take a positive example

(14) \*Djulus [tugu        da(yani)] aax-ta  
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- Assume domain contains two things: *Syntactic Structures* and *Aspects*.  
(15-b) is equivalent to a disjunction ( $p \vee q$ ) where  $\llbracket p \rrbracket$  = 'Djulus read *Syntactic Structures*' and  $\llbracket q \rrbracket$  = 'Djulus read *Aspects*'

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- Because  $(p \vee q)$  has active ALTs, we exhaustify with respect to them. Members of ALT that are not entailed by prejacent  $(p \vee q)$  eliminated (i.e. negated)

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- Under negation ...

- (17) a. Djulus [tugu da(yani)] aax-pa-ta  
Djulus [what.ACC *da(yani)*] read-NEG-PST.3SG  
'Djulus didn't read anything'
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(18)  $\text{O}_{\text{ALT}}(\neg(p \vee q)) = \neg(p \vee q) \wedge \neg p \wedge \neg q \wedge \neg(p \wedge q)$

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where ' $\phi <_{\mu} \psi$ ' =  $\phi$  is less likely than  $\psi$  w.r.t. a probability metric  $\mu$

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(20) \*Djulus [biir da kinige-ni] aax-ta  
Djulus [one *da* book-ACC] read-PST.3SG  
'\*Djulus read any book'

- a.  $\llbracket (20) \rrbracket = \exists x[n(x) \wedge \text{BOOK}(x) \wedge \text{READ}(\text{djulus}, \text{book}) : |n| = 1]$
- b.  $ALT(20-a) = \{\text{one book} \Leftarrow \text{two books} \Leftarrow \text{three books} \Leftarrow \dots\}$

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$$(21) \quad E_{ALT}(20) = \text{one book} \wedge \forall p \in ALT[\text{one book} <_{\mu} p]$$

- i.e.  $\text{one book} <_{\mu} \text{two books} <_{\mu} \text{three books} \dots$   
Unsatisfiable! *two* entails *one* (and so forth)

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- Under negation, these entailments are reversed (22-b)

(22) Djulus [biir da kinige-ni] aax-pa-ta  
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(23)  $E_{\text{ALT}}(22\text{-a}) = \neg \text{one book} \wedge \forall p \in \text{ALT}[\neg \text{one book} <_{\mu} p]$

- (23) is satisfiable. See Crnič (2011, 2014)

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- In languages like Sakha, Hungarian, quantifier particles are crucial to resulting meaning.
- Sakha WH-words without *da(yani)* are not NPIs (24-a). Likewise *biir* 'one' without *da* (24-b).

- (24) a. (i) Min [tugu da(yani)] aax-\*(pa)-t-im  
I [what.ACC *da(yani)*] read-(NEG)-PST-1SG  
'I didn't read anything'  
(ii) Min [tugu] aax-(pa)-t-im?  
'What did I (not) read?'
- b. (i) Min [biir da kinige-ni] aax-\*(pa)-t-im  
I [one *da* book-ACC] read-(NEG)-PST-1SG  
'I didn't read anything'  
(ii) Min [biir kinige-ni] aax-(pa)-t-im  
'I (didn't) read one book'

### 3. NPIs and focus

Where do quantifier particles fit in? (II)

- Hungarian *vala*-WH only NPIs with *is/sem*. Positive polarity items (PPIs) without *is/sem* (25-b) (Tóth 1999, Szabolcsi 2015, 2017)

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

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  - ▶ Existentials (e.g. *some*, WH-words) ALTs =  $\langle \exists, \forall \rangle = \langle \vee, \wedge \rangle$
  - ▶ Numeral 'one' ALTs =  $\{1, 2, 3, 4, \dots, \}$
  - ▶ Focused element ALTs = disjunction of focus alternatives (Rooth 1992)

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  - ▶ Numeral 'one' ALTs =  $\{1, 2, 3, 4, \dots, \}$
  - ▶ Focused element ALTs = disjunction of focus alternatives (Rooth 1992)
- Quantifier particles like *da(yani)*, *is/sem* activate these alternatives (i.e. make them obligatory)

### 3. NPIs and focus

#### Focus with E(ven)

- *even*-focus reading of *da(yani)* a product of the particle activating the alternatives of an element under focus

(26) [(onnooyor) Djulus da(yani)] aax-(pa)-ta  
[(even) Djulus *da(yani)*] read-(NEG)-PST.3SG  
'Even DJULUS (didn't) read'

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### 3. NPIs and focus

#### Focus with E(ven)

- even-focus reading of *da(yani)* a product of the particle activating the alternatives of an element under focus

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- Exhaustification with E(ven)— if the ALTs in (27-b) are probability ranked and Djulus is the least likely ALT, interpretable. Pragmatically ranked
- $\{(\neg)\text{READ}(d) <_{\mu} (\neg)\text{READ}(e), (\neg)\text{READ}(d) <_{\mu} \text{READ}(s)\}$   
where  $X <_{\mu} Y$  says 'X is pragmatically less likely than Y'

## 4. Free-choice and additivity

- Why does  $da(yani)$  not appear in free-choice items?

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- Connection to additivity—Szabolcsi's (2017) bifurcation of focus alternatives

## 4. Free-choice and additivity

### The signature property of free-choice

- The signature property of free-choice is a modal scoping over a disjunction of alternatives (28-a) becoming **enriched** to a conjunction (28-b), where each of the alternatives are acceptable (Chierchia 2013: 89)

(28) Djulus can drink coffee, tea, or water.  $[\Diamond < \vee]$

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- a.  $\Diamond(p \vee q \vee r)$   
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- enrichment of (28-a) to (28-b) a free-choice implicature involving *or*-disjunction.
- Chierchia (2013)— meaning of FCIs like English *any*, Italian *un N qualsiasi* ‘any N whatsoever’, German *irgend* ‘some or other’ similar reasoning

## 4. Free-choice and additivity

FCLs through recursive exhaustification (I)

- Recursive exhaustification with  $O(n \log n)$  (Fox 2007, Fox and Katzir 2011, Chierchia, Fox and Spector 2008, Chierchia 2013)

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- Consider a prejacent with three alternatives and no modal:  $(p \vee q \vee r)$
- $ALT(p \vee q \vee r) =$

$(p \vee q \vee r)$			(Prejacent)
$(p \vee q)$	$(q \vee r)$	$(p \vee r)$	(Subdomain ALTs)
$p$	$q$	$r$	
$(p \wedge q \wedge r)$			(Scalar ALT)

b.

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(29) a.  $ALT(p \vee q) = \{(p \vee q), p, q, r\}$

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$$(29) \quad a. \quad ALT(p \vee q) = \{(p \vee q), \underbrace{p, q}_{\text{entail } (p \vee q)}, r\}$$

$$b. \quad O_{ALT}(p \vee q) = (p \vee q) \wedge \neg r$$

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### FCIs through recursive exhaustification (II)

- After exhaustifying the subdomain ALTs, exhaustify the prejacent ( $p \vee q \vee r$ ) with respect to these (pre-exhaustified) alternatives:

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$O(p \vee q)$ $= [(p \vee q) \wedge \neg r]$	$O(q \vee r)$ $= [(q \vee r) \wedge \neg p]$	$O(p \vee r)$ $= [(p \vee r) \wedge \neg q]$
$O(p)$ $= [p \wedge \neg(q \vee r)]$	$O(q)$ $= [q \wedge \neg(p \vee r)]$	$O(r)$ $= [r \wedge \neg(p \vee q)]$
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$$\begin{aligned}
 (30) \quad & O_{\text{Exh-ALT}}(p \vee q \vee r) = \\
 & \underbrace{(p \vee q \vee r)}_{\text{prejacent}} \wedge \neg \underbrace{((p \vee q) \wedge \neg r) \wedge \neg(r \wedge \neg(p \vee q)) \wedge \dots \wedge \neg(p \wedge q \wedge r)}_{\text{Exhaustified domain ALTs}} \wedge \underbrace{\neg(p \wedge q \wedge r)}_{\text{Scalar-ALT}}
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 & \qquad \qquad \qquad \underbrace{\hspace{10em}}_{(p \vee q) \leftrightarrow r} \\
 \text{a.} \quad & = (p \vee q \vee r) \wedge (p \leftrightarrow q \leftrightarrow r) \wedge \neg(p \wedge q \wedge r)
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Why does *da(yani)* not form FCIs?

- It only activates the alternatives of the prejacent, NOT the alternatives of the subdomain alternatives. i.e. it only forces simple exhaustification

## 4. Free-choice and additivity

Positive  $da(yani) \dots da(yani)$  is free-choice like

- Positive  $da(yani) \dots da(yani)$  coordination resembles the strengthening of a disjunction to a conjunction seen in free-choice

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Djulus [coffee *da(yani)* tea *da(yani)*] drink-PST.3SG  
'Djulus drank both coffee and tea'
- b. Djulus [kofje da(yani) čaj da(yani)] is-pe-te  
Djulus [coffee *da(yani)* tea *da(yani)*] drink-NEG-PST.3SG
- (i) 'Djulus didn't drink coffee or tea' ✓  $[\neg(p \vee q)]$
- (ii) # 'Djulus didn't drink both coffee and tea' #  $[\neg(p \wedge q)]$

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              (ii) # 'Djulus didn't drink both coffee and tea'    #[¬(p ∧ q)]

- *da(ɣani)...**da(ɣani)* cannot scope over negation (32-b-ii)
- No modal in required for *both...and* reading (32-a)



## 4. Free-choice and additivity:

Strengthening *or* to *and*

- If no stronger scalar alternative ( $p \wedge q$ ) is present, recursive exhaustification with  $O(nly)$  can strengthen *or* to *and*
  - Bowler (2014) on Warlpiri *manu* 'or/and', Bar-Lev and Margulis (2014) on Hebrew *kol* 'all/any', see Szabolcsi (2017: 461) for others

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$$(33) \quad \begin{array}{ll} \text{a.} & \text{ALT}(p \vee q) = \{p \vee q, p, q\} \\ \text{b.} & O_{\text{Exh-D-ALT}}(p \vee q) = \underbrace{(p \vee q)}_{\text{prejacent}} \wedge \neg O(p) \wedge \neg O(q) \end{array}$$

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$$\underbrace{\hspace{10em}}_{p \leftrightarrow q}$$

$$((p \vee q) \wedge (p \leftrightarrow q)) \equiv (p \wedge q)$$

## 4. Free-choice and additivity:

Strengthening *or* to *and*

- If no stronger scalar alternative  $(p \wedge q)$  is present, recursive exhaustification with  $O(nly)$  can strengthen *or* to *and*
  - Bowler (2014) on Warlpiri *manu* 'or/and', Bar-Lev and Margulis (2014) on Hebrew *kol* 'all/any', see Szabolcsi (2017: 461) for others

$$\begin{aligned}
 (33) \quad & \text{a. } ALT(p \vee q) = \{p \vee q, p, q\} \\
 & \text{b. } O_{\text{Exh-D-ALT}}(p \vee q) = \underbrace{(p \vee q)}_{\text{prejacent}} \wedge \underbrace{\neg O(p)}_{\underbrace{\neg(p \wedge \neg q)}_{p \rightarrow q}} \wedge \underbrace{\neg O(q)}_{\underbrace{\neg(q \wedge \neg p)}_{q \rightarrow p}} \\
 & \hspace{15em} \underbrace{\hspace{10em} p \leftrightarrow q \hspace{10em}} \\
 & \hspace{15em} ((p \vee q) \wedge (p \leftrightarrow q)) \equiv (p \wedge q)
 \end{aligned}$$

Absence of stronger scalar alternative is key

- If the scalar alternative is included, we would reach a contradiction:
  - $(p \vee q) \wedge (p \leftrightarrow q) \wedge \neg(p \wedge q) = \perp$

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- If the scalar alternative is included, we would reach a contradiction:
  - $= (p \vee q) \wedge (p \leftrightarrow q) \wedge \neg(p \wedge q) = \perp$
- Sakha *da(yani)...**da(yani)* underlyingly disjunction. *Da(yani)* activates each disjunct's ALTs, resulting in recurs EXH. Doubling a morphosyntactic reflex of recurs EXH

## 4. Free-choice and additivity

Whither additivity?

- (34) [Bill is] ástított  
[Bill *is*] yawn.PST.3SG  
'BILL yawned, too' (Hungarian, Szabolcsi 2017: 462)  
Bill yawned AND somebody other than Bill yawned



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$b \leftrightarrow (m \vee k)$

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Whither additivity?

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- Result (36-b) **is** the additive presupposition: *Bill IS yawned* = T only if one of the ALTs *Mary yawned*, *Katalin yawned* is T.

## 4. Free-choice and additivity

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- Result (36-b) **is** the additive presupposition: *Bill IS yawned* = T only if one of the ALTs *Mary yawned*, *Katalin yawned* is T.
- Sakha *da(yani)* lacks basic additive reading because it does not bifurcate its alternatives**



## 5. Conclusion

- Sakha *da(yanɨ)* is a particle which activates alternatives of a host disjunction
- When the host is a low-point of scale existential like a WH-word or *biir* 'one', activation of alternatives forms NPI
- When the host is a focused element, the elements are not inherently ordered, rather only being ordered by pragmatic context
- When it marks each disjunct in a disjunction phrase, *da(yanɨ)* results in a 'both...and' reading in positive sentences, but an 'or' reading scoping under negation. The positive reading is a result of each alternative (disjunct) being marked as having obligatorily active alternatives, resulting in recursive exhaustification, strengthening the disjunction to a conjunction
- By itself, *da(yanɨ)* does not encode that alternatives need be recursively exhaustified (i.e. it does not pre-exhaustify, nor does it bifurcate alternatives), explaining its lack of FCI, basic additive uses

# Acknowledgments

I am deeply grateful to Daria Boltokova for serving as my Sakha consultant. I would also like to thank Jonathan Bobaljik, Uli Sauerland, and Dora Mihoc for their guidance on this project. Others I would like to thank (in alphabetical order) are Lucas Champollion, Gennaro Chierchia, Christos Christopolous, Kate Davidson, Aurore Gonzalez, Vera Griбанова, Tamás Halm, Martin Haspelmath, Jim Huang, Niels T. Kuhlert, Gunnar Lund, Andreea Nicolae, Ankana Saha, Deniz Satik, Hande Sevgi, Tamisa L. Tan, Satoshi Tomioka, Jonathan North Washington, and Chantale Yunt.

- Native Cyrillic for the particle is <даџаны>. Other romanizations include:
  - *dayanı* (Krueger 1962: 115)
  - *dayanı* (Stachowski and Menz 1998: 423)
  - *daqany* (Vinokurova 2005; Baker and Vinokurova 2010)

- *Da(yani)* NPIs are licensed by many negative morphemes, such as verbal negation with *-BA* (see (1)), negative copulas *suox* (37-a) and *ilik* (37-b), negative converb *-BAkka* (37-c), and the prohibitive *-ImA* (37-d)

- (37)
- a. [Tuox *da(yani)* siala] {suox / \*baar} suruj-but-um  
[what *da(yani)* purpose] {NEG.COP / COP} write-PST-1SG  
'I wrote for no reason'
  - b. [Kim *da(yani)*] [biir da kinige] aax-a ilik  
[who *da(yani)*] [one *da* book] read-CVB COP.not\_yet  
'Nobody has read any book(s) yet' (Lit. 'Anybody has not read any book yet')
  - c. [Tugu *da(yani)*] aax-pakka ereeri üören-n-im  
[what.ACC *da(yani)*] read-NEG.CVB though study-PST-1SG  
'I studied without reading anything'
  - d. [Tugu *da(yani)*] {aay-ima / \*aax}  
[what.ACC *da(yani)*] {read-NEG.IMP / read.IMP}  
'Don't read anything!'

- *Da(ɣani)* NPIs also licensed by the comparative case morpheme *-TĀɣar* (38)

(38) Tujara [kim-neeyer *da(ɣani)*] uhun  
Tujara [who-CMPR *da(ɣani)*] tall  
'Tujara is taller than anyone'

- Not licensed in antecedent of conditionals (39-a) or polar questions (39-b)

(39) a. \*[Tujara [tugu *da(ɣani)*] onɲor-doyuna] Djulus čaj  
[Tujara [what.ACC *da(ɣani)*] repair-COND.3SG] Djulus tea  
kut-an bier-iexteex  
pour-CVB give-FUT.3SG  
Intended: 'If Tujara repairs anything, Djulus will serve tea'

b. \*[Kim *da(ɣani)*] kofje ih-er=iɟ?  
[who *da(ɣani)*] coffee drink-PRES.3SG=Q  
Intended: 'Does anyone drink coffee?'

- These NPIs thus strict (or "strong") NPIs, requiring Anti-Additive licensors rather just simply Downward Entailing (Zwarts 1998, Gajewski 2011)

- *Da(yani)* NPIs are not negative-concord items. Fail main diagnostic—ability to serve as a negative fragment answer to a non-negative question (Zanuttini and Portner 2003, Chierchia 2013: 238)

(40) Question: Tugu beyehee aax-pik-kin=ij?  
what.ACC yesterday read-PST-2SG=Q  
'What did you read yesterday?'

a. Negative answers:

- (i) #Tugu da(yani)  
what.ACC *da(yani)*  
intended: 'nothing'
- (ii) Tugu da(yani) aax-pa-tay-im  
what.ACC *da(yani)* read-NEG-PST-1SG  
'I didn't read anything'

- (41) a. Sakha *da(yani)*
- (i) Min [**kimi da(yani)**] kör-\*(bö)-t-üm  
 I [who.ACC *da(yani)*] see-(NEG)-PST-1SG  
 'I didn't see anyone'
- b. Hungarian *is/sem*
- (i) Pál \*(nem) látott [**sen-ki-t**]  
 Paul (NEG) saw *sem*-who-ACC  
 'Paul did not see anybody' (Tóth 1999: 125)
- (ii) Pál \*(nem) mondta, hogy Mária [**vala-ki-t is**] látott  
 Paul (NEG) said that Mary [*vala*-who *is*] saw  
 'Paul did not say that Mary saw anybody' (Tóth 1999: 126)
- c. Japanese *-mo*
- (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: 417)

- (42) a. Sakha *da(ɣani)*
- (i) [ ?(Onnooyor) studjen da(ɣani)] iti kinige-ni aax-ta  
 [(even) student *da(ɣani)*] that book-ACC read-PST.3SG  
 'Even THE STUDENT read that book'
- (ii) [(Onnooyor) studjen da(ɣani)] iti kinige-ni aax-pa-ta  
 [(even) student *da(ɣani)*] that book-ACC read-NEG-PST.3SG  
 'Even THE STUDENT didn't read that book'
- b. Hungarian *is/sem*
- (i) Éva szerencsére [még János-t is] meg hívta  
 Eve luckily [even John-ACC *is*] VRB.MODIFIER invite.PST  
 'Eve luckily invited even John' (Kiss 2004: 108)
- (ii) Nem jött el [egy diák sem]  
 NEG come.PST VRB.MODIFIER [one student *sem*]  
 'No student came' / 'Not even one student came' (Kiss 2004: 140)
- c. Japanese *-mo*
- (i) [Sono syoonin-mo] damatteita  
 [that witness-*mo*] was.silent  
 'Even that witness was silent / That witness was also silent'  
 (Shimoyama 2006: 145)
- (ii) John-wa [hon A -mo] yom-ana-katta  
 John-TOP [book A -*mo*] read-NEG-PST  
 'John didn't even read book A'  
 (Nakanishi 2006: 142)



- (43) a. Sakha *da(yani)*  
 (i) [Djulus *da(yani)* Tujara *da(yani)*] kofje is-pit-ter  
 [Djulus *da(yani)* Tujara *da(yani)*] coffee drink-PST-3PL  
 'Both D. and T. drank coffee'  
 (ii) Min [kinige *da(yani)* aax-t-im] suruk *da(yani)* suruj-d-um]  
 I [book *da(yani)* read-PST-1SG letter *da(yani)* write-PST-1SG]  
 'I both read a book and wrote a letter' / 'In addition to reading a book, I  
 even wrote a letter'
- b. Hungarian *is/sem*  
 (i) [Kati is Mari is] alud-t  
 [Kati *is* Mari *is*] sleep-PST.3SG  
 'Both K. and M. slept' / 'K. as well as M. slept' (Szabolcsi 2018: 5)
- c. Japanese *-mo*  
 (i) Takashi-wa [tyuukan-siken-ni-mo kimatu-siken-ni-mo] ukat-ta  
 Takashi-TOP [midterm-exam-DAT-*mo* term.end-exam-DAT-*mo*] pass-PST  
 'T. passed both the midterm and the final' (Shimoyama 2011: 439)

- (44) a. Sakha
- (i) [Djulus da(yani) Tujara da(yani) kofje is-pe-tex-ter  
[Djulus *da(yani)* Tujara *da(yani)*] coffee drink-NEG-PST-3PL  
'Neither D. nor T. drank coffee'
- b. Hungarian
- (i) [Kati sem (és) Mari sem] alud-t  
[Kati *sem* (and) Mari *sem*] sleep-PST.3SG
- (ii) [Sem Kati sem Mari] nem alud-t  
[*sem* Kati *sem* Mari] NEG sleep-PST.3SG  
'Neither K. nor M. slept' (Szabolcsi 2018: 20)
- c. Japanese
- (i) Takashi-wa [tyuukan-siken-ni-mo kimatu-siken-ni-mo]  
Takashi-TOP [midterm-exam-DAT-*mo* term.end-exam-DAT-*mo*]  
ukara-nakat-ta  
pass-NEG-PST  
'T. didn't pass the midterm or the final' / 'For both the midterm  
and the final, T. didn't pass them' (Shimoyama 2011: 439)

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