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A radically [+arg, –pred] language*

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In this paper, I document key properties, listed in (1), of nouns and noun phrases in the Northern Dene/Athabaskan language Dënesųłiné. I argue that these properties are best explained if nouns are inherently of type <e>, entities, and not only enter the syntax as such, but remain of this type throughout the syntactic-semantic derivation. For a typology of nouns, my analysis means that it may not be universally true, as is widely assumed, that nouns enter the syntax as predicates (type <e,t>) and require a determiner to shift them to type <e> (e.g., Stowell 1991, Szabolcsi 1994, Heim & Kratzer 1998, Longobardi 1994, 2005, Borer 2005). Instead, I argue, there must be crosslinguistic variation in the semantic type of nouns, as suggested in Chierchia (1998).

(1) Properties of Dënesųłiné nouns and noun phrases

(i) *Dënesųłiné nouns are bare (no determiners and number marking) and occur as such in argument positions*

(ii) *Bare nouns can refer*

(iii) *Copulas are obligatory, i.e., there are no predicative nouns*

(iv) *PPs do not modify nouns directly but only as adjuncts in a clause*

(v) *Adjectives are largely absent and adjectival concepts are expressed by verbs*

(vi) *Instead of relative clauses, the language employs fully saturated clauses which are then nominalized*

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1. Bare Noun Arguments

As all Dene/Athabaskan languages, Dënesųłiné has SOV basic word order, highly complex verbs and relatively simple nouns. Nouns may be preceded by a demonstrative, a numeral or quantifier, and a possessor (in this order), and followed by an adjective-type element and a quantifier. Nouns themselves show no grammatical marking except for possession.[1] (2) illustrates this possession marking, and also shows that there is no number inflection; nouns have general number (Corbett 2000, Wilhelm 2008).[2]

(2) John **be**bez**é**
John be-bes-é
J. 3-knife-PNS
'John's knife/knives'

The syntactic distribution of bare nouns is unrestricted. They occur freely in all argument positions, as shown in (3)–(5). In fact, bare noun arguments are the norm.

(3) **yeh** hoghįʔá
house AR.PERF.3S.exist_RO
'There used to be a house there.' [spontaneous DS>E transl.]

(4) **nunıtsële k'ásba** gheldel
coyote chicken PERF.3S.devour_several_objects
'The coyote ate up the chickens.' [spontaneous DS>E transl.]

(5) **dzół** xél̨ senádé
ball with IMPF.3S.several_play
'They (several) are playing with a ball/with balls.'

A well-established generative view of (common) nouns holds that across languages, Ns and NPs denote predicates, type <e,t> (e.g., Heim & Kratzer 1998). They are shifted to the argumental/referential type, <e>, in the DP layer (Stowell 1991, Szabolcsi 1994, Longobardi 1994, 2005, Borer 2005). Apparently argumental bare nouns have a zero D, which limits their syntactic distribution to "governed" positions (Longobardi 1994). No

[1] There are vestiges of number marking on a few human nouns, see Wilhelm (2008).

[2] Dënesųłiné is spoken in about 20 communities in Northern Alberta, Saskatchewan, Manitoba, and the southeast of the Northwest Territories, all in Canada. Examples use a practical orthography. C' = glottalized C, voiced obstruent symbols represent plain voiceless obstruents, voiceless obstruent symbols represent voiceless aspirated obstruents. *á* etc. = high-toned vowels, ą etc. = nasal vowels, *y* = /j/, *j* = /dʒ/, *ł* = /ɬ/, *dh* = /ð/, *ddh* = /dð/, *th* = /θ/, *tth* = /tθ/, *sh* = /ʃ/, *zh* = /ʒ/, *gh* = /ɣ/, *ë* = /ə/. AR = areal (agreement with an "areal" argument); CL = classifier (voice/valence morpheme); DISC = discourse particle; DISTR = distributive; EVID = evidential; ITER = iterative; MDP = mediopassive; NMLZ = nominalizer; OPT = optative mode; PERF = perfective viewpoint aspect; PNS = possessed noun suffix; Q = question marker; RO = one round/compact object; S = subject; SER = seriative; SUB = subordinator; TH = thematic (semantically noncompositional morpheme). To save space, I am not giving morphological breakdowns of verbs except where relevant.

such restriction operates in Dënesųłiné. For example, in (4) *nunitsële* is the subject of a transitive clause, clearly an ungoverned position.

There are two other influential views of nouns, both of which are able to handle the Dënesųłiné facts. Baker (2003) argues that across languages, Ns and NPs denote entities, type <e>. Determiners do not shift Ns/NPs to <e>, but have other functions. This view has no problem with bare nouns in argument positions; however, it also does not make significant predictions about properties of bare noun languages. Chierchia (1998) proposes that there is parametric variation in whether nouns map to the argumental or the predicative type.[3] In languages where nouns map to the argumental type, <e>, bare noun arguments are predicted, among other properties.

I will argue in the rest of the paper that the properties of Dënesųłiné make most sense if Ns and NPs are of type <e>, entities. Since I see significant typological differences between Dënesųłiné and "predicative" languages, I am adopting Chierchia's parametric proposal: Dënesųłiné is a [+arg, –pred] language, i.e., nouns are mapped to <e>. Moreover, I will argue that nouns remain of type <e> throughout the derivation, making Dënesųłiné much more "radically" [+arg, –pred] than envisioned in Chierchia's original proposal. I will first present the interpretations of Dënesųłiné bare nouns, showing that they are fully referential. Then in section 3 I will develop a formal account of Dënesųłiné bare nouns based on, but also departing from Chierchia (1998), and the following sections discuss how other properties fall out from this account.

2. Bare Nouns Can Refer

Dënesųłiné bare nouns do not only have the syntactic distribution of DPs, they also have the full range of readings of DPs (except possibly for generalized quantifiers). This includes generic and narrow-scope indefinite, as well as the referential readings: definite and wide-scope indefinite (on direct kind readings, see section 8). A generic reading is shown in (6). In languages with definite markers, these occur when a noun has unique reference or is discourse-familiar. Dënesųłiné bare nouns occur in both of these contexts: unique reference is shown in (7), and (8)–(10) show textual examples of a discourse-familiar bare subject, direct object, and postpositional object.

(6) **sas** xaye k'étłʼá thetez
bear winter to_end_of IMPF.3S.several_sleep
'Bears sleep all winter.'

(7) **sa** hą́ghį́ʔą́
sun ADV.PERF.3S.RO_PERF
'the sun rose (cloudless morning)'

[3] Chierchia (1998) also proposes a mixed type, represented by English. In English, count nouns map to <e,t> and mass nouns map to <e>. I am not concerned with the mixed type here.

(8) [context: children riding with nuns on the back of a truck to residential school]
… **dënexare** ʔɻɬts'uzı k'e dáyałtı nɻ ʔanı.
nun bead on DISTR.IMPF.3S.pray PAST DISC
'… the nuns were praying the rosary.' [AG96, 03:22]
(distance to last mention of *dënexare*: 3 clauses)

(9) [context: travelling by dog team, describing who was where on the sled]
… setsíe **ɬɻ** k'élnıghı […] **ɬɻ** huɬtthath.
1SG.grandfather dog IMPF.3S.handle.NMLZ dog SER?.IMPF.3S.whip
'… and my grandfather, who was driving the dogs, was lashing them.' [LL35, 06:08] (distance to last mention of *ɬɻ*: 11 clauses and Ø clauses respectively)

(10) [context: children being collected onto a truck to go to residential school]
Kú ʔeyıt'á horelyʉ́ ʔeyër **thenakóthı chogh** k'e
DISC therefore all there vehicle big on
dathídel hú …
ADV.PERF.1PLS.several_go_PERF SUB
'We all got on the truck there …' [AG96, 03:15]
(distance to last mention of *thenakóthi*: 2 clauses)

Bare nouns equivalent to indefinite-marked nouns in other languages are shown in (11)–(14). (11) is an example of nonunique reference, (12)–(14) are textual examples of a discourse-new subject, direct object and postpositional object, respectively. In all of them, the noun phrase in question is the first mention.

(11) k'ąbí dé Norá **tsá** k'échɻɬła walí ʔúto
morning when Nora beaver PERF.3S.catch maybe maybe
'tomorrow Nora might catch **a beaver**'

(12) [context: when narrator was six or seven…]
… kúhú yałtı chu **dënexare** sekuı káthedel nɻ ʔanı.
DISC priest and nun child ADV.PERF.3S.several_go_PERF PAST DISC
'… priests and nuns came to pick up (lit., 'came for') children.' [AG96, 02:36]

(13) [context: what life was like at home in narrator's childhood]
… **tɻch'anádéı** hanáldé nɻ ʔánı.
domestic_animals IMPF.3S.own_several_IMPF PAST DISC
'…he [narrator's father] had some domestic animals.' [AG96, 00:44]

(14) [context: children being taken to residential school]
ʔeyër horelyʉ́ sekuı [...] **thenakóthı** k'e dałye.
there all child vehicle on ADV.MDP.handle_several
'There all the children [who were going to go] were put on a truck.' [AG96, 03:05]

We see that Dënesųłiné bare nouns are unspecified for definiteness. The notions of definiteness and indefiniteness are foreign to the language; they are imposed by the metalanguage English. This makes it challenging to show that bare nouns can have a wide-scope indefinite (or "specific") reading. A wide-scope indefinite usually has unique reference; commonly it is construed as "known to the speaker but not to the hearer". We know it is wide-scope indefinite and not definite because of its grammatical marking, e.g., an indefinite article or the paradigmatic absence of a definite article. However, no such disambiguating grammatical marking exists in Dënesųłiné, and hence the wide-scope indefinite and the definite readings are very difficult to distinguish.

In (15), the bare noun *thanakóthi* may have wide scope over the universal quantifier; in (16), the bare noun can scope over an intensional verb. In each case, the respective noun is discourse-new (hence indefinite). Sentences were presented by me out of the blue, or the context did not contain previous mentions of the noun. Sometimes descriptive material was added, since this supports the wide-scope reading (cf. Fodor & Sag 1982).

(15) Horelyų́ ts'ékuı **thanakóthı** t'adoréłʔá.
all woman car IMPF.3S.make_use_of
'All the women are using cars/a car.'
(i) each woman a car (∀ > ∃)
(ii) together share one car (∃ > ∀)

(16) Rosa **dëneyu ʔaxe** ghánedá kánıdhën snı.
Rosa man *ʔaxe* beside.IMPF.3S.one_sit_down IMPF.3S.want EVID
(i) 'Someone said that Rosa wants to marry this certain man.' (∃ > *want*)
(ii) 'Someone said that Rosa wants to marry a good man.' (*want* > ∃)

Examples like (15) and (16), which are ambiguous between a wide- and narrow-scope indefinite reading, are difficult to obtain. Speakers want to disambiguate the two, for example, by adding a demonstrative. To illustrate, in a different elicitation session (16i) was rejected, and instead unambiguous (17) was volunteered. To circumvent this problem, it is best to construct contexts which go for the wide-scope indefinite reading only, as shown in (18) and (19). (18) was given as the continuation specified in the cue; (19) is a monolingual elicitation. Note that a subsequent referential/definite use of the bare noun *dëneyu* is possible.

(17) Rosa **ʔeyı dëneyu ʔaxe** ghánedá kánıdhën snı.
Rosa that man *ʔaxe* beside.IMPF.3S.sg_sit_down IMPF.3S.want EVID
'I heard/it is rumoured that Rosa wants to marry a certain/this well-to-do man.'

(18) *Cue: A class is doing a cooking project. Students are divided into groups. Some cook porridge, some soup, some bannock, and then I want to say, 'Some children cooked a fish that they had caught themselves.'*

Nahí sekuı **łue thelúhı** dáthełbes.
some child fish PERF.3S.catch_with_net.NMLZ DISTR.PERF.3S.cook/boil
'Some children cooked a fish that they had caught themselves.' (∃ > *nahí sekuı*)

(19) *Scenario: In a store.* (English translations are mine)

A: Ts'éré nets'ı̨ hú?
blanket 2SG.from Q
'Do you have blankets?'

B: Dódí sı̨. **Dëneyu Tsádhekúę hots'ı̨** horelyų́ ts'éré
3S.nothing DISC man Edmonton AR.from all blanket
DISTR.PERF.3S.buy
nádághélnígh.
DISTR.PERF.3S.buy
'No, I'm all out. A man from Edmonton bought them all.' (∃ > ∀)

K'ą́bı́ (dé) nı̨da xa. Paul húlye sı̨.
morning (when) ITER.3S.one_goes_IMPF FUT Paul 3S.named DISC
'He will come back tomorrow. His name is Paul.'

I conclude that bare nouns can refer, which includes both definite and wide-scope indefinite interpretations. There is one environment, however, in which only the narrow-scope reading appears to be possible: bare nouns can apparently not scope over negation. For example, (20) is infelicitous in the scenario given. Speakers explain that this sentence asserts Andrea saw no bear cubs, which is false here. Perhaps the narrow scope under negation has to do with the fact that the Dënesųłiné negator, *híle*, is sentential and occupies the highest structural position, but I leave this for future research.

(20) *Cue: There are 3 bear cubs outside, running into the bush. Andrea looks outside, but only sees two of the cubs (the first one is already gone).*

Andrea **sasaze** gheɔı̨ híle.
Andrea bear.DIM PERF.3S.see NEG
'Andrea didn't see a bear cub.' (*NEG* > ∃; *∃ > *NEG*)

3. Analysis: Dënesųłiné Nouns Are of Type <e>

I will now develop an analysis of Dënesųłiné bare nouns which accounts for their unrestricted syntactic distribution and their range of interpretations. Adopting the parametric approach of Chierchia (1998), Dënesųłiné is a [+arg, -pred] language, i.e., nouns map to type <e>. <e>, the argumental type, comprises kinds and individuals. I follow Carlson (1977), Krifka (1995), and Chierchia (1998) in assuming that type <e> nouns denote kinds, i.e., entities in an abstract domain of kinds or types or concepts. Kind meanings are indicated with small caps. For example, (21) says that the extension of *łı̨* is

the dog kind. However, in many sentences, such as (22), we do not speak about kinds but about instances of a kind. I propose, following again Carlson (1977), that Dënesųłiné predicates include a *realization relation* which relates a kind to instances. For example, the denotation of *nechá* is as in (23), where R is the realization relation, and letters from the beginning of the alphabet are used for variables of the kind sort.

(21) [[*ɬı*]] = DOG

(22) Nechá.
IMPF.3S.big
'It/she/he is big.'

(23) [[*nechá*$_3$]] = λa ∈ D_e . R(a,x_3) & big(x_3)

Note that a ∈ D_e can be of two sorts, kind or individual.[4] The realization of a kind is an individual which realizes the kind. The realization of an individual is that individual, i.e., R applies trivially. The two derivations are shown in (24) and (25).

(24) [[*ɬı nechá*$_3$]]
= [[*nechá*$_3$]]([[*ɬı*]])
= [λa ∈ D_e . R(a,x_3) & big(x_3)](DOG)
= 1 iff R(DOG,x_3) & big(x_3)
i.e., 'a/the dog is big'

(25) [[*Peter nechá*$_3$]]
= [[*nechá*$_3$]]([[*Peter*]])
= [λa ∈ D_e . R(a,x_3) & big(x_3)](peter)
= 1 iff R(peter,x_3) & big(x_3)
i.e., 'Peter is big'

The general-number meaning of common nouns arises as follows: Realizations of a kind may be singular or plural individuals, and the language does not specify in the nominal morphosyntax whether a singular or a plural individual is intended.[5] However, one could imagine a different [+arg, –pred] language where grammatical number marking in the noun phrase does distinguish between singular and plural individuals/instances of the kind. I see no grounds for the prediction of Chierchia (1998) that [+arg, –pred] languages must have general number.

Note that in (23)–(25), the realizations of the kind are free variables in the sense of Heim (1982). That is, common nouns do not have quantificational force of their own;

[4] Instances of a kind are called "individuals" by some, and "objects" by others (e.g., by Chierchia 1998). I will use the term "individual", to avoid confusion with "direct object".

[5] In (24), *ɬı* does not have a plural meaning for independent reasons: in an isolated clause like (24), the distributive prefix *dá-* would be expected on the verb to indicate a plural argument.

they denote free individual variables and thus are no different from proper names or pronouns. This is achieved in my analysis by leaving the existential quantifier ∃ out of the clausal predicate's meaning. Carlson (1977) included ∃ along with R to account for the narrow scope of English bare plurals. However, Dënesųłiné bare nouns are not restricted to narrow scope interpretations, and so ∃ is not needed. For the same reason, I have departed from Chierchia's implementation of the connection between kinds and individuals. Chierchia (1998:364) introduces a semantic shifting mechanism, *Derived Kind Predication* (DKP), to get from kinds to individuals.[6]

(22) If P applies to objects and k denotes a kind, then
$P(k) = \exists x[{}^{\cup}k(x) \wedge P(x)]$

DKP shifts the noun denotation from kind to predicate, and the argument of the predicate is bound by an existential quantifier. Crucially, noun denotations resulting from DKP can only take narrowest scope, due to the way DKP works (and assuming traces are sorted, i.e., the trace of a kind is a kind, and the trace of an individual is an individual). Because in Dënesųłiné an existentially quantified expression can scope over other elements, ∃ is not built into the semantics of the verb, neither directly nor via DKP.

To repeat, on my analysis, the predicate simply introduces a free variable. A definite interpretation is achieved if this variable is coindexed with another variable from the context (anaphorically or deictically). An indefinite interpretation is achieved if the variable is bound by an existential quantifier, through Existential Closure. For example, in (24') ∃ is introduced through Existential Closure at Text level ("Adjoin the quantifier ∃ to T [Text node, AW]", Heim 1982:92).

(24') … = 1 iff $\exists x[R(\text{DOG},x_3) \,\&\, \text{big}(x_3)]$
i.e., 'a/some dog is big'

If there is another scope-bearing element in the clause, Existential Closure at Text level results in the indefinite having wide scope. If ∃ is instead introduced by another scope-bearing element ("Adjoin a quantifier ∃ to the nuclear scope of every quantifier", Heim 1982:90), the indefinite will have narrow scope.

Crucially, none of these interpretations are overtly marked, since there is no grammatical (in)definiteness marker. In other words, Heim's Novelty-Familiarity-Condition (Heim 1982:202) does not hold in Dënesųłiné.[7] This derives the empirical fact

[6] DKP makes use of another operation introduced by Chierchia, the "up" operation which shifts kinds to predicates: "Let d be a kind. Then for any world/situation s, ${}^{\cup}d = \lambda x[x \leq k]$ if d_s is defined, λx[FALSE] otherwise, where d_s is the plural individual that comprises all of the atomic members of the kind." (Chierchia 1998:350).

[7] The Condition states: "Suppose something is uttered under the reading represented by φ, and the file prior to the utterance is F. Then for every NP in φ, it must be the case that: $i \in \text{DOM(F)}$ if NP_i is definite, and $i \notin \text{DOM(F)}$ if NP_i is indefinite. Otherwise, the utterance is not felicitous under this reading." (Heim 1982:202)

that wide-scope indefinites are indistinguishable from definites. Ferch (2013), writing on Shona (and using choice functions), comes to the same result:

> nouns are always interpreted using choice functions, but the function variables are sometimes existentially closed (giving a nonspecific or indefinite reading) and sometimes determined by context (giving a definite or specific reading) (Ferch 2013:379)

Generic readings, as in (6) above, are derived in the standard way, by binding of the free variable through a generic operator.

Summing up my analysis, I have proposed that Dënesųłiné has the parameter [+arg, –pred], mapping nouns to the argumental type <e>. I have interpreted this to mean that nouns are names of kinds, which are related to instances of the kind through a realization relation which is part of the meaning of Dënesųłiné clausal predicates. However, predicates do not also introduce an existential quantifier. The result is that instances of kinds are free variables. I submit that this makes a "radically" [+arg, -pred] language: nouns are of type <e> throughout the derivation and are never of type <e,t>.

My analysis accounts for the absence of determiners, the general number of bare nouns, and their different interpretations (including wide-scope indefinite). The fact that Dënesųłiné nouns are unspecified for definiteness means that wide-scope indefinite and definite readings are normally indistinguishable. In the next sections, I will show how other, apparently unrelated properties fall out from the fact that Dënesųłiné nouns are of type <e> and not <e,t>. These other properties provide strong support for my analysis.

4. Obligatory Copulas

Copulas are obligatory in Dënesųłiné; nouns cannot be used predicatively by themselves. For example, (26) and (27) would be ungrammatical without copula. The same has been documented for the neighbouring Dene language Tłı̨chǫ Yatìı (Welch 2012).

(26) Dënesųłıné hesłı̨.
D. IMPF.1SGS.be$_1$
'I am Dënesųłıné.'

(27) …bé̋ł náhídé hełı ʔánı sekuı dáhídlı̨ hú.
3O.with 1plS.several_beings HABIT truly child DISTR.IMPF.1PLS.be$_1$ SUB
'…we used to live with them when **we were children**.' [FM62, 04:21]

If nouns are of type <e>, the obligatoriness of copulas is explained. They are required to shift the nouns from <e> to the predicative type <e,t>.

5. Near Absence of PPs as Noun Modifiers

That nouns are of type <e> also explains another apparently unrelated fact, namely that PPs do not modify nouns directly, but only as adjuncts in a clause. (28) and (29) were given as Dënesųłiné translations of English prompts. Note that in the prompts, the PPs are dependents of nouns, but in the Dënesųłiné sentences a verb (bolded below) and hence clause has been added, and the PP is the dependent of that verb.

(28) *Context: There are some books on the bed and some on the table.*
Prompt: 'The books on the table are black.'
[ʔerıhtɬ'ís bek'eshích'elyı̨ k'e dáthelaı]
book table on DISTR.IMPF.3S.several_are.NMLZ
dárelzën.
DISTR.IMPF.3S.black
Lit., 'The books which are on the table are black.'

(29) *Context: Some older bread on the table, and some new bread in a grocery bag on the floor. A child is going for the new bread.*
Prompt: 'Eat up the bread on the table first!'
[Bek'eshích'elyı̨ k'e łés datheʔą́ı],
table on bread ADV.IMPF.3S.RO_is.NMLZ
ʔeyı tthe bek'eghútthé!
that first 3O.P.OPT.2SGS.eat_up_small_item
Lit., 'The bread that is on the table, eat that first!'

In texts, too, PPs which are dependents of nouns are very rare. In two texts I looked through, Li (1964) and Li & Scollon (1976:322ff), there are 450 sentences and 196 PPs, of which 194 (99%) are clausal adjuncts or complements. The two exceptions are each highly marked. One is a story title, and it is well-known that titles and headlines have their own grammar. The other is a possessive compound, and is the only Dënesųłiné compound I have encountered where the possessor is a PP.

If nouns are of type <e>, the absence of modifying PPs is predicted. The standard semantic mechanism for noun modification is based on the assumption that nouns are predicates, <e,t>, and creates the intersection between the predicate denoted by the noun and the predicate denoted by the PP (e.g., "theta identification" of Higginbotham (1985), "predicate conjunction" of Jackendoff (1997), "predicate modification" of Heim & Kratzer (1998)). For example, the denotation of *the book on the table* is the intersection of the set of things which are books and the set of things which are on the table:

(30) [[book on the table]] = $\lambda x \in D_e$. book(x) & on the table(x)

But if Dënesųłiné nouns are <e> and not <e,t>, as I propose, there is a type mismatch. It appears that the language resolves the type mismatch by adding a "true" predicate (a clausal predicate) for the PP to combine with. Instead of resorting to a covert type shift,

an overt predicate is added.[8]

The same type mismatch explains the next two properties of Dënesųłiné, the near absence of adjectives and the absence of relative clauses.

6. Near Absence of Adjectives

In Dënesųłiné most adjectival meanings, such as colours, shapes and textures, are expressed by stative verbs. For example, *nechá* in (31) is inflected for imperfective aspect and a third person subject.

(31) łį nechá
łį ne-Ø-Ø-Ø-chá
dog TH-IMPF-3S-CL-big
'the dog is big', 'big dog'

Although stative verbs are often translated into English adjectives, the relationship between them and the noun could not be more different than in English. In English, the adjective is a dependent of the noun, its modifier, and the semantic mode of composition is predicate modification. In Dënesųłiné, the noun is the dependent of the stative verb, its argument in fact, and the mode of composition is function application. What we have in (31) is a clause. When this clause is part of another sentence, it is overtly or covertly nominalized, as in (32) and (33b). Note that even though there is no overt nominalizer in (33b), we know the clause *dëne nezǫ* is nominalized because it acts as a complement of a postpostion, something only nominals can do.

(32) Andrea [łį nechá(hı)] xanáldhër.
Andrea [łį ne-Ø-Ø-Ø-chá(-ı)] xanáldhër
Andrea dog TH-IMPF-3S-CL-big(-NMLZ) IMPF.3S.keep_one/two_beings
'Andrea owns a big dog.'

(33) a. nezǫ
ne-Ø-Ø-Ø-zǫ
TH-IMPF-3S-CL-good
'that/it/she/he is good, nice'

[8] This also explains the apparently exceptional behaviour of the postposition *-ts'ı* 'from', as in (i). *-ts'ı* is the only postposition which is independently used as a clausal predicate. For example, the bracketed part of (i) could be a stand-alone clause, meaning 'the man is from Edmonton'. I submit that *-ts'ı* is precisely a clausal predicate in (i), and that the structure of (i) is parallel to that of (28) and (29).

(i) [Dëneyu Tsádhekǫe **hots'ı**] ghánéda.
man Edmonton AR.from near.PERF.3S.one_sit_down_PERF
'She married a man from Edmonton.'

b. Ts'ą́kuı [[dëne nezǫ]$_{NP}$ ghą]$_{PP}$ nínɻya. (Cook 2004:380)
ts'ą́kuı [[dëne ne-Ø-Ø-Ø-zǫ]$_{NP}$ ghą]$_{PP}$ nínɻya
old_woman person TH-IMPF-3S-CL-good at PERF.3S.one_arrive
'The old woman came to a nice man.'

This indirect way of modifying nouns falls out naturally if nouns are of type <e>. Again there is a type mismatch, this time between nouns and modifying adjectives, and predicate modification cannot apply. And again the language chooses a solution which does not require shifting nouns to the predicative type. A much more detailed discussion of the absence of adjectives can be found in Wilhelm (2014). There I also point out that the small number of possibly true adjectives of the language, for example, *słını* 'evil' and *ʒaxe* 'capable, attractive, well-to-do', have non-intersective meanings, which means set intersection (predicate modification) is not the mode of composition to begin with. My analysis thus predicts precisely this kind of adjective. A type mismatch only exists for elements which require set intersection for combining with nouns.

7. Nominalized Fully Saturated Clauses Instead of Relative Clauses

Relative clauses, like adjectives, are a type of noun modifier which combines with nouns through set intersection/predicate modification. And again, Dënesųłiné does not use this mode of composition. Apparent relative clauses are in fact fully finite nominalized clauses in which the "modified" noun is an argument of the clausal predicate. In other words, we have internally-headed relative clauses.

In (34), the temporal modifier *tth'ıdzıné k'e* is part of the nominalized clause. This means that the noun phrase in question, which follows the temporal modifier, is also inside the nominalized clause. The interpretation of (35) shows that the internal head does not covertly leave the nominalization either (cf. Shimoyama 1999).

(34) [Tth'ıdzıné k'e **dırı ts'éré** nághıłníghı] sa nezǫ.
[tth'ıdzıné k'e dırı ts'éré ná-Ø-ghe-ı-ł-nígh-ı]
yesterday on this blanket TH-3O-PERF-1SGS:PERF-CL-buy-NMLZ
se-ba nezǫ
1SGO-for IMPF.3S.good
'I like this blanket that I bought yesterday.'
(*'Yesterday I liked this blanket that I bought.)

(35) Peter [Norá **sǫlághe labadá** thełbesı] gheldel.
Peter Norá sǫlághe labadá the-Ø-ł-bes-ı gheldel
Peter Nora five potato PERF-3S-CL-cook-NMLZ PERF.3S.eat_up_several
'Nora cooked five potatoes and Peter ate them.'
only true if Nora cooked only five potatoes, and Peter ate all five potatoes
not true if Peter ate five potatoes but Nora had cooked more than five

The preference for nominalizations/internally-headed relative clauses is explained if nouns are of type <e>. My analysis in fact predicts that all so-called relative clauses in Dënesųłiné are internally headed nominalizations, even those where there is no morphosyntactic evidence. Dënesųłiné nominalizations/internally-headed relative clauses are discussed in detail in Wilhelm (2014). Here I only give two new examples, which provide semantic evidence for internal heads. In (36), either *łį* or *nunıtsële* can be interpreted as head. This means that *łį* must be inside the nominalization, even though it is the first element of the sentence and could theoretically be an external head. In (37), the event argument, clearly an element internal to the clause, is the head. Taken together, (36) and (37) show that any variable of the argumental type can be the head of a nominalized clause, as long as the interpretation is plausible.

(36) [Łį nunıtsële theʔáłı] thıłk'éth.
dog coyote 4O.PERF.3Sbite.NMLZ 4O.PERF.1sgS.shoot
(i) 'I shot (the) **coyote** [that was bitten by a/the dog].'
(ii) 'I shot the **dog** [that bit the coyote].'

(37) Andrea tth'ıdzıné k'e [Peter betsųaze ghelts'unı]
A. yesterday Peter 3.sweetheart 4O.PERF.3S.CL.kiss.NMLZ
gheʔį.
4O.PERF.3S.see_PERF
* 'Yesterday Andrea saw Peter, who kissed his sweetheart.'
√ 'Yesterday Andrea saw Peter kiss his sweetheart.'

8. Conclusions

I have argued that Dënesųłiné is a "radically" [+arg, –pred] language. It is radical because nouns do not only enter the syntax as type <e>, they remain of type <e> throughout the derivation. In this way Dënesųłiné is different from other [+arg, –pred] languages such as Mandarin, where nouns are taken to shift to <e,t> covertly and freely (see Chierchia 1998). My proposal explains not only the unrestricted syntactic distribution of bare nouns. It also explains facts not seen in, or disputed for, less "radically" [+arg, –pred] languages such as Mandarin: fully referential readings of bare nouns, including definite and wide-scope indefinite, the absence of nominal modification through PPs, adjectives and (externally headed) relative clauses, and the obligatoriness of copulas for the predicative use of nouns.

Why do Dënesųłiné nouns remain of type <e>, rather than shifting covertly to <e,t>? I believe there are two reasons. First, the language has the morphosyntactic resources that make shifts to <e,t> unnecessary, for example, nominalization of full clauses. Second, the language has another morphosynactic resource, richly inflected verbs. I said above that the realization relation which relates the kinds denoted by nouns to instances of the kind is part of the semantics of Dënesųłiné verbs. I speculate that it is in fact the verbs' pronominal agreement affixes which "realize" the kinds, by introducing a variable. This would explain why there are no non-finite clauses in Dënesųłiné (even

nominalizations are built on finite verbs, as seen in (34)–(37) above). It would also explain why I have not been able to find sentences in which a noun has direct kind reference, and which could not also be interpreted as characterizing sentences. Finally, it would explain a semantic contrast seen in posssesive constructions with and without pronominal agreement affix. In the former, the possessor is an individual, in the latter it is a kind (see also Holden 2013:499).

(38) a. ts'ékui **be**-yú-é kánesta sı̨
woman 3-clothing-PNS IMPF.1sgS.search DISC
'I'm looking for some other woman's clothes'

b. ts'ékui yú-é kánesta sı̨
woman clothing-PNS IMPF.1sgS.search DISC
'I'm looking for women's clothing' (e.g., in a store)

If I am right about what pronominal agreement affixes do, I can offer a semantic alternative to the pronominal argument hypothesis (Jelinek 1984, 1987, Jelinek & Demers 1994, Willie 1989), which has been controversial particularly for Northern Dene languages (see Saxon 1989, Cook 2004, Rice & Saxon 2005): I propose that the nouns and not the pronominal affixes are the syntactic arguments of verbs. However, the pronominal affixes are semantically argument-like in that they introduce variables. My proposal accounts for the syntactic behaviour of the nouns but also captures the essential role of the pronominal affixes.[9]

Inuktitut is another language which has been proposed to be "radically" [+arg, –pred] (Johns & Compton 2005, Compton 2007). Interestingly, Inuktitut also has nominalizations and pronominal agreement. However, there are differences to Dënesųłiné as well, for example, in Inuktitut there are no noun-noun compounds, but when incorporated into verbs, nouns are fully referential. If in Inuktitut nouns denote individuals rather than kinds, the differences could be explained.

Let me conclude by pointing out that there are still many open questions: an analysis of Dënesųłiné quantifiers and demonstratives, a closer look at pronominal affixes, further verification of my predictions (e.g., no direct kind readings, no externally-headed relative clauses), and thorough cross-linguistic comparisons. However, I believe that the proposal that Dënesųłiné nouns are and remain of type <e> has already given real insight into the language, and offers an interesting new way of understanding other languages as well.

[9] I must hasten to add that it is not fully understood when pronominal affixes appear in possession, and that there is also micro-variation across Dene languages (cf. Gunlogson 2001, Rice 2003, Willie 2000).

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