Extending the typology of quantifier particles: Sakha *da* (*daɣanï*) as a TOO-particle without a 'too' meaning*

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Abstract

The Sakha particle *da(ɣanï)* has a restricted, semantically varied distribution. It appears in three main roles: negative polarity item (NPIs), a marker of scalar focus, and doubled in coordination constructions. In coordination *X da(ɣanï) Y da(ɣanï)* means 'both X and Y' in positive sentence, but 'neither X nor Y' in negative sentences. Following from the assumption that NPIs denote low-point existentials, it is surprising to find a particle that is involved in these as well as 'both...and' coordination. While there are quantifier particles in other languages which overlap with all of *da(ɣanï)*'s uses, these typically these serve far more roles. One such common role that *da(ɣanï)* lacks is a basic additive *too* reading, though an additive reading emerges with scalar focus. I argue that *da(ɣanï)* is an element which combines with an host that has semantic alternatives and makes them OBLIGATORILY ACTIVE, in the sense of Chierchia (2013. *Logic in Grammar*). When it combines with a low-point existential, this has the effect of creating NPIs. The 'both...and' reading is argued to be the result of *da(ɣanï)* inducing an additive post-supposition. However, a unary 'too' function is blocked by the additive presupposition of another particle *emie*.

Keywords: Alternative semantics; exhaustification; negative polarity; additivity; focus; post-supposition

1   Introduction

In many languages, quantificational noun phrases like *some linguist*, *everybody*, *any linguist* are formed with a range of particles that make a significant contribution to the meaning of the resulting host+particle construction. This change can seem quite significant, particularly when considering the translation of the host+particle into a language like English. For example, in Japanese (the most widely studied language of this type in the semantics literature), the addition of the particle *-mo* to a host *wh*-pronoun such as *dare* 'who' can function as a universal quantifier *dáre-mo* 'everyone' or a negative polarity item (NPI) *dare-mo* 'anyone' (depending on the polarity of the sentence), while *-ka* forms a corresponding existential quantifier *dare-ka* 'somebody' (Kuroda 1965; Kratzer and Shimoyama 2002; Shimoyama 2006, 2011; Szabolcsi 2015). Outside of their function in quantificational NPs, these particles often serve a wide range of uses—for example, Japanese *-mo* serves as a focus particle with an 'also/too' or 'even' meaning (e.g. A-*mo* 'A too/even A'), and marks coordinands in a conjunction (e.g. A-*mo* B-*mo*

'both A and B'), while *-ka* serves as a sentence-final question particle in *wh*-questions (e.g. Who V...-*ka* 'Who Vs?') and polar questions (e.g. S-*ka* 'Whether S?'), an approximate use with numerals (e.g. 100-*toka* 'some one hundred/ approximately one hundred'), and as a marker of one or more disjuncts in a coordination (e.g. A-*ka* B(-*ka*) 'A or B').

Quantifier particles are fertile territory for cross-linguistic investigation. In recent years a growing literature on the typology of quantifier particles has emerged (see Szabolcsi 2010, 2015, *et seq.*), motivated in large part by the following questions that quantifier particles raise for semantic compositionality (1):

(1) a. "Do the roles of each particle form a natural class with a stable semantics?"
     b. "Are the particles aided by additional elements, overt or covert, in fulfilling their varied roles? If yes, what are those elements?"
     c. "What do we make of the cross-linguistic similarities and differences in the distribution and interpretation of the particles?"

(Szabolcsi 2015, p. 161)

Guided by these three questions (1), this paper examines the particle *daɣanï* from the understudied Turkic language Sakha.[1] *Daɣanï*,[2] often shortened to *da*, appears in three main environments: NPIs (2), coordination (3), and in scalar focus constructions (4)—these three functions are a subset of what are known as TOO-particles (Szabolcsi 2017).[3] The main descriptive point of interest that this particle displays concerns question (1c): while there are quantifier particles in other languages which overlap entirely with *da(ɣanï)*'s uses, the acceptable uses in Sakha are only a subset of similar particles in other languages—of particular significance is the fact that *da(ɣanï)* lacks basic additive *too/also* meanings. (e.g. *da(ɣanï)* only overlaps with a subset of Japanese *-mo*'s uses).

Da(ɣanï)-marked NPIs are formed with interrogative pronouns, or the numeral *biir* 'one' (2a)—*tugu da(ɣanï)* 'anything' and *biir da kinige* 'any book' are ungrammatical in positive sentences, a hallmark of NPIs. If *da(ɣanï)* is absent (2b), both positive and negative sentences are grammatical.[4]

(2) a. (i) Min [tugu   da(ɣanï)] aax-*(pa)-t-ïm.
             I   what.ACC *da*   read-(NEG)-PST-1SG
             'I didn't read anything.'
         (ii) Min [biir da kinige] aax-*(pa)-t-ïm.
             I   one *da* book   read-(NEG)-PST-1SG
             'I didn't read any book(s).'
     b. (i) Min [tugu]   aax-(pa)-t-ïm*(?)
             I   what.ACC drink-(NEG)-PST-1SG
             'What did I (not) drink?'

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[1]Uncited examples come from the author's original elicitations with native Sakha speakers (Vilyuy dialect) conducted in-person in Cambridge, MA (2019-2020) and online (2021-2023).

[2]The IPA value of *daɣanï* is [daʁani]. It has been variously romanized as *daɣanı* (Krueger 1962, p. 115), *daɣanï* (Stachowski and Menz 1998, p. 423; Gast and van der Auwera 2013, p. 131), and *daqany* (Vinokurova 2005; Baker and Vinokurova 2010). Sakha romanizations in this paper follow a broadly Turkological style: <ɣ> represents [ɣ]~[ʁ], <x> represents [χ] (pronounced [qʰ] in onsets), <ï>=[ɨ~ɯ], <ö>=[ø~œ], <ü>=[ʏ~y], <dj>=[d͡ʒ], <č>=[t͡ʃ], <r>=[r~ɾ], <y>= [j] as well as palatalized consonants and vowels (found in Russian loans). Long vowels are transcribed through doubling the letter (e.g. <aa>=[aː]).

[3]TOO-particles are also known as MO-particles (Szabolcsi 2015), named after Japanese *-mo*, or μ-particles (Mitrović 2021).

[4]**Glossing key:** Subject- and possessor-agreement morphemes use 1SG, 2SG, ..., etc. ACC=accusative case, AOR=aorist (nonpast), AUX=auxiliary verb, CMPR=comparative case, COMP=complementizer, COND=conditional, COP=copula, CVB=converb, IMP=imperative, NEG=negation, POSS=possessive, PST=past tense, past participle, Q=question particle. *Da(ɣanï)* is left untranslated, as *da*, in glosses.

(ii)   Min [biir kinige] aax-(pa)-t-ïm.

        I   one book   read-(NEG)-PST-1SG

        (positive): 'I read one book.'

        (negative): 'I didn't read a single book.' / 'I didn't read even one book.'

In (2a-i), both full *daɣanï* and reduced *da* are acceptable with *tugu* 'what'. NPIs built from *biir* 'one' (2a-ii) generally only use the short form only *da*; full *daɣanï* is not ungrammatical *per se* here, but speakers judge it prosodically odd.

    Outside of quantificational NPs like (2), *da(ɣanï)* can appear to the right of each coordinand in a co-ordination construction (3). Unlike with *wh*-words or *biir* 'one' (2), this doubled *da(ɣanï)* coordination is grammatical in positive (3a) and negative (3b) sentences:

(3)   Djulus [kofye da(ɣanï)] [čay da(ɣanï)] is-(pe)-te.

       Djulus [coffee *da*]   [tea *da*]   drink-(NEG)-PST.3SG

       a.   (Without negation): 'Djulus drank both coffee and tea.'

       b.   (With negation): 'Djulus didn't drink coffee or tea.'

Example (3) shows key facts about *da(ɣanï)...da(ɣanï)* coordination related to the polarity of the sentence. While both positive and negative sentences are grammatical, the quantificational force of the coordination crucially differs: in positive sentences, *A da(ɣanï) B da(ɣanï)* has a conjunctive 'both A and B' meaning (3a), while with negation it behaves as a narrow scope disjunction (thus the 'neither...nor' translation in (3b)). Ultimately, it will be argued that the negative reading (3b) is actually represented in the grammar as the conjunction of two negated propositions *Djulus didn't drink coffee and Djulus didn't drink tea*.

    The third role *da(ɣanï)* plays is a focus marker in scalar, counter-expectational sentences:

(4)   a.   Studyen da(ɣanï) kinige-ni aax-(pa)-ta

            student *da*   book-ACC read-(NEG)-PST.3SG

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

       b.   Elbex da kihi   kinige aax-(pa)-ta

            many *da* person book read-(NEG)-PST.3SG

            'So many people (didn't) read the book'

Like in coordination (3), *da(ɣanï)* with scalar focus is grammatical in both positive and negative sentences. In (4), the *da(ɣanï)* marked element is pragmatically unexpected or surprising. With regards to the general distribution of the particle, there are two important things about *da* in (4b): first, *da* appears immediately after the quantificational article *elbex* 'many'; second, full *daɣanï* is dispreferred, paralleling *biir da* NPIs (2a-ii).

    TOO-particles with this particular array of functions (i.e. scalar focus, NPIs, and *both...and/ neither...nor* coordination) are well-attested cross-linguistically (see König 1991; Haspelmath 1997; Szabolcsi 2015; Mitrović 2021). This paper will consider data from only a small set of these languages (i.e. Hungarian *is/sem*, SerBo-Croatian *i/ni*, and Japanese *-mo*), though TOO-particles are well-established (refs above). However, in the dialect of Sakha studied in this paper, *da(ɣanï)* crucially lacks one of most common functions of TOO particles, namely it is not compatible with a plain additive 'too' reading.[5] Additivity is a semantic/pragmatic property, typically described as a presupposition, whereby a

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[5]While all of the judgments in this paper come from speakers of the Vilyuy dialect, I lack data from other dialects and hence cannot generalize beyond the intuitions of the speakers I have consulted. As will be discussed in §3.1, *Da(ɣanï)* is translated with a plain 'too' reading in some sources, such as in a single example in *sakhatyla.ru*'s entry for *da* (a reading rejected by my consultant).

proposition holds not only for the focused element, but also additional contextual alternatives—e.g. *DJULUS drank coffee, too* requires there to be additional coffee-drinkers in the discourse. As shown in (5), *da(ɣanï)* is infelictious on this reading:

(5)   #Djulus da(ɣanï) kofye is-(pe)-te.
       Djulus *da*   coffee drink-(NEG)-PST.3SG
    a.   Intended (positive): 'DJULUS drank coffee, too.'
    b.   Intended (negative): 'DJULUS didn't drink coffee, either.'

To express the additive meanings in (5a)–(5b), speakers of this dialect replaces *da(ɣanï)* with the particle *emie* 'also; again.'

    To my knowledge, there are no other TOO-particles examined in the literature which lack a basic 'too' reading, and hence Sakha represents a crucial typological gap which needs to be accounted for. But answering why *da(ɣanï)* lacks a 'too/either' reading is semantically non-trivial for three main reasons. First, finding the source of additivity in TOO-particles depends heavily on whether one assumes additivity is part of their denotation or else is derived through other grammatical means. Secondly, *da(ɣanï)*'s scalar *even* function (4) has an additive component (Crnič 2011).[6] Finally, *da(ɣanï)*'s coordination function (3) is quite plausibly the result of two mutually-satisfying post-suppositions (following Kobuchi-Philip 2009; Szabolcsi 2015; Brasoveanu and Szabolcsi 2013 on TOO-particles). A plausible, principled semantic account of *da(ɣanï)* must simultaneously explain why additivity is restricted to these additional environments and unavailable for straight-forward focus constructions like (4).

    This paper argues that roles served by *da(ɣanï)* can be analyzed as a natural class and that the particle has one single semantic denotation in all of the roles it serves (i.e. an answer of "yes" to question (1a)). The starting point of the argument is that there is an important generalization that unifies each of these roles—namely they involve semantic alternatives. Following the alternative-semantics based Grammatical Theory of Polarity Sensitivity (Chierchia 2006, 2013), I argue that *da(ɣanï)* is an element which marks that the alternatives of its host are obligatorily active. This theory supplies the answer to question (1b) in the form of exhaustification (Fox 2007; Chierchia et al. 2012; Fox and Katzir 2011; Crnič 2011; Chierchia 2013). When an element in a sentence has active alternatives, these alternatives contribute to the meaning. Exhaustification is a covert LF operation which reckons with the core meaning of the sentence and any active alternatives, resulting in some meanings arising and others being rejected.

    With a particle that serves such variety of roles, it is important to consider the possibility that they do not reflect a single morpheme, but instead represent two (or more) homophonous morphemes, potentially only related diachronically. For many quantifier particles, the hypothesis that the meanings are too distinct to constitute a single lexical item has been argued for and against on semantic grounds.[7] The alternation between full *daɣanï* and reduced *da* provides a rare instance where a lexically-specific alternation favors an analysis of the particle as a single morpheme, and further, a single semantic denotation. Because both full *daɣanï* and reduced *da* can appear in all three of these roles, and further, *daɣanï* cannot be decomposed into *da+ɣanï*, it is incredibly unlikely that this is homophony.

    The structure of this paper is as follows. §2 discusses the distribution of *da(ɣanï)* in all three of its roles, as well as the factors governing whether the particle appears in its full *daɣanï* or reduced *da* form. §3 discusses the distribution of *da(ɣanï)* in comparison to TOO-particles with a similar distribution in

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[6]That is, considering the positive version of (4a) there are (at least) two presuppositions: the scalar presupposition (that the student the least likely alternative to read the book) and an additive presupposition (that somebody other than the student read the book).

[7]For example, on Japanese *-mo* see Kobuchi-Philip (2009); Mitrović and Sauerland (2014); Mitrović (2021) in favor of a unified account. For non-unified accounts, see Hagstrom (1998) and Shimoyama (2006), both of whom distinguish between *-mo* as an additive particle and conjunction on the one hand and its role in quantificational NPs on the other.

Hungarian, BCS, and Japanese.

The heart of my semantic analysis begins in §4, where I discuss the semantics of *da(ɣanï)* in NPIs and scalar focus. Starting from the assumption that NPIs are low-point existentials, it is argued that the NPI effect is a result of *da(ɣanï)*'s function of making semantic alternatives obligatorily active. When applied to the host, this results in meanings that are contradictory in positive environments, but interpretable in negative ones. It is the type of alternatives inherent to elements like *wh*-words and the numeral *biir* 'one' which *da(ɣanï)* activates which creates NPIs. In contrast, the alternatives generated by scalar focus are slightly different to those of *wh*-words and *biir* 'one,' which is reflected in the fact that the particle is not restricted to negative polarity in this construction, and the fact that it requires a probability ranking of its scale.

§5 discusses *da(ɣanï)...da(ɣanï)* coordination. Two potential hypotheses are explored. The first hypothesis considers that *da(ɣanï)...da(ɣanï)* is underlyingly a disjunction, but that *da(ɣanï)* signals to the grammar that exhaustification need be applied recursively. That is, the overt doubling of the particle is a morphosyntactic reflex of recursive exhaustification. This results in the strengthening of an underlying disjunction to a conjunction in affirmative episodic sentences, as *da(ɣanï)...da(ɣanï)* coordination does not have a stronger scalar alternative to negate (similar to Bowler 2014 on Warlpiri *manu* 'or/and,' Bar-Lev and Margulis 2014 on Hebrew *kol-* 'all; any'). The second hypothesis, and the one which will ultimately be endorsed, holds *da(ɣanï)...da(ɣanï)* is actually the result of mutual satisfaction of two post-suppositions (following Kobuchi-Philip 2009; Brasoveanu and Szabolcsi 2013; Szabolcsi 2015 on TOO-particles), and these post-suppositions are created by exhaustification (following Szabolcsi 2017; Mitrović 2021; Fălăuş and Nicolae 2022). Thus, a central goal of this section is in determining why it is that *da(ɣanï)* fails to have a unary non-scalar additive 'too; either' focus reading. It is argued that the reason in Sakha is that the language has a dedicated additive particle *emie* 'also; either' which induces an additive **pre**supposition. It is argued that presuppositions are checked before post-suppositions (and before or concurrent with exhaustification), hence *emie* uses up the alternatives that *da(ɣanï)* could activate. It is only when *emie* is unable to satisfy its presupposition that *da(ɣanï)* is able to 'sneak in' and mark additivity. This is seen when there is a salient probability metric in the alternative set (i.e. scalar focus (4)), or when the alternative which would satisfy the additive requirement is introduced to the right of the first potential trigger (i.e. with additive coordination (3)). §6 concludes the paper.

2   Distribution

Sakha (ISO: sah) is spoken by around 450,000 people, mainly in the Sakha Republic, a geographically vast republic in Russia located in northern Siberia. It is the native language of the ethnic Sakha people (Yakuts),[8] and is also spoken by many Evenki and Even people as a native language (Johanson 2021, pp. 105-6). Nearly all native Sakha speakers are bilingual in Russian.[9]

Sakha is a member of the Northeastern Siberian branch of Turkic (Johanson 1998).[10] The ancestors of the Sakha left the community of Common Turkic speakers over 500 years ago, eventually settling along the tributaries of the Lena River (Johanson 2021, pp. 20, 24, 88-90). Due to being separated

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[8]The Sakha language is is also known as *Yakut* (similarly, Sakha people are also known as Yakuts), as is seen in the place names such as *Yakutia* (the former name of the Sakha Republic) and the capital city *Yakutsk* (Sakha: *Djokuuskay*). The term *Yakut* comes to English through Russian, and in fact *Sakha* and *Yakut* are doublets, both derived from Evenki *ya:ko* (Johanson 2021, p. 89).

[9]The standard form of Sakha mainly displays Russian influence in loanwords (e.g. *kinige* 'book' <Ru. *kniga*). Recent research has indicated language convergence in urban areas (see Ferguson 2016; Grenoble et al. 2019). Many Sakha speakers express concern about the language's future due to a multitude of social, governmental, agricultural, and ecological factors (see Ferguson 2019, 2022; Balzer 2021).

[10]Proto-Turkic > Common Turkic > Siberian > Northeast Siberian.

from other Turkic languages, Sakha is both conservative and innovative, retaining features lost in many other Turkic languages (e.g. phonemic long vowels), and featuring unique features (e.g. phonemic diphthongs, loss of genitive, rounding harmony in low vowels; see Pakendorf 2007; Pakendorf and Stapert 2020). Nevertheless, it maintains familiar Turkic features, such as SOV word order in embedded and unembedded clauses, a nominative-accusative case system, extensive vowel harmony, and highly agglutinative verbal morphology (Xaritonov 1947; Krueger 1962; Afanas'ev and Xaritonov 1968; Ubrjatova 1982; Stachowski and Menz 1998; Baker 2011; Baker and Vinokurova 2010, 2012; Pakendorf and Stapert 2020; Johanson 2021; Menz and Monastyrev 2022).

Previous theoretical work on *da(ɣanï)* is limited. Haspelmath (1997) includes the short form *da* in his study of indefinite pronouns, based on descriptive work from grammars (Afanas'ev and Xaritonov 1968; Ubrjatova 1982). Gast and van der Auwera (2013) consider the particle briefly in an areal overview of scalar additive particles in so-called 'Transeurasian languages.' In generative work, *da(ɣanï)*-NPIs have been used as a syntactic diagnostic of the location of embedded subjects (Vinokurova 2005; Baker and Vinokurova 2010; Baker 2011, 2015).

This section provides the empirical facts of *da(ɣanï)*'s distribution in NPIs (§2.1), scalar focus (§2.2), and coordination (§2.3).[11]

2.1 NPIs

Da(ɣanï) NPIs can be licensed by a variety of morphemes contributing semantic negation, including the negative suffix *-BA* (6a)–(6b), the negative copula *suox* (6c)–(6d), the prohibitive suffix *-Ima* (6e), the negative converb *-BAkka* (6f), and the negative auxiliary *ilik* 'to not yet do' (6g).[12]

(6) a. {Kim da(ɣanï) / biir da studyen} iti kinige-ni aax{-patax / -*pït}.
        {who *da*   / one *da* student} that book-ACC read{-NEG.PST / -PST}
        'Nobody/no student read that book.' (lit: 'Anybody/any student didn't read that book.')

    b. Min xahan da(ɣanï) xanna da(ɣanï) ït-ï kör{-bötöx / *-büp}-pün.
        I   where *da*   when *da*   dog-ACC see{-NEG.PST / *-PST}-1SG
        'I didn't ever see the dog anywhere.'

    c. Tuox da(ɣanï) sïala {suox   / *baar} suruy-but-um.
        what *da*   purpose {NEG.COP / COP}   write-PST-1SG
        'I wrote for no reason.'

    d. Xannïk da saarbaɣalaahïn suox.
        which *da* doubt   NEG.COP
        'There is no doubt.' / 'There can be no doubt.'[13]

    e. {Tugu   da(ɣanï) / biir da kinige} {aaɣ-ïma   / *aax}!
        {what.ACC *da*   / one *da* book} {read-NEG.IMP / read.IMP}
        'Don't read anything/any book!'

    f. {Tugu   da(ɣanï) / biir da kinige} aax-pakka   ereeri   üören-n-im.
        {what.ACC *da*   / one *da* book} read-NEG.CVB even.though study-PST-1SG
        'I studied without reading anything/any book.'

    g. Kim da(ɣanï) biir da kinige aax-a   ilik.
        who *da*   one *da* book read-CVB not.yet
        'Nobody has read any book(s) yet.' (lit: 'Anybody has not read any book yet.')

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[11]The alternation between full *daɣanï* and reduced *da* is discussed Appendix A.

[12]Following standard Turkological practice (see Johanson and Eva A. Csato 1998, pp. xviii-xxii), capital letters in suffixes indicate consonants and vowels that are sensitive to assimilation/harmony with phonological features of adjacent segments/syllables.

[13]This example comes from the *sakhatyla.ru* entry for Russian *nikakoi* 'no, none, any'.

Da(ɣanï)-NPIs are grammatical in any position in the scope of negation, including subject position (e.g. *kim da(ɣanï)*, *biir da studyen* in (6a)), object position (e.g. (6e), *biir da kinige* in (6g)), and adjuncts (e.g. *xahan da(ɣanï)*, *xanna da(ɣanï)* in (6b)). In each of the examples above, the NPI and the negative morpheme can be characterized as clause-mates.

Da(ɣanï) NPIs are not licensed by negation across a finite clause boundary (i.e NEG-raising constructions).[14] In (7), negation marked on the matrix verb does not license an NPI in the embedded clause:[15]

(7) a. *Djulus [miigin tugu da(ɣanï) aax-pït dii] sanaa-ba-tax.
      Djulus [1SG.ACC what.ACC *da* read-PST.3SG COMP] think-NEG-PST.3SG
      Intended: 'Djulus didn't think that I read anything.'

  b. *Djulus [kimi da(ɣanï) kör-d-üm] die-be-te.
      Djulus [who.ACC *da* see-PST-1SG] say-NEG-PST.3SG
      Intended: 'Djulus didn't say that he saw anyone.'

In contrast, with non-finite embedded clauses, *da(ɣanï)* NPIs can be licensed by matrix negation on most verbs, though curiously not when the main verb is a verb of saying (8b).

(8) a. Djulus [tugu da(ɣanï) is-pit-in] bil{-bet / *-er}.
      Djulus [what.ACC *da* drink-PST-ACC] know{-NEG.AOR.3SG / -AOR.3SG}
      'Djulus doesn't know what he drank.'

  b. ??Djulus [kimi da(ɣanï) kör-büt-ün] die-(be)-te.
      Djulus [who *da* see-PST-ACC] see-(NEG)-PST.3SG
      'Djulus didn't say who he saw.'

Notice that the reading of (8a) is somewhat different from English *anything* in a sentence like *Djulus doesn't think that he drank anything.* I will not discuss potential reasons for the ungrammaticality of embedded NPIs by matrix negation (*modulo* the potential quote-like account in fn 15).

The only other environment that *WH+da(ɣanï)*-NPIs are grammatical in is the standard of comparison. Sakha forms comparatives with the case suffix *-TĀɣAr* (9a). *Da(ɣanï)*-NPIs are grammatical as

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[14]Haspelmath (1997, pp. 289-91) concludes that *da(ɣanï)* NPIs can be licensed by "indirect negation," though he openly admits that his sources lack examples of this, relying instead on his typological hierarchy. In his approach, indirect negation (pp. 80-1) includes "superordinate negation" (i.e. NEG-raising) and expressions that are implicitly negative, such as verbs like *deny*, *refuse*, and expressions like *without*. Szabolcsi (2004, fn. 9) points out Haspelmath's collapsing of these categories into one is particularly problematic in Hungarian, as superordinate negation allows not only NPIs, but also PPIs.

[15]The ungrammaticaly of *da(ɣanï)* in embedded finite clauses like (7a) seems to be related to the presence of the complementizer. Embedded finite clauses in Sakha generally involve a complementizer *dii* (restricted to complements of matrix *bil-* 'to know') or *dien* (for all other matrix verbs). *Dien/dii* is transparently formed from *die-* 'to say' with a converb endings. The complementizer's presence obligatorily triggers shifted verbal agreement for matrix third person subjects co-referential with the embedded subject:

(i) Djulus [*pro*$_{i/*s}$ kofye is-pit-im dien] ihit-te.
     Djulus [*pro* coffee drink-PST-1SG COMP] hear-PST.3SG
     'Djulus$_i$ heard that he$_i$/*I$_s$ drank coffee.'

In (i), the embedded verb shows shifted agreement co-referential with the matrix subject. With *dien*, shifted agreement cannot refer to the speaker of (i), but instead this reading requires the embedded subject to appear in the accusative, with third person agreement on the embedded verb like in (7a) (see Baker and Vinokurova 2010; Baker 2011). For the matrix third to embedded first shifted reading, the presence of overt *min* 1SG.NOM in the embedded clause is ungrammatical. Sakha *dien/dii* clauses thus reflect what (2018, 2019) refers to as indexiphoric shift. While discussing the particularities of these clauses would take us too far afield, one aspect that could explain the ungrammaticality of (7a) is that the embedded clause is a kind of a quote. NPIs in quotes are generally inaccessible to negation outside of the quote, e.g. *Djulus didn't say "I drank anything"* (Anand and Nevins 2004; Sudo 2012; Deal 2019).

the standard of comparison (9b), but not as the target of comparison (9c):[16]

(9) a. Tuyara Djulus-taaɣar uhun.
         Tuyara Djulus-CMPR tall
         'Tuyara is taller than Djulus.'
     b. Tuyara kim-neeɣer da(ɣanï) uhun.
         Tuyara who-CMPR *da*   tall
         'Tuyara is taller than anyone.'
     c. *Kim da(ɣanï) Djulus-taaɣar uhun.
         Intended: 'Anyone is taller than Djulus.'

Compared to English NPIs like *any* and *ever*, those formed with *da(ɣanï)* in Sakha have noticeably fewer licensing environments. For example, while English *any* and *ever* are licensed in the antecedents of conditionals and in polar questions, the equivalent in Sakha does not use *da(ɣanï)*. Instead, there are other *wh*-indeterminate pronouns with the particles *ere* and *eme/emit* to fill the role of English *any*-pronouns in these sentences (10b):[17]

(10) a. [Tuyara tugu   {*da(ɣanï) / emit / ere} oŋor-doɣuna]   Djulus čay kut-an
          [Tuyara what.ACC {*da   / emit / ere} repair-COND.3SG] Djulus tea pour-CVB
          bier-iexteex.
          give-FUT.3SG
          (*tugu emit*): 'If Tuyara repairs anything, Djulus will serve (her) tea.'
          (*tugu ere*): 'If Tuyara repairs something, Djulus will serve (her) tea.'
      b. Kim {*da(ɣanï) / emit / ere} kofye ih-er=iy?
          who {*da   / emit / ere} coffee drink-AOR=Q
          (*kim emit*): 'Does anyone drink coffee?'
          (*kim ere*) 'Does someone drink coffee?'

Polarity items licensed under negation and comparatives to the exclusion of conditionals and questions are observed in many languages (see Haspelmath 1997, pp. 68–75, though note my fn. 14 about indirect negation). Thus, the limited range of licensing environments for *da(ɣanï)* NPIs is not exceptional. In

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[16]Curiously, *biir da* NPIs are not grammatical in comparatives (i). At this point it is unclear what the culprit of this ungrammaticality could be, given that plain *biir* 'one' is also ungrammatical in the standard of comparison.

(i) *Djulus biir (da) oɣo-tooɣor öydööx.
     Djulus one (*da*) child-CMPR smart
     intended: 'Djulus is smarter than any child.'; (*biir da*), 'Djulus is smarter than one child.' (*biir*)

In §4.1 I propose that Sakha comparatives contain a covert negative operator which scopes above *WH+da(ɣanï)* NPIs; it is stipulated that *biir da* NPIs fail to be licensed in (i) due to a syntactic requirement of *biir* to scope out of the comparative's covert negation.

[17]In other environments, *WH+emit* pronouns have a nonspecific reading, while *WH+ere* pronouns have a specific reading (see Haspelmath 1997, pp. 289-91). Compare the paraphrases to (i):

(i) {Kim emit / kim ere } iti   kinige-ni   aax-ta.
     {who *emit* / who *ere*} that book-ACC read-PST.2SG
     (*kim emit*): 'Some person (or other) read that book.' (#'...namely Djulus')
     (*kim ere*): 'Someone read that book.' ('...namely Djulus.')

With *kim emit*, the identity of the subject of (i) is perceived as epistemically unknown (i.e. the speaker doesn't know who it is, or the identity is not relevant). Note that the particle *emit* appears to be a dialectal variant; the standard form of Sakha uses *eme*. My consultants accepted both *eme* and *emit* with no perceived difference in meaning.

§3.1, it is argued that *da(ɣanï)* NPIs can be further categorized as "strict" (or "strong") NPIs due to being limited to anti-additive functions.[18]

The careful reader will no doubt have noticed that full *daɣanï* is not listed for NPIs formed with *biir* 'one'. This is related to the phonetic size of the numeral *biir*. As is discussed in Appendix 6, when *da(ɣanï)* marks a host NP modified by a quantifier, the reduced *da* form is usually preferred when the determiner is two or fewer syllables, a pattern that is shared between *biir da* and *da(ɣanï)*-marking a scalar focus §2.2.

Word order facts suggest that in *biir da* NPIs, the particle and host scope over the entire NP. In (11), we see that intervening adjectives do not disrupt the position of *da* (11a) as immediately following *biir*– the particle's position is invariant regardless of whether adjectives are present (11b)–(11c) or absent (11d) in the NP.

(11) a. Min [biir da (ulaxan) kinige-ni] aax-pa-t-ïm.
      I   [one *da* (big)   book-ACC] read-NEG-PST-1SG
      'I didn't read any (big) book(s)'
    b. * ... biir ulaxan da(ɣanï) kinige-ni ...
    c. * ... biir ulaxan kinige-ni da(ɣanï) ...
    d. * ... biir kinige-ni da(ɣanï) ...

With *ulaxan* 'big,' (11a) is compatible with contexts where the speaker is emphasizing that they read a book, just not a big one, but this emphatic quality is not required. (11a) is also compatible with contexts where the speaker makes no commitments about reading non-big books. If *da(ɣanï)* only took scope over the element to its left, we might expect such a contrast between (11b) (where the host of *da(ɣanï)* is *ulaxan*) and (11a)).

On the other hand, when *biir* 'one' is itself used as an argument with no head noun, full *da(ɣanï)* correlates with emphatic 'not even one' readings.

(12) 30 ere sas-taax-pïn.   Biir daɣanï doruobay is   organ xaal-bat-a.
      30 only year-PRED-1SG. one *daɣanï* healthy   inside organ stay-NEG.AOR-3SG
      'I'm only thirty, (yet) not even one of my organs is healthy.' (forum post)

One last note concerns free-choice effects. It is well-known that NPIs in many languages double as free-choice items (FCIs), such as English *any*. Sakha *da(ɣanï)*-NPIs do not admit free choices and are ungrammatical in the scope of a possibility modal without negation. Instead, Sakha uses another particle *baɣarar* to form universal FCIs from *wh*-words (13).

(13) Kim {*da(ɣanï) / baɣarar} alaadjï sie-n   söp buoluo.
      who {*da   / *baɣarar*} pancake eat-3SG can maybe
      'Anyone can eat pancakes.'

2.2 Scalar focus

The second main role of *da(ɣanï)* is as a focus particle, where it is associated with readings where it communicates that something about the particle's host is unexpected. This role I refer to as 'unary *da(ɣanï)*' in order to distinguish the particle's doubled coordination role (§2.3). In (14), in combination with *onnooɣor* 'even,' *da(ɣanï)* occurs to the right of the focus *studyen* 'student':

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[18]Gajewski (2011) proposes that strong NPIs are sensitive to downward entailingness of both the asserted component and the presupposed meaning of the environment, a position which is adopted by Chierchia (2013). See Chierchia (2013, pp. 204-22); Chierchia and Liao (2015, pp. 48-9) for an application of this idea to DE functions which are not anti-additive (e.g. the antecedent of a conditional).

(14) Onnooɣor studyen da(ɣanï) iti   kinige-ni   aax-(pa)-ta.
       even   student *da(ɣanï)* that book-ACC read-(NEG)-PST.3SG
       'Even the STUDENT (didn't) read that book.'

There are two key components to the meaning associated with *da(ɣanï)*: first, a requirement (usually considered a presupposition) that somebody other than the student read (or did not read, with *-BA*) the book, and second, that the student having read (or not read) the book is contextually unexpected. In §3.1 the presence of the first component (i.e. additivity) is discussed in relation to similar particles in other languages, with analyses of its semantics explored in §4.2 and §5.2. These subsections account for these requirements within an exhaustification-based theory of alternatives (Chierchia et al. 2012; Chierchia 2013).

Scalar focus readings do not require both of *onnooɣor* and *da(ɣanï)* in (14), though the omission of *onnooɣor* on a focused subject results in a moderate polarity asymmetry dependent on the information-structure position that the *da(ɣanï)*-marked focus appears. Without *da(ɣanï)* both positive and negative versions are grammatical (15a). When *onnooɣor* 'even' is removed, the positive version is dispreferred unless the focused subject appears in the immediately pre-verbal focus position (see (15b), (15c)):

(15)   a.   Onnooɣor studyen iti kinige-ni aax-(pa)-ta.
            'Even the student (didn't) read that book.'
       b.   Studyen da(ɣanï) iti kinige-ni aax-$^{?/??}$(pa)-ta.
            'Even the student didn't read that book.'
       c.   Iti kinige-ni studyen da(ɣanï) aax-(pa)-ta.
            'Even the student didn't read that book.'

Without an overt *even*-like word such as *onnooɣor*, speakers judge positive sentences like (15b) as odd in out-of-the-blue contexts. The acceptability improves if a context is supplied that makes the pragmatic expectations more salient (e.g. if the particular book is required reading and we know that the student is usually particularly diligent), though it is still dispreferred to equivalent sentences with *onnooɣor*, or pre-verbal focus on a *da(ɣanï)*-marked subject.

While *WH+da(ɣanï)* and *biir da*+N NPIs do not give rise to free-choice effects with modals, possibility modals do indeed produce free-choice effects when *da(ɣanï)* marks scalar focus:

(16)   Ehe-em   da(ɣanï) iti kinige-ni aaɣ-ïan   söp.
       grandfather-POSS.1SG *da*   that book-ACC read-FUT.3SG can
       'Even my grandfather can read that book.'

Pragmatically, (16) expresses that the particular book is readable by anybody, even those who are contextually unlikely to do so. Thus, if we know *ehe-em* 'my grandfather' in (16) has poor vision, (16) would be felicitious.

While there are numerous other aspects of *da(ɣanï)* combining with scalar focus that could be of interest, the last detail I will discuss is its behavior with non-low-point quantifiers like *elbex* 'many,' *araas* 'various,' and *aɣïyax* 'few.' The presence of *da(ɣanï)* has an intensifying effect on the quantifier:

(17)   a.   [Elbex da kihi]   kinige aax-(pa)-ta.
            [Many *da* person] book   read-(NEG)-PST.3SG
            'So many people (didn't) read the book.'
       b.   ...[elbex da kihi]   [araas   da doydu-ttan] kiir-er   ebit.
            ...[many *da* person] [various *da* country-ABL] visit-AOR.3SG AUX
            'So many people, from so many different countries, are visiting (the site).'

   c.   [Aɣïyax da(ɣanï) kihi]   kinige-ni aax-(pa)-ta.
       [few   *da(ɣanï)* person] book-ACC read-(NEG)-PST.3SG
       'So few people (didn't) read the book.'

In (17), the contribution of *da(ɣanï)* expresses that something about the amount is unexpected. Without *da(ɣanï)*, the meaning is more neutral (e.g. (17a) without *da* has the reading 'Many people (didn't) read the book,' with no indication of the likelihood of this obtaining).

    Notice that in (17), we see the same syntactic pattern as *biir da*+N NPIs, in that the the particle immediately follows the quantifier. In Appendix A, this is taken as further evidence that *da(ɣanï)* is the same morpheme in all of its uses.

2.3 Coordination

The third main use of *da(ɣanï)* is in coordination constructions, where the particle marks an element in each coordinand (18) (repeated from (3)).

(18)   Djulus [kofye da(ɣanï)] [čay da(ɣanï)] is-(pe)-te.
       Djulus [coffee *da*]   [tea *da*]   drink-(NEG)-PST.3SG
     a. (Without negation): 'Djulus drank both coffee and tea.'
     b. (With negation): 'Djulus drank neither coffee nor tea.' / 'Djulus didn't drink coffee or tea.'

In positive sentences *da(ɣanï)...da(ɣanï)* results in a conjunction 'both...and' meaning. With negation, it has a narrow-scope disjunction 'neither...nor' meaning'. From the perspective of a language that lacks productive quantifier particles (such as English), this flip is surprising, and makes it difficult to determine which is the core meaning of *da(ɣanï)...da(ɣanï)* coordination. In principle, it could be analyzed as being essentially *and* (i.e. (18b)='not coffee and not tea') or *or* (i.e. (18b)='not (coffee or tea).' This is discussed in §5.2.

    Positive instances of *da(ɣanï)* coordination are pragmatically marked in a way that negative ones are not. Positive *da(ɣanï)...da(ɣanï)* coordination is most felicitous in environments that produce exhaustive readings, such as answers to questions. For example, a *wh*-question (19a-i) or an alternative question (19a-ii) can be answered with either (19b-i) or (19b-ii):

(19) a. (i)   Djulus tugu   is-te?
                Djulus what.ACC drink-PST.3SG
                'What did Djulus drink?'
        (ii) Djulus kofye is-te   duu čay is-te   duu?
             Djulus coffee drink-PST.3SG or   tea drink-PST.3SG or
             'Did Djulus drink coffee or did Djulus drink tea?' / 'Did Djulus drink coffee or tea?'
     b. (i)   Djulus kofye da(ɣanï) čay da(ɣanï) iste.
                'Djulus drank both coffee and tea.'
        (ii) Kofye da(ɣanï) čay da(ɣanï).
             'Both coffee and tea.'

For *wh*-questions like (19a-i), answers with *da(ɣanï)...da(ɣanï)* (19b) do not require any further context to be acceptable. Simply being an answer is sufficient for *da(ɣanï)...da(ɣanï)* coordination to be acceptable. On the other hand, the disjunctive question (19a-ii) has an implicature that Djulus did not drink both, an implicature that the answers reject.

Following standard theories of question semantics, answers to questions are exhaustive (Dayal 2016). For example, if one answers *Djulus and Sardaana* to a questions such as *Who of Sardaana, Djulus, and Erkin studied for the test?*, there is an implicature that only Djulus and Sardaana studied (i.e. Erkin did not). Exhaustiveness is crucial to the meaning of *da(ɣanï)* in all of its roles, which is key to the semantic proposals in §4 and §5.

In more neutral, non-exhaustive contexts, 'and' coordination is expressed with *uonna* 'and' (20a) or *ikki* 'two' (20b):

(20) a. Djulus kofye uonna čay is-te.
          Djulus coffee and   tea drink-PST.3SG
          'Djulus drank coffee and tea.'
      b. Djulus kofye ikki   čay is-te.
          Djulus coffee two(and) tea drink-PST.3SG
          'Djulus drank coffee and tea.'

Answers to questions are not the only context in which positive *da(ɣanï)...da(ɣanï)* coordination is acceptable; they are also acceptable if uttered in a pragmatic context where there is an expectation that the coordinands are unlikely to obtain together. For example, if there is an expectation that Djulus is unlikely to drink both coffee and tea (e.g. he is very sensitive to caffeine), the positive version of (18) is acceptable. In this context, it communicates that, contrary to the speaker's expectations that Djulus would not drink both, he in fact did.

While we have so far only considered examples of *da(ɣanï)...da(ɣanï)* coordination of NPs, it can coordinate constituents of virtually any type, so long as the *da(ɣanï)*-marked elements have the same syntactic label (Vinokurova 2005, p. 205). At the same time, the *da(ɣanï)*-marked coordinands are not required to be surface-level adjacent. This is particularly salient when objects of two different lexical verbs are being coordinated, where two different positions of *da(ɣanï)* are acceptable (21). In (21a), *da(ɣanï)* appears to the right of each verb, but in (21b) it appears to the right of each verb's object. On the other hand, mismatches like (21c), (21d) are not acceptable.

(21) a. Min kinige aax-t-ïm   da(ɣanï) suruk suruy-d-um   da(ɣanï).
          I   book read-PST-1SG *da*   letter write-PST-1SG *da*
          'I read a book and wrote a letter.'
      b. Min kinige da(ɣanï) aax-t-ïm   suruk da(ɣanï) suruy-d-um.
          I   book *da*   read-PST-1SG letter *da*   write-PST-1SG
          'I read a book and wrote a letter.'
      c. *Min kinige da(ɣanï) aaxtïm suruk suruyudum da(ɣanï).
      d. *Min kinige aaxtïm da(ɣanï) suruk da(ɣanï) suruydum.

The position of *da(ɣanï)* in (21a) and (21b) correlates with a pragmatic distinction. When the particle marks objects (22a), there are two readings: a neutral coordination reading (22a-i), and a counter-expectational reading (22a-ii) in which it is contextually deemed unlikely for the coordinands to obtain together (22a-ii), for example if the speaker of (22a) has established in the discourse that they were short on time. When *da(ɣanï)* follows the verb (22b), the counter-expectational read (22b-ii) is preferred.

(22) a. Min kinige da(ɣanï) aaxtïm suruk da(ɣanï) suruydum.   =(21b)
          (i)   'I read a book and also wrote a letter.'
          (ii) 'I managed even to read a book and write a letter.'
      b. Min kinige aaxtïm da(ɣanï) suruk suruydum da(ɣanï).   =(21a)
          (i)   #'I read a book and also wrote a letter.'
          (ii) 'I managed even to read a book and write a letter.'

The availability of a counter-expectational reading (22a-ii), (22b-ii) in *da(ɣanï)...da(ɣanï)* coordination shows that the scalar focus interpretation present with unary *da(ɣanï)* (§2.2) is available in the particles doubled coordination role as well.

Finally, with *da(ɣanï)...da(ɣanï)* coordination, each instance of the particle is obligatory. That is to say, subtraction of any instance of *da(ɣanï)* in the sentences in this subsection results in unacceptability, or else changes the meaning significantly. An example of the latter is a concessive construction, which involves a single instance *da(ɣanï)*.

(23) a. Kini iliit-e   ïraas da(ɣanï) sirey-e   kirdeex.
          s/he hand-POSS.3SG clean *da*   face-POSS.3SG dirty
          'Even though his hands are clean, his face is dirty.'
      b. [Djulus [miigin   sötüölee-bit-e] die-bit-e   da(ɣanï)] [min kïaj-an
          [Djulus [me.ACC swim-PST-3SG] say-PST-3SG *da*]   [I   can-CVB
          sötüölee-bep-pin].
          swim-NEG.AOR-1SG]
          'Even though Djulus said I swam, I can't swim.'

For the purposes of this paper, I assume that concessive use of *da(ɣanï)* (23) is a special sub-class of the particle combining with an element with scalar focus, with little further discussion of its details. The main difference between examples like (23) and those outlined in §2.2 is that in (23) focus scopes over an entire proposition rather than an element within a proposition.

3   The cross-linguistic landscape of quantifier particles

In the previous section, three main roles that *da(ɣanï)* serves were identified: NPIs with *wh*-words and *biir* 'one' (§2.1), *da(ɣanï)...da(ɣanï)* coordination (§2.3), and as a marker of scalar focus (§2.2). At this point, it will be examined how common of a distribution this is for a quantifier particle to have.

Prima facie, the most unexpected property of *da(ɣanï)* is that it appears in NPIs and 'both...and' coordination. One commonly accepted view of NPIs is that they are existentials which obligatorily scope below negation (Fauconnier 1975; Ladusaw 1979; Chierchia 2013; Crnič 2014). Existentially quantified propositions ($\exists x[A(x) \wedge B(x)]$) are logically equivalent to proposition-level disjunction ($p \vee q$), while universally quantified propositions ($\forall x[A(x) \rightarrow B(x)]$) are equivalent to proposition-level conjunction ($p \wedge q$) (Keenan and Faltz 1985; Keenan and Stavi 1986).[19] Moreover, *da(ɣanï)...da(ɣanï)* coordination in the scope of negation resolves to a narrow-scope disjunctive reading (i.e. 'neither...nor'), suggesting that positive *da(ɣanï)...da(ɣanï)* coordination is also a disjunction on some level. As it turns out in this section, the occurrence of a single particle in 'both...and' coordination and NPIs is by no means rare.

There is a growing literature on the cross-linguistic typology of quantifier particles and their hosts, which seeks to explain the semantics of each particle as stable across the environments it occurs in (Szabolcsi 2010, 2015, 2017, 2018). I accept this position. Following this assumption, our main task is to determine what the semantic contribution of *da(ɣanï)* is, and in what ways it is different from potentially similar particles in other languages. In §3.1, I identify quantifier particles in three languages which share with *da(ɣanï)* uses in NPIs, 'both...and' coordination, as well as scalar-focus. These particles are Hungarian *is/sem*, Bosnian/Croatian/Serbian (BCS) *i/ni*, and Japanese *-mo*. Da(ɣanï) differs

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[19]To demonstrate the equivalence between $\exists x[A(x) \wedge B(x)]$ and ($p \vee q$), consider an example like 'I saw a student' (i.e. $\exists x[student(x) \wedge see(I, x)]$), where the domain of students includes Djulus and Tuyara. Here 'I saw a student' is equivalent to 'I saw Djulus or I saw Tuyara.' Similar logic follows for the universal ($\forall$)/conjunction ($\wedge$) equivalence.

from these particles in two ways: the first is that *da(ɣanï)* cannot be used as a plain additive focus particle (i.e. with a reading similar to English *too, also*), the second is that the NPIs built out of *da(ɣanï)* are licensed in fewer environments than Hungarian *is/sem* and BCS *i/ni*. Specifically, *da(ɣanï)*-NPIs are licensed only by anti-additive functions.

§3.2 provides further arguments that each of these three main uses of *da(ɣanï)* can be accounted for as a single lexical item with a single semantic denotation. I argue that particles of this type have the grammatical function of activating alternatives of the host, an addendum to Chiercha's (2013) theory of polarity items suggested by Szabolcsi (2017).

3.1 Comparison of *da(ɣanï)* with Hungarian *is/sem*, BCS *i/ni*, and Japanese *-mo*

Table 1 compares the distribution of *da(ɣanï)* to Hungarian *is/sem*, Bosnian/Croatian/Serbian *i/ni*, and Japanese *-mo*. The rows are broken up into three parts: (a)-(f) involve NP quantification, (d)-(e) are coordination, and (f)-(g) are focus environments.[20]

Language, particle Role	Sah *da(ɣanï)*	Hun *is/sem*	BCS *i/ni*	Jpn *-mo*
a. everyone (GQ), ∀	✗	✗	✗	daré-**mo**
b. anyone, FCI	✗	akár-ki **is**	✗	dare-de-**mo**
c. anyone, NPI	kim **da(ɣanï)**	akár-ki **is**, vala-ki **is**, **sen**-ki	**i**-(t)ko, **ni**-(t)ko	dare-**mo**
d. both X and Y	X **da(ɣanï)**... Y **da(ɣanï)**	X **is** Y **is**	**i** X **i** Y	X-**mo** Y-**mo**
e. neither X nor Y	X **da(ɣanï)**... Y **da(ɣanï)**	X **sem** Y **sem**, **sem** X **sem** Y	**ni** X **ni** Y	X-**mo** Y-**mo**
f. X too	✗	X **is**	**i** X	X-**mo**
g. even X	(onnooɣor) X **da(ɣanï)**	még X **is**	(čak) **i** X	X-**mo**

Table 1: Main semantic roles of quantifer particles in Sakha (Sah) compared to Hungarian (Hun) (Szabolcsi 2015, 2017, 2018), Bosnian/Croatian/Serbian (BCS) (Progovac 1994; Mitrović and Sauerland 2014, 2016; Szabolcsi 2017, 2018), and Japanese (Jpn) (Kratzer and Shimoyama 2002; Shimoyama 2006, 2011; Szabolcsi 2015).

As we see from Table 1, Sakha *da(ɣanï)* has the narrowest distribution of any of these particles, while Japanese *-mo* has the widest. *Da(ɣanï)* shares with BCS *i/ni* a lack of FCI uses (row b), and neither Sakha *da(ɣanï)*, Hungarian *is/sem*, nor BCS *i/ni* are used in universal quantifiers (row a), distinguishing these three from Japanese *-mo*.[21,22]

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[20]The universal use of Japanese *-mo* is included for its general theoretical relevance, though it will play no role in my analysis of Sakha.

[21]*Da(ɣanï)*'s cognate in other Turkic languages is intriguing. Turkish (Turkic>Oghuz) *dA* 'too' is mainly used as an additive focus particle. In Tuvan (Turkic>South Siberian) the particle *-daa* [daː] has a distribution that overlaps with the functions of Japanese *-mo* in Table 1. In Kirby (2022, p. 10) I show that Tuvan *-daa* appears in *wh*-based indefinites, e.g. *kïm-daa* a. 'everybody,' b. 'anybody, FCI,' c. 'anybody, NPI,' doubled coordination X-*daa* Y-*daa* 'Both X and Y; neither X nor Y (with negated predicate),' as well as both of the focus readings: X-*daa* a. 'also X; not X, either (negation),' b. 'even X.' The Old Turkic cognate *taqï/takï* was used as an additive focus particle, an emphatic scalar focus particle, and a conjunction (Tekin 1997, pp. 169, 158; Erdal 2004, pp. 150, 337, 348-9, 478, 509), though it does not appear to have been used in indefinites. Given the lack of early textual records, it is not clear whether the use of Sakha *da(ɣanï)*, Tuvan *-daa* in indefinites is a result of shared inheritance from a common ancestor (and, if so, which of the three functions for Tuvan *-daa* emerged first), or else were separate innovations in Sakha and Tuvan. While distributional similarities among cognates in different members of a family are doubtless insightful and important, this paper focuses more on just the restricted distribution of Sakha *da(ɣanï)*, and how to capture this distribution within a stable semantic denotation.

[22]Note that much of the literature on Japanese does not analyze the various functions of the element *-mo* to be a single

The most unique thing about Sakha *da(ɣanï)* is that it is alone in lacking the additive *too* focus meaning (row f). Additive *X too* can be defined informally as a requirement (often a presupposition), where if X is true some other proposition Y is also true (Rullmann 2003; Szabolcsi 2017). For example, if somebody says *BILL slept, too* (with narrow focus on *Bill*), there is a strong pragmatic requirement that somebody other than Bill slept, and the sentences is otherwise infelicitous. Sakha *da(ɣanï)* does not appear in these types of environments. Compare Hungarian *is/sem* (24) to Sakha *da(ɣanï)* (25):

(24)   a.   Mari ásított. [BILL]$_F$ is ásított.   (Hungarian)
             Mary yawned. [BILL]$_F$ *is* yawned
             'Mary yawned. BILL also yawned.'
      b.   (Mari nem ásított. [BILL]$_F$ sem ásított.
             Mary NEG yawned. [BILL]$_F$ *is* yawned
             'Mary didn't yawn. BILL didn't, either.' (Szabolcsi 2017, (4))

In these sentences (24), *is* appears to the right of the focus in positive sentence (24a), *sem* in the negative sentences (24b). The presupposition of (24a) is 'somebody other than Bill yawned,' while for (24b) the presupposition is 'somebody other than Bill didn't yawn'. Here, the presupposition is satisfied by *Mari*, the subject of the sentence to the left. For equivalent sentences in Sakha, *da(ɣanï)* does not serve this role. Instead, another particle *emie* 'also' is used:

(25)   a.   Djulus kofye is-te.   Min$_F$ {#da(ɣanï) / emie} is-t-im.
             Djulus coffee drink-PST.3SG. I$_F$ { *da*   / *emie*} drink-PST-1SG
             'Djulus drank coffee. I did, too.'
      b.   Djulus kofye is-pe-te.   Min$_F$ {#da(ɣanï) / emie} is-pe-t-im.
             Djulus coffee drink-NEG. I$_F$ { *da*   / *emie*} drink-PST-1SG
             'Djulus didn't drink coffee. I didn't, either.'

In (25), *da(ɣanï)* is infelicitous on a plain additive 'too/either' reading, with or without the sentence to the left. The use of *emie* patterns similarly to Hungarian *is/sem* (24), with the minor distinction that *emie* does not compete with a negative concord morpheme. (25a) without the sentence to the left has the presupposition 'somebody other than me drank,' while (25b) has the presupposition 'somebody other than me didn't drink.'

Interestingly, *da(ɣanï)* is very often translated as 'also; too' (see Krueger 1962, pp. 115, 240) *including* by speakers I have consulted who reject it in sentences like (25). However, I have been unable to find any sentence where it has a non-scalar additive reading, with one exception that comes from *sakhatyla.ru*'s definition 1.5 for *da* where it is translated in Russian as *i, takzhe, tozhe* 'also, likewise, in addition to' with a single example provided:

(26)   Min da bil-er   et-im.
         I   *da* know-AOR AUX-1SG
      a.   *sakhatyla.ru* translation: (Ru) *Ya tozhe znal* 'I also knew.'   (Consultant: #)
      b.   Consultant's translation of (26): (Ru) *Dazhe ya znal* 'Even I$_F$ knew.'

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morpheme, but rather assumes that there are two or more homophonous *-mo* particles. For example, Shimoyama (2006, pp. 147, 159) considers the quantifier-forming *-mo* and additive/coordinating 'also/and' *-mo* two distinct lexical items. Further, there are complex prosodic and syntactic details concerning the *-mo*-marked element which I will leave aside for this paper (see references in Kobuchi-Philip 2009, p. 174; Imani 2020).

In this paper, I take the observation that unrelated languages utilize homophonous elements in some or all of the array of syntactic and semantic functions in Table 1 as justification that TOO particles should be analyzed as a natural class with a stable semantics. At the same time, there are fine-grained syntactic details that I will not be able to address in this paper (see Szabolcsi 2015, p. 183; Szabolcsi 2018, pp. 21-2).

The Russian translation of (26), which uses the non-scalar additive *tozhe* 'also,' was incorrect in my consultants' dialect, and they instead translated (26) with the scalar additive (26b). While it is possible that there are speakers or dialects which would accept *da(ɣanï)* as a plain additive, the consultants' mental grammar which forms the basis of this paper did not.[23]

While *da(ɣanï)* is incompatible with a basic *too/also* meaning, it is not completely incompatible with additive presuppositions concerning the host, because of its *even X* use (row g in Table 1). *Even* often carries additivity, along with the scalar presupposition (Crnič 2011, 2014).

(27) a. Onnooɣor studyen da(ɣanï) iti   kinige-ni   aax-ta.
           Even   student *da*   that book-ACC read-PST.3SG
           'Even the student read that book.'
           (i)   Scalar requirement: The student is unlikely to have read that book
           (ii)   Additive requirement: Somebody other than the student read that book
      b. Onnooɣor studyen da(ɣanï) iti   kinige-ni   aax-pa-ta.
           Even   student *da*   that book-ACC read-NEG-PST.3SG
           'Even the student didn't read that book.'
           (i)   Scalar requirement: The student is unlikely to have not read that book (i.e. it is expected that the student would have read that book)
           (ii)   Additive requirement: Somebody other than the student didn't read that book

Just like the English translations of (27), the Sakha sentences have a scalar requirement (i) and an additive requirement (ii). Furthermore, the 'both...and' and 'neither...nor' readings of *da(ɣanï)... da(ɣanï)* can reasonably be argued to be an additive construction, following common analysis of TOO…TOO coordination (Kobuchi-Philip 2009; Brasoveanu and Szabolcsi 2013; Szabolcsi 2015). Thus, we can characterize *da(ɣanï)* as a TOO-particle which lacks a basic additive 'too' reading. In §5 it will be proposed that *da(ɣanï)* lacks a plain, non-scalar additive reading because it is blocked by competition with *emie*, and that it is only when *emie*'s presupposition is not met that *da(ɣanï)* can induce additivity. This is because *da(ɣanï)*'s additive characteristics are the result of a post-supposition, and this post-supposition is induced by exhaustification of an atomic proposition.

Licensing environment	Sah *da(ɣanï)*	Hun *is/sem*	BCS *i/ni*	Jpn *-mo*
a. Clause-mate negation	kim **da(ɣanï)**	**sen**-ki	**ni**-(t)ko	dare-**mo**
b. NEG-raising	✗	vala-ki **is**	**i**-(t)ko	✗
c. Standard of comparison	kim **da(ɣanï)**	✗	**i**-(t)ko	✗
d. Antecedent of conditional	✗	vala-ki **is**	**i**-(t)ko	✗
e. Polar questions	✗	vala-ki **is**	**i**-(t)ko	✗

Table 2: Interrogative pronoun-based NPIs formed with particles in Sakha *da(ɣanï)*, Hungarian *is/sem* (Tóth 1999; Kiss 2004; Szabolcsi 2017, 2018), Bosnian/Serbian/Croatian *i/ni* (Progovac 1994), Japanese (Lee 1993; Lahiri 1998; Shimoyama 2006, 2011). All examples supplied are ways of expressing an NPI/NCI *anybody*.

When we consider in further detail the types of environments that license NPIs built out of Sakha *da(ɣanï)*, Hungarian *is/sem*, BCS *i/ni*, and Japanese *-mo*, a further distinction arises among these particles. As can be seen from Table 2, Sakha *da(ɣanï)* NPIs are licensed in a much smaller range of functions than Hungarian *is/sem* and BCS *i/ni*. Hungarian *sen-ki* and BCS *ni-(t)ko* are negative-concord

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[23]Further, there are no plain additive examples of *da(ɣanï)* in Krueger (1962), Pakendorf (2007), Vinokurova (2005), or Gast and van der Auwera (2013).

counterparts to *valaki is*, *i-(t)ko* respectively, licensed only with clause-mate negation (row a).[24] Putting comparatives (row c)[25] to the side for the moment, polarity items licensed by negation to the exclusion of the antecedent of conditionals and polar questions is a well-attested subclass called 'strong' or 'strict' NPIs (Zwarts 1998; Gajewski 2011). Examples of this in English include punctual *until* and additive *either*:

(28)   a.   Djulus didn't leave {either/until Monday}. (*cf.* *Djulus left {either/until Monday}.)
        b.   *If Djulus left either/until Monday, Sardaana would know.
        c.   *Did Djulus leave either/until Monday?

Punctual *until* and additive *either* are grammatical with negation (28a), but not in the antecedent of conditionals (28b) or in questions (28c). The existence of strong NPIs challenges the well-known generalization (Fauconnier 1975; Ladusaw 1979) that NPIs are licensed in downward entailing environments (DE, to be defined shortly), as conditionals and questions are both downward entailing (see Nicolae 2015 for DE analysis of questions). Zwarts (1998) proposes further logical properties that have to be taken into consideration to characterize the licensing environments of strong NPIs, based on which relations among the De Morgan's law equivalences (29) hold:

(29)   De Morgan's Laws, where '⇔' is 'mutual entailment':
        a. $\neg(A \wedge B) \Leftrightarrow \neg A \vee \neg B$
        b. $\neg(A \vee B) \Leftrightarrow \neg A \wedge \neg B$

De Morgan's law can be generalized as a function f which governs four unidirectional entailment relationships between the scope of f and the conjunction ($\wedge$) and disjunction ($\vee$). These four relationships are shown in Table 3, where '$A \Rightarrow B$' should be read as 'A entails B':

Table 3 represents a hierarchical relationship between these three types of functions—that is, no function can be anti-additive (b in Table 3) without being Downward-Entailing, and likewise, no function can be antimorphic (c) without also being anti-additive (b) and downward entailing (a). The only natural language function which is antimorphic, anti-additive, and downward entailing is negation (Zwarts 1998; Gajewski 2005, 2007). The antecedent of a conditional is downward entailing, but not anti-additive. The upshot of this is that some polarity items are sensitive to being in environments that are downward entailing, while others require stronger logical properties such as anti-additivity (thus the term 'Strong NPI').

    Turning back to the relationship between Sakha *da(ɣanï)* and similar particles in Hungarian (*is/sem*) and BCS (*i/ni*), we can now characterize a key difference between NPIs formed with *da(ɣanï)*, *is/sem*, *i/ni*. As shown in Table 2, Hungarian *is/sem* and BCS *i/ni* NPIs are licensed by functions that are, at a

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[24]*WH+da(ɣanï)* NPIs are not negative-concord items. In addition to the fact that they are licensed in comparatives, they fail the main diagnostic of negative concord–the ability to serve as a negative fragment answer to non-negative questions (Zanuttini and Portner 2003; Chierchia 2013, p. 238):

(i)   Tugu   beɣehee aax-pïp-pïn=ïy? #Tugu   da(ɣanï)
        what.ACC yesterday read-PST-1SG=Q what.ACC *da*
        'What did I read yesterday? Nothing.'

[25]Hungarian *valaki is* is ungrammatical in the standard of comparison (Tamás Halm, p.c.). Instead, to express a meaning equivalent to English 'Mary is smarter than anyone,' a universal quantifier like *mindenki* or a free-choice item like *bárki* is required:

(i)   Mari okos-abb {*valaki-nél is   / mindenki-nél / bárki-nél}.
        Mari smarter-er {someone-at *is* (=anyone$_{\text{NPI}}$) / everyone-at   / anyone$_{\text{FCI}}$}
        'Mary is smarter than anyone/everyone.'

a.	Downward Entailing
	(i) $f(A) \vee f(B) \Rightarrow f(A \wedge B)$
	(ii) $f(A \vee B) \Rightarrow f(A) \wedge f(B)$
b.	Anti-Additive
	(iii) $f(A) \wedge f(B) \Rightarrow f(A \vee B)$
c.	Antimorphic
	(iv) $f(A \wedge B) \Rightarrow f(A) \vee f(B)$

Table 3: Strengths of Negation (Zwarts 1998; Gajewski 2005, 2007), where '$\Rightarrow$' means 'entails the formula to the right'.

bare-minimum, downward entailing (clause-mate negation, NEG-raising, comparatives, the antecedent of conditionals, and questions), while Sakha *da(ɣanï)* NPIs require stronger functions.

Finally, we need to consider the remaining licenser of *WH+da(ɣanï)*-NPIs in Sakha: comparatives.[26] In many languages, comparatives can license strong NPIs only if they are clausal, as opposed to nominal (see Hoeksema 1983 on Dutch *ook maar* 'at all, whatsoever'). Thus, for those languages that show this asymmetry, it follows that clausal comparatives are anti-additive, while nominal comparatives are not. This asymmetry is reflected in the possible readings of English *or* in the standard of comparisons in nominal (30a) and clausal comparatives (30b):

(30)   a.   Djulus is taller than Erkin or Tuyara.
            (i)   [Djulus is taller than Erkin] or [Djulus is taller than Tuyara]
            (ii)   [Djulus is taller than Erkin] and [Djulus is taller than Tuyara]
    b.   Djulus is taller than Erkin or Tuyara is.
            (i)   #[Djulus is taller than Erkin] or [Djulus is taller than Tuyara]
            (ii)   [Djulus is taller than Erkin] and [Djulus is taller than Tuyara]

Nominal comparatives (30a) with two standards coordinated with *or* display scope ambiguity, with (30a-i) reflecting *or* taking scope over the comparative operator in two clauses, and reading (30a-ii) reflecting the comparative operator scoping over *or*. Clausal comparatives (30b), on the other hand, are only compatible with the latter scope. In §4.1, I will analyze Sakha comparatives formed with case suffix *-TĀɣAr* as containing a covert negation.

3.2 Quantifier particles and alternatives

§1 provided three questions that quantifier particles like *da(ɣanï)* raise for semantic compositionality (1), repeated in (31):

(31)   (Szabolcsi 2015, p. 161 (3))
    a.   "Do the roles of each particle form a natural class with a stable semantics?"

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[26]A reviewer questioned how common it is for strict NPIs to be licensed in comparatives. Indeed English *in weeks* has this distribution (*Djulus is happier than he's been in weeks*) whereas post-focal *either* does not (**Djulus is happier than Sardaana, either*). Moreover, in Haspelmath's (1997) study of the distribution of indefinite pronouns from 40 languages he identifies a handful of pronoun series which are licensed by negation (whether direct clause-mate or NEG-raising) and comparatives to the exclusion of all other licensing environments (e.g. no free-choice reading), such as Maltese *ebda*, Korean *-to*. In §4, I argue that Sakha comparatives license *WH+da(ɣanï)* due to the presence of a covert negation which scopes over the NPI.

b. "Are the particles aided by additional elements, overt or covert, in fulfilling their varied roles? If yes, what are those elements?"

c. "What do we make of the cross-linguistic similarities and differences in the distribution and interpretation of the particles?"

If one assumes that the answer to (31a) is "no," the immediate position would be that at there are at least two morphemes with distinct semantic denotations–that is, it is a case of accidental homophony.[27] With respect to Japanese *-mo* (discussed in §3.1), many have argued that the there are two (or more) distinct morphemes: a quantifier particle *-mo* (including the uses in focus particles, NPIs, etc.), and a coordinator *-mo* (e.g. in Hagstrom 1998. See Mitrović and Sauerland 2014, 2016; see Szabolcsi 2015, 2018 for further discussion).[28] One argument against accidental homophony given by Mitrović and Sauerland (2014) is that *-mo* can express both the quantifier particle use and the conjunctive use at the same time (32a) and, in fact, attempting to coordinate two *mo*-marked NPs with coordinator *-mo* is ungrammatical (32b):

(32)   Japanese

   a.   [Dono gakusei mo] [dono   sensei   mo] hanashita.
        [which student *mo*] [which teacher *mo*] talked
        'Every student and every teacher talked.' (Mitrović and Sauerland 2014, p. 41)

   b.   *[Dono gakusei mo mo] [dono sensei mo mo] hanashita.

If the quantifier-forming use of *-mo* and coordinator *-mo* reflected two distinct morphemes, the ungrammaticality of (32b) would be unexpected. The (32) pattern obtains also in Sakha when two NPIs are coordinated under the scope of negation (33) and in comparatives (34):

(33)   a.   Min [kimi   da(ɣanï)] [tugu   da(ɣanï)] kör-*(bö)-t-üm.
            I   [who.ACC *da*]   [what.ACC *da*]   see-*(NEG)-PST-1SG
            (With negation): 'I didn't see anybody or anything.'

       b.   *Min [kimi da(ɣanï) da(ɣanï)] [tugu da(ɣanï) da(ɣanï)] körbötüm.

       c.   Min [biir da kinige] [biir da suruk] aax-*(pa)-t-ïm.
            I   [one *da* book] [one *da* letter] read-*(NEG)-PST-1SG
            'I read neither any book nor any letter.'

       d.   *Min [biir da kinige da(ɣanï)] [biir da suruk da(ɣanï)] aaxpatïm

(34)   a.   Kini [kim-neeɣer da(ɣanï)] [tuox-taaɣar da(ɣanï)] kïrahïabay.
            s/he [who-CMPR *da*]   [what-CMPR *da*]   attractive
            'S/he is more attractive than anyone or anything.'

       b.   *Kini [kimneeɣer da(ɣanï) da(ɣanï)] [tuoxtaaɣar da(ɣanï) da(ɣanï)]
            kïrahïabay.

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[27]A reviewer questioned whether we might characterize the wide roles served by TOO particles not as a natural class, but rather as shared-feature syncretism. That is, rather than assuming that TOO-particles form a natural class, to assume that morphemes often overlap in the same roles due to a feature they have in common with elements that appear in non-natural classes. It is not clear what advantage describing TOO particles as syncretism would provide over assuming that they are a natural class without a theory for why the syncretism appears in the first place and so I have chosen not to pursue this option.

[28]Even within approaches that consider TOO-particles to be semantically uniform there are differing syntactic analyses of different types of these particles. For example, Szabolcsi (2015, p. 183; 2018, pp. 21-2) argues that there are two syntactic types of quantifier particles: those which attach internal to quantifier phrases (e.g. Hungarian *mind-*; host+*sem*) and those which are heads on the clausal spine (e.g. Hungarian *is*, *sem*+host). While there are syntactic properties that distinguish these two types of particles (see Szabolcsi 2018, pp. 3, 18-29), they may end up semantically equivalent. For example, Hungarian has two ways to form 'both...and coordination': either through the QP-internal *mind* (e.g. *mind* X *mind* Y 'both X and Y') or through the IP-internal *is* (e.g. X *is* Y *is* 'both X and Y'). While I note that these syntactic details have ramifications for the semantics in terms of compositionality, I leave more detailed discussion of the syntax of Sakha *da(ɣanï)* for future work.

As (33) shows, *da(ɣanï)* cannot appear twice in each disjunct regardless of whether the quantifier particle appears at the end of a noun phrase (33b) or whether it appears in NP second-position (33d). Contrasts like (32), (33), and (34) suggest that not only is the morpheme the same in its nominal uses and coordination, but also that it expresses the same meaning in these two environments. While Mitrović and Sauerland (2014) are able to account for the absence of *-mo-mo* by proposing a unified semantic contribution of *-mo* in *dono gakusei mo* 'every student' and X-*mo* Y-*mo* 'both X and Y,' a reviewer points out that Mitrović and Sauerland's (2014) **-mo-mo* observation in (32) lacks a theory behind it that could diagnose whether or not these are in fact the same or different *-mo* morphemes. Indeed **-mo-mo* could be explained as a phonological haplology effect of two phonologically identical, semantically distinct morphemes akin to what is observed in English *-s* plurals in possession (i.e. *the boys' trucks; *the boys's trucks*). However, in Sakha *biir da* NPIs (33c), (33d) we see evidence against phonological haplology, given that, in the ungrammatical version (33d) the NPI-forming *da* is not adjacent to the coordination *da(ɣanï)*.

The alternation between full *daɣanï* and reduced *da* provides additional evidence against an accidental homophony account of the strictly quantifier particle uses and the coordinative uses of *da(ɣanï)*. If we assume that they are two distinct morphemes, the fact that lexically-specific alternation is shared by two different morphemes would be quite strange. The stronger argument would be that these two roles are served by the same morpheme. *Da(ɣanï)*, then, provides a unique counterexample to accidental homophony.[29]

In addition to the coordination facts (33)–(34) and the *da~daɣanï* alternation, further evidence that the quantifier particle and coordinative uses of *da(ɣanï)* are the same morpheme comes from NEG-raising constructions. As was shown in §2.1 and §3.1, NPIs embedded in a finite clause cannot be licensed by matrix negation. Similarly, *da(ɣanï)...da(ɣanï)* coordination is also ungrammatical in embedded clauses with matrix negation:

(35)   Djulus [miigin kofye-nï da(ɣanï) čay-i da(ɣanï) is-pit dii]
            Djulus [me.ACC coffee-ACC *da* tea-ACC *da(ɣanï)* drink-PST.3SG COMP]
            {*sanaa-batax / sanaa-bït}.
            {think-NEG.PST / think-PST}
      a.   Positive: 'Djulus thought I drank both coffee and tea.'
      b.   Negative, predicted readings: (both unavailable for (35))
          (i)   'Djulus didn't think I drank either coffee or tea.'
          (ii)   'Djulus didn't think I drank both coffee and tea.'

With matrix negation *sanaabatax* 'didn't think' (35) is incompatible with *da(ɣanï)...da(ɣanï)* interpreted as disjunction (35b-i) or conjunction (35b-ii).[30] The fact that this is shared with embedded NPIs (7) cannot be a coincidence. There is something general about these types of embedded clauses which results in incompatiblity with *da(ɣanï)* in NPIs and with coordination. Because positive *da(ɣanï)...da(ɣanï)* is grammatical, it cannot be a result of the particle alone. Rather, it is a property of matrix negation in combination with *da(ɣanï)*'s semantics which results in this asymmetry.

These facts, I argue, necessitate an approach to *da(ɣanï)* whereby all of the particle's uses reflect a single underlying semantic denotation (i.e. the answer to (31a) is "yes"). In the rest of this paper, I will propose that *da(ɣanï)* serves a very simple function: it marks the semantic alternatives of its host

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[29]The presence of negative concord on Hungarian *is/sem* and BCS *i/ni* (Table 1) can be seen as similar evidence in these languages, though this requires the assumption the negative concord variants *sem, ni* contain the same morphemes (*is, i*). While I have been tacitly assuming that negative concord is a case of strong-NPI licensing with the additional of a (phonologically) negative piece (similar to Chierchia 2013), nothing central to my argument about *da(ɣanï)* rests on this assumption.

[30]When given sentences like (35), my consultant was able to reconstruct a meaning like (35b-ii), though it was still an ungrammatical way to express this (instead *uonna* 'and' was preferred).

as OBLIGATORILY ACTIVE, in the sense of Chierchia (2013). Following Szabolcsi (2017), quantifier particles cross-linguistically can be categorized as elements whose meaning involve some reference to alternatives, though the specifics of what kind of alternatives they "seek out" (p. 460) and the operations they perform on those alternatives is a point of variation among different particles (in the same language and across different languages).

4 NPIs and Focus: Alternatives and exhaustification

Chierchia (2013) develops a theory which gives a unified explanation to why languages have elements that can be used in the scope of certain logical operators, but not others, particularly those that require a certain polarity (NPIs and PPIs) and those that require a modal (FCIs). This approach pushes "as far as possible the spirit, if not the letter" (p. 26) of the alternative-semantics approach to polarity sensitivity (Kadmon and Landman 1993; Krifka 1995; Lahiri 1998). This theory holds that part of the linguistic endowment of UG is a logical system which involves reasoning about alternatives and that some scalar elements have grammatically-determined alternatives, and is hence known as the Grammatical Theory of Polarity Sensitivity. While it is beyond the scope of this paper to provide a background on this theory, some basic facts need to be discussed in order to situate my account of Sakha *da(ɣanï)* within it.

It has long been noted that languages have elements which are sensitive to the direction of entailment that they appear within, and that scalar elements are particularly sensitive to the same environments (Fauconnier 1975; Ladusaw 1979; Zwarts 1998; Chierchia 2004; Chierchia et al. 2012). For example in positive/upward entailing environments, scalar implicatures emerge and NPIs are ungrammatical (36a), while in negative/downward entailing environments, scalar implicatures do not arise and NPIs are grammatical (36b):

(36)　　a.　Positive/Upward entailing
　　　　　　　(i)　Djulus read a page yesterday. (Scalar implicature: one and only one page)
　　　　　　　(ii)　*Djulus read anything yesterday.
　　　　　b.　Negative/Downward entailing
　　　　　　　(i)　Djulus didn't read a page yesterday. (no scalar implicature)
　　　　　　　(ii)　Djulus didn't read anything yesterday.

The standard neo-Gricean explanation for why the scalar implicature arises in (36a-i) is that the indefinite article *a* is a scalar element which has stronger scalar alternatives (*two pages, three pages*, etc.) which the speaker does not use. Because the speaker does not use a stronger alternative, there must be a reason why–namely that the stronger alternatives are false. In Chierchia's (2013) system, these types of implicatures are termed "ordinary scalar implicatures". The characteristic of ordinary scalar implicatures is that they are optional–i.e. they can be cancelled explicitly (e.g. *Djulus read a page yesterday...in fact he read 100 pages*) or through context (e.g. if (36a-i) is uttered where the number of relevant pages is only one, such as the answer to a question like 'Who read at least one page yesterday?'). Chierchia contrasts implicatures of this type with "grammatical scalar implicatures," in which the implicature calculation is obligatory.

The starting point for this theory is that NPIs are low-point existentials. This fits well with the *da(ɣanï)* data. NPIs are built out of existentials like *wh*-words and the low-point numeral *biir* 'one'. Chierchia (2013) proposes that, like ordinary scalars, NPIs have grammatical alternatives. The difference is that the alternatives of NPIs are grammaticalized–that is to say, they are part of the morphosyntactic make-up of polarity items. Another way to say this is that the alternatives are OBLIGATORILY ACTIVE. By this, it is meant that contradictions that arise during the course of the derivation cannot be ignored. As will shortly be shown, obligatory exhaustification in positive environments often has the

result of producing a contradiction. On this theory, these contradictions are the cause of the ungrammaticality of NPIs in positive sentences.

Much of the work in this theory is done by covert operators called EXHAUSTIFIERS, which take a proposition that has a set of alternatives, and perform some set of pre-defined operations upon the alternatives. If an element has alternatives, the alternatives must be exhaustified. The core semantic meaning of the proposition is known as the PREJACENT. A typical set of alternatives for an existential/disjunction can be represented as a set (37) or as a Hasse diagram (38).

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

(38)   ALTs of $(p \vee q)$:

$(p \vee q)$		[prejacent]
p	q	[subdomain alternatives]
$(p \wedge q)$		[scalar alternative]

In (37) and (38), there are two types of alternatives: the subdomain alternatives $\{p, q\}$ which are the individual disjuncts (Sauerland 2004), and the more-familiar stronger scalar alternative $(p \wedge q)$. The prejacent $(p \vee q)$ itself is also included in the set of alternatives. This is necessary by definition, because a proposition always has itself possible alternative, and moreover there are entailment relationships among the members of the alternatives. The entailments are particularly salient in the semi-lattice notation, where, from the bottom, each alternative entails the alternatives in the row above. That is, $(p \wedge q)$ entails p, and $(p \wedge q)$ entails q, and p and q (separately) entail $(p \vee q)$. There are no entailments in the other direction.

There are two relevant exhaustifiers: O (39), which is a covert counterpart to *only*, and E (40), a covert counterpart to *even*. Here, they are defined, with some brief explanation. In the following subsections, more detail will be provided.

(39) $O_{ALT}(\phi) = \phi \wedge \forall p \in ALT[p \rightarrow \phi \subseteq p]$,
        where '$\subseteq$' means 'entails' (Chierchia 2013, p. 31)

To put (39) simply, O_{ALT} is a grammatical (LF) operator which takes a proposition ϕ with alternatives ALT. $O(\phi)$ asserts ϕ and all of the alternatives of ϕ which are NOT entailed by ϕ. Non-entailed alternatives are eliminated (i.e. negated). E(ven), on the other hand, does not eliminate any alternatives, but rather requires that they be ranked along a scale and that the prejacent is the lowest-ranked element on the scale:

(40) $E_{ALT}(\phi) = \phi \wedge \forall p \in ALT[\phi <_{\mu} p]$,
        where '$\phi <_{\mu} p$' says that ϕ is less likely than p with respect to some contextually relevant probability measure μ (Chierchia 2013, p. 148)

E_{ALT} (40) takes a proposition ϕ which has alternatives ALT and returns an interpretable proposition if and only if ϕ is less likely than any member of ALT. In other words, if our set of propositions is $\{\phi, \psi, \chi\}$, $E(\phi)$ is interpretable if and only if ϕ is less likely than ψ and is less likely that χ (i.e. it is required that ϕ is the least-likely alternative).

In essence, the Grammatical Theory of Polarity Sensitivity puts polarity items on a par with other alternative-sensitive phenomena, namely focus (Chierchia 2013, pp. 30-4). Note that the exhaustifiers O and E are, indeed, focus operators. Focus induces alternatives and these alternatives have to be exhaustified as well. For Sakha *da(ɣanï)*, this makes sense, given that the particle appears in NPIs and focus environments. A central claim I am making is that *da(ɣanï)*'s role in forming NPIs with a low-point existential like a *wh*-word or *biir* 'one' as a host is reflective of the same contribution it is

performing when its host is focus-marked, and this role is to mark that the alternatives are obligatorily active (and thus need to be exhaustified).

Before diving into the application of this theory to *da(ɣanï)*, some words need to be said about the relationship between O(nly) and E(ven). The choice between them is not arbitrary, but is rather determined by the nature of the alternative set under consideration. Chierchia (2013) formalizes this through the principle of OPTIMAL FIT:

(41) OPTIMAL FIT (Chierchia 2013, p. 153)
      In exhaustifying ϕ, use O unless both (41a) and (41b) hold:
      a. $O(\phi)$ is trivial (=contradictory or vacuous)
      b. There is a salient probability measure μ. A probability measure μ is salient iff either of the following hold:
          (i) μ is salient in the context
          (ii) ALT is totally ordered by $\subseteq$ (=entailment)

OPTIMAL FIT (41) provides a useful heuristic for analyzing alternative-sensitive elements. First, we start with O(nly). If exhaustification with O(nly) is contradictory (i.e. contradicts the prejacent) or is vacuous (i.e. returns the prejacent and nothing else), we can move on to exhaustifying with E(ven), so long as the alternatives are ordered by a salient probability metric μ.[31] In §4.1 this economy principle will be invoked to account for the reading of *biir da* NPIs as *biir* 'one' has a totally-ordered set of alternatives thus satisfying condition (41b-ii), while in §4.2 for the scalar focus function (41b-i) will be invoked.

4.1 *Da(ɣanï)* and negative polarity

First, let's consider how this system handles basic cases of NPIs, such as English *any*. *Any* can be represented as an existential with obligatorily active alternatives (42a).

(42) I *(didn't) read any book.
      a. $[\![\text{any}]\!] = \lambda P_{\langle e,t \rangle}.\lambda Q_{\langle e,t \rangle} \exists x[P(x) \wedge Q(x)]_{[+A]}$
      b. Domain of books = {*Crime and Punishment*, *War and Peace*}
      c. $(\neg)\exists x[\text{book}(x) \wedge \text{read}(I,x)]_{[+A]}$

Considering a domain with two members (42b), the meaning of (42c) is equivalent to $(\neg)(p \vee q)$, where p='I read *Crime and Punishment*,' and q='I read *War and Peace*'. The subscripted [+A] in (42a) represents that *any* has obligatorily active alternatives. Because there are alternatives, exhaustification must take place. Further, because they are obligatorily active, any contradiction that emerges in the course of exhaustification cannot be ignored (unlike with ordinary scalars). This is shown in (43) for the positive version, (44) for the negative.[32]

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[31] Crnič (2011) proposes that all NPIs require some degree of emphasis and hence need to be exhaustified with E(ven). The NPI data could easily be ported to such a theory and in fact, *biir da* NPIs require E(ven) as is shown in §4.1. The *both...and* reading of *da(ɣanï))* cannot so straight-forwardly be explained on an *even* account, as E(ven) alone cannot strengthen disjunction to conjunction. In another approach, Xiang (2020) and Mitrović (2021) have both shown that E(ven) can be derived from recursively exhaustifying with O(nly) a set of subdomain alternatives which are ranked along a probability scale. This latter O-to-E approach is particularly appealing for elements like Japanese *-mo* to alternate between the *also* and *even* readings. I will leave for future work the question of whether this approach is suitable for Sakha *da(ɣanï)*.

[32] Here I show exhaustification of the subdomain and scalar alternatives in one fell swoop. Chierchia (2013) splits this off into two steps for cases like English *any* (i.e. $O_{\sigma-Alt}(O_{DA}(\phi))$, where '$O_{\sigma Alt}$' is exhaustification of the scalar alternatives and 'O_{DA}' is exhaustification of the subdomain alternatives. This highlights that it is the subdomain alternatives, not the scalar alternatives, which cause a problem for NPIs in positive sentences. It also makes the connection to free-choice items salient,

(43) a. Prejacent: $(p \vee q)$

  b. $\text{ALT}(p \vee q) = \{p \vee q, \textit{p}, \textit{q}, \textit{p} \wedge \textit{q}\}$

  c. $\text{O}_{\text{ALT}}(p \vee q) = (p \vee q) \wedge \underbrace{\neg p \wedge \neg q}_{\neg(p \vee q)} \wedge \neg(p \wedge q)$

  d. $= \underbrace{(p \vee q)}_{\textbf{prejacent}} \wedge \underbrace{\neg(p \vee q) \wedge \neg(p \wedge q)}_{\textbf{non-entailed alternatives}} \quad \bot$

In (43b), the non-entailed alternatives of the prejacent $(p \vee q)$ are shown in italics. Recall from the definition of O(nly) (39) that non-entailed alternatives are negated. Exhaustification with O(nly) is shown in (43c)–(43d), where the underbraces indicate entailments of the above formulas (here, $(\neg p \wedge \neg q)$ is equivalent to $\neg(p \vee q)$ via De Morgan's law). In (43d), we see that exhaustification with O(nly) contradicts the prejacent. This contradiction itself is responsible for the ungrammaticality of *I read any books*. If we were dealing with an ordinary scalar, this contradiction could be eliminated, as ordinary scalars are governed by Gricean Relevance and by pragmatic reasoning, a contradiction can never be relevant. Because all NPIs have grammatical alternatives as part of their morphological makeup in this theory, Relevence itself is not able to prune contradictory alternatives from the alternative set. This, in a nutshell, is the source of the NPI effect.

In the scope of negation (44), no contradiction will arise.

(44) a. Prejacent: $\neg(p \vee q)$

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

  c. $\text{O}_{\text{ALT}}(\neg(p \vee q)) = \neg(p \vee q)$

Negation affects not just the prejacent (44a), but also the alternatives (44b). As shown by the lack of italicized alternatives in (44b) (contrasting with exhaustification in positive sentence (43b)), all of the alternatives are now entailed. Hence, exhaustification with O(nly) will not eliminate any alternatives (44c) and no contradiction arises. This is ultimately the meaning of *I didn't read any book*. While the meaning is vacuous (i.e. identical to the prejacent), there is no probability metric, hence we cannot continue to E(ven) by OPTIMAL FIT (41).

A similar approach can be applied to Sakha *WH+da(ɣanï)* NPIs with one modification involving the morphological make-up of the phrase. While NPIs built out of an indefinite and a particle are sometimes analyzed as idiomatic (e.g. Lahiri 1998; Chierchia 2013 on Hindi *koii bhii*), this misses the generalization that the particle itself is doing a lot of work. These NPIs are created compositionally through the combination of the particle's semantics with the semantics of the host. By this I mean that NPIs have (at least) two morphemes: a low-scalar existential (which has its own alternatives), and a morpheme which activates these alternatives, making them obligatory (see Szabolcsi 2017 for a similar argument). The latter is what *da(ɣanï)* does:

(45) $[\![\alpha_{[\text{ALT}]} \, \text{da}(\text{ɣanï})]\!] = \alpha_{[+A]}$

In (45) the particle is defined syncategorematically with respect to an element α which itself has alternatives. *Da(ɣanï)* takes these alternatives and makes them obligatorily active.

It is something particular about the semantics of the host when it is a *wh*-word (46a) or the numeral *biir* 'one' (46b) which, in combination with *da(ɣanï)*'s semantics, causes the resulting phrase to be

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as they require recursive exhaustification of their subdomain alternatives. I have chosen not to follow this practice here for reasons of simplicity and because *da(ɣanï)*-marked NPIs are strong NPIs (as argued in §3.1). In this system, strong NPIs like *in weeks* require simultaneous exhaustification of their subdomain and scalar alternatives, along with implicatures and presuppositions; incorporating implicatures and presuppositions results in NPIs that are licensed in more restricted environments than weak NPIs like English *ever* (see Chierchia 2013, pp. 204-22; Chierchia and Liao 2015, pp. 48-9).

polarity sensitive.

(46) a. Min kimi   da(ɣanï) kör-*(bö)-t-üm
          I   who.ACC *da*   see-*(NEG)-PST-1SG
          'I didn't see anybody'

      b. Min biir da kinige(-ni)   aax-*(pa)-t-ïm
          I   one *da* book(-ACC) see-*(NEG)-PST-1SG
          'I didn't read any book'

We shall consider these two types of NPIs in turn, first beginning with *WH+da(ɣanï)* NPIs. On many theories of question semantics (Karttunen 1977; Karttunen and Peters 1979; Dayal 2016), *wh*-words are held to be indefinite generalized quantifiers. Thus, we can define *kim* 'who' analogously to an indefinite pronoun like English *someone* (47a).

(47) a. $[\![kim]\!] = [\![who]\!] = \lambda P_{\langle e,t \rangle}.\exists x[person(x) \wedge P(x)]$
      b. ALT(*kim*)= $\{p \vee q, p, q, p \wedge q\}$

As an existential, a *wh*-indefinite has a stronger scalar alternative, namely a universal quantifier $\forall$ (Horn 1989). By definition, existentials also have subdomain alternatives. Considering an existential/disjunction like $(p \vee q)$, our subodmain alternatives are $\{p, q\}$ and the scalar is the conjunction $(p \wedge q)$. With the semantics of *da(ɣanï)* proposed in (45) and the definition of *kim* 'who,' the NPI effect will fall out in an identical way to the proposal for English *any* (43)–(44).

For *biir da* NPIs like (46b), there are additional details about the alternatives that need to be discussed. As a numeral, *biir* 'one' has alternatives which are totally ordered by entailment:

(48) a. $[\![biir]\!] = [\![one]\!] = \lambda P_{\langle e,t \rangle}.\ \lambda Q_{\langle e,t \rangle}.\ \exists x[n(x) \wedge P(x) \wedge Q(x) : |n| = 1]$
      b. ALT(biir) = $\{\lambda P_{\langle e,t \rangle}.\ \lambda Q_{\langle e,t \rangle}.\ \exists x[n(x) \wedge P(x) \wedge Q(x) : |n| \geq 1]\}$
      c. Scale of numerals: $\{one \Leftarrow two \Leftarrow three \Leftarrow ...\}$

All positive numerals are entailed by positive numerals greater than them (48c). In other words, *I read three books* entails *I read two books*, *I read one book*, but it doesn't not entail *I read zero books*. Unlike *wh*-words, which have reduced scales $< \exists, \forall >$ (Horn 1989), numerals have rich scales. With numerals, it is not important to distinguish subdomain alternatives (i.e. one, two, three, ...) scalar alternatives, because the subdomain alternatives are inherently ordered among each other. Irrespective of the particle *da(ɣanï)*, *biir* 'one' has alternatives on its own, giving rise to scalar implicatures in positive sentences:

(49) a. Min biir kinige aax-t-ïm
          I   one book read-PST-1SG
          'I read one book' (scalar implicature= one and no more than one)

      b. Min biir kinige aax-pa-t-ïm
          I   one book read-NEG-PST-1SG
          'I didn't read a single book'

The implicature in (49a) is an example of an ordinary scalar implicature, which is subject to Gricean relevance. It can be cancelled by negation, as in (49b). To derive the scalar implicature of (49a), we can use O(nly) exhaustification to eliminate the non-entailed alternatives:

(50) O_{ALT}(49a) = one book $\wedge \neg$two books $\wedge \neg$three books $\wedge ...$

O(nly) exhaustification (50) results in an 'exactly one book' reading for (49a) by negating the scalar alternatives which are not entailed by *one*. The same process follows for numerals greater than one

(51c):

(51) a. Min ikki kinige aax-t-ïm
I two book read-PST-1SG
'I read two books'
b. ALT(two books)={two books, three books, ...}
c. O_{ALT}(51a) = two books $\wedge$ ¬three books $\wedge$ ...

The addition of *da(ɣanï)* affects low-point scalars like *biir* 'one' in ways incompatible with *biir* appearing in positive sentences (52a), and incompatible with numerals greater than one (52b):

(52) a. Min biir da kinige aax-*(pa)-t-ïm.
I one *da* book read-(NEG)-PST-1SG
'I didn't read any book(s).'
b. *Min ikki da kinige aax-(pa)-t-ïm.
'*I (didn't) read any-two books.'

Like with *WH+da(ɣanï)* NPIs, the function of the *da* in *biir da* NPIs (52a) is to mark the alternative as obligatorily active. First, let's consider the special status of low-point scalars like *biir*. Following from OPTIMAL FIT (41), we start with O(nly) exhaustification of the positive version of (52a):

(53) a. ⟦positive (52a)⟧ = $\exists x[n(x) \wedge book(x) \wedge read(I, x) : |n| = 1]_{[+A]}$
b. O_{ALT}(53a) = one book $\wedge$ ¬two books $\wedge$ ¬three books

The result of exhaustifying (53a), shown in (53b), is equivalent to exhaustification of *biir* without *da* (50). Note, though, that this result is vacuous–that is to say, because the meaning of *biir* 'one' does not entail any numerals greater than *two*, *three*, etc, eliminating these alternatives does not differ from the truth conditions of *one*. Because *da(ɣanï)* makes the alternatives of *biir* obligatory (signified by the subscripted [+A] in (53a)), and because the alternatives of *biir* 'one' are strictly ordered on a scale, OPTIMAL FIT (41) tells us that O(nly) is not sufficient to exhaustify *biir da* NPIs. Rather, we must use E(ven) (40), where the NPI effect is revealed:

(54) E_{ALT}(53a) = one book $\wedge$ $\forall p \in$ ALT[one book $<_\mu$ p],
where ALT = {one book, two books, three books, ...} (Unsatisfiable)

Unlike O(nly), E(ven) exhaustification (54) does not eliminate the alternatives of the prejacent, but rather returns an interpretable proposition only if the prejacent is less likely than any of its alternatives. This is unsatisfiable, because the alternatives of *biir* 'one' each entail *biir*–i.e. reading one book cannot be less likely than reading two books, because reading two books entails reading one book (Crnič 2014, p. 177). Because (54) is a contradiction, the positive version of (52a) is ungrammatical.

With negation, *biir da* (52a) does not result in a contradiction. The denotation and alternatives of the negative version of (52a) are given in (55):

(55) a. ⟦negative (52a)⟧ = $\neg\exists x[n(x) \wedge book(x) \wedge read(I, x) : |n| = 1]_{[+A]}$
b. ALT(55a)={¬one book, ¬two books, ¬three books, ...}
c. Entailments of ALT: {¬one book $\Rightarrow$ ¬two books $\Rightarrow$ ¬three books $\Rightarrow$ ...}

Because the alternatives of (55a) are negated (55b), the entailment relationships among the alternatives are reversed (55c). Because ¬*one book* entails ¬*two books*, etc, exhaustifying (55a) with O(nly) will return (55a). Again, this is because O(nly) exclusively eliminates non-entailed alternatives of the prejacent. Because the result of O(nly) exhaustification is vacuous and the scale is strictly ordered, OPTIMAL

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FIT (41) tells us to proceed to E(ven):

(56) $E_{ALT}(55a) = \neg\text{one book} \land \forall p \in ALT[\neg\text{one book} <_\mu p]$

The result of E(ven) exhaustification in (56) is the resulting meaning of the negative version of (52a). Unlike in positive environments (54), it is satisfiable because not reading one book is, in all possible worlds, less likely than not reading two books, three books, etc.

Before continuing to scalar focus, I will briefly discuss *WH+da(ɣanï)* NPIs in the standard of comparison. While NPI licensing in comparatives is contentious the semantics literature (see Giannakidou and Yoon 2010; Aloni and Roelofsen 2014), and moreover, the different theories on the semantics of comparatives in general require argumentation beyond the scope of this paper, there are relevant proposals for clausal comparatives which include a negation in the comparative clause (e.g. Seuren 1973; von Stechow 1984; Rullmann 1995; Gajewski 2008; Schwarzschild 2008; see also Heim 2006; Aloni and Roelofsen 2014).[33] I assume that Sakha *-TĀɣAr* comparatives are clausal and contain a covert negation which *WH+da(ɣanï)* NPIs scope below. In (57) we see a simple comparative construction (57a). I adopt an LF of the comparative (57b) in the spirit of Gajewski's (2008) E-Theory of comparatives, where comparatives are a relation between two sets of degrees: a set of degrees of the subject of the comparison (i.e. *Djulus is d tall*) and the comparative clause which contains a semantic negation.[34]

(57)   a.   Djulus Erkin-neeɣer uhun.
              Djulus Erkin-CMPR tall
              'Djulus is taller than Erkin.'
        b.   *Djulus is taller than Erkin* is true iff:
              $\{d : \text{tall}(djulus, d)\} \cap \{d : \neg\text{tall}(erkin, d)\} \neq \varnothing$

In prose, the meaning of (57b) is that the intersection of Djulus's degrees of height and the set of degrees to which Erkin's height does not reach is non-empty. Thus, if Djulus is 180 cm tall and Erkin is 170 cm tall, the intersection of Djulus's height (0 cm $< d \leq$ 180 cm) and Erkin's height (0 cm $< d \leq$ 170 cm) is not empty, containing all (sub)degrees greater than 170 cm and less than or equal to 180 cm. In other words, (57b) is equivalent to saying that there is some degree *d* which is in Djulus's height and is not in Erkin's height (i.e. $\exists d[\text{tall}(djulus, d) \land \neg\text{tall}(erkin, d)]$).

By holding that the comparative clause contains a covert negation, we can analyze Sakha *WH+da(ɣanï)* NPIs in comparatives like (58a) in the same spirit as with overt negation. In (58b), the NPI *kimneeɣer da(ɣanï)* is an existential quantifier which scopes below the abstract negation in the comparative clause.

(58)   a.   Erkin kim-neeɣer da(ɣanï) uhun.
              Erkin who-CMPR *da*   tall
              'Erkin is taller than anybody.'
        b. $[\![(58a)]\!] = \exists d \in D_{deg}[\text{tall}(erkin, d) \land \neg\exists x \in D_{person}[\text{tall}(x, d)]]$

As *da(ɣanï)* makes the alternatives of the existential obligatory, this triggers the need to exhaustify its alternatives. Exhaustification will treat (58b) as the prejacent and its non-entailed alternatives will be the non-entailed alternatives of $\neg\exists x[\text{tall}(x, d)]$, i.e. all members of the domain of individuals other than Djulus. Because the existential is negated (58b), the alternatives of the existential are entailed, and

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[33]Aside from semantic arguments in the aforementioned references, there is cross-linguistic evidence for negation in the comparative clause in languages allowing an overtly negative morpheme in the comparative clause like Italian, e.g. *Sparerà più in alto che non pensi.* 'He will shooter higher than you think,' (literally: 'He will shoot higher than you don't think') (Del Prete 2008, p. 195). See Jin and Koenig (2021) for further languages.

[34]*Uhun* 'tall; long' is a gradable predicate which we can be defined as a relation between individuals and degrees of height (i.e. $[\![\text{uhun}]\!] = \lambda d.\lambda x.[\text{tall}(x, d)]$).

hence (58b) will be true only in the case that Djulus is taller than all of the other individuals in the subdomain alternatives.[35]

4.2 Semantics of *da(ɣanï)* in scalar focus

Analyzing *da(ɣanï)* as a particle which activates the alternatives of its host generalizes well to the particle's use in scalar-focus environments, though there are assumptions that must be made. The main difference from its use in NPIs is that the host's alternatives are focus alternatives rather than a set including subdomain and scalar alternatives. The classic starting point for focus semantics is the Roothian view (Rooth 1985, 1992) that every expression ϕ has both an ordinary semantic value $[\![\phi]\!]^o$ and a focus semantic value $[\![\phi]\!]^f$. The focus value is obtained by substituting the ordinary value with the alternatives of the same type (Dayal 2016, pp. 237–8). For example, for a sentence like (59), the ordinary value is (59a). Let's assume that the contextually relevant focus alternatives of *student* are *teacher* and *headmaster* (59b).

(59) Onnooɣor studyen da(ɣanï) iti   kinige-ni aax-ta.
     Even   student *da*   that book-ACC read-PST.3SG
     'Even THE STUDENT read that book.'
     a. $[\![(59)]\!]^o$ = The student read that book
     b. $[\![(59)]\!]^f$ = {the student read that book, the teacher read that book, the headmaster read that book}

Descriptively, there are three parts to the meaning of (59):

(60) a. The ordinary value (59a) is true.
     b. Some member of the set of focus alternatives (59b) other than the ordinary value is true (i.e. the additive presupposition, as discussed in §3.1).
     c. The ordinary value is less likely than any true members of the focus alternatives distinct from the ordinary value (i.e. the scalar component).

These three components are present in the negative equivalent of (59) as well, though unsurprisingly the polarity changes:

(61) Onnooɣor studyen da(ɣanï) iti   kinige-ni aax-pa-ta.
     Even   student *da*   that book-ACC read-NEG-PST.3SG
     'Even THE STUDENT didn't read that book.'
     a. $[\![(61)]\!]^o$ =the student didn't read that book
     b. $[\![(61)]\!]^f$ = {the student didn't read that book, the teacher didn't read that book, the headmaster didn't read that book}
     c. Additive component: Somebody other than the student didn't read that book.
     d. Scalar component: The student not reading that book is less likely than any of the focus alternatives' not reading of the book (such that the focus value is distinct from the ordinary value).

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[35]As noted in footnote 16, *biir da* NPIs are not grammatical in comparatives, e.g. (i) **Erkin biir da studennaaɣar uhun.* intended 'Erkin is taller than any student.' At this point, I do not have a clear explanation for the badness of (i) which fits into the present analysis. For the time being, I will merely stipulate that, unlike *WH+da(ɣanï)*, *biir da* scopes above the abstract negation in the comparative clause due scope requirements of *biir* 'one,' given that *biir* is likewise ungrammatical without *da* in comparatives: **Erkin biir studennaaɣar uhun.* intended: 'Djulus is taller than one student.' An existential with obligatory alternatives that scopes over negation will be contradictory upon being exhaustified.

As far as how these three parts (60) of scalar focus marking *da(ɣanï)* come about through the current approach, the requirement that the ordinary value is true (60a) falls out directly through exhaustification. This is because the ordinary value of a focalized element serves as the prejacent for exhaustification. Exhaustifiers assert the prejacent (i.e. require that it is true). The scalar component (60c) comes through appropriate ranking of the probability of the focus alternatives being true, though at this point the reason that these alternatives need to be ranked is left as a stipulation. The additive component (61c) is, as we shall see in §5, is more challenging.

For a sentence like (59), E(ven) exhaustification is shown in (62a). For the set of alternatives (59b), (62a) is only satisfied by the ranking (62b-i) or (62b-ii).

(62) a. $E(student) = student \land \forall p \in ALT[student <_\mu p]$
      b. Probability rankings for ALT(student) which satisfy (62a)
          (i) $(student <_\mu teacher <_\mu headmaster)$
          (ii) $(student <_\mu headmaster <_\mu teacher)$

E(ven) exhaustification (62a) is only satisfied when the prejacent is true and is less likely than any of its alternatives. It is not satisfied if any of the focus alternatives are as likely or less likely than the prejacent, for example if in (59) *iti kinigeni* 'that book' refers to something that teachers must read to qualify for employment, but is optional for headmasters. Say *studyen* 'student' refers to a particularly precocious student who desires to be a teacher. If we know that the headmaster is extremely unlikely to perform optional duties, and further, we know that the student, teacher, and headmaster each did read the book, we would would have a probability ranking of $(headmaster <_\mu student <_\mu teacher)$. Because the student reading that book is no longer less likely than all of its alternatives, (62a) would be contradictory. The same logic applies for the negative version of (61).[36]

The approach so far has left two questions unanswered: First, where does the additive requirement come from?[37] Second, why does *da(ɣanï)* require that the focus alternatives are ranked along a probability scale? Were these two details not present, it would be predicted that *da(ɣanï)* would be compatible with O(nly) exhaustification, which is descriptively false. For a sentence like (63), to get an *only* reading, the particle *ere* 'only' must be used.

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[36]This is to say almost nothing at all about the semantics of *onnooɣor* 'even,' or why it is generally required in positive scalar focus sentences but not negative ones. There are two potential approaches to the appearance of *onnooɣor* in scalar focus approaches; the first approach would be to treat *onnooɣor* itself as manifestation of the E(ven)-exhaustifier; however, why exactly this would not be required in the negative sentences is an open question on this approach. The second approach would follow Xiang's (2020, pp. 199-201) on Mandarin *lian* in the *lian...dou* focus construction, which she argues is merely a syntactic element requiring a focus phrase in its complement, with the particle *dou* functioning as an exhaustification operator. However, why exactly Sakha allows *onnooɣoror X*, *onnooɣor X da(ɣanï)*, as well as plain *X da(ɣanï)* to mark 'even' focus is an open question.

[37]For the purposes of this paper I assume that the additive presupposition is always present when *da(ɣanï)* marks scalar focus on common nouns like (61). Recent work has shown that the additive presupposition of English *even* is relatively soft (Szabolcsi 2017, pp. 455, 458; Greenberg 2016). While I have not identified examples of common nouns focused with *da(ɣanï)* where an additive reading is absent, it is questionable whether it is present when the particle marks a mid-scalar quantifier like *aɣïyax* 'few' (see (17)), e.g. (i) *Aɣïyax da kihi kinigeni aaxta* 'So few people read that book.' This sentence is felicitious in contexts where the speaker is surprised by the amount of people who read the book, e.g. if they expected more (or all) contextually relevant people to read the book. It is unclear what an additive presupposition of a sentence like (i) could be and I thus leave in-depth analysis of the semantics of *da(ɣanï)*'s with non-lowpoint quantifers like *aɣïyax* 'few,' *elbex* 'many,' *araax* 'various' for future work. To account for the relationship between this intensifying effect on non-lowpoints and the *even*-like with common nouns (61), I contend that the alternatives of examples like (i) are pragmatically-set likelihood rankings. That is, (i)'s alternative are that *many people* (or *every person*) *read that book* is contextually more likely than *few people read that book* within the established expectations. E(ven) exhaustification will return an interpretable LF only if these pragmatic alternatives are ranked as more likely than the prejacent's non-lowpoint quantifier.

(63) Ehe-em　　　　　　 {da(ɣanï) / ere} iti kinige-ni aaɣ-ïa-n　　　söp.
　　　grandfather-1SG.POSS {*da(ɣanï)* / only} that book-ACC read-FUT-3SG can

　　　a.　(...*da(ɣanï)*...): 'Even my grandfather can read that book.'
　　　b.　(...*ere*...): 'Only my grandfather can read that book.'

In §5, these questions are probed further in relation to *da(ɣanï)*-coordination. It is concluded that *da(ɣanï)*'s use within unary focus competes with *emie*, a lexeme which has an additive presupposition. However, *da(ɣanï)*'s additive requirement is induced as a post-supposition. Thus, it is only when *emie* is blocked from associating with an additive focus that *da(ɣanï)* is able to sneak in and induce additivity.

5　*Da(ɣanï)...da(ɣanï)* coordination

The third role of *da(ɣanï)* that we must account for is in coordination, where the particle appears to the right of each coordinand.

(64)　a.　Djulus kofye da(ɣanï) čay da(ɣanï) is-te.
　　　　　Djulus coffee *da*　　tea *da*　　drink-PST.3SG
　　　　　'Djulus drank both coffee and tea.'
　　　b.　Djulus kofye da(ɣanï) čay da(ɣanï) is-pe-te.
　　　　　Djulus coffee *da*　　tea *da*　　drink-NEG-PST.3SG
　　　　　'Djulus drank neither coffee nor tea' / 'Djulus didn't drink coffee or tea.'

Da(ɣanï)...da(ɣanï) coordination has the following key properties that need to be explained (see §2.3):

(65)　Properties of *X da(ɣanï) Y da(ɣanï)* coordination

　　　a.　Positive sentences are interpreted as conjunction ('both X and Y'). Negative sentences are interpreted as narrow scope disjunction ('not (X or Y)').
　　　b.　*Da(ɣanï)* obligatorily marks each coordinand.
　　　c.　Positive *da(ɣanï)*-coordination sentences are more pragmatically marked than negative ones.

If we assume that *da(ɣanï)* is giving the same semantic contribution irrespective of its host, how are we to link its reiterated focus construction with WH-*da(ɣanï)* and *biir da* NPIs (§4.1) and scalar focus (§4.2)? So far this paper has assumed that *da(ɣanï)* has a heavily underspecified denotation, only marking that its host has active alternatives. In §4, it was argued that *da(ɣanï)*'s NPI and scalar focus functions are the result of the type of alternatives their host bears, and that OPTIMAL FIT results in these alternatives being exhaustified by O(nly) or E(ven), depending whether a reduced or richly ordered scalar alternative is included in the set.

　　A key challenge is that exhaustification of simple subdomain alternatives cannot directly produce the 'both...and' reading of positive *da(ɣanï)* coordination (64a); rather, recursive exhaustification the subdomain alternatives (i.e. exhaustify with respect to the alternatives of the alternatives) is required to strengthen existentials to universals. Recursive exhaustification has been utilized to account for free-choice disjunction (Fox 2007; Fox and Katzir 2011; Chierchia et al. 2012) and free-choice indefinites (Chierchia 2013). Most relevant to *da(ɣanï)*, it has been proposed that many languages derive distributive universal meanings through recursively exhaustifying only the subdomain alternatives existential/disjunction, i.e. through excluding any scalar alternative from the set of alternatives (see Bar-Lev and Margulis 2014 on Hebrew *kol*; Bowler 2014 on Warlpiri *manu*; Mitrović 2014 on Japanese *-mo*; Singh et al. 2016 on Child English *or*; Wong 2017 on Malay *pun*).

In the rest of this section, I will outline two related hypotheses to account for the semantics of *da(ɣanï)...da(ɣanï)* coordination. On the first (§5.1), *da(ɣanï)* coordination is considered to be a discontinuous operator which activates the subdomain alternatives of two subdomain alternatives. While this section serves as a good introduction to expose the reader to the mechanisms of recursive exhaustification, the reiterated coordinator approach will ultimately be rejected due to what is ultimately a better hypothesis to account for the distribution of Sakha *da(ɣanï)* developed in §5.2. In §5.2, it is concluded that *da(ɣanï)* induces an additive post-supposition, in line with common assumptions about the semantics of reiterated 'both...and' coordination built from TOO-particles (see Kobuchi-Philip 2009; Brasoveanu and Szabolcsi 2013; Szabolcsi 2015, 2017, 2018; Mitrović 2021). That is, *da(ɣanï)*'s function of marking an active alternative induces an additive post-supposition by exhaustifying the prejacent with respect to a pre-exhaustified alternative. However, in non-scalar additive contexts (i.e. 'too; also' focus), *da(ɣanï)* is blocked due to the availability of a genuinely presuppositional additive particle *emie* in the language. *Da(ɣanï)*'s additive properties are only detectable where the presupposition of *emie* cannot be satisfied (e.g. in reiterated *da(ɣanï)...da(ɣanï)* constructions). This section also introduces data on a compound particle *emie da* which supports the same position.

5.1 *Da(ɣanï)...da(ɣanï)* coordination as a discontinuous coordinator (to be rejected)

As an example, consider a disjunction of two propositions ($p \vee q$), which has the subdomain alternatives $\{p \vee q, p, q\}$, of which $\{p, q\}$ are not entailed by the prejacent. Similarly, the subdomain alternatives p, q each have their own subdomain alternatives. Recursive exhaustification will have to reckon further with the alternatives of the subdomain alternatives—p has q as a non-entailed alternative, and q has p as a non-entailed alternative. In (66a), non-entailed alternatives are italicized. Recursive exhaustification of ($p \vee q$) with respect to this set of alternatives in (66a) is shown in (66b), using Chierchia's (2013) $O_{\text{Exh–DA}}$ operator.[38] The exhaustification of each subdomain alternative is shown in (66b-i), (66b-ii), the results of which are equivalent to a biconditional of the subdomain alternatives (66b-iii). Finally, because the prejacent ($p \vee q$) requires that at least one subdomain alternative is true, the result in (66b-iv) is equivalent to a conjunction of the subdomain alternatives.

(66)   a. $\text{ALT}(p \vee q) = \{p \vee q, ALT(p), ALT(q)\}$
       (i) $\text{ALT}(p) = \{p, q\}$
       (ii) $\text{ALT}(q) = \{p, q\}$
       b. $O_{\text{Exh–DA}}(p \vee q) = \underbrace{(p \vee q)}_{\text{prejacent}} \wedge \underbrace{\neg O_{\text{DA}}(p) \wedge \neg O_{\text{DA}}(q)}_{\text{exhaustified subdom. alts.}}$
       (i) $\neg O_{\text{DA}}(p) = \neg(p \wedge \neg q)$, *which is equivalent to* $(p \rightarrow q)$ *via material implication*
       (ii) $\neg O_{\text{DA}}(q) = \neg(q \wedge \neg p)$, *which is equivalent to* $(q \rightarrow p)$ *via material implication*
       (iii) $(p \rightarrow q) \wedge (q \rightarrow p)$, *which is equivalent to* $(p \leftrightarrow q)$
       (iv) $(p \vee q) \wedge (p \leftrightarrow q)$, *which is equivalent to* $(p \wedge q)$

If the set of alternatives in (66a) included a scalar alternative ($p \wedge q$), it would also have to be negated by exhaustification because it is not entailed by the prejacent. This would result in a contradiction $(p \wedge q) \wedge \neg(p \wedge q)$. However, if negation scopes over the entire disjunction $\neg(p \vee q)$, recursive exhaustification

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[38]$O_{\text{Exh–DA}}$ is a short-hand operator which Chierchia proposes for 'pre-exhaustification.' The notion of pre-exhaustification in Chierchia's theory refers to certain lexically-specified elements whose subdomain alternatives have obligatorily active alternatives (i.e. free-choice items). The operator can be defined as follows:

(i) $O_{\text{Exh–DA}}(\phi) = \phi \wedge \forall p \in \text{DA}(\phi)[\neg O_{\text{DA}}(p)]$
      ($O_{\text{Exh–DA}}(\phi)$ asserts ϕ and, for all of the subdomain alternatives of ϕ ($\forall p \in \text{DA}(\phi)$), the exhaustification of the subdomain alternatives of p is denied ($\neg O(p)$), if that subdomain alternative p is not entailed by the prejacent.)

will not eliminate the subdomain alternatives $\{\neg p, \neg q\}$ because they are each entailed; similarly, the presence of absence of the scalar alternatives $\neg(p \wedge q)$ would not affect the interpretation as it is entailed by the prejacent $\neg(p \vee q)$.

A common justification for omitting the scalar alternative in the set of alternatives, to my knowledge first pursued by Bowler (2014) on Warlpiri *manu* 'and/or,' is that the language lacks a distinct lexical item corresponding to the scalar alternative. One potential way we could directly import this approach to *da(ɣanï)...da(ɣanï)* coordination, keeping in general accordance with the hypothesis in §4 that *da(ɣanï)* is an alternative activator, is to analyze *da(ɣanï)...da(ɣanï)* as a discontinuous coordinator, taking the requirement that *da(ɣanï)* is doubled to be a reflex of recursive exhaustification. While Sakha does have an overt conjunction *uonna* 'and' (see §2.3), this presumably does not count as a lexical alternative to *da(ɣanï)...da(ɣanï)* because it does not belong to the same lexical category as *da(ɣanï)* (i.e. it does not spell out on the same syntactic head). In other words, *da(ɣanï)...da(ɣanï)* would not activate a scalar alternative because the particle itself does not have a stronger scalar alternative.

On a discontinuous coordinator approach, the three key properties of *da(ɣanï)* coordination are explained: the polarity flip has to do with entailment reversal under negation (65a); each instance of the particle is obligatory to induce recursive exhaustification (65b); positive *da(ɣanï)* is pragmatically marked because it requires recursive exhaustification, whereas negation results in all of the alternatives being entailed.

There are, however, two major shortcomings of this hypothesis. The first reason is that *da(ɣanï)* is basically a TOO-particle (§3), and this approach is radically different from what has been proposed for the semantics of the 'both...and' readings of TOO-particles. The second reason is that it relies on a stipulated discontinuous operator, and it is doubtful that this is actually accurate for *da(ɣanï)*. Recall from §2.3 that *da(ɣanï)* does not have to coordinate phrases that are structurally adjacent, or in a c-command relationship. In (67) (repeated from (21)), we see in (67b) two overt VPs, each containing a *da(ɣanï)*-marked object. These two instances of *da(ɣanï)* do not form a single constituent, thus it seems implausible that they can point to a single discontinuous operator.

(67) a. [Min kinige aax-t-ïm   da(ɣanï)] [suruk suruy-d-um   da(ɣanï)].
          [I   book read-PST-1SG *da*   ] [letter write-PST-1SG *da*   ]
      b. [Min kinige da(ɣanï) aaxtïm] [suruk da(ɣanï) suruydum].
      c. *[Min kinige da(ɣanï) aaxtïm] [suruk suruydum da(ɣanï)].
      d. *[Min kinige aaxtïm da(ɣanï)] [suruk da(ɣanï) suruydum].
          'I both read a book and wrote a letter.'

5.2 *Da(ɣanï)* induces additive post-suppositions

As was discussed in §3, *da(ɣanï)* belongs to the cross-linguistically common class known as TOO-particles, in the same category as Japanese *-mo* (68) (example from Brasoveanu and Szabolcsi 2013). Following Kobuchi-Philip's (2009) proposal, it is commonly posited that the coordinating role of TOO-particles (68b) is related to the additive function of a unary *-mo* (68a).

(68) a. A-**mo** hashitta.   b. A-**mo** B-**mo** hashitta.
          A-*mo* ran.away   A-*mo* B-*mo* ran.away
          'A ran away, too.'   'A, as well as B ran away.'

The main idea behind Kobuchi-Philip's (2009) argument, as pursued further by Brasoveanu and Szabolcsi (2013), Szabolcsi (2015, 2017, 2018), and Mitrović (2021), is that A-*mo* imposes an additive requirement which is satisfied by B, and B-*mo* imposed an additive requirement which is satisfied by A. That is to say, *-mo...-mo* coordination represents mutual satisfaction of additive requirements imposed

in each coordinand (see Fig. 1). However, there is an important difference in how TOO-particles impose additivity and how English additive focus particles like *also, too* impose theirs. While English *too* has an additive **pre**-supposition, TOO-particles impose additivity through a **post**-supposition. For the purposes of this paper, there are two relevant differences between presuppositions and post-suppositions: (I) pre-suppositions are checked before at-issue updates, while post-suppositions are checked after at-issue updates; (II) presuppositions are checked left-to-right, whereas post-suppositions are checked simultaneously (thus not sensitive to left-to-right ordering; see Farkas 2002; Brasoveanu 2013; Brasoveanu and Szabolcsi 2013).
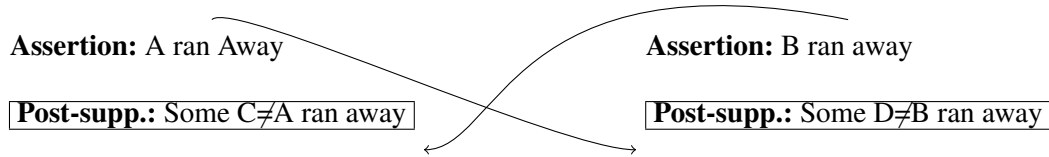
Assertion: A ran Away   **Assertion:** B ran away

| **Post-supp.:** Some C≠A ran away | | **Post-supp.:** Some D≠B ran away |

Figure 1: Mutual satisfaction of additive post-suppositions.

Sakha *da(ɣanï)*-coordination, I argue, is indeed constructed in the same way as outlined above for Japanese *-mo* as a post-supposition (Fig 1), but is blocked from associating with a unary additive focus by the presupposition on *emie* 'also; again'. In the dialect of Sakha examined in this paper, *da(ɣanï)* represents a unique pattern among TOO-particles in that it lacks a unary TOO function (69a), though it has the reiterated TOO…TOO function (69b).

(69) a. #A **da** kofye iste.   b. A **da** B **da** kofye istiler.
          A *da* coffee drank   A *da* B *da* coffee drank
          #'A drank coffee, too.'   'Both A and B drank coffee.'

As said above, for a non-scalar additive reading, speakers correct *da(ɣanï)* in sentences like (69a) to *emie* (70a). However, reiterating *emie* is not a grammatical means of producing conjunction (70b). *Emie* can mark additive focus in elements in the right-most member of coordination (71a), but not the left (71b).

(70) a. A **emie** kofye iste   b. *A **emie** B **emie** kofye istiler
          A *emie* coffee drank   A *emie* B *emie* coffee drank
          'A drank coffee, too'   int. 'A and B drank coffee'

(71) a. Min kofye-nï   kïtta čay-ï   **emie**   is-pit-im
          I   coffee-ACC with tea-ACC drink-PST-1SG
          'I drank coffee and also tea'
      b. *Min {koyfenï **emie** kïtta / kofye kïtta **emie**}, čayï ispitim

Examples (70b) and (71) demonstrate that Sakha *emie* is sensitive to context updates that come before it. That is to say, *emie* imposes additivity as a presupposition, whereas *da(ɣanï)* imposes additivity as a post-supposition. Because presuppositions are checked before post-suppositions, this has the effect of blocking *da(ɣanï)* from additivity on a single argument. On the other hand, bare *emie* cannot form reiterated coordination in a structure like (70b) because its presupposition can only be satisfied by something before it in the discourse.

Additivity is standardly characterized as a strong (pre)supposition trigger that must spell out if it can spell out (Saebo 2004; Abusch 2010; Szabolcsi 2017; Bade 2015). Sakha supports this view, but it

suggests further that different routes to spelling out additivity may compete with each other. However, I am crucially not suggesting that *da(ɣanï)* and *emie* are contextual allomorphs triggered by pre-/post-suppositions. Rather, I am claiming that *emie* and *da(ɣanï)* may act upon the same set of pragmatic alternatives, but *emie* gets first dibs on them because presuppositions are checked first. Thus, *da(ɣanï)* can only associate with an additive meaning when *emie* cannot.[39]

The compositional procedure that I propose for how post-suppositional additives can be blocked by presuppositional additives follows from the following assumptions. First, alternative-marking is present in the derivation before the overt morphemes are spelled out.[40] Second, alternatives present in the derivation must be spelled out overtly whether these alternatives are grammaticalized (i.e. NPIs/FCIs as in §4) or pragmatic (i.e. focus). Crucially, spelling out these alternatives overtly happens in steps. For the present paper, the most relevant step is that alternatives which map to a presuppositional morpheme are checked before exhaustification. That is, following Heim's (1991) economy principle MAXIMIZE PRESUPPOSITION!, if a presupposition is satisfied in context, it must be realized by a suitable morpheme which maps to that presupposition. If a language has a suitable morpheme with an additive presupposition (e.g. Sakha *emie,* English *too; also*) it is inserted and the requirement that alternatives be overtly marked is satisfied; I refer to this fulfilment of alternatives as 'using up' the alternatives. However, if there is no suitable morpheme in the lexicon which bears an additive presupposition satisfiable in the grammatical object under construction (e.g. if there is no suitable lexical additive, or the alternative-marked element does not linearly precede the satisfying alternative), the grammar must mark it through other means, such as by inserting a non-presuppositional alternative-activating morpheme. This alternative-activing morpheme triggers exhaustification and creates a reading equivalent similar to an additive presupposition through exhaustification (see §5.2.1).[41] In Japanese (68), unary focus inserts *-mo* (68a) because there is presumably no presuppositional additive lexical item, and *-mo* is inserted in both conjuncts of binary *A-mo B-mo* (68b) to mark that *A* has *B* as an alternative (and that *B* has *A* as an alternative). In Sakha, when a unary additive alternative is introduced in the derivation (69a), (70a), this alternative is used up by presuppositional *emie* 'too' before exhaustification; on the other hand, *emie*'s additive presupposition cannot be met the within coordination, and thus the alternative-activating particle *da(ɣanï)* is inserted. Thus, *emie*'s additive presupposition bleeds the capacity for *da(ɣanï)* to be interepreted as *too* within a unary additive focus and it is only when that presupposition cannot be satisfied that we can detect its cross-linguistically expected TOO particle semantics.

Whether or not additive presupposition triggers universally block the spell out of additive post-supposition inducer is an empirical question, one which has emerged only after considering the fine-grained distribution of a single particle.[42]

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[39]We can characterize the types of linguistically meaningful inferences observed in implicature, presupposition, and post-supposition as what I refer to as 'grammatical inferences.' While the hypothesis that there may be ordering or blocking effects among different types of grammatical inferences has been explored in the literature (see Sauerland 2002, 2008 on Implicated Presuppositions), incorporating ordering into post-suppositions and the exhaustification procedure is, as far as I am aware, a novel proposal.

[40]Here I have in mind the Distributed Morphology (Halle and Marantz 1993) idea of LATE INSERTION (see Szabolcsi 2015, p. 161 for further references).

[41]There is good independent justification for presupposition checking to temporally precede exhaustification in that incorporating presuppositions into exhaustification has an effect on the logical operators an alternative-sensitive item can be interpreted under. For example, an existential with obligatorily active alternatives exhaustified with these alternatives and any presuppositions present produces NPIs that are licensed by negation (as it has no presupposition) but not presuppositional environments like antecedents of conditionals (i.e. producing strong NPIs; see Gajewski 2011; Chierchia 2013, pp. 204-22; Chierchia and Liao 2015, pp. 48-9). As discussed in footnote 32, Chierchia (2013) proposes that exhaustifiers can be sensitive to only the asserted content (i.e. weak exhaustification) or both the asserted component and the presuppositions (i.e. strong exhaustification).

[42]As Brasoveanu and Szabolcsi (2013) note, modern French has as a binary additive coordinator *et A et B* 'A and B,' but *et*

Before moving to the specific proposal of how to induce an additive post-supposition (§5.2.1), there is an additional coordination pattern that needs to be explained. While above I said that bare *emie* cannot function as a coordinator (70b), there is one pattern where it appears to do so—this involves the using both *emie* and *da* together to form the complex *emie da* (72):[43]

(72) a. ilii-te   **emie da** ïaldj-ar,   **emie da** ïaldjï-bat.
       hand-POSS.3SG *emie da* hurt-AOR *emie da* hurt-NEG.AOR
       'His hand hurts, and it doesn't hurt.'

b. (kini) **emie** *(**da**) bulčut, **emie** *(**da**) balkïsït,   **emie** (**da**) fotograf
       (s/he) *emie da*   hunter *emie da*   fisherman, *emie* (*da*) photographer
       'S/he is a hunter, a fisherman, and a photographer.'

While at first *emie da* seems to be a fundamental problem to the above analysis of *da(ɣanï)* and *emie*, I contend that it is entirely consistent. The major complication here is that *emie*'s additive requirement is fulfilled by an alternative which is introduced later in the discourse, i.e. in (72a) the additive requirement of 'his hand hurts' is satisfied by 'his hand doesn't hurt.' However, notice in (72b) that *da* is obligatory in all but the final coordinand, where a bare *emie* is allowed. That is to say, we find bare *emie* only in the position that we would expect a presuppositional particle to appear: after the presupposition has been satisfied (as in (71a)). Post-suppositional *da* can be satisfied by alternatives to either its left or right. *Emie da* can be characterized as the neutralization of a conflict between requirements of two particles resolved by the particles sharing alternatives. Another way to say this is that the particles are parasitic on each other, and *emie* is able to ignore or delay its additive presupposition in non-final conjuncts by virtue of *da* seeking an alternative later on.

5.2.1   Inducing an additive post-supposition with exhaustification

In what follows I will follow an exhaustification-based approach to derive an additive post-supposition, following Szabolcsi (2017); Mitrović (2021); Fălăuş and Nicolae (2022). I argue that creating an additive post-supposition is a natural extension of *da(ɣanï)*'s core semantic contribution of activating alternatives.

     The procedure is as follows. First, consider how Sakha *da(ɣanï)* would induce additivity were it not blocked by *emie* in a sentence like (73), where *da(ɣanï)* marks *Djulus*'s alternatives:

(73)   Djulus da(ɣanï) kofye iste.
      Djulus *da*   coffee drank
      *'Djulus drank coffee, too.'   (✓ *even Djulus...*)

TOO-particles like *da(ɣanï)* mark the alternatives of the host as obligatory, though they are exhaustified higher in the structure than where they appear. Exhaustification takes place somewhere in the CP (Chierchia 2013) or TP (Mitrović 2021), thus the ordinary value of (73) will be represented as a proposition, as in (74a), with *da(ɣanï)* requiring that the host has alternatives (74b). In (74b) '$\phi(x)$' is a variable for a non-Djulus alternative.

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cannot be used as a unary additive focus particle *et A* 'also A.' Given that French possesses *aussi* 'also,' a presuppositional additive, it is possible that French *et...et...* is post-suppositional and is blocked from associating with unary 'also' meanings by *aussi*. Likewise Szabolcsi et al. (2014) note an intriguing difference between the adverbial particle *dou* in Mandarin and Cantonese. These particles can function as scalar additive 'even' focus markers, but in Cantonese it can also mark plain additive 'also' focus. Szabolcsi et al. (2014) argue that Mandarin *dou* is blocked in plain additive focus by the presence of a dedicated additive particle *ye* 'also,' while in Cantonese "*dou* spills over to fill a vacant spot in the absence of *ye*" (p. 148).

[43]The sentences in (72) come from the *sakhatyla.ru* entry for *emie*. Note that (72a) on the entry lacked *da* (*iliite emie ïaldjar , emie äldjïbat*). My consultants judged this to be ungrammatical, correcting it to *emie da...emie da*. As with non-scalar additive readings of *da(ɣanï)*, it is possible *emie...emie* is subject to dialectal variation.

(74) a. $[\![(73)]\!]^o = \phi d_{[+A]}$,
      where 'λx. ϕx'= 'x drank coffee'

   b. $ALT(\phi d) = \{\phi d, \phi x\}$,
      where x $\in$ ALT(ϕd)

So far, I have assumed that *da(ɣanï)* activates subdomain and scalar alternatives of the prejacent, and all exhaustification related procedures are driven by Chierchia's (2013) principle of OPTIMAL FIT (see (41)). However, we reach a problem with an alternative set like (74b), because the result of exhaustifying ϕd *Djulus drank coffee* with O(nly) is *Djulus drank coffee and x did not drink coffee*. However, if we are going for an additive focus reading, there must be some *x* such that *x drank coffee* is true. Here Mitrović's (2021, pp. 141-6) revision of OPTIMAL FIT is helpful. In his version, there is another round of O(nly) exhaustification, where the result of the first round is treated as the set of alternatives. This reformulation is shown in (75):

(75) OPTIMAL FIT — Mitrović (2021, p. 144) revision
      In exhaustifying ψ: (75a) > (75b) > (75c)

   a. Exhaustify with O(nly)
   b. If O(ψ) is trivial (contradictory or vacuous), exhaustify again with O(nly)
   c. As a last resort, if there is a salient probability metric, exhaustify with E(ven)[44]

How this proceeds to produce additivity is shown in (76). The first round of exhaustification will simply negate the subdomain alternatives (76a). The second round takes these updated alternatives and exhaustifies the prejacent with respect to them (76b).

(76) a. $O_{ALT}(\phi d) = \phi d \wedge \neg\phi x$ *first round of exhaustification*
   b. $O_{Exh-ALT}(\phi d) = \phi d \wedge \neg O(\phi d)$ *second round of exhaustification*
      $= \phi d \wedge \neg(\phi d \wedge \neg\phi x)$
      $= \phi d \wedge (\phi d \rightarrow \phi x)$ $= (\phi d \wedge \phi x)$

The result in (76b) is that *Djulus drank coffee* is true, as is *Djulus drank coffee if a drank coffee*, where *a* is an alternative of Djulus. This is how additivity is produced.

However, for Sakha *da(ɣanï)*, as argued in §5.2, the non-entailed alternative ϕx is already 'used up' by *emie* before exhaustification takes place, hence there there will not be active alternatives of *Djulus* by the time exhaustification occurs. In this way, I argue that presuppositional lexemes can bleed exhaustification's ability to create additive post-suppositions (modulo presupposition suspension and alternative-sharing with *emie da* (72)). Coordination (77) prevents *emie* from satisfying its presupposition, as the alternative that would satisfy the first instance appears to its right. Our account for the property of *da(ɣanï)*'s obligatoriness within each coordinand (65b), then, is that each instance is inducing an additive post-supposition.

(77) [Djulus da(ɣanï)] [Tuyara da(ɣanï)] kofye is-(pe)-ti-ler.
      [Djulus *da*   ] [Tuyara *da*   ] coffee drink-(NEG)-PST-3PL

   a. Positive: 'Djulus and Tuyara drank coffee.'
   b. Negative: 'Neither Djulus nor Tuyara drank coffee.'

Crucially, in (77), the role of each *da(ɣanï)* is *not* in serving the role of conjunction, but marking each alternative as a substitute within the alternative set. That is to say, (77) is asyndetic conjunction. Here I follow den Dikken (2006); Szabolcsi (2015); Mitrović and Sauerland (2016) in adopting JP, a

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[44]Note that (75c) is drastically simplified. Mitrović (2021) proposes that E(ven) is not a primitive exhaustifier, but is rather created through exhaustification (see Xiang 2020 for a similar approach). The details of this are beyond the scope of this paper.
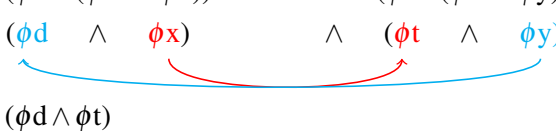
syntactic projection for (con-) or (dis-)junction. I will assume that though J is not syntactically overt, it ends up being interpreted as conjunction, as is cross-linguistically consistent for zero-marked conjunction (Winter 1995).[45] Syntactically, there are two avenues we could explore for *da(ɣanï)...da(ɣanï)* coordination: as non-Boolean, *e*-type conjunction of DPs as in (78a), following Mitrović and Sauerland (2016), Mitrović (2021, pp. 112-8); or as a Boolean, *t*-type conjunction-reduction structure (78b).

(78)   a.

b.
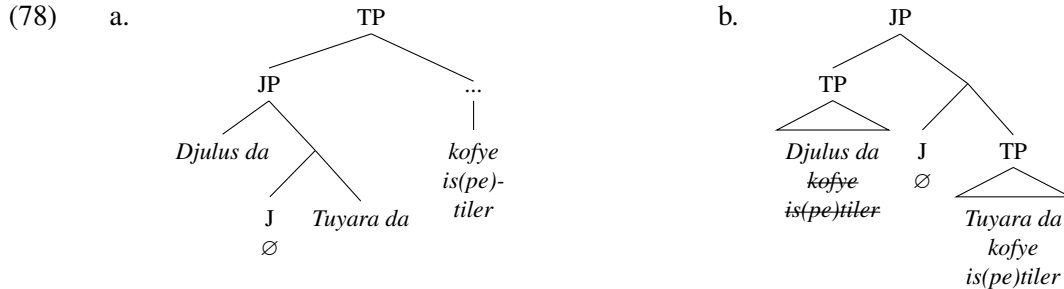
There is good empirical motivation to assume that Sakha *da(ɣanï)*-coordination involves Boolean conjunction of TPs as in (78b). Particularly strong evidence for this is in sentences like (79), where 'neither...nor' meaning is produced by *da(ɣanï)*-marked objects associated with two different lexical items (see also (67b)). Crucially, in (79), each conjunct's verb is marked with negation.[46]

(79)   [Djulus kofye da(ɣanï) is-**pe**-teɣe   ] [alaadjï da(ɣanï) sie-**be**-teɣe   ].
        [Djulus coffee *da*   drink-NEG-PST.3SG] [fritter *da*   eat-NEG-PST.3SG]
        'Djulus didn't drink coffee and he didn't eat *alaadjï* (fritters).'

Thus, for my final analysis of *da(ɣanï)* coordination, I argue that exhaustification operates at the edge of each coordinand, creating an additive post-supposition within each, and each additive post-supposition is mutually satisfied by the other conjunct. This is shown for the 'both...and' reading of positive (77a) in (80), where the columns to the left represents '*Djulus da* drank coffee' and the column to the right '*Tuyara da* drank coffee,' conjoined by zero-conjunction in J^0.

(80) $(O_{\text{Exh–DA}}(\phi d) \quad \wedge \quad O_{\text{Exh–DA}}(\phi t))$
        a. $(\phi d \wedge \neg O\phi d)$ $\wedge$ $(\phi t \wedge \neg O(\phi t))$
        b. $(\phi d \wedge \neg(\phi d) \wedge \neg\phi x)$ $\wedge$ $(\phi t \wedge \neg(\phi t \wedge \phi y))$
        c. $(\phi d \wedge (\phi d \rightarrow \phi x))$ $\wedge$ $(\phi t \wedge (\phi t \rightarrow \phi y))$
        d. $({\color{cyan}\phi d} \quad \wedge \quad {\color{red}\phi x})$ $\wedge$ $({\color{red}\phi t} \quad \wedge \quad {\color{cyan}\phi y})$

        e. $(\phi d \wedge \phi t)$

In (80a)-(80c), *Djulus drank coffee*, we see the same process I outlined in (76), carried out within each conjunct, where 'ϕx' is an alternative of Djulus other than Djulus, and 'ϕy' an alternative of Tuyara other than Tuyara. Ultimately, as we see in (80d), *Djulus drank coffee* has the post-supposition *some x≠Djulus drank coffee*, and *Tuyara drank coffee* has the post-supposition *some y≠Tuyara drank coffee*, and the prejacent within each clause satisfies the other's post-supposition. Thus, (80d) produces the final 'Both Djulus and Tuyara drank coffee' reading.

    Finally, turning to the reading of (77b) with negation (81), we now have an answer to why *da(ɣanï)...da(ɣanï)* is interpreted like a narrow-scope disjunction with negation. More accurately, it is *not* a disjunction,

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[45]See Szabolcsi (2015, pp. 112-8) for a more complex view involving interpretive defaults and overrides.

[46]In Mitrović's analysis of TOO-particles as doubled coordinators, he argues DPs joined by non-Boolean conjunction form tuples, and his structure is ultimately analogous to conjunction reduction (2021, pp. 112-8, 148-51).

but rather conjunction of two exhaustified post-suppositional LFs, each containing a negation. This provides an answer to property (65a) of *da(ɣanï)...da(ɣanï)* coordination: it is interpreted like 'neither...nor' because it is the conjunction of negative conjuncts.

(81) $(O_{Exh-DA}(\neg\phi d)) \quad \wedge \quad (O_{Exh-DA}(\neg\phi t))$

  a. $(\neg\phi d \wedge \neg O(\neg\phi d))$ $\wedge \quad (\neg\phi t \wedge \neg O(\neg\phi t))$

  b. $(\neg\phi d \wedge \neg(\neg(\phi d) \wedge \phi x))$ $\wedge \quad (\neg\phi t \wedge \neg(\phi t \wedge \phi y))$

  c. $(\neg\phi d \wedge (\phi x \rightarrow \phi d))$ $\wedge \quad (\neg\phi t \wedge (\phi y \rightarrow \phi t)))$

  d. $(\neg\phi d \quad \wedge \quad \neg\phi x) \quad\quad \wedge \quad (\neg\phi t \quad \wedge \quad \neg\phi y)$

  e. $(\neg\phi d \wedge \neg\phi t)$

  Similar to the positive case, in (81d) we arrive at two post-suppositions, though now *x* and *y* are are under the scope of a negated predicate. Again, these post-suppositions are satisfied by the other conjunct (81e), producing a 'neither...nor'/'Not A and not B' meaning.

  One limitation to this approach is that it is not immediately clear from (81) why negative *da(ɣanï)...da(ɣanï)* coordination is less pragmatically marked than the positive (i.e. property (65c)). Within the approach in §5.1, where *da(ɣanï) ...da(ɣanï)* was analyzed as a discontinuous recursive exhaustifier in positive sentences, this was readily explained by the the fact that for $\neg(p \vee q)$, all of the alternatives are entailed (thus there being no need to carry on recursive exhaustification). That approach, however, suffered from a lack of syntactic plausibility in Sakha, as well as no straightforward connection to potential additive readings of TOO-particles cross-linguistically.

  A potential reason for the pragmatic markedness of positive *da(ɣanï)...da(ɣanï)* coordination, in contrast to negative *da(ɣanï)*-coordination, may be the range of other less structurally complex options which can express conjunction in the language. As we saw in §2.3, Sakha has a dedicated *and* word *uonna* as well as *ikki* 'two' (used for coordination of two arguments) as shown in (82) (repeated from (20)):

(82) a. Djulus kofye uonna čay iste.
    Djulus coffee and tea drink.PST.3SG
    'Djulus drank coffee and tea.'
  b. Djulus kofye ikki čay iste.
    Djulus coffee two tea drink.PST.3SG
    'Djulus drank coffee and tea.'

That is, it would appear that the dialect of Sakha I have examined requires a pragmatically salient reason to explicitly mark both conjuncts with *da(ɣanï)...da(ɣanï)*, such as in emphatic contexts or answers to questions. In contrast, there is no such straightforward way to mark negative coordination othwerways. As we see in (83) negation in clauses with *uonna* (83a), *ikki* (83b) is interpreted as a narrow-scope conjunction (83a-i), (83b-i).

(83) a. Djulus kofye uonna čay ispete.
    Djulus coffee and tea drink.NEG.PST.3SG
    (i) 'Djulus didn't drink coffee AND tea (he drank only one).'
    (ii) *'Djulus didn't drink coffee and Djulus didn't drink tea'
  b. Djulus kofye ikki čay ispete.
    Djulus coffee two tea drink.NEG.PST.3SG
    (i) 'Djulus didn't drink both coffee and tea (he drank only one).'
    (ii) *'Djulus didn't drink coffee and he didn't drink tea.'

6 Conclusion

This paper has analyzed the semantics of the Sakha particle *da(ɣanï)* within an exhaustification-based version of alternative semantics. The main goal has been to show that we can arrive at a unified account of each of the uses of the particle under single denotation. The approach here has assigned a heavily underspecified semantics to *da(ɣanï)*, only having it perform the role of activating alternatives and making them obligatory. Much of the intricacies have been assigned to the grammatical module itself, and I have shown how Chierchia's (2013, p. 153) Economy Principle Optimal Fit, which mitigates the choice of exhaustifiers based on the nature of alternatives, as well as Mitrović's (2021, p. 144) modification to Optimal Fit, can derive most of the meanings of *da(ɣanï)*. That is, it is largely predicted by the nature of the alternatives which *da(ɣanï)* activates which determines the distribution of the resulting particle+host construction.

Descriptively, Sakha *da(ɣanï)* represents an interesting, heretofore unattested pattern among TOO-particles in that it has all of their hallmarks except for their (arguably) core meaning of serving as a non-scalar 'too' focus marker. This paper has argued that this lack is the result of a competition effect with a presuppositional lexeme *emie* 'too, also, either; again.' It was proposed that the additivity imposed by TOO-particles is not, in any sense, primitive to their meanings, but is the result of exhaustification.

This work has shown that we can, and should, analyze multifunctional quantifier particles as elements which have a single denotation. Because *da(ɣanï)* has two forms (*daɣanï* and *da*) which appear to be largely phonologically conditioned, it is implausible that all of the myriad meanings represent accidental homophony. Future work on alternative-oriented particles with numerous functions will help clarify further the way the grammar is able to construct meanings from morphosemantic atoms.

While the main aim of this paper was to give an account of one single Sakha particle *da(ɣanï)*, at various points other morphemes which are richly complex in their own right have been mentioned, such as *emie* 'also; either; again,' *eme/emit* (non-specific indefinite particle), *ere* (specific indefinite particle; 'only'), *baɣarar* (universal free-choice particle), and *duu* (exclusive disjunction; alternative question particle). Some of these particles were examined by Haspelmath (1997, pp. 289-91), though purely based on descriptive grammars. Like Haspelmath's implicational hierarchies for indefinites, I have at various points relied upon competition between particles to account for various absences, though my approach has encoded much of the meaning of these particles through a grammatical operation of exhaustification. Further studies on these additional particles will no doubt produce a fuller picture of the rich system of alternative calculation within Sakha, and will help lead to a more general picture of how grammar is able to reckon with alternatives.

Conflict of interest

The authors declare that they have no conflict of interest.

Appendix A: Position of *da(ɣanï)* and alternation between *daɣanï* and *da*

The alternation between full *daɣanï* and reduced *da* has been noted since the earliest descriptions of Sakha (Böhtlingk 1964 [1851], §670). At the outset, it is worth noting that speakers report that *daɣanï* and *da* are variants of the same word. Nevertheless, to my knowledge there is no literature discussing what factors may governs this alternation. From examples I have examined, there are three general tendencies that characterize the alternation. First, wherever full *daɣanï* is acceptable, reduced *da* is generally also acceptable (but not vice versa). Secondly, when the particle appears as the final element

of the constituent it modifies, either *daɣanï* or *da* is acceptable. Thirdly, when the particle appears in the second position of an NP, reduced *da* is preferred if the word to the left is two syllables or fewer.

As outlined above, there are two positions that *da(ɣanï)* can appear in within an NP, dependent on whether there is a determiner. When the *da(ɣanï)*-marked NP does not contain a determiner as in *wh+da(ɣanï)* NPIs (84a) and scalar focus-marking *da(ɣanï)* (84b), the particle appears as the final element of the NP:

(84) a. (i) Min [NP tugu   da(ɣanï)] aax-pa-t-ïm.
            I   [what.ACC *da*]   read-NEG-PST-1SG
            'I didn't read anything.'
      (ii) [NP Kim da(ɣanï)] iti   kinige-ni   aax-pa-ta.
            [who *da*   ] that book-ACC read-NEG-PST.3SG
            'Nobody read that book.' (lit: 'Anybody didn't read that book.')
    b. (i) Onnooɣor [NP studyen da(ɣanï)] iti   kinige-ni   aax-(pa)-ta.
            Even   [student *da*   ] that book-ACC read-(NEG)-PST.3SG
            'Even the student (didn't) read that book.'
      (ii) Min [NP (kïhïl) kinige-ni   da(ɣanï)] aax-(pa)-t-ïm.
            I   [(red)   book-ACC *da*   ] read-(NEG)-PST-1SG
            'I (didn't) read even the (red) book.'

In examples like (84), both full *daɣanï* and reduced *da* are acceptable. Notice from (84b-ii) that the addition of an adjective to the NP does not result in *da(ɣanï)* appearing in the second position. When an NP does contain a determiner (e.g. in *biir+da+*Noun NPIs (85a-i), scalar focus with demonstratives (85b-i) or with quantificational determiners (85b-ii)), the particle appears immediately following the determiner:

(85) *Da(ɣanï)* following determiner in host constituent
    a. (i) Min [NP biir da(??ɣanï) kinige-ni   ] aax-pa-t-ïm.
            I   [one *da*   book-ACC] read-NEG-PST-1SG
            'I didn't read any book.'
    b. (i) Onnooɣor [NP bu da(??ɣanï) studyen] kinige-ni   aax-(pa)-ta.
            Even   [this *da*   student] book-ACC read-(NEG)-PST.3SG
            'Even this student (didn't) read the book.'
      (ii) [NP Elbex da(??ɣanï) kihi   ] kinige-ni   aax-(pa)-ta.
            [Many *da*   person] book-ACC read-(NEG)-PST.3SG
            'So many people (didn't) read the book.'
      (iii) [NP Aɣïyax da(ɣanï) kihi   ] kinige-ni   aax-(pa)-ta.
            [Few   *da*   person] book-ACC read-(NEG)-PST.3SG
            'So few people (didn't) read the book.'

For *da(ɣanï)*-marked NPs with overt determiners (85), *da(ɣanï)* always immediately follows the determiner. It is ungrammatical for *da(ɣanï)* to appear to the right of the noun (i.e. **biir kinige-ni da(ɣanï)* (85a-i), **onnooɣor bu studyen da(ɣanï)* (85b-i)). Again, when the determiner is two syllables or fewer (i.e. *biir* [biːɾ] 'one' (85a-i), *bu* [bu] 'this' (85b-i), *elbex* [ɛlˈbɛχ] 'many' (85b-ii)) reduced *da* is strongly preferred, while both the short and reduced form are acceptable if the determiner is longer than two syllables (i.e. *aɣïyax* [a.ʁɨˈjaχ] 'few' (85b-iii)). This NP second-position effect is particularly salient with possessive constructions. Like other Turkic languages, Sakha marks possession obligatorily on the possessum. Personal possession can be optionally reinforced with overt pronouns, which emphasizes the possessor (e.g. *min uolum* (86a) 'MY son, not yours'):

(86) a. (min) uol-um
          (I)   son-1SG.POSS
          'my son'

      b. (en)   uol-uŋ
          (you.SG) son-2SG.POSS
          'your son'

      c. (bihigi) uol-but
          (we)   son-1PL.POSS
          'our son'

      d. (ehigi) uol-gut
          (you.PL) son-2PL.POSS
          'y'all's son'

When the possessive phrase is modified by *da(ɣanï)* (e.g. under scalar focus), the particles follow the possessum when there is no overt possessor—both the full and reduced forms are acceptable (87a), similar to (84). When an overt pronoun is present, the second-position effect (85) emerges. Here, full *daɣanï* is dispreferred with the short, monosyllabic pronouns *min* 'I/my,' *en* 'you/your' (87b-i) and full *daɣanï* is acceptable with the trisyllabic pronouns *bihigi* 'we/our,' *ehigi* 'y'all(s)' (87b-ii):

(87) a. $\varnothing_{\text{Poss'r}}$ uol{-um / -uŋ / -but / -gut} da(ɣanï)...
          'Even my/your/y'all's/our son...'

      b. (i)   Min da($^{??}$ɣanï) uol-um... / en da($^{??}$ɣanï) uol-uŋ...
               'Even my/your son...'
          (ii) Bihigi da(ɣanï) uol-but... / ehigi da(ɣanï) uol-gut...
               'Even our/y'all's son'

The most likely factor differentiating (87b-i) and (87b-ii) is that the plural pronouns are phonetically longer.

With *da(ɣanï)...da(ɣanï)* coordination, the pattern from examples I have observed is not so clear. In general, there is a preference for at least one of the instances to be reduced to *da*, though for most sentences I have observed, there is no change in acceptability whether the left is reduced (*X da Y daɣanï*) or the right (*X daɣanï Y da*), or whether both are reduced (*X da Y da*). One exception to this tendency is seen when positive *da(ɣanï)...da(ɣanï)* involves correcting or clarifying an expectation of exclusivity. For example, in an answer to an alternative questions (e.g. *Did Djulus drink coffee or tea?* (19a-ii)), *daɣanï...daɣanï*, *daɣanï...da*, and *da...daɣanï* are each acceptable, and *da...da* is disprefered.

Tentatively, I characterize the alternation between *daɣanï* and *da* as follows. The variation is largely phonological, as evidenced from the pattern in (84), (85), which is paralleled in the possessives (87). The pragmatic effects, seen in coordination, are a reflex of the the fact that *da(ɣanï)* disprefers reduction when it bears phonological focus.

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