

Université de Montréal

A Lexical Semantic Study of Dene Sų́líné, an Athabaskan Language

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Cette thèse intitulée :

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## SOMMAIRE

Cette thèse constitue une étude systématique du lexique du déné s̄l̄iné, une langue athabaskane du nord-ouest canadien. Elle présente les définitions et les patrons de combinatoire syntaxique et lexicale de plus de 200 unités lexicales, lexèmes et phrasèmes, qui représentent une partie importante du vocabulaire déné s̄l̄iné dans sept domaines: les émotions, le caractère humain, la description physique des entités, le mouvement des êtres vivants, la position des entités, les conditions atmosphériques et les formations topologiques, en les comparant avec le vocabulaire équivalent de l'anglais. L'approche théorique choisie est la Théorie Sens-Texte (TST), une approche formelle qui met l'accent sur la description sémantique et lexicographique empiriques.

Les deux premiers chapitres fournissent les fondations de la présente recherche. L'introduction affirme l'importance de la sémantique lexicale pour la description linguistique, et offre un survol essentiel de l'histoire et de la langue des déné s̄l̄inés. Le chapitre I considère les études linguistiques qui ont été faites sur les langues athabaskanes et fait la critique de la lexicographie déné s̄l̄iné précédente. Le chapitre II expose de façon détaillée l'approche Sens-Texte de la sémantique en la confrontant avec les courants dominants de la sémantique lexicale. Ici on trouve aussi une description de l'approche lexicographique de la TST.

La deuxième partie présente les résultats de notre recherche. Le chapitre III décrit les zones sémantiques et syntaxiques des entrées lexicales. Le chapitre IV contient une discussion des relations lexicales qu'on retrouve dans l'échantillon. Le dernier chapitre offre des conjectures sur l'influence de la structure polysynthétique et de certains facteurs sociolinguistiques sur les relations lexicales.

En résumé, la présente recherche relève d'importantes différences entre le lexique du déné s̄l̄iné et celui de l'anglais à tous les niveaux: dans la correspondance entre la représentation conceptuelle, considérée (quasi-)extralinguistique, et la structure sémantique; dans les patrons de lexicalisation des unités lexicales, et dans les patrons de

combinatoire syntaxique et lexicale, qui montrent parfois des traits propres au d ne s lin  int ressants.

**Mots-Cl s:** S mantique Lexicale, Lexicologie, Dene S lin , Langues Athabaskanes, Th orie Sens-Texte, Description Linguistique.

## ABSTRACT

This work constitutes a systematic lexical semantic study of Dene Sų́líné, an Athabaskan language from northwestern Canada. As such, it presents the lexicographic definitions, syntactic and lexical combinatorial patterns of over 200 lexical units (lexemes and idioms) representing part of the core Dene Sų́líné vocabulary for seven semantic fields: terms to describe emotions, human character, physical description, position of an object, atmospheric conditions and topographical features. The theoretical approach used is Meaning-Text Theory (MTT), a formal linguistic approach with a strong empirical focus on semantics and lexicography.

The first two chapters provide the foundation for the present research. The introduction reviews the significance of cross-linguistic semantics for linguistics, and sketches some basic facts about the history and language of the Dene Sų́líné people. Chapter I is a survey of the Athabaskanist literature along with a review and critique of the previous lexicographic tradition for Dene Sų́líné. Chapter II is a detailed exposition of the MTT approach to semantics and lexicography, as well as the idea of semantic primitives, and covers MTT's treatment of some major questions in lexical semantics.

The second part of the thesis presents the results of the current study. Chapter III describes the semantic and syntactic portions of the lexical entries. Chapter IV contains a discussion of lexical relations found for the lexical units in the sample. The final chapter speculates about the impact of polysynthetic structure and certain sociolinguistic factors on lexical relations in Dene Sų́líné.

In summary, this work finds significant differences between Dene Sų́líné and English at all levels: in the relationship between of (quasi-)extralinguistic concepts and linguistic meanings, in the lexicalization or conflation patterns one finds in meanings of lexical units, and finally in the syntactic and lexical combinatorial patterns, which also show interesting language-specific tendencies.

**Keywords:** Lexical Semantics, Lexicography, Dene Sų́liné, Athabaskan Languages, Meaning-Text Theory, Language Documentation.

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Figures are labelled with Arabic numerals which begin anew with each chapter. For tables, the same rule applies, but Roman numerals are used. In both cases, the chapter number in Roman numerals is prefixed to the figure or table number, so Table II-II for instance is the second table of Chapter II. Please note that lexicalization rules are not considered figures and simply appear at various points in the text.

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## ABBREVIATIONS AND SYMBOLS

### MEANING-TEXT THEORY

<b>DMorphR</b>	<b>Deep Morphological Representation</b>
<b>DPhonR</b>	<b>Deep Phonological Representation</b>
<b>DPhonS</b>	<b>Deep Phonological Structure</b>
<b>DS</b>	Apresjan's <b>D</b> ictionary of <b>S</b> ynonyms
<b>DSyntR</b>	<b>Deep Syntactic Representation</b>
<b>ECD</b>	<b>Explanatory Combinatorial Dictionary</b>
$\mathcal{L}$	a particular natural language under discussion
<b>LF</b>	<b>Lexical Function</b>
<b>LU</b>	<b>Lexical Unit</b>
<b>MTM</b>	<b>Meaning-Text Model</b>
<b>MTT</b>	<b>Meaning-Text Theory</b>
<b>NSM</b>	<b>Natural Semantic Metalanguage</b>
<b>Sem-rule</b>	<b>Semantic Transition Rule</b>
<b>SemR</b>	<b>Semantic Representation</b>
<b>SemS</b>	<b>Semantic Structure</b>
<b>SMorphR</b>	<b>Surface Morphological Representation</b>
<b>SPhonR</b>	<b>Surface Phonological Representation</b>
<b>SSyntR</b>	<b>Surface Syntactic Representation</b>
<b>SSyntS</b>	<b>Surface Syntactic Structure</b>
$\Leftrightarrow$	linguistic mapping correspondence
//	fused value of a lexical function
$\oplus$	meta-operation of linguistic union
$\emptyset$	zero morph
*	semantic incompatibility or ungrammaticality
?	semantic oddity or unacceptability

### ATHABASKAN MORPHOLOGY

1	first person	ITER	iterative
2	second person	MIR	mirative
3	third person	MOM	momentaneous
ABS	absolute state	NCM	noun class marker
ADJ	adjectival suffix	NMLZ	nominalizer
ANIM, <i>anim.</i>	animate entity	OB	object
ASSERT	assertion marker	OPT	optative
AUD	auditory marker	PAST	past tense
CL1	classifier 1	PERM	perambulative
CL2	classifier 1	PFV	perfective
CL3	classifier d	PL	plural
<i>comp.</i>	compact/heavy object (stem gloss)	PO	possessive/possessed

CON	conative	POSS	possibility
CONS	construct state	PROB	probability
DIST	distributive	PROG	progressive
DP	discourse particle	REC	reciprocal
DS	default subject	REL	relative clause marker
DU	dual	REP	repetitive
EMPH	emphasis marker	REV	reversive
ERR	errative	SG	singular
FUT	future tense	SER	seriative
H	high tone	TERM	terminative
HAB	habitual	TRANS	transitional
<i>imp.</i>	impersonal subject (stem gloss)	VCD	verb class marker <i>de-</i>
INCEP	inceptive	VCN	verb class marker <i>ne-</i>
INCH	inchoative	VIS	visual marker
IPFV	imperfective		

## TYPOGRAPHICAL CONVENTIONS

1. Technical terms presented for the first time appear in *Courier New*.
2. Lexical items discussed as keywords of lexical entries are in CAPITAL letters; when discussed as spoken words they are in lower case *italics*. Meanings are in ‘simple’ (= ‘semantic’) quotes.
3. Lexicographic numbers are added to some wordforms to disambiguate the sense or lexeme referred to, e.g. ‘cause<sub>2</sub>’ or *here...lt’e<sub>2</sub>*. These numbers are added to English glosses where there may be confusion as to the precise English lexeme intended to render the meaning of the Dene lexical unit. For English words, these lexicographic numbers correspond to senses in the Longman Dictionary of Contemporary English (LDOCE), 4<sup>th</sup> edition (Bullon 2005), , or to the electronic version 4.2 of the LDOCE. For Dene Słı́né lexical units, the lexicographic numbers correspond to senses found in the list in Appendix A.
4. Morphemic glosses appear in curly brackets between the Dene data and the semantic gloss. Grammatical morph glosses are in SMALL CAPS while stem glosses are in lower case Roman letters, e.g. *yalti* {3IPFV:speak} ‘he speaks’. Grammatical meanings are in lower case Roman if they are part of the meaning of the stem, which is not a suppletive form, e.g. *theké* {3IPFV:du.sit} ‘two people sit’.
5. Dene Słı́né data are transcribed in the official Dene Słı́né alphabet. The corresponding IPA symbols may be found in Appendix B.
6. An asterisk indicates an ungrammatical form or semantic incompatibility. To avoid many redundant examples, a word in diamond brackets can be substituted with the immediately preceding word, unless asterisked: *dogs* ⟨*rabbits*; \**deer*⟩ *have paws*.
5. When a wordform is segmentable but the author prefers not to show the analysis because it is irrelevant, the morphs are listed with a colon between each one: *tegha* {INCEP:3IPFV:sg.walk}, instead of *te-ø-gha* {INCEP-3IPFV-sg.walk (IPFV)}.
6. Suppletive forms are indicated in parentheses in small caps after the root, e.g. *honéltq* {3PFV:teach (PFV)} ‘she taught’, but this information is omitted if irrelevant.



*To the Dene people of Dillon and elsewhere,  
for their kindness and for their will to keep living and  
speaking the Dene language*

and

*To my parents*



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# INTRODUCTION

## 1 COMPARATIVE SEMANTICS

**1.1. Questions and Goals.** Many people are drawn to linguistics by a sense of wonder at the immense diversity of human languages. The rich variation in vocabulary, morphological structures and sound combinations, as well as the sheer number of living languages, is dazzling and fascinating. Of course, if we can even speak of the “diverse varieties” of something, in this case human language, there must be some universal and unchanging “thing” which underlies all of its unique instances — human Language. To wonder about the nature and extent of linguistic diversity is therefore to wonder at the same time about the linguistic and conceptual unity of humanity. One of the most important tasks of linguists is to sort out the difference between the universal and likely innate features of Language from the wealth of culturally variable, learned facts about individual human languages. Only when we have compared many examples of natural languages can we form a hypothesis about the traits Language must possess.

The search for a common core of Language has often focused on the idea of a Universal Grammar underlying the syntax of each natural language, proposed as the component which would give language its creative and infinite nature. As the famous poverty of the stimulus argument illustrates, knowing a language cannot be simply knowing a list of data sets. Instead, it must be to carry in one’s mind a dynamic system for interpreting and creating novel utterances. Language cannot be in the lexicon at all, it is said, because the lexicon is obviously the part which differs most completely between languages. Would it therefore be correct to say that mastering the syntax and morphology of a language is what is required to “know” that language? While such a description certainly constitutes a necessary part of this knowledge, we cannot say that grammatical knowledge is sufficient to know natural language  $\mathcal{L}$ , as a linguist can know the grammar of a  $\mathcal{L}$  without knowing how to speak it fluently. Is knowing a language

then to hold in one's mind an adequate list of its lexical entries, in combination with the grammar? Even this, however, seems to be insufficient. A learner of a foreign language may know the grammar and enough of the words to communicate, but will arrange them in combinations that mimic his or her native language rather than the target language. This sort of interference is caused by interlinguistic differences is pervasive and not limited to phraseologized language.

Consider an English speaker who is learning a Native American language like Dene Sųliné (Canada, Athabaskan family; ISO code CHP<sup>1</sup>). The learner would be at a loss to express many simple ideas if his sentences were based on the semantic structures of English. One such simple utterance might be "I'll give you a cup of tea". The learner of Dene, knowing the words *lidí* 'tea' and *tth'ái* 'cup' as well as the grammar might venture to verbalize "cup of tea" as *\*lidí tth'áié* {tea cup:CONS}<sup>2</sup> or *\*tth'ái beyé lidí*{cup 3:in tea}. In the proper Dene Sųliné sentence, however, the entity word 'cup' does not appear at all. Instead, one says:

- (1) *lidí newaska*  
*lidí ne-was-ka*  
 tea 2OB-1OPT-handle.small.container  
 'I'll give you a cup of tea'

The verb root *-ka* denotes not the act of carrying nor the transfer from the first person to the second person, which is indicated by the prefixes, but the shape and material of the object, in this case a small, full container. A more literal translation would be "I will small-container you [with some] tea". This is interpreted as referring to a cup rather than to a plate, because it is part of speakers' encyclopedic knowledge that tea is drunk from cups; if in the same sentence *lidí* were replaced with *etsís*, a traditional food made

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<sup>1</sup> Taken from the Web version of the Ethnologue ([www.ethnologue.com](http://www.ethnologue.com)).

<sup>2</sup> The term "construct state", abbreviated CONS, is not used in the Athabaskanist literature. This marker is required by a noun syntactically governing another noun or clause. This suffix, which exists in various northern Athabaskan languages, is referred to as the "possessed" suffix in Wilhelm & Saxon (2008).

of shredded dried moose meat, it would be interpreted as referring to a small plate or plastic container. The same (extralinguistic) conceptual situation is rendered with two entirely different linguistic semantic representations in English and in Dene. Therefore, neither semantic representation is innate or universal; both are simply artifacts of a given language community. Clearly, “knowing the language” is not simply a question of knowing the syntax and morphology, or even the lexical items, but knowing how to represent conceptual situations as meanings and then as lexical units, and knowing which meanings are important enough in the language to be nameworthy in the first place. Indeed, separating lexical knowledge from conceptual knowledge is as important a task as separating the Universal Grammar from particular language grammars, as Chomsky (1965: 160) clearly acknowledges: “It is important to determine the universal, language-independent constraints on semantic features — in traditional terms, the system of possible concepts. The very notion of ‘lexical entry’ presupposes some sort of fixed, universal vocabulary in terms of which these objects are characterized...”.

This remark hints at the mistake of viewing the lexicon as a mass of material with no structure, and nothing universal or combinatorial in it. If we can learn new words from our own language, or from a second language, our lexicon must be constituted in such a way that new meanings can be integrated as configurations or parallels of previously known meanings. The lexicon, in addition to the grammar, must therefore have some universal base or structure, and it is only when we have understood this organization that we can appropriately characterize natural language lexica. Lexical semantics should therefore be viewed as proceeding from a similar scientific basis as grammatical analysis, and as being complementary to it as an essential part of describing Language and natural languages.

Anna Wierzbicka, whose work has constituted one of the deepest and most typologically diverse searches for lexical universals in modern linguistics, reminds us of how far back this tradition of searching for a universal “alphabet” of human concepts and word meanings stretches. Wierzbicka (2002) cites d’Alembert’s entry for “dictionnaire” in volume IV of the *Encyclopédie* (1754) where he hypothesized about “les mots originaux et primitifs” — meanings common to all cultures which would constitute a universal alphabet of human thought. Wierzbicka’s work takes this idea far

beyond a simple awareness of the necessity of finding this common element in lexica; she in fact proposes an open-ended and empirically justified list of universal semantic primitives, which she claims can be combined to form the infinite variety of linguistic meanings in various languages. Cross-linguistic semantics aims to make a systematic description of how extralinguistic situations are realized as a configuration of linguistic meanings, and in turn how this linguistically specific configuration is translated into actual lexical units of a natural language. The mission of cross-linguistic semantics is therefore two-fold: on one hand, analysts compare meanings in words belonging to different languages and seek a common psychological or conceptual basis on which such a comparison could rest. On the other, the semanticist seeks to elucidate the degree and manner to which comparable semantic fields, or (quasi-) comparable words differ between languages, as a result of structural or cultural differences. While this is a field which is attracting more and more research as the urgency of general language documentation increases, as linguists we are still at the foot of the mountain as far as systematic, formal description of lexica is concerned.

To get the fullest idea of cross-linguistic lexical semantic variation, one would need to compare a variety of languages that are geographically separate and historically unrelated. It would also be important to choose languages spoken by speech communities with (at least historically) very different forms of social and sociolinguistic organization. For example, a language spoken in an urban mass society and one spoken by a small hunter-gatherer nation whose culture was based on extensive shared knowledge and face-to-face communication would likely have very different lexica, even if the languages were genetically related.

This work presents a lexical semantic and lexicographic study of Dene Słı́né, a native Athabaskan language from northwestern Canada. The Athabaskan languages constitute one of the most geographically extensive of the language families of native North America, covering an area which stretches from Alaska and the Arctic coast to the southwestern USA, where Navajo and Apache are among the most prominent Native American languages. With between 8,000 and 15,000 living speakers, Dene Słı́né is one of the major extant languages of the Athabaskan family. It belongs to the Northern branch of the family, which covers the Canadian as well as the Alaskan



language groups. Its closest relatives are Dogrib (Tłı̄chǫ), North and South Slavey as well as, more distantly, Beaver, Sekani (Tsek'enne), Tahltan, Carrier and Tsuut'iina, among others.

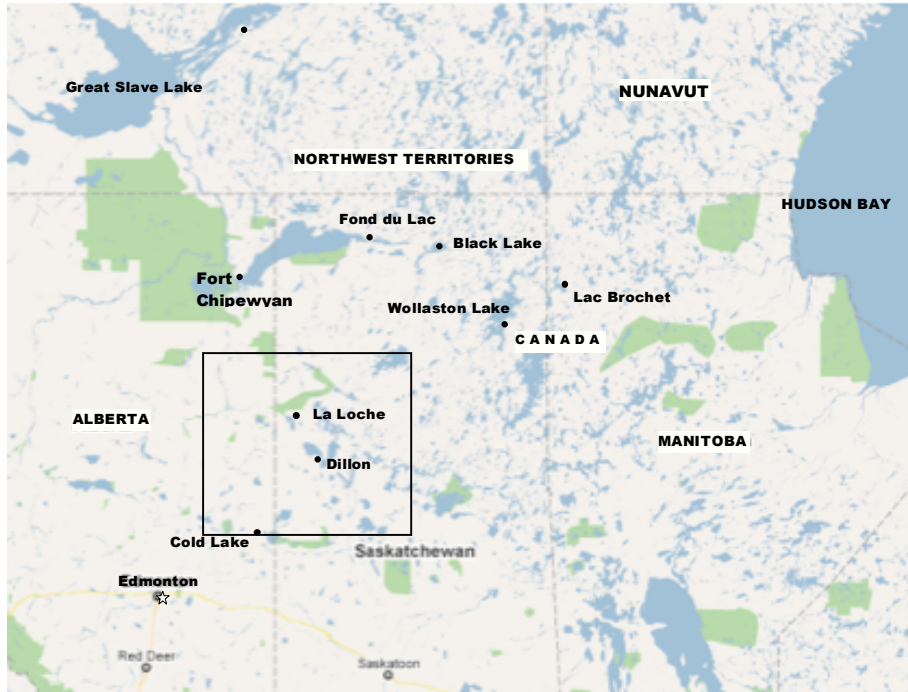
For a speaker of a European language like English, few languages could be as challenging and as interesting to learn as an Athabaskan language. Rich in morphology, Athabaskan languages are “polysynthetic”, containing verbs with an informational content closer to that of a clause in English. While this type of morphological structure may appear alien to some Europeans, this is not an unusual linguistic structure in the Americas. What makes the Athabaskan languages morphologically unique, however, is that the verb is not built in a concatenative way but is analyzed as a “template” whose elements are ordered in a seemingly unpredictable way. Many “prefixes” are only so etymologically, as in the synchronic language they constitute discontinuous stem elements that must be learned as part of the verb’s unchanging form.

Aside from structural considerations, the social and cultural context in which Dene languages came into being differs greatly from that of European languages. Dene peoples traditionally lived in small groups who shared resources and lived off the land in the boreal forest, tundra and lakes which cover their territory. Perhaps because the cultural and social history of northern Athabaskan peoples differs markedly from that of Europe, Dene lexical items often contain unique meanings, presuppositions or connotations with respect to English. Languages are born as tools to communicate within a given culture. Words are coined according to the needs and interests of the speech community and what it finds noteworthy in its collective experience over the centuries. The vocabulary for physical description, emotions, character, weather, as well as the position and movement of people and objects are among the domains of vocabulary which show significant differences with respect to European languages. Studying the lexicon of a Dene language in this way is therefore a rewarding journey of both scientific and cultural discovery.

**1.2. The Current Study.** This work presents a formal description of part of the Dene Słı̄né lexicon, including lexical entries for over 200 lexical units. The first goal is to try to show, for this sample, how the mostly non-linguistic conceptual structure is

realized as a set of linguistic meanings, or semantic structures, and how these semantic structures are in turn translated into Dene Sų́liné lexemes and phrasemes. The second goal is to elucidate the particular patterns which emerge from this analysis, especially to the extent that they differ from English, and finally to correlate the meanings salient enough in Dene to be realized as lexical units with on cultural and historical patterns of the speech community which may have influenced the lexicon.

All data used here comes from the on the variety of Dene Sų́liné spoken in Dillon, Saskatchewan, a community located near the border with Alberta on Peter Pond Lake, by car about six hours northwest of Saskatoon. Dillon is the population center of Buffalo River First Nation and has about 1,000 inhabitants, virtually all of whom are Dene Sų́liné. The author visited this community from August to December, 2008, during which time he collected texts and conducted numerous elicitation sessions with over 10 speakers, men and women, mostly between the ages of 50 and 80, who generously offered their time to this project. Some additional clarifications and verifications of the data in the entries were provided by the same speakers over the phone during 2009 and early 2010 as well.



**Map 1. Dene Communities in Western Canada**  
(map adapted from Google Maps™, maps.google.com).



**Map 2. The Southern Dene Area**  
(map adapted from Google Maps™, maps.google.com).

## 2 THE DENE SŪLINÉ PEOPLE AND LANGUAGE

The Dene Sŭliné<sup>3</sup> are one of the most numerous and widely distributed indigenous peoples or First Nations of western Canada, and tens of thousands of people of Dene Sŭliné ancestry live across the region. The Dene Sŭliné are part of a group of linguistically and culturally similar Athabaskan peoples in northern Canada collectively known as the Dene, including the Dogrib, Slavey and Dene Dhá tribes, among others. These Dene peoples are also related to more distant Arctic and Alaskan Dene peoples such as the Gwich'in, the Sekani, the Ahtna and the Koyukon, as well as to the Navajo and Apache peoples of the southwestern USA. Any of these peoples may be referred to as “Dene” in certain contexts. Dene Sŭliné also use the term “Dene” both for their own local tribes and to refer to Athabaskan people generally. In this study, “Dene” will be used as a shortened version of Dene Sŭliné since this work is concerned exclusively with the Dene Sŭliné of northern Saskatchewan.

**2.1. Traditional Society.** The Dene Sŭliné were traditionally hunter-gatherers who used land covering a vast part of subarctic western Canada, extending from Hudson Bay in the west across northern Manitoba and Saskatchewan and extending into northeastern Alberta and the southern edge of the Northwest Territories, the Dene Sŭliné “heartland” being between Lake Athabaska and Great Slave Lake. Living between the boreal forest and the tundra, the Dene had many resources at their disposal. People lived by hunting the barren-ground and woodland caribou, as well as on fishing

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<sup>3</sup> The Dene Sŭliné are known as the “Chipewyan” in much scholarly literature, but most Dene Sŭliné are offended by this name, which comes from a Cree word meaning “pointy clothing” and which has roots in the historical tensions between the Dene Sŭliné and the Cree. Because of this negative connotation, I will always refer to the Dene Sŭliné by their own name, which means “the original people” or “the true people”.

at the many lakes. The diet was supplemented by gathering plants, berries, and hunting small game animals.

Dene languages formed a dialect continuum (see Krauss 2000 for a discussion of pre-contact Athabaskan languages and identities). Traditional Dene social organization was local and probably based on kinship and sharing of resources (Vanstone 1974). Because European-introduced diseases decimated the indigenous populations and the European fur trade transformed their economic activities in the 18<sup>th</sup> century (for an overview, see Abel 1993), we cannot be certain about every detail of pre-contact tribe and band organization. However, anthropologists have posited three main levels of social organization for western subarctic peoples. Vanstone posits the local band, the regional band and the task group as dominant forms of social organization in northern Athabaskan societies. According to Vanstone, the regional band was long-standing group of hundreds of people usually linked by marriage and kinship who traditionally hunted over a large established territory. The regional band gathered for part of the year for activities that required hundreds of people to accomplish, such as caribou pens or some fishing techniques, as well as to exchange information and marriage partners. It is not clear whether the regional band corresponded closely with any linguistic division. For most of the year, the regional band split into local bands each comprising two or three nuclear families who hunted and fished together following a leader, while keeping in sporadic contact with the other local bands. A task group was a temporary group of varying size which gathered to exploit a resource and which was probably based on skill as well as kinship. Dene languages were part of a dialect continuum, and overlaid on this was extensive travel and multilingualism as different Dene groups which grew up in contact with each other likely mastered multiple language varieties.

Direct contact between the Dene Sų́líné and Europeans began in the early 18<sup>th</sup> century (see Abel 1993 for an overview of 18<sup>th</sup>-20<sup>th</sup> century Dene history). In 1670 Britain had guaranteed the Hudson's Bay Company (HBC) exclusive trading rights in what it referred to as Rupert's Land, covering the entire Hudson Bay drainage system. While this covered the eastern edge of the Dene Sų́líné lands, most Dene territory was found outside of the HBC lands in the so-called Northwest Territory, which the British did not clearly claim to control. The Dene of the boreal forest may have been displaced

south by Cree people moving west with the fur trade. Trade between the British and Dene peoples began sporadically, and gradually increased through the 18<sup>th</sup> centuries and accelerated in the 19<sup>th</sup> century. In 1868 the British government sold Rupert's Land and the Northwest Territory from the "control" of the HBC to the Dominion of Canada which united them as the "Northwest Territory" in its new Confederation. Immediately afterward came the numbered treaties between various First Nations and the Canadian government, resulting in the first Euro-Canadian state presence in the region and instituting the reserve system. At the same time, the Canadian government was dividing the part of the Northwest Territory south of the 60<sup>th</sup> parallel into the provinces of Manitoba, Saskatchewan and Alberta. By 1908 most Dene Sų́líné communities were on or near reserves divided across areas governed by Treaties 5, 6, 8 and 10 and divided across three Canadian provinces and one territory.

In the 1830s and 1840s, European linguistic and cultural influence was also brought in by Catholic and Anglican missionaries who arrived with the fur traders to try to convert the Dene to Christianity (while competing against each other for converts). By the end of the 19<sup>th</sup> century, Roman Catholic and Anglican missionaries had already converted virtually all of the Dene to Christianity, but Dene people kept many of their traditional beliefs alive as well. Priests and nuns provided some religious and secular education, often in the Dene language as few Dene spoke English. In the early 20<sup>th</sup> century, the churches' strategy shifted from local evangelization and native literacy to total cultural and linguistic assimilation through a coordinated residential school system, which (among other social forces) resulted in massive cultural and linguistic disruption for the Dene Sų́líné in the 20<sup>th</sup> century and continuing today. The current sociolinguistic status of the language is therefore a result of this period.

**2.2. The Southern Dene Sų́líné Region.** Because the Dene Sų́líné lands were so vast, different Dene cultures existed in different areas. This thesis is concerned with the Dene Sų́líné of Dillon, Saskatchewan, located on Peter Pond Lake at the southern edge of the Dene Sų́líné language area. The southern Dene who lived around La Loche, Ile-a-la-Crosse and Peter Pond lakes had a lifestyle quite different from their caribou-

hunting counterparts in the Athabasca region who are the focus of many linguistic works on the Dene, such as Li & Scollon's *Chipewyan Texts* (1976). Unlike the bands of the rocky sub-arctic, southern Dene Sų́líné lived completely in the boreal forest and their main resource was moose, which unlike caribou are solitary animals. The southern Dene may therefore have had less need to form massive regional bands to hunt caribou and their social organization may have been even more individualistic and local. The southern Dene Sų́líné also had much closer contact with the Cree, and not infrequently intermarried with them in addition to fighting with them. It was also the Dene Sų́líné living furthest to the south who were most affected by a settlement-style frontier of agricultural Europeans. All of this means that the traditional and modern culture of the Dene Sų́líné from the Dillon area differs markedly from the Dene Sų́líné culture of the Lake Athabasca region, which is more prominent in the scholarly literature.

**2.3. The Language.** The Dene Sų́líné language is spoken in over 20 communities scattered across a huge territory in northwestern Canada, from eastern Alberta to Hudson Bay, and from Cold Lake and Dillon up to the Northwest Territories. The exact number of speakers is unclear, due in part to the conflicting uses of the terms “Dene” and “Chipewyan” on government censuses. Cook (2004) claims there are 15,000 speakers of Dene Sų́líné, which has been questioned by de Reuse (2006) as too high. As the town of La Loche, Saskatchewan alone is majority Dene-speaking and has several thousand residents, and assuming that the fluent speakers in most other communities includes anyone over 35-40, the current speaker population might be around 10,000.

The Dene Sų́líné language is historically part of a dialect continuum which shades into the Slavey languages in the Northwest Territories and is quite similar to Dogrib as well. Dividing Dene peoples into mutually exclusive nationalities and languages is a bit artificial. As described by Krauss (2000), many Athabaskan languages formed a dialect continuum, and peoples probably did not have a concept of themselves as a “tribe” based only on language. Dene people traditionally lived in small groups based on

kinship and resource sharing (Vanstone 1974). Dene families travelled widely and came into contact with other people, so many Dene grew up learning not just the variety spoken by their immediate family but those of the surrounding groups with which they had contact. Intermarriage and multilingualism extended to non-Dene groups in some places: in Fort Chipewyan, there was such extensive intermarriage between Cree and Dene people before the 20<sup>th</sup> century that many residents had a mixed identity (Li & Scollon 1976). In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, some Dene also married Métis people, of mixed Cree and French-Canadian ancestry, adding a distinct French influence to the language.

Nonetheless, today Dene Sł́liné seems surprisingly unified for a language traditionally spoken over such a large area (about the size of France). While speakers can instantly recognize each others' local accents and are often surprised (or amused) by the number of different words, people from every Dene community can largely understand and be understood by all the others.

The data cited in this thesis are from the variety of Dene spoken in the area of Dillon, Saskatchewan. Thorough and definitive Dene Sł́liné dialect studies have not been undertaken, so classification of the Dillon dialect can only be tentative. Usually people speak more like the people in other towns with which there is frequent communication and intermarriage, which would associate Dillon with Janvier and Cold Lake in Alberta, and the towns of La Loche and Patuanak in Saskatchewan. People from Dillon tend to have less frequent contact with the Lake Athabasca region or with other northern fly-in communities.

**2.4. Sociolinguistic Status.** The residential school era was a turning point for the Dene language. Until the mid-20<sup>th</sup> century, most Dene people spoke only Dene. People followed a seasonal nomadic cycle with their families, and had limited contact with white society. The contact they did experience was usually with HBC traders and missionaries who lived in the Dene region and had to learn some Dene to communicate adequately. Even Catholic mass was available in Dene, however imperfectly learned by some priests. In most economic and social situations, Dene tended to be used exclusively. The return of the residential school survivors would have introduced the



first people who spoke English fluently, and who may have been semi-speakers of Dene. However, these people would have been forced to relearn Dene or readapt to using it most of the time in Dillon. This generation, which grew up in the late 1920s and 1930s, taught their children Dene. Some people, however, may also have taught their children some English. Many residential school survivors may have internalized negative attitudes toward speaking Dene as a result of their experience.

The oldest Dillon residents who did not grow up speaking Dene and who do not speak it today were born in the late 1960s. Soon after this, electricity came to Dillon and with it television. Some speakers report a sharp rise in Dene-English codeswitching among Dene children at this time, and a shift toward viewing English as more prestigious than Dene. Even so, at this time there must have been a steep decline in mother tongue transmission, because many people in their 30s today are only semi-speakers of Dene who tend to use Dene only when speaking with older people. The Dene community over 40 is essentially characterized by diglossia, with English used exclusively in formal, technical and academic situations as well as in passive entertainment products such as movies and television, and Dene used in informal conversation in the home and in traditional activities. Only English is used in written communication.

With few exceptions, people under 20 in Dillon speak to each other in English. Most teenagers, and some small children can understand a lot of Dene, but will not speak it. One often hears Elders<sup>4</sup> ask questions or call out commands in Dene to young people who respond in English. Teenagers from La Loche who speak Dene fluently sometimes visit Dillon, introducing a little Dene into young peoples' conversations. The Dene language is currently taught as a subject at all grade levels, but teachers have access to few materials other than what they can find the time to create themselves. While most young people do not regularly speak Dene outside of the classroom, the vast majority of high school students surveyed view the language positively, insisting that it

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<sup>4</sup> In the context of Canadian First Nations, "Elders", as distinct from "the elderly" or "seniors" generally, are those older individuals who the community recognizes as having great wisdom, spiritual insight or knowledge of traditional Aboriginal culture; they are usually considered by Aboriginal communities as the most authoritative representatives of traditional culture and linguistic norms.

is a central part of the Dene identity to be learned and preserved. Many Dene people at all ages have expressed concern about language shift and interest in language revitalisation efforts, to which this research has been linked.

### **3 STRUCTURE OF THIS THESIS**

This thesis is divided into two parts. Part 1 contains a detailed description of the theoretical foundation, while Part 2 presents the results of the study. Chapter I contains a review of previous lexicographic and linguistic studies of Athabaskan languages which are relevant to lexical semantics. The first section of Chapter II contextualizes Meaning-Text Theory (MTT) in the general field of lexical semantics generally, touching on MTT's treatment of some important debates in semantics which have consequences for practical lexicography. Section II-2 contains a more detailed description of Meaning-Text semantics and lexicography, including a lot of terminology and formalisms used later in the thesis. Chapter III presents the semantic and syntax zones of the Dene lexical entries, organized by semantic field. Chapter IV illustrates and paradigmatic and syntagmatic lexical relations of the lexical units in the sample. Chapter V provides some speculation about the role of linguistic typology and lexical relations. Linguistic typology is considered in a broad sense, in terms of morphological structure but also from a sociolinguistic perspective insofar as how the very different social and historical history of the Dene language might result in very different frequencies of some lexical relations with respect to European languages.

## CHAPTER I

### Athabaskan Semantics and Lexicography

There is such a wealth of literature about the many Athabaskan languages that it is impossible to summarize it exhaustively here. This discussion will therefore be limited to published materials about Athabaskan languages that are relevant to the current work, which concerns lexical semantics and theoretical lexicography. While little work has been done on this precise topic on Dene S̄uliné, there are at least two areas of discussion in Athabaskan literature that have important consequences for how the lexical items should be defined and portrayed. The first area comprises discussions in formal linguistic studies about the distinction between the Athabaskan verb stem (the unit of analysis of most of the lexical items here) versus inflected and derived verb wordforms. Secondly, there are a number of previous dictionaries of Athabaskan languages, which implicitly treat the verb stem and other lexical items in contrasting ways. While this thesis concerns lexicography at a more conceptual level, the framework of this thesis has important consequences for practical lexicography, and indeed was developed partly to respond to the requirements of the latter. It is therefore useful to contrast the representation of lexical items in practical lexicographic work with the way they would be portrayed in an Explanatory and Combinatorial Dictionary (ECD) of Dene.

#### 1 THE LEXICAL UNIT IN FORMAL LINGUISTIC STUDIES

**1.1. Studies of Dene S̄uliné.** Most of the lexical units described in the current study are verbs stems. The Athabaskanist literature in general is characterized by a concentrated focus on the verb and its structure from both a morphological and semantic perspective. The contrasting models of the Athabaskan verb structure which can be found in the literature have consequences for what is considered a lexical unit, the basic unit of analysis in this work. There are several reasons for this strong focus on the verb.

First of all, in Athabaskan languages the verb constitutes the most significant lexical class in terms of the sheer number of lexical items. Furthermore, on the level of semantics, there has been much critical debate in the literature about which parts of the verbal wordforms should be considered the stem as opposed to derivational or inflectional affixes. Athabaskanists have disagreed over which parts of verbforms are learned and which are examples of synchronic morphological complexity. For example, Sapir and Hoijer (1967) refer to the “verb base” as the part of the wordform minus any inflection markers. The “theme” is then the part stripped of the fully productive derivational prefixes, and can in turn be divided into “thematic prefixes” and the “stem”, the root plus the classifier. In this work, a terminology is used, with the “verb stem” being defined here as something closer to the “verb theme” in the literature: the part of the wordform that is associated with the meaning that the speaker wants to express and learns as a unit, in contrast to cases where the speaker coins a new lexeme with the free derivational means of the language (see Section III-1.1).

Sapir’s career bridges the previous anthropological tradition and the rising formal structuralist school. Sapir had obtained his Ph.D. in anthropology and began his career studying the Athabaskan oral tradition before becoming increasingly focused on the languages themselves. Sapir’s interest in the region seems to have been inspired in part by his colleague Franz Boas, a specialist of northwestern Canadian (but not Athabaskan) languages. Sapir published numerous collections of texts in Native American languages as well as articles and monographs about historical and comparative Athabaskan morphology. He also wrote on Yana, Nootka, Algic, Takelma and Salishan languages. But his greatest passion was for the Dene languages. Sapir’s descriptions of individual Dene languages as well as his comparative work (for example, Sapir 1915) and his tantalizing speculations about the structural and typological origins of the Athabaskan family in his correspondence still constitute the foundation of Athabaskan linguistics.

The anthropological influence on Sapir’s work on the Athabaskan languages is quite noticeable and gave his methodological approach a balance which is appealing to modern language documentation goals. For Sapir, the best way of studying a language was to collect a massive body of traditional texts and then to produce from grammars





Slavey and Dogrib as non-mutually intelligible languages<sup>5</sup>, the grammatical studies and dictionaries made for these other languages are of great use to students of Dene Sł́liné. Rice (1989) is a massive grammar of Slavey and the most exhaustive grammatical description of a Northern Athabaskan language. Rice (1989) incorporates data from the many varieties of Slavey, some of which are quite close to Dene Sł́liné. Rice also published an excellent comparative study of Athabaskan morphology (2000) that, while truly pan-Athabaskan in scope, cites much data from Northern Athabaskan languages. This work is important not only for its description of the derivational and quasi-inflectional morphology historically related in each language, but for her innovative model of the Athabaskan verb: in contrast with the traditional template, Rice introduces the concept of semantic scope as a means of explaining interlinguistic variation in the order of the derivation and quasi-inflection markers. There has been relatively less work on the other northern Athabaskan languages. In addition to studies on Dogrib syntax, Saxon has published articles on the grammar and semantics of individual prefixes in Dogrib, including a study of the impersonal marker, here referred to as the “default human subject marker” (Saxon 1993) and of reflexive pronoun markers (Saxon 1990).

**1.3. Other Athabaskan Languages.** Despite the number of works cited above, the Northern Canadian branch of the Athabaskan family has received relatively less attention than the Alaskan and Southwestern branches. In Alaska, the Alaskan Native Language Center (ANLC) is a research and teaching center where several linguists write grammars, dictionaries and pedagogical materials in the native languages of that state, in addition to historical and comparative studies. Among the most influential works in this collection, one can cite Kari’s (1979) study on Athabaskan verb theme categories and Leer’s (1979) important historical reconstruction of Proto-Athabaskan

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<sup>5</sup> As noted in the introduction to this chapter, the term “Dene” is used variously to describe all these northern Athabaskan peoples with substantially similar languages, or to describe all Athabaskan peoples, or to describe specifically the Dene Sł́liné. To avoid ambiguity, in this work “Dene” will always refer only to Dene Sł́liné, the focus of this research, unless otherwise indicated.

verb roots. More recently Alaskan Athabaskan languages have been the objects of ANLC-based research, including a study of aspectual derivation in Koyukon (Axelrod 1993) and a grammar of the Tanacross language (Holton 2000).

The Southwestern branch, dominated by the Navajo and Apachean sub-branches, contains the largest Athabaskan languages in terms of absolute numbers of speakers, with more than 300,000 speakers of Navajo and 12,000 of Apache. After Sapir's early studies (e.g. Sapir 1967), and Hoijer's (1945, 1946, 1948, 1949), the most important work has been that of Robert Young (to cite one study among many, the detailed description of Navajo verb morphology in Young 2000), and a recent grammar of Apache by de Reuse (2006b). Midgette (1995) is a study of the semantics of the Navajo progressive in discourse. Smith (1996) is a review of the semantics of aspectual markers while Smith (2000) is an analysis of the verb stem (called the "verb base") in Navajo.

## **2 THE LEXICAL UNIT IN ATHABASKAN LEXICOGRAPHY**

A core priority of the theoretical approach used in this work (see Chapter II) is to build an analytical lexicon of natural languages which will clearly distinguish between forms which are learned as units and those which are freely composed via the productive grammatical means of the language. Although this seems like a common principle of linguistic description, when one is compiling a dictionary of an Athabaskan language, for which the status of the verb stem is a source of debate (see Section III-1.1), one must take a position and list lexical items by verb word or by verb root.

On a sociolinguistic level, the dictionaries can be divided into three groups: pedagogical dictionaries written by Christian missionaries for the purposes of translating religious materials from French or English into Dene languages, with other missionaries as the target audience; dictionaries compiled by professional linguists and destined to an academic audience; and various pedagogical dictionaries created by linguists in close cooperation with Dene communities or self-published by the Dene bands themselves as part of their school curricula and internal language planning



efforts. Community-based dictionaries noun dictionaries and other dictionaries designed for specific purposes which do not focus on the verb stem are discussed separately, in Section 2.3.

The existing dictionaries of Dene Sų́líné are all bilingual and unidirectional, usually from Dene into French or English. Many, however, contain English indexes of topics or translation equivalents of Dene keywords.

**2.1. Word-Based Dictionaries.** These are dictionaries which use a full verb stem (“verb theme” in Athabaskan linguistics) or an inflected verb word as the citation form. Most missionary dictionaries are of this type and were produced in the latter half of the 19<sup>th</sup> century. At that time, the Athabaskan peoples of northwestern Canada were the object of a rivalry between (English-speaking) Anglican and (French-speaking) Roman Catholic Oblate missionaries. The latter converted nearly all of the Dene Sų́líné villages to Catholicism in the 19<sup>th</sup> century and brought them under a francophone sphere of influence. The first dictionary of Dene Sų́líné was published in France in *Dictionnaire de la langue déné dinjié ou chippewyane* (1874) by Émile Petitot, a missionary in the region. Petitot's dictionary is from French into four northern Athabaskan languages arranged in left-two-right columns: Dene Sų́líné, two Slavey languages, and Gwich'in. In terms of format, the dictionary presents several challenges: Petitot heard and transcribed the Dene words as a French speaker, and failed to make several phonemic distinctions which did not exist in his language, such as the difference ejective versus non-ejective consonants. Petitot also failed to distinguish between some phonemes, such as /t/ and /d/ that can be found in French. Finally, while Petitot's dictionary is widely cited, it is unclear that he conducted a thorough study of Dene Sų́líné because the modern Dene Sų́líné speakers with whom I attempted to re-elicite Petitot's data found the vast majority of Petitot's wordforms incomprehensible and utterly different from any Dene Sų́líné which might be a translation of the French keyword, even though they easily recognized most words from other sources from the same time period. One wonders whether Petitot

mislabeled his group as “Chipewyan” (Dene Słíné) while it was in fact another language, or whether he generated the Dene Słíné entries by analogy based on the entries in the other languages, or simply using his own intuitions as a second language speaker of Dene Słíné.

The second missionary to publish a Dene Słíné dictionary was Laurent LeGoff, whose 1916 *Dictionnaire de la langue montagnaise* is based on what he learned with the Dene between 1880 and 1900. This unidirectional French-to-Dene dictionary seems to have been generated by trying to render the headings of a monolingual French dictionary in Dene, based on the presence of entries for words such as ‘emperor’ but no entry for frequently used native words like ‘tipi’. Vaster and much more phonetically accurate and consistent than Petitot’s dictionary, LeGoff’s dictionary also contains numerous verb paradigms. Although LeGoff’s data is still cited in academic articles, it seems that perhaps 40% of the Dene words he lists seem to have been generated by LeGoff himself, even in cases where a Dene equivalent of the French word was readily available. Many of the Dene words and phrases in the dictionary are based on calques from French. For example, ‘skin’ in English (or ‘peau’ in French) has two translations in Dene, *-tth’i* to describe the skin and superficial flesh of a living being, and *dheth*, which describes a disembodied hide of a skinned animal. In English and French, these are two senses expressed by the same signifier. LeGoff’s dictionary often uses the sense of ‘disembodied hide’ to refer to living people’s skin, e.g. *sedhéth* {1PO:hide:CONS} as the Dene equivalent of “ma peau”, ‘my skin’. ‘Bandage’ is rendered as *eya dhéth* {pain hide:CONS}, which would mean “bag of pain” in Dene; the correct of referring to this situation would be *dene kqé hecheth* {person wound:CONS 3IPFV:tie} ‘a person’s wound is tied up’. ‘Peninsula’ is rendered as *k’asjené nu*, lit. “almost island”, a rendering of the Latin etymology of *peninsula*, while Dene has a frequently used word, *hochéla*, for peninsulas and promontories. The Dene word for ‘rust’ is claimed to be *tsatsqané tsqané* lit. “excrement of metal”; in Dene to refer to the situation of ‘rust’ one would use the verb stem ‘to rust’, *dí...tsá*. Although it is clear that many of the words and phrases in LeGoff’s dictionary are unlikely to have been uttered

by native speakers, perhaps 50% of the entries (or their near-equivalents) were confirmed by native speakers during this research project.

At the same time that Petitot and LeGoff were writing, the Oblate missionaries produced a number of devotional works and hymn books in Dene Sų́liné, written in a form of syllabic writing. In the latter 20<sup>th</sup> century, Protestant missionaries produced a dictionary with little grammatical information, but with authentic data and a very good phonetic transcription (Elford & Elford 2001).

A few dictionaries by professional linguists have used inflected verbforms as citation forms. Among the dictionaries for Northern or Canadian languages of this type, one must mention the Dogrib dictionary by Siemens & Saxon (1996), perhaps the most usable dictionary of a northern Athabaskan language for non-specialists. For Navajo, the massive dictionary by Young & Morgan (1987) uses the first-person form as the citation form but contains an index of lexical units by verb root.

**2.2. Root- and Stem-based Dictionaries.** Most of the Athabaskan dictionaries by professional linguists have been of this type, which certainly reveals the most etymological information which is highly valuable for comparative studies. Of particular note is the excellent dictionary of Koyukon (Jetté & Jones 2000). The native speaker linguist Eliza Jones compiled this dictionary by checking and verifying a corpus of data from an early 20<sup>th</sup> century missionary dictionary by Jules Jetté, whose linguistic notes were far more accurate and culturally sensitive than the missionary dictionaries which appeared for Dene Sų́liné. The Koyukon dictionary is adopts a combination of ways of listing lexical items, as the main entry is by verb root, but is then followed by a series of full verb themes (“verb stems” in our terminology). The Ahtna dictionary by Kari (1990) contains over 6,000 entries with numerous examples of productive derivation and includes an English to Ahtna index. Kari’s Dena’ina dictionary (2007) is of similar depth and complexity.

**2.3. Other Athabaskan Dictionaries.** Some smaller pedagogical dictionaries have appeared for languages of the lesser-known and more endangered Pacific branch of the Athabaskan family. Of these, one should mention at least Golla’s (1996)

dictionary of Hupa. Sharon Hargus has compiled a topical noun dictionary of Sekani (Hargus 1986) and of Witsuwit'en (Hargus 1997) as well as an interlinearized collection of stories in the latter language (Hargus 1995). Rice (1977) is a noun dictionary of a north Slavey variety while Rice (1983) is a topical noun dictionary of another Slavey variety. Norwegian & Howard (2004) is a verb dictionary of South Slavey. All of the above dictionaries are unidirectional, from the Athabaskan language to English, except for the Dogrib dictionary, which is bidirectional. It should be noted, however, that virtually all of these dictionaries contain some type of English-to-Dene index.

Dictionaries produced by Dene communities themselves have been slow to appear. Schools in most Dene communities are trying to implement language preservation and revitalization programs, requiring a curriculum with pedagogical materials. Most of these are published informally and circulated among a few educators. Dene tribes have also produced a number of Web sites with generous word lists and texts, some accompanied by sound recordings. A council of Slavey First Nations produced their own dictionary, *Guzagi K'ugé* ("Our Language") in 1997.

In summary, Athabaskan lexicography contains a variety of currents which reflect conflicting sociological contexts and concrete purposes. In most dictionaries by linguists, Athabaskan verbs are presented as morphologically complex, and there is often not a strong concern about separating diachronic morphological combinations from synchronic ones. This follows a general semasiological tendency in Athabaskan and Americanist linguistics, or a focus on analyzing forms to arrive at their meaning. This choice has the advantage of revealing extensive etymological and comparative information. On the other hand, some dictionaries (mostly pedagogical) list only wordforms without any word-internal analysis. The current lexical semantic study, if translated into a partial Explanatory Combinatorial Dictionary (ECD) of Dene, would represent an additional type, one focusing on the synthesis of forms by speakers to express meaning rather than the analysis of existing forms. A Dene ECD would therefore list both "verb themes" and "verb stems" as keywords, according to whether the latter were autonomous signs in the synchronic language independent of any non-inflectional material.



## CHAPTER II

### Semantics and Lexicography: Theoretical Foundations

The overall purpose of this thesis is to associate given lexical units in Dene Sų́líné with particular meanings, expressed as lexicographic definitions, and to contrast quasi-synonymous definitions where possible. This correlation is complicated at both ends. First, there is no consensus in the literature as to what exactly a basic Dene lexical unit is, at least where verb stems are concerned. Second, the purpose and construction and indeed the validity of a lexicographic definition varies markedly according to the particular lexical semantic framework adopted. Up to this point, we have reviewed how the current study fits into the Athabaskanist literature, and it is certainly vital to make clear which Dene signifiers are treated as a units of semantic description (for the structure of the verb stem in this work, see Chapter III, Section 1.1). However, it is equally critical to outline exactly what the lexical semantic side of the study aims to accomplish as well as its context within lexical semantics.

Lexical semantics, perhaps more than any other subfield of linguistics, is characterized by an eclectic mix of goals and approaches. Sometimes these reflect particular problems and interests rather than a whole-language documentation approach. Some of the more prominent topics in semantics include investigation of the syntax-semantics interface and explorations into the structure of cognition underlying lexical items. Some semantic approaches, such as truth-conditional semantics pioneered by analytical philosophers such as Frege and Carnap, are more closely located in philosophy and logic than in linguistics proper. Currently, one also finds many studies dedicated to topics such as metaphor, metonymy and semantic extension, as one can find in the work of Langacker, Lakoff and Croft. Language philosophers Saul Kripke and Hilary Putnam have also identified problems with the concept of lexical definition and meaning as it pertains to certain classes of lexical items. So while the lexical

semantics literature is rich, varied and suggestive of multiple paths for future exploration, lexical semantics has remained less an articulated science than a common subject matter discussed by a heterogeneous mix of linguists, lexicographers and philosophers. In comprehensive reviews of lexical semantic theories, these heterogeneous projects are often treated as mutually exclusive models, even though they often deal with unrelated questions.

The current description of the Dene lexicon is anchored in the approach of Meaning-Text Theory (MTT), a relatively lesser-known approach with respect to some of the above theories. MTT emerged in the 1960s in Russia and is largely coterminous with the Moscow Semantics School, which began in connection with Soviet machine translation efforts and which therefore required an extremely detailed and accurate formal model of language in all its aspects. The creation and articulation of MTT was primarily the collective effort of three Moscow-based linguists, Alexander Zholkovsky, Igor Mel'čuk, and Juri Apresjan, whose early efforts resulted in Explanatory Combinatorial Lexicography (Zholkovsky & Mel'čuk 1965, 1966, 1967), also known as the Explanatory Combinatorial Dictionary (ECD) approach. While most MTT researchers, including Apresjan, have remained focused on semantics and lexicography, Mel'čuk's extremely prolific writings have extended a solid foundation for MTT in morphology and syntax. After his emigration to Montreal, Canada, in 1978, Mel'čuk produced much new MTT work in English and French. He continued lexicographic research after the 1970s, particularly with the French-language ECD (Mel'čuk *et al.* 1984; 1988; 1999) the Russian-language ECD (Mel'čuk & Zholkovsky 1984), and numerous other lexicographic articles and monographs. Mel'čuk's writing on morphology is extensive, particularly the five-volume *Cours de Morphologie Générale* (Mel'čuk, 1993-1997; much of this is condensed in Mel'čuk 2006a); important syntax works include the volumes Mel'čuk (1988) and Polguère & Mel'čuk (2007). *Semantics: From Meaning to Text* (Mel'čuk, to appear) is a large textbook on theoretical lexical semantics. The pedagogical application of MTT lexicography to second-language learning has begun to be addressed; see for example Mel'čuk & Polguère's *Lexique actif du français* (2007), the first general public dictionary based on

MTT concepts. With the publication of all of these works, MTT has gradually gained appeal and prominence as a tool for global empirical linguistic.

With its roots in semantics and lexicography, MTT adopts positions with respect to many of the major theoretical questions in lexical semantics. These choices have obvious consequences for how MTT's practical lexicographic description is carried out. Some theoretically charged terms like "semantic component" or "definition" need to be explained in their MTT context versus what they might mean in other approaches. Although MTT may be unique in certain aspects, readers may be surprised to discover that some of its goals and assumptions are shared with more dominant linguistic theories. In order to render this work accessible to any readers with an interest in lexical semantics and Athabaskan languages, it is therefore important to outline the particular assumptions and formalisms of MTT semantics before proceeding to the analysis of the Dene lexicon itself, so that the former may not obscure the latter. This chapter therefore has two goals. Section 1 provides the necessary background to MTT lexical semantics as compared with other approaches, for readers interested in semantics in general but unfamiliar with this particular approach. Sections 2 and 3 are aimed at readers familiar with MTT and discuss why the present work contributes to MTT itself by introducing a language family that has not been discussed in the MTT literature, one that is both typologically different and that comes from a very different cultural and sociolinguistic context with respect to the languages widely discussed in MTT semantic studies so far.

## **1 MEANING-TEXT THEORY IN LEXICAL SEMANTICS**

This section compares the tenets and methods of MTT with other major approaches to lexical semantics whenever the theoretical positions adopted have important consequences for practical lexicography. In these cases, Dene lexical items are referenced along with English ones to illustrate the correlation between the linguistic model and the lexicographic definitions.



**1.1. The Scope of Lexical Description in Meaning-Text Theory.** Semantic description cannot be separated from linguistic description generally. Linguists approaching the lexicon from a specific theoretical framework will approach this enterprise with a particular view of the syntax-semantics interface. As a result there is no consensus among linguists as to what information should be included in lexicographic description, as the difference between the grammar and the lexicon is often “a function of one’s theory” (Pawley 1985). MTT is an approach which is highly focused on lexicography and less on syntax, assigning to the lexicon a high informational content which includes information which counts as syntactic in some other theories.

The basic tenet of Meaning-Text Theory, as expressed by Mel’čuk in *Semantics: From Meaning to Text* (to appear) is the following:

Any act of linguistic communication between a Speaker and an Addressee involves three major entities:

- (a) A mental, or psychological, linguistic content that the Speaker wants to express via physical linguistic signals (and that can be received and understood by an Addressee); this content will be referred to as *meaning*.
- (b) A physical linguistic signal—acoustic, graphical, or gestural—that the Speaker uses in order to express the intended mental linguistic content (and that can be perceived and deciphered by the Addressee in order to get to this content); this signal will be referred to as *text*.
- (c) A mapping between meanings and texts, or a set of rules establishing correspondences between them; this set of rules, encoded in the Speaker’s (and the Addressee’s) brain, taken together with the set of meanings and the set of texts, is nothing else but a (natural) *language*.

Of language, only the signifiers, be they sound, graphic or gestural signs, are directly perceptible, as are the meanings (to each of us, because we choose them); the rest of language is obscured within the brain — language is a “black box” into which we cannot peer. Whatever language is and however it ultimately exists as architecture in the brain, it must constitute the link between the speakers’ meanings and their perceptible texts. This correspondence can be abbreviated as follows:

(2) A Meaning  $\Leftrightarrow$  Text Model of Language  
**language**

$$\overbrace{\{Meaning_i\} \leftarrow \text{correspondence} \Rightarrow \{Text_j\}} \quad | \quad 0 < i, j \leq \infty$$

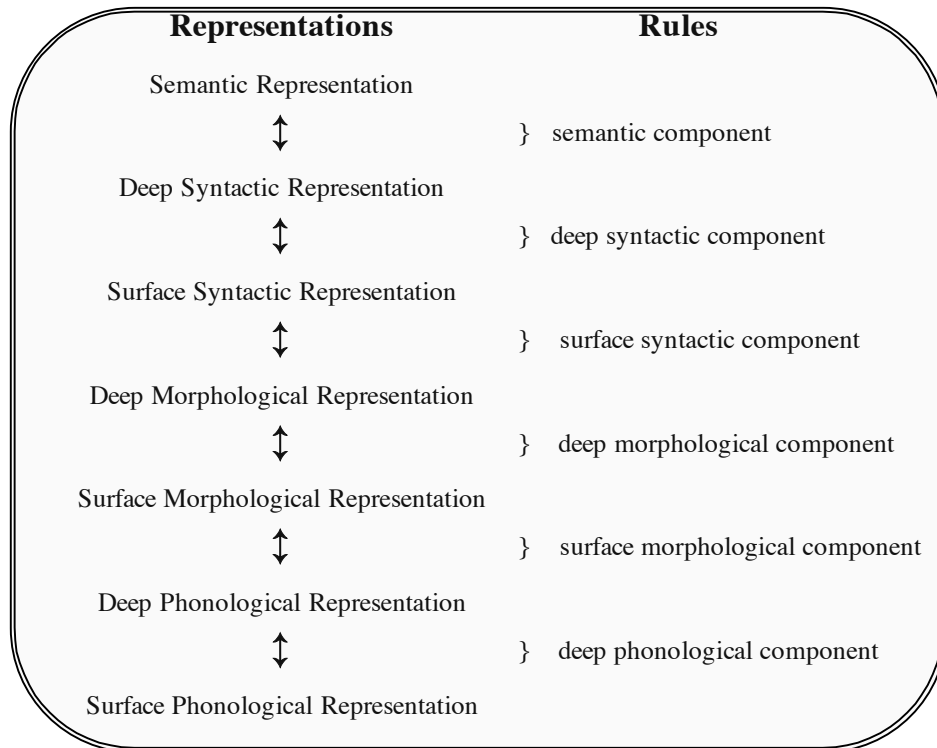
Linguistics, like quantum mechanics or cosmology, is a science which has as its object something which is not directly observable. To describe an object which we cannot observe directly but only by deducing its traits by observing its effects, scientists must have recourse to a model, “an abstract system of symbolic expressions” (Mel’čuk 1997a). A functional model does not claim to behave like the object of study in every respect. It merely seeks to represent those aspects of the object’s behavior or functioning which could explain the phenomena we see. Mel’čuk (1997a) cites the example of the Bohr-Rutherford model of the atom, which was not claimed to look like an atom but simply to model certain facts we can deduce about atoms based on what we know about matter.

What, then, should a functional model of language consist of? MTT is an equative model of language. As expressed by the central tenet of MTT above, language is simply described as a set of correspondences between an infinite but denumerable set of meanings and an infinite but denumerable set of texts. In this way, an equative model is in contrast with a generative model which seeks to represent the language component which generates all and only the grammatically correct utterances of a language and in which the focus is not on the lexical units which are learned but on language as a mental structure which enables the creative assembly of these lexical units into novel utterances.

MTT does not specifically deny the existence of Universal Grammar or an innate language faculty (cf. the Cognitive Grammar approach, and others). MTT simply refrains from making detailed claims what the architecture of Universal Grammar must be. The priority is shifted to fully describing the lexical semantic, pragmatic, morphological and syntactic facts about the widest array of natural languages. In this aspect MTT may resemble a return to earlier structuralist approaches. MTT also does not attempt to integrate data from diverse languages (or diverse structures within the same language) into a single abstract underlying form, but simply posits a typology of

relations (for example, syntactic or lexical semantic relations) which can be found in multiple languages.

The rules in an equative model like MTT link various modules or aspects of language in order to show how, starting from a semantic representation, one can arrive at a set of phonological representations, or texts. MTT rules are not dynamic and transformational, translating a mental structure or deep structure into surface structures (cf. classic phrase structure rules are followed by transformational rules in Chomsky 1965, or Merge and Movement followed by Spell-Out in Chomsky 1993). Equative rules are static and declarative, representing simple correspondences between the meanings and the sounds that express them, along with each logically inferrable intermediary level of representation (see Figure II-1).



**Figure II-1. Representations and Components in Meaning-Text Theory.**

Equative rules have no input and output of the rules in a traditional sense, but link wholly “other” levels of analysis. This is indicated by the bidirectionality of the arrows  $\Leftrightarrow$  in the rules that constitute each module. While the rules work in either direction,

MTT chooses to privilege the onomasiological direction, or the direction of synthesis: starting with the meaning, one proceeds to the tangible phonological representation. This is in contrast with the semasiological direction, or that of analysis. The central question is not, therefore, “What do lexical units  $L_1, L_2, \dots, L_n$  of this language mean?”, but “How does one express  $\text{Concept}R_1, \text{Concept}R_2, \dots, \text{Concept}R_n$  in this language?”. There are several reasons for this choice, amply justified in Mel’čuk (1993, 1997b, among others).

Once the speaker has started with a (mostly non-linguistic) configuration of concepts he or she wishes to express, linguistic meanings which correspond to these concepts are selected. The speaker juxtaposes these meanings freely and transparently in the case of a *free phrase*, in which each linguistic sign has the same signifier and signified it would have had outside of the phrase. The sum of this semantic and grammatical combination is called an *act of linguistic union*, represented by the symbol  $\oplus$ . The defining criteria of a free phrase formed by an operation of linguistic union are first that the signified has been combined unrestrictedly and regularly on the basis of the Conceptual Representation (see section 2.1 below), and second that the signifiers have also combined unrestrictedly and regularly according to the grammatical rules governing the combination of all lexical units (Mel’čuk 2006a: 8). (For a typology of non-free phrases, see Section II-3.1.3.)

One could call the MTT approach more “lexicocentric” than most linguistic currents. Lexicocentrism can be defined in the weak sense, as the constatation that lexical facts constitute numerically the vast majority of what must be documented in order to describe a speaker’s knowledge of a language. As Mel’čuk *et al.* (1995: 17) puts it, “les lexies forment... la partie primordiale de la langue. En exagérant quelque peu, on pourrait même dire que l’ensemble des lexies est la langue. En effet, une langue est constituée de lexies et de règles servant à la manipulation de ces dernières”. Or Mel’čuk (2006b): “MTT considers the lexicon as the central, pivotal component of a linguistic description; the grammar is no more than a set of generalization[s] over the lexicon, secondary to it”. There is also a stronger interpretation of lexicocentrism, one which suggests that the lexicon actually influences the content or functioning of the grammar, as the statement “le lexique d’une langue prime logiquement sur sa

grammaire” (Mel’čuk *et al.* 1995: 17) suggests, although such a claim could be interpreted as referring either to diachronic change or to some sort of synchronic relationship.

The lexicocentrism of Meaning-Text Theory is certainly partly due the fact that MTT, unlike most other linguistic approaches, has its roots in practical lexicography. To some extent, lexicocentrism and syntactocentrism appear as simply different sets of priorities reflecting equivalent ways of dividing up the linguistic facts, which differ mostly for theory-internal reasons.<sup>6</sup> This debate concerns which information is assigned to the lexicon versus the grammar. However, there seem to be a number of advantages to choosing a lexicocentric model, at least in a weaker sense of lexicocentrism. One concrete example is the treatment of syntactic combinatorial information often referred to as “event structure” outside MTT and known as the *government pattern* in the MTT framework. Event structure has been explored in great detail in a number of systematic descriptions and classifications, such as Levin (1993). In a classic insertion model of the syntax-semantics interface, lexical items are inserted at the bottom of syntactic trees that are formed at a prior stage. The lexical items are chosen according to their subcategorization rules which correspond to actant structure and subcategorization constraints. In this way, features like subcategorization or “verb categories”, classes which share an argument structure, must be posited to account for these combinatory patterns. In classic generative approaches, meaning does not motivate syntactic structure: “I am assuming throughout that the semantic component of a generative grammar, like the phonological component, is purely interpretive” (Chomsky 1965: 75). While event structure and subcategorization are lexically specified, their relationship with the lexicographic definition is generally not made explicit.

In a Meaning-Text model, semantic combination is closely linked to syntactic or morphological combination. This unity would explain as regular some features of syntactic combinatory patterns which a lexical insertion model might render more

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<sup>6</sup> So far, there seems to be evidence for influence in both directions, i.e. of lexical knowledge on syntactic knowledge and vice-versa, at least in the context of language acquisition (see the ample literature on “semantic” versus “syntactic bootstrapping”, especially Pinker 1989 and Gleitman & Landau 1994).

arbitrary or coincidental. The government pattern and its syntactic combinatorial requirements are not superimposed on the lexical meaning to the same extent, but often flow organically from the lexicographic definition. As a trivial example, the verb DIE could not be used with inanimate subjects not because of an arbitrary parameter but because the meaning ‘cease to live’ invokes such a subject. Another example is the treatment of many “optional” actants. If one places a stronger focus on the syntactic combinatorial requirements than on the meaning, one might underestimate the extent of polysemy of verbs and fail to meticulously sort out their subtly variant senses. This causes some actants to be viewed as optional when in fact there may be distinct quasi-synonymous verbs whose meanings may contain different sets of semantic actant. If the verb SHÉ...TI in the sentences *k’ani shéghesti* {just.now 1PFV:sg.eat<sub>2</sub>} ‘I just ate’ and *lue ghq shéghesti* {fish of 1PFV:sg.eat<sub>1</sub>} ‘I ate fish’ is considered to be the same verb or the same sense, then the object must be optional. If, on the other hand, the verb in *lue ghq shéghesti*, SHÉ...TI<sub>1</sub>, has the definition ‘living being X chews and swallows Y’, an object is always required. This sense can only be said if the subject is presumed to be eating a specific object. The presence of a second semantic actant is part of the definition. The sense SHÉ...TI<sub>2</sub> in *k’ani shéghesti* would be intransitive and telic, meaning ‘X consumes a meal’, in reference to habitual or planned acts of eating. The same difference exists between the English quasi-synonyms EAT<sub>1</sub> (*I ate an orange*) and EAT<sub>2</sub> (*let’s eat, then leave*). Because quasi-synonyms of EAT<sub>1</sub> lack the component ‘meal’, and cannot be extended to this sense, they cannot be used in the same context: *let’s \*devour* {*\*nibble, \*wolf down*}, *then leave*. In the MTT view, these differences do not appear as arbitrary parameters once the meanings have been properly analyzed and tested. Indeed, the syntactic combinatorial constraints are seen in MTT as important insights into the subtly variant meanings of the keywords. This one will find a proliferation of quasi-synonyms such as the various verbs meaning roughly ‘to be sad...’, ?ANE...?Á<sub>1</sub>, ?ANE...?Á<sub>2</sub>, ?ANE...?Á<sub>3</sub> in Chapter III. Of course these senses are united by a common element (see Section 1.3 of this chapter) but it is important to compare their subtle difference including in the number of semantic actants. In the lexical entries in this study, the strong link and frequent cross-referencing of the

lexicographic definitions and the government patterns is due to this concept of influence of the semantics on the syntax.

**1.2. Semantic Components in Meaning-Text Theory.** MTT presupposes the discrete character of meaning and this thesis will continually mention “semantic components” which are necessary and sufficient to obtain the meaning of the Dene keyword. This is liable to cause confusion because many readers will recall the “componential” approach truth-conditional semantics, which also invoked a “necessary and sufficient” set of conditions for rendering the meaning of a keyword. Some linguists have even gone so far as to speak of various “componential” approaches as a common school, despite the fact that this term is used in incompatible semantic traditions. For example, the following passage from Geeraerts & Cuyckens (2007: 144) lumps Plato, Aristotle, Locke and Carnap together under the umbrella of “necessary and sufficient conditions for their application”:

The traditional concept... is sometimes referred to as the Classical Theory of concepts, which has had a long history in philosophy dating back to antiquity (e.g. Aristotle 1984, Plato 1981; Locke [1697] 1960; Carnap 1978). Its main tenet is that concepts have definitional structure in the sense that they encode necessary and sufficient conditions for their application. For example, the concept ‘bachelor’ can be interpreted in terms of the Classical Theory as a complex mental representation that is composed of a set of features (semantic markers) such as male, adult and not married (see Katz and Fodor 1963)... I will discuss the ways in which Cognitive Linguistics developed a prototype-based conception of semantic structure that goes against Classical Theory

It is in fact inappropriate to conflate decompositional approach like MTT with truth-conditional decomposition in the sense of analytical philosophy.<sup>7</sup> “Decomposition” means something quite different in MTT with respect to how this term is used in truth-conditional semantics, to which MTT is not related. Analytical philosophers such as Carnap were interested in language as a symbolic system of utterances which, like mathematical statements, could express truth and knowledge about the referents. Utterances were described in terms of the necessary and sufficient truth conditions

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<sup>7</sup> Wierzbicka (1986: 307) notes, “sweeping attacks on ‘Western philosophy and linguistics’ based on vague references to an alleged ‘standard view’ and to unidentified ‘standard theories’ are, in my view, in questionable taste”. Haser (2005) offers a meticulous deconstruction of Cognitive claims about other philosophical schools.

under which the utterances could be true or meaningful. Sentences were taken to have the same meaning if they were true under the same conditions. The interest was in language as a means to learning about the referents (the world). Frege's sense/reference distinction (or Carnap's intension/extension) was important as a means of isolating the referent. The meaning of a word could be "decomposed", as Carnap did, by describing it in terms of meaning postulates, analytical statements such as (3) which could be listed so that the user of the language system could choose the precise set of referents to which the name could apply.

(3) (MP)( $\forall x$ )(bachelor(x)  $\supset$   $\sim$ married(x))

'For any X it is true that: if X is a bachelor, then X is not married'

Analytical semantics is mostly sentential; lexical meaning was important only to the extent to which it contributed to the understanding of the utterance. According to Marconi (1997: 8) lexical meaning not a focus of the analytical school also because the choice and interpretation of lexical units was considered a mechanical translative operation:

Another reason that structural issues prevailed was that there were thought to be *no* lexical semantic issues... Genuine objects have internal properties, and so do their names, but such properties are regarded as purely combinatorial... The internal properties of a name (whatever they are) are not conceived of as making up its 'semantic content': the semantic content (the *Bedeutung*) is just the object named, and as for sense, they have none. Everything else in language is composition.

MTT is the reverse of this sort of componential approach. Instead of focusing on the truth conditions necessary for the utterance to be true, MTT semanticists are interested in *linguistic* conditions under which a certain lexical unit can be used. In other words, MTT is interested in the meaning of lexical units for their own sake rather than to learn about the referents. In fact, MTT does not address the question of truth or absurdity at all. An untrue or bizarre meaning such as that of the sentence *Colorless green ideas sleep furiously* is odd because the speakers, with their extralinguistic knowledge, would find this combination of meanings odd, not because of anything in the meanings themselves. MTT instead posits the meanings of lexical units can (in most cases) be decomposed into a set of semantically simpler meaning components, *salva*



*significazione*, which constitute its paraphrase. The term *salva significazione* refers to the requirement that native speakers must feel that meaning is preserved and still communicated when the decomposition is used instead of the keyword.

Some linguists might assume that this sort of semantic decomposition must be subjective, perhaps culture- or context-dependent. As Riemer (2006) states, “Whether or not a word’s meaning has been successfully explicated, and its understanding thereby achieved, cannot be determined by the extent to which a proposed explication conforms to a pre-established scheme: ... [it] is sensitive to ... the cognitive, cultural, and historical contingencies of each individual in the learning experience. This is a truism which I take to be so obvious as not to require any argument”. MTT posits that there are objectively more and less successful semantic decompositions. This is based on tests of semantic simplicity, a concept developed in Mel’čuk (1995), which I will follow here. When comparing the semantic complexity of two lexical units (LUs), if  $LU_1$  is definable in terms of  $LU_2$ , but not the reverse, then  $LU_1$  is semantically more complex than  $LU_2$ . In the following pairs the latter member is semantically more complex and the former is simpler: *close* ~ *open*, *wet* ~ *dry*, *Islam* ~ *Muslim*, *Indiana* ~ *Hoosier*, *linguistics* ~ *linguist*. This is empirically testable and falsifiable. If we attempt to define *wet* as ‘with / having liquid’ and we suppose that *wet* is semantically simpler than *dry*, we will define *dry* in terms of *wet*, i.e. *dry* = ‘not’ + ‘wet’, or more fully as *dry* = ‘not with/having liquid’, which seems to work. If however we supposed that *dry* was semantically simpler than *wet* and tried to define *wet* as ‘not’ + ‘dry’, then it is unclear what *dry* could be defined as. If we said that *dry* meant ‘not with / having liquid’, then we are back where we started. Similarly, if we decided that *Islam* was semantically simpler than *Muslim*, then we could define *Muslim* in terms of *Islam*, i.e. *Muslim* = ‘one who practices Islam’. In turn, the definition of *Islam* would be ‘a religion which... [a list of its specific features]’. If we chose the reverse, that *Islam* could be defined in terms of *Muslim*, i.e. *Islam* = ‘the religion practiced by Muslims’, we would have to add the differentia to *Muslim*, making its definition ‘someone who practices a religion which... [specific features]’. Therefore, a full explication of *Islam* would be ‘the religion of the people who practice the religion which... [specific features]’, which is obviously redundant and should be shortened to ‘the religion which...’. Similarly,

*Indiana* ‘a US state located...’ is semantically simpler than *Hoosier* ‘someone who lives in Indiana’, rather than *Indiana* = ‘place where *Hoosiers* [people who live in Indiana] live’. *Linguistics* should not be defined in terms of *linguist*, i.e. ‘a science practiced by linguists’ (even though sometimes it *feels* that way). Rather, *linguistics* = ‘the science of language’ and *linguist* = ‘someone who studies the science of language’. So semantic simplicity emerges naturally through analysis and provides a clear answer as to which word is simpler than the other.

In Dene one can similarly posit that *dáhháre...t̩* ‘to open’ is also semantically more complex than *dáre...t̩* ‘to close’. Interestingly, the morphological complexity of some Dene wordforms mimics their semantic complexity, as in the above case where the verb meaning ‘to open’ is (historically) derived from the verb meaning ‘to close’ by adding the prefix *hhá-* ‘out’. Sometimes, Dene lacks the more semantically complex member of an antonym pair, as for the pair *na...tser<sub>1</sub>* ‘to be (physically) strong’ versus *na...tser<sub>1</sub> íle* ‘to be weak’, literally a simple negation of ‘to be strong’. In this case, the morphological re-analysis provides a visible clue of the underlying semantic re-analysis. It would be quite misleading to imply that morphological complexity always indicates semantic complexity or vice versa, as the two forms of complexity or simplicity are logically independent of one another.

Meanings can be decomposed into a configuration of simpler meanings that are necessary and sufficient to denote the meaning of the word being analyzed. For example, the meaning of the noun PROFESSOR [X] of [Y] to [Z] at [W] is ‘person X who, having expert knowledge of subject Y, teaches students Z at institution of higher education W’ comprises the components ‘person’, ‘teach’ and ‘employ’ and has the semantic actants ‘higher education establishment’, ‘students’ and ‘subject’. If one of these components is missing then the lexeme PROFESSOR no longer applies. If someone never teaches, he or she cannot be called a *professor* in English, but perhaps a *researcher*. To be called a *professor* in English, one must be currently employed by some institution of higher education; it sounds strange to call someone a *?private professor* or a *?freelance professor*. It is interesting to note that ‘employed by an institution of higher education’ is only a connotation of this word’s French (quasi-)

equivalent, PROFESSEUR. One can be a *professeur de piano à domicile* (a private piano “professor”). The verb RENT<sub>1</sub> ‘person X acquires the rights of possession of commodity Y for duration T from person Z in exchange for quantity of money W (which Z asks of X)’ requires an owner of a commodity, another person, a time frame and a quantity of money. These components are considered obligatory not because they must be mentioned in every utterance containing the lexemes PROFESSOR or RENT, but because the speaker and addressee must be aware of them at some level. This is the meaning of a componential approach *salva significatione*. MTT’s componential approach to meaning is crucial for cross-linguistic semantics, because many or most words from other languages do not have an easy translation equivalent because they do not share all semantic components, as in the case of *professor/professeur* above. Slight differences in the set of components are pervasive when comparing lexica of two languages. The English verb CRY ‘X has liquid come out of X’s eyes’ is seemingly easy to render in most languages. But CRY has a denotational range different from many of these quasi-equivalents in other languages. In English one can *cry blood from an illness* or *cry from cutting onions*. In Russian, is one such case, described in Melcuk (2004a): the Russian quasi-equivalent of CRY, PLAKAT’, cannot be used in this context because the cause of ‘strong emotion’ is a semantic component of PLAKAT’ but not of the English CRY: \**Ot vetra ona zaplakala* \*‘She started crying because of the wind’. One can compare English and Dene lexemes in the same way. In Dene Sùliné, CRY is usually rendered by the stem –TSAGH. However, –TSAGH has an obligatory participant that CRY does not, namely ‘strong emotion Y’. One cannot –*tsagh* for a non-emotional reason, e.g. \**tl’oghtsené nast’ath zá* ⟨\**senaghé eya zá*⟩ *hestsagh* {onions 1IPFV:cut.up because ⟨1PO:eyes it.hurts because⟩ 1IPFV:cry} \*‘I’m crying because I’m cutting onions ⟨\*because I have an eye illness⟩’. In these situations one would have to use *sená tué* {1PO:eyes water:CONS} ‘my eyes are watering’.

**1.3. Necessary and Sufficient Components in the Definitions.** In MTT, meanings of lexical units are described as configurations of simpler semantic components. These semantic components are selected so that taken together they match

the denotational range of the keyword. They are, in other words, classic or criterial categories, defined using necessary and sufficient elements. For example, if the lexeme PROFESSOR refers to a classical or discretely drawn category of referents, then every human either falls in or outside of the category PROFESSOR. In lexical semantics, classical categories have come under heavy criticism in recent decades with the popularity of prototype categories, which became popular in linguistics after Eleanor Rosch (1973, 1975) published her research on the psychological perception of categories. These studies showed that there were significant “prototype effects” on people’s perceptions of individuals’ membership in a category. Most of the examples were of natural and cultural kinds, e.g. characterizing the prototypical category referred to by BIRD based on whether various individual birds were considered “good” examples. Some more recent schools of linguistics, primarily the Cognitive Grammar (CG) approach, have adopted and formalized prototype categories and applied them to the study of word meanings. Taking up Rosch’s thesis, CG linguists (e.g. Lakoff & Johnson 1980) argued against the validity of classical categories and criterial definitions of lexical meanings. In the CG approach, a lexical meaning is described as a content which evokes a series of “cognitive domains”. For example, Langacker (2008: 55), cites the domains which “figure into” the meaning of WATER, including a picture of a half-full glass of water as including space, wetness, liquid, container and the cultural practice of pouring water into a glass. There is no established inventory of “basic domains” in CG and so the domains should not be considered semantic primitives in our sense, but “are better thought of as realms of experiential potential” (Langacker 2008: 56). CG criticisms of classical categories such as Lakoff & Johnson (1980) and Langacker (1987) frequently cite the later Wittgenstein’s family resemblance model as an antecedent of a prototype category model of lexical meaning, the most famous example of which was the word/category GAME from his *Philosophical Investigations* (Wittgenstein 1953, §66):

Consider for example the proceedings that we call ‘games’ ... What is common to them all? — Don’t say: ‘There *must* be something common, or they would not be called “games”’ — For if you look at them you will not see something that is common to *all*, but similarities, relationships, and a whole series of them at that. To repeat: don’t think, but look!”

Two issues in particular motivate this criticism and are important to discuss, as they are of critical relevance to the present work. The first is the idea that necessary and sufficient categories cannot be listed due to the criss-crossing “family resemblance” model of meaning. The second is the idea that linguistic meaning as expressed in a lexicographic definition of a keyword cannot be separated from encyclopedic knowledge about the referents or situations invoked.

The MTT framework supports both the possibility of selecting a necessary and sufficient set of discrete components as well as the clear distinction between lexical meaning and extralinguistic knowledge. The use of criterial definitions is justified by rigorous analyses of substantial samples of lexical units from many lexica, especially in its lexicographic module known as the Explanatory Combinatorial Dictionary (ECD). Systematic ECD-type lexical databases and dictionaries illustrate that the majority of lexical items in a language are usually verbs and nouns denoting linguistic situations. As configurations, these are quite amenable to definition by paraphrase, as are many entity terms, in spite of extralinguistic “prototype” effects. Even accepting Wittgenstein’s view of meanings as family resemblances based on use, it does not follow that criterial linguistic definitions such as MTT’s are incompatible with it. MTT does not make specific claims about the mental reality of concepts, it merely posits a formal model that explains speakers’ actual linguistic behavior. The widespread polysemy of many words (which made GAME “undefinable”) is also why MTT speaks of “lexical units” (LUs, i.e. lexemes and phrasemes) rather than of “words”. It is assumed that a given phonological string, i.e. /rən/ or /gejm/, will be recycled and used as many different linguistic signs, each of which will have its components and actants and which deserves to be described as a lexical unit in its own right. If the lexical units share the same signifier are linked by a semantic bridge or common semantic component they can be classified in the same *vocable* in an ECD-type lexical database. A *vocable* is a common signifier subsuming multiple lexemes that are semantically related, in other words a polysemous word or phrase. It is not necessary for *vocables* to be categorized based on necessary and sufficient criteria — the semantic bridge underlying the *vocable* can be of a family resemblance type. But still each lexical unit within this constellation of senses will have a criterial definition, even if the

polysemy is quite extensive. Naturally, this kind of relationship between lexical units belonging in a vocable be posited only after the analyst has elicited the meaning each lexical unit separately.

The debate about the validity of classical versus prototype categories to describe word meanings is closely related to the question of whether linguistic meaning can be sharply delimited from encyclopedic knowledge. At least for the bulk of the lexicon (rigid designators may be a distinct class, see Section 1.4 below), MTT makes a sharp distinction between the purely linguistic meaning of lexical units and the speakers' extralinguistic or encyclopedic knowledge about the referents. Mel'čuk (1993: 42) explains:

Le terme **sens** doit être interprété ici de la façon la plus étroite possible. Il ne s'agit aucunement du sens que nous obtenons comme résultat d'une bonne compréhension du sens d'un énoncé quelconque, que nous en dégageons grâce à la logique, à nos connaissances extralinguistiques, etc., c'est-à-dire qu'il ne s'agit pas du « vrai » sens, qui est, en fin de compte, la seule raison d'être de la communication... Nous ne visons que le sens purement langagier : le plus superficiel, le plus littéral, celui qui est accessible uniquement grâce à la maîtrise de la langue en cause.

This sharp distinction between linguistic meaning and encyclopedic knowledge is fundamental to MTT semantics. The consequence is that anything claimed to be part of the meaning must be imposed by the language and invariable between speakers. In cases of extreme variation, only those meanings common to all speakers can be considered to be part of the linguistic meaning. For example, if some speakers in different areas, social classes or centuries have different knowledge of that the lexeme SUN refers to, linguistically it can only be 'the bright object that rises and sets each day', excluding any non-universal definition. Any definition posited must be the same for all speakers, and must be gathered through elicitation. This is particularly important to be aware of when writing lexicographic definitions for items like –КУЭ́ 'house', DENÍ 'moose' and so forth.

Methodologically, one posits the components of a lexical meaning by testing a hypothetical set against speaker intuitions. This can indeed be challenging for entity terms which are subject to a wide degree of variation according to extralinguistic factors. For example, if one attempted to list the necessary and sufficient semantic components denoted by the English lexeme HOUSE<sub>1</sub>, one could proceed with

elicitation with native speakers designed to separate houses from non-houses, e.g. by discussing and looking at photos of various houselike structures mixed with examples of other clear non-houses. Depending on which culture we live in, the stereotypical house look different or have a different cultural role with respect to houses in the anglophone world. A Mediterranean villa may be a commercial property only occupied part of the year. Some “houses” may not even be man-made structures, but natural features heavily modified and furnished with amenities, e.g. the converted cave houses of Matera (Italy). Some houses are dug downward into the ground instead of build upward on a foundation, such as the troglodyte houses of Matmata (Tunisia). Other types of houses, such as Inuit igloos, grass huts, tipis, bark houses built and used by hunters, seem more ephemeral. A prototype definition of HOUSE<sub>1</sub> would have to rely on cognitive domains common to all of these cultures, or else falling into a quietly ethnocentric definition. And any definition or schema reduced to the common denominator across all instances begins to closely resemble a criterial definition. If HOUSE<sub>1</sub> is defined as a ‘a man-made autonomous intracommunicating walled structure made for people to live in’, this seems to match the denotational range: *A mansion* ⟨*igloo, villa, troglodyte house, grass hut, leanto, bark house*⟩ *is a kind of house*; *\*A tent* ⟨*\*tipi, \*apartment, (refurnished) \*cave, \*apartment building owned by one family*⟩ *is a kind of house*. If the structure was intended for some other purpose, HOUSE<sub>1</sub> does not apply: one does not say *\*A shed* ⟨*\*barn, \*stable, \*treehouse, \*doghouse, \*lighthouse*⟩ *is a kind of house*, even if a person lives in it. This definition of HOUSE<sub>1</sub> also seems to include specifically linguistic information that speakers have access to, rather than expert knowledge. When when asked to justify their categorization of a structure of a house or non-house, for example, consultants are usually able to cite specific criteria such “it’s permanent” or “it isn’t man-made”. Moreover, speakers tend to change their answer if their criteria about the referent are discovered to be false (“It *isn’t* man-made? Ok then no, it’s not a house”). The semanticist could then hypothesize that HOUSE<sub>1</sub> refers to a ‘a man-made autonomous intracommunicating walled structure made for people to live in’, where ‘autonomous’ means ‘not a part of a larger building’. Speakers tend to have clear intuitions about whether a word has been misapplied, and lexicographic definitions as a paraphrase must be general enough to cover all the

referents to which the speaker's intuitions apply, even when they are subject to a great deal of extralinguistic variation, as in the case of HOUSE<sub>1</sub>.

The usefulness of classical categories is even more striking when applied to words for linguistic situations rather than entities, such as RENT<sub>1</sub>, STEAL, and BORROW<sub>1</sub>. The linguistic definition of DRINK<sub>1</sub> may be 'X takes a liquid Y into X's mouth and swallows it'. It is part of our extralinguistic knowledge that the situation denoted by *drink* usually involves a glass or a cup. But upon hearing a sentence like *The exhausted hiker collapsed by the stream and drank*, no English speaker would think to ask *But where did he find a glass?* If a second-language speaker said *He drank some mouthwash and spat it out*, English speakers would say that this person did not know the meaning of DRINK<sub>1</sub>. Indeed, much of the difficulty with criterial definitions comes precisely when examples of natural kinds such as BIRD, WATER and perhaps HOUSE<sub>1</sub> are attempted. But this is due not to the invalidity of criterial definitions for the majority of lexical meanings, but due to the special linguistic properties of natural kind terms.

What has been missing from the debate about categorization so far has been a careful and systematic testing of prototype and classical categories against a representative sample of lexical units from from typologically diverse lexica. The lexicographic enterprise can also be supplemented by psycholinguistic testing of which type of categorization better represents the speakers' intuitions<sup>8</sup> of lexical meanings. Finally, it is also important that such a study include both LUs denoting both entities

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<sup>8</sup> Pinker and Prince (1999) and Pinker (1999: 278) reviewed a large body of psycholinguistic studies, and concluded that the evidence is mixed: "The facts about verbs [*the subject of the Pinker and Prince study*] and the facts about concepts converge to suggest that the human mind is a hybrid system, learning fuzzy association and crisp rules in different subsystems... some modelers even link the rule system to the frontal cortex and the exemplar-based system to the temporal and posterior cortex". However, the studies Pinker cites dealt only with names for entities, mostly natural kinds, which have special properties. Moreover the prototype effects always disappeared when the researchers pressed the subjects to motivate or carry out real instances of categorization rather than testing reaction time, etc. All of this evidence could be explained, perhaps better, as prototype *effects* on classical categories rather than in prototype *categories* themselves.

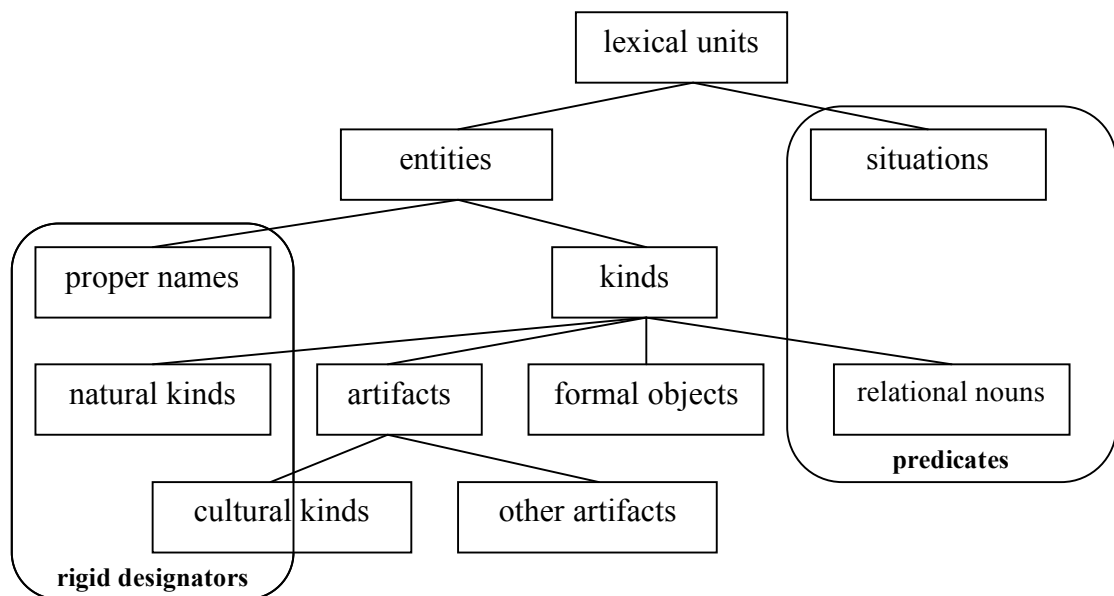


and those referring to situations, as natural kind terms (such as WATER) have distinct semantic properties, to be discussed in the following section.

**1.4. Lexicographic Definitions and Natural Kind Terms.** So far, MTT's use of criterial definitions which can be substituted, *salva significatione*, with the keyword has been illustrated for lexemes like PROFESSOR, DRINK<sub>1</sub>, and HOUSE<sub>1</sub>. While criterial definitions work well in practice for situation terms, for a minority of entities this method can be more challenging. Entities can be divided into two classes, proper names (*Aristotle, Mexico*) and semantic kinds. "Kinds" should be understood in a technical sense here as referring to any entity which can be part of a taxonomy, not in the sense of Wierzbicka's (1988) semantic kinds or any other sense. These kinds can be divided into natural kinds, artifacts, formal objects (*electron, soul*, or in Dene *ik'qzézé* 'spiritual medicine'), and relational nouns. Natural kinds include names for kinds of living things, including all species and genera names (*iyeze* 'bird'; *dechen* 'tree'); topographical features (*sheth* 'hill'; *hhátaiłi* 'spring') and atmospheric phenomena (*cha* 'rain'; *yath* 'snow on ground') and naturally occurring substances (*tu* 'water', *tthe* 'stones'). Artifacts can be cultural kinds, i.e. noteworthy items frequently used by the speech community, such as *nibále* 'tent'; *egané* 'dried meat', or in English *sofa*, *pencil*<sub>N</sub>, *bread*<sub>N</sub>, or unique objects created for a specific purpose. Relational kinds include names for persons or biological material in relation to another, such as kinship terms (*-tá* 'father' *-skéné* 'children') and body parts (*-tth'éné* 'leg' *-hhaié* 'roots'). A typology of semantic classes is outlined in Figure II-2.

Kripke (1972/1980) and Putnam (1975) demonstrated that proper names, natural kinds, and some artifacts are rigid designators, which always refer to a specific group of individuals regardless of the encyclopedic facts we know or discover about them. Kripke and Putnam showed that for proper names and natural kinds, essential criteria in their definitions can be altered, and the word still applies. For instance, the *Longman* definition for LEMON (Bullon 2005) is 'a fruit with a hard yellow skin and sour juice'; that of TIGER is 'a large carnivorous wild animal that has yellow and black

lines on its body and is a member of the cat family'. We can envision surprising biological discoveries such as the existence of some tigers with no stripes or lemons of another color. Surely we would not change our use of the words TIGER and LEMON as a consequence.



**Figure II-2. A Typology of Lexical Semantic Classes.**

Usually when people express incorrect beliefs about rigid designators, we feel that it is the speaker's ideas, rather than his or her language use, that is incorrect. For example, a 1999 Gallup poll<sup>9</sup> revealed that nearly 20% of Americans believed that the Sun revolved around the Earth, which is incompatible with the definition of what planets and stars are; before the modern era nearly everyone believed this. We do not feel that people who use SUN this way do not understand the *linguistic meaning* of the lexeme SUN, but rather that their knowledge about the referent is not up to modern community standards. It was once believed that the word WHALES referred to a sort of very large fish. These beliefs reflect the naïve-linguistic categorization of the speech

<sup>9</sup> "New Poll Gauges Americans' General Knowledge Levels". Gallup. July 6, 1999.

community; experts cannot with their greater knowledge better represent the meaning of these words. To be concrete: a killer whale is still a *whale* in the English language, even though a few people might believe (erroneously) that they are fish, and a few know (correctly) that they are really large dolphins. Rigid designators as words are resistant to change even after the community changes their scientific beliefs about the referents. Thus when describing the denotational range of a Dene word like GU, which roughly corresponds to ‘insect’ or ‘bug’ in English, it is not necessary to claim that, because of the phraseme GU DETTH’ÉNÉ ‘crab’, lit. “a (multi-)legged *gu*” really means that crabs are or were categorized by Dene people as a kind of insect. The important question is identifying the range of entities referred to by these labels.

In MTT lexicography and lexical semantics, natural kind terms like WATER (or TU<sub>1</sub> in Dene) cannot be decomposed into semantic units such as ‘chemical’ or “H<sub>2</sub>O” which invoke scientific or expert extralinguistic knowledge. Even if such a definition could match the denotational range of the referents, the speakers are not necessarily aware of these ‘simpler’ meanings and they do not combine these to build the meaning of the keyword. Most English speakers may not know that water has the chemical structure H<sub>2</sub>O, or they did not know it 50 or 100 years ago, so this information cannot be used to represent the linguistic meaning of WATER. It is not clear how many and which features are necessary and sufficient to define these words, or conversely which features could be subtracted or altered for for this intuition to be violated. Rigid designators work more like pointers for items that we have direct experience with than like semantic units.

Putnam expressed this by saying that knowing the meaning of rigid designators means knowing certain obligatory “stereotypes”, or standard beliefs that the linguistic community requires members to hold about the referents. The stereotype of the referent of WATER, for example, includes the beliefs that it is colorless, odorless, drinkable, runs through faucets, and so forth. Putnam’s concept of stereotype thus resembles MTT’s minimal paraphrase definition based on naive-linguistic categorization.

Another example of the difference in in conceptualization between rigid designators and other words/categories with criterial definitions can be found in the

cultural shift which occurred with the discovery of evolution by natural selection. As Pinker (2007) notes:

Before Darwin (and among creationists today) people used to think that every species could be defined by a set of necessary traits that characterized its essence... But someone who thinks that way will have trouble wrapping his mind around the very idea of evolution, because evolution entails the appearance of intermediate forms that are literally neither fish nor fowl. According to this “essentialist” mindset, a dinosaur has a dinosaurian essence and can no more evolve into a bird than a triangle can evolve into a square. One of Darwin’s conceptual breakthroughs was to treat a term for a species as a pointer to a population of organisms (a rigid designator) rather than as a type that is stipulated by a fixed set of traits... embracing the members that were originally dubbed with the label, their contemporaries who could breed with them, and some portion of their ancestors and descendents who are sufficiently similar to them.

Two concepts from this passage are crucial. First, rigid designators receive their name from an act of “baptism”, as posited by Kripke, while this is not true for the majority of LUs. Second, natural class categories can be extended to unclassified entities which are “sufficiently similar” based on some underlying conceptualization, while the majority of LUs have strict criterial definitions. Putnam extended rigid designation to some artifacts or cultural kinds, such as PENCIL.

The question of communitarian standards for “knowing a word” has recently been examined by Marconi (1997), who proposes that knowing the meaning of a word (and most of his and others’ examples are rigid designators) involves a blend of two kinds of knowledge, which he calls “inferential” and “referential competence”. Inferential competence involves the ability to use a word correctly in sentences and to draw inferences from sentences containing that word (an ability which, in Marconi’s scheme, is not sharply differentiated from encyclopedic knowledge). In contrast, referential competence is the ability to perform real-life tasks which require mapping word-concepts onto real examples of objects. Marconi compares a bookish biologist who knows everything there is to know about *Aulularia clemensi* (an invented species of butterfly) but cannot recognize an example of one in nature as quickly a child who grew up around them. This is an extreme example of differentiation between the two; for most words they overlap. For any natural kinds, such as foreign species and exotic elements, which only experts deal with, the community standard for “knowing the word” is very low, and the faintest inferential competence may provide referential ability to “know the meaning”: “if I cannot recognize uranium but I know that it is an

element with a heavy atomic weight, radioactive under certain circumstances, and so forth, few would say that I don't know what 'uranium' means ... but if I am presented, on a tabletop, say, with a fruit I don't know, an animal I never saw before, and a bit of uranium and I am asked to pick the uranium, I will easily do it". For locally relevant words more is required, even specifically of referential competence: "if I know that dolphins are sea mammals frequently spotted even in the Mediterranean, etc., but I do not have the faintest idea of what a dolphin looks like, there may be doubts concerning my competence" (Marconi 1997: 66). The degree of inferential and referential competence required to "know the word" is determined by the standards of the speech community; both are separate from encyclopedic knowledge, which is not subject to such a standard.

The discovery of rigid designators was taken up by opponents of criterial definition (see Geeraerts 1986) as an argument against all attempts at necessary and sufficient definitions of any lexical units. However, the case of rigid designators does not challenge the essential tenets of semantic analysis by decomposition into paraphrases. Criterial definitions are still an effective, psychologically realistic model for the vast majority of lexical units. It is unfortunate that many debates in the lexical semantics literature revolve around a few examples of proper names and natural kind terms like CAT, BIRD, WATER, THE MORNING STAR, and so forth, which are treated as representative examples of lexical meanings. Only the names of entities can be rigid designators, but the numerical majority of items in the lexicon of a natural language describe linguistic situations, which as configurations cannot be rigid designators. It would therefore be unfortunate to dismiss the whole field of lexical meaning as intractable just because of the existence of this interesting but relatively small class of rigid designators.

**1.5. Whose Definitions?** So far we have seen that the MTT view of meaning is based on the native speakers' intuitions. While ECDs may incorporate examples of the use of lexical units from corpora, the core methodology for elaborating the entries is not based on inductive corpora studies but on elicitation (see Section III-2.5, on the research methodology). Speaker intuitions have themselves been challenged as a reliable source

of knowledge about lexical meaning. Placing intuition as the best source of knowledge would seem to suggest a wholly mentalistic concept of meaning: meaning is in the mind and the referent corresponds to whatever semantic components the speaker has in his or her own meaning for that lexical unit. Putnam (1975) famously leveled a powerful objection to the idea that meaning determines reference with his well-known *elms/beeches* thought experiment. Putnam admitted that, in his ignorance of *Latifolia*, these two words had precisely the same mental representation or “definition” for him. But it seems wrong to conclude that the linguistic meanings of the words ELM and BEECH are the same, much less that their referents are the same. Putnam’s famous assertion that “meaning just ain’t in the head” can be interpreted in the context of MTT as a reminder that the speech community has shared norms about what meanings are carried by lexical units.

This turns out to be a methodological issue for MTT. Although our approach is not usually concerned with the sociolinguistic aspect of language, the data used in ECD-type definitions must conform to the same standard of any other intuition- and elicitation-based approach: a responsible semanticist cannot base the analysis on data from only one or two consultants, if the definitions are claimed to be valid for the whole language. Usually semantic statements in MTT works such as the ECD do not claim to be absolutely authoritative — individual speakers may disagree with the intuitions presented — but they are based on input from multiple native speakers of presumably the same linguistic variety. As such, they are meant to stand as a (tentative) description of the standard meaning of the community rather than of a single person. In most of the major lexicographic projects so far, MTT linguists have worked on their native languages (although Apresjan has done extensive research on English, and Mel’čuk focuses on French). All of these settings involve European languages with numerous native speakers who can verify the data. Because this project concerns an endangered Native American language spoken in small communities, it is quite challenging to have such a thorough level of verification (see Section III-2.5 on the research methodology). Still the intuitions must be agreed upon by at least three speakers within the same community. Cases where this standard has not been met or where there is disagreement between speakers must be noted.

## 2 LEXICAL SEMANTICS IN MEANING-TEXT THEORY

Up to this point we have seen some of the fundamental ideas of Meaning-Text Theory and what their relation is to some of the popular frameworks and debates in the general field of lexical semantics. Now let us take a closer look at how lexical semantics is actually formalized and done using the MTT approach. Sections 2.1 and 2.2 will closely follow the description of the MTT semantics and the semantic structure outlined in Mel'čuk's *Semantics: From Meaning to Text (SMT)*, to appear).

**2.1. The Content of a Semantic Model.** At the beginning of Section 1.1. we saw what Mel'čuk calls the core tenet of MTT, the idea that language is a set of rules in speakers' minds which establish correspondences between an infinite and denumerable set of meanings and an infinite and denumerable set of texts:

$$(4) \quad \begin{array}{c} \text{language} \\ \underbrace{\hspace{10em}} \\ \{\text{Meaning}_i\} \leftarrow \text{correspondence} \Rightarrow \{\text{Text}_j\} \quad | \quad 0 < i, j \leq \infty \end{array}$$

This model requires between the Semantic Representation and the Phonological Representation two intermediate levels of representation, syntactic and morphological. The Syntactic, Morphological and Phonological Representations are divided into deep and surface levels, giving seven total levels of representation and six modules which establish the mapping correspondences between them (recall Figure II-1 above). Meaning, however, does not begin as a Semantic Representation out of thin air, but as a Conceptual Representation formed by the speaker who observes and wishes to verbalize something in relation to the world. A Meaning-Text Model of language is therefore part of a larger world  $\Leftrightarrow$  sound model of human linguistic and paralinguistic behavior.

$$(5) \quad \{\text{WORLD}\} \Leftrightarrow \{\text{SemR}_i\} \Leftrightarrow \{\text{SPhonR}_j\} \Leftrightarrow \{\text{LINGUISTIC SOUNDS}\}$$

MTT excludes phonetics, or the correspondence  $\{\text{SPhonR}_j\} \Leftrightarrow \{\text{SOUNDS}\}$ , from its model of language proper. At the other end, it also excludes the correspondence between the Concept[ual] Rep[resentation] and the Sem[antic] R[epresentation]. The former is supposed to be “the fragments of the outer world that interest the speaker”, “a component that produces a discrete cognitive representation of observed continuous reality of the universe” (Mel’čuk, *SMT*, to appear). The nature of the ConceptR is mostly extralinguistic (casting aside a radically Whorfian perspective). It is however “minimally motivated by language. It is not an objective, ‘photographic’ reflection of reality, ... yet the imprint of language on it is rudimentary”. There must also be a correspondence which links the this to verbalizeable semantic units, i.e. a  $\{\text{ConceptR}_h\} \Leftrightarrow \{\text{SemR}_i\}$  module, which Mel’čuk calls *conceptics*. Because the left-side element is (mostly) nonlinguistic, this component lies at the intersection of linguistics, the philosophy of language, cognitive science, and other domains. “It presumably has a very complex structure, of which, at the present state of our knowledge, one can only advance hypotheses”. It must be excluded from the model of language proper, which is concerned with the purely linguistic modules of human linguistic behavior. Although MTT models do not describe conceptics or phonetics directly, it is acknowledged that an MTT model of language is joined to both of them. MTT describes only the portion between the Semantic Representation and the Surface Phonological Representations:

$$(6) \quad \text{language (proper)}$$

$$\overbrace{\{\text{SemR}_i\} \Leftarrow \text{correspondence} \Rightarrow \{\text{SPhonR}_j\}} \quad | \quad 0 < i, j \leq \infty$$

The Semantic Representation of an utterance or lexical unit comprises four sub-representations: the Semantic Structure or SemS; the Semantic-Communicative Structure or Sem-CommS, the Rhetorical Structure or RhetS, and its Referential Structure or RhetS. For the aims of the present investigation, we are interested only in the SemS or semantic structure, the representation in MTT of the purely linguistic meanings of lexical units and utterances, independent of pragmatic information and the encyclopedic



knowledge of the speakers. We will limit our review to MTT's characterization of the SemS which models this message-independent, objective meaning of the LUs under analysis; we shall exclude, for reasons of space and relevance, MTT's treatment of the three other elements of the SemR.

**2.2 The Semantic Structure.** We will consider first the elements which we can safely posit the SemS must contain based on linguistic evidence, before reviewing how and why they are represented as they are in the MTT framework.

**2.2.1. Content of the Semantic Structure.** The Sem[antic] S[tructure] of a lexical unit (LU) is usually a decomposition of the LU's meaning into simpler meanings which, taken together, form its paraphrase. In MTT, linguistic meaning is considered to be "the invariant of the (quasi-) synonymic paraphrasing that can be carried out without any recourse to extralinguistic information" (Mel'čuk, to appear). Therefore the SemS, as a representation of linguistic meaning, is not just the SemS of the sentence in question, but also of all of its paraphrases and with the same semantic content. The sentences 'he's a professor of chemistry' and the 'he's a person who masters chemistry and teaches it to students at an institution of higher education' would therefore have the same SemS, and are semantically equivalent once we exclude pragmatic, communicative and rhetorical levels of analysis. It should be noted that while the prototypical SemS is of an utterance rather than of a linguistic unit, in this work focused on lexical semantics most examples will be of SemS of lexical units. Two SemS are semantically equivalent if speakers intuitively feel that they "say the same thing" (decomposition *salva significatione*) even if they are not used in the same extralinguistic situation. If the reverse is true, i.e. that two different expressions are used in exactly the same extralinguistic situation but do not "say the same thing" (one can think, for example, of the multitude of different ways people express the ideas of 'thank you' or 'happy birthday' in the languages of the world) we cannot say that they are semantically equivalent. From a language-universal viewpoint, Mel'čuk states, the combination of ordinary semantic structures is free and filtered by only encyclopedic or

pragmatic considerations. In this understanding, the problem with semantically unacceptable sentences, such as the famous *Colorless green ideas sleep furiously*, is not really linguistic, but lies in the fact that the meanings themselves are strange in this combination for speakers.

The decomposition of the keyword's meaning such as one finds in the semantic structure can, in principle, proceed to the level of semantic primitives (see below). However, the meanings in the SemS must always be based on verifiable meanings of the language at hand. This is, for Mel'čuk (to appear), the first substantive requirement of the SemS. His second requirement of the SemS is that it "must be maximally homogeneous", i.e. the SemS is composed *entirely* of these simpler SUs belonging to the language and the links between them.

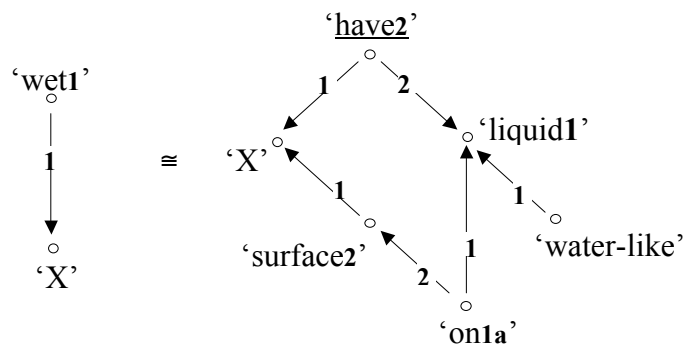
The first requirement of the SemS has other important consequences. If the SemS must be composed only of real semantemes in the language, then the content of specific SemSs is language-specific. One cannot say that the semantic structures of lexemes with the "same meaning" belonging to two different languages are identical. The closest the analyst can come to saying that two semantic structures from different languages are equivalent is to say that their semantemes and the relations between them stand in a one-to-one correspondence. This relies on the assumption that some simple meanings, such as 'good', 'bad', 'you', 'want', etc., which are available and comparable between different languages, although complex configurations of simple meanings, such as 'condescension' or the Portuguese 'saudade' may not be comparable in this way between culturally different languages. (The principle of semantic primitives will be addressed in much greater detail in Section 3.3.)

When meanings are represented in MTT as lexicographic definitions rather than as a SemS, they are written using a controlled metalanguage based on the language of the researcher and reader, but this is only to render them more accessible. MTT assumes that the true syntax of lexicographic definitions is based on simple logical relations, and not on the syntax of any natural language or some underlying natural language syntax common to all languages.

Assuming that there is a level of semantic decomposition at which one can posit a one-to-one correspondence between semantemes in different languages, cross-linguistic

differences in the SemS arise because the patterns of lexical conflation, or packaging of a group of semantemes into one lexical meaning, and then lexical unit, are different. Mel'čuk (to appear) posits that there is a set of language-specific constraints governing lexical conflation patterns. From a descriptive, language-specific perspective, a well-formed SemS should not contain configurations of semantemes that cannot be lexicalized in L, i.e. that are not expressible as LUs in that language.

**2.2.2. Representation of the Semantic Structure.** The SemS contains all and only the semantemes that make up the meaning of the SU corresponding to the LU under analysis, and the relations between them. This information is represented in MTT semantics as a labelled, directed, connected graph which constitutes a semantic network. Each of the vertices on this graph, called a *node*, stands for one of the semantemes that make up the meaning of the sentence represented by the graph; the relations between the nodes are called *arcs*, and are labelled with numbers that indicate the relations between them (a topic to be developed below). A graph is multidimensional and nonlinear, so the exact position of the nodes (semantemes) is not meaningful. The arcs of the network describe the predicate-argument relations and are numbered to differentiate them rather than to classify them as different types of semantic relation; in MTT the predicate→argument relation is the only type of semantic dependency.



**Figure II-3. Simple and Decomposed SemS of the English 'wet<sub>1</sub>'**

(adapted from Mel'čuk, to appear).

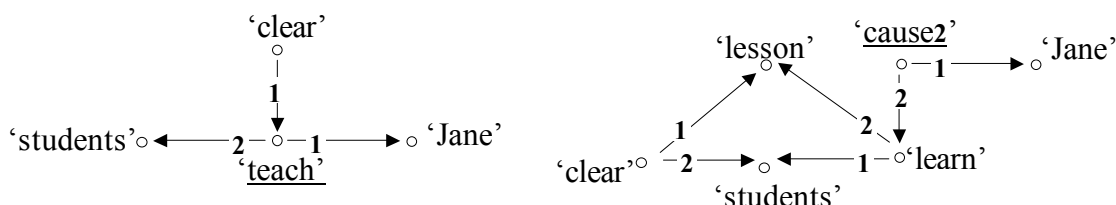
The arrow of each arc points to the argument of the predicate at its tail. Below are two example networks, one simple and one decomposed, for the same English adjective, WET<sub>1</sub> ('X is wet<sub>1</sub>' ≡ 'X has<sub>2</sub> a water-like liquid<sub>1</sub> on<sub>1a</sub> X's surface<sub>2</sub>'), seen in Figure II-3. The *communicatively dominant node* is at the top and underlined; this constitutes the barest paraphrase of the whole meaning. In other words, 'X is wet<sub>1</sub>' means ultimately 'X has<sub>2</sub> something on it', not 'X is water-like' or 'X has a surface<sub>2</sub>'.

Mel'čuk and his colleagues chose semantic networks to represent semantic structures for three reasons (according to Mel'čuk, to appear):

- 1) Based on the data, there is no reason to imagine that meaning is linearly ordered — rather it is unordered, organized only by certain relations between objects - a network is a formal object which mimics this unorderedness. Because the network is multidimensional, it allows a semantic unit to be simultaneously in multiple relations with other SUs, i.e. an actant of multiple SUs at the same time. This represents what we know about semantic dependencies.
- 2) We know that meaning contains two kinds of elements: meanings themselves or semantic units, and the relations between them. A network is also composed of two elements, nodes and arrows indicating relations.
- 3) The connected and directed structure of a network mimics in a formal object the structure of an SU in the fully interconnected nature of its component meanings and the directed nature of the relations between them.

The semantemes which label the nodes of the semantic network must correspond to the signifieds of *full* lexical units (lexemes or idioms) of the language. By *full*, Mel'čuk means to exclude elements which have signifieds but which do not constitute semantic units, such as empty support verbs or syntactic grammatical signifieds, which should not be represented in the SemS. The relation between the set of semantemes and the semantic unit corresponding to the keyword is characterized by paraphrase and decomposition. In MTT's componential approach, meanings can be decomposed into semantically simpler semantemes, until one reaches the level of semantic primitives, or *semes*, as they are called in MTT (Mel'čuk, to appear). In the above SemSs for 'wet<sub>1</sub>', the semantemes 'on' and 'have' might be considered semes, but semantemes 'liquid'

and ‘surface’ can presumably be decomposed further into even simpler meanings. MTT semanticists call *deep* those SemSs or definitions which decompose meanings further down toward semantic primitives, and *shallow* those that retain more complexity. How deep should the decomposition proceed? An extremely deep or fully decomposed SemS would seem to offer more detail. However, the fullest extent of decomposition into semes would make the network unreadable, much as a definition entirely composed of primitives would occupy several pages, would distract the reader with unnecessary detail, and thus would be of little descriptive use. At the same time, the level of decomposition should not be arbitrary, so Mel’čuk proposes the *principle of minimal decomposition* (Mel’čuk, to appear), which states that “The canonical SemS of a given utterance **U** is as shallow as possible: it uses the minimum number of decompositions possible, this minimum being determined by the actual lexical stock of **L** (and thus by the available stock of semantemes)”. Naturally, “as shallow as possible” depends on the analytic task at hand. If the decomposition is too shallow, it may obscure relations pertinent to the analysis. For example, adverbs may have semantic scope over an “internal” element rather than the whole clause, so the utterance should be decomposed to a level that makes this element “visible”. In the case of *Jane taught the students CLEARLY*, the first SemS would be incorrect because it does not show the semantic scope of *clearly*, while the second SemS does.



To ensure that the SemS is not so shallow that it obscures important relations and semantic scope, Mel’čuk (to appear) also proposes the *condition of maximal explicitness*, which states that “the canonical SemS of a given utterance **U** is decomposed sufficiently to explicitly and univocally indicate all semantic links between its semantemes”; this is the condition of sufficiency for the SemS to be canonical. The two rules, minimum decomposition and maximal explicitness, pull the SemS in opposite

directions, one toward depth and one toward shallowness. A well-formed, canonical SemS therefore lies at the just equilibrium between the two.

Another question about semantemes has to do with which label to choose when there are several synonyms or quasi-synonyms. In MTT, the meanings of all synonymous lexical units are represented by a common semantic structure. Mel'čuk (to appear) supports choosing the most literal, the most neutral stylistically, and the simplest and most flexible syntactically item ('steal' rather than 'abscond', or 'snake' rather than 'serpent'). The lexical class should be maintained between the keyword and the communicatively dominant node of the SemS whenever possible. There are cases when both of the above ideals must be violated due to the idiosyncracies of the language or if it strongly enhances readability.

Formally, the semantemes of a language can largely be divided into two classes, semantic names and predicates. A semantic predicate is a "binding" meaning which requires the presence of other meanings (participants or semantic actants). Semantic names, by contrast, are independent, non-binding meanings. The category of predicates and names are not coterminous with the lexical classes of verbs and nouns. Semantic names tend to be realized as nouns. Many linguistic situations can be expressed as nouns in European languages, i.e. BEAUTY, SADNESS, even though these are usually derived from adjectives. Some predicate nouns such a HEIGHT (of a person), are only etymologically derived from verbs. While nouns can be predicates, verbs, adjectives and adverbs can never be semantic names. Overall in English predicates tend to be verbs and adjectives. In other languages, i.e. languages like Dene Sųliné, the noun class is virtually always restricted to natural kinds, artifacts, people and places; situations and qualities are always expressed with verbs. It must be noted that "semantic name" is not synonymous with "entity", as entities such as relational and kinship terms ('leg', 'father') conceptually require the presence of other entities, their actants. These predicate nouns are referred to as quasi-predicate.

A predicate semanteme, usually denoting a situation, has certain obligatory participants. Situations can typically have up to six obligatory actants. A classic case of a five-actant verb is RENT<sub>1</sub>. The situation referred to by this verb requires five participants: an owner of a commodity, a commodity, another person, a time frame and

a quantity of money, listed in (7) in propositional form:

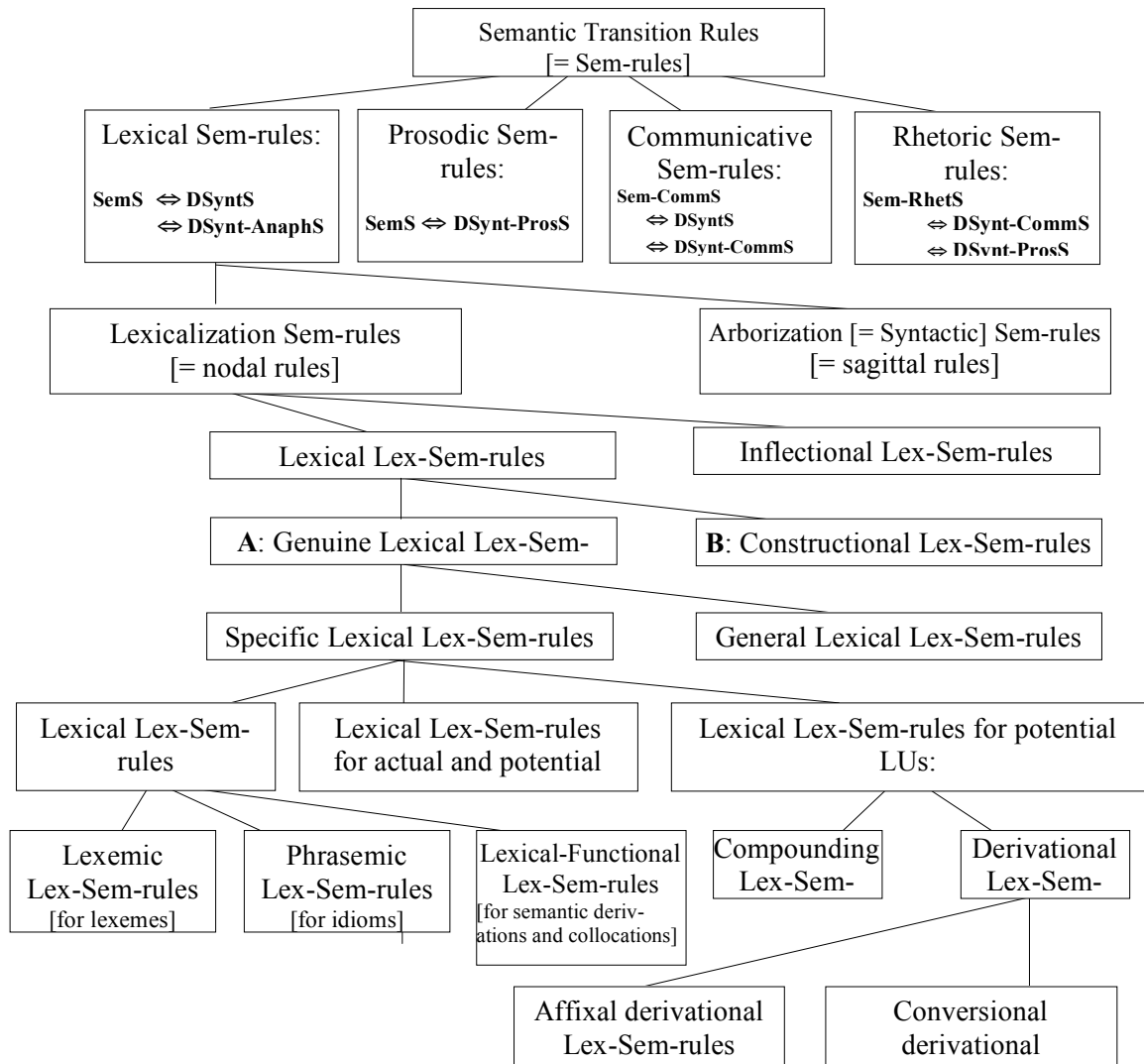
- (7) RENT<sub>1</sub>: *person X acquires the rights of possession of commodity Y from person Z in exchange for quantity of money W (which Z asks of X) for duration T*

There are also zero-place predicate semantemes, such as weather and atmospheric verbs like ‘rain’ (also plentiful in Dene to describe atmospheric phenomena and topographical features). The obligatory participants are not obligatory in that they are required to be mentioned in any utterance containing the keyword — often in the case of RENT<sub>1</sub>, one just says *I’m renting an apartment downtown* or *Did you buy or are you renting?* without mentioning the owner, duration of time, the money, or the commodity. But the speaker and addressee are still conscious of the existence of these participants, and if any of them is missing *conceptually*, the situation cannot be described as *renting* but rather as *borrowing*, *buying*, etc. “An element  $\Psi$  of the situation denoted by L is called its *obligatory participant* if and only if it satisfies the following condition: if  $\Psi$  is removed from SIT(L), then what remains either cannot be denoted by L or ceases to be a situation” (Mel’čuk 2004a). Obligatory participants may almost never be mentioned, or even impossible to mention to mention in some cases. There are often more participants in a linguistic situation than there are syntactic actants. For example, a lexicographic definition of the English intransitive position verb LIE might be ‘to remain in a horizontal position’. But even though LIE is intransitive, it has two obligatory participants, the subject and a hard surface which is supporting the experiencer, e.g. *porch* in the sentence *the cat is lying on the porch*. This surface might only be mentioned if marked, but the speaker and addressee must be aware of it: if there is no supporting surface, e.g. the someone floating horizontally in water, the situation cannot in English be referred to as *lying*.

**2.2.3 The Semantics-Syntax Interface.** The translation of semantic units into lexical units is done as part of the mapping correspondence between the Semantic Representation and the Deep Syntactic Representation, as mentioned above:

- (8) {SemR}: [SemS; Sem-CommS; (Sem-)RhetS; RefS]  
 $\updownarrow$   
 {DSyntR}: [DSyntS; DSynt-CommS; DSynt-AnaphS; DSynt-ProsS]

The correspondence rules that cover the translation  $\{\text{SemR}_i\} \Leftrightarrow \{\text{DSyntR}_j\}$  are globally referred to as semantic transition rules, or Sem-rules. Mel'čuk (to



**Figure II-4. Mel'čuk's (to appear) Typology of Semantic Transition Rules.**

appear) contains a lengthy discussion about all of the Sem-rules; they can be divided into four categories which translate each subcomponent of the SemR to its counterpart

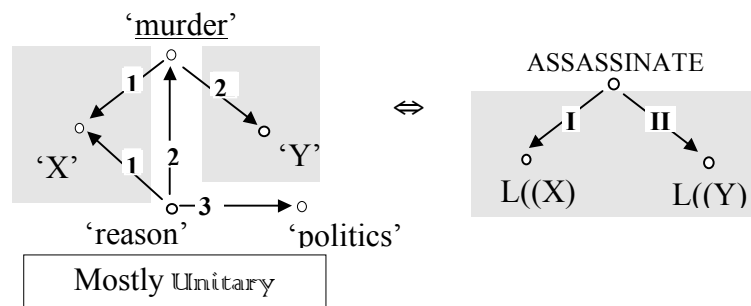


in the DSyntR, e.g.  $\{\text{SemS}_i\} \Leftrightarrow \{\text{DSyntS}_j\}$  rules,  $\{\text{Sem-CommS}_i\} \Leftrightarrow \{\text{DSynt-CommS}_j\}$  rules, and so forth.

As this outline of MTT lexical semantics is limited to the semantic structure, we will correspondingly limit our discussion of those rules that model the correspondence between the semantic structure and the deep syntactic structure. These are the lexicalization Sem-rules or lexicalization rules. These are the only rules that will be exemplified for the Dene lexical items in this study. Figure II-4 shows the place of the lexicalization Sem-rules in Mel'čuk's overall typology of the Sem-rules. This kind of rule includes three elements: the semantic network that constitutes the semantic unit, the lexical unit which has a given part of speech and basic diathesis (semantic  $\Leftrightarrow$  syntactic actant correspondence), and a set of conditions under which the rule can apply.

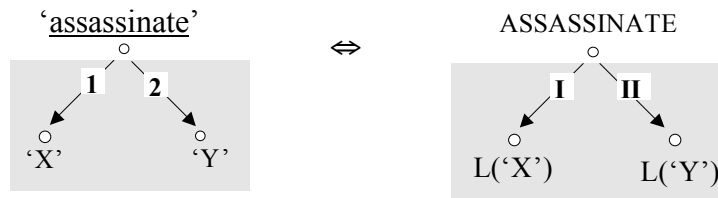
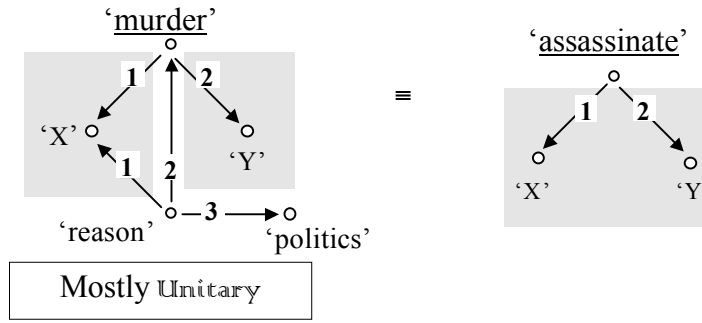
The lexicalization rules are, essentially, the core semantic part of lexical entries of a language. Describing these is the central task for the semanticist seeking to describe the language at hand. Our review of lexicalization Sem-rules will be further restricted to the subset of them relevant to the current description of Dene: the Lexical Lex-Sem rules for the formation of actual lexical units, of which there are three types: Lexemic Lex-Sem-rules; Phrasemic Lex-Sem-rules; Lexical-Functional Lex-Sem-rules, covering semantic derivations and collocations, Compounding Lex-Sem rules and Derivational Lex-Sem-rules.

### 1. A Lexemic Lex-Sem-rule (Mel'čuk, *SMT*):



The semantic 'X murders Y for a political reason' is realized in English as its own lexeme, the verb *assassinate* (X assassinates Y), where X and Y are both realized by

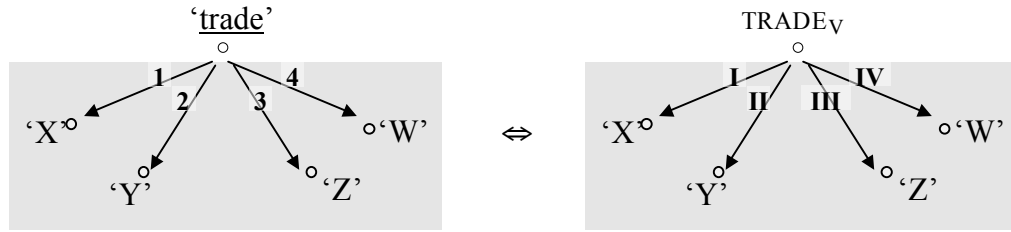
(nominal) lexical units. Lexicalization Sem-rules such as this are actually an abbreviation of two separate rules, the first of which forms an actually establishes the equivalence between the (sub-)network of more primitive meanings and the semantic unit at hand:



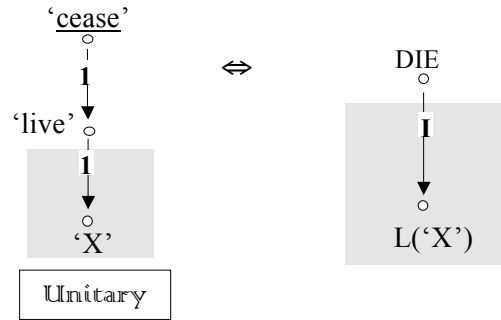
Polguère (1990: 86) refers to this formation of semantic bundles or units as lexicalization (proper), and the basis for semantic paraphrase, which he contrasts with lexemization, which refers specifically to the transition between the Semantic and Deep-Syntactic levels of representation (see Polguère 1990 for a well-developed discussion of the semantic-syntax transition, concerning both lexical and sentential semantics.) For the sake of brevity, in the present work we will represent the Lex-Sem-rules as if they were one, and call them “lexicalization rules”, but the reader should keep in mind that they refer to both lexicalization and lexemization (phrasemization, ...) subcomponents.

The above semantic network is marked as “Mostly Unitary”. This is because some sets of components are usually lexicalized and realized as a unitary word, but do not have to be: one can say *X murdered Y for political reasons* as well as *X assassinated Y*. Some Lex-Sem-rules are completely optional, as for TRADE<sub>V</sub> ‘X gives X’s possession

Y to Z in exchange for Z's possession W'. One can just as easily say the decomposition as the keyword.



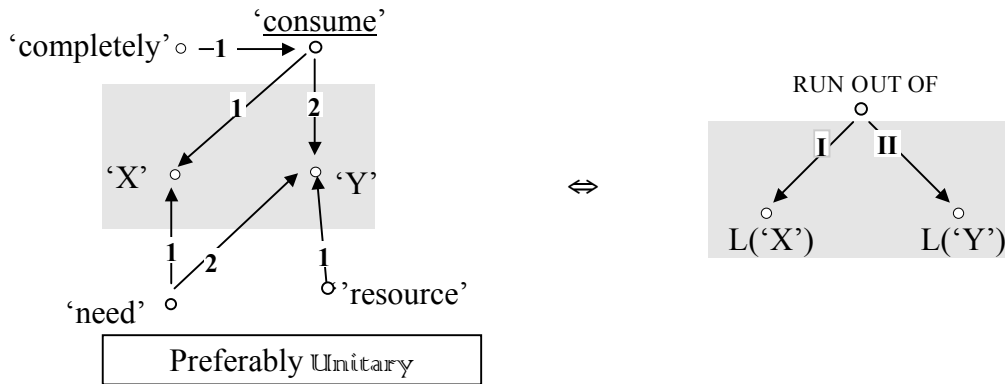
Other Lex-Sem-rules are obligatory:



It sounds very strange to say *X ceased to live*; the lexicalization rule must be applied.

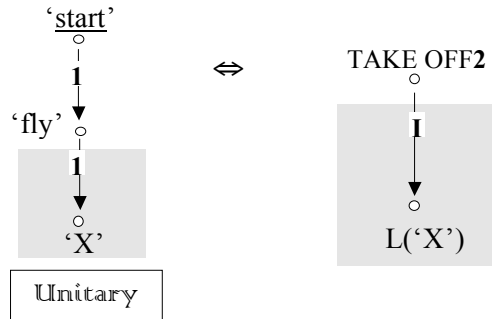
Phrasemic Lex-Sem-rules are similar to Lexemic Lex-Sem-rules, the only difference being that the realization at the DSyntR is a phraseme rather than as lexeme.

They follow the same typology of optionality:

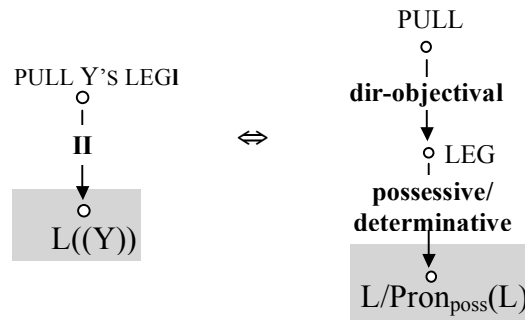


Good: *We've run out of sugar.*

Acceptable: *We've consumed all the sugar and we need more.*

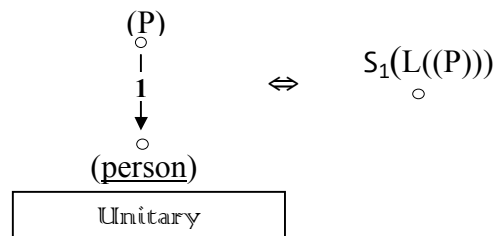


*The bird took off* is acceptable; *?The bird started to fly* is strange. *Start to fly*, for a bird, has the special meaning 'begin to be able to fly'; the same expression sounds odd when applied to an airplane: *?Ten minutes later, my plane finally started to fly*. Phrasemic Lex-Sem-rules have, additionally, a Phrasemic DSynt-rule that specifies their realization as Deep-Syntactic units, e.g. that for PULL [Y's] LEG (Mel'čuk, to appear):



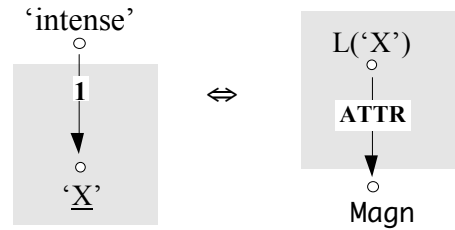
Lexical-Functional Lex-Sem-rules specify which meanings are realized as regular lexical relations or lexical functions (see Section 3.1.4 and Chapter IV). These, too, are assigned degrees of optionality, as the following examples from Mel'čuk (to appear):

**S<sub>1</sub>** (agentive derivative: person who does action (P)):



*He's a good cook.* *?He's a person who cooks well.*

**Magn** (intensifier of X):



*A huge meal; a gorgeous sunset; a very big meal; a very beautiful sunset*

This concludes our discussion of the semantic structure and the realization of semantic units as lexical units. Let us now turn our attention to how this semantic framework is applied to practical language description. The following section will outline MTT lexicographic principles consistent with the semantic model described above, which will also provide a justification for the above model.

### 3 LEXICOGRAPHY IN MEANING-TEXT THEORY

Lexicography is, in the current approach, essentially applied lexical semantics. One could easily state that in the social history of linguistics lexicography has usually proceeded as a discipline divorced from theoretical semantics: linguists “do not actually compile dictionaries according to the theoretical principles which they spell out; when they do tackle dictionary-making, grammarians generally switch hats and become conventional lexicographers” (Pawley 1985). This is unfortunate, as lexical semantics and lexicography share a natural symbiosis. To communicate and record the meanings lexical items in a language, lexicographers must craft definitions that accurately represent the elements of meaning of the keywords as the speakers understand them. Semanticists also need to test the scientific understanding of what meaning may involve against a body of data obtained through lexicographic elicitation. In this way, semantics and lexicography are essentially theoretical and applied sides of the same discipline. As noted by Mel’čuk *et al.* (1995: 27):

La différence entre la lexicologie et la lexicographie est la même que celle établie entre la physique et le génie, par exemple. La physique se préoccupe des lois générales de la matière, de l’énergie et du mouvement; le génie s’intéresse à l’application industrielle de ces lois : à la construction des ponts, à la fabrication d’avions, à l’extraction du pétrole. ...

Aucune de ces deux physiques n'est pourtant autonome : la physique théorique ne peut pas exister sans mise à l'épreuve — par la physique expérimentale — de ses hypothèses et modèles, et la physique expérimentale a besoin d'hypothèses et de modèles à mettre à l'épreuve. .. Il en est parfaitement de même pour la paire « lexicologie ~ lexicographie » ... La lexicologie (comme la physique) a sa théorie — l'étude générale du lexique des langues naturelles, au niveau formel et abstrait, tout en ayant, elle aussi, sa pratique — la description expérimentale du lexique.

Naturally, this is not how the two disciplines have evolved so far. The historical isolation of the two disciplines is highlighted by the fact that there is no comfortable equivalent of *lexicologie* in English, *lexicology* being underused. In English a more common translation of *lexicologie*, besides “lexical semantics”, might be “theoretical lexicography”, although its theoretical aims would seem to be rather far outside the realm of the English lexicographic tradition.

**3.1. The Explanatory Combinatorial Dictionary.** The Explanatory Combinatorial Dictionary (ECD) is not the proper name of a book but a template for Explanatory Combinatorial Lexicography, MTT's lexicographic approach and an application of its semantics module to lexicography and its realization as a dictionary (such as Mel'čuk *et al.* 1984). As such, the ECD is the first “lexicologist's dictionary”, the model for compiled dictionaries rooted in theoretical semantics rather than in practical or commercial lexicographic considerations. Mel'čuk (2006) describes its origin as follows: “The ECD is a monolingual dictionary, proposed in the late 1960s by Alexander Zholkovsky and myself... A little later, Juri Apresjan joined us, so that the very first versions of ECD's lexical entries for Russian were authored by all three of us. In its present form, the ECD implements many of Apresjan's ideas”. As Mel'čuk (2006b) elaborates, “An ECD is an active, or encoding dictionary: the information about words and expressions it contains is collected and presented exclusively from the point of view of text synthesis,” i.e. the ideas that one wants to express through speaking or writing. The ECD and its related projects constitute the foundation and the bulk of the work in MTT to date.

The ECD's guiding principles are formality, internal consistency, uniform treatment and exhaustivity (Mel'čuk *et al.* 1995). Formality means that the descriptions in ECD entries must be formulated using a strictly controlled metalanguage that must decompose the meaning of the keyword into simpler meanings. Internal consistency

refers to harmony between the different types of information (semantic, syntactic, ...) about a lexical item described in an entry. This is of critical importance because an ECD entry contains several zones with different areas of specialization which may conflict if compilation is incomplete. To illustrate this, Mel'čuk *et al.* (1995) cites the case of the French ECD entry for the noun BLESSÉ 'a wounded person', whose definition is (translation mine) 'a living person who has one or several wounds'. BLESSURE 'wound' had previously been defined in the French ECD as a 'visible lesion to the tissues of a living being by an exterior cause'. But if the adjective intensifier *grand* 'big' is placed before BLESSÉ, it means that the wounds which can particularly damage the health of the subject. When adding modifiers such as intensifiers to a keyword, the ECD analyst must always ascertain which aspect of the meaning of the word is modified. In this case, the component 'damage the health of the subject' had to be added to the definition of BLESSURE 'wound' to allow for the meaning of the expression *grand blessé* 'a seriously wounded person'. The principle of internal consistency means that each part of the ECD entry is continually updated and refined to in light of information ascertained from research on the other zones and other entries. The principle of uniformity requires that whenever there are parallels between lexical units, they must be described in parallel. For example, the English vocable CHICKEN<sub>N</sub> would include the sense referring to the animal (which is countable — *two chickens*) as well as another sense, 'flesh of...', which is uncountable (*a bit of chicken*). Once both of these senses are included in the ECD entry for CHICKEN, they must also be added to entries for all edible fleshy animals and plants (TURKEY, FISH, MELON, and so forth). The principle of exhaustivity is an ideal which refers, at the macro-level, to the effort to describe as many lexical units of the subject language as possible. At the micro-level, exhaustivity refers to the representation of the various kinds of knowledge the native speaker possesses of the keyword: its definition, its morphological forms, its semantic and syntactic actants, and so forth.

As a reflection of these principles, the ECD entry for a lexical unit has an intricate, multifaceted structure. An ECD entry is usually much longer, more detailed and requires more research than a traditional dictionary entry, but this is necessary if the ECD principles are to be followed faithfully. An entry contains several zones for

different types of information about the keyword. The keyword itself may represent a single lexical unit, i.e. lexeme or a phraseme, or a whole vocable. When different senses or lexemes belong to the same vocable, one is usually the base lexeme, of which the others are metaphorical or metonymic extensions. Each lexeme is described in terms of four types of information or zones: phonological, semantic, syntactic and lexical-combinatory. The entry begins with the phonological information including the wordform itself and its phonetic variants and any contrastive prosodic information. The other three zones (semantic, syntactic and lexical-combinatory) are much longer.

**3.1.1. The Semantic Zone.** The semantic zone contains the definition of the head LU and its connotations. As we limited the scope of our review of MTT semantics to the representation and translation of the Semantic Structure (excluding the pragmatic and communicative components of the Semantic Representation), we will only discuss the definition here. The definition is actually an explication which also must follow precise principles. Those listed below are compiled from Mel'čuk 2004a and Mel'čuk 2004b):

1. The ECD definition must be necessary and sufficient to describe the keyword, without including any superfluous or encyclopedic knowledge of the world.
2. The ECD definition must be decomposable into semantically simpler meanings, avoiding circularity.
3. The ECD definition should contain no ambiguous items or items synonymous with the keyword.
4. The Maximal Block rule: if the lexicographic definition of the keyword contains a semantic configuration composed of the meanings ' $\sigma_1$ ' + ' $\sigma_2$ ' +, ..., + ' $\sigma_n$ ' such that this configuration is semantically equivalent to the meaning of another LU that exists in  $\mathcal{L}$ , then that LU and not the above configuration of (simple) meanings must appear in the definition.
5. The ECD definition must guarantee absolute mutual substitutability with the LU in text: the LU must be replaceable by its definition and the definition of L must be replaceable by L in any imaginable context.



A brief explanation of the reasoning behind these rules will follow.

**Rule 1:** The definition must contain all and only the semantemes which together are necessary and sufficient to describe the denotational range of the keyword. This includes all semantic actants and/or obligatory participants (recall the previous examples for CRY, DRINK, etc.). The components of the definition constitute the purely linguistic meaning of the lexical unit; the definition cannot include extralinguistic or cultural knowledge which is not encoded in the language (recall the discussion of linguistic meaning versus encyclopedic information in Sections II-1.3 and II-1.4).

**Rule 2:** The definition must be decomposable into semantically simpler meanings; this requirement avoids circularity in the definition. For example, if ASTRONOMER is defined as ‘a person who does astronomy’, and ASTRONOMY as ‘the science done by astronomers’, this would be unhelpful for a user who does not know the meaning of the keyword. If ASTRONOMY is defined as ‘the science of celestial bodies’, one has a much clearer idea of its content and what other words it shares some affinity.

**Rule 3:** The ECD definition should contain no ambiguous items, those which could be interpreted as denoting different and mutually exclusive semantemes synonymous with the keyword. Nor must the definition be circular within the dictionary (though not the entry), by defining the keyword using one of its quasi-synonyms of equal complexity, e.g. *rich* defined as *wealthy* and vice versa. Instead, the keyword must be explicated using semantically simpler meanings.

**Rule 4:** In Section II-2.2, it was shown that semantic decomposition could be shallow or deep, continued to the level of semantic primitives or quasi-primitives. The correct semantic decomposition was found at the equilibrium between the principle of minimum decomposition and that of maximal explicitness. These principles have their effect in lexicography as the maximal block rule, which states that if the lexicographic definition of L contains a semantic configuration composed of the meanings ‘L<sub>1</sub>’ + ‘L<sub>2</sub>’ + ... + ‘L<sub>n</sub>’ such that this configuration is semantically equivalent to the meaning of LU ‘L’ that exists in the lexicon, then ‘L’ and not the above configuration of (simple) meanings must appear in the definition. This intermediate

level of semantic decomposition helps prevent ECD definitions from being inordinately long and unwieldy.

**Rule 5:** Finally, mutual substitutability between the definition and the keyword in texts is a critical criterion. The goal of a definition is to reflect the native speaker's knowledge of the keyword. Therefore, the definiens and the definiendum must be mutually substitutable in all contexts. If the speaker can use the explication in lieu of the keyword in all contexts, this is very strong evidence that they are equal in content and that the definition really represents the meaning of the keyword. For this reason, Mel'čuk (2006: 38) asserts that mutual substitutability is "the central methodological requirement of the MTT approach to theoretical semantics and the lexicon... Without substitutability, we cannot claim that the definiendum is equal to that of the definiens, and thus the concept of definition itself collapses". This does not require the definition and the keyword to be stylistically equivalent in speech — usually the explication used in lieu of the lexical unit is pragmatically odd. Still this test remains a powerful way of elucidating differences between the definiens and definiendum which one had not considered.

Let us recall that the lexical units of a language can be divided into these self-contained semantic names on one hand and predicates or quasi-predicates on the other. Quasi-predicates are, for example, relational names and kinship terms such as *father* or *leg*. The above rules cover the definition of all lexical units, semantic names and predicates, in the MTT approach. Additional requirements, however, are specified for the definitions of predicates and quasi-predicates, such as *MAGAZINE* and *ASTRONOMER*. According to Mel'čuk (2004a), "predicates denote facts: actions, activities, events, perceptions, processes, states, relations, properties, quantities, localizations, and so forth". Precisely because their meanings require actants, to correctly write the definition of predicates or quasi-predicates in the MTT approach, additional rules are required governing their treatment in lexicography.

The following rules cover the handling of obligatory participants as well as various types of constant and optional participants. In addition, there is a discussion of how to distinguish true semantic actants from circumstantials, and presuppositional semantic components from assertional ones.

6. Predicate definitions are expressed in propositional form.
7. Predicate definitions contain all obligatory participants of the situation denoted by the keyword.
8. The situation denoted by the predicate inherits all obligatory participants of any lexical meanings which are contained in it.
9. Presuppositions, and other nonassertional semantic components, must be distinguished from assertions about the actants.
10. A principled distinction must be made between optional and circumstantial participants.
11. Constant participants may not be expressible in the text even if they are obligatory.

**Rule 6:** The definition of a lexical unit denoting a situation, in addition to explicating the situation itself, must illustrate the role of the actants. For this reason, the definition of a predicate is in propositional form to better illustrate the placement of the actants with respect to the keyword: EAT = '*X eats Y: being X chews and swallows Y*'. The letters X, Y, Z, etc., describe the semantic actants of the situation.

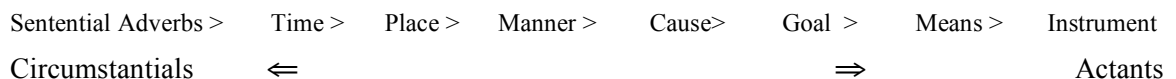
**Rule 7:** These semantic actants or participants in the situation are considered obligatory if, once they are removed from the situation, the keyword can no longer denote the same situation or ceases to indicate a situation. For example, a situation of eating cannot be described by EAT<sub>1</sub> if X does not chew and swallow something but simply chews with an empty mouth, without any substance Y. All of the elements, including participants X and Y, are necessary for this lexical unit to be used.

**Rule 8:** Naturally, a lexeme 'inherits' all the semantic components denoted by a moderately complex lexeme within the definition (the rule of maximal block). If one of the components of the meaning of the predicate is itself a predicate with its own actants, the keyword then 'inherits' all of the actants of the lexemes that make up its definition. This is known as the "Obligatory Inheritance Principle".

**Rule 9:** It is critical to distinguish presuppositions from assertions in the definition. Not all components may have the same status in this respect. Many components express facts about the keyword or about an actant, but others may be presuppositions or semantic taxonomic restrictions on an actant rather than

assertions. Often the difference can be clearly seen when the analyst adds a negation or intensifier to the keyword. Which components are negated or intensified? Mel'čuk (2004a: 45) cites the case of WIDOW: the definition of this word cannot simply be 'X is a woman who has lost her husband and has not remarried' because the negation, as in *Zhu is not a widow*, does not negate the fact that Zhu is an adult female. The gender of the primary actant must be a nonassertional semantic component, referring to a taxonomic restriction or presupposition about the actant X. This is shown by putting this information in a nondefining relative clause embedded in the definition: 'X, who is a woman, has lost her husband and has not remarried'. In this study, there are many instances of nonassertional components in Dene motion and position verbs, which feature intricate conflation patterns incorporating detailed nonassertional information about X's shape, texture and number (see Chapter III).

**Rule 10:** Sometimes a component is merely suggested to be present but is not strictly required for the definition to apply. These are called *weak* or *default components* (see discussion in Mel'čuk 2004a and 2004b). For example, the adverb STUBBORNLY strongly suggests that the agent continued to do (or to refuse to do) something in spite of better alternatives. That would be the automatic interpretation of a sentence such as *she stubbornly refused to come with me*. But this meaning can easily be contradicted by certain contexts, as in *he stubbornly fought the cancer*. We would not want to say that these are two distinct senses of *stubborn*. A similar but greater challenge presents itself when the analyst must decide whether to include in the definition of a verb those entities that are obliquely part of its situation but perhaps not so closely involved as to be called participants. a "circumstants", and lie outside of the definition. Figure II-5 from Mel'čuk (2004b) shows the following hierarchy between circumstants and optional participants:



**Figure II-5. Hierarchy of Circumstantials and Actants (Mel'čuk 2004b).**

If the analyst labels something an optional participant if the participants differ between two instances of a word, then the linguistic situations they are distinct, and we must be in the presence of two separate senses. For instance, shall we say that the intransitive *eat* in *the whippet ate from my plate* and the transitive *eat* in *the whippet ate something from my plate* are different lexemes belonging to EAT?

Mel'čuk (2004b) defines five criteria for deciding that something is part of a circumstantial phrase (solution 1) to be described by a nonstandard lexical function if its expression is somehow controlled by the keyword, or an optional participant of the situation itself (solution 2):

1. Its semantic role: if the nominal in the situation is closer to the right side of the hierarchy in Figure II-5, then we should consider it an optional participant. In the case of *Brake for moose!*, the circumstantial *for moose* is on the right half of the table.

2. The semantic homogeneity of different possible circumstantials/participants: if there is a very limited and unitary range of them, they are more participant-like.

3. Its lexical boundness by the keyword: the fewer lexical restrictions on the phrase in question, the more the analyst should opt to consider it an optional participant.

4. Its semantic boundness by the keyword: the fewer semantic restrictions on the phrase in question, the more the analyst should opt to consider it an optional participant.

5. Whether or not the language has a lexical function (see Chapter IV) that would normally relate the keyword and the phrase in question. If so, considering it a circumstantial would be more in keeping with the overall description of the lexicon. For example, for the phrase *drink from a glass* the lexical function **Labreal** (denoting the typical use of the keyword) can relate the two items: **Labreal**(*glass*) = *drink*.

**Rule 11:** One category of obligatory participants are the constant participants, whose expression is restricted. They are usually not expressed in the text because their presence is assumed and unworthy of mention. For example, for the lexeme SEE, the body part 'eyes' is a constant participant, necessary for the concept of seeing, but one rarely mentions the eyes overtly. One mentions them if they are somehow marked, i.e. *She could barely see with her failing eyes*.

There are four types of constant participants, each indicated with a distinct symbol in this study. Constant participants which cannot be expressed are surrounded by

square brackets [ ], those which can only be expressed if characterized explicitly by curly brackets { }, those which are entirely optional by parentheses ( ), and those which must be expressed without a marking (in the original Russian ECD). The constant participants which are included only if characterized explicitly include those participants which must logically be part of the situation, i.e. the lips with which one kisses, the eyes with which one sees, but which are only mentioned overtly if particular attention is being drawn to them, as in *he pointed at me with a pencil*. Some participants simply cannot be expressed, even if they are obligatory. Thus, if a definition of the Dene idiom  $X_{\text{obj.agrX}}-ini\ k'éch'á$ , lit. “against X’s mind” (referring to X’s feeling of anger at a situation caused by someone else) is usually expressed in an independent clause, which could suggest that the definition would be ‘person X feels angry because person [Y] does or did situation [Z] that X does not want’. Y and Z must be present in the situation but expressed in a previous clause or understood in the discourse. However, in many instances definitions will list semantic components as expressible if they are usually uttered in an adjoining clause within what is judged to be the same utterance. This is relatively common in Dene.

**3.1.2. The Syntax Zone.** The second major zone of the ECD entry is the syntactic combinatorics zone, constituted essentially by the government pattern of the keyword. The government pattern (GP) provides two types of information. First, it specifies how the semantic actants X, Y, Z, etc. from the definition correspond to deep-syntactic actantial roles, indicated by Roman numerals I, II, III, etc. This part is referred to as the diathesis of the lexical unit. Which deep-syntactic actants are obligatory and which are optional must also be indicated. Second, the GP illustrates the various possibilities of how the deep-syntactic actants can be realized as surface-syntactic actants, real members of syntactic classes in the language. Table II-I shows the GP for the English verb HELP<sub>1</sub>. As can be seen in Table II-I, the surface realization of the syntactic actants are numbered. The default reading of the GP is that any of these surface realizations from each column can be used with any of the surface realizations from the other columns. Sometimes combinations, however, may be odd or unacceptable. If so, the odd or erroneous combinations must be indicated. In Table II-I,

for example, realizations 3 and 4 from the column for Deep Syntactic Actant III are undesirable with the realization 1 of Deep Syntactic Actant IV.

X ↔ I	Y ↔ II	Z ↔ III		W ↔ IV	
1. N	1. N	1.	V <sub>inf</sub>	1. <i>with</i>	N
		2. <i>to</i>	V <sub>inf</sub>	2. <i>by</i>	V <sub>gerund</sub>
		3. <i>with</i>	N		
		4. <i>with</i>	V <sub>gerund</sub>		
		5. <i>in</i>	V <sub>gerund</sub>		
		6. PREP <sub>dir</sub>	N		

**Table II-I. Government Pattern for the verb HELP<sub>1</sub> (Mel'čuk 2008).**

For example, the sentence *?Kathleen (I) helped Arthur (II) with his work (III) with her advice (IV)* is odd. Similarly, the GP must specify whether any of the combinations, while permissible, carry a special meaning. The first surface realization of Deep Syntactic Actant I means that the semantic actant X was not directly involved in action Z: X was not performing action Z, but providing resources to Y so that Y could do Z.

**3.1.3. Phraseology in the ECD.** The final zone of an ECD entry describes how the keyword is related to and combines with the other lexical units of the language, wherever that combination is somehow irregular or phraseologized. According to Mel'čuk (2008), “[in] a dictionary of language L... any phraseologized or non-free word combinations involving the keyword must be described in the final zone which concerns lexical combinatorics, which is concerned with how the keyword may be combined with the rest of the lexicon.” The ECD treatment of phraseologized language is best understood starting with what MTT defines as a compositional, free phrase.

Let us recall, from Section II-1.1, that in MTT language is described as a set of many-to-many correspondences between an infinite set of meanings and an infinite set of texts. An act of language use begins when the speaker observes, experiences or conceives of a situation using his or her extralinguistic mental faculties. Once the speaker has chosen the relevant linguistic meanings and signifieds needed to express the

conceptual representation, the speaker juxtaposes them through acts of linguistic union to produce a compositional complex sign which is the sum of the signifieds and the signifiers of its constituents. This is a free phrase, as opposed to a phraseme. According to Mel'čuk (2006:8) to be considered a free phrase involving the linguistic union of A and B the combination of  $A \oplus B$  must satisfy two conditions “its signified ‘X’ = ‘ $A \oplus B$ ’ is unrestrictedly and regularly constructed on the basis of the given Concept[ual] R[epresentation] (which the speaker wants to verbalize) — out of the signifieds ‘A’ and ‘B’”, and furthermore “its signifier /X/ = / $A \oplus B$ / is unrestrictedly and regularly constructed on the basis of the SemR ‘ $A \oplus B$ ’ — out of the signifiers /A/ and /B/”. For example, a speaker of English can select the lexemes KICK and BALL with the meanings ‘kick’ and ‘ball’ and the phonological forms /kɪk/ and /bɔl/ and, using rules that apply to most of the lexical units of English, form the phrase *kick the ball*. The combination must be chosen and interpreted as compositional at every level. “A free phrase is thus 100% compositional and replaceable by any other sufficiently synonymous phrase” (Mel'čuk 2006b).

But much of language is not free. People seem to speak largely in set phrases and using phraseology. The idiom KICK THE BUCKET, for example, is not formed by building on the speaker's selection of the concepts of ‘kick’ and ‘bucket’, like the phrase *kick the ball* is. The concepts ‘kick’ and ‘bucket’ are entirely absent from the speaker's conceptual representation of a situation of dying denoted by KICK THE BUCKET. Instead, KICK THE BUCKET must be listed with its own entry in the lexicon (dictionary). This follows from MTT's principle treating phrasemes and lexemes and equally “deep” in the lexicon.

Phraseologized or non-free language, in which at least one part of one of the signifieds or signifiers is combined in a nonregular or restricted way, is not a side curiosity in the lexicon, but may well constitute the bulk of the vocabulary. Example (9), taken at random from a major American newspaper, shows all non-free expressions in bold.

- (9) **Racking up exorbitant** mobile charges is **easy to do** if you are not **careful about** using your cellphone internationally. AT&T charges 99 cents **a minute**



to use your phone in Italy (rates vary **by country**), and that is if you **pay for** the carrier's international calling plan. If you do not, the charge **goes up** to **\$1.29 a minute**.<sup>10</sup>

It is almost impossible to overstate the prominence of set phrases or phrasemes in natural language, so one tenet of the MTT approach is that the dictionary should give adequate attention to them. There is a diverse typology of non-free or phraseologized language which in the ECD approach is based on on which of the two necessary conditions of compositionality mentioned above is violated and how. Table II-II summarizes the four types of phrasemes in the ECD.

The vast majority of phrasemes, like the rest of the language, represent meanings freely chosen by the speaker to represent a given conceptual representation (the idea of translating a meaning into a text). An exception is the case of *pragmatemes*, for which even the pre-linguistic conceptual structure is restricted. A *pragmateme* is a fixed phrase that one must use in a given situation. Even its meanings cannot be selected unrestrictedly by the speaker to express this situation. Many greetings, speech formulas, proverbs, religious and ritual language, and quotations are *pragmatemes*. For example, in English one must say *good luck* to someone about to undertake a difficult task; one cannot use the semantically equivalent *good fortune* or *may you be lucky* in this situation.

For all other phrasemes, the meanings that they express are freely selected by the speaker and only their forms are restricted. *Full phrasemes*, or idioms, are cases in which the meaning of a sequence formally composed of the signifiers /AB/ does not actually involve the meanings 'A' or 'B'. For example, RED HERRING denotes something neither red nor a herring. KICK THE BUCKET neither involves the meaning 'kick' or 'bucket'. In these cases the meanings 'diversion' or 'die' are selected by the speaker, and to verbalize them he or she selects a multi-word expression as a whole unit.

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<sup>10</sup> "Cheap Mobile Calls, Even Overseas", Joanna Stern. *New York Times* (online edition), January 6, 2010.

	PRAGMATIC PHRASEMES		SEMANTIC PHRASEMES	
	pragmateme	idiom	collocation	quasi-idiom
for phrase /AB/ structure	ConceptR(SIT) ⇒ <'X';/A+B/>	<'C';/A+B/>	<'A+C';/A+B/>	<'A+B+C';/A+B/>
signified restricted	X			
signifier restricted	X	X	X	X
signified irregular	sometimes	sometimes		X

**Table II-II. Typology of non-free phrases in the ECD.**

Semiphrasemes, on the other hand, are cases where the sequence /AB/ denotes the meaning 'A' and second meaning which is not 'B'. The selection of signifier /B/ is not free but is imposed by the selection of /A/. These are also known as collocations. For example, if the speaker wants to express the meanings 'armed' and 'intensely', the speaker must say *heavily armed* or *armed to the teeth*. It sound strange to say *?very armed*. The signifier 'armed' is freely chosen but the expression of 'intensely' is restricted to certain modifiers. Finally quasi-phrasemes, or quasi-idioms are cases in which the sequence /AB/ conveys the meanings 'A' and 'B' transparently, but other unpredictable meanings are added as well. For example FISH AND CHIPS does refer to fish and to chips, but not in just any way. The fish and the chips must be served warm, and in a certain way, or else the items cannot be referred to as FISH AND CHIPS. Similarly, CHRISTMAS TREE indeed refers a tree and one buys and displays it at Christmas-time. However it must be a large evergreen tree, and it must be decorated. If someone purchases a bonzai or palm tree two weeks before Christmas, it would be strange to refer to it in conversation as a *Christmas tree*.

Phrasemes also exist on a morphological level, where the signifier of a seemingly complex wordform appears to be linearly divisible, but its meaning is unpredictable or phraseologized rather than a case of the regular union of morphs provided for by the grammar. This is referred to in MTT as a morphological phraseme (Mel'čuk

1997a: 246-9), which are elementary signs on the level of the signified but not on the level of the signifier. Let us recall that inflectional and derivational affixes are considered to be true elementary signs (=signs “not representable as [a combination of] other signs united by a meta-operation of linguistic union”, Mel’čuk 1993: 64) with transparent grammatical meanings. Following Mel’čuk’s (1993: 311), definition of derivation a derivateme is a standard grammatical meaning which can be productively added to members of a lexical class, so that speakers can add the derivateme to existing words to coin new lexemes readily interpretable to other speakers. This definition of derivation presupposes that the base is an extant word in the language, so all derived stems are complex. The above would fit a novel coinage like *stacker*, but not a morphological phraseme like *stapler*.

Following Mel’čuk (1993: 64), quasi-elementary signs are those wordforms whose signifiers are linearly divisible into smaller parts. However, these signifieds that would correspond to these signifiers if they appeared as part of a free phrase cannot be isolated from the meaning of the whole word. Alternatively, some grammatical signifieds (such derivatememes or inflectional values) can be isolated from the meaning of the word although their markers cannot be. This is the case of wordforms such as *am*, which are commonly called portmanteaux. For Mel’čuk (1997: 246-9) morphoids are quasi-morphs which still bear a plausible semantic link with the meaning of the whole word, and submorphs are those which no longer have so clear a link. In English, the quasi-suffix *-er* in *scanner* and *stapler* is a morphoid because the semantic component ‘instrument’ is still a component of the meaning of the word, regardless of the word’s idiosyncratic meaning. Many Dene wordforms contain morphoids rather than derivational affixes. For example, the iterative *ná-*, meaning ‘again’, is a derivation marker in the wordform *nánasther* [*ná+nasther*] {ITER+1IPFV:stay} ‘I stay again’, but a morphoid in the form *nóresker* [*ná+horesker*] {etymologically ITER+1IPFV:ask} ‘I beg’, lit. “I ask again”.

These complexes of quasi-morphs which are semantically different from the sum of their parts are referred to as morphological phrasemes. One can distinguish inflectional morphological phrasemes, a sort of morphological idiom

whereby the language recycles inflection markers to express inflectional value other than those typically denoted by those markers, from derivational morphological phrasemes, which are complex signifiers analyzable as an (ex-)derivational morphoid with a supposed lexical base. In all cases, the morphological phraseme must be learned by the speaker. To call a wordform a derivational morphological phraseme, there must be evidence for the existence at some point of the base to which it was once added, e.g. *repeat* is not a morphological phraseme, since *peat* is not a speech verb in English. While a word such as *garlic* is a compound word or phraseme from a diachronic point of view, its component parts are no longer part of the English language. The noun *gar* (Old English, ‘spear’) has been lost and *leek* has shifted from referring to roots to referring to another set of plants. Its vowel is also phonologically reduced. For these reasons, we would not want to analyze *garlic* as being morphologically complex, even on the level of the signifier. The MTT approach thus allows for an interesting continuum of forms, from free phrases to monomorphemic items, in addition to providing a typology of intermediate cases and describing how they differ from both free and monomorphemic forms. Morphological phrasemes are of particular relevance to Athabaskan morphology and many of keywords discussed in the rest of this thesis are considered to be morphological phrasemes.

**3.1.4. Lexical Relations.** Collocations have typically been classified as a type of semantic relation. “Semantic relations” is a broad term referring to patterns of how words are related to each other in the lexicon. Paradigmatic semantic relations such as synonymy and antonymy are those in which the two words can replace each other in the same context, as in *this book is good/bad*. Syntagmatic or phrasal semantic relations are between words which usually appear together. In MTT, semantic relations are formalized as lexical functions, which are regular meaning relationships between sets of words in a language. In order to qualify as a lexical function, a semantic relation must satisfy two conditions:

1. Homogeneity of the LF: the inputs are linked to their values by a common relation, such as antonymy, synonymy, intensification, and so forth.
2. Diversity of Expression: the expression must be unpredictable and phraseologized.

For example, the meaning ‘intense’ mentioned above can be added to many adjectives and verbs, but its expression is diverse: *thunderous APPLAUSE*, *heavily ARMED* (or *ARMED to the teeth*), *sharp CONTRAST*, *radical CHANGE*, *EASY as pie*. When an English speaker uses these expressions, he certainly does not think of thunder, sharpness or pie. He simply wants to add the meaning ‘intense’ to the words *applause*, *armed*, *easy*, etc., and is forced by the conventions of English to use these collocations. It is extraordinarily challenging for a second-language learner to use these collocations correctly. Mastering the collocations of a language is an essential part of learning that language, and so the user is given this information in ECD-type entries. For example, the meaning ‘intense’ is formalized as the lexical function **Magn** (from the Latin *magnus* ‘big’).

**Magn**(*contrast*) = *sharp*

**Magn**(*applause*) = *thunderous, heavy*

**Magn**(*armed*) = *heavily, to the teeth*

**Magn**(*beautiful*) = // *gorgeous* (// indicates a fused value)

**Magn**(*naked*) = *stark*

This information would be listed in the ECD dictionary entries for SHARP, APPLAUSE, BEAUTIFUL, etc. If English had a standard modifier or affix that meant ‘intensely’, with no unpredictable expression, then **Magn** would not be relevant to the English lexicon, and would not be included in the English ECD. A lexical function reveals a meaning relationship salient enough to be repeated for many pairs in the lexicon despite not being expressed by its own standard marker. The names of the lexical functions are Latinate in origin and it is conventional in MTT to write them in bold. In the current version (Mel’čuk 1996) there are 60 standard lexical functions posited to exist in various languages. LFs 1-22 cover paradigmatic functions such as **Syn** (synonymy), **Anti** (antonymy) and **Conv<sub>ij</sub>** (conversives), as in **Conv**(*husband*) = *wife* or **Conv<sub>21</sub>**(*send*) = (*receive*). In Meaning-Text Theory, part-whole relations (hyponymy and hyperonymy) are considered to be encyclopedic rather than lexical knowledge, so they are not included as lexical functions. Only hyperonymy is expressed as a function when it involves a conventional metaphor (**Gener** and **Figur** for ‘generic’ and ‘figurative’ respectively). LFs 22-60 are syntagmatic lexical functions. They involve constructing a phrase based on the keyword, either as a means of changing

its lexical class or because it is simply a common phrase in the language. This includes **Centr**, a conventional phrase for the culminating part of a situation and modifier relations such as **Magn**, described above, **Ver** and **Bon**, as in the following: **Centr**(*crisis*) = *the peak* [of the ~] and the **Magn** derivatives above.

Finally, some lexical functions may denote a non-regular semantic relationship that covers only a few lexical items in a language. These are referred to in the ECD as nonstandard lexical functions, and they are usually language-specific. There is no space to fully discuss lexical functions here. The reader may find a more detailed description, with examples of each of the LFs, in Chapter IV, dedicated to lexical functions in Dene.

**3.2. Apresjan's Dictionary of Synonyms.** A second direction in Explanatory Combinatorial Lexicography has been the detailed semantic analysis of synonymy and the compilation of theoretical dictionaries of synonyms. The main works in this current are by Juri Apresjan, his Dictionary of Synonyms, a database begun in the early 1990s and has resulted in three volumes of a Russian synonym dictionary so far, amply summarized in Apresjan (2000). Entries in the Dictionary of Synonyms (not italicized because it also refers to an ongoing project and approach) naturally share much in common with the ECD entries. This general outline therefore concentrates on the differences between them.

Rather than presenting an alphabetical list of unrelated and self-contained entries, synonym dictionaries are organized in meta-entries comprising series of quasi-synonymous words. For example, in Apresjan (2000: 188) describes the KHOTET' [to want] series for Russian, comprising the following lexemes: *khotet'*<sub>1</sub> [~ to want], *zhelet'* [~ to wish], *mechtat'*<sub>2</sub> [~ to yearn for], and *zhazhdat'* [~ to crave]. The structure reflects the comparative goal of the work. Like the ECD, the synonym dictionaries are basically monolingual, but when they are aimed at an audience whose native language differs from the object language, the explications are supplemented with translations.

The choice to focus on synonymy is advantageous because it commits the analyst to effecting an extremely fine-grained semantic and combinatorial analysis in order to distinguish the meaning and use of the words in the series. Conversely, the subtle

semantic differences between the synonyms uncovered by ECL-based synonymy studies have led to the discovery of new dimensions of systematicity in the lexicon, such as lexicographic types (see Apresjan 2000: 163-166). As an applied methodology, synonym dictionaries are a type of production dictionary aimed at teaching the user to distinguish between the meaning of synonymous words in a second language. For Apresjan, three features are essential to the mastery of the lexicon of another language: semantic precision (the ability to select the appropriate quasi-synonyms according to express one's meaning), idiomatic usage (the mastery of lexical and syntactic co-occurrence restraints) and flexibility, or the ability to paraphrase. "It is clear that if a dictionary of synonyms is to help the user towards accurate expression it should contain a full, non-redundant and absolutely explicit description of their semantic similarities and distinctions. A description is full if it mentions all substantive characteristics of the lexemes at issue; it is non-redundant if no superfluous characteristics are ascribed to any lexeme; lastly it is explicit if nothing is left unsaid and every characteristic is clearly stated in a manner which can and should be understood literally, with no recourse to the reader's deductive powers" Apresjan (2000: 4). The systematicity comes not only from the exhaustiveness of the description of lexical portraits and of the series, but in the selection of the keywords and series themselves. The goal of Apresjan's study is to depict the overall culture-specific "naïve linguistic view of the world" which emerges from the study of the lexical means of depicting all the main human systems — lexical items denoting emotions, desires, sensory perceptions, mental activities, physical movements, and so forth.

The entry for each synonym series is divided into six smaller zones or sections rather than the three main zones of the ECD. After the phonological form, the first section is the heading or the name of the series, to which only lexemes of the same part of speech may belong (Apresjan 2000: 55). The quasi-synonyms either have similar semantic content or they are morphologically derived from each other. Among the quasi-synonyms there is a dominant, "the lexeme which has the most general meaning in the given series, has the broadest application and co-occurrence, and is most neutral from the point of view of style, pragmatics, communicative value, grammar and prosody, etc." (Apresjan 2000: 56). Sometimes the dominant is a semantic primitive,

present in all the other members of the series, but it can also possess some idiosyncratic features that do not figure into the other more complex quasi-synonyms. After the heading is an indication of the stylistic level, which is particularly relevant to literary European languages such as Russian and English.

**3.2.1. The Zone of Meaning.** This zone of the dictionary contains numerous subsections. As a series, the quasi-synonyms are arranged by degree of semantic similarity. The zone of meaning for the entry therefore begins by listing the semanteme common to all of the elements in the series, and mentions whether this is a semantic primitive. This is followed by an explication of the meaning of each quasi-synonym. The explication has four functions (Apresjan 2000: 64): to explain the meaning of the lexical items, to indicate their place in the “semantic system of the language”, to represent semantic mapping rules between their semantic and deep syntactic representations and finally to preview the lexical combinatory rules in the following sections. This is followed by a “synopsis”, which lists the semantic parameters by which the quasi-synonyms differ, i.e. intensity, duration, probability of realization (for verbs of desire), etc. Next the reader is provided with a meticulous description of the semantic similarities and differences (not only in the explication but also pragmatic, referential and connotative divergences) so as not to burden the reader with the task of comparing the quasi-synonyms manually. A subsection describing prosodic and communicative properties indicates which items of the series can receive phrasal stress and be rhematic, if there are such differences between the quasi-synonyms. Similarly, any restrictions on the use of the words due to extralinguistic considerations is mentioned, as are any context in which the regular semantic and communicative differences between the quasi-synonyms are neutralized. The zone of meaning ends with any notes on synonyms not included in the series (being peripheral, archaic or obsolete), other meanings related but not similar enough to be included in the series, and other senses of the words in the series that fall outside of it.

**3.2.2. The Form Zone.** The Dictionary of Synonyms has more elaborate formal information than one finds in the French and English ECDs that have been published.



This zone details any irregularities among the inflectional forms of the keyword, i.e. if a verb has an unpredictable form in a given aspect or mood, or if the plural of a noun is irregular (*ox > oxen*). Also noted are any restrictions on the use of certain grammemes with one of the keywords. For example the English verb BELIEVE is not typically used in the progressive aspect: *?I'm believing you*. The Form Zone also lists any unpredictable semantic or communicative traits a keyword has in one of its inflectional forms. For example, the past tense form of KHOTET' 'to want' can be used in question but it belongs to a different and lower register than the other forms (Apresjan 2000: 79). Finally the zone includes what Apresjan refers to as "non-proper forms". These are instances in which a verb has a defective paradigm and forms from a synonymous verb are conventionally used to fill in the missing forms in the contexts in which they would have been used.

**3.2.3. The Syntax Zone.** This zone corresponds loosely to the Government Pattern in the ECD, because it lists all the unpredictable syntactic combinatory patterns of the keyword, but it focuses especially on the possible realizations of the surface-syntactic actants, including any restrictions or idiosyncrasies in meanings. This information is also structured differently from in the ECD, in paragraphs, to compare use within a series. There may be some language-specific parameters in this zone as well. The Russian version of the Dictionary of Synonyms specifies whether there is a difference in meaning if the verb is used in the "absolute construction", a context in which a normally transitive verb is used intransitively. It also lists whether the keyword can be the main verb in a clause with a subordinate clause, with any attendant semantic differences.

More similarly to the ECD and the methodology outlined in Mel'čuk *et al.* (1995), the Dictionary of Synonyms tests the semantics of interrogative and negative sentences types, which frequently carry idiosyncratic meanings. Unlike the ECD, word order beyond the Government Pattern is a separate parameter, and this is specified if there is any difference in semantic scope or meaning from way such a word order would normally be interpreted. Finally, any peculiarities in its combination with words of other lexical classes (for example, if a verb is rarely used with adverbs) are listed.

**3.2.4. The Co-occurrence Zone.** This zone is quite different from the ECD, which divides the entry into syntactic patterns on one hand and on the other semantic combinatorics, which concerns mostly lexical functions and phraseologized language. Instead, the Dictionary of Synonyms divides the profile of the grammatical forms of the keyword in the syntax zone from the description of any irregularities in the combination of the keyword with other lexical items in the language, be they induced by semantic, lexical, morphological or syntactic traits of those other lexemes. In the Dictionary of Synonyms, all of this information is listed in the co-occurrence zone, which might list co-occurrence restrictions with individual semantic components (of any lexical unit). For example, the subject of certain verbs must be human. This information is specified in the explication in the ECD. Also in the co-occurrence zone is whether the keyword blocks any morphological values on the items it combines with. For example, in Russian some otherwise synonymous subordinating prepositions have different requirements as to which aspect the verb in the subordinate clause may occur in (Apresjan 2000: 89).

**3.2.5. The Illustration and Auxiliary Zones.** Apresjan's Illustration Zone is quite detailed compared to the ECD, containing ten or twelve examples of many keywords. Part of this is to justify the many claims made about the keywords in the entry, but this also contributes to more pedagogical aims of the Dictionary of Synonyms with respect to the ECD. Another particularity is that the Dictionary of Synonyms draws heavily on examples from corpora (including many literary examples), while the ECD is based on elicitation from native speakers and occasionally supplemented with examples from corpora.

The auxiliary zones comprise several small subsections. There is a listing of any quasi-synonyms which are phrasemes, as the actual synonym series in the Dictionary of Synonyms contain only lexemes in almost all cases (Apresjan 2000: 94). The subsection of "analogues" lists hyperonyms, hyponyms and co-hyponyms for words of which one semantic component may appear in the definition of the keyword series elements, but which is not semantically close enough to be the dominant. Further

subsections list conversives of keyword verbs and of their “analogues”. Finally, there is a listing of exact and inexact antonyms (depending on how many and which semantic components are being negated or reversed) and list of morphological derivatives, which is relevant to the Russian version.

**3.3. Wierzbicka’s Natural Semantic Metalanguage.** The third semantics approach on which the present work is based is not actually part of Meaning-Text Theory but comes from the MTT’s “sister school” founded by Anna Wierzbicka, the Natural Semantic Metalanguage (NSM) approach. The NSM framework shares many affinities with Meaning-Text Theory, and the two approaches have evolved in such close contact with each other from the beginning of both that they may be said to have mutually influenced each other. It will be useful to explore the areas relevant to MTT that have been borrowed from NSM, or further developed in that school than in MTT proper.

The Natural Semantic Metalanguage is an analytic framework for lexicography and lexical semantics pioneered by Anna Wierzbicka, a semanticist of Polish origin who has spent much of her career at Australian National University in Canberra. Wierzbicka was later joined in her approach by other linguists, most notably Cliff Goddard, and the NSM project has now produced perhaps a few hundred research articles and attracted enough followers that it may be dubbed a school of lexical semantics. In general, the NSM is much less formalized than MTT, but it is based on extensive cross-linguistic data from diverse language families. In contrast, MTT semantics is highly formal and perhaps more systematic for single-language description, but has mostly been developed with a focus on a restricted sample of typologically similar European languages.

Like MTT, Wierzbicka adopts the functionalist view of language as essentially a tool for expressing meaning. As she evocatively states, “To study language without reference to meaning is like studying road signs from the point of view of their physical properties (how much they weigh, what kind of paint they are painted with, and so on), or like studying the structure of the eye without any reference to seeing. Curiously, however, this is precisely how many linguists study language” (Wierzbicka 1996: 3). Wierzbicka’s “semantocentrism” is more radical than MTTs — like, the Cognitive

Grammar approach, she extends even to the description of morphosyntax, which she views as encoding meaning like other linguistic signs (this aspect of her theory is elaborated in *The Semantics of Grammar*, Wierzbicka 1988).

If language exists primarily to communicate meaning, then it stands to reason that part of this meaning will express “universal” concepts, those which are common and intrinsic to human experience, and a much larger part will be subjective, rooted in the experience of a particular human community and oriented toward the concerns and priorities unique to that group. Much of language is untranslatable to others who do not share the experiences and concepts of the speech community. Human communities differ as to social organization, economic foundation, physical surroundings, supernatural beliefs, priorities, interests and history. If a language is primarily an instrument for communicating meaning and reality, it is normal that the linguistic stock of a language will contain items denoting the places, artifacts, and ideas salient enough to the speech community to be considered nameworthy, and that much of such content will differ from language to language. Wierzbicka is open to a weak version of the Sapir-Whorf hypothesis (not as much towards Whorf’s determinism): “As a society changes, these tools [conceptually specific words], too, may be gradually modified and discarded. In that sense, the outlook of a society is never wholly ‘determined’ by its stock of conceptual tools, but it is clearly influenced by them” (Wierzbicka 1997: 5).

In order to compare quasi-synonyms within a language or so-called concept equivalents between different languages, or render of the denotational content of lexical items which have no near-equivalent in the native language of the academic audience, the *definiens* of these lexical items explicate their meaning in terms of simple, universal meanings. The second position Wierzbicka takes (like MTT) is that the *definiens* of a lexical item must be its decomposition into semantically simpler meanings. “one cannot understand the concepts of ‘promise’ or ‘denounce’ without first understanding the concept of ‘say’, for ‘promise’ and ‘denounce’ are built upon ‘say’. Similarly, one cannot understand the concepts of ‘deixis’, ‘demonstration’, or ‘extension’ without first understanding the concept of ‘this’...” (Wierzbicka 1988: 10). Wierzbicka believes that decomposition can proceed until the analyst reaches indefinibilia, those elements which are universal and innate.

**3.3.1. Semantic Primitives.** In the study of another language, the indefinabilia or semantic primitives such as IF, GOOD, FEEL, HERE, and SOMETHING are best rendered by translation or paraphrase, as any attempt to define them only obscures their meaning. In her various works, Wierzbicka provides a list of semantic primitives which she considers undefinable and which she predicts will have lexical equivalents in the languages of the world. These indefinabilia constitute the Natural Semantic Metalanguage (NSM). This is an empirical claim, based on a growing body of empirical studies of how these meanings are rendered as lexical items in diverse languages.

<b>Substantives</b>	I, YOU, SOMEONE, PEOPLE, SOMETHING/THING, BODY
<b>Relational substantives</b>	KIND, PART
<b>Determiners</b>	THIS, THE SAME, OTHER/ELSE
<b>Quantifiers</b>	ONE, TWO, SOME, ALL, MUCH/MANY
<b>Evaluators</b>	GOOD, BAD
<b>Descriptors</b>	BIG, SMALL
<b>Mental predicates</b>	THINK, KNOW, WANT, FEEL, SEE, HEAR
<b>Speech</b>	SAY, WORDS, TRUE
<b>Actions, events, movement, contact</b>	DO, HAPPEN, MOVE, TOUCH
<b>Location, existence, possession, specification</b>	BE (SOMEWHERE), THERE IS, HAVE, BE (SOMEONE/SOMETHING)
<b>Life and Death</b>	LIVE, DIE
<b>Time</b>	WHEN/TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT
<b>Space</b>	WHERE/PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE
<b>“Logical” concepts</b>	NOT, MAYBE, CAN, BECAUSE, IF
<b>Intensifier, augmentor</b>	VERY, MORE
<b>Similarity</b>	LIKE

**Table II-III. A current English Version of the Natural Semantic Metalanguage (Goddard 2007)**

The inventory is continually revised to accommodate new data, but as a framework for elicitation of word meanings it has been relatively successful and consistent. The current version contains over 60 items, summarized in Table II-III. The definiens of a lexical item is a list of semantic components, in a numbered list, each written in

propositional form. The actants of a verb can be indicated by X, Y, Z, etc., as in MTT, or alternatively using natural language pronouns such as I, someone and something.

It is important to note that logically prior concepts are semantically simpler. Being conceptually prior has at times been confused with having been learned or mentioned previously in the discourse: “In claiming universality for its simplest semantic elements, NSM escapes this objection by, in effect, asserting an identity between the simplest meanings and the already-known ones... Only if greater simplicity is substituted for prior knowledge as the universal characteristic of semantic explanation does a level of ultimate simples become necessary: the process of definitional simplification cannot, clearly, go on for ever. But if semantic explanation is assumed to operate by relating definienda to meanings which are already known, no universal array of absolutely simple ideas need be supposed” (Riemer 2006). This objection confuses *prior* in a chronological sense with *conceptually prior*, which is what is meant here. Meanings which are simpler *must* be prior. The only way for the speaker to understand a complex sign *as* a union of subcomponents is if he or she already has knowledge of those simpler units. One could, in principle, learn the word *linguists* as a label one can apply to a group of people who recently arrived in town for a conference, and have some referential ability to identify those individuals, but one cannot understand the meaning of *linguists* as ‘people who do linguistics [the science of language] if one does not know what *linguistics* or *science* or *language* are; one cannot understand *Hoosiers* to refer to ‘people who live in Indiana’ if one does not know that Indiana exists.

If no meaning were semantically simpler than any other, and no concept were conceptually prior to another, then lexical meanings would be so unpredictable that speakers would have an immensely difficult time integrating new meanings from their own language or from new languages into their existing mental framework, undermining the communicative function of language. In order for new meanings to be processed, they must be decomposed, and this decomposition would proceed logically to indefinibilia or primitives which can be learned in another language only through translation. There is some slight disagreement between the MTT and NSM schools as to whether *all* the primitives can be verbalized as lexical units in natural languages and whether they are always comparable. Also, the NSM school has revised the particular

set of primitives as more data from more languages has become available. The usability and universality of the primitives remains an ongoing empirical question.

**3.3.2. NSM Definitions.** The defining metalanguage to the items in the NSM list. Example (10) cites the definition of AFRAID (Wierzbicka 1999: 75):

- (10) *Afraid* (X was afraid)
- (a) X felt something because X thought something
  - (b) sometimes a person thinks about something:
  - (d) I don't want this to happen
  - (e) I don't know if I can do anything now"
  - (f) when this person thinks this this person feels something bad
  - (g) X felt something like this
  - (h) because X thought something like this

Sometimes a single primitive will be rendered by a few different lexical items in complementary distribution. This is referred to as *allolexy* (Goddard 1994).

Semantic primitives are used to explicate words from another language without a precise equivalent in the language of the analyst. The language of the definition is not important because it is assumed that such a definition reduces the meaning to a level of universal conceptualization, whose meaning is only loosely related to language (resembling somewhat MTT's Conceptual Representation).

When it is not used for cross-linguistic semantics, the NSM is used for a fine-grained comparison of quasi-synonyms in a language, much like in the Dictionary of Synonyms. These quasi-equivalents between two languages or quasi-synonyms within a language may share many of the same primitives in its definition, but there will also be *differentia* – additional semantic components which enable the reader to understand the difference in use and denotational range between the two quasi-equivalent words. For example, in comparison with (10), Wierzbicka's definition of the German *angst*, loosely equivalent to 'fear', is the following (Wierzbicka 1999: 134):

- (11) *Angst* (e.g. *X hatte Angst vor dem Hund / vor der Prüfung*)
- (a) X felt something
  - (b) sometimes a person thinks for some time:
  - (b') "I don't know what will happen
  - (c) many bad things can happen to me
  - (d) I don't want these things to happen
  - (e) I want to do something because of this if I can
  - (f) I don't know what I can do"
  - (g) because of this this person feels something bad for some time
  - (h) X felt something like this

Each one of these components must be verified with linguistic evidence to check for semantic compatibility. For example, the presence or absence of the portion 'for some time' in component (b) differs between the definitions in (10) and (11). This is a concrete prediction that *angst* cannot be used to express a transient or momentary fear, while *afraid* can: *I heard a loud bang, and I was afraid for a moment* (<*\*felt angst for a moment*>).

But in the NSM theory, the value of basic sentences using primitives goes far beyond providing evidence for components of the definitions of lexical items. The authors view the basic combinatorial properties of the words which encode these primitives in a language as constituting a sort of basic grammar of that language. A specific definition of "basic combinatorial properties" has not been presented, but one imagines that it might refer to the actant structure and government patterns of these lexical items. Since lexical primitives form a sort of alphabet of basic human concepts, Goddard imagines that once we have a list of the "basic combinatorial properties" of words encoding lexical primitives from a large sample of languages, general patterns will emerge which will be evidence of a sort of universal grammar, although of a very different sort from that posited in generative approaches. As Goddard (2002: 31-32) explains it:

Every language L contains an irreducible semantic core, with universal lexical and syntactic (combinatorial) properties. As we describe, for any language, the L-specific realisation of this core, we are describing what may be called the "core grammar" of that



particular language. That is, in the process of identifying and describing the local exponents of the universal semantic primes, we are also describing the essential morphosyntactic characteristics of that language... In this way, the establishment of any L-specific NSM can be seen as a foundational step in the comprehensive grammatical description of that language

Such a study has not yet been undertaken in depth, but it is interesting to imagine that a sort of universal grammar could emerge from a study universal lexical combinatory properties. Indeed, every aspect of Wierzbicka's and Goddard's NSM approach invites empirical verification (and the authors themselves strongly encourage linguists to apply this approach to as many languages as possible). A fairly decent body of such lexical semantic studies of various languages already exists. Perhaps the most fruitful and popular subfield of study has been the study of lexical units denoting emotions in the languages of the world (see Wierzbicka & Harkins 2002, and numerous sources cited below).

**3.3.3. Areas of Divergence.** Meaning-Text Theory and the Natural Semantic Metalanguage share interests, core principles and some methods. Both have been referred to as “neostucturalist” (Geeraerts 2009) as they assume a compositional view of meaning: semantically complex linguistic signs can be decomposed into semantically simpler components, *salva significatione*, the compositional sum of which is equivalent to the meaning of the semantically complex sign. Both approaches are heavily focused on lexical semantics and lexicography. Specific studies in both approaches often treat similar topics such as ethnosemantics and cross-linguistic comparison. However, there are several important points of divergence. The first point of divergence concerned the status of the semantic primitives in the explications. With respect to the NSM approach, Apresjan (2000: 228-229) agrees that the meaning of a keyword can be decomposed into simpler units but suggests that the resulting metalanguage would be language-specific: “with thie aid of a semantic metalanguage, conceived as a sub-language of the object language, the national semantics of that given language may well be described”. Furthermore, a set of quasi-synonymous semantic primitives denoting mental predicates (i.e. two words meaning ‘feel’ or ‘want) may have meanings too simple to be further decomposed using actual lexical items in the object language, but semantic differences between them still remain. Citing the difference between two

simple quasi-synonyms for ‘want’ in Russian, Apresjan (2000: 8) concludes that neither are true primitives:

This lexical ‘incommensurability’ is typical above all of words which have fairly complex meanings: the greater the number of different ideas encapsulated in one dictionary sense, the greater the likelihood that the combination of ideas will be unique. Conversely, the simpler the meaning, the fewer basic ideas contained in it, the greater the likelihood that it will be expressed in one word in many, perhaps all the languages of the world. Sometimes, however, even relatively simple senses display similar lexical incommensurability...

The true primitive, the “component forming the intersection between them... cannot be verbalized”. Apresjan terms these true sub-lexical primitives “semantic quarks”: “senses which actually exist but which are not materialized in the vocabulary of natural languages”. Following this argument, there must also be a degree of “lexical incommensurability” between quasi-primitives in the various languages. A set of semantic primitives is therefore unique to the object language. “Semantic primitives in our perspective are language-specific, unlike universal primitives of human thought introduced by Wierzbicka. In point of fact, in MTT, we should speak of the semantic primitives of English, Chinese, Swahili, Totonac, etc. This does not preclude (near-) identity of the sets of semantic primitives for different languages” (Mel’čuk, *Semantics: From Meaning to Text*, to appear). While forming a list of primitives is a critical task for the semantic analysis of a given language, one should be cautious about cross-linguistic comparison: “a universal (cross-cultural) semantic metalanguage should obviously be based on an artificial logical language, the words of which are true primitives — the intersecting parts of words which partially translate one another in natural languages”.

The second difference between the NSM and Meaning-Text Theory relates to potential disagreement over the of viability of bilingual explications, an issue closely connected to the question of whether semantic primitives are truly universal. If many semantic primitives are assumed to be language-specific in some aspects of their meaning, then it is difficult to write a scientific explication in a controlled metalanguage based on language A of a lexical unit from language B; true definitions can only be monolingual. The NSM school, by contrast, assumes that there is a set of real semantically simple linguistic signs in each natural language which reflect universal

human concepts which cannot be further decomposed and which are therefore truly comparable cross-linguistically. Following this premise, it does not really matter which natural language is the source of the defining metalanguage used in explications, as long as that metalanguage is rigorously composed from the “bottom-up”, starting from universal semantic primitives. A Russian or Totonac or Dene word can therefore be explicated using an English defining mini-language because it is assumed that the component words of its definition correspond equivalents in the source language.

A third point of divergence concerns the internal structure of the explications. In term of the depth of semantic decomposition, NSM explications are “flatter”: more semantic components of the keyword are fully decomposed into primitives. The result is very long definitions which are not amenable to practical lexicography. For instance, Mel’čuk *et al* (1995: 84) cites Wierzbicka’s (1985: 310-311) definition of LEMONS, which fills over two pages even though it contains some intermediately complex components. ECD definitions, by contrast, are “textured” or hierarchical, containing elements of different degrees of semantic complexity. Following the maximal block rule discussed above, the meaning of the keyword is decomposed to the extent needed to define it. If a cluster of semantic components in the definition can be replaced by a single and more complex lexical unit that subsumes their meanings, and which is still simpler than the meaning of the keyword, then this intermediately complex lexical unit must replace the cluster. In addition to being better adapted to practical lexicography, this rule results in a definition that better reveals the semantic relationship between the defining components.

The two schools may not be as unreconcilable as these issues would seem to suggest. Methodologically MTT and NSM they are not mutually exclusive. Both schools are concerned with teasing apart the universal items from the culture-bound and specific. While the NSM primitives are claimed to be undefinable and universal, the list is continually revised on the basis of empirical verification of whether these terms are in fact culture-based or complex. While TT definitions must be in the object language to be substitutable with the keyword, MTT authors have sought parallels metalanguages. While the NSM is claimed to explicate lexemes from different human languages and

cultures on an equal basis, authors using the NSM often seek to supplement their explications with partial explications in the object language.

**3.4. Other Studies.** There is a fairly large and evolving literature on both MTT semantics and the Natural Semantic Metalanguage. While in previous decades these schools began with larger theoretically-oriented volumes, there is more and more current work being done on the lexical semantics of individual languages, particularly in the NSM school.

**3.4.1. Other ECD-Based Studies.** To date, full ECD dictionaries or databases have been compiled for Russian (Mel'čuk & Zholkovsky 1984) and French (Mel'čuk *et al.* 1984-1999). There is also an ECD-based dictionary of collocations for Spanish (*Diccionario de colocaciones del español*, Alonso Ramos 2003, 2004). Mel'čuk & Polguère (2007) released the *Lexique actif du français*, which is a unique ECD-based dictionary adapted to a non-specialist audience as a pedagogical tool for teaching vocabulary to learners of French (see also Polguère 2007 for a discussion of the tension between the ECD formalisms and general public use).

Polguère (1990) is a PhD dissertation which features an extensive presentation of the whole semantic module and the SemR DSyntR transition in MTT. It treats the other components of the semantic representation (i.e. the semantic-communicative and pragmatic components) and includes a detailed discussion of semantic paraphrase at the lexical and sentential levels. Milićević (2007) is a book dedicated to paraphrase, focusing particularly on sentential semantics. Mel'čuk *et al.* (1995) is a cours manual to teach Explanatory Combinatorial Lexicography. There are numerous articles and conference presentations about specific subtopics in the ECD approach. Besides a rich literature concerning almost all areas of the ECD in Russian, there are articles about lexical functions in German (Mel'čuk & Wanner 1996), in Spanish (Barrios 2009, Sanromán Villas 2009), and, for French, articles on the definitions in the semantic zone (Barque & Polguère 2009), lexical functions (Jousse 2010), polysemy (Barque 2007, Venant 2009), and collocations (Augustyn & Tutin 2009). The ECD approach is

currently being adopted by an increasing number of researchers around the world, applying it specific questions such as morphological phrasemes in Chinese (Nguyen 2007), lexical functions in Japanese (Panina 2007), and polysemy of Korean adjectives (Lim 2009), as well as specific translation and lexicographic topics in other languages). Indigenous languages of the Americas have received relatively little attention from researchers applying ECD concepts, but these include studies of lexical functions in Huichol (Grimes 2002), morphological phrasemes in Totonac (Beck, Holden & Varela n.d.), and communicative structure in Lushootseed (Beck 2009). There have been relatively few large-scale ECD lexicographic studies of American languages or other small oral languages, but two self-published dictionaries by Grimes (1981) for Huichol and Mackenzie (2006) for Eastern Penan (Malaysia) are exciting debuts.

**3.4.2. Other NSM-Based Studies.** There is a small but growing literature about the Natural Semantic Metalanguage. As an approach designed for cross-linguistic lexical semantic comparison, it is frequently applied as “ethnosemantics”, studies of key concepts in individual, often lesser-studied languages. Two major collections of studies are Goddard & Wierzbicka (1994) and Harkins & Wierzbicka (2001). Specific-language studies may be global surveys of NSM primitives in the object language, as has been done in the first collection mentioned above for Ewe (Ameka 1994), Acehnese (1994), the Australian languages Kayardild (Evans 1994) and Yankunytjatjara (Goddard 1994), the Austronesian languages Longgu (Hill 1994) Samoan (Mosel 1994) and Kalam (Pawley 1994), as well as for larger official languages such as Russian (Gladkova 2008), French (Peeters 1994), Spanish (Travis 2002), Japanese (Onishi 1994, Rie 2000), Chinese (Ye 2000), Thai (Diller 1994), Korean (Lee 2005) and Amharic (Amberber 2008). The NSM has been applied to the indigenous Canadian languages Cree (Junker 2004, 2008) and Sm’algyax (Stebbins 2004). So the cultural and typological range to which this approach has been applied has been growing exponentially. As more and more data is integrated, the selection of primitives and the definition of specific emotion concepts has been refined. Many studies have been aimed at postulating new primitives or questioning or refining the status of current primitives. Quite a few NSM studies are comparisons of the realization of similar semantic content

in two more more languages. Until now NSM linguists have focused heavily on the semantic field of emotions, as in Jean and Harkins (2001), Wierzbicka (1996, 1999) but some of the studies in Wierzbicka (1988) treat artifacts.

## CHAPTER III

### The Semantic and Syntax Zones

This chapter describes the semantic and syntactic information specified in the lexical entries. This information corresponds to the semantic and syntax zones in Explanatory Combinatorial Dictionary (ECD) entries. However, before launching this discussion of the semantics and syntactics of Dene Sùliné (DS) lexical units, Section 1 of this chapter provides the reader with some more information about the DS lexicon, including what is claimed to be the verb stem, and outlines a typology of phraseologized forms which constitute lexical units mentioned later. Section 2 also includes a discussion of the choices that were made to adapt the ECD methodology to this type of cross-linguistic study. It is important to address a few issues of translation, semantic equivalency and defining lexical units using a semantic metalanguage based on a natural language other than the one under study. Section 2 also describes the motivation for the choice of semantic fields and provides some more information about the research methodology. Once these critical questions have been addressed, the chapter proceeds (from Section 3) to the description of the lexical entries themselves.

#### **1 THE DENE SÙLINÉ LEXICON**

The reader may recall from Chapter I that Athabaskan verbs have a typologically unusual structure and that there are debates in the Athabaskanist literature that have consequences for how lexical entries should be described. While the reader may benefit from knowing the Athabaskan literature in greater detail, two topics in particular are essential to understanding the current chapter. The first is the structure of the Athabaskan verb stem and its the basic morphological properties. The second concerns the different types of phraseologized forms which occur in Dene and which are claimed to have the status of lexical entries.

**1.1. Overview of Dene Sūliné Verb Morphology.** The vast majority of lexical units discussed in this work are verb stems, and the verb is the only part of speech with extensive morphology. This section will therefore focus on the elements in the Dene verb structure, outlined in Figure III-1, which contains an example of a simple intransitive stem, two discontinuous intransitive stems and a discontinuous transitive stem.

verbform	stem	INFL	stem	INFL	stem		gloss
					CL	root	
<i>hejen</i>				∅	d	yen	‘s/he sings’
<i>leghájdher</i>	leghá			ǰ		dher	‘s/he died’
<i>nászé</i>	ná			s	l	zé	‘I hunt’
<i>hasonéltq</i>	ha	se	hone	H	ł	tq	‘s/he taught me’

**Figure III-1. A Basic Outline of the Dene Verb.**

Dene verbs are almost exclusively prefixing, the final syllable being the verb stem or part of the verb stem. Verbs are inflected for aspect and mood as well as for subject and object person and number agreement. The only values of inflectional categories marked as prefixes on the verbs are imperfective and perfective aspects, and the optative mood. There are also derivational categories such as secondary aspect, adverbials and directionals.

The verb stem is defined here as the part of the wordform necessary to learn or utter to obtain the meaning of the verb, such as ‘to hunt’, ‘to teach’ or ‘to speak’. For example, someone wanting to learn the Dene verb meaning ‘to hunt’ would have to learn the stem *ná...lzé*. In this work, the “verb stem” is defined as “the part of the wordform **w** that does not include any inflectional affixes which are part of that wordform and which express the inflectional values that characterize **w** as a whole” (Mel’čuk 1997a: 72). The final syllable — commonly referred to as the “verb root” or “verb stem” in the literature — is often combined with one of three elements known as “classifiers” in Athabaskanist literature. These single-syllable “verb roots” or “root-classifier” combinations thus constitute the simplest type of verb stem, to which a subject agreement/mood/aspect inflectional marker is prefixed. In addition to simple,



monosyllabic stems, there are discontinuous stems, combining the right-side stem elements with one or more elements to the left of the aspect/mood subject agreement inflection markers.

This terminology is very different from that used in the Athabaskanist literature. For example, Sapir and Hoijer (1967: 85) recognize three levels of analysis: the verb word minus the inflectional affixes is the “verb base”. The verb base can be divided into a “verb theme” and a productive derivation marker. These derivations which are part of the verb base but not the verb theme would include productive and transparent incorporated postpositions, adverbials, directionals, etc. The “verb theme”, in traditional terms, provides the basic nonderived meaning of the verb such as ‘to hunt’ or ‘to speak’. The “verb theme” can in turn be divided into “thematic prefixes”, a classifier and a “verb stem”: “A verb form is analyzed in three steps: (1) the base is separated from the inflectional prefixes, (2) the base is divided into its adverbial prefixes, if any, and its theme, and (3) the theme is divided into its thematic prefixes, if any, and its stem”. For example, the form *yalti* ‘s/he speaks’ would traditionally be analyzed as comprising the verb theme *ya...lti* ‘to speak’ plus a zero-marked third person affix. The verb theme *ya...lti* would then be divided into the thematic prefix *ya-* with the stem/root *-ti* plus the classifier *-l-*. The minimal “verb theme” is a classifier-root combination, so for most Athabaskanists there is always a contrast between the “verb theme” and the “verb root”, which is felt to be somehow more basic.

There is a lack of a consensus in the literature over whether the “classifiers” are part of the verb stem or synchronic grammatical markers, or both. Sapir and Hoijer (1967) and Young and Morgan (1980) consider the classifiers to be part of the stem: they do not constitute a morpheme and are not paradigmatic. For many Athabaskanists, it is simply a convenient convention to parse this portion of the stem from the “root” for a number of reasons. The first is the probable historical origin of the classifiers as inflection markers (of voice) or as derivational markers (of valence). This is seen in the existence of numerous lexical pairs, such as ‘to use’ and ‘to be used’, where one stem is a “passive voice” item and the other “active”. For example, alternation of the classifiers *l-* and *d-* is the only difference the verb forms *k’ólyq* ‘he knows it’ and *k’ójq* ‘it is known’. The existence of many such pairs gives the impression that the classifiers are

still grammatical morphs. Cook and Rice (1989: 29) state, “Confusion about the status of the classifiers seems to arise from the fact that the classifiers have two distinct functions”: they are probably historically derived from valence-changing derivation markers, but synchronically the classifiers must usually be learned as part of the stem.

The above views of the Athabaskan verb incorporate information about language change and may well show the relative age of the different elements within the “verb theme”. In some cases the origin of these left-side stem elements is obscure, while in other cases they resemble fossilized grammatical prefixes, incorporated adverbs or nouns, or fossilized agreement material, which historically gave rise to monomorphemic discontinuous stems. While such an analysis reveals interesting etymologies, this is not the approach adopted in this work. Meaning-Text Theory, with its roots in analytical lexicography, takes a boldly synchronically angle on linguistic analysis: a central concern is separating what is learned by the speaker as a unit and which forms are freely composed by the speaker through an act of linguistic union. Verb stems, following Mel’čuk’s above definition, are considered to be non-decomposable on a semantic level — they are elementary linguistic signs, those whose signifiers and signifieds are “not representable as [a combination of] other signs united by a meta-operation of linguistic union” (Mel’čuk 1993: 64). In cases where a discontinuous string of elements is always necessary to express a meaning, e.g. *ha...hone...lta* for ‘to teach’ (PFV), the entire string will be called the “verb stem”. Where a productive derivation marker such as a directional, adverbial or aspectual prefix is added to a verb stem that also exists without that prefix, it is called a “derived verb stem”. In this work, the “verb root” is also viewed as simply a stem element without a distinct status from a synchronic perspective. As classifiers and “thematic prefixes” must be learned as part of the stem, they are considered here to be simply stem elements with partially visible etymologies. Finally, because in MTT it is considered that only values of inflectional categories can be zero-marked, the current analysis assumes the existence of three rather than four classifiers (in most Athabaskanist literature, a fourth zero-marked classifier is assumed). Here, verb stems which do include one of the classifier elements *l-*, *d-* or *l-* are considered not to have a classifier element at all.

Sorting what is learned as a lexical unit associated with a given meaning from those forms which are freely composed by the speaker is particularly relevant to Dene verbforms because the language (and the current sample) is full of examples of both derived verb stems and morphological phrasemes (see definition in Section 1.2 below), whose signifiers but not their signifieds are considered to be representable as a combination of units. Because discontinuous stem elements may have the same phonological form and may even be historically derived from derivation markers, establishing whether a stem is a case of linguistic union or not is critical — if the root-classifier pair is not an autonomous lexical unit in the modern language and therefore cannot act as base for derivation, then it is assumed that the left-side element is a stem element rather than a derivation marker. When stem elements are discontinuous they are separated by three dots, e.g. *ya...lti*.

**1.2. Phraseology in Dene Sḷliné.** Chapter II provided an overview of phraseologized language from an MTT perspective. There are basically four types of phrasemes, as outlined in Mel’čuk’s (2006) typology of idiomatic phrases, and described in Section II-3.1.3: pragmatemes, full phrasemes (or idioms), semiphrasemes (or collocations) and quasi-phrasemes. All four of these types seem to be much less common in Dene than in European languages. However, Dene has many morphological phrasemes (see Section II-3.1.3), which are the morphological equivalent of a multi-word phraseme.

Each type of phraseme mentioned above has distinct semantic properties. A pragmateme is a fixed but semantically transparent phrase that one must use in a given situation, whose meanings cannot be selected unrestrictedly by the speaker to express this situation. For example, to state the number of people in a group, in English one must say *There are [four] of us*, while in French the same information must be stated as *Nous sommes [quatre]*, lit. “we are [four]”. Many greetings and speech formulas are pragmatemes. Dene uses the expression *sinié*, lit. “I am happy”, in some of the situations in which one says *thank you* in English, such as in expressing gratitude to someone who has rendered a great service or shared some important knowledge.

Full phrasemes, or idioms, are cases in which the meaning of a sequence formally composed of the signifiers /AB/ does not actually involve the meanings ‘A’ or ‘B’ at all, such as KICK THE BUCKET. Dene seems to have relatively few of these, examples being X Y GA NE...DA {X Y next.to sg.sit} ‘X to marry Y’, lit. “X to sit next to Y” and EŁGA<sub>obj.agrX</sub>–KÉ {REC:next.to du.sit} ‘to be a (romantic) couple’, ‘to be married’, lit. “to sit next to each other”. This is a full idiom because the idea of ‘to be a couple’ does not contain the meanings ‘sit’ or ‘next to’. Semiphrasemes or collocations are cases where the sequence /AB/ denotes the meaning ‘A’ and a second meaning which is not ‘B’. These can sometimes be found in Dene, as in the case of many position verbs where the difference is linguistic rather than conceptual, as well as a few **Oper**<sub>1</sub> collocations such as **Oper**<sub>1</sub>(*tue* ‘fish’) = ~ *ghq na..dher* ‘to sit next to ~’, meaning “to fish”.

Quasi-phrasemes, or quasi-idioms are cases in which the sequence /AB/ conveys the meanings ‘A’ and ‘B’ transparently, but other unpredictable meanings are added as well. These are somewhat more numerous, i.e. HHAYE HO..ŁTSI {winter AR...make} ‘to set winter camp’, lit. “to make [a structure] in winter”; numerous food entities similar to FISH AND CHIPS, e.g. ŁUE NATSIS ‘fish made with crumbled dried fish’, lit. “crushed fish”. Among the entries for this study, only semiphrasemes and quasi-phrasemes occur frequently.

## 2 APPLYING MTT SEMANTICS TO DENE SŪLINÉ

Although the major currents of MTT semantics and lexicography, including the Explanatory Combinatorial Dictionary (ECD) and the Dictionary of Synonyms as well as the Natural Semantic Metalanguage (NSM) are shared, Section II-3.3.2 mentioned some areas of divergence. This section concentrates on a few of these differences which are most relevant to the bilingual nature of this study. The first difference between the NSM and MTT schools concerns the possibility of semantic equivalence between an L1 and an L2, an issue also referred to as “lexical incommensurability” in

some of the MTT literature. The related question of the status of bilingual lexicographic definitions is a direct consequence of this debate.

**2.1. Problems of Semantic Equivalence in Bilingual Lexicography.** In Section II-2.2 it was said that the SemS of a lexical unit must be maximally homogeneous, or composed entirely of semantic units from the language and the relations between them. Semantic decomposition can proceed to the level of semantic primitives and no further, because the SemS (or the definition) must always be based on real semantic units of the language at hand, expressible as other LUs, and the relations between them. These relations, on the other hand, are unordered and cross-linguistically universal: MTT assumes that the true syntax of definitions is based on simple logical relations, and not on the syntax of any natural language or some underlying natural language syntax common to all languages (this is in contrast with the position of the NSM school on the syntax of the semantic metalanguage, see Goddard 2002 and Section III-2.2 below).

Because definitions or semantic structures must comprise real meanings from the language, then the content of specific SemSs is language-specific. “Even when languages **L<sub>1</sub>** and **L<sub>2</sub>** have semantemes that are in one-to-one correspondence, say, in case of what is known as semantic primitives, for instance, [English] ‘I’ ≡ Fr[ench] ‘moi’, these semantemes are still the signifieds of different lexemes of two different languages. They are by no means identical; the most we can say about them is that they stand in one-to-one correspondence” (Mel’čuk, *SMT*, to appear). The closest the analyst can come to saying that two semantic structures from different languages are equivalent is to say that their semantemes and the relations between them stand in a direct relation to one another, as the NSM school supposed in the case of semantic primitives. Complex configurations of simple meanings do not have such direct correspondences.

This study assumes the essential viability of decompositional bilingual explications on the above premise. If the notion of lexical incommensurability were taken its strongest possible interpretation, then linguists could never compare meanings of quasi-equivalent lexical units from different languages. Translation would be impossible, as would cross-linguistic semantics and bilingual lexicography. However,

such comparisons are possible, and many examples are found in the MTT literature, like the comparison of CRY with its Russian quasi-equivalent PLAKAT' mentioned previously, from Mel'čuk (2004a).

By testing words in equivalent contexts, one can control for differences, and ultimately make a productive comparison between the SemS or definitions of words from different languages. Drawing on the ample empirical body of work of Wierzbicka, Goddard and the other members of the NSM school, we will cautiously assume that much is in fact shared between the sets of primitives in each language. Naturally, the list of semantic primitives has to be independently verified in each language, and the researcher must ascertain whether they are felt to be equivalent in the same contexts. Once the semantically simpler units have been verified to have the same denotational range, then the truly 'untranslatable' words from another language can be compared. In Dene, for example, the emotion verb *k'éne...ta<sub>2</sub>* ('*X Y k'énetā*: 'person X feels very sad because X suddenly wants to be in contact with person Y intensely a long time after X has lost Y') has no direct equivalent in English. It could be rendered in colloquial English as 'to be suddenly overcome with nostalgia for a lost person'. A Dene-language definition or decomposition of this could be:

(12) X Y għaneta {X Y 3IPFV:love}

'X loves Y'

Y hule thá hots'ĩ {Y 3IPFV:be.absent long.time AR:from}

'Y has been gone a long time'

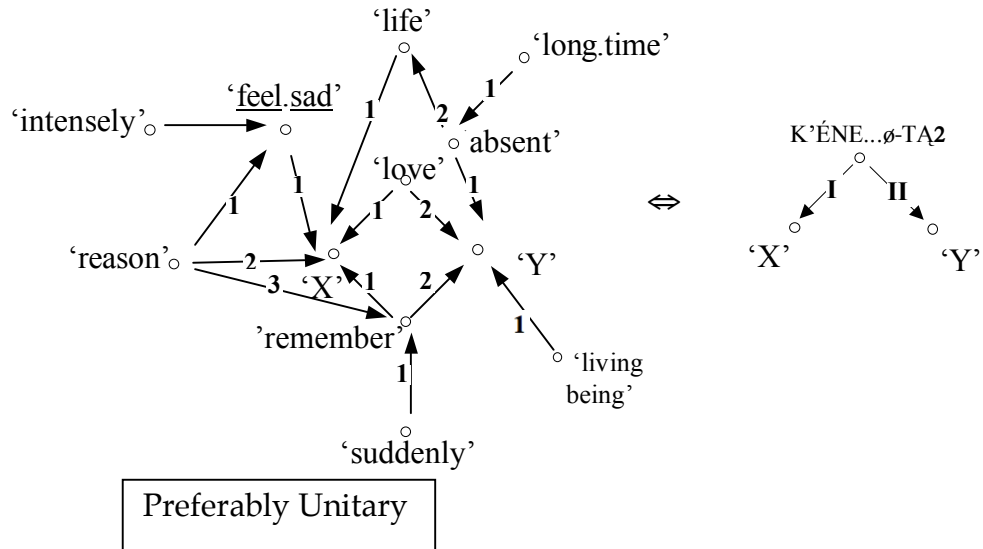
Et'ahħa X Y henalní {suddenly X Y 3IPFV:remember}

'X suddenly remembers Y'

X ha dúé {X for it.is.bad}

'X feels sad'

The sentences in example (12), taken together, could be uttered in place of *k'éne...ta<sub>2</sub>* (with pronouns or names in place of the variables X, Y, etc.). But a fluent Dene speaker who uses the appropriate words for concepts would know to use the verb *k'éne...ta<sub>2</sub>* to denote the situation. The lexemes *ghane...ta* 'to love', *hena...lni* 'to remember', and so forth, must in turn be independently verified as being equivalent to the English semantemes 'love', 'remember', and so forth. In this case, *ghane...ta*<sup>11</sup> 'to love' is restricted to situations where Y is a living being rather than an inanimate object, as in "I love ice cream" or other contexts of the English 'love'. Once this sort of information has been verified, one can construct a SemS of the Dene keyword using English semantemes that stand in a one-to-one correspondence with their Dene equivalents:



The English-language SemS and definitions are to be read as translations of the Dene ones that could, in principle, be constructed in their place.

Concerning the depth of semantic decomposition, this study rigorously follows the ECD approach in applying the maximal block rule (see Section II-3.1). Because the keywords are in Dene and their explications are in English, maximal block should be

<sup>11</sup> Interestingly, the lexemes *ghane...ta* and *k'éne...ta<sub>1</sub>* share the stem element *-ta*, which would be referred to as the "verb root" in the Athabaskanist literature. This suggests an etymological, as well as a semantic, relation between the two verb stems.

understood in the following way: English words used in the explications are formed in a bottom-up fashion, based on the standard English-language set of semantic primitives as specified by the NSM school. The Dene-language NSM primitives correspond closely to this English set (with some exceptions, which are noted). Any English words used in the definition which are not primitives are themselves explicated in the introduction to each synonym series or set of entries.

**2.2. Semantic Primitives in Dene Sųliné.** Naturally, assuming crosslinguistic translation in this study hinges on verifying existence and equivalence of the NSM semantic primitives in Dene. In some cases, this is not so obvious. This section will therefore concentrate on those semantic primitives which are difficult or impossible to render in Dene. The NSM list contains some primitives whose meanings are too simple to be verbalized as one lexical unit in Dene, which instead has several quasi-equivalent terms. These problems of quasi-complexity and equivalency between primitives especially concerns a handful of semantic primitives, specifically those denoting mental predicates: FEEL, WANT, and THINK. There are also several other NSM semantic primitives that have no equivalent at all in Dene Sųliné and which may therefore need to be removed from the canonical list or replaced with other semantic primitives. Table III-I shows a list of Dene equivalents of the most recent version of the NSM primitives (Goddard 2007). Six primitives do not seem to have easy translations in Dene: BAD, MOMENT, FEEL, KIND, PART and CAN. In addition, NEAR and SMALL are infrequent.

To understand why BAD, NEAR and SMALL are absent or rare, we must review the Meaning-Text treatment of antonymy (see Mel’čuk 1995: 451-452). Antonymy is usually described as a single paradigmatic relation between words with “opposite” meanings, but in MTT antonymy subsumes four specific types of semantic differences: negative oppositions (*open/close*); more/less oppositions (*near/far*); positive/negative oppositions (*beautiful/ugly*) and deictic opposition (e.g. *north/south*). The first type of antonymy is equivalent to adding ‘not’ to one of the components. For the pair *open/close* [a container], *close* means ‘cause that the edges of the cover for an opening and the edges of the opening are in contact’, while *open* must involve a negation of part of this meaning, i.e. ‘cause that the edges of a cover for an opening and the opening are



not in contact'. The two meanings are asymmetrical in that the meaning of *open* contains

<b>Substantives</b>	<i>si</i> (PRO) 'I', <i>nen</i> (PRO) 'you (SG)', <i>eláta</i> (PRO) 'someone', <i>dene</i> (N) 'person'/'people', <i>zasí</i> (N) 'something'/'thing', — <i>zĩ</i> (N) 'body'
<b>Relational substantives</b>	*'kind', *'part'
<b>Determiners</b>	<i>diri</i> (PRO) 'this' / 'these', <i>ele...l't'e</i> (VI) 'to be same as each other' — <i>nasĩ</i> (PP) 'other than'
<b>Quantifiers</b>	<i>ĩághe</i> 'one', <i>náke</i> 'two' (NUMERALS), <i>nahi</i> (PRO) <i>nání</i> (PRO) 'some', <i>horelyú</i> (QUANT) 'all', <i>lq</i> (VI) 'much'/'many'
<b>Evaluators</b>	<i>ne...zq</i> (VI) 'to be good', *bad
<b>Descriptors</b>	<i>ne...chá</i> (VI) 'to be big', <i>tsélé</i> (ADJ) 'small'
<b>Mental predicates</b>	<i>ne...dhen</i> (VI) 'to think', <i>k'áho...lyq</i> (VT) 'to know (it)', <i>horé...lzi</i> (VT) 'to want (it)', * 'feel', — <i>zi</i> (VT) 'to see (it)', <i>de...tth'agh</i> (VT) 'to hear (it)'
<b>Speech</b>	<i>he...ni</i> (VI) (to say), <i>yati</i> (N) 'word(s)', <i>at'óho...di</i> (VI) 'be true'
<b>Actions, events, movement, contact</b>	— <i>tsi</i> (VT) 'to do', <i>nóre...tth'i</i> (VI) 'to happen', <i>naghe...da</i> (VI) 'to move', <i>here...lmi</i> (VT) 'to touch'
<b>Life and Death</b>	<i>ghe...na</i> (VI) 'to live', <i>legháne...dhi</i> (VI) 'to die'
<b>Location, existence, possession, specification</b>	<i>na...dher</i> (VI) 'sg is present', [classificatory verbs] 'be (somewhere)', <i>hulĩ</i> 'there.is (thing)', <i>ts'ĩ</i> (PP) 'of' = 'have', <i>a..t'ĩ</i> (VI) 'to be (person)', <i>a..t'e</i> 'to be (thing)'
<b>Time</b>	<i>t'ahú/ú</i> (CONJ) 'when', <i>duhu</i> (ADV) 'now', <i>ts'én tth'ú</i> (PP) 'before', <i>tl'á</i> (PP) 'after' <i>thá</i> (ADV) 'a long time', <i>hotsélé</i> (ADV) 'a short time', *'moment'
<b>Space</b>	<i>t'ahok'é</i> (PRO) 'where', <i>jq</i> (PRO) 'here', <i>hodá</i> (PP) 'above', <i>yághe<sub>2</sub></i> 'below', — <i>dhá</i> (VI) 'to be far', — <i>ldúé</i> (VI) 'to be near', <i>ga</i> (PP) 'beside', <i>yághe<sub>3</sub></i> (PP) 'inside'
<b>"Logical" concepts</b>	<i>ile</i> (CLITIC) 'not', <i>húto</i> (PART) 'maybe', *'can', <i>zá</i> (PP) 'because', <i>dé</i> (CONJ) 'if'
<b>Intensifier, augmentor</b>	<i>hotié /huł'édhé</i> (ADV) 'very', <i>zázé</i> (PP) 'more than'
<b>Similarity</b>	<i>k'ézi</i> (PP) 'like'

ADV = adverb

PART = particle

PRO = pronoun

VI = intransitive verb

CONJ = conjunction

PP = postposition

QUANT = quantifier

VT = transitive verb

N = noun

**Table III-I. A Dene Sųliné Version of the Natural Semantic Metalanguage**

within it the entire idea of *close*, but not the reverse, and *open* has the added component 'not'. For this reason the negated antonym is semantically more complex than the non-negated member (see discussion in Mel'čuk 1995: 451-453). The same stands for the pairs *lock/unlock*, *cover/uncover*, *hide/reveal*, etc. Depending on the scope of the negation, a word can be in an antonymic relation with multiple words. There is no English word meaning 'not cause to exist', but there is one meaning 'cause not to exist' (*destroy*). If both existed in the language they would be distinct antonyms of *create*. A subset of this antonymy by negation involves binary parameters, those with only two

possible values, whereby negation of the main component produces the other logical possibility, as for the pairs *blind/sighted* and *asleep/awake*, where *asleep* means ‘in a state of not perceiving’. The negated value is semantically more complex and can be further decomposed in a way that would be circular if applied to the affirmative value.

More/less oppositions involve gradient parameters where there is some sort of “middle ground” between the two antonymic values. For example *hot* and *cold* are antonyms at either extreme of the scale of temperature, but there is also a middle value, *lukewarm*, that is neither *hot* nor *cold*. This type of antonym “should by no means be misinterpreted as negation. The semantic element ‘Anti’ is equivalent rather to the mathematical minus: cf. the difference between ‘-2’ and ‘not 2’” (Mel’čuk 1995: 451). Values like *hot* and *big* effectively mean ‘having a greater temperature’ or ‘having a greater size’ than the standard example of something. So we can speak of a “huge bumblebee” or the “warmer ice at Europa’s core and the colder ice of its outer crust” — these examples are characterized relative to the average traits of the object described rather than in absolute terms. Other examples of this type of antonymy are *heavy/light*, *tall/short*, and *big/small*. Wierzbicka (1996: 54) agrees that, for this type of antonymy the ‘more’ value is semantically simpler than the ‘less’ value, i.e. the meaning of *heavy* is more basic than that of *light*, etc. Similarly, for gradient parameters of subjective value such as *good/bad* and *beautiful/ugly*, the positive extreme is semantically simpler than the negative extreme. The final type of antonymy involves deictic oppositions such as *north/south* and *left/right*, which are based on contrast with each other and for which neither value is semantically more complex than the other. This framework for antonymy would suggest that the ‘less’ and ‘bad’ members of the pairs may not be true semantic primitives.

The Dene language reflects this asymmetry by frequently expressing antonymy with the negation marker. This is true of the first type of antonymy but also of the second and third types, degree and value oppositions:

- |      |             |                          |                               |
|------|-------------|--------------------------|-------------------------------|
| (13) | náredhá     | {3IPFV:be.high}          | ‘it is high (off the ground)’ |
|      | náredhá íle | {3IPFV:be.high NEG}      | ‘it is low (off the ground)’  |
|      | díttí       | {3IPFV:be.expensive}     | ‘it is expensive’             |
|      | díttí íle   | {3IPFV:be.expensive NEG} | ‘it is cheap’                 |

The negation marker is polysemous for antonyms: it can be interpreted as indicating the middle or neutral value of a gradient parameter or the less/negative extreme. Thus, *dilt̩́ íle* can be interpreted as a simple negation of the positive extreme, i.e. ‘it’s not expensive’ in response to the question “Is it expensive?”, or as the opposite extreme, ‘it’s (particularly) cheap’. This is shown by the fact that “very, very cheap” is expressed by adding an intensifier to *dilt̩́ íle*: *hot̩́e dilt̩́ íle ś̩i* {really 3IPFV:be.expensive NEG EMPH} ‘it’s very cheap’ i.e. literally “it is really really not expensive”.

The current NSM primitive set contains four sets of antonyms: FAR/NEAR, GOOD/BAD, BIG/SMALL, and LONG TIME/SHORT TIME. In Dene all of the primitives denoting the negative/less values are rare or absent, and would be expressed most frequently by negation:

- |      |            |                     |                |
|------|------------|---------------------|----------------|
| (14) | nidhá íle  | {3IPFV:be.far NEG}  | ‘it is close’  |
|      | nezq̩́ íle | {3IPFV:be.good NEG} | ‘it is bad’    |
|      | nechá íle  | {3IPFV:be.big NEG}  | ‘it is small’  |
|      | thá íle    | {long.time NEG}     | ‘a short time’ |

Dene does, however, have lexical equivalents for NEAR, SMALL, and SHORT TIME, which do not occur in the corpus but can be elicited. Although antonym pairs are usually required to be members of the same lexical class, SMALL is only available as an adjective rather than a verb.

- |      |         |                    |                    |
|------|---------|--------------------|--------------------|
| (15) | niłdúé  | {3IPFV:be.far NEG} | ‘it is close’      |
|      | tsélé   | {small:ADJ}        | ‘small’            |
|      | hotsélé | {AR:small:ADJ}     | ‘for a short time’ |

As was seen above, the less/negative values are not in fact semantic primitives but are semantically complex and can be explicated in term of the more/positive values.

The other “missing” primitives are MOMENT, CAN, FEEL, KIND, and PART. There are two senses of the noun MOMENT in English, one meaning ‘short duration of time’ and one meaning ‘point in time’; some of the canonical contexts seem to be ambiguous between the uses. Below are some canonical contexts of MOMENT and how they would be rendered in Dene. There is no noun or other word referring to a ‘point in time’ as an

entity in Dene; one can simply specify the adverbial sense of ‘for a moment’ or ‘precisely now’:

<u>English</u>	<u>Dene</u>	<u>literal translation</u>
(16) for a moment he [V]-ed	hotsélé [V]	AR:small:ADJ V
at this moment	dųhų dedané	now right.away
at the same moment [V]	hotié ełá [V]	really together [V]

Goddard and Wierzbicka (2002: 74-75) defend CAN as a semantic primitive, citing the following canonical contexts for it, among others:

(17) This person can/can’t do it	Something bad can happen to me
I can’t move	You can’t do things like this
I can/can’t think about this right now	I can’t see it

Of course this list blends incompatible deontic and epistemic senses of ‘can’, which are expressed by the lexical units belonging to the same vocable CAN in English. Anticipating criticism, they admit that “linguists tend to resist the suggestion that CAN is a semantic prime. Don’t we know that there are various “kinds” of CAN: for example, the “*can* of ability” vs. the “*can* of possibility”? In our view, these designations are really classifying different ways in which CAN can be used, not identifying distinct meanings of CAN. In fact, one of the hallmarks of CAN is its vagueness”. They insist that “in language after language a modal element is reported which is vague in this way, just like English *can*”. I will have to join the “linguists” in rejecting CAN as a primitive, as it has no equivalent in Dene, or perhaps many other languages. The English CAN is a vocable whose first lexeme CAN<sub>1</sub> is the deontic sense, indicating permission to do something, as in *French citizens can study in Quebec without paying foreign tuition*, or *Children can’t drive*. CAN<sub>2</sub>, the epistemic sense, expressing possibility, as in *It can sometimes snow in April* or deduction as in *That can’t be James at the door — he’s in Florida*. Both interpretations are not possible for many contexts, making the English CAN polysemous rather than vague. CAN therefore cannot be included in a list of Dene semantic primitives. In Dene, not only is no word subsuming both senses CAN<sub>1</sub> and

CAN<sub>2</sub>, there is no specific lexical unit to express even one of the senses. Below are Dene renderings of both senses of the English CAN.

Deontic:

- (18) Sekwi beschené k'él'ni ha hoʔa íle  
 {children vehicle 3IPFV:drive FUT it.must NEG}  
 'Children can't drive', lit. "It must not be that children drive"

Nets'én phone asle ha asut'e íle ú?  
 {2SG:to phone 1IPFV:do FUT 3IPFV:have.problem NEG Q}  
 'Can I call you?', lit. "Is it not a problem if I call you?"

Epistemic:

- (19) Túlú k'é hojéré íle, Edmonton nassa ha dúé íle  
 {road on AR:dirty NEG I1IPFV:sg.go FUT impossible NEG}  
 'The road isn't bad, I can go to Edmonton', lit. "it's not impossible to..."

The positive deontic CAN is expressed by the negation of *aso...t'e* 'there is a problem', so an English sentence like *I can come to work at nine o'clock if I want to* would be rendered literally as "there is no problem if I come to work at nine o'clock". A CAN indicating ability due to knowledge would be expressed with *k'ó...lyq* 'to know (how to)' as in *dení dhéth hestsí k'óshq* {moose hide:PO 1IPFV:make 1IPFV:know} 'I know how to make moose hide'. The epistemic CAN is expressed *ha dúé íle*, the negation of the phraseme *ha dúé* meaning 'impossible', as in (19). Each of these senses denotes the absence of an obstacle, be it the result of social, physical or experiential limitations. All of this indicates that CAN is both culturally specific and semantically complex, indicating 'absence of an obstacle' or 'removal of an obstacle', and that, if anything, CAN'T would be a better candidate as a semantic primitive.

Another traditional NSM primitive is FEEL in its sense 'to experience an emotional state'. The English verb *feel* has direct equivalents (It. *sentirsi*, Fr. *se sentir*, etc.) in other European languages. Many non-European languages express the concept of FEEL as a distinct sense of a noun that also denotes the locus of emotion, such as 'heart', 'liver', 'guts', etc. Wierzbicka (1999: 277) cites Lutz's (1987, 1988) studies of

emotion words in the Ifaluk language of Polynesia, which represents feelings as a distinct sense of the word *niferash*, meaning ‘our insides’. These body part terms for emotions are not metaphorical extensions in the synchronic language in that one can have a whole conversation about emotions in an abstract way without referencing the literal body parts. To ask an Ifaluk speaker how he or she feels, one would ask literally ‘how are your insides?’, to which the response might be ‘my insides are good/bad’. What is common to all of these lexical items, *feel*, *sentirsi*, *niferash*, etc., is that they are semantic predicates with two obligatory participants. They link the experiencer with the lexeme denoting the emotional state, often a noun or an adjective, i.e.  $I \leftarrow \textit{feel} \Rightarrow \textit{happy}$ ,  $je \leftarrow \textit{me sens} \Rightarrow \textit{triste}$  or in Ifaluk “my  $\leftarrow$  insides  $\Rightarrow$  are.good”. In each language, the word meaning FEEL is essentially a support verb. Such a word is unnecessary in Dene, as most individual emotions are expressed by intransitive verbs, as those in (20).

(20)	estenesthen	henɕli
	estene-s-dhen	hene-N-li
	feel.sad-1.IPFV-feel.sad (IPFV)	feel.happy-3.IPFV-feel.happy
	‘I feel sad’	‘he is happy’

Dene has a large repertoire of verbs and phrasemes denoting many specific emotions, but apparently no abstract word equivalent to ‘emotion’, ‘feel’ or ‘feeling’ in English. To ask someone ‘how do you feel?’ in Dene, one must ask simply *edlánet’e?*, or *how are you?*, to which the response must indicate a specific emotion verb, such as those in (20). Similarly, to say something like ‘I feel mixed emotions’ (about a life change, moving, etc.) or ‘I feel different emotions’, one must list specific emotions, as in (21).

(21)	ja	sinié	kúlú	nasteri,	kúlú	sini	natser	íle
	here	1:be.happy	EMPH	1IPFV:live:REL	but <sup>12</sup>	1PO:mind	3IPFV:be.strongNEG	
	‘I am happy to be living here (in this new place) but I am sad’, i.e. “I feel different emotions about moving here”							

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<sup>12</sup> *Kúlú* is the signifier for two unrelated lexemes, a conjunction and a particle; all homophones or lexemes in a polysemy chain are always glossed according to the sense at hand.

Observing the idiom *síní natser íle*, lit. “my mind is weak”, meaning ‘I feel sad’, one might be inclined to think that *síní*, lit. “my mind”, in is in fact specific sense denoting feel, much as “our insides” was in Ifaluk. There are quite a few idioms in Dene in which the mind or the heart are represented as the locus of an emotion. However, unlike in Ifaluk these are all fixed phrasemes in Dene; one cannot speak or ask about “the mind” in an abstract way, as in (22).

- (22) \*edlát’ú níní / \*nedzié  
 how 2PO:mind 2PO:heart  
 \*‘how is your mind’ / \*‘...your heart?’

To ask what someone’s emotions are, one must use the fixed pragmateme *edlánet’e?* ‘how are you?’, or guess at a series of specific emotions, i.e. *ninié ú? na dúé ú?* ‘are you happy? are you sad?’. When asked about a word for *feel* or *emotion*, one speaker said matter-of-factly “some words we don’t have in Dene”, meaning they express rich emotion talk without recourse to a word equivalent to *emotion* or *feel* in English.

Also apparently “missing” in Dene is a lexical equivalent of KIND, as in ‘type of [entity, situation]’. This is another “semantically light” primitive which is used to establish a taxonomy of items in a language. One does not find any lexical unit equivalent to KIND in contexts similar to its canonical contexts, as shown in the various Dene translation of the English sentences with *kind*:

- |      |  |                                      |           |   |
|------|--|--------------------------------------|-----------|---|
| (23) | ełk’éch’á jíe                              | edlát’ı jíe                          | ʔonıya    | ú |
|      | different berries                          | what berries                         | 2PFV:pick | Q |
|      | ‘different kinds of berries’ <sup>13</sup> | ‘What kind of berries did you pick?’ |           |   |

<sup>13</sup> Dene nouns are not inflected for number, and will be glossed in English as singular or plural according to the context.

- (24) tsótsie iyeze aṭ'e náke jíe gha shéghesti  
 robins birds 3IPFV:be two berries of 1PFV:sg.eat  
 ‘robins are a kind of bird’ ‘I ate two kinds of berries’

- (25) t'at'i ʔasí tsádhéth  
 REL:what REL fur  
 ‘any kind of fur’

Dene has a number of other options for referring to “kinds” of things. One sense of the Dene word is its adverb meaning ‘like this’, and another is its use as a demonstrative pronoun meaning ‘this kind’ or ‘this type’. It is used in virtually all of the situations in which one would use *this kind* in English, as shown in examples (26)-(28).

- (26) Kú kut'i power ʔá hedi, dódí n̄.  
 but like.this with without there.was.none PAST  
 ‘But not this kind of power [electricity], that didn’t exist’

- (27) kut'i yú thela  
 like.this cloth 3IPFV:pl.lie  
 ‘there were [pieces of] this kind of cloth’

- (28) Kut'i ké tth'i dáłtsi dūt'ú.  
 like.this shoes also DIST:3IPFV:make like.that  
 ‘This kind of mocassin they would make like that, too’

Another way of indicating “this kind” or “the kind” is to use a relative pronoun construction with a verb meaning ‘to be’ or another existential verb, so “the kind of forest” or “this kind of land” would be expressed as “the forest that it is”, or “how the land sits”, as in example (29):

- (29) Dechen t'a hut'e n̄ eyer ʔasí neba nila heles̄i  
 forest REL AR:3IPFV:be PAST there thing 2:for 1PFV:bring.pl 3OB:1IPFV:say  
 dé eyi gháré yuʔá hoha.  
 if that by.means.of 3D:3IPFV:recognize AR:for



‘He’ll recognize what kind of bush it was if I bring back something [from there] for him’

A similar relative pronoun-existential verb construction is equivalent to *any kind*, i.e. *any kind of fur* would be rendered “whatever fur it is” or “whatever fur it might be”, as in (30)-(31).

- (30) Tsádhéth náni thełtsi dé nánik’é Hudson Bay náyełni hoyı,  
 fur sale 3PFV:make when store 3D:3IPFV:sell REP  
 t’at’i ʔası tsádhéth, eyi ʔá tsąba.  
 REL:what REL fur that with money  
 ‘After they trapped fur Hudson Bay would buy them, any kind of fur’

- (31) Nak’e egané hıltsi ú t’a ber wali sí  
 sometimes dried.meat 1PL.IPFV:make and REL meat PROB REL  
 ‘Sometimes we would make dried meat with any kind of meat’

The Dene constructions resemble those of colloquial English, in which *kind* can also easily be omitted, as in *What birds did you see?*; *Hundreds of birds are native to this province*; *You can put different meats in it*; *Whatever paint you want to use*; *Any paint will do just fine*, etc. As a whole, it does not seem that KIND is a universal human concept or that it even needs to be expressed lexically.

The final NSM primitive which does not have an easy Dene translation is PART. The word *part* indicates a particular relation between two things, i.e. *The prologue was a part of Renaissance plays* or *Vermont is part of the United States*. In Dene this is not rendered by a single lexeme denoting the relation. When the English word *part* is used to indicate ‘a portion’ of something, a quantity adverb meaning ‘a little’ is used in Dene:

- (32) *eyi honi yaaze na hosni ha*  
 that story a.little 2.for 1IPFV:tell.story FUT  
 ‘I’ll tell you part of that story’

In sentences that are translated into English with the word *part* indicating the relation, i.e. body parts or parts of a car, the postposition *ts’i* ‘of’, which also indicates possession or origin, is used. *Parts of a moose* would be rendered as *denie bets’i rasí*, literally “things from a moose”, as in the following narrative about cutting out the different parts of a moose after a hunt:

- (34) *Kú eyi denie bets’i rasí horelyú hílchú ut’e la*  
 so that moose 3:of things all 3IPFV:take ASSERT  
*betthí tth’i hílchú, betthú ú, betsí ú, benághé*  
 3PO:head also 3IPFV:take 3PO:tongue and 3PO:nose and 3PO:eyes  
*ú bedzághé ú eyi horelyú begħa*  
 and 3PO:ears and that all 3:of  
*shéts’élyi nǐ ut’e la. Bets’i rasí róghedi íle.*  
 DS:3IPFV:pl.eat PASTASSERT 3:from thing 3IPFV:throw.away NEG  
 ‘Every part of the moose is taken. The head is taken as well, and its tongue,  
 its nose, its eyes, its ears. People would eat all that. No part is wasted’

The inherently possessed nominal *-ts’i* is attested in one text, in the form *hue ts’i* translated as “fish pieces”. However, it describes a small leftover fish parts boiled for broth or grease, and *-ts’i* seems to be etymologically related to *hue nats’is* ‘shredded fish’, so *hue ts’i* probably means something close to ‘little fish bits’ rather than ‘parts’. In a few situations Dene speakers are forced to translate English phrases with *parts*. For example, in the Dene-language curriculum at Dillon’s secondary school, the lesson on “body parts” was dubbed *sezí* in Dene, meaning ‘my body’. All of this indicates that part is not a Dene concept and that Dene people have a variety of ways to indicate part-whole relations without recourse to a particular lexical item denoting it.

In this study, we will exclude from the SemS and definitions all those semantemes which do not have more or less direct equivalents in Dene. This includes CAN (at least as a primitive), PART and KIND. The primitives FEEL and MOVE, however, can be included in the Dene definitions. Although FEEL and MOVE are not verbalizable as generic LUs in Dene, they are uncontestedly part of the meaning of feeling and movement verbs in general. While it is likely that Dene does not conceive of ‘parts’ or ‘kinds’ as entities or unitary concepts, it is impossible that they do not conceive of movement or of feelings. Any other semantemes in the definitions or SemS which are not semantic primitives must be explicated. For example, ‘sad’ and ‘entity’ are complex, so in their definitions their meanings must be explicated in using terms that have a close correspondence with existing Dene semantemes. A word like ‘sad’ may not have one direct equivalent in Dene. ‘Sad’ expresses a configuration of meanings and/or a cultural script which may differ slightly from its quasi-equivalents in other languages. One can start with the assumption that ‘sad’ refers to a configuration of simpler meanings such as ‘X can’t change a bad situation’; ‘because of this, X feels something bad’. Unlike ‘angry’, ‘sad’ feeling do not drive the experiencer to actively revolt against the negative situation. As the English word *sad* refers to all of these meanings at once, whenever it appears in the lexicographic definition of a Dene verb, the same components must be claimed to be expressed by the Dene keyword, even if they cannot be expressed in isolation from other language-specific meanings. The same can be said of the English word *entity*, even if there is no lexical unit meaning ‘entity’ in Dene: in a Dene-language definition, one would be forced to choose between specifying ‘things’ (*ʒasi*), ‘wildlife’ (*tich’ánádé*), ‘people’ (*dene*), etc. In Dene all of these things can be listed separately, but the English term ‘entity’ is just a convenient category which refers to all of them. So the reader should keep in mind that complex English words are merely convenient shorthand ways of referring to clusters of ideas whose existence in Dene has to be empirically verified.

Certainly, one can never be entirely free of the danger of imposing the meanings of own meanings on another language one is studying, and this risk is only increased when comparing word meanings between two languages as historically and culturally

removed from each other as Dene and English. Still, if we exercise the proper caution, we will certainly benefit from the comparison between these two lexica.

**2.3. The Structure of the Entries.** Overall, this project follows the lexicographic approach common to the ECD and to Apresjan's Dictionary of Synonyms (DS), while also incorporating some methodological elements from the NSM school. Although entries in the ECDs and in the Dictionary of Synonyms share a basic tripartite format, with semantic, syntactic and lexical combinatory levels of description, there are some important differences. As was mentioned in Chapter II, Apresjan's DS has six main zones: the Zone of Meaning, the Form Zone, the Syntax Zone, the Co-occurrence Zone, the Illustrative and Auxiliary Zones. A fine-grained comparison of the semantic traits of the quasi-synonyms is possible, but lexical functions are less of a focus in the Dictionary of Synonyms than in the ECD. Keywords do not correspond to vocables but to whole series, groups of lexical units which are quasi-synonymous. The words included in the series do not receive exhaustive treatment as vocables — any senses not synonymous with the series are excluded. ECDs, by contrast, have a "flat" structure, with each entry dedicated to one vocable (but all of the lexemes in that vocable). The selection of entries is not based on particular semantic considerations. ECD entries usually have a Semantic Zone, a section for the Government Pattern, and a Combinatorial Zone, which includes lexical functions and phraseology.

The entries elaborated for the current project have a hybrid structure between the ECD-type entries and those of the Dictionary of Synonyms. The overall goal is to describe a selection of lexical units covering several major semantic fields in Dene. Consequently, more emphasis is placed on analyzing the means Dene has for describing a given concept rather than on describing multiple senses of a vocable. Where possible, entries are dedicated to an entire synonym series rather than to single lexemes or vocables. However, because this project involves analyzing words from a language very different structurally and culturally from English, there is a risk of imposing English conceptual categories on Dene when grouping lexical items together into series, especially those series for which there is no lexical primitive in Dene. It is important to begin the entry for a lexical item or for a synonym series with a fairly detailed introduction, whose goal is to justify the comparison of the keyword(s) and their

translations in English in terms of primitive concepts. For example, since *anger* is an English representation of an English conceptual category, one must justify grouping together some Dene lexical items into a group denoting ‘anger’. The introduction for an “anger” series therefore must justify that Dene “anger” words have a similar conceptual basis and indicate a similar physiological and social process as those denoted by the English *anger*. After this introduction, the microstructure for synonym series entries is slightly simplified with respect to the Dictionary of Synonyms: entries for each series contain a Semantic Zone, with the heading, the dominant, a list of definitions and the parameters by which the quasi-synonyms differ, a comparison of their definitions, and a mention of pragmatic and extralinguistic conditions on their use, if applicable, followed by any other notes; a Grammatical Zone (essentially the Government Pattern); and a Co-occurrence Zone, which lists paradigmatic and syntagmatic lexical functions and idioms in which one of the keywords participates. Unlike in the Dictionary of Synonyms, examples are shown throughout the entry rather than in their own section. Some lexemes from a semantic field have no quasi-synonyms and so are described in stand-alone, ECD-type entries, which include a Semantic Zone (Heading, Definition, Pragmatic or Extralinguistic Notes), a Government Pattern Zone, and a Co-occurrence Zone, also listing lexical functions and idioms. For all entries, the Semantic and Syntax (Government Pattern) Zones will be discussed in Chapter 3 below. For reasons of space and ease of consultation, the Co-occurrence Zone of the entries will be illustrated separately in Chapter 4, preserving the same order of exposition of the semantic fields and series.

Goddard and Wierzbicka diverge from the Meaning-Text lexicography on another point, the syntax of the language of explications. While neither approach treats the metalanguage syntax as a meaningless means of linking the primitives, they differ as to its importance and ideal form. The Moscow Semantic school assumes that the syntax of the definitions should be based on an “artificial logical language”, as noted above. In the NSM approach, by contrast, suggests that the syntax of the semantic primitives is revealing of an underlying common configuration of human concepts.

**2.4. Semantic Fields Selected.** What is considered noteworthy in a language is at least partly contingent on the culture, historical experience, beliefs and interests of its speakers. As Apresjan (2000: 103-4) describes it:

Each natural language reflects a specific way of perceiving and organizing (i.e. conceptualizing) the world about us. The meanings expressed in natural language form a unified system of views, a kind of collective philosophy which becomes obligatory for all speakers of that language... This way of conceptualizing reality (the world-view) inherent in a given language is partly universal and partly national-specific, such that speakers of different languages may view the world in slightly different ways, through the prism of their languages.

Therefore:

The primary task of systematic lexicography is to reflect the naive worldview which a given language embodies—its naive geometry, physics, ethics, psychology, and so forth. The naive pictures of each of these areas are not chaotic but form definite systems and should therefore receive a homogeneous description in a dictionary.

By “naïve” one does not mean unsophisticated or uninformed of scientific realities. Language as a communitarian creation reflects the cumulative historical interests as well as past interests and beliefs and may eventually become archaic. Language may act as a museum that reflects folk characterizations and taxonomies. Following Apresjan, our goal is to reflect a general, total ‘picture of man’ and the world as reflected in lexical data. For Russian Apresjan (2000: 107) identifies several of the “main systems which make up a human being: the organs which house them, produce certain states, and perform certain functions and the semantic primitives which correspond to these systems, organs, states or functions”. These main human systems include physical perception, physiological states, thought and speech, which are all central enough in human communication to merit a particularly rich and subtle repertoire of vocabulary, such as important to people, which concern their inner reality and reaction to external forces and events. The systems are interrelated, at least linguistically: verbs of physical perception may be extended to refer to purely mental activity: *I see what you are trying to say, I smell a hidden agenda*, and physiological reactions are part of and even stand for the expression of emotion meanings: *I shiver / turn white with fear*, etc.

In trying to describe the “main lexical systems” of a language like Dene, which is culturally distant and historically unrelated to English, we cannot benefit from the same

insider's perspective that Apresjan had for Russian. Still, we can identify several "human systems" that are important enough to merit a particularly rich vocabulary. To these are added a few, such as topographical features, which are encoded in a very different way with respect to English. The "main systems" described for this study are: feelings (emotions and desires), character (*generous, kind, nosy*), physical description (*red, tall, prickly*), motion (*swim, trot, jump*), physical posture or position (*lie, sit*), topographical features (*cliff, grove*), and time/atmospheric conditions (*dusk, snow, thunder*). Several other systems such as perception and physiological reactions (*tremble, smile*) can be partially observed as well in a thorough description of those seven core semantic fields. It is important to note that we are using "semantic fields" here not in its technical sense of 'series of lexical units that share a semantic bridge' but by its informal definition of lexical units related to a certain topic, synonymous with "human systems" described above. By examining words from each of these fields we will attempt, as best we can given the limitations of time, space and cultural knowledge, to illustrate a Dene view of these systems, be it close to the English one or quite distinct from it.

**2.5. Methodology.** The data were nearly all collected during the author's stay in Dillon between August and December, 2008. In some cases, clarifications or other data were obtained from speakers by phone between December 2008 and the time of writing. Most of the data come from five speakers, 3 female and 2 male. All were born in Dillon except the oldest speaker who was born near La Loche. All are aged between 72 and 84, except one speaker who is in her early 50s. All speakers use Dene as their main daily language but are completely fluent in English as well, except for the oldest speaker who is monolingual. Data were confirmed with at least two speakers, and three in the majority of cases.

The MTT lexicographic methodology is elicitation-based. It relies on speaker's intuitions to estimate and express the extent to which a Dene word is the translation equivalent of an English word. Normally the author presented a series of contexts in which the English quasi-equivalent could be used, and then tried its various quasi-equivalents in Dene in the same contexts. In addition, the speakers were asked to provide open-ended information about any differences they felt might exist between the

quasi-synonyms in a series. Finally, each keyword was checked with each lexical function (see Chapter IV) that it could conceivably have an output for. In a minority of cases, examples were taken from narratives and stories which were recorded from the speakers by the author during the same time period. Any data which come from published sources are labelled as such.

It is very challenging to establish the meaning of words when one has only partial knowledge of the language and culture. Of course, one can expect that certain differences between the English or Dene quasi-equivalents and the keywords might have been missed, or that the keywords in a series may differ according to contexts, connotations or sociolinguistic considerations that have not yet been identified. Whenever the consultants provided comments that seemed relevant to establishing the meaning of the keywords, these are included verbatim in the various sections. While the result may not be as complete as what has been obtained in more massive Explanatory Combinatorial Dictionary projects for major European languages, for which frequent access to native speakers, corpora and self-elicitation are possibilities, this project should be seen as an important basis for further semantic research into Dene verb stems and idioms.

### 3 THE SEMANTIC AND SYNTAX ZONES

**3.1. Dene Emotion Terms.** Words referring to emotions form a rich semantic class in world languages. However, it is important to note that, as Wierzbicka (1999) describes in further detail, this semantic field is not exactly coextensive with the conceptual category denoted by the word *emotions* in English. Other languages may have categories which, while rather similar to ‘emotions’, nevertheless differ in a few interesting ways from that grouping. For example, the ancient Greeks had a category called *pathos*, which included not only what we would label *emotions* in modern English, but also other feelings such as physical desires and appetites including ‘hunger’ and ‘thirst’. According to Wierzbicka, even in English the term *emotion* is rooted in specifically modern ideas of psychology and socialization that were not widespread before the 18<sup>th</sup> century. *Emotion* denotes a category of feelings that imply both a



physical process, such as “shaking from fear” or “to be radiant with joy”, and an intellectual component, such as ‘to think that something can harm oneself, someone or something one cares about’ in the case of ‘fear’. If only one of these elements is present, we cannot call the feeling an “emotion” in English. For example, one cannot speak of an *\*emotion of hunger*, because ‘hunger’ contains no intellectual component. It also sounds strange to speak of an *?emotion of loneliness*, as ‘loneliness’ is not associated with specific physical changes in the experiencer. Even the “natural” or “obvious” division of emotions into is culturally specific. As Wierzbicka (1992:121) notes, even “basic” emotion categories such as ‘fear’, ‘anger’, ‘sadness’ are subject to interlinguistic variation:

English terms of emotion constitute a folk taxonomy, not an objective, culture-free analytical framework, so obviously we cannot assume that English words such as *disgust*, *fear*, or *shame* are clues to universal human concepts or to basic psychological realities. Yet words such as these are usually treated as if they were objective, culture-free 'natural kinds'.

Wierzbicka asserts her position against a large body of psychological and biological studies attests to the biological, rather than cultural, nature of emotions. As early as the 19<sup>th</sup> century, Charles Darwin (1991/1872) concluded that various emotional states such as “joy”, “anger”, and “reflection” are universal, as most facial expressions and gestures, although some specific expressions such as kissing may be a culture-specific. Later models developed the idea of emotions as adaptations that helped humans survive in the ancestral environment (e.g. Pinker 2002), much like physical traits and impulses. Studies and psychology manuals and articles such as Kemper (1987), Izard (1991), Plutchik (1994) and Birch (1995) also assume the biological innateness of specific “basic emotions” such as ‘fear’ and ‘sadness’. How, then, could linguistic evidence ever contradict the universality of emotion categories?

Wierzbicka does not argue with the goals and findings of these studies, but she sees an interpretive error rooted in language. The universalists’ error, following the NSM argument, lies not in assuming that there are some universal emotional experiences denoted by, for example, ubiquitous facial expressions and gestures, but in assuming that the conceptual categories designated by these signs are *precisely* coextensive with the range of experiences denoted by English concepts ‘sadness’, ‘anger’, ‘depression’, ‘resignation’, and so forth. Assuming that the categorization is

isomorphic with the English taxonomy amounts to nothing more than a reification and universalization of Anglo-American emotion categories. A more prudent approach, according to the NSM school, would be to assume that emotion-type categories in a given language correspond to words which exist in the language rather than to an a priori schema. As Wierzbicka (1999) notes:

It is ethnocentric to think that if the Tahitians don't have a word corresponding to the English word *sad* (Levy 1973), they must nonetheless have an innate conceptual category of "sadness"; or to assume that in their emotional experience "sadness" - for which they have no name - is nonetheless more salient and more relevant than, for example, the feelings of *tiaha* or *pe'ape'a*, for which they do have a name (although English does not)."

According to the NSM school, what is universal is that all cultures have "emotion talk", or the use of lexical units that refer to inner states (understood flexibly enough for the border between emotions and non-emotions to be different from that of English). For example, a given language may express the range of feelings denoted by the English words *fear* and *shame* with a single word. Conversely, English has no direct equivalents for emotions nameworthy in other languages, such as *saudade* in Portuguese, the German *Schadenfreude*, or *dedore..ini* in Dene, which refers to a mixture of shame, respect and humility that prevents one from speaking excessively around Elders. Presumably many of these words can be associated with cultural patterns that have existed at least historically in the societies which speak these languages.

While the lexical items themselves often cannot be translated with precise, one-to-one equivalents into other languages, their meanings can be decomposed into primitives such as WANT, FEEL, I, HAPPEN, GOOD, BAD, etc., concepts which are claimed to be universal. Emotion concepts in world languages can then be explicated as belonging to the basic genera of "to feel something good" , "to feel something bad" (using Wierzbicka's terms), or "positive emotional states" and "negative emotional states" (Iordanskaja 1970). It is these states, for Wierzbicka, that are the universal inner states studied by the psychologists, although individual languages tend to express these in combination with language-specific differentia which can in turn be explicated with semantic primitives. Once the definition of a keyword from another language has been decomposed into semantic primitives, a direct cross-linguistic comparison is possible.

Wierzbicka contrasts the meanings of the Ifaluk words SONG and LIGET with the meaning she claims for the English ‘anger’ below:

‘X is angry’

- (35) (a) Y did something bad  
 (b) X doesn’t want this to happen  
 (c) X wants to do something because of this

The Ifaluk word LIGET has, according to Wierzbicka, the components (b) and (c) above, but component (a) would be ‘something bad may happen’ rather than ‘Y did something bad’. One can work in one’s garden “with *liget*” because one does not want one’s neighbors to think that one is lazy. By comparison, one could not work on one’s garden “with anger” in English. Another Ifaluk quasi-equivalent of ‘anger’, SONG, would have the components (a) and (b), but not (c). One may feel SONG at a slight or insult, but in Ifaluk culture, Lutz claims, this is directed inward, resulting in depression or private agitation, rather than linked to a desire to react with “anger” to the one who did something bad. According to Lutz, this is related to how the Ifaluk, a small group of people living on an isolated island, have adapted their social dynamics to a context in which daily cooperation is essential and interpersonal conflict must be avoided at all cost. Wierzbicka cites these studies to highlight why it is important to decompose culturally specific emotion terms into simpler and more universal primitives in order to make such comparisons of quasi-equivalents belonging to different languages.

Methodologically, to apply this approach one must first semantically decompose words of the semantic metalanguage likely to be used in lexicographic definitions and semantic structures, at least to a level “shallow” enough that more direct comparison may be possible with semantic and lexical units in the target language. For example, one can divide emotion LUs into positive and negative emotional states. Next one can build simple definitions of positive and negative emotion words using simple components. For example, ‘sadness’ would have a decomposition similar to (36) but with a contrasting component (c), namely ‘X feels that X cannot do anything to change (a)’. While ‘sad’ does not translate to a single lexical unit in Dene, one could render

‘sad’ by through a target-language decomposition that closely follows the claimed English-language decomposition:

- (36) ‘X is sad’
- (a) Edúhu hoʔa ha dúé  
 different AR:3IPFV:stand impossible  
 ‘[The situation] can’t be changed’
- (b) ?Así hestsi ha dúé eyi hoha  
 thing 1IPFV:do impossible that AR:for  
 ‘I can’t do anything about it’
- (c) X nidhen ʔa, kúlú ba dúé  
 3IPFV:think ASSERT but 3:for it.is.bad  
 ‘X feels something bad because X thinks this’

There is actually no single word in Dene with precisely the same denotational range as ‘sad’ in English. Instead, there are several similar words which that would incorporate the above ideas and reactions, but with other additional meanings and connotations that renders them a bit more specific. If no Dene word is a clear equivalent of ‘sad’, how can the English word *sad* to be used in a metalanguage used to explicate the meaning of these Dene sad-type word? It must be assumed that that all of the elements denoted by the English ‘sad’ are common between Dene and anglophone culture. When English labels such as ‘sad’, ‘angry’ and ‘love’ are used in the semantic metalanguage, it is they may serve as abbreviation of for such a cluster of meanings which the analyst can established as shared, even though they may not have been lexicalized in the same way in both languages.

Already on this basis we do find that Dene shares very similar emotion categories with English. However, an additional level of evidence is provided by associating lexical items (in English and Dene) with a certain set of observable responses. For ‘sad’, this may include physical reactions, such as crying, and cultural scripts, such as withdrawal and silence. For this reason, Apresjan (2000) considers it too broad to simply divide emotions into genera such as “positive” and “negative” emotional states, as “negative emotional states” would group ‘hatred’, ‘fear’, and ‘disgust’ together, for example. Instead, Apresjan places emphasis on the connection between individual

negative and positive emotions and psychosocial scripts that differentiate them qualitatively. Each emotion such as ‘anger’, ‘fear’, and ‘joy’ is associated with certain thoughts, bodily sensations, physical and social manifestations. For example, the process for ‘fear’ (or its direct equivalent in Russian) is described as the following (Apresjan 2000: 208):

To experience fear one must (1) perceive or at least imagine a certain situation and (2) apprise it as dangerous to oneself or to something or somebody close. The result is the emotion itself, (3) an unpleasant sensation evoked by (1) or (2). This sensation may manifest itself (4) in certain physiological reactions (pallor, trembling, etc.), over which the subject has no control, and/or (5) in wishes (for example, a wish to hide, shrink, etc.), which may lead us in turn to (6) deliberate motor activity or (7) to speech.

A similar account of emotions as physical-psychological processes that occur in response to particular stimuli can be found, for example, in Iordanskaja and Mel’čuk’s (1990: 335) analysis of the Russian verb BOJAT’SJA ‘to fear’. In the MTT analysis of emotion words, emotion or feeling concept categories are thus established inductively, by observing the whole process that is associated with a given lexical item. If in a given language and culture situations which in English we would label as “fear” and “shame” are associated with the same lexical units as well as the same physiological reaction and wish (to hide, or to run away), then there is no empirical basis for positing separate conceptual categories, and a more appropriate English rendering of these lexemes would be something like “fear/shame”. One can search for the same anger-, sad-, fear- and shame-type emotions in world languages as one finds in English, but the analyst must always keep in mind that these may be combined or categorized differently on the basis of these physiological reactions. (These reactions include not only those observable to others, such as sweating or the hair standing on end, but also imaginary internal events such as a “broken heart” or “blood boiling”.) Linguistic data on reactions are thus also vital for categorize the emotional experiences in a culturally appropriate way.

Section II-3.1.4 outlined lexical functions, MTT’s formalism for a diverse array of lexical relations. Among these was **Real<sub>i</sub>**, a relation whose outputs referred to typical ways of realizing (hence the name) or actualizing the keyword. For example, *cry* or *withdraw into silence* could be realizations of *sad*. Once a plausible semantic decomposition has been suggested for some Dene lexical units, one must then test to see

if there are outputs of **Real<sub>i</sub>** for them and whether they are the same as for the English LUs in the metalanguage. This puts us in a position to distinguish at least three types of emotionally unpleasant states in Dene:

- a. ‘sadness’ = ‘emotionally unpleasant state which causes one to want to do less’

**Real<sub>i</sub>**(‘feel.sad’) = *-tsagh* ‘to cry’, e.g. *hestsagh* ‘I cry’

- b. ‘anger’ = ‘emotionally unpleasant state which makes one want to do something bad to someone not in self-defense’

**Real<sub>i</sub>**(*H...lch’e*) = ‘attack Y’, e.g. *bech’á yasti, eyi dene hest’ús* ‘I talk against him, I hit that person’

- c. ‘fear’ = ‘emotionally positive state which causes X to move away from X because Y can do something bad to X or something/someone that X cares about’

**Real<sub>i</sub>**(‘feel.afraid’) = ‘to run away’, e.g. *eyi dene ch’ázi tthisha* ‘I run away from that person’

The use of English emotion words in lexicographic definitions of emotion-type LUs in Dene is therefore justified by this two-pronged approach to establishing equivalency.

A final problem concerns the definition of “emotion talk” to the exclusion of similar semantic fields. Apresjan (2000) distinguishes between the “basic [emotion] vocabulary” and “words which, while not denoting emotions in the strict sense, include in their meaning an indication of the subject’s emotional state at the moment of performing some action or being in a certain state”, such as ‘admire’, in the sense of ‘X feels something good for Y that X is watching’. Another division made by Apresjan (2000: 123) separates emotions “into more and less elemental, having respectively a greater portion of feeling proper and a greater proportion of intellectual appraisal”. The semantic field of emotions in this work includes LUs that denote basic and secondary (or simple or complex, to use Apresjan’s terms) emotions. So ‘fear’, ‘saudade’ and ‘admire’ would all qualify according to this definition. Also included in the vocabulary of emotion is any term for which the root of the definition refers to an emotional state, regardless of the secondary components. Conversely, words for which the root of the definition denotes mainly intellectual appraisal are excluded, even if their definitions have secondary emotional components (Apresjan’s “less elemental” emotions). For example, ‘pride’ is included because at its core it is a feeling and not a way of

appraising something intellectually. ‘Agree’ and ‘doubt’, on the other hand are excluded because, while they carry certain emotional connotations, primarily describe the subject’s belief or disbelief in a proposition.

**3.1.1. Definitions.** Section 3.1.1 presents the lexicographic definitions of the emotion LUs in the current sample. In most cases, the lexical units fall naturally into series of quasi-synonyms. In some cases, the keywords are not as directly comparable to any other Dene LUs and are discussed as stand-alone entries.

**3.1.1.1. The ‘X is angry’ Series.** Following Apresjan (2000) the meaning ‘anger’, based on English linguistic data (in turn based also on his Russian synonym series), can be defined as following psychosocial process:

To experience anger one must (1) perceive or at least imagine a certain situation and (2) apprise it as something unjust and bad for oneself or for something or someone that one cares about. The result is the emotion itself, (3) an unpleasant sensation evoked by (1) or (2). This sensation may manifest itself (4) in certain physiological reactions (shaking, increased heart rate), over which the subject has no control, and/or (5) in wishes (for example, to scream, hit the responsible party or something or some else), which may lead us in turn to (6) deliberate motor activity or (7) to speech.

Dene concepts of ‘anger’ appear to share much in common with this English-based schema. Like the English ‘anger’, Dene ‘anger’ words have the components ‘X feels something bad towards person Y because of something that Y caused that was bad for X’. The component ‘angry’ will therefore be shorthand for those components in the following definitions. Dene ‘anger’ words are associated with a similar physical reaction as the English ‘anger’, e.g. *sedzié naghelna* {1PO:heart 3IPFV:move.fast} ‘my heart is racing’ and *hílch’é rá betth’i heldél* {3PFV:feel.angry because 3PO:flesh 3IPFV:shake} ‘his skin (surface flesh) is shaking with anger’. The locus of ‘anger’ in Dene is considered to be the heart: *bedzié rá sets’ílch’é* {3PO:heart with 1SG:to:3PFV:get.angry} ‘he was very angry with me’, lit. “he got mad at me with his heart”. As in English, Dene ‘anger’ words imply a desire of X to react in some way

against Y, i.e. by screaming (*hílch'é zá hezil* {3PFV:get.angry because 3IPFV:scream} ‘he screams from anger’). One difference with respect to English is that Dene lacks a generic word for ‘angry’ independent of aspectual derivation. X’s current state of anger (‘X is angry’) is rendered by a stative perfective of what is at least etymologically an inchoative derivation: *hílch'é* ‘s/he gets angry’.

The ‘X is angry’ series is *H...lch'é*, *ná...lch'ogh*, *X OBJ.AGR<sub>X</sub>-íni k'éch'á*, *hene...tkon*, *hune...lch'ogh* and *dzire...lch'ogh*. Of these, all are verbal lexemes except *X bini k'éch'á*, which is a quasi-idiom. Normally *hune...lch'ogh* and *dzire...lch'ogh* would be respectively be analyzed as habitual and perambulative derived stems (“verb themes” plus derivation, in traditional terminology), but the remainder *-lch'ogh* has been lost as an extant stem in 21<sup>st</sup> century Dene, at least in Dillon, so they merit inclusion in the series as quasi-elementary verb stems. The definitions are the following (following the NSM, “does/did” indicates performing or causation):

1. *H...lch'é* <*X Y ts'én hílch'é Z zá*: person X starts to feel anger at person Y because of situation Z that Y did> ; common English translation: *to get angry*.
2. *ná...lch'ogh* <*Y, X ná lch'ogh Z zá*: person X feels intense anger at situation Y>; common English translation: *to be really, very angry / to be furious*.
3. *X OBJ.AGR<sub>X</sub>-íni k'éch'á* <*Y, X bini k'éch'á*: person X feels angry at situation Y>; common English translations: *to disagree / to be upset / to be angry*.
4. *OBJ.AGR<sub>X</sub>-hene...tkon*, <*Y, ø<sub>SG</sub> X benelkon*: person X feels angry at situation Y that some people sometimes do that many people feel is bad>; common English translation: *to be offended, to be irritated, to be fired up*.



5. *hune...lch'ogh* <X *hune*lch'ogh: person X regularly feels very angry because of situations that people do>; common English translation: *to get angry often / to be an explosive person / to be short-tempered.*

6. *dzire...lch'ogh* <Y, X *dzire*lch'ogh *gha ná...dher* Z: because person X is very angry at situation {Y}, X moves to many places within area Z>; common English translation: *to storm around / to go around angry.*

The quasi-synonyms differ by the following parameters:

1. The nature of the feeling: *hene...lkon* is usually due to a perceived deliberate offense or breach of social rules on the part of someone else who did something that would be considered wrong by most people in the society. *X bñi k'éch'á* is due to a deliberate action or choice on the part of someone else that X feels hurt or offended by. It implies an intellectual disagreement as well as an emotional reaction: i.e. *seyaze kontúé hedq, sñi k'éch'á kúlú asolesj ile* {1PO:son 3IPFV:drink, 1PO:mind against but 1IPFV:say.something NEG} ‘my son is drinking whiskey, I'm upset but I don't say anything’; *holq sñi k'éch'á kúlú asorusj ile, ku'ú setikwi senéshq la* {many.times 1PO:mind against but 1OPT:say.something NEG, like.that 1PO:parents 1OB:3PFV:raise ASSERT} ‘Even if a lot of times I disagreed [with what adults were saying], I felt I mustn't say anything, that's how my parents raised me’. The others are more versatile in their cause, indicating a general anger with multiple possible causes, with a similar range to *angry* in English

2. Intensity: *H...lch'é*, *hune...lch'ogh* and *dzire...lch'ogh* are relatively neutral in intensity, and can take both intensifiers and attenuative adverbs. By contrast, *ná...lch'ogh* is more emphatic (and is consequently less acceptable with intensifiers).

Less intense are *bjini k'éch'á* and *hene...lkon*, which are closer to 'offended' or 'irritated' rather than 'angry'.

3. Duration: *hune...lch'ogh* refers to a customary situation. *Dzire...lch'ogh* involves traveling around and so suggests (but not strictly require) a longer duration. The others are relatively neutral as to duration, but none of these words are used for very long-term anger or hostility that one may harbor, i.e. towards an enemy over a period of months or years.

4. Presence of reason required in the subject: *H...lch'é* does not require reason, and can take an animal subject; this is impossible with all of the others.

5. Presence of motion during the emotion: only *dzire...lchogh* involves physical movement from place to place; the others do not specify a motion component .

**3.1.1.2. The 'X dislikes Y' Series.** For X to 'dislike' or to 'hate' Y, (1) X must know the situation or entity Y that X dislikes and (2) apprise this situation or entity Y as bad or unpleasant or having done something that was bad for X, which leads to (3) a negative feeling toward Y, usually leading to the X's (4) avoiding contact with Y (*bech'ázi hessa* {3:away.from 1IPFV:sg.walk} 'I walk away from him/her/it'; *bech'ázi nasther* {3:away.from 1IPFV:stay} 'I stay away from him/her'; *bedáresdeth* {3OB:1IPFV:turn.off} 'I turn it [radio, TV, music] off') or (5) negative speech toward Y if Y is a person (*dájlaze helesj* {2IPFV:pee 1PFV:say} 'I tell him/her to piss off', likely a calque from English) or X's negative speech to someone else about Y.

There are at least four lexical units in Dene that fit this schema. They are the lexemes *ch'áre...t'e* and *dakure...la* and the phrasemes *X Y ch'á...di ile* and *X Y*

*hene...l̩̩ ile*. The latter two are quasi-idioms, the signifiers being simply negated verbs. But the positive forms (without *ile*) differ in meaning, *ch'á...di* meaning ‘to be emotionally dependent on’ or ‘to cling to emotionally’ rather than ‘to like’. *Hene...l̩̩ ile* {like NEG}, lit. “not to like” is probably a quasi-idiom because it implies not only a lack of liking but an active dislike (which, incidentally, is also suggested by its English equivalent, as in *I don't like him*).<sup>14</sup> *Hene...l̩̩ ile* is the dominant of the series as its meaning is general and underlies those of all its quasi-synonyms. The definitions are the following:

1. *hene...l̩̩ ile* <*X Y hen̩̩li ile Z ʔá*: living being X feels something bad towards situation or entity Y because of Z>

2. *ch'á...di ile* <*X Y ch'ádi ile Z ʔá*: person X feels something bad towards situation or entity Y because of a bad situation or quality Z that Y did or is like>

3. *ch'áre...t'e* <*Y X ha ch'árit'e Z ʔá*: person X feels something bad towards person Y because of a bad situation Z that Y did>

4. *dakure...la* <*X Y Z-i dakurela*: person X feels something bad toward situation or entity Y that continues to make a sound that X does not like or who continues to do action Z that makes a sound that Y does not like>

The quasi-synonyms differ by the following parameters:

1. The cause of the feeling: one feels *ch'á...di ile* and *hene...l̩̩ ile* are very versatile and can be caused by virtually any action or characteristic of the entity or situation that X dislikes. One feels *ch'áre...t'e* towards someone based on that person's negative actions or personality: *Jean sa ch'árit'e ch'ereh̩̩ ʔá, dene* {J. 1SG:for 3IPFV:be.hateful 3IPFV:be.bad because person} ‘I hate Jean because he's

<sup>14</sup> Its status as a quasi-idiom could still be questioned, as in many cases in Dene the negation *ile* is ambiguous, with both attenuative and antonymic readings possible.

without a conscience, that guy'. One feels *dakure...la* because one is fed up with somebody's incessant talking or a continued irritating sound that something makes, i.e. *nerakuresla eyi shen ch'elé horĩtth'qi* {2OB:1IPFV:dislike that music worthless 2IPFV:listen:REL} 'I am fed up with you listening to that worthless music'. The stimulus must be auditory.

2. The object of the feeling: *ch'á...di íle* and particularly *hene...lĩ íle* are flexible and can be felt towards people, other entities or situations: *eyi dene bech'ásdi íle* 'I dislike that person'; *tulú k'é hojéré bech'ásdi íle* 'I dislike when the road is washed out'. *Ch'áre...t'e* can only be felt towards a person, and there is a strong suggestion (but not requirement) that the person feels the same way about the experiencer.

3. Presence or reason in X: *hene...lĩ íle* does not require a human subject; all of the others do.

4. Intensity: *ch'á...di íle* and particularly *hene...lĩ íle* have relatively low or flexible intensity and easily take attenuative or intensifying adverbs. *Ch'áre...t'e* is stronger, although it is a general attitude as well. The most intense is *dakure...la* because it is related to a specific incident.

5. Duration: *ch'á...di íle* and *hene...lĩ íle* are flexible in their duration; *ch'áre...t'e* must occur over a long duration of months or years, and *dakure...la* must be fleeting, temporary feeling of exasperation.

6. Contact between the experiencer and the object: it is somewhat strange to use *ch'áre...t'e* towards someone with whom one does not have direct contact, such as the prime minister: one would use *ch'á...di íle* and *hene...lĩ íle* in this situation.

**3.1.1.3. The ‘X is afraid/worried’ Series.** The schema for ‘fear’ or ‘anxiety’ is understood as the following: X must (1) perceive or at least imagine a certain situation Y and (2) X appraises Y as dangerous to X or to something or someone X cares about. As a result (3) X experiences a negative emotional state evoked by (1) or (2). This may manifest itself in (4) X’s characteristic physiological reactions, such as X’s pallor and trembling (*setth’i neljer* {1PO:surface.flesh 3IPFV:fear} ‘I am shaking’, lit. “my skin / surface flesh is afraid”; *sedzié deltth’er* {1PO:heart 3IPFV:run.fast} ‘my heart is pounding’, *setth’i nik’ath* {1PO:surface.flesh 3PFV:MOM:be.cold} ‘my skin grew cold’), over which X has no control, and/or (5) X’s wishes to take action (for example, to run away, to withdraw, etc., which may lead in turn to (6) X’s deliberate motor activity (*tthisha* {1PFV:flee} ‘I ran away’) or (7) to speech. Based on this pattern of emergence (which also follows Apresjan’s) Dene is rich in terms meaning ‘afraid’ or ‘worried’, with at least seven lexical units in ordinary use.

The series contains four verbs, *ne...ljer*, *k’éné...tq<sub>2</sub>*, *te...lgheth*, *hhahore...ti* and three phrasemes, *X PO.AGR<sub>X</sub>-jini lq*, lit. “X’s mind is much/many”, *X PO.AGR<sub>X</sub>-dzié na...tser ile*, lit. “X’s heart is weak”, and *X k’eniré...lya ile*, lit. “X is not calm”. The first two phrasemes are full idioms and the third is a quasi-idiom, i.e. the negation of the intransitive verb *k’eniré..lya*, meaning ‘person X feels no anxiety because X thinks that nothing bad is happening or might happen to entity Y’, but with a slightly unpredictable meaning. *Te..lgheth* is morphological phraseme containing a quasi-morph which is probably historically the inceptive prefix *te-* (rather unusual with a verb denoting a state). There is no extant stem *-lgheth*, and the perfective form is used to denote the emotional state. This is a rare word, and unlike what happens with the other quasi-synonyms in this series, speakers disagree about its existence, with only a few people using it. The dominant of the series is *ne...ljer*, a generic and widely applicable term translating to general ‘fear’. The definitions are the following:

1. *ne...ljer* <*X Y ch'á neljer*: living being X feels afraid of Y>; <*X Y ba neljer*: living being X feels afraid that something bad could happen to Y that X cares about>; colloquial English translation: *to be afraid, to fear*.

2. *k'éne...ta<sub>2</sub>* <*X Y k'énetq*: person X suddenly feels intensely afraid that something bad might happen or have happened to person Y after X has not been in contact with Y for a long time>; colloquial English translation: *to be suddenly overcome with worry*.

3. *te...lgheth* <*X telgheth Y á*: living being X suddenly feels intensely afraid because X saw or heard Y that X thinks could do something bad to X>; colloquial English translation: *to get scared, to be suddenly frightened*.

4. *hhahore...li* <*X Y OBJ.AGR<sub>Y</sub>-hhóreli / X Y OBJ.AGR<sub>Y</sub>-hhóreli Z SUBJ.AGR<sub>Y</sub>*: person X is afraid that Z may cause situation Y which would be bad for X>; colloquial English translation: *to be cautious, to be wary*.

5. *X PO.AGR<sub>X</sub>-jini ta* <*X bini ta Y á*: X feels afraid for a long time because of continued situation(s) Y>; colloquial English translation: *to be worried, to be burdened with a lot of worries*.

6. *X bedzié na...tser íle*, lit. “X’s heart is weak”. <*Z, X bedzié natser íle Y ha*: person X feels afraid to do action Y because X knows that X will be in contact with situation Z which may be bad for X>; colloquial English translation: *to be filled with dread, to be anxious*.

7. *k'eniré...lya íle* <*X Y ghq k'enirélya*: person X feels afraid because X thinks that something bad is happening or might happen to entity Y>; colloquial English translation: *to be worried, to feel anxiety*.

The quasi-synonyms differ by the following parameters:

1. Cause and nature of fear: *ne..ljer* has a very wide range of application, and can be used with more situations than any other quasi-synonym in the series. In response to the question *edlát'i ch'á n̄ljer zá ?* {what against 2IPFV:fear Q} 'what do you fear?', speakers may cite a wide range of fears. Some state general fear in their lives because of a present or future situation, as in *yanadhé dé tsqba dódi dé, nesjer lqt'e* {future when money there.is.none if 1IPFV:fear ASSERT} 'I'm kind of afraid that I'll have no money in the years to come'. It can also refer to specific occurrences or entities, present or future, as in *robber ch'á nesjer* {r. against 1IPFV:fear} 'I'm afraid of robbers' and *l̄i bech'á nesjer bejeré zá* {dog 3.against 1IPFV:fear 3IPFV:be.mean because} 'I am afraid of that dog because he is mean'. A scary monster in a science fiction movie was described as *bech'á nejer ahonet'i* {3.against 3IPFV:ind.fear 3IPFV:looks.like} 'one is frightened by it'. *Ne...ljer* can also indicate more diffuse or constant fears, as in *theni n̄q dher dé, neba nesjer* {alone 2IPFV:stay when, 2:for 1IPFV:fear} 'I am afraid for you when you stay alone'. *Ne..ljer* is also the proper word to describe irrational fears and phobias, such as *dlúne ch'á nesjer* {mice against 1IPFV:fear} 'I am afraid of mice (musophobia)' *tenesle ch'á nesjer* {1IPFV:go.into.water against 1IPFV:fear} 'I'm afraid to go into the water'.

The verb *k'éne..tq<sub>2</sub>* is quite distinct from any English word as well as from its Dene quasi-synonyms. It denotes a strong feeling of worry that comes on suddenly after a relatively extended period of time in which the experiencer had not been worried, so it can only be used in reference to someone whom the experiencer assumed was safe but later felt to be in danger. A typical example might be someone who suddenly realizes that a relative who had gone hunting should have returned and begins to worry about him, as in *dení kálzé ha téya, thá hule, duḥu bek'énitq*

{moose 3IPFV:hunt.for for INCEP:3PFV:sg.walk, long.time 3IPFV:be.absent, now 3OB:1IPFV:worry} ‘he went moose hunting, he's been gone a long time, now I'm worried about him’. If the experiencer had been worried about the person from the beginning, the sentence *negħq k'énirésha ile* {2:about 1IPFV:feel.calm NEG} ‘I was worried about you’ might be used instead.

*Te...lgheth* and *ne...ljer* denote a more primordial, animal fear. *Te...lgheth* is used to indicate a sudden fear at a direct stimulus, such as thunder, or a loud bang: *zelk'édhi zá náthestla, tesgheth* {bang because 1PFV:startle 1IPFV:get.scared} ‘I got scared because of the loud bang’. In this case it is similar in meaning to *startle* in English. The exact translation of *startle* is *na...ltla*, as in the example above. Unlike *to be startled*, *te...lgheth* can indicate the fear resulting from a situation which, while sudden, has some buildup, for example as a sudden dangerous storm on the lake while the experiencer is fishing (*?I was startled by the growing storm*). It also cannot be used for situations which, while physiologically startling, are not frightening: *\*phone deltsér, tesgheth* {phone 3IPFV:ring 1IPFV:get.scared} \*‘I was scared by the phone ringing’.

Far different is the meaning of *hháhore..ti* (condensed to *hhóre..ti*, for most speakers). *Hhóre..ti* denotes a rational fear of a situation which is likely or at least conceivable. Sometimes the meaning is close to that of 'caution' in English. A typical example would be *dechqáddani t'úle zá holì nassa ha bóresli* {bridge string with AR:3IPFV:be 1IPFV:go FUT 3OB:1IPFV:fear.for} ‘I'm scared to cross that bridge made of string (because it looks like it might collapse)’, or *seyaze bóresli talthh'i ha/ch'á* {1PO:son 3OB:1IPFV:fear.for 3IPFV:fall.into.water FUT / against} ‘I'm scared that my son will fall into the water (while playing on the edge of the bridge)’. It cannot be used with irrational fears that cannot be realized, such as phobias.



*Bjini la* is an ongoing feeling of unease related usually to a series of intractable problems which pose a persistent threat to the well-being of the experiencer. The cause of the fear is therefore an ongoing and important factor in X's life. Dene speakers typically translate *bjini la* as 'he is worried', but it has a more restricted range of application than *worried*. In response to the question *edlat'i gha njini la?* {what for 2PO:mind it.is.much} 'what are you worried about?', speakers give answers such as economic problems or trouble with romantic relationships, i.e. *tsaba dodi, t'a awasne k'oshq ile* {money there.is.none REL 1OPT:do 1IPFV:know NEG} 'I have no money, I don't know what to do (with my life)', *betsuaze yech'azi nalja ra, bjini la* {3PO:girlfriend 3D:away.from 3PFV:walk because 3PO:mind it.is.much} 'he is worried because his girlfriend left him'. It is not used with short-term worries brought on by a momentary situation, i.e. *?seskene thá hule dé, sjini la* {1PO:children long.time 3IPFV:be.absent when 1PO:mind it.is.much} '?I worry when my children are gone a long time'. In such situations, *k'eniresha ile* 'I am anxious' is more appropriate. The nature of the feeling denoted by *k'eniré...lya ile* is a temporary sense of worry induced by a specific cause. Typical causes for this worry include for example a child's absence or a car breakdown, as in *seyaze yuwé tabil ka nakj, begha k'eniréscha ile* {1PO:son over.there fishnets for 3PFV:paddle, still 3IPFV:be.absent, 3.about 1IPFV:be.calm NEG} 'my son paddled far out to set nets; he's still gone, I'm worried about him'. However, it is not obligatory to specify the reason.

The phraseme *X bedzié natser ile*, "X's heart is weak", is similar to *dread* in English, a sense of negative anticipation at an unpleasant situation, usually one that the experiencer is likely to witness. For example, when one speaker mentioned that she was going to pick up her son who she heard had been drinking, she said *sedzié natser ile ekozi hessa ha* {1PO:heart 3IPFV:be.strong NEG there 1IPFV:sg.go FUT} 'I'm

afraid to go there’, specifying “I am afraid of what I will see”. The speaker knows that the situation is happening or will happen soon. The situation will have bad consequences for the actant X who then dreads it. This idiom has a connotation of discouragement and intractability of the situation the speaker cannot affect but is unpleasant to face. Another sense of the same phraseme is something close to ‘devastated’ or ‘depressed’.

2. Presence of reason in X: because the fear of *ne...ljer* is instinctive, it does not require rationality in the experiencer: *l̥i sech’á neljer* {dog 1SG:against 3IPFV:fear} ‘the dog is afraid of me’. The worry of *k’énirélya ile* requires reason, because the experiencer cannot be an animal or a baby: *\*l̥i / \*bebi k’énirélya ile* {dog / baby 3IPFV:be.calm NEG} \*‘the dog / the baby is worried’. *Te...lgheth* does not require reason: *ʔelk’édhi ʔá l̥ichogh télgheth* {bang because horse 3PFV:get.scared} ‘the horse got scared / is scared because of the bang’. *K’éne...ta<sub>2</sub>* denotes a rational fear that can only be experienced by humans. The object of *k’éne...ta<sub>2</sub>* must also be human, usually a loved one of the experiencer. Because *X bini ta* denotes an ongoing worry based on a rational assessment of one’s life, the experiencer must be rational and human: *\*bebiaze bini ta* {baby:DIM 3PO.mind it.is.much} ‘the baby is worried’; *\*sets’i l̥i bini ta* {3PO:mind it.is.much} \*‘my dog is worried’. To explain this incompatibility, one speaker offered the explanation “dogs don’t think”. The feeling of *X bedzié nátser ile* “X’s heart is weak” involves foresight and dread and requires reason, of course, so the experiencer must be human: *\*l̥i bedzié nátser ile beskár ha* {dog 3PO:heart 3IPFV:be.strong NEG 3OB:1IPFV:slap FUT} \*‘The dog is dreading that I’m going to hit him’.

3. Duration: The fear denoted by *ne...ljer* may be fleeting, as in *sets’eni segha niya eyerots’i nesjer ile* {1PO:friend 1SG:by 3PFV:arrive therefore 1IPFV:fear NEG} ‘my

friend came so I stopped being afraid / my fear abated’, or general and ongoing, as in the case of the phobias and statements like *theni naqther dé, neba nesjer* {alone 2IPFV:stay when 2SG:for 1IPFV:fear} ‘I am afraid for you when you stay alone’ above. Because the situation denoted by necessarily lasts over a certain duration, this phraseme is incompatible with attenuative adverbs, as in the sentence *\*elótselé bini lq* {little.time 3PO:mind it.was.much} \*‘she was worried for a little while’ or *\*duhu dziné k’é sini lq* {this day on 1PO:mind it.is.much} \*‘today I am worried’. Also here *k’éniré..lya ile* is used. The feeling is necessarily temporary, so *k’éniré..lya* cannot be used with adverbs of long duration such as *hok’éll’á* ‘always’. In fact, some speakers even add adverbial phrases denoting a short duration, such as *hotsélé* ‘for a little while’, in their own spontaneous English translations of sentences with *k’éniré..lya* and without any temporal adverbs. Because of the nature of the stimulus of *te...lgheth*, the emotion is quite fleeting and refers only to the entry into the state of fear or the heightened period of acute fear immediately afterward. This emotion usually has gives the experiencer an impulse to flee the danger or seek to defend himself. *K’éne..ta<sub>2</sub>* can only be used after actant X has not had contact with actant Y for an extended period, far beyond a day. For example, it would be incorrect in the case of *gah bil nánetɔ̀i ha téya, aɔ̀ɔ̀ hule, begha k’énirésha ile* / *\*bek’énitq* {rabbit snares 3IPFV:verify for INCEP:3PFV:sg.walk, still 3IPFV:be.absent, 3:about 1IPFV:be.calm NEG / \*1ipfv:worry} ‘he went to check his rabbit snares, but he’s been gone a long time, so I’m worried / \*I’m suddenly very worried’. Checking rabbit snares is a task that one accomplishes in a couple of hours or half a day, but to use *k’éne..ta<sub>2</sub>* “would mean you didn’t see him for a long time”, according to one speaker; “for weeks at least”, specified another.

4. Intensity: While the feeling of *k'énirelya ile* temporary, the feeling is intense. It is incompatible with attenuative adverbs, as in *?yáazj k'énirésha ile* 'I'm a little worried' — less intense quasi-synonyms are used instead. One is a separate sense of the vocable whose primary sense means 'to think', i.e. *begħa nánesther* {3:about 1IPFV:think} 'I'm thinking about him (with concern)'. There is also a sense of the vocable whose main sense is 'to remember', i.e. *benasni* 'I remember him (with concern)'. *K'éne..tq<sub>2</sub>* is a very intense emotion incompatible with attenuative adverbs, although it may often be used with exclamations such as *esji* 'wow!' or 'oh!', as in *esji nek'énitq* {wow 2OB:1IPFV:worry} 'oh, how I was worried about you! [people said you were dead]', or *hule hule esji siyeze bek'énitq* {3IPFV:be.absent 3IPFV:be.absent oh 1PO:son 3OB:1IPFV:worry} 'he's been gone so long, oh I am so worried about my son'.

5. Effect on the experiencer: because *ne...ljer* has such a wide range of application, the effect on the experiencer and whether the fear would drive him to a certain action is contingent on the context. It may or may not have a physical effect. *Te..lgheth* is associated with physical responses such as *sedzié náltth'er* {1PO:heart 3PFV:stop.running} 'my heart stopped', *sedzié deltth'er* {1PO:heart 3IPFV:run.fast} 'my heart is pounding', *setth'i nik'ath* {1PO:skin INCH:3PFV:be.cold} 'my skin grew cold'. Because of its intractable, ongoing nature, *X OBJ.AGR<sub>X</sub>-jini lq* is not associated with direct physical effects on and responses of the experiencer. *K'énetat<sub>2</sub>* is not associated with a physical effect but it typically drives the speaker to seek help and search for the missing person.

**3.1.1.4. The 'X is sad' Series.** 'Sadness' in English denotes a 'negative emotional state because of situation Y' which is distinct from 'anger', 'fear', etc. Like

these, ‘sad’ references a situation where ‘something bad happened’ The result is (3) the emotion itself, X’s unpleasant sensation (*ahhe nóretth’er íle* {good 3PFV:happen NEG} ‘something bad happened’, or *eltth’i nódher íle* {right 3PFV:happen NEG} ‘something bad happened’, for some speakers). Unlike ‘anger’, or ‘fear’ terms, however, ‘sad’ terms do not have the component of ‘X wants to do something to change situation Y’ because X feels that X cannot do anything to change it. To be ‘sad’, X must (1) perceive or at least imagine a certain situation Y. (2) X appries Y as dangerous to X or to something or someone X cares about, a situation which X knows X can do nothing to change (*t’a awasne íle* {REL 1OPT.do NEG} ‘I can’t do anything [about it]’). evoked by (1) and (2). This sensation may manifest itself (4) X’s characteristic physiological reactions: feeling low in energy, impulse to be quiet, do less activity (*ʔasí heltsi íle* {thing 3IPFV:do NEG} ‘s/he won’t do anything’), crying (*hetsagh* {3IPFV:cry} ‘s/he cries’) etc., over which X has limited control, and/or (5) in X’s wishes such as the wish to withdraw from social contact (*theni nádher horelʔi* {alone 3IPFV:stay 3IPFV:want} ‘s/he wants to be alone’), to do less activity, and so forth which may lead X in turn to (6) X’s deliberate actions following up on (5) or (7) to speech (*este ʔá yalti* {sadness with 3IPFV:speak} ‘s/he speaks of/with sadness, despondency’) The range of feelings denoted by this whole schema includes processes such as ‘regret’, ‘nostalgia’, ‘to miss [someone, something]’, ‘depression’, which all have additional differentia to distinguish them from the core ‘sadness’ terms.

The Dene vocabulary for sadness is rich and varied, containing at least 14 lexical units that fit the above definition. The series is: *X ha dúé<sub>2</sub>*, *X ha horé...lyq íle*, *ane...ʔá<sub>1</sub>*, *ane...ʔá<sub>2</sub>*, *kane..ʔá*, *k’é...lĭ*, *k’éne...tq<sub>1</sub>*, *estene...dhen*, *dá...ʔá<sub>2</sub>*, *dá...ʔá<sub>3</sub>*, *hasne...dhen*, *X bĭni nettheth*, *X ba ehhúle indifferent* and *X bĭni nátsér íle*. *X ha dúé<sub>2</sub>*, lit. “for X it is hard”, *X ha horé...lyq íle*, lit. “for X it is not pleasant”, *X bĭni nettheth* “X’s mind is extinguished”, *X ba ehhúle*, “for X it means nothing” and *X bĭni nátsér íle*, lit. “X’s mind is weak” are phrasemes, and the rest are verbs. In two

cases, there are two distinct lexemes within the same vocable. The definitions are the following:

1. *X ha dúé<sub>2</sub>* < $\emptyset_{SG}$  *X ha dúé Y ʔá*: person X feels very sad because of situation Y>; colloquial English translation: *to be sad, to suffer [psychologically]*.

2. *X ha horé...lyq ile* < $\emptyset_{SG}$  *X ha horélyq ile*: person X feels intense sadness and does not feel good towards all of the things that X often feels good towards>; colloquial English translation: *to be sad, to be having a bad time*.

3. *ane...ʔá<sub>1</sub>* <*X aneʔá*: person X feels sad because X does not have anyone to talk to>; colloquial English translation: *to be sad, to be lonely, to be down*.

4. *ane...ʔá<sub>2</sub>* <*X aneʔá*: person X feels sad because of X no longer is in contact with situation or entity [Y]>; colloquial English translation: *to be nostalgic, wistful*.

5. *kane...ʔá* <*X Y kaneʔá*: living being X feels sad because X is no longer in contact with situation or entity Y>; colloquial English translation: *to miss someone/something*.

6. *hok'é...li<sub>1</sub>* <*Y, X hok'éli*: person X feels sad because X is sorry for situation Y that X caused and wishes X had not caused>; colloquial English translation: *to regret*.

7. *k'éne...tq<sub>1</sub>* <*X Y k'énetq*: person X feels very sad because X suddenly wants to be in contact with person Y intensely a long time after X has lost Y>; colloquial English translation: *to be suddenly overcome with nostalgia*.

8. *estene...dhen* <*X Y ʔá estenjdhen*: person X feels very sad because of situation Y and does not want to do things that X should do>; colloquial English translation: *to be sad, to be devastated, to languish, to be self-pitying*.

9. *dá...ʔá<sub>2</sub>* <*X Y ʔá dájʔá*: person X feels something bad because of bad situation Y that has existed for a long time>; colloquial English translation: *to suffer (mentally), to undergo hardship*.

10. *dá...ʔá<sub>3</sub>* <*X Y ts'én dájʔá*: person X feels very sad because X intensely wants to be in contact with Y which X can't be in contact with>; colloquial English translation: *to pine, to yearn, to crave*.

11. *hasne...dhen* <*Y Z, X hasnɨdhen*: person X feels bad because person Y did action Z that X didn't want Z to cause>; colloquial English translation: *to be disappointed* (in someone who is shirking his/her responsibility to share).

12. *X PO.AGR<sub>X</sub>-jini nettheth* <*X bɨjini nettheth*: X feels very bad because situation Y that X wanted to happen did not happen>; colloquial English translation: *to be very disappointed, to be crushed*.

13. *X ba ehhúle* <*X ba ehhúle*: X has a physical and mental problem that causes that X feels very sad and does not want to do anything>; colloquial English translation: *to be clinically depressed, to be in a torpor, to no longer care about life*.

14. *X PO.AGR<sub>X</sub>-jini nátser ile* <*X bɨjini nátser ile*: X feels very sad because many bad things have happened or many good things that X wanted to happen did not happen>; colloquial English translation: *to be dejected, to be depressed*.

The parameters by which they differ include:

1. The cause and nature of the feeling: the most abstract and versatile are the phrasemes *X ha dúé<sub>2</sub>*, lit. “it is hard for X” and *X ha horé...lyq ile*, lit. “it is unpleasant for X”. There is considerable semantic overlap between the two quasi-synonyms. *X ha dúé<sub>2</sub>* and *X ha horé...lyq ile* can both be used to describe someone's emotional state after severe emotional trauma, and speakers regard them as closely synonymous. *X ha horé...lyq ile* can refer to intense sadness and emotional devastation: *leghájdher t'á dé, bɨ esteyɨdher, beba horélyq ile* {he.died after when, 3PO:mother 3PFV:get.sad 3.for 3IPFV:be.pleasant NEG} ‘after he died, his mother fell into a depression, she was having a bad time’; *X ha dúé<sub>2</sub>* can also be used here. However, *X ha horé...lyq ile* has a wider range of application than *X ha dúé<sub>2</sub>*. *X ha dúé<sub>2</sub>* can only

indicate severe emotional pain, *X ha horé...lyq ile* can also refer simply to a lighter form of sadness, even a bad day: *duḥu dziné k'é sa horélyq ile / ?sa dúé* {this day on 1SG:for 3IPFV:be.pleasant NEG / 1SG:for it.is.bad} ‘today I am sad / ?I am sad’. Its range extends to specific events (while suggesting a general negative outlook as a result of that event): *ahhe nódher ile, beba horélyq ile* {beautifully 3PFV:happen NEG 3:for 3IPFV:be.pleasant NEG} ‘something bad happened, (so) he’s sad’. While *X ha dúé*<sub>2</sub> implies a specific cause for the experiencer’s sadness, *X ha horé...lyq ile* strongly suggests that the speaker has a general negative outlook and derives little pleasure from other areas of his or her life, i.e. *edini Dillon beba horélyq ile* {he D. 3:for 3IPFV:be.pleasant NEG} ‘he’s not happy in Dillon’.

The intransitive verb *ane...ʔá*<sub>1</sub> has various senses, the first of which can be rendered as *melancholy* or *lonely* in English. Examples would be *dene ch'ázi nidhá nasther, aniʔá* {people away.from far 1IPFV:stay 1IPFV:be.lonely} ‘I’m staying far from people, I feel lonely’ and *dene seghqnetq ile, aniʔá* {people 1OB:3IPFV:love NEG 1IPFV:be.lonely} ‘people don’t love me, [and] I feel lonely’. This melancholy is distinct from nostalgia and from loneliness, as in *hhait'ázi dé aniʔá* {fall when 1IPFV:be.sad} ‘I (always) feel sad in the fall time’. It implies both a lack of contact and a subdued, irrational sadness. *Ane...ʔá*<sub>2</sub> is closer to *nostalgia*, thinking about pleasant past experiences, as in *nálzé ghq nánidh̄j, benasní sugha dághida, aniʔá* {hunting about 1IPFV:think 3OB:1IPFV:remember well 1PL.IPFV:live 1IPFV:be.sad} ‘I’m thinking about hunting, how we lived happily, and I feel nostalgic’. It is especially challenging to separate the various senses from English equivalents and from each other because Dene speakers, whose English is generally native-like, tend to use the English words *sad*, *lonely* and *miss* interchangeably and for a wider range of situations than is standard for those English words. Closely related morphologically and semantically



is the transitive *kane...ʔá* which is the direct equivalent of the English verb *to miss* (someone, something), as in *nekaniʔá* ‘I miss you’, or *horelyú kaniʔá, t’qt’u dághida yanísi* {all 1IPFV:miss REL:how 1PL.IPFV:live in.past} ‘I miss everything about how used to live, in the past’. The English emotion of *regret* is usually translated as *k’é...líj*: A person feels sadness because he has committed an action or made a decision that he later comes to view as wrong, or omitted an action that he later feels he should have done, as in *Eṅṅ ghesʔi ile ú besdóte, hok’ésli* {Mother 1PFV:see NEG and 3PFV:die 1IPFV:regret} ‘I regret not seeing my mother before she died’. The Dene verb always refers to one’s regrets over one’s own behavior rather than feeling sorry for events beyond one’s control, e.g. *I regret the loss of our home in the hurricane*. This meaning is not possible with *k’é...líj*; *ba dúé theda* {3:for it.is.hard 3IPFV:sg.sit} ‘he sits in sadness’ would be used instead. The meaning of the transitive verb *k’éne...tq<sub>1</sub>* is uniquely Dene. This verb is in the same vocable as the sense *k’éne...tq<sub>2</sub>* discussed above, indicating a sudden, intense worry about the safety of someone the experiencer has not been in contact with for a while. The object of the verb must be a person whom X loves: *\*t’qt’u dághida bek’énitq* {REL:how 1PL.IPFV:live 3OB:1IPFV:miss} \*‘I suddenly terribly miss how we used to live’. It is not necessary for the object of the feeling *k’éne...tq<sub>1</sub>* to have died: *betsúaze yech’ází náłja, beziritl’izé hułʔq, yek’éneta* {3PO:girlfriend 3D:away.from 3PFV:sg.walk 3PO:photo 3PFV:find 3D:3IPFV:miss} ‘he found a picture of his girlfriend who had left him, and he suddenly missed her’. This verb is typically used when someone hears a story about or finds an item from a lost relative, and is suddenly overcome with nostalgia. *Estene...dhen* <*XY ʔá esteniḍhen*: person X feels very sad because of situation Y> is also commonly translated by the Dene as *sad* in English, but its use is much more restricted than the above two quasi-synonyms. This is a sort of emotional devastation

brought on by a traumatic event, such as the death of a relative, the end of a marriage, etc. One speaker described it as an "internally-focused feeling", i.e. a compartmentalized sadness one feels with respect to a specific personal tragedy, in contrast with *X ha horé...lyq ile* which is more "seeing everything black", being unhappy in every aspect of one's life, even in response to a specific tragedy. The two meanings are sufficiently different in Dene that some speakers will allow a direct contrast such as *beba horelya ile kúlú estenîdhen ile* {2:for 3IPFV:be.pleasant NEG but 3IPFV:be.sad NEG} 'he is sad but not grief-stricken'. It carries a strong connotation of a debilitation, similar to *grief-stricken*, or *abattu* in French. By contrast, *dá...ʔá<sub>2</sub>* refers to an ongoing deprivation or disruption in one's emotional needs, as in *ts'ékwi ʔá / tsqba ʔá / bedzié náté ʔá daiʔá* 'he is suffering because of a woman / for money / because his heart is broken'; another sense refers to suffering due to deprivation of one's physical needs. Still another sense, *dá...ʔá<sub>3</sub>*, refers to a sadness or suffering resulting from an intense desire for someone or something that the experiencer knows he cannot have because of some external obstacle. Some examples are *ts'élt'úi ts'én dáíʔá* {cigarettes to 1IPFV:suffer} 'I'm pining for cigarettes (but the doctor forbade me to smoke them)' and *eyi ts'ékwi ts'én daiʔá* {that women to 3IPFV:suffer} 'he's yearning for that woman (but he can't have her)'. *dá...ʔá<sub>3</sub>* is distinct from *dá...ʔá<sub>2</sub>* because in the latter case the desire can be fulfilled, unlike the former. The focus of *dá...ʔá<sub>3</sub>* is on the experiencer's suffering rather than on his or her desire, so the word is best viewed as a type of sadness.

Quite unlike the above quasi-synonyms is *hasne...dhen*, which denotes a sort of disappointment that someone else has refused aid or a service that was owed the experiencer, as someone who returns from the hunt with plenty of meat but then fails

to engage in the normal practice of sharing it with others, contrary to their expectations: *ber ghq danuthesni kúlú seghalchúth íle, hasnidhí* {meat of 1PFV:wish.to.have but 1OB.3.gave NEG, 1PFV:be.disappointed} ‘I wanted meat but they didn't give me any, so I was disappointed’. It has a connotation of deliberate selfishness or cruelty on the part of the other party. “There has to be a story behind it” said one speaker as in the example above. *X bini nettheth* describes X's bitter disappointment, and it is strongly implied that this is the result of an action or speech that another person directed at X; it is a quasi-conversive of *X Y bini leghá...ldhi* (‘for X to devastate Y’, lit. “for X to kill the mind of Y”). *X ba ehhúle* denotes a sadness accompanied by an extreme torpor, close to what we would call “clinical depression” in English (one speaker called people who experience this “suicide people”).

2. Presence or absence or reason in X: almost all of these quasi-synonyms require the presence of reason in the experiencer, as they frequently involve memory, anticipation or foresight. Several of them, such as the feeling of *estene...dhen*, are brought on by a traumatic situation that the experiencer remembers and broods over. For this reason, most are limited to human experiencers, i.e. *\*hí estenidhen* {dog 3IPFV:be.sad}\*‘the dog is devastated’. Only *kane...zá* and possibly *X ha dúé<sub>2</sub>* can be applied to animal experiencers.

3. Intensity: *X ha dúé<sub>2</sub>* and *X ha horé...lyq íle* are variable. *K'éne...tq<sub>1</sub>* is an intense sadness, so attenuative adverbs cannot be used with this verb. *Estene...dhen* is very an intense emotion, so it can be combined with adverbs indicating intensity, as in *huti'édhé estenidhen* {very 3IPFV:be.sad} ‘she is very sad’ and *estenidhen ts'éthíle* {3IPFV:be.sad gently:neg} ‘she is very sad’, but not attenuation: *?yáazí estenidhen*

{a.little 3IPFV:be.sad} ?‘she’s a little sad’. One speaker said that *estene...dhen* is a such a strong emotion that she found it strange to add intensifiers. Other speakers found the intensifiers acceptable. Both senses of *da...ʔá* are intense, so it is strange to add attenuative adverbs: *?yáazj dájʔá* {a.little 3IPFV:suffer}.

4. Duration: *X ha dúé<sub>2</sub>* and *X ha horelya íle* are flexible in their duration. However, for very long durations or general statements of fact *X ha dúé<sub>2</sub>* is more appropriate than *X ha horé...lyq íle: yanisj dene ba dúé <? horélyq íle> hodánjdhen íle* {in.past people 3.for it.was.bad <?it.was.pleasant neg> DIST:3IPFV:think NEG} ‘people in the past didn’t feel that they were suffering <?that they were sad>’. As a specific cause is necessary; *estene...dhen* cannot be an episode of depression or seasonal sadness, i.e. *\*?hhait’ázi dé estenesthen* {fall when 1IPFV:be.sad} ?‘I feel sad in the fall’. The feeling must have a certain duration: *?duhu dziné k’é estenjdhen* {this day on 3IPFV:be.sad} ?‘she’s sad today’. Both senses of *dá...ʔá* involve prolonged suffering.

5. The suddenness of the feeling: the feeling of *k’éne...tq<sub>1</sub>* strikes the experiencer suddenly after a period in which he had not been thinking of the person he had lost: *\*thá hots’j bek’enitq* {long.time AR:from 3OB:1IPFV:miss} \*‘I’ve missed him (suddenly) for a long time. The time lapse between the death and the feeling can range from weeks to years.

6. Impact on X’s social interactions: *estene...dhen* and *X ba ehúle* imply that the experiencer has withdrawn from his or her social interactions and duties, in a way which is socially unacceptable even given his or her suffering.

Pragmatic and Extralinguistic Factors: Unlike any of the European-language equivalents, *estene...dhen* also has a negative connotation, suggesting an undignified

self-pity. Because of this connotation, it is considered to be a voluntary process. As such, it can be used in the negative imperative: *kut'a ú estenǰdhen íle kúlú* {that's.it and 3IPFV:be.sad NEG EMPH} 'don't engage in self-pity'. Also due to the negative connotation, some speakers find it pragmatically odd to use in the first person, i.e. *?estenesthen* '?I am sad (in a debilitated, self-pitying way)'. The feeling may push the experiencer to speak in a self-pitying way, considered bad in Dene culture, prompting the advice *este rá yanetti íle kúlú* {sadness with 3IPFV:speak NEG EMPH} 'don't talk in a self-pitying way'.

**3.1.1.5. The 'X is happy' Series.** According to Wierzbicka (1988: 53), languages have far fewer words for when 'something good happened' than for negative emotional states. Interruptions and challenges in one's health, social life or providing for one's needs become noteworthy instances of negative emotions. Often 'happiness' is conceived of as a state in which there is simply an absence of affliction and obstacles: the absence of sickness, interpersonal conflict and material burdens. The Dene language has relatively few words that refer directly to the emotional states of happiness and contentment. To describe one's enjoyment of an evening with friends eating bannock and dried meat and playing bingo might be simply narrated, followed by an impersonal third-person verb such as *(seba) horélyq* {(for me) 3IPFV:be.pleasant} 'for me it is pleasant'. There are, however, a few lexical units that can be directly translated as 'happy' or 'glad'. A basic component is 'something good happened' (*ahhe nóretth'er* {well 3PFV:happen}, or *eltth'i nódher* {right 3PFV:happen}) or perhaps 'X feels good (as if) something good happened', or 'X thinks that something good can happen'. 'X feels something good' is more difficult to verbalize in Dene as there is not a precise equivalent of 'feel'. We can therefore say that the dominant cannot be verbalized in Dene.

To experience a 'positive emotional state' X must (1) perceive a certain situation and (2) appraise it as good for X or for something or someone X cares about, a situation

which is better than other situations that were possible. The result of this evaluation is (3) X's feeling of happiness itself, a pleasant sensation evoked by (2). This sensation may manifest itself in (4) X's characteristic physiological reactions such as X's smiling and light laughing (*hesch'úl* 'I smile'; *násdlogh* 'I laugh') X's feeling a sense of freedom or increased energy (*sek'é rasí hule lqt'e* {1:on thing 3IPFV:be.absent like:3IPFV:be} 'it feels like there's no burden on me'). Unlike a negative emotional state, a positive emotional state does not result in X's specific wishes because X does not want to alter this state but rather wants to allow it to continue. It may remain a private feeling, or it may result in (5) X's actions or (6) X's speech and mental images which simply convey X's state of joy (*rasí horelyú nádlogh la sa hut'e seba* {things all 3IPFV:laugh like 1:for AR:3IPFV:be 1:for} 'it's like everything is smiling for me'). For (5), there do not appear to be physical expressions comparable to the English "jumping for joy" and others.

The series is *binié<sub>1</sub>*, *hene...l<sub>2</sub>*, *X ha asone...t'í ile*, *X ha sugha* and *X OBJ.AGR<sub>X</sub>-ini ná...tser*. The definitions are the following:

1. *OBJ.AGR<sub>X</sub>-inié<sub>1</sub>* <*X OBJ.AGR<sub>X</sub>-inié*: person X feels something good for a short time>; free English translation: *to feel happy, to feel glad*.

2. *hene...l<sub>2</sub>* <*X hene<sub>l<sub>2</sub></sub>*: living being X feels something good for a long time>; free English translation: *to feel happy*.

3. *X ha asone...t'í ile* <person X feels that nothing bad is happening>; free English translation: *to feel okay, to feel fine*.

4. *X ha sugha* <person X feels something good>; free English translation: *to feel good, to feel well*.

5. *X* PO.AGR<sub>X</sub>-*ini nátsér*, lit. “X’s mind is strong” <person X feels something good because X thinks that something difficult will happen in a way that will be good for X>; free English translation: *to feel confident*.

Only two of the LUs are lexemes: *binié<sub>1</sub>* and *hene...li<sub>2</sub>*; the others are phrasemes: *X ha asone...t’i ile*, {X for there.be.problem NEG} lit. “for X there is no problem”; *X ha sugha* {X for it.is.good}; *X OBJ.AGR<sub>X</sub>-ini nátsér*{X PO<sub>X</sub>:mind 3IPFV:be.strong<sub>3</sub>} lit. “X’s mind is strong”.

The parameters by which the quasi-synonyms differ are the following:

1. Cause and nature of the feeling: English has a contrast between words like *glad*, *merry* and *joyful*, which are all usually associated with a short-term experience of pleasure or delight through some immediate cause, with *happy*, which suggests a subdued and ongoing sense of well-being and satisfaction. Many European languages have a similar contrasting pair, as between *content* and *heureux* in French or *contento* and *felice* in Italian, or *alegre* and *feliz* in Spanish. Dene seems to have a somewhat similar contrast between *binié<sub>1</sub>* and *hene...li<sub>2</sub>*, although this pair also has some features unique to Dene. OBJ.AGR<sub>X</sub>-*inié<sub>1</sub>* ‘to be glad’ or ‘to be happy’ is part of the same vocable as OBJ.AGR<sub>X</sub>-*inié<sub>2</sub>* ‘to like (it)’. This is the word used to refer to a fleeting merriness or joy at a specific situation. For example, some speakers use *sinié* ‘I am glad’ in a way similar to ‘thank you’ upon receiving a gift. In response to someone discussing a party he or she attended, a Dene speaker might ask *ninié ú?* {2:happy Q} ‘were you happy (there)?’ or ‘did you have fun?’. The negation of OBJ.AGR<sub>X</sub>-*inié<sub>1</sub>* is often translated as *angry* or *upset*. The sentence ‘I am happy because I won at bingo’ is rendered as *bingo honésnaq dé sinié* {b. 1PFV:win when 1:be.happy}; using *hene...li<sub>2</sub>* in the same context is unacceptable: *?bingo honésnaq dé henesli* {b. 1PFV:win when 1:be.happy } ?‘I am happy because I won at bingo’. Because OBJ.AGR<sub>X</sub>-*inié<sub>1</sub>* is tied to a specific moment and situation, it cannot be used to denote general satisfaction with life: *\*benekwé hel*

*binié* {3PO:husband:CONS with 3:be.happy} ‘she was happy (living) with her husband’. One can be OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub> while being entirely unhappy in one’s general life. A traditional legend about a Dene woman kidnapped and raped by Eskimos and suddenly rescued by a wolf walking on water contains the line *nuníe yenílʔi ú binié hojá eyi ts’ékwi* {wolf 3D:3IPFV:see when 3:be.happy AR:3PFV:begin that woman} ‘at the moment when she saw the wolf, the woman became happy’.

*Hene...li*<sub>2</sub> has, of course, the contrasting values of the same parameters. Unlike OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub>, *hene...li*<sub>2</sub> is used to denote the experiencer’s contentment with his general circumstances in life rather than for a transitory feeling of joy or mirth at an immediate cause. This happiness can be felt in the mind as well: *sini heneli* {1PO:mind 3IPFV:be.happy} ‘my mind is happy, relaxed’. Dillon elders commonly use this lexeme when they contrast the mental well-being of the older generation who lived off the land with the more complex 21<sup>st</sup> century social context, saying for example *yanisi hedaneli, duhu hedaneli ile* {in.past DIST:3IPFV:be.happy now DIST:3IPFV:be.happy NEG} ‘back then, people were happy, now they are not happy’ and *dene ba dúe k’élá honidhen ile ni... dene ba horélya, dene hedaneli ú* {people 3:for it.was.hard INF AR:3IPFV:think NEG PAST people 3:for 3IPFV:be.pleasant people DIST:3IPFV:be.happy and} ‘I guess they didn’t find their life hard... people enjoyed life, and were happy’. “It’s about your attitude”, said one Elder. It is incorrect to use OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub> in the same context: *\*dene dábinie yanisi* {people DIST:3IPFV:be.happy in.past} *\*‘people were happy back then’*. Conversely, it is incorrect to say *\*henesli* *\*‘I am happy’* when the feeling of joy is caused by a specific action such as receiving a gift. The idiom *X PO.AGR<sub>X</sub>-ini ná...tser* is used when one is about to face a difficult change with calmness and satisfaction of one’s success, similar to *confident* or *satisfied* in English.



2. Presence of reason in X: Like ‘glad’ in English, OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub> also requires the presence of reason, and cannot be used with animal experiencers: \**li binié* {dog 3:be.happy} \*‘the dog is happy’. A distinct sense of *hene...li*<sub>2</sub> is used to describe animal joy, perhaps because also in this case the feeling is deduced from the subject’s attitude.

3. Intensity: for humans, *hene...li*<sub>2</sub> indicates a general, subdued feeling of satisfaction with one’s circumstances, so it rarely takes intensifiers. Only OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub> has a highly variable intensity and can comfortably take intensifiers: *binié zá binié* ‘he’s really very happy’. The others are standard expressions of low-intensity contentment or absence of problems, so their intensity does not vary and it is strange to add intensifiers to them, much as *really fine* is strange in English.

4. Duration: Because of the fleeting nature of OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub>, it is incompatible with temporal adverbs denoting an ongoing duration, such as \**dene dá binié hok’ét’á* {people DIST:3OB:happy always} ‘people were always happy’. When *binié* is used with ongoing contexts, adverbs or particles, it has a repetitive reading: *ku’i dórelth’a<sub>c</sub> la ku’u dá binié* {this DIST:3IPFV:listen ASSERT like.this DIST:3OB:happy} ‘they listen to these (stories) and they are happy’; *dene ghi?i dé binié hoyi* {person 2IPFV:see if 3:happy REP} ‘if you ran into someone, he would be happy’, in reference to people’s greater friendliness in the culture of decades ago; *senekwé nija dé thá hule dé sinié ni* {1PO:husband:CONS 3PFV:arrive when long.time 3IPFV:be.absent when 1OB:happy PAST} ‘when my husband would arrive after a long absence, I was happy’. As a fleeting emotional state OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub> is not to be confused with the sense OBJ.AGR<sub>X</sub>-*inié*<sub>2</sub>, translated as ‘to like’, as in *honásí binié eyi t’at’u nálze k’énáts’édé* {also 3:like that REL:how hunting DS:3IPFV:do} ‘they (Dene people in the past) were also satisfied with the way they hunted’. This sense is frequent, but being generally happy *with* or satisfied *with* a state of affairs is conceptually quite different from joy or gladness as a feeling,

and the two senses also have different government patterns: OBJ.AGR<sub>X</sub>-*inié*<sub>2</sub> requires a subordinate clause. Conversely, *hene...li*<sub>2</sub> is incompatible with a fleeting, contextual feeling of contentment.

5. Human organ versus whole subject: Unlike its quasi-synonyms, *hene...li*<sub>2</sub> can be ascribed specifically the mind (considered in the Dene naive-linguistic view of the world as the locus of emotion) rather than to the whole person, i.e. *sini heneli* {1PO:mind 3IPFV:be.happy} ‘my mind is happy’.

**3.1.1.6. The ‘X likes/loves Y’ Series.** The primitive is ‘X feels something good toward Y’, expressed by the dominant *hene...li*<sub>1</sub>. The series consists of six lexemes: *chá...di*<sub>2</sub>, *ghane...ta*, *hene...li*<sub>1</sub>, *sane...dhen*, *sahore...lani* and *-lneth*; OBJ.AGR<sub>X</sub>-*inié*<sub>2</sub>.

The definitions of the quasi-synonyms are the following:

1. *chá...di*<sub>2</sub> <*XY heni ch’adi*: living being X likes living being Y unusually intensely and craves Y’s affection> ; free English translation: *to be attached to, to be clingy to, to really like* [someone] *now*.

2. *ghane...ta* <*XY ghaneta*: singular living being X loves singular living being Y>; free English translation: *to love*.

3. *hene...li*<sub>1</sub> <*XY heneli*: person X likes entity or X’s activity Y>; free English translation: *to like*.

4. *sane...dhen* <*XY sanidhen*: person X loves living being Y>; free English translation: *to feel affection for* [Y].

5. *sahore...lani* or *sore...lani* <*XY ghq saholelani*: person X intensely loves divine being Y>; free English translation: *to adore*.

6. *-lneth* <*XY helneth*: living being X loves entity Y and depends on Y emotionally>; free English translation: *to depend on* [Y] *emotionally*.

7. OBJ.AGR<sub>X</sub>–*inié*<sub>2</sub> <X Y pro<sub>subj</sub> agr-X–*inié*: living being X likes situation Y>; free English translation: *to like* [activity Y].

These quasi-synonyms differ by the following parameters:

1. The nature of X's liking or love for Y: *chá...di*<sub>2</sub> is purely platonic; X aims to receive the affection and attention of the living being Y. Unlike most of its quasi-synonyms, *chá...di*<sub>2</sub> expresses a temporary surge in affection and emotional clinginess toward Y. Because of the component 'X craves Y's affection', *chá...di*<sub>2</sub> pushes Y to interact with Y. Normally in Dene culture this is expressed by wanting to be near or with the living being, but in a modern context it is possible to use this word to refer to a friend or relative who lives at a distance, for example, but whom one calls often: *sak'ie Arizona nadher kúlú bení ch'ásdi* {1PO:maternal.aunt Arizona 3ipfv:live but 3:depending.on 1IPFV:like} 'My aunt lives in Arizona but she is my favorite'. It implies seeking contact with Y but does not require for this feeling to be reciprocal: *sedézé bení ch'ásdi kúlú eyi sení ch'ádi ile* {1PO:older.sister 3:depending.on 1IPFV:like but she 1:depending.on 3IPFV:like NEG} 'I feel such affection toward my sister but she doesn't feel it toward me'. Because of the component 'X seeks affection of Y', however, Y must know, or X must want Y to know about X's feelings. One cannot *ch'ádi* a deceased relative or a movie star: *?setsuné nǰ bení ch'ásdi* {1po:grandmother late 3:depending.on 1IPFV:like} 'I feel such affection for my late grandmother (now)'. The feeling *chá...di*<sub>2</sub> depends on X's emotional need of affection or attention from Y rather than on Y's positive qualities: *dene nezóle kúlú bení ch'ásdi* {person 3IPFV:be.good:NEG but 3:depending.on 1IPFV:like} 'he's not a good person, but I feel affection for him and seek his attention'.

The feeling expressed by *ghane...ta* is a general love that can be used in both platonic or romantic contexts: *setsuné ghqnitq* {1PO:grandmother 1IPFV:love} 'I love

my grandmother’, *James betsuaze għaneta* {James 3PO:girlfriend 3IPFV:love} ‘James loves his girlfriend’, *Yedáriye għaneta* {Creator 3IPFV:love} ‘she loves the Creator’. The object of *għane...ta* can be any living being: *sechízaze għanita* {1PO:cat 1IPFV:love} ‘I love my cat’ is acceptable as well. It cannot however be applied to non-living entities: *\*diri yoh għanita* {this house 1IPFV:love} \*‘I love this house’, or activities: *\*enelka għaneta* {3IPFV:sew 3IPFV:love} \*‘she loves sewing’. For these *hene...li<sub>1</sub>* could be used in both cases, or alternatively OBJ.AGR<sub>X</sub>–*inié<sub>2</sub>* for activities and situations. *Hene...li<sub>1</sub>*, like OBJ.AGR<sub>X</sub>–*inié<sub>2</sub>*, has a much wider range of application than its quasi-synonyms. In the case of *hene...li<sub>1</sub>*, X involves a very general enjoyment that X derives from situation or entity Y, be it sensory, aesthetic, emotional or intellectual pleasure. Consequently, Y can be any living being, as in *benestj, beti zá, dene nezq zá* {3OB:1IPFV:like 3:friendly because person 3IPFV:be.good because} ‘I like him because he is kind, because he is a good person’ or inanimate entity: *diri bek’eshélyi <reyághe> benestj* {this table <marrow> 3OB:1IPFV:like} ‘I like this table <moose bone marrow>’. It may also refer to any activity or situation: *elidliné eghálasna benestj ile* {F.M. 1IPFV:work 3OB:1IPFV:like NEG} ‘I don’t like working in Fort McMurray’. *Hene...li<sub>1</sub>* is really the only option in this series for use with an inanimate Y, and in spontaneous speech speakers commonly use this word to describe their favorite foods. *Sqne...dhen<sub>1</sub>* can refer to friendship or to romantic love. It is often used in the reciprocal *elgha sqnidhen* {REC:of 3IPFV:love} ‘they love each other’ to describe couples or true friends. The object of *sqne...dhen<sub>1</sub>* does not have to be human: *li għa sqnidhen* {dog of 3IPFV:love} ‘she loves the dog’, although it does have to be animate: *\*diri erihl’is għa sqnesthen* {this book of 1IPFV:love} ‘I love this book’.

The intransitive verb *sahore...lni* or *sóre...lni* is a relatively rare word. It is considered by at least one speaker as belonging to the (Catholic) religious lexicon, which is heavily influenced by French second-language speakers. Some speakers translate this word into English variously as “respect”, “worship” and “love”, and consider the term to be appropriate for describing love of God, as in *Agnes Niholtsini ghq saharelni* {A. God of 3IPFV:adore} Agnes is adoring the Creator. As such, the range of X and Y actants is limited Y can only be a divine being. It can't be used with people as Y *\*dene ghq sóresni* {people of 1IPFV:adore } because, in the words of one speaker, “we don't treat people that way”. Other speakers use this word with a different sense, meaning ‘having fun with (someone)’. Disagreement between speakers indicates multiple senses, some of which are more commonly used by different people. The latter sense probably denotes more an attitude or activity than an emotion. The transitive verb *-lneth* is the rarest word of the series — some speakers deny its existence entirely. Among speakers who do use it, there is a very strong preference to use it in the reciprocal, i.e. *Agnes ú Robert ú elehelneth* {A. and R. and REC.:3IPFV:depend.on} ‘Agnes and Robert are emotionally dependent on each other’, or in a derived form. A few speakers do, however, use it in its underived form. The word refers to an emotional need or reliance rather than any other type, such as economic: *\*tsqba ha elehelneth* {money for REC.:3IPFV:depend.on} \*‘they depend on each other for money’. The object of *-lneth* must be an entity rather than an activity (*\*yasti hesneth* {1IPFV:pray 1IPFV:depend.on} \*‘I depend on praying emotionally’), but it can be animal, as in *chíze hesneth* ‘I am attached to the cat emotionally’ or an inanimate object of emotional significance, as in the sentence *įlásį diri erihł'is*

*hesneth* {always this book 1IPFV:depend.on} ‘I always depend on this book emotionally’.

In contrast, OBJ.AGR<sub>X</sub>-*inié*<sub>2</sub> is used with a wider of situations than the other quasi-synonyms, with the exception of *hene...łi*<sub>1</sub>. It is used for situations in which X derives happiness, amusement or satisfaction from a situation. *Binié*<sub>2</sub> and *hene...łi*<sub>1</sub> are the only lexemes that can be used with situations as Ys; the Y actant of OBJ.AGR<sub>X</sub>-*inié*<sub>2</sub> must be a situation: \**erihł’is* / \**chize sinié* {c \*‘I am happy (about) the book / the cat’}. This word is often used for activities carried out by X, such as *hhál ʔá sénásther sinié* {cards with 1IPFV:play 1:like} ‘I like playing with cards’, but unlike the case with *hene...łi*<sub>1</sub>, it is also possible for Y to be a situation totally extraneous to X, as in *eyi ts’ékwi t’at’u beskéné néshq sinié* {that woman REL.how 3PO.children 3IPFV:raise 1IPFV:like} ‘I like the way that woman raised her children’, Dene ʔá crestł’is k’osha sinié ‘I like knowing how to write Dene’; *k’i tué hesdq sinié* {birch water:CONS 1IPFV:drink 1:happy} ‘I like drinking birch syrup’.

2. Presence of reason in X: rationality is not required of the experiencer of *ch’a...di*<sub>2</sub>. A pet dog, for example, can be X: *diri łi seni ch’ádi* {this dog 1:depending.on 3IPFV:like} ‘this dog is clingy to me’. The experiencer of *ghane...ta* does not have to be rational: *selichoghé seghaneta* {1PO:horse:CONS 1OB:3IPFV:love} ‘my horse loves me’. Unlike *binié*<sub>2</sub>, *hene...łi*<sub>2</sub> involves a rational actant: *dene sedáneli* {1OB:DIST:3IPFV:like} ‘people like me, I am well-liked’, *?łichogh seneli* ?‘the horse likes me’. Unlike several quasi-synonyms, *sqne...dhen*<sub>1</sub> requires reason: \**chize etgha sqnidhen* {cats REC.of 3IPFV:love} \*‘the cats love each other’. As it is a religious word, the experiencer of *sahore...lni* can only be human. The verb *-lneth* can take rational or non-rational actants as X: *diri sekwi* {sets’i łi} *selneth* {this child <1:to dog}

1OB:3IPFV:love} ‘This child ⟨my dog⟩ needs me emotionally’. *Binié*<sub>2</sub> does not require reason, and can be used with human and non-human Xs: *neł yasti sinié* {2.with 1IPFV:speak 1:like} ‘I like talking with you’, *łi dzoł zá sénéadher binié* {dog ball with 3IPFV:play 3:like} ‘the dog likes playing with the ball’.

3. Duration: unlike *-lneth*, *ba...dhi ch’á...di*<sub>2</sub> and *ghqne...tq* necessarily involve an ongoing state of affairs. Not surprisingly, it is odd to use temporary adverbs such as *diri sa k’é huli* ‘only this month’ with this verb. *Sqne...dhen* cannot be used for a fleeting emotion, i.e. \**duhu dziné k’é huli yeghq sqnidhen* {this day on only 3D:of 3IPFV:love} \*‘s/he loves him (just) for today’. *Sahore...lni* appears to be flexible in duration, referring to a moment of worship or to a general feeling. The verb *-lneth* is also flexible in terms of duration, and may be used for an ongoing feeling of emotional reliance and attachment, or for a fleeting feeling in a time of particular emotional need: *duhu dziné k’é sets’éni hesneth* {this day on my.friend 1IPFV:want} ‘I am really depending on my friend (only) today’. *Binié*<sub>2</sub> is also flexible with regards to the duration of the feeling. It can be used for general preferences as in many of the above examples, or for a temporary feeling: *nak’é bel nasther benesłi ile kulu duhu dziné k’é hułi bel nasther sinié* {sometimes 3.with 1IPFV:stay 3OB:1IPFV:like NEG but this day on only 3.with 1IPFV:stay 1:happy} ‘I sometimes don’t like staying with him, today I am glad to be with him’. *Sqne...dhen*<sub>1</sub> refers to an ongoing feeling that X has towards Y.

4. Intensity: Unlike most of its quasi-synonyms, *ch’á...di* expresses a temporary surge in affection and emotional clinginess toward Y. Even if X generally likes and expresses affection to Y, the state of *ch’á...di* indicates a particular increase. Because of this component, this verb is particularly incompatible with attenuative adverbs such as *yáazi* ‘a little’ and *hułl’édhé ile* ‘very ... not’. *Sqne...dhen* is, however, subject to

variation in its degree, and combines with both emphatic and attenuative adverbs: *hotié* / *degháre lĭ ghq sanĭdhen* {really / barely dog of 3IPFV:love} ‘she loves the dog a lot / a little’. Similarly, the emotion of *ghane...ta* must be intense. Attenuative adverbs are particularly odd with this emotion: *?yáazĭ* ⟨*?degháre*⟩ *yeghānetq* ? ‘she loves him a little ⟨? a lot⟩’. *Sahore...lni* has a fixed intensity, and cannot be used with attenuative adverbs or with intensifiers such as *hotié* ‘really’. The verb *-lneth* has a variable intensity, as it can be combined with intensifiers, as in *hotié elehelneth* {really REC:3IPFV:need} ‘they really need each other’, although attenuants are odd: *?yáazi elehelneth* {a.little REC:3IPFV:need} ? ‘they need each other a little’. *Binie<sub>2</sub>* has some flexibility in terms of intensifiers: *senasther sinié ʔá sinié sĭ* {1IPFV:play 1:like REP 1:like EMPH} ‘I really like playing’.

5. Effect on the experiencer: *hene...lĭ<sub>1</sub>* could potentially have as many **Reals** as it does Y actants, but this emotion does not really push X to carry out any action in an immediate sense, as seen by its frequent use to express general, permanent preferences.

Pragmatic and Extralinguistic Notes: speakers also report that, unlike the typical translations ‘clingy’ or ‘needy’, *ch’á...di<sub>2</sub>* as an emotion is not viewed negatively. Unlike *clingy* or even *cuddly* in English, a Dene speaker will gladly use *ch’á...di<sub>2</sub>* in the first person: *bech’ásdi* ‘I am clingy to him/her’, ‘I really like him/her now’.

**3.1.1.7. The ‘X wants Y’ Series.** Desires are wishes, which is a larger category than “emotions”. Because this study is cross-cultural, it is not confined to the culturally-specific category of “emotions” (see the introduction to this section), which are artificially divorced from “feelings” such as ‘hunger’ in English. The category of desires encompasses items from both groups, and so “emotion” should be taken loosely to reflect this. The semantic primitive of this field is ‘X wants Y’. The dominant is *hore...lʔĭ*, which has a similar range and versatility as the English meaning ‘want’ and which appears to be a common meaning underlying that of every verb in the series (in



place of which it can almost always be used). This series contains the following eight verb stems: *hore...lɔ̀j*, *ba...dhi<sub>1</sub>*, *ba...dhi<sub>2</sub>*, *bane...tal*, *hoba...dhi*, *danu...lni*, *ne...dhen<sub>2</sub>*, *kane...dhen*, as well as the phraseme *nj dé*.

The definitions are the following:

1. *hore...lɔ̀j* <*X Y horelɔ̀j*: living being X feels a desire for Y>; English free translation: *to want*.

2. *ba...dhi<sub>1</sub>* <*X Y badhi*: living being X feels a desire to ingest Y>; English free translation: *to want to eat, to hunger for*.

3. *ba...dhi<sub>2</sub>* <*X Y badhi*: living being X feels a desire to have sex with living being Y>; English free translation: *to want (sexually)*.

4. *bane...tal* <*X Y banetal*: living being X wants to ingest Y>; English free translation: *to want to eat, to hunger for*.

5. *hoba...dhi* <*X hobádhi*: living being X feels a desire to have sex>; English free translation: *to have sexual desire, to be horny*.

6. *danú...lni* <*X Y ghq danulni*: person X feels a desire to own object Y>; English free translation: *to want to own [Y]*.

7. *ne...dhen<sub>2</sub>* <*X Y njdhen*: person X feels a desire that event Y takes place in the future and is planning for Y>; English free translation: *to wish, to intend*.

8. *kane...dhen* <*X Y kanjdhen*: person X feels a desire to obtain inanimate object Y that X needs>; English free translation: *to be on the lookout for [Y], to be looking for [Y]*

9. *nj dé*, lit “PAST if” <[*X[ Y nj dé*: person [X], who is the Speaker, feels a desire that situation Y were happening / had happened / would happen>; English free translation: *to wish*.

The following parameters distinguish these quasi-synonyms:

1. The nature (and consequently object) of the desire: the transitive verb *hore...lʔi* is the most general and closest to the dominant of all of the quasi-synonyms of this series. It can be used with a wide range of rational and irrational X actants, i.e. *eghálana horelʔi* {3IPFV:work 3IPFV:want} ‘he wants to work’ as well as *l̥i tu horelʔi* {dog water 3IPFV:want} ‘the dog wants water’. The object of the desire can be virtually any living being, inanimate object or situation. Using a human as a direct object of the verb would usually imply a sexual desire, much like *to want somebody* in English, i.e. *ts’ékwi norelʔi ahunedí* {woman 2OB:3IPFV:want 3IPFV:seem} ‘it seems the woman wants you (sexually)’. With an inedible object it would imply a desire of ownership and with food or drink it would imply consumption, but these are all pragmatic factors rather than components of the definition. This is the verb most commonly used to describe speakers’ desires for immediate future preferences, such as *hotié Edmonton ts’én naheda ha horelʔi* {really Edmonton to REV:3IPFV:sg.go FUT 3IPFV:want} ‘she really wants to go back to Edmonton’. The above example shows that this verb also has a variable intensity, as shown by its ability to be used with intensifiers such as *hotié* ‘really’. There is no absolute link between wish and intent in the meaning of this verb, and *hore...lʔi* can be used for impossible or impractical situations: *Edmonton ts’ésa horesʔi kúlú dúé* {Edmonton to:1IPFV:sg.go 1IPFV:want but it.is.impossible} ‘I want to go to Edmonton but it’s impossible’ or *siné ha horesʔi kúlú hhait’ázi ʔa* {summer FUT 1IPFV:want but fall ASSERT} ‘I want it to be summer but it is fall’. These uses do reflect situations that, while temporarily impossible or implausible, are at some point plausible or likely to happen. For an entirely imaginary and impossible situation, such as ‘I want to be young again’, *ni dé* rather than *hore...lʔi* would be used (see below); *?chelekwaz nawasdle horesʔi* {young.man 1OPT:be.again 1IPFV:want} ‘I want to be a young man again’. This sentence may be less acceptable than the hypothetical sentences about the

seasons above since, while the desire for each season can certainly be fulfilled within coming year, the desire to be young again is entirely imaginary and unrealizable.

For *ba...dhi*<sub>1</sub> the object of the desire is an entity, specifically food or drink. This word is used when the subject desires food or drink in general entity rather than a specific kind of food or drink among choices: *lidi basthi* {tea 1IPFV:want} ‘I want tea’ and *egané basthi* {dried.meat 1IPFV:want} ‘I want dried meat’ are perfectly acceptable but pragmatically more marked than *tu basthi* {water 1IPFV:want} ‘I am thirsty’, lit. ‘I want water’; *lidi* ⟨*egané*, *tu*⟩ *horesʔi* {tea ⟨dried meat, water⟩ 1IPFV:want} ‘I want tea ⟨dried meat, water⟩’ would be a more common choice. This is also used for general hunger in the quasi-idiom *ber basthi* {food 1ipfv:want} ‘I want food’ or ‘I am hungry’. *Tu basthi* {water 1IPFV:want} must be considered an idiom because while *ber* can have the sense of ‘food’, *tu* refers specifically to water and not to ‘drink’. *Ba...dhi*<sub>1</sub> denotes desire of variable intensity, and can be intensified through repetition: *ber basthi t’á ber basthi* {food 1IPFV:want REP food 1IPFV:want} ‘I am really very hungry’. It seems to be slightly more intense than *hore...lʔi* because *ba...dhi*<sub>1</sub> suggests a physiological need in addition to a simple desire. Unlike the others, it is used only for temporary situations. Long-term hunger or starvation is inferred from a reference to circumstances: *yanisʔi ʔená estunet’iné, ber bets’i ʔá* {long.ago Cree 3IPFV:be.poor, food 3.to NEG because} ‘long ago the Cree were very poor, they had no food’, cf. *\*yanisʔi ʔená ber badhi* {long.ago Cree food 3IPFV:want.eat} \*‘long ago the Cree wanted food’. This word involves a physiological need rather than a rational desire, so non-rational entities can be X: *tʔi ber badhi* {dog food 3IPFV:want} ‘the dog wants food, is hungry’. As with *ba...dhi*<sub>1</sub>, the object of *bane...tal* is food and drink.

Dene has at least three or four words that refer specifically to eros in addition to the general ‘want’ verb which is compatible with that meaning. The first is the most direct, *ba...dhi*<sub>2</sub>. It is transitive: *nebadhi* ‘she wants you’. Some speakers consider this

to be an innovation, a modern extension of *ba...dhi*<sub>1</sub> above, but all speakers accepted this sense as possible. The object of the desire here is an entity, but speakers rejected the use of an inanimate object Y for pragmatic reasons. Like *ba...dhi*<sub>1</sub> it denotes a desire of variable intensity and temporary duration. It is more intense than its quasi-synonym *ederé...lye* ‘to be enticed’: *ts’ékwaze bets’én edereste* {girl 3.to 1IPFV:be.enticed} ‘I am enticed by her’, lit. “to her”. The verb *hore...lɔ̃* which has a very general meaning can also be used: *ts’ékwaze norelɔ̃ ahunedi* {girl 2OB:3IPFV:want 3IPFV:seem} ‘it seems the girl desires you’. A long-term desire is designated with synonyms for ‘love’ and ‘like’. Like *ba...dhi*<sub>1</sub> it denotes a real-world desire that can be satisfied.

A close quasi-synonym is the intransitive *hoba...dhi*, which differs formally from *ba...dhi*<sub>2</sub> only in the presence of the areal prefix, referring to a situation or area. It is used to refer to general, diffuse desire to have sex and it cannot be used with a specific Y: *\*setsúaze (ha) hobasthi* {1PO.girlfriend (for) 1IPFV:be.horny} \*‘I am horny for my girlfriend’. Like its English equivalent ‘horny’, *hoba...dhi* is dispreferred in contexts where the discourse indicates a specific or probable Y: *ts’ékwaze ahhenet’i, bets’én edereste* {girl 3IPFV:be.beautiful 3:to 1IPFV:be.enticed} ‘the girl is beautiful, I am enticed by her’, versus *?ts’ékwaze ahhenet’i, hobasthi* {girl 3IPFV:be.beautiful 1IPFV:desire} ‘the girl is beautiful, I am horny’. *Hoba...dhi* is a state that pushes the experiencer toward an action, as shown by the numerous **Real** possibilities in the following section, but it can also be used when the realisation of the desire is impossible or impractical, for example for someone alone in the bush.

The intransitive verb *danú...lɔ̃* differs slightly from the other ‘want’ verbs in many parameters. The Y actant can only be an object or animal that X wishes to possess, such as in *neɔ̃ihé ghq danúsni* {2PO:jacket of 1IPFV:want.own} ‘I want your

jacket’. The general ‘want’ verb *hore...lʔi* can alternatively be used in most or all of these sentences. It is compatible with intensifiers but the attenuative adverb *yáazi* ‘a little’ with this verb was rejected by speakers (and tends to be slightly pragmatically odd for all emotional states). *Danú...lni* differs from its quasi-synonyms however in that it refers to a specific Y that the person X wishes to acquire. If the person X simply searches for a generic Y it is slightly odd to use *danú...lni*; speakers tend to use the verb *ʔane...dhen*, as in *truck godhé nasni ha huʔl’édhé ʔanesthen* {truck new 1IPFV:buy FUT really 1IPFV:want} ‘I really want to buy a new truck’.

The transitive verb *kane...dhen* is similar in object, intensity and duration as its quasi-synonym *danú...lni* in that unlike the latter *kane...dhen* implies that X is somehow deficient for not having Y. It suggests a Y that the subject X regularly comes into contact with. It is used to refer to necessities that X is hoping to stock or is looking for, such as *hhaye hohha nalbadhé kánesthen* {winter for tires 1IPFV:want} ‘I’m looking for winter tires for the winter’. It does not imply ownership, but simply obtaining something, even temporarily, to consume: *hue kanidhen ú?* {fish 2IPFV:want QUESTION} ‘are you hoping to get fish?’. It can also be used for wanting [to find] one’s own possession that one has lost: *neké kanidhen* {2PO.shoes 2IPFV:want} ‘you’re looking for your shoes’.

The transitive verb *ne.. dhen<sub>2</sub>* is quite different within this series. This verb is the second sense within the same vocable as the sense ‘to think’. The only acceptable Y is a situation expressed by a verb; an entity cannot be the second actant: *\*ber <\*tu; \*ʔih> nesthen* {food <water; coat> 1IPFV:want} \* ‘I want food <\*water; \*a coat>’. The situation Y must be future situation with respect to narrated situation rather than the moment of speech: an old woman recalled not wanting her marriage with a stranger arranged by a priest when she was eighteen years old with *kú si sa dúé la hanúwasja nesthen íle ʔá* {but I 1.for it.was.hard ASSERT 1OPT:marry 1IPFV:want NEG because} ‘it

was so hard for me because I didn't want to get married'. It can refer to an immediate possibility that is desired or not desired while being debated: *yalti tth'i bek'éch'á yawasti ile nesthen zá, sa dúé kílú* {priest also 3.against 1OPT:speak NEG 1IPFV:want ASSERT, 1:for it.was.hard but} 'I didn't want to go against the priest, even though I felt terrible', also from the same narrative. However, the same verb can be used for a more tentative or distant future as well as an immediate one: *yanádhé dé sekué dustsi nesthen* {future when 1PO.house 1OPT:build 1IPFV:want} 'I want to build a house for myself one day in the future'. This is one of the few contexts where the general want verb is unacceptable, because the latter suggests a more immediate fulfillment of the desire: *?yanádhé dé sekué dustsi horesʔi nesthen* {future when 1PO.house 1OPT:build 1IPFV:want} '?I want to build a house for myself one day'.

2. Intensity of the desire: The most general and flexible in its intensity is *hore...lʔi*. Speakers accept, to an extent, adverbs of degree with verbs of hunger: *yáazi ber badhi* {*banetal; horelʔi*} {a.little meat 3IPFV:want.eat <3IPFV:want.eat; 3IPFV:want>} 'he's a little hungry', although they find it a bit pragmatically odd to quantify hunger. The other quasi-synonyms are less acceptable with adverbs of degree. Speakers find it odd to add intensifiers to *bane...tal*, as in *?hult'édhé jié banetal* {really berries 3IPFV:want.eat} 'he really wants (to eat) berries', although *hult'édhé jié banetal ile* {really berries 3IPFV:want NEG} 'he really doesn't want (to eat) berries' is fine. This is probably due to the fact that Dene lacks many negative antonyms and uses negation polysemously, with an attenuative or antonymic meaning depending on the context. The negation likely has an antonymic meaning here. As with *ba...dhi*, *bane...tal* involves a temporary desire. The other parameters seem to be identical with the quasi-synonym *ba...dhi*. *Hoba...dhi* denotes by definition an intense feeling, and attenuative adverbs like *yáazi* 'a little' are pragmatically quite odd (even stranger than with the quasi-synonyms). In cases where desire can more logically vary, such as *danú...lni* 'to want to own [Y]', a slight or attenuated desire is expressed by

speakers with the optative form of a verb such as ‘to buy’ followed by an excuse or explanation or why the desire is only tentative: *nusni*<sup>15</sup> *kúlú*... ‘I would buy it but...’.

3. Duration of the desire: *hoba...dhi* implies an ongoing desire; *ba...dhi*<sub>1</sub>, *bane...tal*, and *ba...dhi*<sub>2</sub> are limited in duration; if, for example, the desire in *ba...dhi*<sub>2</sub> were extended as permanent tendency of a person, one would say *edlélé ba naster* {sexuality 3:for 3IPFV:be.strong} ‘sexuality is strong for him’ instead. The others are more flexible and their duration can vary depending on the context. In particular, *danú...lni* is compatible with a long-term duration and with a past reading *thá hots’i truck danúsni* {long.time since truck 1IPFV:want.own} ‘I’ve wanted a truck for a long time’.

4. Relation between desire and intent: *ne...dhen*<sub>2</sub> requires both desire and intent. Because intent and a future context are necessary, the desire must be realizable: *?bingo nedhé honesnı nesthen* {bingo big:ADJ 1IPFV:win 1IPFV:want} ‘?I want to win the big bingo’ is strange because it sounds too much like intent. It can however be used for situations that are, while plausible, currently impossible: *Edmonton nawassa nesthen kúlú dúé* {Edmonton REV:1OPT:sg.go 1IPFV:want but it.is.impossible} ‘I want to go to Edmonton but it’s impossible (the road conditions are too bad). *Ne...dhen*<sub>2</sub> suggests a noncommittal or tentative desire based on rationally weighing possibilities. This component is why the negative *nesthen íle* as in the examples above particularly suggest a lack of consent or compatibility with the subject’s intentions. Speakers reject sentences such as *?tu wasdq nesthen* {water 1OPT:drink 1IPFV:want} ‘I want to drink water’ and *?ber ghq shéwasti nesthen* {food 1OPT:eat 1IPFV:want} ‘?I want to eat meat’ as odd, one speaker saying “it sounds like you’re debating it”. Because *kane...dhen* implies intention and a future situation, it can only be used for situations

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<sup>15</sup> Many speakers find it somewhat rude or inappropriate to use the verb “buy” directly to refer to an unmarked situation of acquiring something. The Dene have a very long tradition of sharing and exchanging items and only in recent times have come to really acquire most items in a cash economy.

that are both plausible and future with respect to the main narrated event. *Danu...lni* is clearly linked to an intent to acquire the Y, as shown by the numerous **Reals** (expressions of buying). *Danu...lni* is, however, compatible with unrealizable desires to own a specific Y: *beghq danúsni kúlú bena sets'í ile* {3:of 1IPFV:want.own but 3:in.exchange.for 1:to NEG} 'I want [to own] it but I have nothing in exchange for it'. In the case of *ní dé*, there is a much weaker link between desire and intent: it can be used with actions one has no intention or ability of carrying out: *chelekwaz nawasdle ní dé nesthen* {young.man 1OPT:be.again PAST if 1IPFV:think} 'I am thinking, I wish I were a young man again'.

5. Presence or absence of reason in X: *danú...lni*, *ne...dhen<sub>2</sub>*, and *kane...dhen* require rationality and planning, and so cannot be used with animal or infant Xs. There is resistance to attributing desire and intention to animal agents: *\*sas dene legháwalthi ní dhen* {bear man 3OPT:kill 3IPFV:want} \*'the bear wants to kill the man'; one speaker explained "we can't say what an animal is thinking". Speakers find it strange to use *hoba...dhi* with animal subjects because it implies an ongoing desire, which they find odd to apply to nonrational subjects. Similarly, *ní dé* and *ba...dhi<sub>2</sub>* are limited to humans. Only *hore...lzi*, *ba...dhi<sub>1</sub>*, and *bane...tal*, are non-rational and can be applied to animal experiencers.

6. Hypothetical or real-world nature of the desired situation: the phraseme *ní dé* is the only non-verb from the series. Structurally it is formed from the quasi-morphs *ní*, the past-tense marker, and the conjunction *dé* 'if'. It comes just after the sentence it has semantic scope over. It can refer to past, present or future situations, as in *neba horelyq ní dé* I hope you have a good time (in the future) or *denie thilk'édh ní dé* {moose 1PFV:shoot PAST if} 'I wish I would shoot / had shot a moose'.



7. Whether the desire is possible to realize: unlike the others, *n̄́ dé* can also be used with entirely imaginary and unrealizable situations: *chelekwaz nawasdle n̄́ dé nesthen* { young.man 1OPT:be.again PAST if 1IPFV:think} ‘I am thinking, I wish I were a young man again’.

8. Restrictions on speech act participants: unlike its quasi-synonyms, *n̄́ dé* is used to express hypothetical, imaginary desires of the Speaker only, similar to *ojalá* in Spanish. It can never be interpreted as referring to wishes of the X actant of the subordinate sentence, so added to a third-person subject sentence such as *edini denie thelk'édh* {he moose 3PFV:shoot} ‘he shot a moose’ would mean ‘I think it should be him to shoot the moose’ rather than \*‘he would like to shoot the moose’, or *l̄́ besayúé hulʔq n̄́ dé* {dog 3PO:toys 3PFV:find PAST if} ‘I wish the dog would find his toys’.

Pragmatic and Extralinguistic Notes: Because *ne...dhen*<sub>2</sub> concerns intentions, it is pragmatically most compatible with the first person, because in the Dene language one hesitates to claim intimate knowledge of other peoples’ intentions. There is a tendency, therefore, to add *ahunedi* ‘it seems’ with after verbs of volition and desire with non-first-person subjects.

**3.1.1.8. Other Emotion Terms.** There are a few words which denote ‘surprise’. The basic explication for this emotion is ‘X feels something because X starts to know something that X thought would not be true or happen’. Although the various ‘surprise’ words in English may have positive connotations (such as *surprise* or *unusual*) or negative ones (such as *shock*), the notion of ‘surprise’ cannot itself be evaluated as negative or positive. To experience ‘surprise’ one must (1) perceive a certain situation or start to know something and (2) apprise it as something very different from what one thought would happen or be true of that situation or of the participants involved in it. As a result of this evaluation, one feels a strong sensation (3)

evoked by (1) and (2). This sensation may manifest itself (4) in certain physiological reactions such as the eyes widening (*bená dárígai* ‘his eyes turned white (wide)’ — no ‘jaw dropping’ in Dene) over which one has only partial control. It may remain a private feeling (if no one noticed the physiological response), or it may result in (5) actions such as turning to and touching or shaking other people from disbelief (*elenílʔi* we look at each other, *dene benathilna* ‘I touched someone’, *sets’éni sethelni* ‘my friend grabbed me’) and (6) speech (*esji!* ‘wow’, *húúli!* ‘wow, really!’) that expresses one’s state of surprise.

The series is *yenorí...ya*, *k'é* and *ʔorí*. The definitions are the following:

1. *yenorí...ya* or *norí...ya* <X Y *ghq yenoríya*: person X feels surprise at entity or situation Y>.
2. *k'é* <[X] Y *k'é*: person [X], who is the Speaker, feels surprise when X that situation Y is happening / happened>
3. *ʔorí* <[X] Y *ʔorí*: person [X], who is the Speaker, feels surprise when X sees that situation Y is happening / happened>

Only the first is a verb; *k'é* and *ʔorí* are postverbal particles with scope over the entire clause. They differ by the following parameters:

1. Kind of stimulus: because *k'é* and *ʔorí* indicate surprise at situations the Speaker or protagonist has directly experienced through sensory perception, they are limited to situations for which there might (usually) visual or auditory evidence.
2. Whether one has directly observed evidence for something: *k'é* and *ʔorí* indicate surprise at something one has directly perceived through sensory means, while *norí...ya* can be used for intellectual surprise: *yanísj honí beghq sudi lq't'e, kúlú nak'é tth'i beghq noríya lq't'e* {in.past story 3:of funny assert, but sometimes also 3:of 3IPFV:be.surprised ASSERT} ‘Stories from long ago are funny but sometimes

surprising’, lit. “sometimes old stories are funny but sometimes one is surprised at them”, *kúlú ǰlásǰ ts’én tth’i beghq noriya* {but one.side at also 3:of 3IPFV:be.surprised} ‘However one aspect [of the situation] is surprising’

3. Evidentiality: *ǰóri* implies visual evidence: *tedhe tsǰl ghejer óri* {night falling.snow 3PFV:fall MIR} ‘wow! [look!], it snowed last night’; implies but does not entail visual evidence: *beghá nóreshále dene dǰtth’ah k’é* {3:about 3IPFV:be.surprised people 3PFV:hear MIR} ‘people were very surprised to hear that’. *Yenóri...ya* has no evidentiality restrictions.

4. Duration: only *yenóri...ya* can express a long-term or general feeling, as in (*yanǰsǰ honǰ beghq sudi laǰ’e, kúlú nak’é tth’i beghq noriya laǰ’e* ‘Stories from long ago are funny but sometimes surprising’). The others express surprise only concerning the moment in which one discovered something, and no more.

5. Restrictions on speech act participants: unlike its quasi-synonyms, *k’é* and *ǰóri*, as postverbal particles, can express the surprise of the Speaker only; if there is any other subject, it is understood that the particles indicate that the Speaker is surprised by what that other subject is doing.

**3.1.2. Emotion Terms: Syntax.** In each case whenever an actant is a situation, in principle this can be expressed in the surface syntax as a verb or as a noun. The latter can happen when the verb is expressed a noun derivatives (i.e.  $N = S_0(V)$ , where  $V$  is an action of another DSyntA). However,  $S_0(V)$  derivations are very rare in Dene, one example being *be-eghena-i* {3PO-live-NMLZ} ‘his/her life’. It should therefore be kept in mind for every Government Pattern where a noun (N) is listed as a possible surface realization of a situation, while this is technically an option it is not productive.

Like its English quasi-equivalent 'angry', the first verb in the 'X is angry' series may have three semantic actants in some cases ('X is angry at Y for doing Z') and two in other contexts: ('X is angry at [agentless] situation Y'). This LU therefore has two Government Patterns:

1. *í...lch'é* <X Y *ts'één hílch'é* Z *zá*: person X starts to feel anger at living being Y because Y caused situation Z>

X ↔ I	Y ↔ II	Z ↔ III
1. N <sup>1</sup> <sub>human</sub>	1. N <sub>living</sub> <i>ts'één</i>	1. V <i>zá</i> 2. N <i>zá</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *sets'ílch'é* [*sets'één hílch'é*] {1OB:at 3PFV:get.mad} 'she got mad at me', 'she is mad at me'

C<sub>1.1</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: *Eva beskéné ts'ílch'é sq'a dáyalti ile zá* {Eva 3PO:children at:3.PFV:get.mad quietly DIST:3:speak NEG because} 'Eva got mad at her children because they were talking loudly'.

2. *í...lch'é* <X *hílch'é* Y *zá*: person X starts to feel anger at situation Y>:

X ↔ I	Y ↔ II
1. N <sup>1</sup> <sub>human</sub>	1. CLAUSE <i>zá</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *hílch'é chq zá* {3PFV:get.mad it.rains because} 'he was mad at it raining'.

3. *ná...lch'ogh* <Y, X *nálch'ogh*: person X feels intense anger at situation Y>

X ↔ I	Y ↔ II
1. N <sup>1</sup> <sub>human</sub>	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *edini yebeschené hesdóltsi, nálch'ogh* {he 3D.PO:car:CONS 3PFV:destroy, 3IPFV:be.angry} 'he<sub>1</sub>'s furious that he<sub>j</sub> destroyed his<sub>i</sub> car'.

C<sub>3.1</sub>:V must be an action of Y, which is not expressed but is understood in the discourse.

4. *X* OBJ.AGR<sub>X</sub>-*ini k'éch'á*, lit. “X’s mind against” <*Y, X bini k'éch'á*: person X feels angry because at situation Y that X does not want>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: The keyword is technically intransitive; Y is realized as another clause understood pragmatically as the cause of the situation: *seyaze kontué hedq, sini k'éch'á kílú asolesj ile* {1PO:son whiskey 3IPFV:drink, 1PO:mind against but 1.IPFV:say.something NEG} ‘my son is drinking whiskey, I'm upset [at that] but I don't say anything’.

5. OBJ.AGR<sub>X</sub>-*hene...lkon* <*Y, ø<sub>SG</sub> X benelkon*: person X feels angry at situation Y that some people sometimes cause that many people feel is bad>

X ⇔ II	Y ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *vasi ha ile ghq yanelti, senelkon* {thing for NEG about 2IPFV:speak, 1OB:3IPFV:offend} ‘you are speaking disrespectfully, and it offends me’.

*hune...lch'ogh* <*X hunelch'ogh*: person X feels very angry many times because of situations that people do>

X ⇔ I
1. N <sup>1</sup> <sub>human</sub>

C<sub>1.1</sub>: *Sam hunelch'ogh* ‘Sam always gets angry at people’

6. *dzire...lch'ogh* <*Y, X dzirelch'ogh gha ná...dher Z*: because person X is very angry at situation {Y}, X moves to many places within area Z>.

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. CLAUSE	1. <i>gha ná...dher</i> N <sub>place</sub>

C<sub>1.1</sub> + C<sub>3.1</sub> (by far the most frequent GP): *James dzirelch'ogh gha nághidher Banich'eri* {James 3IPFV:PERM:be.angry PP 3PFV:stay P.} ‘James stormed angrily around Patuanak’, ‘James went around Patuanak angry’.

C<sub>2</sub>: rarely expressed; usually understood from the discourse.

The items in the ‘X dislikes Y’ series also have varying Government Patterns:

1. *hene...li ile* <X Y *heneli ile* Z *zá*: living being X feels something bad towards situation or entity Y because of situation Z>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>living.being</sub>	1. N <sup>1</sup> 2. V <sup>1</sup>	1. V <i>zá</i> 2. N <i>zá</i>

C<sub>1.1</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: *diri kafi benesti ile suga deʔqzé natser zá* {this coffee 3OB:IPFV:like NEG sugar too.much 3IPFV:be.strong because} ‘I dislike this coffee because the sugar (in it) is too strong’.

C<sub>1.1</sub> + C<sub>2.2</sub>: *tulú k'é hojéré benesti ile* {road on AR:messy 1IPFV:like NEG} ‘I hate it when the road is muddy and torn up’.

2. *ch'á...di ile* <X Y *ch'ádi ile* Z *zá*: person X feels something bad towards situation or entity Y because of a bad situation or quality Z that Y did or is like>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup>	1. V <i>zá</i> 2. N <i>zá</i>

C<sub>1.1</sub> + C<sub>2.2</sub>: *tulú k'é hojéré benesti ile* {road on AR:messy 1IPFV:like NEG}

3. *ch'áre...t'e* <Y X ha *ch'árit'e* Z *zá*: person X feels something bad towards person Y because of a bad situation Z that Y did>

X ⇔ II	Y ⇔ I	Z ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>human</sub>	1. V <i>zá</i> 2. N <i>zá</i>

C<sub>1.1</sub> + C<sub>2.2</sub> + C<sub>3.1</sub>: *Jean sa ch'árit'e ch'erełŋi zá, dene* {J. 1:for 3IPFV:be.hated 3IPFV:be.rude because person} 'I hate Jean because he's antisocial, that guy'

C<sub>1.1</sub> + C<sub>2.2</sub>: *Jean sa ch'árit'e* {J. 1:for 3IPFV:be.hated} 'I hate Jean'

4. *dakure...la* <X Y Z-i *dakurela*: person X feels something bad toward situation or entity Y that continues to make a sound that X does not like>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>human</sub> 2. N <sup>1</sup> <sub>inanimate</sub>	1. V <sub>subj.agrY-i</sub>

C<sub>1.1</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: *nerakuresła eyi shen ch'elé horiłtth'qi* {2OB:1IPFV:dislike that music worthless 2SG.listen:REL} 'I am fed up with you listening to that damned music'

C<sub>1.1</sub> + C<sub>2.2</sub> + C<sub>3.1</sub>: impossible

C<sub>1.1</sub> + C<sub>2.2</sub>: *eyi shen ch'elé berakuresła* {that music damned:ADJ 3OB:1IPFV.dislike} 'I am fed up with that damned music'

The 'X feels fear / anxiety' series:

1. *ne...ljer* <X Y *ch'á neljer*: living being X feels afraid of entity or situation Y because of Y's characteristic Z, or X feels afraid because something bad might happen to Y because of situation Z>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>animate</sub>	1. N <i>ch'á</i> 2. N <sub>animate</sub> <i>ba</i> 3. V <i>ch'á</i>	1. V <i>ʔá</i> 2. V <i>dé</i> 3. N <i>ʔá</i>

C<sub>2.2</sub>: must be a living being X is afraid *for*, i.e. whom X cares about and who could be in danger: *theni naqther dé, neba nesjer* {alone 2IPFV:stay when, 2:for 1IPFV:fear} ‘I am afraid for you when you stay alone’.

C<sub>2.3</sub> + C<sub>3.3</sub>: odd; very rare

C<sub>1.1</sub> + C<sub>2.2</sub>: often with C<sub>3.2</sub> with V<sub>SUBJ.AGRY</sub> (i.e. Y’s action Z), or else C<sub>3</sub>: is omitted

C<sub>1.1</sub> + C<sub>2.3</sub>: often a general fear, with Z omitted: *tenesle ch'á nesjer* {1IPFV:go.into.water against 1IPFV:fear} ‘I’m afraid to go into the water’

C<sub>1.1</sub> + C<sub>2.1</sub>: *dlúne ch'á nesjer* {mice against 1IPFV:fear} ‘I am afraid of mice (musophobia)’

C<sub>1.1</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: *tì bech'á nesjer bejeré ʔá* {dog 3.against 1IPFV:fear 3:mean because} ‘I am afraid of that dog because he is mean’

C<sub>1.1</sub> : alone, often an expression of a general or abstract fear without a contextual stimulus, e.g. *yanadhé dé tsaba dódí dé, nesjer laq'e* {future when money there.is.none if 1IPFV:fear EMPH} ‘I’m kind of afraid that I’ll have no money in the years to come’.

2. *k'éne...tq<sub>2</sub> <XY k'énetq<sub>2</sub>*: person X suddenly feels intensely afraid that some-thing bad might happen or have happened to person Y after X has not been in contact with Y for a long time>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>human</sub>



C<sub>1.1</sub> + C<sub>2.1</sub>: *dení kálzé ha téya, thá hule, duhu bek'énitq* {moose for:3IPFV:hunt for INCEP:3PFV:sg.go, long.time 3IPFV:be.absent, now 3OB:1IPFV:worry} ‘he went moose hunting, he's been gone a long time, now I'm worried about him’.

3. *te...lgheth* <*X telgheth Y zá*: living being X suddenly feels intensely afraid because X saw or heard Y that X thinks could do something bad to X>

X ↔ II	Y ↔ I
1. N <sup>I</sup> <sub>human</sub>	1. N 2. V

C<sub>1.1</sub> : *zelk'édhi zá náthestla, tesgheth* {bang because 1PFV:startle 1IPFV:get.scared} ‘I got scared because of the loud bang’

4. *hhahore...li* has two Government Patterns:

1. *X Y OBJ.AGR<sub>Y</sub>-hhóreli*: <person X is afraid that to do action Y which would be bad for X>.

X ↔ I	Y ↔ II
1. N <sup>I</sup> <sub>human</sub>	1. V <sup>I</sup> <sub>SUBJ.AGRX</sub> <i>ha</i>

C<sub>1.1</sub> + C<sub>2.1</sub> : object agreement will be 3<sup>rd</sup> person *be-*, in reference to the situation Y expressed by V that X is afraid of doing, even if this situation would be carried out by X rather than by a third person: *dechqáldáni t'úle zá holı nassa ha bóresli* {bridge string with AR:3IPFV:be REV:1IPFV:sg.go FUT 3OB:1IPFV:fear} ‘I'm scared to cross that bridge made of string (because it looks like it might collapse)’

2. *hhóreli* <*X Y OBJ.AGR<sub>Y</sub>-hhóreli Z<sub>SUBJ.AGRY</sub> ha*: person X is afraid that person Y may cause situation Z which would be bad for X>:

X ⇔ II	Y ⇔ II	Z ⇔ III
1. N <sup>I</sup> <sub>human</sub>	1. N <sup>I</sup>	1. V <sub>subj.agrY</sub> <i>ha</i> 2. V <sub>subj.agrY</sub> <i>ch'á</i>

C<sub>1.1</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: C<sub>3</sub> obligatory with the combination C<sub>1.1</sub> and C<sub>2.1</sub>. Object agreement will be with N(C<sub>2.1</sub>), the agent of V(Z) in this case: *seyaze bóresli taltth'i ha/ch'á* {1PO.son 3OB:1IPFV:fear 3IPFV:fall.into.water FUT/against} ‘I’m scared that my son will fall into the water (while playing on the edge of the bridge)’.

5. X OBJ.AGR<sub>X</sub>-*ini* *tq* <X *bini* *tq* Y *zá*: X feels afraid for a long time because of continued situation(s) Y>

X ⇔ I	Y ⇔ II
1. N <sup>I</sup> <sub>human</sub>	1. V 2. N

Y rarely used because the keyword often refers to a general angst at several situations. C<sub>1.1</sub> + C<sub>2.1</sub>: *betsuaze yech'ázi nálja zá, bini tq* {3PO:girlfriend 3D:away.from 3PFV:walk because 3PO:mind it.is.many} ‘he is worried because his girlfriend left him’. C<sub>2.2</sub> : especially rarely used; would be S<sub>1</sub>(V) describing a situation, which is a rare derivation in Dene.

6. X PO.AGR-*dzié natser íle*, lit. “X’s heart is weak”. <Z, X *bedzié natser íle* Y *ha*: person X feels afraid to do Y because knows that X will be in contact with situation Z which may be bad for X>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>I</sup> <sub>human</sub>	1. V <sub>SUBJ.AGRX</sub> <i>ha</i>	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *seyaze kontúé hedq, sedzié natser íle ekozi hessa ha* {1PO:son 3IPFV:drink, 1PO:heart 3IPFV:be.strong NEG there 1IPFV:sg.go FUT} ‘My son is drinking whiskey, I’m afraid to go there (home)’.

7. *X k'eniré...lya íle* <X Y *ghq k'énirélya*: person X feels afraid because X thinks that something bad is happening or might happen to entity Y>

X ↔ I	Y ↔ II
1. N <sup>1</sup> <sub>human</sub>	1. N

C<sub>1.1</sub> + C<sub>2.1</sub>: *seyaze yuwé tabíl ka náki, begħq k'énirésha íle* {1PO:son over.there fishnets for 3IPFV:paddle, still 3IPFV:be.absent, 3.about 1IPFV:be.calm NEG} ‘my son paddled far out to set nets; he's still gone, I'm worried about him’

The ‘X feels sad’ series:

1. *X ha dúé<sub>2</sub>* <∅-SG X ha dúé Y *ʔá*: person X feels very sad because of situation Y>

X ↔ II	Y ↔ III
1. N <sup>1</sup> <sub>human</sub> <i>ha</i>	1. V <i>ʔá</i>
2. N <sup>1</sup> <sub>human</sub> <i>ba</i>	2. N <i>ʔá</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *sa dúé sets'ì chízaz tēghájdher ʔá* {1:for it.is.hard 1:to cat:DIM 3PFV:die because} ‘I feel sad because my cat died’.

2. *X ha horé...lyq íle* <Y, ∅-SG X ha *horélyq íle*: person X feels intense sadness and does not feel good towards all of the things that X often feels good towards because of situation Y>

X ⇔ II	Y ⇔ III
1. N <sup>1</sup> <sub>human</sub> <i>ha</i>	1. CLAUSE
2. N <sup>1</sup> <sub>human</sub> <i>ba</i>	1. V <i>ʔá</i>

C<sub>1.2</sub> + C<sub>2.1</sub>: *la dódí, beba horélyq ile* {work there.is.none 3.for 3IPFV:be.pleasant NEG}  
 ‘he’s sad, depressed because there is no work’.

C<sub>1.2</sub> + C<sub>2.2</sub>: *beba horélyq ile la dódí ʔá* {3.for 3IPFV:be.pleasant NEG work there.is.none  
 because} ‘he’s sad, depressed because there is no work’.

3. *ane..ʔá<sub>1</sub>* <X *aneʔá*: person X feels sad because X does not have anyone to  
 talk to>

X ⇔ I
1. N <sup>1</sup> <sub>human</sub>

C<sub>1.1</sub>: *dene ch’ázi nidhá nasther, aniʔá* {people away.from far 1IPFV:stay  
 1IPFV:feel.lonely} ‘I’m staying far from people, I feel lonely’

4. *ane..ʔá<sub>2</sub>* <X *aneʔá*: person X feels sad because of X no longer is in contact  
 with situation or entity [Y]>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. V
	2. N

C<sub>1.1</sub> + C<sub>2.1</sub>: *nálzé ghq nánidhĭ, benasní sugha dághída, aniʔá* {hunting about  
 1PFV:think 1PFV:remember well 1PL.IPFV:live 1IPFV:be.sad} ‘I’m thinking about  
 hunting, how we lived happily, and I feel nostalgic’

5. *kane..ʔá* <X Y *kaneʔá*: living being X feels sad because X is no longer in  
 contact with situation or entity Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> 2. V <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *nekaniʒá* {2OB:1IPFV:miss} ‘I miss you’

C<sub>1.1</sub> + C<sub>2.2</sub>: *horelyú kaniʒá, t’q̣t’u dághída yanísi* {all 3OB:1IPFV:miss REL:how 1PL.IPFV:live in.past} ‘I miss it all, how used to live in the past’

6. *hok’é...ḷi<sub>1</sub>* <Y, X *hok’éli*: person X feels sad because X is sorry for situation Y that X caused and wishes X had not caused>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *Ènè ghesʒi ile ú besdóle, hok’ésṭi* {Mother 3OB:1IPFV:see NEG and 3PFV:die AR.OB:1IPFV:regret} ‘I regret not seeing my mother before she died’

7. *k’éne...tq<sub>1</sub>* <X Y *k’énetq*: person X feels very sad because X suddenly wants to be in contact with person Y intensely a long time after X has lost Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>human</sub>

C<sub>1.1</sub> + C<sub>2.1</sub>: *betsúaze yech’ázi nálja, beziritl’izé hułʒa, yek’énetq* {3PO.girlfriend 3D.away.from 3PFV:go 3PO.photo 3PFV:find 3D:3IPFV:miss} ‘he found a picture of his girlfriend who had left him, and he suddenly missed her’.

8. *estene...dhen* <X Y *ʒá esteniḍhen*: person X feels very sad because of situation Y and does not want to do things that X should do>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. V <i>ɔá</i> 2. N <i>ɔá</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *estenidhen bela legháidher ɔá* {3IPFV:be.sad 3PO:cousin 3PFV:die because}  
‘she is sad because her cousin died’.

9. *dá..ɔá<sub>2</sub>* <X Y *ɔá dájɔá*: person X feels something bad because of bad situation Y that has existed for a long time>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. V <i>ɔá</i> 2. N <i>ɔá</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *bedzié náté ɔá daiɔá* ‘he is suffering because his heart is broken’

C<sub>1.1</sub> + C<sub>2.2</sub>: very common, and not limited to S<sub>1</sub>(V): *ts'ékwi ɔá / tsqba ɔá daiɔá* ‘he is suffering because of a woman / for money’.

10. *dá..ɔá<sub>3</sub>* <X Y *ts'éñ dájɔá*: person X feels very sad because X intensely wants to be in contact with Y which X can't be in contact with>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <i>ts'éñ</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *ts'élt'úi ts'éñ dájɔá* {cigarettes towards 1IPFV:suffer} ‘I'm pining for cigarettes (but the doctor forbade me to smoke them)’

11. *hasne...dhen* <Y Z, X *hasnidhen*: person X feels bad because person Y caused situation Z that X did not want Z to cause>

$X \Leftrightarrow I$	$Y \Leftrightarrow II$	$Z \Leftrightarrow III$
1. $N_{human}^I$	1. $N_{human}$	1. $CLAUSE_{subj.agrY}$

$C_{1.1} + C_{2.1} + C_{3.1}$ : *ber għq danuthesni kúlú edini seghq̄lchuth ile, hasnidh̄i* {meat of 1IPFV:desire but he 1OB:3PFV:fabriclike NEG 1IPFV:be.disappointed} ‘I wanted (dried) meat but they didn't give me any (lit. “didn’t transfer it as a fabriclike sheet to me”), I was disappointed’.

12.  $X$  PO.AGR<sub>X</sub>-*in̄i nettheth* < $Y$ ,  $X$  *b̄in̄i nettheth*:  $X$  feels very bad because situation  $Y$  that  $X$  wanted to happen did not happen>

$X \Leftrightarrow I$	$Y \Leftrightarrow II$
1. $N_{human}^I$	1. $CLAUSE$

13.  $X$  AGR<sub>X</sub>-*ha ehh̄ule* < $\emptyset$ -*sg X ba ehh̄ule*:  $X$  has a physical and mental problem that causes that  $X$  feels very sad and does not want to do anything>

$X \Leftrightarrow II$
1. $N_{human}^I$ <i>ba</i>

$C_{3.1}$ : *edini ba ehh̄ule* {he 3:for it.is.indifferent}

14.  $X$  PO.AGR<sub>X</sub>-*in̄i n̄atser ile* < $X$  *b̄in̄i n̄atser ile*:  $X$  feels very sad because many bad things have happened or many good things that  $X$  wanted to happen did not happen>

$X \Leftrightarrow I$
1. $N_{human}^I$

The ‘X is happy’ series:

1. OBJ.AGR<sub>X</sub>-*inié*<sub>1</sub> <*X binié*: person X feels something good for a short time>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. V <i>zá</i>
	2. V <i>dé</i>
	3. N <i>zá</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *bingo honésna zá sinié* {b. 1PFV:win when 1IPFV:be.happy} ‘I am happy because I won at bingo’

C<sub>1.1</sub> + C<sub>2.2</sub>: *bingo honésna dé sinié* {b. 1PFV:win when 1IPFV:be.happy} ‘I am happy because I won at bingo’

2. *hene...li*<sub>2</sub> <*X heneli*: living being X feels something good for a long time>

X ⇔ I
1. N <sup>1</sup> <sub>human</sub>

3. *X ha asone...t’e ile* < $\emptyset$ -sg *X ha asone...t’e ile*: person X feels that nothing bad is happening>

X ⇔ II	Y ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. V
	2. V <i>dé</i>
	3. N

4. *X ha sugha* < $\emptyset$ -sg *X ha sugha*: person X feels something good>

X ⇔ II	Y ⇔ III
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1. N <sup>1</sup> <sub>human</sub>	1. V <i>ɹá</i>
	2. N <i>ɹá</i>

5. *X* PO.AGR<sub>X</sub>-*ini natser* <person X feels something good because X thinks that something difficult will happen in a way that will be good for X>

X ⇔ I
1. N <sup>1</sup> <sub>human</sub>

The ‘X likes/loves Y’ series:

1. *chá...di*<sub>2</sub> <*X Y heni ch’ádi*: living being X likes living being Y unusually intensely and craves Y’s affection>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. N <sup>1</sup> <sub>living</sub> <i>heni</i>

C<sub>1.1</sub> + C<sub>2.2</sub>: *sak’ie beni ch’ásdi* {1PO.maternal.aunt 3OB:depending.on 1IPFV:like} ‘My maternal aunt is my favorite’, ‘I like and depend on my maternal aunt’.

2. *ghane...ta* <*X Y ghqnetq*: singular living being X loves singular living being Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living-SG</sub>	1. N <sup>1</sup> <sub>living-SG</sub>

C<sub>1.1</sub> + C<sub>2.1</sub>: *setsuné ghqnitq* {1PO.grandmother 3OB:1IPFV:love} ‘I love my grandmother’

3. *hene...li*<sub>1</sub> <*X Y hene- 1*: person X likes entity Y or X’s activity Y because of Y’s quality Z>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> 2. V <sup>1</sup>	1. V <i>zá</i>

C<sub>1.1</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: *benestj, beti zá, dene nezq zá* {3OB:1IPFV:like 3:nice because, person 3IPFV:be.good because} ‘I like him because he is kind, because he is a good person’

C<sub>1.1</sub> + C<sub>2.2</sub>: *elidljné eghálasna benestj ile* {F.M. 1IPFV:work 3OB:1IPFV:like NEG} ‘I don’t like working in Fort McMurray’.

4. *sqne...dhen* VI <X Y *ghq sqñidhen*: person X loves living being Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>living</sub> <i>ghq</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *elghq sqñidhen* {REC.of 3IPFV:love} ‘they love each other’, ‘they have true affection for one another’

5. *sahóre...lni/sóre...lni* <X Y *ghq sahórelni*: person X intensely loves divine being Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>divine</sub> <i>ghq</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *Agnes Niholtsini ghq sahórelni* {A. God of 3IPFV:love} ‘Agnes adores the Creator’

6. *-lneth* <X Y *helneth*: living being X loves entity Y and depends on Y emotionally>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. N <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *ilási diri erihl'is hesneth* {always this book 1IPFV:rely.on} ‘I always depend on this this book emotionally’

7. OBJ.AGR<sub>X</sub>-*inié*<sub>2</sub> <*X Y binié*: living being X likes situation Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. V <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *hhál rá sénásther sinié* {cards with 1IPFV:play 1IPFV:like} ‘I like playing cards’

The ‘X wants Y’ series:

1. *hore...lʔj* <*X Y horelʔj*: living being X feels a desire for situation or entity Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> 1. V <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *l̥j tu horelʔj* {dog water 3OB:3IPFV:want} ‘the dog wants water’.

C<sub>1.1</sub> + C<sub>2.2</sub>: *eghálana horelʔj* {3IPFV:work 3OB:3IPFV:want } ‘he wants to work’.

2. *ba...dhi*<sub>1</sub> <*X Y badhi*: living being X feels a desire to ingest Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. N <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *lidí basthi* {tea 3OB:1IPFV:want} ‘I want tea’

3. *ba...dhi*<sub>2</sub> <*X Y badhi*: living being X feels a desire to have sex with living being Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>human</sub>

C<sub>1.1</sub> + C<sub>2.1</sub>: *nebadhi* {2OB:3IPFV:want} ‘s/he wants you’

4. *bane...tal* <*XY banetal*: living being X wants to ingest Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. N <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *hʉtl'édhé jíé banetal ile* {really berries 3OB:3IPFV:want NEG} ‘he really doesn’t want (to eat) berries’

5. *hoba...dhi* <*X hobádhi*: living being X feels a desire to have sex>

X ⇔ I
1. N <sup>1</sup> <sub>human</sub>

C<sub>1.1</sub>: *hobadhi* {3IPFV:desire.sex} ‘s/he is horny’

6. *danú...lni* <*XY ghq danulni*: person X feels a desire to own object Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <sub>ghq</sub>

C<sub>1.1</sub> + C<sub>2.1</sub>: *neʉihé ghq danúsní* {2PO.jacket of 1IPFV:want} ‘I want (to own) your jacket’

7. *ne...dhen<sub>2</sub>* <*XY nǐdhen*: person X feels a desire that event Y takes place in the future and is planning for Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. V <sup>1</sup> <sub>subj.agrX</sub>

C<sub>1.1</sub> + C<sub>2.1</sub>: *yalti tth'i bek'éch'á yawasti ile nesthen ʉá, sa dúé kúlú* {priest also 3:against 1OPT:speak NEG 1IPFV:want ASSERT, 1:for it.was.hard but} ‘I didn’t want to go

against the priest, even though I felt terrible’, lit. “I wanted that I not speak against the priest...”

8. *kane...dhen* <*X Y kanidhen*: person X feels a desire to obtain inanimate object Y that X needs>

X ↔ I	Y ↔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *neké kanidhen* {2PO.shoes 3OB:2IPFV:want} ‘you’re looking for, hoping to find your shoes’.

9. *nì dé*, lit “PAST if” <[X] Y<sub>PFV</sub> *nì dé*: person X, who is the Speaker, feels a desire that situation S were happening / had happened / would happen>

X ↔ I	Y ↔ II
—	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *denie thilk'édh nì dé* {moose 3OB:1PFV:shoot PAST if} ‘I wish I would shoot / had shot a moose’

Other emotion LUs:

1. *yenori...ya / nori...ya* <*X Y ghq yenoriya*: person X feels very surprised because X observed situation or entity Y which was very different from how X thought Y would be>

X ↔ I	Y ↔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <sup>1</sup> <i>ghq</i>
	1. V <sup>1</sup> <i>ghq</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *yanisì honi beghq sudi lq'te, kùlú nak'é tth'i beghq noriya lq'te* {in.past story 3:of funny ASSERT, but sometimes also 3:of 3IM:be.surprised ASSERT} ‘Stories from long ago are funny but sometimes surprising’

C<sub>1.1</sub> + C<sub>2.2</sub>: *nárádlogħ begħā norésha* {DIST:3IPFV:laugh 3OB:of 1IPFV:be.surprised} ‘I was surprised at their laughing’

2. *k'é*<[X] *Y k'é*: person X, who is the Speaker, feels surprised that situation S is happening / happened>

X ↔ I	Y ↔ II
—	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *plane ghet'al k'é* {plane PROG:3IPFV:fly:PROG MIR} 'there was a plane flying overhead!'

3. *rórí* <[X] *Y rórí*: person X, who is the Speaker, feels surprised that situation S is happening / happened>

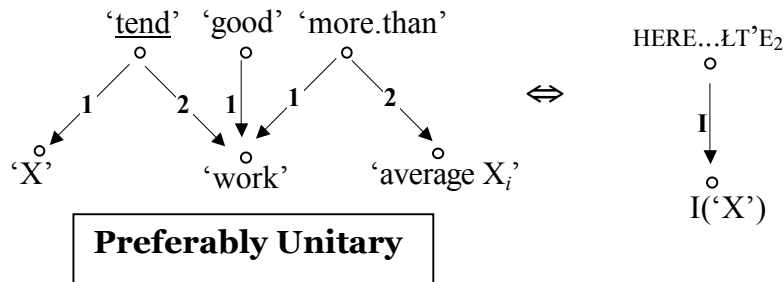
X ↔ I	Y ↔ II
—	1. CLAUSE

C<sub>1.1</sub> + C<sub>2.1</sub>: *tedhe tsil ghejer rórí* {night falling.snow 3PFV:fall MIR} 'wow, it snowed last night!'

**3.2. Character Terms.** We saw in Section 2.4 that Apresjan (2000) identified a number of “main lexical systems” which are significant for semanticists because they correspond to “main human systems” such as physical perception, speech, thought, emotions and manipulation of objects. So central to human experience are these systems that speech communities have coined an especially rich and subtle range of vocabulary to refer to them. Although character and personality terms are not included in Apresjan’s list, the stable traits of people’s personalities are often characterized in terms of these main human systems and therefore character terms share semantic components with words from the other domains. For example, many character terms refer to ways of speaking (*aggressive, talkative, sweet*); ways of thinking (*curious, creative, imaginative*); ways of feeling emotions (*brave, short-tempered, cowardly*); one’s effect on other people’s emotions (*affectionate, creepy, friendly*); ways of working (*productive, lazy, meticulous*), and interacting in human society (*independent,*

*trustworthy, sociable*). These traits reveal themselves through the subject's habitual actions, and can be considered not as qualities of the subject X but as generalizations others make over many instances of X's behavior.

Character trait meanings are defined by specific behaviors. For some terms, only one behavior is diagnostic of the trait. Someone is *talkative* or *chatty* if he or she talks more than is considered customary. For other traits, such as 'X is kind' or 'X is nice', there may be multiple prototypical manifestations expected, such as 'X helps people', 'X speaks with others in a friendly way', and 'X shares resources'. Crucially, character terms require not just certain behaviors to apply, but X's propensity to behave in that way in the face of other choices. In this work, the component 'tends to' will stand for the propensity to carry out certain behaviors, and will constitute the common element of all character terms' meanings. The meanings of character verbs thus follow a pattern where 'tend' is the dominant node and nonassertional (often 'good' or 'bad') are added to the action that 'X' characteristically tends to carry out, as in the SemS below for the verb *here...lt'e<sub>2</sub>* 'to be hard-working':



In the English version of the SemS, the communicatively dominant node is 'tend', because character terms are primarily descriptions of X's tendency to perform certain actions characteristic of the trait. This SemS represents most of the semantemes that must be present in the meanings of all character terms (replacing 'do' and 'work' in the above example with whatever behavior the character verb denotes). In a Dene-language version of this SemS, however, it would not be possible to decompose the meaning of a character verb in precisely this way. First of all, in Dene all character traits are

expressed as intransitive verbs<sup>16</sup> or as phrasemes or free clauses. The component ‘tend’ cannot be expressed independently of other meanings as a Dene verb. The most similar LUs are adverbs such as *hok’étl’á* ‘always’. Also, ‘do’ is not usually expressed independently of a specific action verb in Dene. Morally ‘good’ and ‘bad’ actions are also expressed with the adverbs *eltth’i* ‘well’ and *eltth’i ... íle* ‘well ... not’ on the verb *k’éná...dher* ‘do<sub>1</sub>’ and its (quasi-)synonyms, or with the (deverbal) adverbs *nezq* ‘good’ and *nezq .. íle* ‘good ... not’ on the verb *a...t’í<sub>2</sub>* ‘do<sub>1</sub>’. Because these are presuppositions, they are usually expressed as background knowledge when describing someone’s character. A speaker might start by saying [X] *eltth’i rasí k’énádher* {[X] well things 3IPFV:do} {right things 3IPFV:do<sub>1</sub>}, before going on to list a specific set of positive character traits, such as *here...t’e<sub>2</sub>* ‘to be hard-working’. The latter verb can be decomposed then either as *hok’étl’á eghálana* {always 3IPFV:work} ‘he always works’ or as *dene rázé eghálana* {people more.than 3IPFV:work} ‘he works more than (other) people’. Speakers find it pragmatically odd to specify all of this in a single sentence, i.e. as *?herélt’e hok’étl’á dene rázé eghálana rá* {3IPFV:be.hardworking always people more.than 3IPFV:work because} ‘he is hardworking because he always works more than (other) people’. It would be a more natural Dene style to express these ideas as several sentences in a discourse. The MTT methodology simply seeks to establish the denotational equivalence of the definiens and the definiendum independently of stylistic considerations. (The latter are explored in great detail in the MTT literature, but there is no space to address them in this work.) It seems therefore that the Dene-language SemS of these character terms would have the same components and presuppositions as its English equivalent.

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<sup>16</sup> A few of the verbs could be interpreted as emotion or action terms because they are derived from a base with the habitual prefix *hune-*, giving the pairs (*yalti* ‘s/he speaks’ ~ *yahunelti* ‘s/he is talkative’) and (*hil’ché* ‘s/he gets angry’ ~ *hunelch’ogh* ‘s/he has an explosive temper’). Most of the character LUs are not derived verbs, however.



As indicated by the SemS in the above lexicalization rule, some actions that people do are presupposed to be positive or negative according to the values and priorities of the culture, and their meanings may include ‘good’ or ‘bad’ as presuppositional components. This is referred to by Apresjan (2000: 14) as a culture’s “naive-linguistic ethics”, of which he cites several examples of Russian quasi-synonym pairs:

From the analysis of pairs of the type *khvalit'* [to praise] and *l'stit'* [to flatter], *khvalit'* and *khvalit'sia* [to boast], *obeshchat'* [to promise] and *sulit'* [to promise the earth] ... and others like them it is possible to form an idea of the underlying commandments of Russian naive-linguistic ethics. ... Of course all these commandments are the merest truisms, but it is curious that they have been fixed in the meanings of words. Certain positive commandments of naive ethics are also reflected in language”.

In the above examples there may be an evaluative component or connotation, but ‘good’/‘bad’ is by no means the dominant semanteme. ‘To flatter’ is best characterized as a way of talking which may have bad consequences or motivations, not as a way of being bad per se. ‘Good’ and ‘bad’ are much more central to the meanings of other action verbs.

There are at least two ways of approaching ethical concepts, including naive-linguistic ethics. In Western philosophy, situation ethics is a domain covering the analysis of intrinsically right and wrong actions independently of the character of the agent, while virtue ethics puts the focus on the qualities a person should possess in order to have the propensity to carry out right or wrong actions in concrete situations. The two types of ethics are naturally interrelated. If a person consistently performs good and bad actions, we tend to make a judgement about his or her personality. Still, action and character terms remain quite distinct angles from which to describe people’s behavior. In turn, ethical words in natural languages can usually be divided into two groups, those describing the ethics of actions — as in Apresjan’s examples — and those that directly evaluate the character of a person in terms of virtues and vices.

The term *ethics* is related to *ethos*, the distinguishing habits and attitudes of a group. The qualities viewed as virtues and vices are widely variant across cultures and between time periods within a culture, and this is reflected in their lexica. Much as the Natural Semantic Metalanguage school claims that empirically all languages have “emotion talk”, or words describing some emotional situations, one can posit that all

cultures will also have “virtue talk” or “ethical talk”, a vocabulary to refer to people’s personalities in an evaluative way. As with the emotions field, one can expect this field to contain both culture-specific and universal elements. Often ethical values are reflected indirectly through negative words denoting people who were not considered virtuous because their behavior broke with community standards. Because lexica change more slowly than cultures, in some cases the values may be mostly historical. In traditional European culture, it was considered virtuous for women, but not for men, to be quiet and subservient in marriage and chaste outside of it, so the English language has preserved words like *harpy*, *shrew*, *slut*, and *easy* which refer to a woman who did not conform to such expectations, while we find no equivalent terms describing men with these tendencies. In this way, character terms can provide insight into the historical or current mainstream values of a culture.

Recalling the introduction to Chapter 3, MTT characterized two types of antonymic oppositions as gradient parameters with a neutral mean value (‘good’ ~ ‘bad’ oppositions and ‘more’ ~ ‘less’ ones). In Western philosophy a similar concept of virtues and vices has been profoundly influential. Aristotle’s ethical writings describe the virtues as middle values of gradient parameters, or “golden means”. Deficiency or excess of the same quality is a vice, as in the cases of courage (cowardice, recklessness); modesty (bashfulness, shamelessness); generosity (meanness, prodigality); and friendliness (churlishness, rudeness). Linguistically, too, it makes sense to view character traits as parameters with a socially correct range on the continuum. There is not necessarily a word for excess in the positive direction, which is sometimes rendered by adverbial modifiers, as in the English phrases *generous TO A FAULT* and *being TOO kind*. However, there is usually a distinct word denoting the negative end of the continuum, e.g. a social transgression, as in words such as *cowardly* or *stingy*. Negative words are therefore a good indication of culturally valued traits. In Dene, adverbs such as *deʔáqé* ‘really’ can be used as intensifiers, as in *deʔáqé betí* ‘he was so nice’, or in sense of ‘too much’, to denote the harmful excess of a trait, as in *deʔáqé nidhá!* {really 3IPFV:be.far} ‘it’s really (too) far! (let’s not go there)’. Dene character terms can sometimes be intensified in this way to denote excess of a positive quality, but there are usually distinct antonyms for the negative extreme.

The absence of certain character terms is therefore revelatory of Dene culture and social history. In some cases, the range of meanings denoted by these verbs seems to echo documented cultural patterns in Dene societies. Several anthropological studies of a Dene community in the Northwest Territories (see Rushforth 1992 and Rushforth & Chisholm 1991) have identified individual autonomy, self-sufficiency and resilience as highly valued traits in that culture. This corresponds with the semantic content of Dene verbs for ‘to be courageous’ or ‘to be brave’, which differ from their English quasi-equivalents in important ways, and to the plethora of critical words to denote ineptitude (i.e. as a hunter), laziness, cowardice and the propensity to complain (see below).

**3.2.1. Disambiguating Senses.** Dene character terms were obtained through a combination of means: direct elicitation of equivalents of English terms, scanning of Dene texts and conversations recorded by the author looking for references to people’s personalities, and through more open-ended elicitation without any preconceived content, using questions like “Describe a good person for me”, “Why do you like your friend Mary so much?”, “Someone who is *betí*, what does he do?”. In some cases, this can reveal characteristic Dene words that have no precise English equivalents. In open-ended elicitation, it is crucial to avoid imposing polysemy on a Dene LU that is used in contexts where different English LUs would be used. If one finds that the same signifier *here...It’e* has multiple English translations such as ‘to be tough’, ‘to be persistent (in an endeavor)’ and ‘to be hard-working’, are there three distinct senses, each closely matching an English sense, or is there one vague overarching sense? In such cases, caution must be exercised in positing polysemy. Before approaching the series of Dene character terms, it is important to note how this class of words was delimited from other related areas of vocabulary, given that the two languages have different strategies for referring to people’s personalities. Terms were selected only if they always referred to permanent or long-lasting personality traits. Habitual readings of emotion or mental predicates such as ‘enthusiastic’ or ‘determined’ were excluded. Also left out were measures such as ‘cultivated’, ‘poised’, or ‘achiever’, and behavior categories like ‘trustworthy’, ‘progressive’, and ‘cooperative’, all of which refer more to a person’s skills, accomplishments or social interactions than to his or her mental makeup. Also excluded were words denoting attitudes toward the world, such as

‘optimistic’, which refer more directly to beliefs than to personality. These LUs may be linked to certain traits or virtues, but the latter are not necessary components of their definitions. Thirty-two LUs were chosen based on these criteria, and divided into five series, with a small remainder of unclassified LUs.

**3.2.2. Other Means of Characterization.** Dene and English differ not only in the selection of character terms expressed but also in the extent to which character terms are used at all instead of free phrases. There are essentially four cases of English character words that have no easy equivalents in Dene.

**Actions instead of Character Terms.** Dene has many emotion and character terms, but in comparison with European languages they are much less frequently used in narratives and in daily speech. Generally the Dene style employs less analysis of people’s character and emotions than one finds in equivalent European genres. Often the same idea can be rendered in Dene in a more “objective” way. The most appropriate rendering of the English sentence *I was ashamed I had said that* would be *Eyi t’a aresj elthh’i aresj ile k’é* {that REL 1PFV:say right 1PFV:say NEG MIR} lit. “What I said, I really spoke in a wrong way”. The sentence makes an indirect reference to the speaker’s general negative feeling with regard to what he had said, but it is not as specific as the meaning ‘ashamed’. There is a word meaning “to feel ashamed”, *horíne...ja<sub>1</sub>*, and it would be possible to render this English sentence more literally, as *eyi t’a aresj ni eyi begħa horínesja* {that REL 1PFV:say PAST that 3:of 1IPFV:be.ashamed}, but this is a slightly odd and overly explicit way of saying it, according to the consultants interviewed. Dene speakers might describe a ‘kind’ or ‘caring’ person as *dene ts’éni* {people 3IPFV:help} ‘s/he helps people’ rather than using a character term. Describing people’s emotions and personalities indirectly through their actions is characteristic of the Dene style.

**Absence of an equivalent meaning.** The second case concerns English semantic units that are so foreign to Dene that they cannot easily be rendered even with a paraphrase. When asked to translate these words and several example sentences containing them, and after considerable reflection, speakers concluded that they

“couldn’t think of it” or that “we don’t talk that way”. This happened with *brave* and *cunning*, among others. Speakers found it odd to describe someone who faces danger, such as a hunter encountering a bear, as ‘brave’ or ‘courageous’ because these words impose a European optic on Dene culture. A former chief explained to me that traditional Dene life always involved risks and hardships, and facing such challenges bravely was not considered noteworthy but was assumed. The closest approximation of ‘brave’, as in the situation of the hunter facing the bear, could be *herəlt’e*, rendered variously as “he is capable”, “he is hard-working” and “he is tough” in English, or *yenítł’édh* ‘he is determined to stay strong (in a situation)’, a term also said of an elderly woman facing painful surgery. Being ‘brave’ was traditionally a normal requirement of Dene life, unworthy of special mention. Instead, Dene possesses a series of words denoting cowardice, such as *benatíe* (very approximately, ‘s/he is faint-hearted’) or *bek’élait’iné*, rendered as “s/he is not a survivor”, or perhaps more precisely ‘s/he is incompetent because of cowardice’.

**Habitual reading of a free phrase.** In some cases, Dene speakers seem to identify and refer to very similar meanings as one finds in English character terms, but there is no established Dene LU to express them. In such cases, speakers coin a free phrase on the spot. There are essentially two ways in which this happens. The first is the construction of a phrase which is quite similar to a definition. Two examples of this are the English character terms *able* and *imaginative*. The sentence *My son is very able at building* was rendered as *Síyzeze t’a hołtsi wali k’asjene hołtsi wali* {1PO:son REL 3IPFV:make POSS almost 3IPFV:make POSS} ‘My son can make almost anything that is possible to make’. The sentence *My son is imaginative* is rendered as *Síyzeze t’qt’ú ʔasi holí wali ghq nánedher* {1PO:son REL:how things AR:3IPFV:be<sub>5</sub> POSS about 3IPFV:think} ‘My son thinks about how things could exist’. The second way is to use a habitual reading of a situational thinking or feeling verb, perhaps with the addition an adverb meaning ‘always’ or ‘each time’. The phrase *intellectually curious* in the sentence *You are intellectually curious* was rendered as *Horelyú k’oshq nı dé nıdhen* {all 1IPFV:know PAST if 2IPFV:want} ‘you would like to know everything’. *Determined*

as a character trait could be rendered as *hok'étl'á yen̄itl'édh* {always 3IPFV:be.determined} 's/he is always determined to stay strong (in a situation)'.

**Partial Equivalence of meaning/lexical unit, minus intensifier or attenuative components.** In some cases two LUs are nearly equivalent, but often the English SU contains the components 'intensely' or 'not intensely' which are missing from the Dene equivalent. In Dene, it is usually preferred to add such components through free adverbs, if at all, rather than as fused meanings. Adjectives such as *a brilliant person* or *a gorgeous woman* are translated in Dene simply as *dene huyq* {person 3IPFV:be.intelligent} 'an intelligent person' and *ts'ékwi ahhenet'ì* {woman 3IPFV:be.beautiful} 'a beautiful woman'. Intensifying adverbs or reduplication are in some cases permissible, but they are seldom used in the spare Dene style. Indeed, to many Dene people it sounds strange to try to rank or quantify qualities like 'beauty' or 'intelligence'. Someone is simply called 'intelligent' or 'beautiful', or not, based on the overall impression he or she makes on others.

When discussing positive character traits, it is important to distinguish ethical and moral character from mere amicability or pleasantness in interpersonal relations. Someone can exercise high-minded virtue and behave properly without being overly friendly to others. To describe a 'good person' in this sense, one could use *dene nezq* {person 3IPFV:be.good}, but according to this verb carries a connotation of amicability and affection. An honorable or virtuous person could be described either in terms of his or her thought patterns (*dene hozu ʔá n̄idhen* {person AR:good with 3IPFV:think}, lit. "a person who thinks with the good"), or in terms actions: *eltth'i ʔasí k'énádher* {right things 3IPFV:do} 's/he does the right things'.

What is a good person like, and how does this person behave? It was mentioned above that the standards of morality and goodness are different across cultures. In Dene we find a lack of precise equivalents of English terms denoting many of the cardinal virtues in Western culture such as 'generosity', 'courage', 'honesty', 'charity', and so forth. If these qualities are so essential in traditional Dene culture, one would expect to find a rich variety of verbs to refer to them. However, often what is what is normal is not nameworthy, and instead words are coined to denote

stigmatized behavior or infractions of the social code. As in the above example of ‘bravery’, where courage was simply assumed and undeserving of explicit mention, one found instead a variety of words for cowardice or failure rather than for bravery. Similarly, the English words *generous* and *charitable* reflect an assumption which is true of most Western societies but not of traditional Dene cultures, namely that everyone has his own property and resources that he then may choose to share with others or not. The latter case is not necessarily reproachable, and the first is admirable, deserving of positive words to describe it. In Dene culture, in contrast, people lived off the land and needed to constantly cooperate and share resources. As one elderly hunter put it:

Ją kuḱ’é hots’i deni ɫeghǎdher dé já hogaié k’é ełata nálzé yuwé, deni ɫeghǎjther dé, dene horelyú kozi hedél í. Nádárelye ʔa, horelyú ʔasí, t’ahu losí, dene ełgharedeł í ní? Kuṭ’u dene dághena... Yanisí dene ełts’édi ú dághena ní ʔa, ełdháredi ú, t’ahi sí. Dene ʔasí bets’i íle dé, ʔasí horeké dé, begħalchu, t’at’i sí, ɫes húto, lidí húto, sugá húto, ts’élt’úi húto. Dene horelyú ʔasí bets’i íle ní, tsǎba dódí ú la, yanisí. Dene eghálana íle ɫt’e.

‘If someone from here in this clearing would kill a moose out there, everyone went there. They would all take everything, they would share it. That is how people lived... In the past, people lived by helping each other, and feeding each other, anything. If someone had nothing, if he asked for something, it was given to him, anything: flour, tea, sugar, or tobacco. People didn’t have much because there was no money back then. People didn’t work [for cash]’

An woman in her late 80s described the constant collaboration in household tasks:

K’i ts’i tth’i hołé, eyi tth’i kuṭ’i hoyi, eyi tth’i hedzégh. Ts’ékwi dáyełtsi, dáyenelka. Ts’ékwi ɫa yegħa dełtth’i í, dáđloyáłti ú, sudi kádáyáłti ú. “Sets’érúłni” dáđi íle ní dódí. Ełáta así hełtsi dé, dene heł dáıgha, dene ts’éni hoyi.

‘People made birch bark canoes, too, and seal them with spruce gum too. Women would make them, sewing them together. A lot of women would sit by one while laughing and joking. People never asked others to help them. If someone was making something, people would make it that person, people always helped that person’

Consequently, generosity and thoughtfulness are not particularly salient virtues in traditional Dene culture, but simply the natural and expected way of behaving in a society where people have to constantly collaborate to survive, and where survival on one’s own is impossible. In contrast, Dene has a variety of words to describe vicious

people who fail to meet this standard because they are lazy or selfish — they do not carry their weight and do their share of the work.

**3.2.3. Definitions.** As with the emotion lexical units, many character terms fall into a few natural synonym series. However, a number of them are not directly comparable to any other words in the class and so are discussed as distinct entries.

**3.2.3.1. The ‘X is good to others’ series.** Because the traditional Aboriginal lifestyle required so much mutual cooperation and living for extended periods in the same small group, maintaining cordial relations was essential for survival. Kindness and friendliness were therefore not only valued traits but essential social skills. The English notions of ‘kind’ and ‘friendly’ are usually rendered by one of the words in the synonym series below, or by paragraph-long descriptions of the specific behaviors of someone who is *betí* or *ne...zq<sub>3</sub>*. Also similar is the transitive verb *hene...lǐ<sub>3</sub>* ‘to be kind to [Y]’. Typical behaviors of people who are *betí* ‘nice’ or *ne...zq<sub>3</sub>* ‘[morally] good’ include tendencies like *ʔasí ghqnetq íle* {things 3IPFV:love NEG} ‘s/he is not miserly’, lit. ‘s/he does not love things’, cf. *así ghqnetq* {things 3IPFV:love} ‘s/he is mean, stingy’, lit. ‘s/he loves things’. As already discussed, it is the lack rather than the presence of generosity and kindness that is nameworthy in Dene. Other traits and behaviors include speaking in a kind way (*hotié yati nezq haiʔq* {really words 3IPFV:be.good 3PFV:place} ‘she said some very kind things’); good manners and behavior to others (*bech’álanié nezq* {3PO:customs 3IPFV:be.good} ‘s/he (habitually) behaves well with others’); helping people (*hotié dene ts’éni* {really people 3IPFV:help} ‘s/he helps people’); using humor, which is highly valued in Dene culture (*sudi k’ólther* {funny 3IPFV:master} ‘s/he is funny’, lit. ‘s/he masters humor’).

There are three genuine character terms for rendering the idea of ‘kind’ or ‘nice’. The above verb is excluded because as a transitive verb with a referential direct object, it cannot be classified as a character term, which must be a general statement without



reference to a specific direct object. The series is OBJ.AGR<sub>X</sub>-*tí*, OBJ.AGR<sub>X</sub>-*hederédłine*, and *ne...zq<sub>3</sub>*, and the definitions are the following:

1. OBJ.AGR<sub>X</sub>-*tí* <*X betí*: living being X tends to interact with others in a way that makes Y feel good, more than Y normally feels in interactions with others >

2. OBJ.AGR<sub>X</sub>-*hederédłine* <*X bederédłine*: people think that most people will behave like this | X tends to behave with other people in a way that makes other people feel good >

3. *ne...zq<sub>3</sub>* <*X nezq*: living being X tends to interact with others in a way that makes Y feel good, more than Y normally feels in interactions with others>

They differ by the following parameters:

1. The nature of the quality: OBJ.AGR<sub>X</sub>-*tí* seems to describe someone who is kind and friendly, with less emphasis on X's services to others than on X's sweet demeanor and, pleasantness in verbal interaction with others, as well as X's restraint in conflictual situations: *eyi deneyu betí, bini k'éch'á dé, hulch'ogh ile* {that man 3:nice, 3PO:mind against when, 3IPFV:be.habitually.angry NEG} 'he's a kind-hearted man, when he's upset he doesn't explode'. [X] OBJ.AGR<sub>X</sub>-*hederédłine* describes someone who behaves according to social conventions and does not behave in a way that offends others. Its negation, *bederédłine ile*, implies insanity in a way similar to *bini hule* {3PO:mind 3IPFV:be.absent} 'his mind is gone'. It suggests deliberate behavior beyond a simple natural disposition: *edini dene heł dé, bederédłine* {3PO:he people with when, 3IPFV:be.good} 'he behaves well around people'; *sets'eni bini nezq, hulch'ogh ile* {my.friend 3PO:mind 3IPFV:be.good, 3IPFV:be.habitually.angry NEG} 'my friend has a good heart and never blows up in anger'.

2. Presence of reason in X: of this series, only OBJ.AGR<sub>X</sub>-*tí* can be used with Xs that do not have rationality, e.g. *tı betı* {dog 3:nice}. The others require rational Xs. For instance, because *bederédłine* implies knowing social codes and behaving

accordingly, requires rationality: \*sets'ì tì *bederédline* {1:of dog 3IPFV:be.normal} \*‘my dog is good’. Instead, one would use *sets'ì tì bejeré ile* {1:of dog 3:mean NEG} ‘my dog is sweet-tempered’, lit, “not mean”.

3. Intensity: *bederédline* seems to be an all-or-nothing trait with which it is strange to add intensifiers. The others can take it, although it is generally pragmatically odd to quantify character verbs in Dene. One exception is *betí*, which is frequently intensified through repetition: *betí rá betí* {3:friendly REP 3:friendly} ‘s/he’s really friendly, sweet’.

4. Whole person or mind: the experiencer of *ne...zq<sub>3</sub>* can be X himself or X’s mind, e.g. [X] *bjini nezq* {X 3PO:mind 3IPFV:be.good}.

**3.2.3.2. The ‘X tends to do bad things’ Series.** The dominant of this series, ‘X tends to do bad things’, can be expressed as *eltth'i rasí k'énádher ile* {right things 3IPFV:do NEG} or as *nezq at'ì ile* {3IPFV:be.good 3IPFV:do NEG}. In some sense, any negative character trait is perceived as such through its negative effect on others, offense in the least of cases. The following simply denote negative character traits which are simply reflections of someone’s unconscious character. X’s deliberate will to do harm to others is not focused by these words; any such harm or offense is incidental. These words are primarily an analysis of X’s character. The series is: *eyúne, slini, ts'úre...díe, huneH...ldai, k'ése...lني/k'ésde...lني*, *bejeré, X bjini slini*. The definitions are the following:

1. *eyúne* <‘X *eyúne hełi*: X is very mentally ill’>; possible English rendering: *crazy, insane*.

2. *dlogh* <‘X *dlogh hełi*: X does bad things that children usually do’>; possible English rendering: *childish*.

3. *slini* <‘X *dene slini hełi*: X tends to intentionally do unjustified things that are very bad for other people’>; possible English rendering: *evil, mean, nasty*.

4. *ts'úre...díe* <X *ts'úredíe*: living being X tends not to make a normal effort to do work [Y]>; possible English rendering: *to be lazy*.

4. *huneH...ldai* <X Y *ha huníldai*: person X tends to have tantrums because of repeated situation {Y}>; possible English rendering: *to throw tantrums, to be a brat*.

5. *k'ése...lni* <X *k'éselni*: person X tends to be more worried about physical pain or the possibility of pain than is normal>; possible English rendering: *to be overly sensitive to pain*.

6. *-jeré* <X OBJ.AGR<sub>X</sub>-*jeré*: living being X tends to say and do bad things to living beings {Y} whom X has contact with>; possible English rendering: *to be mean, disagreeable*.

7. *X OBJ.AGR<sub>X</sub>-íni slini* <X *bíni slini*: person X tends to say bad things to living beings {Y} whom X has contact with>; possible English rendering: *to be grumpy, cantankerous*.

These seven lexical items include three adjectives, four verbs and a phraseme. They differ by the following parameters:

1. Type of negative trait: *eyúne* describes a mental illness, or as a term of insult behavior that the speaker deems to contrary to social norms that it is similar to a mental illness (the opposite is *hederédliñe* 'he is (socially) normal, rational'. *Slini* denotes an evil character of X, who deliberately does cruel things to other people (*nezq at'i íle* {good 3IPFV:do<sub>1</sub> NEG} 'he does bad things'), such as fighting, killing, or stealing essential resources (*dene k'énádher* {people 3IPFV:fight}; *dene tegháldé* {people 3IPFV:kill}; *vasí háriñye* {things 3IPFV:take.away}). *Slini* is the standard word for 'evil' in English, i.e. *Hitler dene slini qt'e* {H. person evil 3IPFV:be} 'Hitler was an evil person'. *Ts'úre...díe* 'to be lazy' indicates a person or animal that does not want to do his share of the work expected. *huneH...ldai* is the tendency to have intense irrational outbursts or tantrums, said of children or of people who behave like children, e.g.

*hunıldai sekwi heļi ú* {3IPFV:throw.tantrum child 3IPFV:be when} ‘he used to throw tantrums as a child’. *K’ése...lni* describes the defect whereby someone is emotionally unable to handle the regular pain of daily life, or complains about it too much, rather like the expressions *being a baby* or *wimp* in English. The bound stem *–jeré* ‘mean and nasty’ denotes a living being which tends to be aggressive to others because of its very unpleasant character, e.g. *dene bejeré* ‘a mean person’ or *li bejeré* ‘a mean dog’. Its opposite is *beti* ‘friendly’. Unlike *mean* or *grumpy*, *–jeré* seems to also denote, for humans, a uniformly negative intellectual attitude (*bejeré, ʋasi hule ba eltth’i wale* {3:mean thing 3IPFV:be.absent 3:for correct POSS} ‘nothing can be good in his/her view’) manifested in deliberately mean-spirited behavior, e.g. *yati nezq dene hoʋa ile* {word 3IPFV:be.good people 3IPFV:give NEG} ‘s/he gives false advice to people’. The phraseme *X bini slini* ‘X is mean and grumpy’ lit. ‘X’s mind is evil’, is etymologically related to *slini* ‘evil’, but the meaning is much milder than *slini* or *–jeré*, denoting instead someone who is customarily unfriendly and easily annoyed, but lacking the connotation of premeditated cruelty to others.

2. Presence of rationality in X: *eyúne, ts’úre...die* and *–jeré* can all be applied to animals as well as people, e.g. *li eyúne* {*ts’úredie; bejeré*} ‘a crazy {lazy; mean} dog’. The others apply only to people and imply a tendency towards premeditated negative actions.

3. Whole subject or organ: *slini* ‘evil’ can be applied to the whole person (*dene slini heļi* {person evil 3IPFV:be<sub>1</sub>} ‘he is an evil person’) or to the person’s heart (*bedzié slini* {3PO:heart evil} ‘his heart is evil’). The others cannot have an organ as the locus of the trait — *bini slini* ‘X is mean and grumpy’ lit. ‘his/her mind is evil’ has the mild and idiomatic meaning of ‘grumpy’ or ‘cantankerous’.

4. Intensity of negative trait: most of the traits in this series are variable enough to take intensifiers such as *hʉtʉ'édhé* 'very', even *slini* 'evil' (*hʉtʉ'édhé slini*). As can be imagined, though, this is pragmatically odder with very strong adjectives like *slini* 'evil' and less strange with milder traits like *-jeré* 'mean' and *ts'úre...díe* 'to be lazy'.

Pragmatic and extralinguistic notes: *slini* 'evil' tends to be reserved for non-Dene people, regardless of the actions of the person. This connotation of foreignness seems to be related to an older, archaic sense of *slini* of 'belonging to an enemy tribe', which used to be applied to outsiders in an era of intertribal warfare, e.g. *ʉená (slini)* 'the (bad) Cree'. *Eyúne* 'crazy' is a pejorative term, and Dene people use *bjini hule* {3PO:mind 3IPFV:be.absent} 'his mind is gone' to refer to the mentally ill in a neutral way.

**3.2.3.3. The 'X is not good to others' Series.** This series denotes negative character traits are criticized for their negative effect on others. The series contains four intransitive verbs, *ch'ére...lʉi*, *nabá...dhi*, *ts'óne...dher*, and *edere...lchá*, and three phrasemes: *ahhe hereH...t'j*, *ahhe dóhe...lʉi*, *X dene ch'á nethe...lʉá*. None of the LUs could be the dominant. The common semanteme is 'X tends to do something bad to people', which could be expressed as *dene hel nezʉ at'j íle* {people with 3IPFV:be.good 3IPFV:do NEG}.

1. *ch'ére...lʉi* <X Y hel ch'érelʉi: person X tends to do things without a reason that make other people {Y} feel very bad>; possible English renderings: *to be aggressively rude*.

2. *nabá...dhi* <*X Y Z nabádhi*: person X tends to watch people [Y] do actions [Z] that X does not need to know because X wants to know that [Y] is doing something bad>; Possible English renderings: *to be nosy, to be dirt-digging*.

3. *ts'óne...dher* <*X Y ghq ts'ónidher*: person X gives other people less of X's resources Y than people normally give each other>; possible English renderings: *to be mean<sub>2</sub>, to be stingy*.

4. *edere...lchá<sub>1</sub>* <*X ederelchá*: person X tends behave like X thinks X is better than other people>; possible English renderings: *to be arrogant, to be bossy*.

5. *ahhe hereH...t'í* <*X ahhe herít'í*: person X tends to want other people [Y] to think that X is better than them>; possible English renderings: *to be a show-off, to be vain*.

6. *X ahhe dóhe...lʔi* <*Y ʔá X ahhe dóhelʔi*: person X tends to want other people to think that X is more attractive than them in activity {Y}>; possible English renderings: *to be narcissistic, to be vain*.

7. *X dene ch'á nethe...lʔá* <*X dene ch'á nethelʔá*: person X tends not to want to be with other people because X loves other people less than normal>; possible English renderings: *to be antisocial, to be a loner*. They differ by the following parameters:

1. Type of offensive tendency: *ch'ére...lʔi* is translated by Dene people as 'rude', but is considerably stronger and more negative than *rude* in English. It cannot be applied to minor or unwitting violations of etiquette such as chewing with one's mouth open — typical examples include aggressively rude or malicious behavior such as destroying other people's things (*ʔasí hesdottsí* {things 3IPFV:destroy}) or saying profane or nasty insults to other people (*bedhá dúé* {3PO:mouth it.is.bad}). A quasi-synonym is *ʔasí k'ólyq íle* {things 3IPFV:know NEG} 's/he is ignorant', "s/he doesn't know things", i.e. has no manners, but *ch'ére...lʔi* is stronger. *Nabá...dhi* describes someone who offends other people by observing them closely to search for bad behaviors, somewhat similar to *nosy* in English. Unlike *nosy*, *nabá...dhi* specifically

implies watching people (as opposed to listening in on phone conversations, looking at mail, etc.), as in *sekué kúta nágha eyer t'ahí nádher sí ghq nabádhi* {1PO:house visit 3IPFV:come there REL (HUM) 3IPFV:stay REL about 3IPFV:be.nosy} ‘she comes to visit because she is curious to observe who is staying with me’. It is different from *snooping* because it does not imply that X rummages through Y’s personal items, but simply that X observes Y’s behavior with other people. Unlike *gossipy* in English, *nabá...dhi* does not entail that X wants to talk with others about Y’s bad activities. *Ts’óne...dher* is a tendency to be stingy (*dene rasí ghaneta* {person things 3IPFV:love}) and to withhold sharing sufficient quantities of resources such as food and clothing (*ber <yú> róhelshi íle* {food <clothes> away:3IPFV:give NEG}) that are traditionally expected to be shared according to need in Dene culture. Whenever someone comes upon a great amount of some resource, he or she is supposed to give away equal amount of it to the others; in the case *ts’óne...dher* of this rule has been violated. Unlike ‘stingy’ or ‘mean’ in English, can also describe someone who doesn’t take turns in conversation or give others equal opportunities in an activity (*ts’ónidher dene hha nuʔa íle* {3IPFV:be.selfish people for 3IPFV:give.space NEG} ‘he’s selfish, he doesn’t give a chance to others’). *Edere...lchá* describes someone who offends others because of his excessively high opinion of himself (*ederelchá horelyú rasí k’ólyq nıdhen ʔá* {3IPFV:be.arrogant all things 3IPFV:know 3IPFV:think because} ‘he is arrogant because he thinks he knows everything’). *Edere...lchá* simultaneously implies arrogance and pride (*bejeré* ‘s/he is mean’, *deʔázé hodi* {too.much 3IPFV:be.proud}), an unapproachable person (*dene yórelker dé, hílch’é* {people 3D:3IPFV:ask if 3IPFV:get.mad} ‘if people ask her something, she gets mad’) who is aggressive, bossy attitude toward others (*dene ts’én k’ádoreldher* {people to 3IPFV:boss}). *X ahhe hereH...t’i* and *X ahhe dóhe...lʔi* are very similar and imply an arrogant attitude, but more in a boastful or narcissistic way than in an aggressive or bossy manner. The both are used for someone who cares

excessively about being fashionable (*yú nezq yenidher hotié t'q nadheri at'i sí* {clothes 3IPFV:be.good 3PFV:think.of really REL last 3IPFV:be.made REL} 's/he really wants the latest fashion') and the latter is used particularly for someone who wants to show off his or her beauty (*ahhe dóelzi, dene zázé ahhenet'i nidhen* {beautiful 3IPFV:pretend people more.than 3IPFV:be.beautiful 3IPFV:think} 'she is narcissistic, she thinks she is more beautiful than [other] people'), or in activities such as dancing (*datli zá hedóelzi* {3IPFV:dance with 3IPFV:be.vain} 'she is vain, a show-off about her dancing'). Finally, *X dene ch'á nethe...lá* refers to an offensive trait by which X is asocial and uninterested in other people in the community, because of X's negative attitude.

2. Active disrespect or withholding: *ts'óne...dher* is offensive for actions that X refrains from doing (sharing or giving away extra resources); the others indicate a tendency for X to actively engage in emotional or physical harm to others.

3. Intensity of offense: the least intense lexical items seem to be *ahhe hereH...t'i*, *ahhe dóhe...lzi* and *nabá...dhi*, which describe an offense which is both relatively mild in its effect on others, and are also more acceptable with intensifiers. *X dene ch'á nethe...lá* and particularly *ch'ére...lzi*, *ts'óne...dher*, and *edere...lchá* seem to be the more intensely negative of the series, which is supported by the fact that they are less acceptable with intensifiers.

4. Severity and type of negative effect for others: *ch'ére...lzi*, *ts'óne...dher* and *edere...lchá* indicate the most emotionally and perhaps physically destructive effect on other people. *Nabá...dhi* is intermediate in that it only implies a social transgression and emotional harm; *X dene ch'á nethe...lá*, *ahhehereH...t'i*, and *ahhe dóhe...lzi* do not imply direct harm to others but more a light emotional offense.



Related words: *ho...ní* ‘to be proud’ can sometimes be used, with intensifiers, to indicate a self-important or arrogant person (*deʔqzé honí* ‘s/he is too proud’). It is not clear that *ho...ní* can be used to describe a character trait or whether this results simply from a habitual reading of an emotion verb.

**3.2.3.4. The ‘X is aggressive’ Series.** The Dene Sų́iné traditionally lived in isolated groups of several families or up to a few hundred people, in which everyone had to cooperate to survive. Until the latter half of the 20<sup>th</sup> century, Canadian Dene peoples lived essentially independent of a state apparatus or system of criminal justice. When someone behaved aggressively, violently or criminally, there was no legal means of addressing this by calling in an external authority. It is likely that people had to devise ways of defusing interpersonal tensions through public competitions, avoidance or public criticism by an Elder. In more extreme cases, northern people often used ridicule and ostracism to correct or isolate aggressive and violent people. Given the difficulty of surviving on one’s own, banishment or isolation was a serious punishment that means great danger and hardship for those cast off. Perhaps because aggressivity could bring such trouble to northern Dene people, the language seems to have singled out aggressivity for analysis, with a variety of words describing different shades of this trait. Four of them are *hune...lch’ogh*, *X OBJ.AGR<sub>X</sub>-iní OBJ.AGR<sub>X</sub>-k’ehoní...gis*, *nádene...lch’é*, and *X OBJ.AGR<sub>X</sub>-hóre...ni íle*. There is no verbalizable dominant or semantic primitive. The definitions are the following:

1. *hune...lch’ogh* <*X hulch’ogh*: X tends to speak in a way that makes other people feel bad, and tends to suddenly become very angry as if X is going to attack other people>. An English rendering might be *to be disagreeable and explosive*.

2. *X Y ha* OBJ.AGR<sub>X</sub>-k’ehoní...gis <*X bini bek’ehonigis*: X tends to suddenly become very angry with people over situation {Y} as if X is going to attack other

people>. English free translations might be *to be explosive*, *to be mercurial* or *to be moody*.

3. *nádene...l ch'é* <*X nádenelch'é*: X tends to suddenly become very angry with people, as if X is going to attack other people>. An English rendering could be *to be moody*, *to be short-tempered* or *to be explosive*.

4. *X<sub>OBJ.AGRX</sub>-hóre...ni íle* <*X bóreni íle*: X tends to want or try to hurt other people>. English equivalents could be *to be fearsome*, *to be nasty*, *to be vicious*.

*Hune...lch'ogh* and *nádene...lch'é* are intransitive verbs; the rest are phrasemes. They differ by the following parameters:

1. Intensity: *X<sub>OBJ.AGRX</sub>-íní OBJ.AGRX-k'éhoni...gis* is less intense than *nádene...lch'é hune...lch'ogh*, which are in turn less intense than *X<sub>OBJ.AGRX</sub>-hóre...ni íle*.

2. Presence of reason in X: all of these quasi-synonyms apply only to adult human beings, except *X<sub>OBJ.AGRX</sub>-hóre...ni íle*, which can apply to children (*eyi sekwi bóreni íle* {that child 3IPFV:be.easy NEG}) and even (for some speakers) to domestic animals, although this may be another sense as it implies general uncontrollability rather than highlighting the physical danger of X.

3. Standard state of X's behavior: *hune...lch'ogh* implies that X, in addition to being explosive, is also disagreeable in the 'calm' periods between X's outbursts of anger; *X<sub>OBJ.AGRX</sub>-íní OBJ.AGRX-k'éhoni...gis* and *nádene...lch'é*, by contrast, do not imply this, and can be used to describe someone who, while notable for being short-tempered, is not disagreeable all of the time. *X<sub>OBJ.AGRX</sub>-hóre...ni íle* implies someone who is uniformly aggressive and nasty.

4. Presence and nature of resulting actions: in the case of *hune...lch'ogh*, X tends to do a variety of antisocial actions during X's outbursts, not limited to attacking or harming others: *vasí noreyez* {things 3IPFV:smash} 's/he smashes things'; *dene kué*

*ch'ázi tǐnegha* {person house:CONS away.from 3IPFV:exit} 's/he runs out of the house';  
*dzírelch'ogh* {3IPFV:exit} 's/he storms around'. The **Reals** of are more focused on X's  
 hurtful actions and speech to others: *dene ts'én hilch'é* {people at 3IPFV:get.mad} 's/he  
 gets mad at people'; *bedhá dúé* {3PO:mouth it.is.bad} 's/he says nasty things to  
 others'. *X OBJ.AGR<sub>X</sub>-hóre...ni ile*, on the other hand, implies actual violent behavior:  
*dene k'énádher* {people 3IPFV:fight} 's/he fights people'; *ʔasi hesdóltsi* {things  
 3IPFV:destroy} 's/he destroys things'.

Pragmatic and extralinguistic notes: *X OBJ.AGR<sub>X</sub>-hóre...ni ile* is viewed far  
 more negatively than the others, as it implies that the person tends to be dangerous. It is  
 often used for people with serious behavioral problems or for foreign (enemy) tribes in  
 traditional stories.

**3.2.4. Character Terms: Syntax.** As indicated by the lexicalization rule  
 above, most character terms express general tendencies in X's behavior with other  
 people. There are usually no other participants because the people affected by X's  
 behavior are nor referential semantic actants. Character verbs are usually intransitive  
 with a simple Government Pattern:

$X \Leftrightarrow I$
1. N <sup>1</sup> <sub>human</sub>

For minority of character terms, however, some of the constant participants are  
 expressible, sometimes if marked:

1. *huneH...ldai* <*X Y ha hunildai*: person X tends to have tantrums in customary  
 situation {Y}>

$X \Leftrightarrow I$	$Y \Leftrightarrow II$
1. N <sup>1</sup> <sub>living</sub>	1. V

2. *ch'ére...lɔ̀j* <*X Y hel ch'érelɔ̀j*: person X tends to do things without a reason that make other people {Y} feel very bad>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. N <sub>living</sub> <i>hel</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *dene hel ch'érelɔ̀j* {people with 3ipfv:be.rude} 'he is rude and aggressive with other people'.

3. *nabá...dhi* <*X Y Z nabádhi*: person X tends to watch people {Y} do actions {Z} that X does not need to know because X wants to know that {Y} is doing something bad>

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>1</sup> <sub>living</sub>	1. N <sub>living</sub>	1. V <sub>subj.agrY</sub>

C<sub>1.1</sub> + C<sub>2.1</sub> without C<sub>3.1</sub>: impossible; all three participants are expressed, or only X.

3. *ts'óne...dher* <*X Y ghq ts'ónidher*: person X gives other people less of X's resources Y than people normally give each other>; possible English renderings: *mean*<sub>2</sub>, *stingy*.

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. N

6. *X ahhe dóhe...lɔ̀j* <*Y ɔ́á X ahhe dóhelɔ̀j*: person X tends to want other people to think that X is more attractive than them in activity {Y}>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>living</sub>	1. V <sub>subj.agrX</sub>

2. *X Y ha* OBJ.AGR*X-k'éhoni...gis* <*X bini bek'éhonígis*: X tends to suddenly become very angry with people over customary situation {Y} as if X is going to attack other people>

X ⇔ I	Y ⇔ II
1. N <sup>l</sup> <sub>living</sub>	1. CLAUSE

**3.3. Physical Description Terms.** Languages possess a very wide range of lexical units referring to the physical characteristics of people and objects, so it is not possible to treat this semantic class exhaustively. To make a selection, one could begin by distinguishing temporary qualities or states such as ‘hot’, ‘cold’, ‘healthy’, ‘pale (in that moment)’ from words which describe the unchanging nature and features of something, such as ‘tall’, ‘short’, ‘fat’, ‘thin’, ‘heavy’, ‘brittle’, and so forth. This section will therefore be limited to discussing permanent or semi-permanent physical qualities of people and objects. We are also limiting the discussion to the description of an entity’s directly perceptible physical traits rather than to its value, age, beauty, etc.

We use language to express our reality, and part of our reality as humans is experiencing the world through a body with an expected range of size, abilities, and so forth. We therefore describe things in relation to these natural absolute parameters. Something is ‘big’ if it is much bigger than a person, and ‘small’ if it is much smaller than a person. A task is ‘difficult’ if a single person cannot do it easily, and a place is ‘big’ if a person cannot see or walk around all of it in a short time, a day for instance. Something is ‘heavy’ if a person cannot lift it, and so forth. People don’t usually describe things like mountains and lakes as *heavy* because people never lift them. Wierzbicka (1996) relates color words to objects common to our human experience. ‘Red’ refers to the color of blood, ‘yellow’ to the color of the sun, ‘green’ to the color of vegetation, and so forth.

On the other hand, we describe objects in relation to an average abstracted from many instances of seeing them rather than in relation to human characteristics. This

idea goes back at least as far as Aristotle's *Categories* (Edgill & Pickard-Cambridge 2006):

A man might, indeed, argue that 'much' was the contrary of 'little', and 'great' of 'small'. But these are not quantitative, but relative; things are not great or small absolutely, they are so called rather as the result of an act of comparison. For instance, a mountain is called small, a grain large, in virtue of the fact that the latter is greater than others of its kind, the former less. Thus there is a reference here to an external standard, for if the terms 'great' and 'small' were used absolutely, a mountain would never be called small or a grain large. Again, we say that there are many people in a village, and few in Athens, although those in the city are many times as numerous as those in the village: or we say that a house has many in it, and a theatre few, though those in the theatre far outnumber those in the house. The terms 'two cubits long, "three cubits long,' and so on indicate quantity, the terms 'great' and 'small' indicate relation, for they have reference to an external standard. It is, therefore, plain that these are to be classed as relative.

Some descriptive parameters like size and intensity are conceived of as relations in Dene. For example common intensifiers include *hoʔázé* and *duʔázé* are actually etymologically derived from a pronominal prefix and the postposition *ʔázé*, meaning 'more than'.

Wierzbicka (1996) has difficulty with this idea of meanings like 'big' and 'small', noting that if 'big' is defined in terms of the comparative 'bigger' then it would be circular to explicate 'bigger' in terms of 'big', despite the fact that we feel that 'bigger' is semantically more complex than 'big'. She posits that size should be described as a pure relation between instances of things rather than in relation to some average or prototypical size for a category. There is support for this comparative concept of size in Dene as well. Comparatives are often expressed as two conjoined clauses: 'Peter is the biggest boy' might be expressed naturally as *Peter dene ʔázé nechá, benasí nechá íle* {Peter people more.than 3IPFV:be.big, 3.other.than 3IPFV:be.big NEG} 'Peter is bigger than the people, the others are not big'.

**3.3.1. Definitions.** The MTT-based definitions of many physical description terms in the following section follow the Aristotelian conception of qualities as extremes on a gradient parameter with respect to a middle value. This is similar to Mel'čuk's (1995: 431-432) framework for antonymy already referred to. Values like *hot* and *big* effectively mean 'having a greater temperature' or 'having a greater size'

than is average for the object being described rather than in absolute terms. The positive extremes of the scale such ‘big’, ‘intense’, ‘good’, ‘far’ (big distance), etc., are semantically simpler than the negative extremes. Following this understanding, we can use the following definitions for ‘fast’ and ‘slow’: *X is fast*: ‘X moves in a way that X or X’s parts are in more places in the same time than most other Xs could do’; *X is slow*: ‘X moves in a way that X or X’s parts are in fewer places in the same time than most other Xs could do’

Some qualities are better considered as values of a binary opposition. For example, while we may be accustomed to considering the English adjectives ‘difficult’ and ‘easy’ as qualities inherent to an activity, upon reflection we can see them as conditions external to human or animal agents that can impede them in their desire to perform an action or bring about a certain state of affairs. In this understanding, ‘easy’ means ‘absence of an obstacle’ and is a negation of ‘difficult’ or ‘presence of an obstacle’. We can formulate these definitions of ‘easy’ and ‘difficult’ as follows: *X is difficult*: ‘living beings have to do many things or do something so much for situation X to happen that maybe they can’t make X happen’; *X is easy*: ‘living beings do not have to do many things or do something so much for situation X to happen so they can make X happen’. The ideas ‘fast’, ‘slow’, ‘difficult’ and ‘easy’ in the definitions in the following sections should be understood as referring to the explications above.

**3.3.1.1. Texture of a Substance.** Textures refer to the way we perceive surfaces and materials when we touch, handle or squeeze them. Some of the traits which affect perception of texture are weight, density, or the proportion of component substances. When these qualities vary in items that people use, they have practical and aesthetic consequences. A quality like ‘dense’ can be explicated, for example, as meaning ‘it is more difficult to move some of liquid X by touching it than for most Xs’ or as meaning ‘liquid X moves less fast than most liquids’. Something that is dense, like a stew, is more difficult to stir, or thick sap is more difficult to gather. A rough surface could be explicated as ‘parts of surface X are uneven with each other so that it is difficult to move other things over it’. Unevenness produces friction, which is desirable

for some objects such as rope used to tie a knot, but undesirable in others, such as ice under the runners of a sled.

Often textures are really descriptions of how easily people can move the parts of a material away from or toward each other. Rubber is elastic, meaning that the component parts of its structure can be manipulated to be nearer or farther from each other. When the contracting force is removed from the elastic object, it returns to its former shape. On the other hand, it is difficult or impossible to change the shape of a rock by moving its parts or sides closer or farther apart from each other. The concept of ‘light [weight]’ can be explicated as ‘it is less difficult to move X up from the ground than for most things the same size as X’. ‘Soft’ could be explicated as ‘it is easy to move the X’s sides closer together by touching X’ thinking of squeezing, or ‘it is easy to move part of the surface of X toward the inside of X by touching it’ thinking of poking something. All of these traits have practical consequences for how people can use objects with these qualities. The Dene series for textures of a material is *de...yer*, *de...dogh*, *de...dhî<sub>1</sub>*, *natser<sub>3</sub>*, *de...dhî<sub>2</sub>*, *de...ch’er*, *de...nagh*, *de...dhul*, *de...ddher*, *ho...ltun*, *de...tlegh*, *naltles*, *nedadh* and *neddha*. In their definitions below, components like ‘light’, ‘fast’, ‘difficult’ and ‘elastic’ should be understood as being shorthand references for the above explications.

1. *de...yer* <*X deyer*: it is very difficult to move X’s parts or sides closer or farther apart>; common English translations: *to be hard*, *firm*; example Xs: *tthe* ‘rock’, *tue* ‘fish’.

2. *de...dogh* <*X dedogh*: it is more difficult to move liquid X than to move most liquids>; common English translation: *to be thick*, *dense*; example Xs: *techázj* ‘soup’, ‘stew’, *lamelas* ‘syrup’.

3. *de...dhî<sub>1</sub>* <*X dedhî*: it is less difficult to move liquid X than to move most liquids>; common English translation: 3. *to be thin<sub>4</sub>*, *watery* [i.e. batter]; example Xs: *techázj* ‘soup’, ‘stew’, *lamelas* ‘syrup’.

4. *na...tser<sub>3</sub>* <*X Y nátser*: people know liquid X has Y in it || liquid X has more [Y] in it than most Xs>; common English translation: *to be strong<sub>15</sub>*, *concentrated* [liquid]; example Xs: *lidi* ‘tea’, *kafi* ‘coffee’.



5. *de...dhi<sub>2</sub>* <*X dedhi*: people know liquid X has [Y] in it || liquid X has less of [Y] in it than in most Xs because X has more water in it than is most Xs>; common English translation: *to be weak*<sub>10</sub>; example Xs: *lidi* ‘tea’, *kafi* ‘coffee’.

6. *de...ch'ér* <*X dech'ér*: X is hard and elastic in a way which people do not like>; common English translation: *to be rubbery, chewy* [meat]; example Xs: *ber* ‘meat’, \*‘rubber’, \*‘tire’.

7. *de...nagh<sub>2</sub>* <*Y Z<sub>subj.agrY</sub> ø<sub>sg</sub> / X denágh*: liquid X is dense so that for living thing Y it is difficult to perform action Z>; common English translation: *to be soupy and hazardous, quicksand-like*; example Xs: *hotl'és* ‘mud’.

8. *de...dhul* <*X dedhul*: large hard thing X has nothing inside it so that people can put things in X>; common English translation: *to be empty, vacant, to have a lot space available in it*; example Xs: *ts'i* ‘boat’, *tili* ‘pail’.

9. *de...ddhér* <*X deddhér*: granular X’s grains are smaller than for most Xs>; common English translation: *to be fine*<sub>7b</sub>; example Xs: *thai* ‘sand’, *tthe* ‘rocks’, *tthe ddhéré* ‘gravel’.

10. *ho...ltún* <*ø<sub>sg</sub> / X holtún* ground X is very soft because there is a lot of water in every part of X>; common English translation: *to be soaked, water-saturated* [ground]; example Xs: *nih* ‘ground’.

11. *de...tlegh* <*X detlegh*: X is soft and cannot to move>; common English translation: *to be limp, flaccid*; example Xs: *gah* ‘[freshly killed] rabbit’.

12. *na...ltlés* <*X naltlés*: thing X is very soft because X has a lot of liquid in it>; common English translation: *to be mushy*; example Xs: *libadá naltles* ‘mashed potatoes’.

13. *ne...dádth* <*X nedádth*: it is more difficult to move X up from the ground than it is for most things the same size as X>; common English translation: *to be heavy*; example Xs: *tthe* ‘rock’, *hhél* ‘pack [on back]’.

14. *ne...ddhá* <*X neddhá*: X moves toward the ground more slowly than most things because X is very light>; common English translation: *to be very light, featherweight*; example Xs: *t'á* ‘feather’.

All are intransitive verbs. *Deyer* and *deddhér* have corresponding adjectival derivatives, *yeré* ‘hard’ and *ddhéré* ‘fine<sub>7b</sub>’

The material texture words differ by the following parameters:

1. Thickness of a liquid: *de...dogh*, *de...dhi<sub>1</sub>*, *de...dhi<sub>2</sub>* and *de...nagh<sub>2</sub>* refer to liquids. *de...dogh* and *de...dhi<sub>1</sub>* are antonyms describing the thickness of liquids of variable density. *de...nagh<sub>2</sub>* is a quasi-synonym of *de...dogh*; they both to thick liquids and things of mudlike consistency.

2. Overall texture of a solid object: *de...tlegh* refers to something that should be firmer or even move of its own volition but which is completely limp and sags. *Ho...ltún* is used to describe the soil soaked after rain or the melting of snow. *De...ch'ér* and *de...yer* refer to very firm, solid objects, but *de...yer* describes something much harder than *de...ch'ér*. They are not mutually exclusive: *ber deyer ú, dech'er* {meat 3IPFV:be.hard and 3IPFV:be.rubbery} ‘the meat is hard and rubbery’. *Na...ltés* refers to something which, while a solid, is so soft that if much liquid were added it would itself become a liquid. *De...dhul* is used to refer to rigid containers such as canoes with a lot of space available in them, usually from the perspective of a person looking down at the container which is laid out horizontally so that its open side faces up. Something that is not used as a container or which is closed on all sides (like a hollow tree, door or ball) would be described as *beyé hoʔq* {3:inside 3IPFV:be.space} ‘there is space inside it’.

3. Aesthetic evaluation: *de...nagh<sub>2</sub>* and *de...ch'ér* both imply something that will be unpleasant for a living being to experience. The others are more subjective.

4. Specification of consequences for the subject: *de...nagh<sub>2</sub>* refers to something that will be difficult or even hazardous to experience. *beschené dza nizi ghekodhi denágh* {car mud immersed.in 3IPFV:run:REL 3IPFV:be.sinking} ‘the car is stuck in the soft mud, it is impossible for it to drive out’. None of the others have such a component.

5. Difficulty to move or handle: *de...dogh*, *de...nagh<sub>2</sub>*, and *ne...dádh* all refer to objects that require a lot of human effort to move or manipulate.

6. Specific cause for the texture. Objects that *ho...ltún* have been permeated with water. In contrast, a material which is *naltles* can naturally be very soft and may not be ‘diluted’ or contain any water.

7. Temporary or permanent: *ho...ltún* describes something which is not naturally mushy. It may be a state of long duration, but it is not permanent, i.e. *yuwé nih holtun, nitél lqt'e* {over.there ground 3IPFV:be.mushy, mushkeg like:3IPFV:be} ‘over there the ground is mushy, almost like on the mushkeg’. The others are usually intrinsic or general features of the objects they describe.

Pragmatic and extralinguistic notes: *de...dhul* is a “high word” used by Elders who tend to have a larger and more traditional vocabulary. The younger generation would tend not to use this word and to use the general expression *beyé hoʔq* ‘there is space in it’ or ‘it is hollow’ in place of *de...dhul* in modern Dene (the younger speakers).

**3.3.1.2. Texture of a Surface.** People constantly experience surfaces and materials by touch. Some of our most frequent tactile experiences are with clothing, bedding, furniture, surfaces on which we sit or lie such a wooden, carpeted, marble or dirt floor, the ground, and our own and others’ skin and hair. Some of the differences registered by our skin receptors include

1) The degree of friction against our skin, which corresponds to the difficulty with which one can drag an object of a given weight across our skin. We experience something that generates a lot of friction against our skin as rough. Something that generates little friction is interpreted as smooth or slippery.

2) Whether if it has sharp points or hooks that are angled in a way to catch our skin. This is the case of objects such as thorns, burrs, or a cheese grater. Although we recognize that the material is perhaps smooth, its surface shape is corrugated in a fine enough pattern that the objects may be interpreted as round, flat, etc. shapes with a particularly rough surface.

3) Whether the surface is covered with some other substance that affects our experience of it as slippery or rough and which leaves a residue on our skin, as something greasy or slimy.

4) How much resistance we experience to pressing the surface towards the inner part of the object, i.e. its hardness. In English, a ‘hard’ object can have a soft surface: a chair or bench may have a hard seat but which is covered with thin cushioning or

upholstery. This supports the separation of softness of a surface from the parameter of softness of a whole object all the way to its center, as discussed above.

- 6) The speed with which the object is dragged over our skin.
- 5) The temperature of the object.

The above factors are experienced simultaneously, and psychologists divide their interpretation into discriminatory touch and affective touch. Discriminatory touch is the ability to know what sort of object we are touching, while affective touch has to do with whether people experience tactile contact with a surface as pleasurable or not. We know that a pleasurable (i.e. soft, velvety) surface is not merely one that is not rough. Rather it is one which is uneven in some way, covered with soft hairs for example, which stimulate receptors in the skin and cause a distinctly pleasurable tactile sensation quite independent of a mere lack of roughness. On the other hand, pain receptors can be stimulated by spikes or hooks, causing us to experience contact with an object as unpleasant. There is therefore a secondary emotional component to many texture words. Our experience of contact with a surface as pleasurable or not is also affected by the pressure with which the surface is applied to our skin, i.e. if someone is pressing down on it, where it touches (our faces, under our wrists are more sensitive than our hands and feet), the speed with which the object is dragged over our skin, the temperature, etc.

At a same average pressure and speed, people usually experience some things as tactilely pleasant, such as animal furs, feather and velvet. Other sensations include: scratchy (wool, cat's tongue, peach, stubble from shaved hair), abrasive (scouring pads, sandpaper, pineapple), spiky (thorns, cactus, porcupine, sea urchin), sharp (teeth, knife, pointy rocks), slimy (snail, slug, organs of killed animal), sticky (sap, dried syrup or soda), smooth (glass, plastic, some rock, hairless skin). It should be noticed that a surface must be uneven to stimulate tactile pleasure, i.e. people usually find a rabbit fur more pleasurable to touch than smooth marble. Others surfaces have enough hairs or bristles to notice but not enough to feel pleasant or painful, e.g. a peach.

The following words are used in definitions of the series, and should be understood as abbreviations for the meanings listed below:

*X is soft*: 'it is easy to move the X's sides closer together by touching X'

*X is hard*: ‘it is difficult to move the X’s sides closer together by touching X’

*X is rough*: ‘parts of surface X are uneven with each other so that it is difficult to move other things over it’

The series is: *de...nur*, *de...t’us*, *de...ker*, *de...ch’él*, *de...ch’ogh*, *dé...ni* and *de...lk’és* and *de...t’ogh*. They are all intransitive verbs. There is no expressible dominant or semantic primitive; if it existed it would be ‘to have a surface like’ or ‘to feel like’. The LU with the closest meaning to ‘feel like’ in Dene is *laa...t’e*, meaning ‘to be like (in all ways)’, but this is more general. The definitions are the following:

1. *de...nur* <*X denur*: X’s surface is made of or covered with something uneven and soft and feels good to touch>; common English translation: *to be soft, silky, velvety*. Typical Xs include: *tsádhéth* ‘animal hide’ *gah dhéth* ‘rabbit fur’.

2. *de...t’us* <*X det’us*: X’s surface is made of or covered with something that stays in contact with other things it touches>; common English translation: *to be sticky, slimy*. Typical Xs include: *utúí* ‘a snail’, *dzégh* ‘tree sap’.

3. *de...ker* <*X deker*: things move very easily over the surface of X so it is difficult for things to stay in contact with X>; common English translation: *to be smooth, slippery*. Typical Xs include: *dechétél k’é* ‘on the floor’, *tthe* ‘rocks (after rain)’.

4. *de...ch’él* <*X dech’él*: X’s surface is rough and feels bad to touch>; common English translation: *to be rough, abrasive*. Typical Xs include: *chízaze betthú* ‘a cat’s tongue’.

5. *de...ch’ogh* <*X dech’ogh*: X’s surface is covered with small sharp points>; common English translation: *to be spiky, prickly*. Typical Xs include: *ts’í* ‘porcupine’, *cactus* (English borrowing).

6. *dé...ni<sub>1</sub>* <*X déni*: X’s surface has a thin edge or point which can easily cut things>; common English translation: *to be sharp*. Typical Xs include: *bes* ‘knife’, *tthe* ‘rocks’

7. *de...lk’és<sub>1</sub>* <*X delk’es*: people know that the surfaces of most Xs have hair growing from them || X’s surface has no hair growing from it>; common English translation: *to be bald*. Typical Xs include: *elqta betthí* ‘someone’s head’.

8. *de...tl'ogh* <X's surface has hair growing from everywhere on it>; common English translation: *to be furry, fur-covered, fuzzy*. Typical Xs include: *dení bedé* 'moose antlers', *tí* 'dog'.

The quasi-synonyms differ by the following parameters:

1. The kind of surface: *de...nur* can describe a cloth or object which is entirely pliable, but it only entails a soft surface. A hard chair with a soft cover can also *de...nur*. The verb *de...t'us* strictly speaking describes something sticky, something which adheres to other surfaces. However most examples of this in the Dene traditional life are also of things which leave a slime or trace on another object (*sap, snails*, etc.), meaning that *de...t'us* is also used for many objects that in English would be called *slimy*. It might be an object small enough for X to touch all of its surface at once; where it is an extended surface such as a floor it is more common to use the derived for *horet'us*. *De...ker* can describe either smaller objects or surfaces such as the floor; in the latter case, however, the derived stem *hore...ker* is also used. *De...ch'él* and *de...ch'ogh* most often describe living animals and animal parts. *Dé...ni* describes an object with a sharp point that can cut easily. *De...lk'és* refers to a surface which is hairless and which one would expect to have hair. *De...tl'ogh* describes a surface covered with relatively short and uniform hairs, e.g. antlers or an animal hide.

2. The size of points or bristles on a rough surface: *De...ch'él* describes a surface covered with very bristles or points which are so small that they are not immediately remarkable to the naked eye, so that the whole surface can be felt as uniformly rough, i.e. *chízaze betthú dech'él* < \**dech'ogh* > {cat 3PO:tongue 3IPFV:be.rough < \*3IPFV:be.rough >} 'a cat's tongue is rough'. By contrast, *dech'ogh* indicates a surface covered with larger spikes, thorns or bristles which stick out farther from the surface and are larger, so that they may be noticed more easily by the naked eye: *ts'í* < *cactus* > *dech'ogh* 'a porcupine < *cactus* > is prickly'; *nedaghá dech'ogh* < ?*dech'él* > 'your chin (stubble) is prickly'

3. Whether the surface is covered with something that is not part of it: In the case of *de...t'us*, it is strongly implied that the sticky surface is also slimy or will at least leave some residue on an object it touches, i.e. *dzé det'us* tree sap is sticky, *ût'úi det'us*

snails are slimy. *De...ker* simply describes something that is slippery, be it because of its natural smoothness, or because it is covered with water or with oil. Practically, there are more situations in which a slippery surface is so because it is covered with a liquid). None of the other words imply that they are covered with something not naturally part of them.

4. Whether the texture is unusual for this object: *de...lk'és*, meaning 'bald', describes a body part which has no hair but which one would normally expect to have hair, i.e. the head. The other quasi-synonyms do not imply that their subjects are in any way unusual for their class of objects.

5. The aesthetic evaluation: *de...nur* includes as a secondary component the idea of sensory pleasure stimulated by touch, and *de...nur* is usually considered a positive quality. It is often used as a compliment referring to cloth or to an animal hide. *De...ch'él* and *de...ch'ogh* refer to items which are abrasive to human skin and are therefore usually considered negative qualities where human handling is concerned. *De...ker* 'it is slippery' describes objects that are difficult or even hazardous to hold or stand on, which is usually negative as well.

6. Derivational possibilities: *de...ker* and *de...t'us* have the areal derivations *hore...ker* and *hore...t'us*, describing an area.

Related words: These include *de...lk'és<sub>2</sub>* 'to have no leaves': *k'i delk'es hhayé dé* not a texture, but obviously closely related to *de...lk'és<sub>1</sub>* 'to be bald'.

**3.3.1.3 Color Terms.** Despite the universal biological basis of color perception, there is a dazzling variety of ways in which the languages of the world encode color concepts. Some language have only two or three color terms, others have the full range of pure spectrum colors and others described above. In some specialized societies, experts such as painters or weavers may know an almost limitless range of color terms. There is a huge linguistics literature, mostly related to the Sapir-Whorf hypothesis, that investigates the relationship between this linguistic variation with human biological perception. The modern consensus is that linguistic variation does not correspond to conceptual categorization to the extent that all people see colors in the same way. The interlinguistic variation in color terms seems therefore to be simply an artifact of

cultural differences concerning the salience of various color concepts. Wierzbicka (1996) relates colors to prototypes related to objects that almost all human groups encounter in their daily lives. For example, red = blood, yellow = sun, blue = sky (and the sea for some people), white = bright light, clouds (and snow for some people), black = darkness, brown = earth, dirt, green = plants, vegetation. Other terms, such as gray, dark blue, pink, etc. show more intercultural variation. Wierzbicka's idea is supported by considerable linguistic evidence from languages in which in which colors are etymologically related to object terms, for example 'brown' and 'earth'. Similar results obtain for several Dene colors, shown below.

The meaning 'color' is easy to isolate in Dene. It may well be a sense distinct from LAHO...T'I<sub>1</sub> 'to resemble', 'to look like' but belonging to the same vocable. Or the fact that it is understood to refer specifically to the color of an object in some contexts may be pragmatic knowledge. The question *edlá láhót'í zá* {what like:3IPFV:look<sub>4</sub> Q} can be translated and interpreted as 'what does it look like?' or as 'what color is it?'. *Its color* is rendered by the relative clause *t'a láhót'í* {REL like:3IPFV:look<sub>4</sub>} which can mean 'what it looks like' or 'what its color is'. Eleven colors are encoded as lexical units in Dene, and they all seem to correspond closely with the range of shades indicated by their English translations (perhaps through centuries of cultural contact also).

The definitions are:

1. *de...lzen* <X : X is of a color similar to the color of darkness>
2. *de...lgai* <X : X is of a color similar to the color of snow>
3. *de...lk'os* <X : X is of a color similar to the color of blood>
4. *dé...t'és* <X : X is of a color similar to color of the sky without clouds>
5. *de...lthogh* <X : X is of a color similar to the color of the sun>
6. *de...ltses* <'X : X is of a color similar to the color of dirt>
7. *de...lba* <X : X is of a color similar to the sky in twilight>
8. *təch'ai láhót'í* <X : X is of a color similar to the color of vegetation>



9. *jietué láhót'í* <X : X is of a color similar to the color of purple grapes>

10. *jie tthoghé láhót'í* <X : X is of a color similar to the color of oranges>

11. *dze k'ozé láhót'í* or *dze láhót'í* <X : X is of a color similar to the color of pink spruce gum>

Seven color words are intransitive verbs: *de...lzen* ‘to be black’, *de...lgai* ‘to be white’, *de...lk'os* ‘to be red’, *dé...t'és* ‘to be blue’, *de...ltthogh* ‘to be yellow’, *de...ltses* ‘to be brown’ and *de...lba* ‘to be gray’. Four colors are expressed with phrasemes comparing the color of the direct object with that of a salient object from Dene culture: *tqch'ai láhót'í* ‘it is green’, lit. ‘it looks like leaves’, *jietué láhót'í* ‘it is purple’, lit. ‘it looks like wine’, *jie tthoghé láhót'í* ‘it is orange’, lit. ‘it looks like an orange’, and *dze k'ozé láhót'í* ‘it is pink’, lit. ‘it looks like red (spruce) gum’ or *dze láhót'í* ‘it is pink’, lit. ‘it looks like (spruce) gum’. Color terms are unusual in that six of them have corresponding adjectives, which are a small closed class in Dene: *tthoghé* ‘yellow’, *zené* ‘black’, *gaié* ‘white’, *tsezé* ‘brown’, *baé* ‘gray’, and *t'ezé* ‘blue’.

*De...lzen* is used for objects which appear black, not for dark places or for the absence of light. For darkness one can use instead *hóret'í ile* {it.is.visible NEG} ‘it is dark’, e.g. *yízi hóret'í ile* {indoors 3IPFV:be.visible NEG} ‘the house is dark’, or *sqt'és (láhót'í)* {pitch.dark like:3IPFV:look<sub>4</sub>} ‘it is pitch dark (outside, in that place)’. For some speakers, *sqt'és* ‘pitch dark’ is extended to another sense to describe objects as dark as pitch darkness, i.e. coal, as *sqt'és láhót'í* {pitch.dark 3IPFV:look.like} ‘it is pitch black’.

Color luminescence can be modified to denote dark light shades by adding *kúlú delzen láhót'í* {but 3IPFV:be.black like:3IPFV:look<sub>4</sub>} ‘but it looks black’. For light shades, one can add the intensified *hotié* ‘really’ or ‘bright’ before the color term, together with *kúlú bq hit'í láhót'í* {but 3:by 3IPFV:shine like:3IPFV:look<sub>4</sub>} ‘but it looks

shiny' after it. For example, *delk'os kúlú delzen láchót'í* {3IPFV:be.red but 3IPFV:be.black like:3IPFV:look<sub>4</sub>} 'it is dark red'; *hotié delk'os* {really 3IPFV:be.red} 'it is bright red'; *hotié delk'os kúlú bə hit'í láchót'í* {really 3IPFV:be.red but 3:by 3IPFV:shine like:3IPFV:look<sub>4</sub>} 'it is light red', or maybe 'it is light red and a bit transparent'.

Related words include *de...lk'al<sub>1</sub>* 'to be clear (transparent)'. This is not a color term, but is closely related, used for transparent objects like water and glass. *Delzen<sub>2</sub>* is a sense meaning 'dark', as in 'dark eyes' or 'dark clouds', e.g. *bená dárelzen* {3PO:eyes DIST:3IPFV:be.red}. This sense has the corresponding adjective *zené<sub>2</sub>* 'dark', as in *yák'odh zené* {clouds dark:ADJ} 'dark clouds'

**3.3.2. Physical Description Terms: Syntax.** As these terms describe permanent features of an object, they are usually intransitive verbs, having no other obligatory participants, but realizing X as a noun:

X ⇔ I
1. N <sup>1</sup>

There are exceptions, however. *Ho...ltún* usually refers to the ground, so X can be omitted:

*ho...ltún* <X *holtún*: X is very soft because there is a lot of water in every part of X>:

X ⇔ I
1. ∅ <sub>SG</sub>
2. N <sup>1</sup>

C<sub>1.1</sub>: *holtún* '[the ground] is mushy because it is saturated with water'

C<sub>1.1</sub>: *ní holtún* 'the ground is mushy because it is saturated with water'

2. *na...tser<sub>3</sub>* <X Y *nátser*: people know liquid X has Y in it || liquid X has more [Y] in it than most Xs>;

X ⇔ I	Y ⇔ II
1. N <sup>l</sup>	2. N <sup>l</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *kafī sugá nátser* {coffee sugar 3IPFV:be.strong<sub>5</sub>} 'the coffee is strong with sugar'

3. *de...nágh<sub>2</sub>* <Y Z-i X denágh: liquid X is dense so that for living being Y it is difficult to do action Z>; common English translation: *to be soupy and hazardous, quicksand-like*; example Xs: *hotl'és* 'mud'.

X ⇔ I	Y ⇔ II	Z ⇔ III
1. N <sup>l</sup>	1. N	1. V <sub>subj.agrY-i</sub>
2. ∅ <sub>SG</sub>		

C<sub>1.2</sub> + C<sub>2.1</sub> + C<sub>3.1</sub>: *beschené dzá nǐzǐ ghekodhi denágh* {car mud in 3ipfv:drive 3IPFV:be.thick} '(the mud) is (too) thick for the car to drive in'

**3.4. Motion Terms.** Motion verbs describe situations in which a living being propels itself with its own energy over a surface, through a liquid or through the air. The meanings of these verbs are in some cases extended to inanimate subjects, whether machines such as *beschene* 'car' or *dzíret'ai* 'plane', which appear to drive themselves forward much like a living being, or to disembodied phenomena such as *tada* 'epidemic' and *yohtsane* 'storm', which are described linguistically as moving if they were living agents with a body. We will exclude from the class of motion verbs those that refer to involuntary motion, even of a living being, such as sliding or falling (discussed separately below), as well as those verbs such as 'drive', 'ride' and 'fly' in the sense of 'travel by vehicle' or 'to operate a vehicle', which describe a subject moving a second entity rather than X's own body. We will also limit our investigation to verbs that can describe standard means of travel of the subject over long distances,

while excluding those which describe a localized movement, e.g. *-gal* ‘sg bipedal walks’ but not *de...dʔeth* ‘to take some steps’.

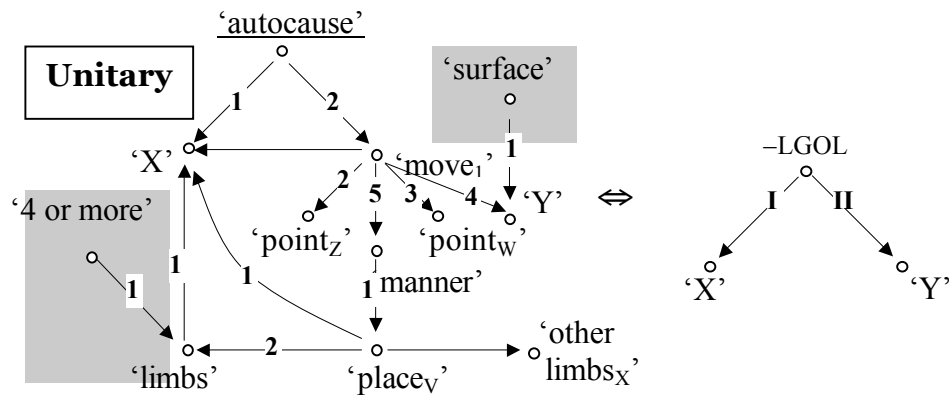
Athabaskanists divide the verb stems of Dene languages into classes called “verb theme categories” (Kari 1979). A verb theme category is a group of verb stems (“verb themes” in Athabaskan literature) which share a certain semantic and morphological features, including their range of possible derivational forms. Because verb themes are called “verb stems” in this work, verb theme categories will be called “verb stem classes”. The motion class accepts an exceptionally wide range of derivatemes: *ne-* ‘momentaneous’, *na-* ‘reversive’, *na-* ‘durative’, *te-* ‘inceptive’, *hu-* ‘transitional’, *ghe...-l* ‘progressive’ and *dzire-* ‘perambulative’. Motion verb stems (though not only them) also feature significant and semi-regular suppletive alternations between imperfective, perfective and optative forms, and also between various derived forms. Apresjan (2000) defines the lexicographic type, also using a range of semantic, morphological and combinatorial criteria. Given its unique semantic and morphological properties, it seems that the motion verb class in Athabaskan languages fits Apresjan’s definition of a lexicographic type.

**3.4.1. Definitions.** The motion terms discussed in this section fall into two series of quasi-synonyms. The first describes an animate X’s movement across a surface. The second series describes a variety of ‘fall’ verbs that take both animate and inanimate Xs and that describe X’s movement toward the ground from the air or from a position with one of X’s smaller surfaces in contact with the ground.

**3.4.1.1. The ‘X travels’ Series.** There is no abstract, generic verb similar to ‘go’ or ‘move’ in Dene. As in Russian (see the discussion in Apresjan 2000: 216), the speaker must specify the means by which X moves, even if this information is utterly irrelevant to the linguistic situation being described. The dominant meaning for all of the verbs in the motion class is ‘travel’, which shall stand for the components ‘X causes<sub>2</sub> self to move from place Y to place Z’. This meaning is always expressed in a unitary way, often with one or more presuppositions about the nature of X, such as X’s number of limbs or posture, as in (28).

- (28) *-lgol* <X Y k'é helgol: living being X moves<sub>1</sub> [from point Z to point W] on surface Y by placing one of X's limbs, which are four or more, in front of the others>

The SemS of a motion verb like that in (28) can be drawn with the common 'travel' semanteme, accompanied by the verb's nonassertional components in grey.



Nonassertional components are distinct from assertions because they cannot be negated or modified externally, i.e. *X Y k'é helgol ile* {X Y on 3IPFV:walk NEG} cannot mean 'X does not walk on all fours on Y'.

The ten 'travel' verbs considered here can in principle take any of the seven derivatememes for the motion class mentioned above, giving 70 possible stems. However, some combinations are excluded for pragmatic reasons. It is very difficult to elicit the underived forms *-dhi*, *-bi*, *-li* and *-lzul*; there is a very strong tendency to use these stems with the transitional or perambulative derivatememes, and to use 'fly' with the progressive marker. Some instances of the progressive derivation with motion verbs are likely morphological phrasemes because their nonderived bases are no longer extant words. Because this section discusses the meanings of 'travel' verbs, we will consider the most commonly used form of each of them, simple or derived. The components 'through an area', 'around an area', and 'is ...-ing', corresponding to the

transitional, perambulative and progressive derivatemes, should therefore be disregarded as parameters in the following definitions. The travel series includes the stems *-gal*, *-lgol*, *-lkath*, *-lgos*, *-duth*, *ghe...t'al*, *hu...dhi*, *dzire...bi*, *dzire...li* and *dzire...lzul*. There is no verbalizable dominant. In modern Dene an innovative sense of the 'biped walk' verbs meaning simply 'to go' (by any means of transport) is becoming more common, and one often hears utterances like *Arizona nathiya* {A. REV:1PFV:sg.go} 'I went to Arizona' (meaning by airplane). This cannot be considered the dominant, however, because it refers only to human travelling; it cannot be used for fish or animal movements. The definitions are the following::

1. *-gal* <X ghegal Y k'é: X travels on surface Y by putting one of X's two feet in front of the other>. A free English translation would be *walk*<sub>1</sub>. X must be human or a moose (it was explained by a speaker that even though moose have four legs, the human 'walking' verb is applied to them as an honorific, because the moose is so crucial to the survival of the southern Dene).

2. *-lgol* <X Y k'é *helgol*: X travels on surface Y by placing one of X's four or more limbs in front of the others> Free English translations would include *walk*<sub>1</sub> (said of an animal), *crawl*, *scurry* and *sidle*. Any X is possible which has four or more limbs, as long as X is walking or crawling on a hard surface (even of an object, or the wall or ceiling). Some of the many possible X's are: *li* 'dog', *chize* 'cat', *gu* 'insect', *ts'úze* 'fly', *ut'ui betth'éné la* 'octopus (crawling on the ocean floor in film)', *etthén* 'caribou', *dene* 'person (on all fours)'

3. *-lkath* <X Y k'é *helkath*: X travels on surface Y by putting one of X's four feet in front of the others at a regular rhythm without all X's feet leaving the ground at the same time> The best English translation is *trot*. This verb is used usually only with *li* 'dog' and *lichogh* 'horse' as subjects.

4. *-lgos* <X Y k'é *helgos*: X travels on surface Y by by placing two of X's four feet in front of the others at a regular rhythm so quickly that all of X's feet leave the ground at the same time between movements> The best English translation is *gallop*.

This word is used for *łichogh* ‘horses’ and for fast-moving ungulates such as *yáhtoé* ‘deer’.

5. *–duth* <*X Y k'é heduth*: X travels on surface Y by twisting X's body against Y> The best English translation is *slither*, and the typical X is *nadúdhe* ‘snake’, although a person can do this movement (as a joke, for example).

7. *ghe...t'at* <*X ghet'at*: X is travelling quickly through the air> This verb corresponds closely to *fly* in English, but also *glide*. Xs can be animate or inanimate, including *jyeze* ‘(smaller) bird’, *det'áni* ‘(larger) bird’, *dzíret'ai* ‘plane’.

8. *hu...dhi* <*X Y hudhi*: disembodied entity X moves through area Y> Free English translations include *drift by*, *come through*, and *sweep through*. Xs can be from a range of phenomena or diffuse objects, including: *yohtsané* ‘thunderstorm’, *lér* ‘smoke’, and *tada* ‘epidemic’.

9. *–bı* <*X Y k'é/yaghe hebı*: living being X travels on/in liquid Y by pushing Y back with X's limbs> The best English translations are SWIM<sub>1</sub> and TREAD<sub>5</sub>, but *–bı* is more restricted than SWIM<sub>1</sub>. Typical Xs include *dene* ‘person’, *tsá* ‘beaver’, *łue* ‘fish (fluttering with fins)’, *cheth* ‘duck (treading water)’.

10. *dzíre...lı* <*X Y yághe hulé*: X travels around in liquid Y by pushing through Y using X's gills or propeller> A free English translation might be *dart around (underwater)*. Typical Xs include *łue* ‘fish’, and *łuechogh* ‘whale (if not moving fins)’.

11. *dzíre...łzul* <*X Y k'é dzírelzul*: X travels around the surface of liquid Y partly by pushing Y back with X's limbs and partly by floating on surface of liquid Y> A free English translation would be *swim<sub>1</sub>* or possibly *glide (on water)*, but *swim<sub>1</sub>* is more general. Typical Xs include *cheth* ‘ducks’ and *łichogh* ‘horses (swimming while being pulled by a person across a river, used more often with prefix *na-* ‘across’ than with the perambulative *dzíre-*)’.

These quasi-synonyms differ by the following parameters:

1. Kind of movement: *-gal* is long-distance bipedal walking; for this reason it cannot be applied to other bipedal walking such as birds walking on the beach, for which *nare...t'eth* ‘to take steps’ would be used: *iyeze naret'eth* {bird around:3IPFV:take.steps}. So *-gal* is restricted to humans because there is no other bipedal animal that walks long distances in the Dene language area. This verb is also used to speak of the moose (*deni ghegal*). One speaker remarked that the moose is “tall” and “lanky” rather like a human, but this verb cannot be used for other animals whose legs are longer than their trunks are tall, such as other ungulates or even lanky daddy long legs (with tiny bodies and verb long legs), which *-lgol* instead. Another speaker remarked that because moose were the basis of the livelihood in the southern Dene region and were so important to the culture, the human term was used as a sign of respect. By contrast, *-lgol* describes any other kind of animal walking on more than two legs, or a human on all fours (*dene bałch'a yérilgé* {person fence under:3PFV:sg.walk} ‘the person crawled under the fence’; *nálzé dené nálgol deni ch'á nádenelzi zá* {hunting person:CONS DUR:3IPFV:sg.walk moose against 3.hides.self because} ‘the hunter crawled on all fours to hide himself from the moose’). It covers animals and insects (*horádzi* ⟨*dlúne, tthelkailé, sas, etthén*⟩ *helgol* {the spider ⟨mouse, weasel, bear, caribou⟩ is walking}), also on the ceiling or wall (*ts'úze yotthit'á k'é helgol* {fly ceiling on 3IPFV:walk} ‘the fly is crawling on the ceiling’), and octopi underwater (*ut'ui betth'éné lq té helgol* {*ut'ui*<sup>17</sup> 3PO:legs they.are.many} ‘the octopus (on the ocean floor) is walking underwater’, and many others. The verb *-lkath*, roughly meaning ‘to trot’, refers to a rhythmic, four legged walking-running, characteristic of dogs and horses. It is faster than walking and more sharply rhythmic, but it is not running because not all of X’s feet leave the ground at the same time. By contrast, *-lgos* is much like ‘galloping’, because it implies a fast rhythmic running whereby all of

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<sup>17</sup> *ut'ui* is a Dene natural kind term referring to a set of soft-bodied invertebrates with a sticky surface, including snails, slugs, mussels, clams, octopi; it has no easy translation in English.



X's feet leave the ground at the same time. The verb *-duth* 'to slither' is said mostly of snakes, and denotes a movement X makes by twisting the underside of X's whole body against a hard surface; *-zús* translates roughly as 'to slide' and refers to something that moves by sliding one of X's large surfaces in continuous contact with Y: *hodánaszus sheth k'é* {down:DUR:1IPFV:slide hill on} 'I was sliding (on a sled) down the hill'. *Ghe...t'al* 'to fly' refers to a self-propelled movement through the air. X can be an animal such as a bird (*iyeze hít'ak* {bird INCH:3PFV:fly} 'the bird started flying') or it can be an inanimate subject like a plane: *nidhóz niya ú plane ghet'al k'é* {far:DIM 1.walked when plane 3.flies MIR} 'I had walked pretty far away when suddenly there was a plane flying overhead'. *Hu...dhi* denotes the movement of a nonsolid entity such as smoke, a cloud or a storm (*yohtsené hudhi ha* {storm TRANS:3IPFV:go FUT} 'the storm will come through'), or even extended to a phenomenon such as an epidemic (*táda ja húdher* {epidemic TRANS:3PFV:go} 'the epidemic tore through here'), perhaps considered a putative or metaphorical cloud. Finally, Dene has at least three different 'swim' verbs denoting distinct physical movements. *Dzire...bi* describes a movement by which the subject (usually but not necessarily a person or a land animal) swims by visibly moving its body parts, especially by pushing the liquid back with its limbs, as in *tsá* ⟨*sas, cheth, dene*⟩ *dzirebi* {beaver ⟨bear, duck, person⟩ PERM:3IPFV:swim} 'the beaver ⟨bear, duck, person⟩ is swimming around'. As indicated by its use with *cheth* 'duck', this verb does not require X to be totally submerged in the liquid, only that X pushes back on liquid Y. While this sort of swimming by moving the body parts in a way clearly visible to an observer is usually done with limbs, a limbless animal such as a snake can also *dzire...bi* if it is undulating its body against the liquid: *nadúdhe dzirebi* {snake 3:PERM:swim} 'the (sea) snake is swimming around'. Fish can also do this, if they are "fluttering" in place by moving their side fins. *Dzire...li* is distinct from its quasi-synonym *dzire...bi* in that the former indicates a fluid darting forward, as

when fish move forward in a way that the movement of its body parts is imperceptible. The subject is “not forcing” and “doesn’t show he’s using his fins” according to one speaker. This verb is also applied to submarines. Whales and fish can either *dzíre...lí* or *dzíre...bí*, depending on their movement; snakes, however, can only do the latter: *nadúdhe dzírebí* (ʔ*dzírelí*) {snake PERM:3IPFV:swim} ‘the snake is swimming around’. Lastly, *dzíre...lʔul* indicates a sort of combination of the two, whereby the subject X does partly move its limbs to go forward, but at the same time relies on its inertia or on an external force pulling or pushing X to help X along. Examples include ducks paddling while gliding on a pond (*chethaze dzírelʔul* {duck:DIM PERM:3:swim} ‘the little ducks are swimming/gliding around’) and horses swimming across a river while being helped or pulled on a rope by someone at the shore: *líchogh nalʔel* {horse DUR:3:swim} ‘the horse swims/glides across’.

2. Number of Xs: Interestingly, most of these verbs, including *-lkath*, *-lgos*, *-duth*, *hu...dhi*, *dzíre...bí*, *dzíre...lí* and *dzíre...lʔul*, differ according to the number of Xs. Those in the list are all for singular Xs; for all animal motion verbs, if X is greater or equal to two, the stem *-lʔás* is used:

	<b>X = 1</b>	<b>X = 2</b>	<b>X = 3 or more</b>
'singular biped walk'	<i>-gal</i>	<i>-ʔás</i>	<i>-dél</i>
'moose walk'	<i>-gal</i>	<i>-lʔás</i>	<i>-lʔás</i>
'quadruped walk'	<i>-lgol</i>	<i>-lʔás</i>	<i>-lʔás</i>
'fly'	<i>ghe...t'al</i>	<i>ghe...t'al</i>	<i>-dél</i>

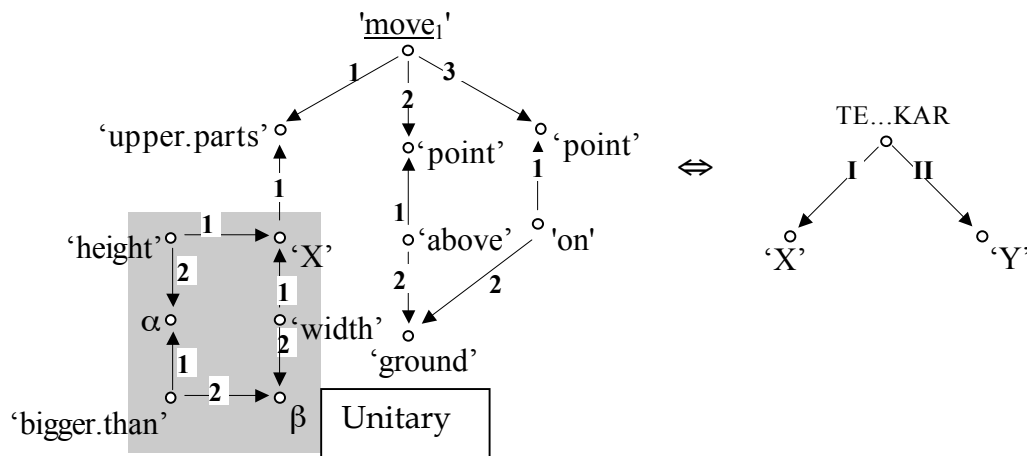
**Table III-II. ‘Travel’ Verbs by Number of the Actants.**

3. Degree of self-propelled movement: the ‘travel’ series includes verbs whose experiencer X displaces his/its body using X’s own bodily energy. However, the

movement described by *dzíre...lʔul* differs from those described by the other quasi-synonyms in that this verb describes a combination of X's self-propelled movement and X's uncontrolled gliding, either from inertia or because X is at the same time being pulled or pushed by another entity.

Related words: excluded from the 'travel' series are *te...t l'á* '(caribou) start to travel' which denotes their specific season migration rather than simply the meaning 'travel'; and *ttheba...gal* 'person runs', which describes a special way of local movement rather than X's standard way of travel. These verbs also do not follow the standard derivation pattern of the 'travel' series.

**3.4.1.2. The 'X falls' Series.** Verbs meaning 'fall' constitute another class of movement verbs with its own semantic and morphological patterns. 'Fall' verbs do not take the same range of derivational meanings as 'travel' verbs — they take the inceptive *te-*, as well as directionals, particularly *ná-* 'down'. Some 'fall' verbs are difficult to elicit without one of these prefixes. Like the 'travel' verbs and like position verbs, the 'fall' series features presuppositions about X's physical shape, texture and number. Again, the negation of the verb does not negate the presupposition, e.g. [X] *nákedh íle* {[X] 3PFV:fall NEG} 'X (sticklike object) did not fall' does not mean 'X is not stick-shaped', etc. Below is the SemS for *te...kar* '(wide thin) X falls' (nonassertional components in grey).



The series is *ná...kedh*, *ná...lkedh*, *ná...ltth'i*, *ná...ghez*, *eke...ltth'i*, *te...kar*, *-jer*, *í...ltth'e*, *í...kar*, and *ná...t'i*<sub>2</sub>. We will consider *í...ltth'e* and *í...kar* to be derivational morphological phrasemes rather than derived forms, because the *í-/H-* is not a derivational marker that makes sense in this context or that can be used with other 'fall' verbs (it would have to be the semelfactive or inchoative marker).

1. *ná...kedh* <*X nákedh*: X, which is sticklike, moves toward the ground>. Example Xs include *tutili* (*beyé dódí*) {bottle (3:in there.is.nothing)} 'an (empty) bottle'; *dechen* 'stick', *t'i'schené* 'pencil'.

2. *ná...lkedh* <*X nálkedh*: X, which is, a full container, moves toward the ground>. Example Xs include *tutili* (*beyé tu deta*) {bottle (3:in water 3.stands)} 'a bottle (full of water)'; *erihl'is dhéth nalcheth* {paper hide:CONS bag} 'an envelope'.

3. *ná...ltth'i* <*X náltth'i*: X, which is heavy, round or animate, moves toward the ground> Example Xs include *dene* 'person (falling from roof)', *bekáh* 'his scab', *dzot* 'ball'.

4. *ná...ghez* <*X nághez*: X, which is a standing sticklike object, moves toward the ground> Example Xs include *gani* 'pine tree', *dechen* (*náŷa*) {tree (3.stands)} 'a (standing) tree'.

6. *eke...ltth'i* <*X ekéltth'i*: X, who is a standing person, moves toward the ground> X seems to be restricted to humans.

7. *te...kar* <*X tekár*: X, which has a wide surface, moves toward the ground so that all of X's wide surface is in contact with the ground> Example Xs include *niábale* 'tipi', *tél* 'tarp', *yoh* 'house'.

8. *-jer* <*X hejér*: X, which is a flaked substance, moves from the sky toward the ground>. X is restricted to *tsíl* 'snow'.

9. *í...ltth'e* <*X hiltth'e*: X, which is a granular substance, moves from the sky toward the ground>. X is restricted to *tsíl* 'snow'.

10. *í...kar* <*X hikar*: X, which is a large-flaked substance, moves from the sky toward the ground>>. X is restricted to *tsíl* 'snow'.

11. *ná...tl'i₂* <*X natl'i*: X, which is plural, moves toward the ground>. X is any plural set of objects.

These quasi-synonyms differ by the following parameters:

1. Shape and texture of X: *ná...kedh* denotes the falling of a sticklike object or empty container from a height, i.e. whose base was not in contact with the ground before the motion started. *Ná...lkedh* describes the fall of a full container, as in *tutíli beyé tu deta nálkedh* {bottle 3:in water 3IPFV:stand 3:PFV.fall} 'the bottle, full of water, fell'. Interestingly, the range of this verb does not correspond with that of the classificatory verbs indicating a full container with liquid contents; it can be extended even to other types of containers such as envelopes: *erihl'is dhéth nalchéth nálkedh* {paper hide:CONS bag:CONS 3.PFV.fall} 'the envelope fell'. *Ná...ghez* refers to a sticklike object whose base is resting on the ground or which is planted in the ground and which falls over, so that its long side is in contact with the ground: *gani <dechen, nǐbál chené> nághez* {pine.tree <tree, tent pole> 3PFV:fall} 'the pine tree <tree, tent pole> fell down'. When a standing or upright person falls over, one must use the verb *eké...ltth'i*, as in *ekestth'i ha huto* {1:fall.over FUT POSS} 'I might fall down' (said by a dizzy person). By contrast, a person falling from a height or a heavy or round object falling to the ground must be expressed with *ná...ltth'i*, e.g. *nastth'er* 'I fell (from the roof)'. *Te...kar* is often glossed as 'to collapse' and it can be used when X is an object with a large surface or side which, when the structure or object falls or collapses, rests spread out over the ground. Often X is a clothlike structure, as in *nǐbále <tél> tékar*

{tipi ⟨tarp⟩ house 3PFV:fall} ‘the tipi ⟨the tarp⟩ fell down’. X can also be a structure, but it has to be shaped so that the roof is wider and bigger than the sides so that the overall effect is one of collapsing or flattening and not falling over: *yoh* ⟨\**tsakué*⟩ *tékar* {house ⟨\*outhouse⟩ 3PFV:fall} ‘the house ⟨\*the outhouse⟩ fell down’. There are three different verbs to describe snow falling; where an English speaker would use adjective like *fluffy* or *powdery* to describe falling snow, Dene distinguishes them by using different verbs, with the same subject, *tsít* ‘falling snow’, which can also be used as a verb. The most generic verb is *-jér*, which seems to be synonymous with simply *tsít* {snow.is.falling}. If the snow is a bit fine, *í...tth’e* can be used (*tsít hítth’e*), a verb whose root is can be used with other derivatememes to describe sand falling from a dune. Finally, if the snow is falling in particularly large, fluffy flakes, one can use *í...kar* (*tsít híkar*). *Ná...t’i<sub>2</sub>* describes the falling of any plural objects, including people, but excluding atmospheric phenomena like snow.

2. Contact between X and the ground before X falls: The verbs *ná...ghez*, *eké...tth’i* and *te...kar* all denote Xs which were standing on the ground and then fell over so that their longest side was resting on the surface, e.g. a tent pole in the first case, a standing person who fell over in the second, and a tall thin structure like an outhouse in the third. The other quasi-synonyms imply falling a height, where X was not touching the surface before the start of the situation.

3. Final position of X: *te...kar* describes a motion of falling, rather like *collapse*, which suggests that the cloth structure or building ended up completely flat on the ground. Interestingly, it shares the same root with *í...kar* ‘to fall in large flakes’.

4. Number of X: Excluding the atmospheric terms, these quasi-synonyms all denote singular Xs; a fall involving two or more of any of them, including people, would be expressed with *ná...t’i<sub>2</sub>*: *t’aqhaghe* ⟨*nádene, bíl*⟩ *nát’i* {leaves ⟨two.people, snares⟩ 3PFV:plural.fall} ‘the leaves ⟨two people, the snares⟩ fell’.

### 3.4.2. Motion Terms: Syntax.

The ‘X travels’ series: Most of these lexemes describe X's movement over surface Y, e.g. *'dzire...lʔul* ‘X swims/glides over surface of body of water Y’: they therefore have the same actants, X and Y:

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>human</sub>	1. N <i>k'é</i>

Exceptions include *ghe...t'al* ‘to fly’: <X ghet'al: X is travelling quickly through the air {Y}>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N <i>yághe</i>

2. *hu...dhi* <X Y hudhi: disembodied entity X moves through area Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>disembodied</sub>	1. N

C<sub>1.1</sub> + C<sub>2.1</sub>: *táda ja húdher* {epidemic here TRANS:3PFV:go} ‘the epidemic went through here’

3. *-bĭ* <X Y k'é/yaghe hebj: living being X travels on/in liquid Y by pushing Y back with X's limbs>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup> <sub>limbed</sub>	1. N <i>yághe</i> 2. N <i>k'é</i>

C<sub>1.1</sub> + C<sub>2.1</sub>: *dadzené tanílé ú té hebí* {loon 3PFV:dive.in.water and underwater 3IPFV:swim} ‘the loon dived down and swam underwater’

C<sub>1.1</sub> + C<sub>2.2</sub>: *edini tuchogh k’é dzírebí* {he ocean on PERM:3IPFV:swim} ‘he swims in the ocean’, lit. “on the ocean”.

4. *dzíre...lí* <X Y yághe hulé: X travels around in liquid Y by pushing through Y using X's gills or propellar>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N <i>yághe</i>

**3.5. Physical Position Terms.** “It is there” or “he/she is there” is one of the most difficult meanings for foreign people to express in Dene, because there are so many choices according to the shape, texture, number and animacy of the subject which “is there”. These can be divided into three series: the classificatory verbs, a group of existential verbs used for very large entities, and human position verbs.

**3.5.1. Definitions.** The inventory of physical position verbs discussed in this section can be easily divided into three series of quasi-synonyms. The first describes the position of (mostly inanimate) Xs according to their shape and texture. The second series contains several other position verbs describing larger entities or portions of entities. Finally, a third series is dedicated to human posture verbs.

**3.5.1.1. Classificatory Verbs.** Where an English speaker can refer to any object using the abstract existential expression “it is over there”, the Dene speaker is forced to choose between these classificatory verb stems which differ according to their presuppositions about X’s shape, texture, contents (if X is a container) animacy and number. For example, to say that a ball, a round object, “is over there”, one must say



*dzol yuwé theʔq* {ball over.there 3IPFV:be} ‘a ball sits over there (as a compact object)’. To refer to a blanket in the same position however, one must say *ts’éré yuwé thelchuth* {blanket over.there 3IPFV:be} ‘a blanket is (spread out) over there’. These stems are referred to as “classificatory verb stems” by Athabaskanists because they classify objects based on their physical characteristics, while they can all be translated roughly as “X is there” or “there is an X”. While there are several sets of handling stems, with meanings like ‘throw’, ‘pick up’, and so forth, which differ in precisely the same way, these are not suppletive forms referring to fixed noun classes. Crucially, the same noun can be used with different classificatory stems if its shape is changeable: compare *ts’éré yuwé thelchuth* {blanket over.there 3IPFV:be} ‘a blanket is (spread out) over there’ with *ts’éré yuwé theʔq* {blanket over.there 3IPFV:be} ‘a (tightly rolled) blanket is over there (as a compact object)’. For some objects which cannot be easily classified according to the divisions between the presuppositions of the verbs, the choice of stem may be lexicalized and may differ between communities. For example, “a corpse is there” is rendered as *dene lú theʔq* {person frozen:ADJ 3IPFV:comp.be} ‘a corpse is there (as a compact object)’ in some Dene communities, but as *dene lú thetq* {person frozen:ADJ 3IPFV:stick.be} ‘a corpse is there (as a sticklike object)’ in others. Concepts like ‘a cup of tea’ or ‘a lake’ are not rendered in Dene as nouns, but as verbs denoting ways of sitting, i.e. as *lidí thekq* {tea 3IPFV:sm.cont.be} ‘a cup of tea is there’, more literally “tea is there as a small full container”, or *tu theʔq* {water 3IPFV:comp.be} ‘a lake is there’, literally “water sits there as a heavy object”. The best way to link the presupposition with the assertion in the English translation is with the preposition *as*, because the stems are vague enough to work with two types of Xs: containers which hold some unspecified content in the shape specified by the stem (*tth’ái thekq* {cup 3IPFV:be} ‘a (full) cup is there [with Y contextually understood]’ or another substance X which is held in the shape specified by the stem by an otherwise unspecified container, e.g. *lidí thekq* ‘tea is there (in a small full container)’. One of the stems

describes plural objects without specifying X's shape, texture or contents, and one is animate and also used as a human position verb. This section will discuss eight of the classificatory verbs, excluding the animate stem, which will be discussed in Section 3.9.3. The language forces the speaker to assign a shape and texture to an object — there is no verbalizable dominant or primitive meaning simply 'to be there' as in English.

More than for many of the verb stems discussed in this thesis, there is an extensive literature about classificatory verbs. Specifically for Dene Sų́líné, Carter (1976) produced a description of their meaning and use. This is the version used in Dillon, Saskatchewan, and may show some slight phonetic differences in the signifiers with respect to versions in other communities.

The series is  $-ʔq$ ,  $-tq_1$ ,  $-tq_2$ ,  $-ltq$ ,  $-kq$ ,  $-lchuth$ ,  $-dzai$ ,  $-tlé$ , and  $-la$ , and the definitions are the following:

1.  $-ʔq$   $\langle X Y k'é theʔq$ : X, which has a compact shape, is supported by surface Y>. Example Xs include 'ball', 'rock', 'spool of thread', 'oven', and 'lightbulb'
2.  $-tq_1$   $\langle X Y k'é thetq$ : X, which has a sticklike shape, is supported by surface Y>. Example Xs include 'stick', 'pencil', 'television' (in some communities)
3.  $-tq_2$   $\langle X Y k'é thetq$ : X, which is a rigid empty container, is supported by surface Y>. Example Xs include '(empty) pail', '(empty) bottle', '(empty) matchbox', but excluding bags.
4.  $-ltq$   $\langle X Y k'é theltq$ : X, which is a full large container, is supported by surface Y>. Example Xs include '(full) pail', '(full) bottle'.
5.  $-kq$   $\langle X Y k'é thekq$ : X, which is a full small container, is supported by surface Y>. Example Xs include '(full) cup' and '(full) plate'.
6.  $-lchuth$   $\langle X Y k'é thelchuth$ : X, which has a fabriclike shape, is supported by surface Y>. Example Xs include 'blanket', 'shingle', and 'tarp'.

7. *-dzai* <*X Y k'é thedzai*: substance X, which has a loose granular shape, is supported by surface Y>. Example Xs include 'gravel', 'sand', '(loose) tobacco', '(loose) tea', and '(loose) sugar'.

8. *-tlé* <*X Y k'é thetlé*: X, which has a mushy texture, is supported by surface Y>. Example Xs include 'mud' and 'mashed potatoes'.

9. *-la* <*X Y k'é thela*: X, which is plural, is supported by surface Y>. Example Xs include any plural X, regardless of shape or texture.

The classificatory verbs differ by the following parameters:

1. X's shape: *-ʔq* seems to be used for Xs which are 'compact', meaning roughly round or square, i.e. whose length is not more than twice their width, as in *tsqk'áni* <*t'áldedhi, k'qk'áni*> *yuwé theʔq* {oven <spool.of.thread, light.bulb> over.there 3IPFV:be} 'an oven <a spool of thread, a light bulb> is (sitting) over there'. Round objects always *-ʔq*, but roughly square containers are usually excluded even if a block of wood the same length and width would be considered 'compact': *tili* 'box' <*tutili* 'bottle') *thetq* <ʔ*theʔq*> 'the box <bottle> is there'. As with all the stems in this series, X must be resting on surface Y; the same objects hanging from a string would have to be described as *nábel* 'it is hanging down' or *dáthela* 'they are up there'. X can sometimes be a permanent feature of Y, described as if it were an object lying on Y, as with certain highly localized topographical features such as *nu* <*tu*> *theʔq* {island <water> 3IPFV:be} 'an island <a lake> is there'. However, some speakers avoid using *theʔq* for topographical features, preferring the alternative *hóret'i* 'it is visible' or 'it is seen'. The stem *-ta<sub>1</sub>* is used for 'sticklike' objects, a class which includes most long, thin objects including non-containers whose length is more than twice their width. Examples include *néni* <*remote, t'isshené*> *yuwé thetq* {fallen.tree <remote.control, pencil> over.there 3IPFV:be} 'a fallen tree <the remote control, the pencil> is over there'. They must be lying with their long side against the surface Y rather than planted or

standing upright on the surface, in which case *náǐǵa* ‘it (sticklike) stands’ would be used. Another sense, *-ta<sub>2</sub>*, is used for empty containers regardless of shape. Even a roughly square box or a long, thin container standing upright with its smaller side in contact with surface Y: *tili* ‘box’ ⟨*tutili* ‘bottle’⟩ *thetq* ‘the box ⟨bottle⟩ is there’, the latter said of an upright bottle. Any full container which is not tall and thin and which is smaller than a pail is described with *-kq*, e.g. *tth’ái* ‘cup’ ⟨*tth’áikálé* ‘plate’⟩ *thekq* ‘the cup ⟨the plate⟩ is there (with something in it)’. The stem *-lchuth* is used with flexible Xs with a large surface which covers a portion of the surface Y: *beyé dódí yuwé thetq* ⟨*\*theltaq*⟩ {bottle ⟨cup⟩ 3:in there.is.none over.there 3IPFV:be} ‘an empty bottle ⟨cup⟩ is over there’. By contrast, *-dzai* denotes a roughly granular substance, even rather coarse: *suga* ⟨*lidí*, *ts’elt’úii*, *tthe ddhéré*⟩ *yuwé thedzai* {sugar ⟨tea, tobacco, rocks fine:ADJ⟩ over.there 3IPFV:be} ‘(loose) sugar ⟨tea, tobacco, gravel⟩ is over there’. The stem *-la* is used for plural objects of any shape.

2. Texture: The stem *-tlé* is used with a mushy, lifeless substance as X, regardless of shape. X can be animate or inanimate but containing some liquid, such as mud (*hotl’és thetlé* ‘mud is (sitting) there’) or something of a similar texture, but excluding dry shapeless things: *\*ts’éré thetlé* {blanket 3IPFV:be}. This stem can also be used with humor to describe a drunk, exhausted or lethargic person, roughly like *plopped down* in English: *edini nǐ k’é thetlé* {he ground on 3IPFV:be} ‘he’s lying (collapsed) on the floor’. The other stems are focused more on shape than on the texture of X per se.

3. Size: Full containers can take different stems based solely on size. If X is a full container the size of a cup, *-kq* must be used e.g. *tth’ái* ‘cup’ ⟨*tth’áikálé* ‘plate’⟩ *thekq* ‘the cup ⟨the plate⟩ is there (with something in it)’. a container of the same shape but as large as a bucket or larger would be described using *-ltq*. The other stems are flexible as to size, and vary depending on shape and texture.

4. Presence or absence of container: *-dzai* must denote substances without a container *suga* ⟨*lidi*, *ts'elt'úi*⟩ *yuwé thedzai* {sugar ⟨tea, tobacco⟩ over.there 3IPFV:be} '(loose) sugar ⟨tea, tobacco⟩ is over there'. These sentences could denote small piles of loose tea, coffee and tobacco, but the same small pile in the same configuration on a paper plate would be described as *suga* ⟨*lidi*, *ts'elt'úi*⟩ *yuwé thekq* {sugar ⟨tea, tobacco⟩ over.there 3IPFV:be} '(loose) sugar ⟨tea, tobacco⟩ is over there (on a plate)'.

5. Container X has contents or not: *-ta<sub>2</sub>* is used for empty containers regardless of shape: *tíli* 'box' ⟨*tutíli* 'bottle', *tth'ái* 'cup', *tth'áikálé* 'plate'⟩ *thetq* 'the (empty) box ⟨bottle, cup, plate⟩ is there'. If the container is full, however, there is a division between pail-sized and larger containers and tall, thin containers such as bottles on one hand, and short or small full containers on the other. Any full container smaller than a pail is described with *-kq*: *tth'ái* 'cup' ⟨*tth'áikálé* 'plate'⟩ *thekq* 'the cup ⟨the plate⟩ is there (with something in it)'. A tall full like a bottle on one hand, or square or round but pail-sized or larger container with contents is denoted by *-ltq*. This gives minimal pairs like *tutíli beyé tu detq yuwé theltq* ⟨*\*thetq*⟩ {bottle 3:in water 3IPFV:be over.there 3IPFV:be} 'a bottle with water in it is over there' and *tutíli beyé dódí yuwé thetq* ⟨*\*theltq*⟩ {bottle 3:in there.is.none over.there 3IPFV:be} 'an empty bottle is over there'.

6. Number: *-la* is used for plural Xs of any shape or texture, and all of the other quasi-synonyms denote singular Xs and cannot be pluralized with the distributive marker *dá-*; *tth'ái* ('cup') *dáthekq* would be interpreted as a directional 'the full cup is sitting up there' rather than as a plural \*'there are several full cups there'.

**3.5.1.2. Other Existential Position Verbs.** These verbs are the **Func<sub>0</sub>** verbs for large topographical features. All of these verbs translate to 'X is there', but unlike the classificatory verbs they only refer to objects which cannot change their shape and texture. For this reason, most of Xs must always take a given existential position verb. There is no true expressible dominant with the meaning 'to be there', but one can use

the generic *hore...dʒi* ‘to be visible’ to avoid using one of these verbs. The forms of the stems should be considered highly speculative, they are only observed in their third person propositional form. Because they are only speculative, I will use the verified propositional form rather than the stem in the discussion below.

1. *ho...ʒa* <*X Y (k'é) hoʒa*: X, which is a compact object larger than a person but small enough to be seen at once, is on surface Y or in area Y>

2. *nini...ʒa* <*X Y niʒa*: X, which is a geographical feature too long to be seen at once, goes through area Y>

3. *náni...ʒa* <*X Y (k'é) náʒa*: X, which is an upright sticklike object of any size, stands on surface Y or in area Y>

4. *hu...li* <*X Y huʒi*: X, which is a portion of an entity or substance X, is in area Y>

5. *ná...dher<sub>3</sub>* <*X Y nádher*: X, who is a living being, is in area Y>

All are intransitive verbs. They differ by the following parameters:

1. Shape: *hoʒa* is used for something relatively compact and localized. There seem to be few other shape restrictions though: *eyer sekué hoʒa* {there 1PO:house AR:3IPFV:sit}; *yunathé tu theʒqi eyer sheth goze bets'én horilger hoʒa, hehedi* ‘at the lake which lies ahead there is a steep place between hills, they said’ (Li & Scollon 1976); *hogaié hoʒa k'é* {clearing 3IPFV:be MIR} ‘wow, there’s a clearing’; *hoyé chogh hoʒa* {hole big 3IPFV:be} ‘there’s a big hole’. Interestingly, its use seems to be extended (perhaps as a new sense) to items which do not have a physical existence: *hubeyatié hoʒa nuhets'i website k'é* {3PL.PO:report 3IPFV:be 1PL:to website on} ‘their report is on our Web site’. *Náʒa* refers to a sticklike object: e.g. *dechen náʒa* ‘a tree is there [standing]’. X is conceived of as a long, thin feature which stretches off into the distance away from the Speaker or the protagonist of the text, and is therefore too long to be viewed entirely by a stationary person: *tulú* {*hotéth; des*}

*níʒa* ‘a road ⟨portage; river⟩ is there’<sup>18</sup>, cf. *\*des* ⟨*\*tulu*⟩ *hoʒa* \*‘a river ⟨\*road⟩ is there’. One speaker said that these last sentences cannot be used “because it’s long”.

2. Position with respect to the surface: *náíʒa* describes something planted in the ground or standing with its small surface on the ground, e.g. *gani náíʒa* ‘a pine tree is there [standing]’, cf. *gani theʒa* ‘a [fallen] pine tree is there’. *Níʒa* is describes topographical feature that is part of, or in constant contact with, the ground.

3. Quantity: *huʒí* refers to the existence of a quantity of a substance that is also in other places, e.g. *k’i* ⟨*náídi*; *t’ogh*⟩ *huʒí* {birch ⟨medicine; grass⟩ 3IPFV:be} ‘there are birch trees ⟨medicine; grass⟩ there’; *tu nedhel huʒí* {water 3IPFV:be.hot 3IPFV:be} ‘there’s hot water (available at the faucet)’. The plural of *ná...dher*<sub>3</sub>, *ná...dé*<sub>3</sub>, can be interpreted as having a definite or indefinite subject: ‘the people were there’ or ‘some people were there’. The others describe only the entire X or set of Xs being present.

4. Existence of natural endpoint: *níʒa* is used with Xs which are long thin geographical features. *Níʒa* suggests a dynamic or gestalt view in which X has a natural endpoint, such as a road, a river or a portage.

5. Permanence: *hoʒa* suggests impermanence, not a permanent feature of area, although there is variation between speakers and communities on this point. For some speakers, there is a contrast between *hoʒa* and *theʒa*, with the latter presupposes permanence: *tu nu theʒa* ⟨*?hoʒa*⟩ {lake island 3IPFV:be} ‘there is an island on the lake, cf. *tu k’é hoʒa* ⟨*?theʒa*⟩ *sí* {water place 3IPFV:be} ‘there is a water hole (cut in the ice)’. For these speakers, using *hoʒa* with geographical features is odd because “it sounds like you can move it”, as one consultant explained. Other speakers

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<sup>18</sup> For some speakers, *níʒa* is blocked with *des* ‘river’ by the existence of a more specific verb, *téli* ‘it flows’.

would accept *hoʔq* with permanent geographical features. Interestingly, *hoʔq*, not *theʔq*, is used to describe the location of cities: *Saskatoon / New York háyorila nechá hoʔq* ⟨\**theʔq*⟩

6. Animacy: *ná...dher*<sub>3</sub> is the only word used to describe the presence of animate Xs: *dlúne nádé ú?* {mice 3IPFV:pl.be Q} ‘are there mice (in your apartment)?’ *Jesse nádher ú?* {J. 3IPFV:sg.be Q} ‘Is Jesse there (at your house)?’; *ɛ, nádher* ‘yes, she’s here’. The others cannot be used with animate subjects, e.g. \**dene hułi* \*‘there are some people there’. In the words of one speaker, this would be wrong “because they move”.’

**3.5.1.3. Human Posture Verbs.** There are the standard position verbs meaning ‘sit’, ‘stand’ and ‘lie’. In Dene, these differ based on the number of the subject, with unrelated stems for singular, dual and plural subjects:

	<b>X=1</b>	<b>X=2</b>	<b>X=3 or more</b>
(37) ‘to lie’	– <i>tɪ</i> <sub>1</sub>	– <i>tes</i> <sub>1</sub>	– <i>tes</i> <sub>1</sub>
‘to stand’	– <i>yɪ</i>	– <i>yɪ</i>	<i>nareH...ɫya</i>
‘to sit’	– <i>da</i>	– <i>ké</i>	<i>de...ɫtthi</i>

Human posture verbs form a class with distinctive grammatical features as well: like the classificatory verbs, they take the *the*– imperfective allomorph. This section will consider only the singular-subject stems, which do not differ from the dual- and plural-subject stems in any component other than the number of Xs. These verbs are best described as individual entries rather than as a series of quasi-synonyms.

1. –*tɪ*<sub>1</sub> <*X Y k'é thetɪ*>. Often living beings need to be in this position || X is in a position with X’s body flat on surface Y>.

This verb describes the position of ‘lying’ with X’s body flat and supported by a surface. The condition ‘often living beings need to be in this position’ is necessary to



distinguish  $-t_i$  from  $-lt_i$ , which is used for an animate being lying injured or collapsed: *dene yuwé thelti* ⟨\*theti⟩ ‘a person is lying (injured) over there’, cf. *dene yuwé theti* ⟨\*thelti⟩ ‘a person is lying (resting, sleeping) over there’. It is not restricted to a human body: *li yuwé theti* {dog over.there 3IPFV:lie} ‘the dog is lying over there’.

2.  $-y_i$  <X Y k'é theyi: X is in a position with X's body upright supported by X's feet on surface Y>.

This describes ‘standing’ — a living being X is supporting X's own body on X's legs. The only difference apparent between the meaning of  $-y_i$  and ‘to lie’ in English is that  $-y_i$  is a bit odd with four-legged animals and insects: *li yuwé theda* ⟨\*theyi⟩ {dog over.there 3IPFV:sg.sit} ‘the dog is standing over there’, lit. ‘sitting’; *ts'úze yozí k'é theda* ⟨\*theyi⟩ {fly wall on 3IPFV:sg.sit} ‘the fly is standing on the wall’, lit. ‘sitting’.

3.  $-da$  <X Y k'é theda: X is in a position with X's body upright but folded and close to the ground on surface Y>.

It is unclear whether there is one or two senses here: this verb can be used to describe a range of positions. A person's body can be folded so that that the top half of X's body is upright and X's weight resting on X's buttocks, which are supported by surface Y: *dachene k'e thida* {chair on 1IPFV:sg.sit} ‘I'm sitting on the chair’. Or it can describe a position where X's body is folded into a shape rather similar to ‘sitting’, but where X's weight is still supported by X's feet. So the meanings of  $-da$  and ‘to crouch’ are not mutually exclusive: *heyis ú theda* {3IPFV:crouch when 3IPFV:sg.sit} ‘he is crouching’, lit. ‘he is sitting crouching’. As described in the previous entry, this is also the standard verb to describe animals in a stationary position, e.g. *ts'úze yozí k'é theda* ⟨\*theyi⟩ {fly wall on 3IPFV:sg.sit} ‘the fly is standing on the wall’, lit. ‘sitting’. If there is one sense that subsumes crouching, sitting, and standing (for a living being

with short legs), then it must depend on whether the distance between X and the ground is greater than the height of X's trunk, so that X's body gives a general impression of being near the ground versus tall and upright. In fact, *-da* is not used to describe stationary animals that are very tall or lanky: *liçhogh yuwé theyi* ⟨\*theda⟩ {horse over.there 3IPFV:sg.stand} 'the horse is standing over there'.

**3.5.2. Position Terms: Syntax.** As these verbs describe the position of entity X on surface Y, most of them have the same Government Pattern:

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N <i>k'é</i>

Some of the existential position verbs to describe the location and position of topographical features, however, have different GPs:

*nini...za* <X Y *níza*: X, which is a geographical feature too long to be seen at once, goes through area Y>:

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N

*náni...za* <X Y (*k'é*) *náiza*: X, which is an upright sticklike object of any size, stands on surface Y or in area Y>:

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N 2. N <i>k'é</i>

*hu...lĭ* <*X Y huĭ*: X, which is a portion of entities or substance X, is in area Y>:

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N

*ná...dher<sub>3</sub>* <*X Y nádher*: X, who is a living being, is in area Y>

X ⇔ I	Y ⇔ II
1. N <sup>1</sup>	1. N

**3.6. Atmospheric Terms.** “Atmospheric” will serve as a label for a variety of verbs that denote not only atmospheric weather phenomena but also lake phenomena such as ‘waves’ as well as the movement of the sun. The inflectional paradigm of these lexical units is restricted in several ways. Most of the verbs have no perfective or optative form, so a past situation would have to be indicated with the past tense marker *ni*, or by the discourse context. For pragmatic reasons they exist only in the third person singular, even though they seem to have the normal structure of Dene verbs. Two of these verbs, however, *cha* and *tsil*, part of a very small unique class of verbs which are monomorphemic and unconjugated, and take none of the regular Dene verb morphology outlined in Section III-1.2.2. These verbs also have distinct semantic and lexical combinatorial properties. Usually the Dene Słiné language seems to avoid explicitly marking the beginnings and ends of states (see Chapter IV) as well as adverbs of degree. Atmospheric verbs, however, are particularly acceptable with both kinds of phasal lexical relations. This section does not aim to present an exhaustive list of Dene atmospheric and solar verbs, but only the most frequent.

**3.6.1. Definitions.** The verbs in this section are best described as a series of stand-alone entries rather than as synonym series. They are simply divided according to semantic field. The first concerns precipitation and wind terms, the second the movement of the sun, and the third lake weather.

**3.6.1.1. Precipitation and Wind.** Verbs for precipitation and wind do not seem to constitute a synonym series, as they are not directly comparable. It is therefore more advantageous to present these LUs as stand-alone, ECD-type entries.

1. *-lts'i* < $\emptyset_{SG}$  *nilts'i*: air moves in a current>.

This is the most generic word for ‘wind’, or more accurately ‘the wind blows’, in Dene. By itself it does not take other actants. To say ‘the wind blew against me’ one would have to add a second verb, meaning ‘to strike’, e.g. **Involv**(*-lts'i*) = *náne...lth'i* ‘[formless entity] strikes’, e.g. *nilts'i senánélth'er* {3IPFV:wind.blow 1OB:3PFV:drift.strike} ‘the wind hit me’. This sentence, however, implies the wind hitting as a unitary gust rather than as a constant flow of air. The wind denoted by this verb<sup>19</sup> is expected to be of a certain intensity or speed, as shown by its acceptability with a variety of **Magn** intensifiers: **Magn**(*-lts'i*) = *~ chogh* ‘big’; *~ naltla* ‘it is fast’; i.e. *~ nítl'édh* ‘it hits hard’; *~ náts'er* ‘it is strong’; **AntiMagn**(*-lts'i*) = // *nilts'iaze* ‘a slight wind’.

2. *chq* < $\emptyset_{SG}$  *chq*: drops of water fall from the sky>.

This is the most generic verb for ‘rain’ or ‘it rains’. It is expected to be of a certain intensity; drizzling or misting is not described as *chq*: *chq hederédline íle, hotetsíl* {rain 3IPFV:be.normal NEG, 3IPFV:drizzle} ‘it’s not really raining, it’s just drizzling’. If it is above a certain duration, intensity, quantity or size (of raindrops) it is modified with a rich array of **Magn** adverbs which magnify one or all of its components: **Magn**<sub>size</sub>(*chq*) = *~ ná...t'i* ‘plural fall’, i.e. ‘rain falls in big drops’; **Magn**<sub>quantity</sub>(*chq*) =

<sup>19</sup> It is debatable whether *nilts'i* in sentences like *nilts'i senánélth'er* {3IPFV:wind.blow 1OB:3PFV:formless.hit} ‘the wind hit me as a big gust’ is a verb rather than a **S**<sub>0</sub> syntactic derivative and subject of the **Func**<sub>0</sub> verb. Both constructions would be possible.

~ *lq* ‘it is abundant’; **Magn**<sub>intensity</sub>(*chq*) = ~ *ts'éthhile* ‘strongly’; **Magn**<sub>temp</sub>(*chq*) = *thá hots'én* ~ ‘for a long time’. It usually has the syntactic position of a verb, taking tense markers (*chq ha k'ábi* {it.rains FUT tomorrow} ‘it will rain tomorrow’) although in the case of *chq nátl'i* {rain down:3IPFV:pl.fall} ‘rain falls in big drops’ it could also be interpreted as a deverbal noun which is the subject of the second verb.

3. *tsíl* <∅<sub>SG</sub> *tsíl*: flakes of frozen water fall from the sky>.

This is the standard word for ‘[falling] snow’ or ‘snowing’; it cannot be used for snow on the ground: **S**<sub>res</sub>(*tsíl*) = // *yath* ‘snow [on ground]’. If *tsíl* is above a certain expected intensity or size (of snowflakes), a variety of **Magn** adverbs are added: **Magn**<sub>size</sub>(*tsíl*) = ~ *kárase ná...tl'i* ‘~ flakes plural fall’; **Magn**<sub>quantity</sub>(*tsíl*) = ~ *lq* ‘it is abundant’. There are also a variety of **Func**<sub>0</sub> verbs which describe its falling, and in some cases its way of falling: **Func**<sub>0</sub>(*tsíl*) = ~ *í...tth'e* ‘granular falls’; **Func**<sub>0</sub>**Magn**<sub>size</sub>(*tsíl*) = ~ *í...kár* ‘it falls in big flakes’.

4. *hote...ts'íl* <∅<sub>SG</sub> *hotéts'íl*: tiny water drops fall from clouds in sky>

This could be colloquially translated as ‘it is drizzling/misting’. It describes a situation of precipitation where the droplets are too small to be seen distinctly and which are not felt to hit the skin separately. As mentioned previously, *hote...ts'íl* is not a kind of *chq* ‘it rains’: *chq hederédlije íle, hotetsíl* {rain 3IPFV:be.normal NEG, 3IPFV:drizzle} ‘it’s not really raining, it’s just drizzling’.

5. *ere...lyel* <∅<sub>SG</sub> *erelyel* : a loud noise happens in the sky that usually happens after lightning during rainstorms>.

This describes thunder clapping but not lightning or a whole storm.

6. *dzagothe...tl'i* <∅<sub>SG</sub> *dzagothelt'i* : a flash of light happens in the sky that usually happens before thunder during rainstorms>. This verb translates to “lightning strikes”. It might be at least etymologically a phraseme *dzagoth helt'i*

because some speakers seem to place a pause between the syllables *-goth-* and *-he-*, although *dzagoth* is not a extant word.

**3.6.1.2. Solar Verbs.** These verbs describe the movement and brightness of the sun. They also do not form a synonym series, and are best described as stand-alone, ECD-type entries.

1. *ho...ba* < $\emptyset_{SG}$  *hoba*: there is very little light in the sky>.

This is similar to “it is twilight” in English, except that can refer to the very beginning or the very end of the day, as long as there is only a trace of light in the sky. Etymologically it comes from the combination of the areal prefix *ho-*, which indicates agreement with a situation or place, and *-ba* ‘to be grey’. At the very beginning of dawn, before *yá...tkq* would be appropriate, one can use *ho...ba: hoba hedhel* {3IPFV:faint.light PROG:3IPFV:formless.come:PROG} ‘the faint beginning of the morning light is arriving now’; *hoba hegai* {3IPFV:faint.light INCEP:3IPFV:be.white} ‘[the sky] is starting to lighten with the earliest rays of dawn’. One speaker said that this means “the horizon is just getting to be visible”. One can use it to describe the last fading light of dusk: *qhú hoba hóret’i* {still 3IPFV:faint.light 3IPFV:be.visible} ‘the twilight can still be seen’.

2. *yá...tkq* < $\emptyset_{SG}$  *yátkq*: most daylight appears at the beginning of the day>.

This refers to the period where dawn has begun more fully and most of the light of day has appeared in the sky, i.e. after *hoba*. It suggests, however, that the sun has not fully emerged from the horizon, as evidenced by sentences like *yátkq kú sa hhaj?q* {3IPFV:dawn then sun 3PFV:come.out } ‘it was dawn and then the sun came (fully) out’.

3. *ts’éne...?a* < $\emptyset_{SG}/XY$  *yá hots’i ts’éniz’a*: the sun comes out from behind Y>.

This is used for when the sun comes out from behind something that obscures it, such as clouds: *yak'ódh yá hots'í sa ts'éniʔa* {clouds in AR:from sun 3PFV:come.out} ‘the sun came out from behind the clouds’. Another verb, *hhá...ʔa*, is used for when the sun comes out in the morning: *k'abí ighá sa hháʔa* ⟨*\*ts'éniʔa*⟩ *dé* {morning early sun 3PFV:come.out when} ‘early in the morning (just) after the sun came up’.

4. *ts'é...ʔal* <∅<sub>SG</sub>/X⟩ *ts'éʔal*: the sun is clearly visible>.

Colloquially this verb could be translated as “the sun is shining”. As a constant participant, it is possible to add *sa* ‘the sun’, but it is marked; more commonly it is not mentioned unless one wants to place a specific emphasis on it.

5. *náhe...ʔa* <∅<sub>SG</sub> / X *náheʔa*: the sun goes down>.

This refers to the period when the sun is going down until there is complete darkness, after which *tedhe* ‘night’ begins. This verb is also the standard word for ‘evening’ as it refers to the time period of the whole sunset, as in *náheʔa ú segha niya* {3IPFV:sun.sets when 1:by MOM:3PFV:sg.walk} ‘he came to my place in the evening’. It does, however, refer literally to the sun going down in the sky: *náheʔa sí* {3IPFV:sun.sets EMPH} ‘the sun is going down’; *náheʔa horélya* {3IPFV:sun.sets 3IPFV:be.pleasant} ‘the sunset is pretty’. A quasi-synonym is the phraseme *sa noyiʔa* {sun earth:into 3IPFV:move.round} lit. “the sun went into the earth”.

6. *yétsí* <∅<sub>SG</sub> *yétsí*: there is bright red light at the end of the sunset>.

This lexeme has an unusual structure in that it is difficult to determine its lexical class. Etymologically it resembles the combination of *ya* ‘sky’ and the possessed noun *-tsí* ‘bits of’; *-tsí* would also be a phonologically unusual (for its high tone nasal vowel in an open syllable) and otherwise unattested verb root. *Yétsí* could be interpreted a noun in many syntactic contexts: *náheʔa horélya, yétsí hel*

{3IPFV:sun.sets 3IPFV:be.pleasant red.sunset with} ‘the sunset is beautiful, with a red ending’; *náheʔq kúlú yétsí dódi* {3IPFV:sun.sets but red.sunset there.is.none} ‘the sun is setting, but there is no red ending’. In other cases, though, it appears to be a stand-alone verb: *náhaʔq tʔá dé, yétsí* {3PFV:sun.set at.end when 3IPFV:red.sunset} ‘at the end of the sunset, there is the last red shimmer’. In this case, if it were a noun one would expect a **Func**<sub>0</sub> verb such as *horetʔi* ‘it is visible’.

**3.6.1.3. Lake Weather Terms.** These verbs describe the movement of the lake itself as a consequence of wind and precipitation. These also do not constitute a synonym series, and are best presented as ECD-type entries.

1. *tare...tí* <∅<sub>SG</sub> *taretí*: there are lines of raised water moving across the surface of the body of water against the foot of land Y / into container Y>. This verb is usually used with no other object, simply to state weather conditions, i.e. *taretí* {3IPFV:wave} ‘there are waves (on the lake)’. It is rarely used with a direct object but it can be: *nutʔa taretí* {earth:at.foot.of 3IPFV:wave} ‘waves are striking against the land’; *nuhetsʔé yé tarítí chʔá, tsʔi húltʔi* {1PL.PO:boats:CONS into 3IPFV:wave against, boats 1PL.OPT:pull} ‘let’s pull up out boats so that the waves don’t go into them’.

2. *tadene...chá* <∅<sub>SG</sub> *tarichá* : tall lines of raised water move across the surface of that body of water>. This means “the waves are big” in colloquial English. *Tadene...chá* does not seem to denote a situation in which other participants are involved but is simply an assessof weather conditions.

3. *tare...dyath* <∅<sub>SG</sub> *tarejath*: there are white crests on the tall lines of raised water move across the surface of the body of water>. An English rendering could be “there are whitecaps”. This verb, too is used to simply describe lake conditions with no other obligatory participants.

4. *í...lben* <∅<sub>SG</sub> *hilben*: the level of water of the body of water rises to an unusual level>. The subject can be any body of water, whether a river or a lake. It refers to any



situation in which the water suddenly rises to an unusually high level, e.g. as the result of a flood, or high tide.

5. *de...ghel<sub>2</sub>* <∅<sub>SG</sub>/X *deghel*: there are no lines of raised water moving across the surface of the body of water>. This is a very reduced **AntiMagn** or **Anti** of *tare...t̥i* ‘there are waves’ and indicates that the lake is at rest without large or visible waves. The first sense of the vocable *de...ghel<sub>1</sub>*, means ‘[area] is calm’ in a more general sense without referring to the water.

**3.6.2. Atmospheric Terms: Syntax.** Mostly GPs for the atmospheric and solar LUs in the same are similar. They all take an empty dummy subject:

X ⇔ I
1. ∅ <sub>SG</sub> !

C<sub>1.1</sub>: *yálkq ts'én tth'ú* { ∅<sub>SG</sub> 3IPFV:dawn before} ‘before it is dawn’

Exceptions are *náhe...ʔq* ‘[the sun] goes down’, *ts'éne...ʔa* ‘[the sun] comes out’ and *de...ghel<sub>2</sub>* ‘[the lake] is calm’, which can optionally take a referential noun subject (*sa* ‘sun’ and *tu* ‘lake’ respectively):

X ⇔ I
1. N <sup>!</sup>
2. ∅ <sub>SG</sub> !

C<sub>1.1</sub>: *tu deghel dé* {lake 3IPFV:be.calm when} ‘when the lake is calm’

C<sub>1.2</sub>: : (*tu k'é*) *deghel dé* {(lake on) 3IPFV:be.calm when} ‘when it is calm (on the lake)’

**3.7. Topographical Terms.** To outsiders, one of the most striking features of Northern Athabaskan cultures in the Aboriginal era was the extent to which people

travelled. Without maps or compasses, Dene people traversed great distances of perhaps hundreds of kilometers on foot or by dogsled to harness the various seasonal resources, from fish and berries to large ungulates, as part of their traditional land use cycle. More strikingly, Dene would return to precisely the same locations each year and were able to locate other Dene communities spread out over a territory the size of France. Athabaskan people knew their land in such intimate detail that they could cover long distances without getting lost, which could be fatal in the northern Canadian wilderness. To organize and transmit such knowledge, the Dene language uses a very extensive array of place names as well as subtle range of topographical terms. As one elder described it:

[Sṽnághe] segha nagma kí la ʔa, dechen yá nághidher dé, beł hosni ha. Edlíni ʔasí łegháı̄tther ú, edlásı̄ nathiya, edlólýe nı̄ eyi tu, eyi des séłni. Beba hothizı̄ dé, t'a nı̄h, k'uta k'ólya hoyı̄. Nuhni t'a dechen yághe t'ahuk'é náráılzé ú, t'ahuk'é dzírı̄del kí, horelyú bezi dáıt'ı̄ ʔá nih. Horelyú bezi hı̄lı̄ nuhba, eyi gháre k'órelya. Dechen tth'ı̄ t'at'u deʔa, beł koresı̄ dé, beba ʔası̄ núnı̄ni dé, yułʔá ha. Dechen t'a hı̄t'e nı̄ eyer ʔası̄ neba nila helesı̄ dé eyi gháre yułʔá hoha. Kuł'u dághı̄da nuhni dene.

‘[My older brother] will come to visit me, after I have been in the bush, so that I may tell him about it. “What spot did you hunt something? What direction did you go? What is the name of that river?” he asks me. If I name the place to him, he knows it. We have made a name for every place in the bush where we hunted and where we travelled. Each [place] has a name for us, by that he knows it. Also the way the trees stand, the kind of bush it is, if I bring something back from it for him he will recognize it. That is how we Dene lived.’

Topographical terms, while a particularly important area of vocabulary historically, seem to be among the most endangered parts of the lexicon, as a sedentary way of life has now been adopted for some time. Many of these terms are compounds, e.g. *gani hochéla* {jackpine promontory} ‘promontory with jackpines’ or *k'es néné* {poplar land:CONS} ‘bush made up primarily of poplars’. From a crosslinguistic perspective, however, it is interesting that many of the Dene terms for topographical features are verbs rather than nouns.

Like other areas of vocabulary, topographical features are based on a human perspective. Linguistically significant differences include their size with respect to a human: taller/shorter than a person, etc., too tall for a person to climb, etc. Among

those features that are larger than person, there are those that can be viewed in their entirety by a person in one moment. Among larger features, there are those that can be explored by a person in several hours or a day versus much larger landforms. This selection will only consider those features that are larger than a person but small enough to be fully viewed by a stationary human being. This class includes a selection terms for slopes and cliffs; terms for arrangements of trees and terms for waterways or subsections thereof.

Because most of these lexical items are intransitive verbs, when people interact with them, their actions must be described as a some clause in some cases, particularly if they have a second actant, e.g. *tabaqhe ts'én ts'énit'i, kozí dene natheya* {shore to 3IPFV:ridge.trees.be, there person REV:3PFV:sg.go} ‘there is a ridge of trees going down to the shore, someone went down there (and came back)’. In other cases, it is more acceptable to integrate the whole verb phrase into a sentence, perhaps as a desentential noun: *dene erét'i yá húya* {person 3IPFV:be.ridge.trees in TRANS:3PFV:sg.go} ‘the person walked through the ridge of trees’; *dene hhátałi ts'i tu híka* {person spring from water 3PFV:take.small.container}. It is not really obvious which part of speech these LUs belong to in these cases, nouns or verb phrases, as both could be possible in this context.

**3.7.1. Definitions.** As with the semantic field of atmospheric and solar terms, many lexical units describing topographical formations are best described as stand-alone entries. However, the first set of LUs in this section, denoting patterns of sloping ground, is best illustrated as a series of quasi-synonyms.

**3.7.1.1. Slopes.** All of these verbs translate to “there is a slope there”. They can be applied to any slope which is too high for a person to reach the top with his hands while standing at the bottom of it; in principle there is no upper limit to their size. Because these verbs, for pragmatic reasons, exist only in the third person and cannot be conjugated, the stems are speculative. Unlike the previous atmospheric terms, these lexemes are sufficiently similar to be described in a synonym series.

The series is: *hodeH...lger*, *hokáde...dhá*, *hodáhohe...ʔá*, *hokáhohe...ʔá*, *thaidáhohe...ʔá*, *hodáhohe...gai*. The definitions are the following:

1. *hodeH...lger* < $\emptyset_{SG}/X$  *Y ts'én horílger*: viewed from above, there is / land X forms a steep slope>
2. *hokáde...dhá* < $\emptyset_{SG}/X$  *hokáredhá*: viewed from below, there is / land X forms a steep slope>
3. *hodáhohe...ʔá* < $\emptyset_{SG}/X$  *hodóheʔá*: viewed from above, there is / land X forms a gentle slope>
4. *hokáhohe...ʔá* < $\emptyset_{SG}/X$  *hokóheʔá*: viewed from below, there is / land X forms a gentle slope>
5. *thaidáhohe...ʔá* < $\emptyset_{SG}$  *thaidóheʔá*: viewed from above, there is a sandy / the sand forms a gentle slope>
6. *hodáhohe...gai* < $\emptyset_{SG}/X$  *hodóhegai*: viewed from above, there is / land X forms a gentle slope much lighter in color than the surrounding land>

All of the stems contain former prefixes like *hoká-* ‘up’ and *hodá-* ‘down’. But the lexemes in this series are morphological phrasemes rather than derived stems because the remainder, if one removes the prefixes, i.e. *\*deH...lger* and *\*hohe...ʔá*, are not extant verb stems. Most of them take a dummy subject or alternatively *nih* ‘land’ as the subject (*nih hodárilger ts'éthîle des daé* {land 3IPFV:slope.down gently river above} ‘the land slopes down gently above the river’); when there is a second obligatory participant with the dummy subject, there is no agreement with a distal third person, as one normally finds when both the subject and the direct object are in the third person: *bets'én horílger* {3:to 3IPFV:slope.down}, not *\*yets'én horílger* {3D:to 3IPFV:slope.down}.

Parameters by which they differ:

1. Viewpoint: *hodeH...lger*, *hodáhohe...ʔá*, *thaidáhohe...ʔá* and *hodáhohe...gai* are viewed from above looking down; *hokáde...dhá* and *hokáhohe...ʔá* are viewed from below looking up.

2. Inclination: *hodeH...lger* and *hokáde...dhá* are steep, perhaps between 45 and 90 degrees. It does not describe an actual “cliff” in the English sense, a completely vertical dropoff. This may be for pragmatic reasons: speakers, when confronted with a photo of such a cliff, will simply say “we don’t have land like that” rather than applying a Dene name to it. *Hodáhohe...ʔá* and *hokáhohe...ʔá* describe more gentle slopes, less than about 45 degrees. These can take different modifiers such as ‘gently’ or ‘steeply’: *ts’étthje* ⟨*hárehha*⟩ *hodóheʔá* {gently ⟨steeply⟩ 3IPFV:slope.down} ‘there is a gentle ⟨steep⟩ slope going downward’. In the ‘steep’ case speakers imagined that there could not be a trail going up and down it. *Thaidáhohe...ʔá* and *hodáhohe...gai* are also very gentle, perhaps even more so than *hodáhohe...ʔá* and *hokáhohe...ʔá*. The sets are not completely symmetrical: *hokáde...dhá* can be used as a general term (with modifiers) for slopes of a variety of inclinations, while *hodeH...lger* is confined to a narrower range of very steep slopes.

3. Whether the slope is climbable: speakers consider that *hodeH...lger* and *hokáde...dhá* denote slopes which are too steep to be climbable, or which are climbable only with great difficulty: *hodárilger*, *kozi nassa horésʔi ile* {3IPFV:slope.down there 1IPFV:REV:go 1IPFV:want NEG} ‘there is a steep slope, I wouldn’t want to try to climb it’; *hodárilger*, *dene hokágha wali ile* {3IPFV:slope.down person up:3IPFV:sg.walk POSS NEG} ‘a person couldn’t walk up it’. *Hodáhohe...ʔá*, *hokáhohe...ʔá*, *thaidáhohe...ʔá*, *hodáhohe...gai* should be climbable for a person, although their difficulty may vary.

4. The composition of soil: *hodeH...lger*, *hokáde...dhá*, *hodáhohe...ʔá*, *hokáhohe...ʔá* can be made of anything, from rock to earth covered with vegetation; *hodáhohe...gai* is usually but not necessarily interpreted as being made of sand, and *thaidáhohe...ʔá* must describe sand, e.g. a sand dune (*thai chogh*)

5. The color of the land: *hodáhohe...gai* is white or pale; the others are unspecified in their color.

6. Focus on the destination or endpoint: *hodeH...lger* is conceived of as a gestalt situation with a viewpoint that travels from the summit to whatever it at the foot of the slope, which must be mentioned as a second obligatory participant, as these examples from Li & Scollon (1976): *názé nauhdéli t'así sheth goze tu ts'én horílgeri ghuhʔi húsq* {hunt REV:2PL.IPFV:pl.go REL hill between lake to 3IPFV:slope.down–REL 2PL.PFV:see Q} ‘Did you who were hunting see a place that goes down to a lake between hills?’; *yunathé tu theʔqi eyer sheth goze bets'én horílger hoʔq, hehedi* {ahead lake 3IPFV:sit.heavy–REL there hill between 3:to 3IPFV:slope.down AR:3IPFV:sit.heavy 3DU.IPFV:say} ‘At the lake which lies ahead there is a steep place between hills, they said’.

**3.7.1.2. Other Land Features.** The remainder of the topographical features are not quasi-synonymous and so are best not described as a series but as individual ECD-type entries. The segmentations are quite tentative as, for pragmatic reasons, they only appear in the third-person singular. The definitions are the following:

1. *hote...ʔa<sub>1</sub> <∅<sub>SG</sub>/X hotéʔa*: there is / land X forms a long narrow strip of empty regular land>. A colloquial translation might be ‘it (land) extends, stretches out’. This can describe any narrow, relatively empty and flat (walkable) land feature such as a pass between mountains, a portage, or the flat top of a chain of hills. In the case of ‘portage’

it is the standard **Func<sub>0</sub>** verb which takes ‘portage’ as its subject: portage *hotéth hotéza* {portage 3IPFV:extend} ‘there is a portage there’, ‘a portage extends [from there]’; in the other cases the subject is usually zero marked. It suggests a gestalt scene starting from the perspective of the speaker or a feature that the land extends out from. This is often the case, but not always: the feature can be described “neutrally” in its entirety, e.g. *hok’édhé k’é hoteza* {AR:between on 3IPFV:extend} ‘there is a valley between [the hills]’.

2. *hharáhone...za* < $\emptyset_{SG}/X$  *hharóza*: there is an area / the land X in an area goes down in places>. This is difficult to translate into English. It means that, viewed from the perspective of someone walking along a relatively elevated expanse of land, there are different relatively small spots where the land slopes down suddenly to a lower area. It could also be interpreted as describing various depressions surrounding a comparatively elevated and flat area which is the vantage point of the speaker.

3. *hodá-H-ne...za* < $\emptyset_{SG}/X$  *hodáiza*: there is an area that / the land X goes down in a place>. This is somewhat similar to *hharáhone...za* but it describes a depression or lower area, small enough to be viewed in its entirety by a stationary person. Unlike *hharáhone...za*, it implies that the land goes up again on the other side.

**3.7.1.3. Tree Formations.** There are a variety of nouns to refer to trees and tree species, but it is interesting that many of the formations thereof are realized as verbs. The lexical units are *ereH...ti*; *ts’éne...ti* and *húlza*, and their definitions are:

1. *ereH...ti* < $\emptyset_{SG}/X$  *eréti*: there is an area of trees that / trees X extend as a long narrow area>. This refers to a ridge of trees set off from the forest and extending in a line through an area more or less devoid of trees, such as a narrow promontory extending into the water. It can have the species of tree as the subject — *zelaz eréti* {spruce:DIM 3IPFV:be.tree.ridge} ‘there is a ridge of little spruce trees’ — or an empty dummy subject: *eréti yuwé* {3IPFV:be.tree.ridge over.there} ‘there is a ridge of trees

over there’. It can also be seemingly converted to a noun, with a **Func<sub>0</sub>** verb: *erét’i yuwé hūli* {tree.ridge over.there 3ipfv:exist} ‘there is a ridge of trees over there’.

2. *ts’éne...t’i* < $\emptyset_{SG}/X Y$  (*ts’én*) *ts’énit’i*: there is an area of trees that / trees X extend as as a long narrow area to area Y>. This indicates a ridge of trees, but it describes a gestalt view of the tree ridge, starting from one point and travelling to the endpoint. As such, it has a second obligatory participant, the endpoint of the tree ridge. It has a morphoid of the incorporated postposition *ts’én* ‘to’. This verb is often used to describe ridges of trees that extend downward to a lakeshore, a common feature in the Dene language area: *velaz tu ts’énit’i* {spruce:DIM lake to:3IPFV:tree.ridge.extend} ‘there is a ridge of little spruce trees going down into the lake’.

3. *hūlʔa* < $\emptyset_{SG}$  *hūlʔa*: there is a permanently watery area of land>. This describes a place which is similar to mushkeg, but with less water. There is usually not enough water to be visible, but enough that trees cannot grow there. It is also much smaller than a mushkeg (*nítéli*) or even than a little mushkeg (*nítélaz*). It is a verb that takes a dummy subject: *hūlʔa yuwé* {3IPFV:watery.land over.there} ‘there is a watery spot of land over there’; *yuwé hūlʔa nathiya* {over.there 3IPFV:watery.land REV:1PFV:sg.walk} ‘I went to that watery place over there’

**3.7.1.4. Waterways.** Rivers, streams and other waterways are of vital importance to the Dene. Athabaskan languages are quite rich in these terms (see Kari 1996a and 1996b for a discussion of hydronyms in Alaskan Athabaskan languages from a linguistic and historical perspective). Traditionally waterways have served as sources of fish, which are also used as food for dogteams, the major form of transportation. Also, once rivers are frozen they can be used as “ice roads” which facilitate travel over long distances that would be arduous to cross over rough terrain. Finally rivers and their features serve as landmarks. Many riverine terms are nouns: *des* ‘river’, *detthie* ‘source of river’, *deschághe* ‘mouth of river’, ‘narrows’, *ttheba* ‘rapids’, *des taga*



‘riverbank’, etc. In addition to these, however, many words indicating the direction, source, division or union of waterways are intransitive verbs. Some of these are *elhhone...dl̩*, *elei...dl̩*, *hhátane...l̩* and *hhqaná...dl̩*. At least etymologically, these verbs are all derived from a common stem, *—l̩*, meaning ‘flow’. These are best described not a series, but as stand-alone ECD-type entries. The segmentations are hypothetical as the verbs always appear in the third person singular. The definitions are the following:

1. *elhhone...dl̩* < $\emptyset_{SG}/X$  *elhhonedl̩*: the river (X) turns sharply>. This describes a sharp bend in the river, towards one direction: (*des*) *naál̩ni ts’én elhhonedl̩* {(river) left to 3IPFV:river.turn} ‘the river bends sharply to the left’.

2. *elei...dl̩* < $\emptyset_{SG}$  *elidl̩*: two rivers flow together>. This describes the opposite of a fork in the river, a place where two rivers (any two) unite. There appears to be resistance to actually naming the rivers as a subject X, e.g. \*[river A] *chu* [river B] *chu elidl̩* {[river A] and [river B] and 3IPFV:flow.together}, but this may be for pragmatic reasons. It can only refer to the permanent topographical feature of two rivers flowing together, not two streams of liquid or any other context. Several of these formations are found in the Dene language area, and the nearest settlement at this feature is usually named this. In the Dillon area, *elidl̩* (or *elidl̩ néné* {3IPFV:flow.together land:CONS}) as a proper name refers to Fort MacMurray.

3. *hhátane...l̩* < $\emptyset_{SG}$  *hhátail̩*: water permanently flows out of the ground>. This verb describes a natural spring. This is a morphological phraseme, *hhá–ta–ne...l̩* {out–water–VCN...CL4–flow} lit. “water flowing out”. *Hhátane...l̩* cannot refer to any situation of water flowing out of some surface or object; it can only describe the permanent topographical feature of a spring. It cannot describe a geyser or water flowing out of the ground on one occasion such as a broken water pipe, which would

be described with *nyé tu hháhijì* {earth:out.of water out:3IPFV:flow} ‘water is flowing out of the earth’.

4. *hhqná...dlì* < $\emptyset_{SG}$  *hhqnádlì*: water permanently flows from a height to the ground>. This refers to a waterfall. This is also a morphological phraseme, *hhá-ná-...dlì* {suddenly-down-...CL3-flow} lit. “it suddenly flows down”. This verb must refer to a permanent waterfall; any other situation of water flowing down, e.g. water flowing from the rooftop, could be described with *tu dánelez* {water down:VCD:3IPFV:run} ‘water is running down’ or *tu dánit’i* {water down:3IPFV:pl.fall} ‘water is dripping down’, but not as *\*hhqnádlì*.

**3.7.2. Topographical Terms: Syntax.** The standard GP for the majority of topographical verbs contains simply one actant which is an empty dummy subject X:

X $\Leftrightarrow$ I
1. $\emptyset_{SG}$

This is valid for *thaidáhohe...zá*, *húlza*, *elhhone...dlì*, *elei...dlì*, *hhátane...lì* and *hhqná...dlì*.

C<sub>1.1</sub>: *hhátailì* ‘there is a spring there’.

For *hokáde...dhá*, *hodáhohe...zá*, *hokáhohe...zá*, *hodáhohe...gai*, *hote...za*, *hharáhone...zá*, *hodá-H-ne...zá* and *ereH...t’i*, the empty subject can alternate with an actual noun, virtually always *nih* ‘land’, or the name of a tree species in the case of tree formations.

X ⇔ I
1. N <sup>I</sup>
2. ∅ <sub>SG</sub> <sup>I</sup>

C<sub>1.1</sub>: *nih hharóʔá* ‘the land goes down here and there’

C<sub>1.2</sub>: *hharóʔá* ‘it [the land] goes down here and there’

*HodeH...lger* has a second participant, realized as an oblique:

X ⇔ I	Y ⇔ II
1. N <sup>I</sup>	1. N <i>ts'én</i>
2. ∅ <sub>SG</sub> <sup>I</sup>	

C<sub>1.1</sub>: *nih hodárilger ts'éthíle des daé* {land 3IPFV:slope.down gently river above}  
 ‘the land slopes down gently above the river’

C<sub>1.2</sub>: *hodárilger, dene hokágha wali íle* {3IPFV:slope person up:3IPFV:sg.walk POSS  
 NEG} ‘there is a sharp slope down, a person couldn’t walk up it’

C<sub>1.1</sub> + C<sub>2.1</sub>: *nih tu ts'én hodárilger* {land lake to 3IPFV:slope.down} ‘the land slopes  
 down to the lake’

C<sub>1.2</sub> + C<sub>2.1</sub>: *bets'én horílger* {3:to 3IPFV:slope.down} ‘there is a sharp slope down to it’

Note: C<sub>1.1</sub> + C<sub>2.1</sub> and C<sub>1.2</sub> + C<sub>2.1</sub>: no distal third person prefix on Y=II=N.

*Ts'éne...t'í* has an obligatory second participant, realized as a direct object:

X ⇔ I	Y ⇔ II
1. N <sup>I</sup>	1. N <sup>I</sup>

C<sub>1.1</sub> + C<sub>2.1</sub>: *ʔelaz tu ts'énit'í* {spruce:DIM lake to:3IPFV:tree.ridge.extend} ‘there is a  
 ridge of little spruce trees going down into the lake’.

## CHAPTER IV

### The Lexical Combinatorial Zone

The third and final zone of a lexical entry in the MTT framework is the lexical combinatorics zone, which describes how the keyword is related to other LUs. The lexicon is not a formless mass but is structured by crisscrossing relations between sets of words whose semantic components vary in some regular way. This systematic variation is referred to as lexical relations in most schools of lexical semantics. As mentioned in the introduction, in MTT, lexical relations are described as lexical functions. Paraphrasing the definition in Mel'čuk (1998), a lexical function (LF) is a regular correspondence between pairs of words, not unlike a mathematical function. An LF has the form  $f(L) = \{L'_i\}$ , where  $f$  is the function or relation itself linking an LU  $L$  with a set of  $f$ 's values  $L'_i$ , which need not be perfectly synonymous but which must be quasi-synonyms. The input  $L$  and the values  $L'_i$  must be of the same lexical class. An example LF is **Anti**, the relation of antonymy or opposites. **Anti**(*good<sub>A</sub>*) = *bad<sub>A</sub>*, and **Anti**(*open<sub>V</sub>*) = *close<sub>V</sub>*. To qualify as an LF, a relation must have the following characteristics:

1. Homogeneity of the LF: the inputs are linked to their values by a common relation, such as antonymy, synonymy, intensification, and so forth. Observe the following examples of the LF **Magn** (from the Latin *Magnus*, indicating intensification): **Magn**(*contrast*) = *sharp*; **Magn**(*applause*) = *thunderous, heavy*; **Magn**(*armed*) = *heavily, ~ to the teeth*; **Magn**(*beautiful*) = // *gorgeous* (// indicates a fused value). All of these inputs and values share the common relation of lower to higher intensity.

2. Maximality of the LF: the LF must link all possible values with the keyword. In the examples of **Magn** above, any acceptable intensifier of the keyword must be listed as a value.

3. Phraseological character of the LFs: each value of a keyword must phraseologically bound or unpredictable. One of the defining characteristics about the LFs is that they specify links between keywords and outputs which are imposed by the language. When an English speaker wants to add the idea ‘intensely’ to *armed*, he or she does not think even remotely of ‘teeth’ or ‘heavy’. Rather *to the teeth* and *heavily* are simply the means the English language provides for adding the semanteme ‘intensely’ to that adjective.

Lexical functions are called *standard* when they satisfy two conditions: 1) the LF is sufficiently abstract to be applicable to a large number of keyword-output pairs; and 2) there is some diversity of expression of the outputs. In the case of **Magn** above, if English had one adverb or derivation marker that could productively and regularly add the semantic component ‘intensely’ to all the above keywords, then this would not be a value of the LF **Magn**. Lexical functions, usually language-specific, which do not meet both of these criteria, especially because they involve a very small set of LUs.

The lexical relations of antonymy, synonymy, hyperonymy and hyponymy are widely accepted and discussed by semanticists. In MTT, however, lexical functions cover a much more diverse range of lexical relations than these, many unique to our framework. In the current version of LFs (Mel’čuk 1996) there are currently 60 standard lexical functions posited to be frequent in various languages, and an open-ended number of language-specific, nonstandard lexical functions involving smaller numbers of lexical items.

To date, large-scale descriptions of lexical functions have been described for a typologically restricted and culturally similar European languages such as Russian, French and English. Examining lexical relations in an oral Athabaskan language like Dene is therefore of theoretical interest. We will begin by examining the presence and prevalence of the 60 established standard lexical functions in Dene, before looking at Dene texts in an open-ended search for any language-specific nonstandard functions. Follow the list in Mel’čuk (1998), LFs will be divided first into paradigmatic and syntagmatic categories, and within those into small subgroups quantification, phasal derivatives, and so forth. This chapter has the following sections:

1. Standard Lexical Functions
2. Nonstandard Lexical Functions
3. Complex Standard Lexical Functions

## 1. STANDARD LEXICAL FUNCTIONS IN DENE SŪLINÉ

**1.1. Paradigmatic Lexical Relations.** Lexical Functions 1-3 are the standard paradigmatic functions are **Syn** (synonyms), **Anti** (antonyms) and **Conv** (conversives). These are not restricted to one part of speech, but their products are of the same part of as the keyword. Examples in English are **Syn**(*puma*) = *mountain lion*, **Anti**(*good*) = *bad*, **Conv**(*husband*) = *wife* and **Conv**(*send*) = (*receive*). Dene synonym series were amply discussed and presented in Chapter III; it is important to note that many **Syn** pairs in Dene do not differ based on the same semantemes as their equivalents in English, e.g. **Syn**(*yath* ‘snow (on ground)’) = *tsil* ‘(falling) snow’, and the multitude of position verbs that vary based on the shape, texture, number and animacy of X. Antonymy comprises four relations

As discussed in detail in Section III-2.2, antonymy in MTT semantics actually covers four different semantic relations: negation of an internal component; more/less oppositions; positive/negative oppositions and deictic oppositions. More/less oppositions involve gradient parameters where there is some sort of “middle ground” between the two antonymic values, e.g. (*hot/cold*), (*near/far*). Good/bad oppositions are also gradients of subjective value such as (*good/bad*) and (*beautiful/ugly*). In both cases, the positive or higher extreme is semantically simpler than the negative extreme. Dene often expresses the negative value of this parameter simply by adding the negation marker *ile* to the positive value, which is consequently ambiguous between attenuation and antonymy:

**Anti**(*náredhá* ‘it is high (from ground)’) = *náredhá ile* ‘it is low (from ground)’

**Anti**(*diltǰi* ‘it is expensive’) = *diltǰi ile* ‘it is cheap’

There are, of course, many “genuine” antonym pairs in Dene.

While conversives do exist in Dene they are unlikely to be found for the LUs in this sample. Of the seven fields considered, Character, Quality, Position, Atmospheric and Topographical LUs usually have only one actant; Emotion and Motion verbs may have multiple SemAs. For motion verbs there are no conversives; it would mean something like ‘surface X gets walked on by Y’ or ‘liquid X gets swum through by Y’. Conversives are not prominent in our sample. Of the emotion words in the sample, there is only one possible example: **Conv**(*hasne...dhen* ‘to be disappointed’) = [Y] OBJ.AGR<sub>Y</sub>-*iní ne...ttheth* ‘to disappoint [Y]’, lit. “to put out [Y’s] mind”.

**LFs 4-5: Gener and Figur.** These take nouns as keywords and values. **Gener** is a category hyperonym, e.g. **Gener**(*republic*) = *state*. This is easily available in Dene, following a Dene-specific ontology of artifacts and natural kinds. Examples include:

**Gener**(*ech’ère* ‘wild fur animal’) = *sas* ‘bear’, *tthelkailé* ‘weasel’

**Gener**(*layúé* ‘tool’) = *bes* ‘knife’, *elk’édhi* ‘gun’, and so forth.

**Figur** links the keyword with a noun which serves as a conventional metaphor for an instance of that noun, as in:

**Figur**(*fog*) = *wall of*~ **Figur**(*hunger*) = *pangs of*~

This sort of relation between nouns is virtually nonexistent in Dene. Nouns represent artifacts and natural kinds, not figurative concepts. *He felt pangs of hunger* might be rendered with a construction like ‘for:him it.was.painful, he.desired.food because’. If a speaker wishes to represent a phenomenon metaphorically, it is usually through overt comparison; *there was a wall of fog* could be rendered with ‘fog it.was.abundant almost wall it.looked.like’, where the metaphorical comparison was drawn freely rather than phraseologically bound. But even this is uncharacteristic of most Dene texts, as more literal terms tend to be used to describe objects. Overall in the corpus and data collected for this study, there was less figurative language than would be found in English. (It is important to note that this could indicate a particularity of English rather than of Dene, as it is the author’s impression that English uses figurative language copiously in comparison with even many other European languages such as French and Italian.)

**LFs 6-9: S<sub>0</sub>, A<sub>0</sub>, V<sub>0</sub> and Adv<sub>0</sub>.** These are structural derivatives, or semantic derivations involving only a change lexical class, such as deverbal nouns like **S<sub>0</sub>**(*live*) =

*life* or adverbial derivations like **Adv**<sub>0</sub>(*gusto*) = *with* ~. In an Athabaskan language, **S**<sub>0</sub> derivatives are virtually non-existent because the noun class is restricted to natural kinds and artifacts, and almost never encompasses abstract concepts, situations or qualities. There are, however a handful of deverbal nouns, such as:

**S**<sub>0</sub>(*ghe...na* ‘sg lives’) = *eghenai* ‘life’

**S**<sub>0</sub>(*ná...lze* ‘to hunt’) = *názé, nálzé* ‘the hunt’

**S**<sub>0</sub>(*ya...liti* ‘to speak’) = *yati* ‘speech’, ‘words’.

**A**<sub>0</sub> are also rare because adjectives constitute a small closed class of perhaps 30 or so members. The adjectives available are, however, usually deverbal, referring to colors and textures, as

**A**<sub>0</sub>(*de...lzen* ‘to be black’) = *zené* ‘black’

**A**<sub>0</sub>(*de...ddher* ‘to be fine’ = *ddheré* ‘fine (granular substance)’.

**V**<sub>0</sub> derivatives are correspondingly rare, as descriptive words and abstract concepts are already represented as situations or verbs rather than as adjectives or nouns.

Apart from verbs, adverbs are another large, open class in Dene. Many of these adverbs, such as *thú* ‘in vain’, *ighá* ‘early’, and *eltth’i* ‘correctly’, have no obvious relation to verbs. On the other hand, some adverbs strongly resemble verbs with *ú* ‘when’/‘and’ added to them. Compare the verb phrase *dzi dónelt’e* {day DIST:AR:3IPFV:number} ‘the days number’, or ‘there are [...] many days’, and *dzi dónelt’ú*, a contraction of *dzi dónelt’e ú* ‘every day’, lit. “during all the days that there are”. It may be problematic even to consider these as adverbs and *ú* as a suffix, because coordination or manner are indicated by adding an embedded clause headed by *ú* ‘when’, as in:

1. *dájen ú dáts’édil* {dist:3IPFV:sing when DS:3IPFV:pl.dance} ‘they sang and danced’, ‘they sang while dancing’

2. *herəlt’e<sub>1</sub> ú eghálana* {3IPFV:be.hardworking when 3IPFV:work} ‘he works hard’, lit. “he works while he is hard-working”.



Sometimes genuine **Adv<sub>0</sub>** derivatives are obtained through conversion. The third-person imperfective form is used. Compare: *náltla* {3IPFV:be.fast} ‘s/he is fast’ and *náltla ghegal* {fast 3IPFV:SG.walk} ‘she was walking fast’ or *nezq* {3IPFV:be.good} ‘it is good’ and *nezq thetsen* {good 3IPFV:smell} ‘it smells good’. The preverbal position is consistent with adverbials, and syntactic conversion makes more sense pragmatically than positing a cleaved construction, such as “it-was-fast that she-walked”. Even accepting these cases as genuine adverbs, however, we cannot consider **Adv<sub>0</sub>** a standard lexical function in Dene because it lacks a diversity of expression: it is always done by conversion and a change in word order.

**LF 10: S<sub>i</sub>.** These noun derivatives provide the names of the deep syntactic actants of the (verbal) keyword: **S<sub>1</sub>** is usually the agent ( $X \Leftrightarrow I$ ), **S<sub>2</sub>** the patient ( $Y \Leftrightarrow II$ ), **S<sub>3</sub>** an oblique object ( $Z \Leftrightarrow III$ ). For example, for the verb *teach* ‘X, having the full knowledge of subject Y, causes that person Z knows Y’, **S<sub>1</sub>**(*teach*) = *teacher*; **S<sub>2</sub>**(*teach*) = *subject*, and **S<sub>3</sub>**(*teach*) = *student, pupil, disciple*.

In Dene, there are a few morphological and syntactic means of coining a **S<sub>1</sub>** derivative. The first is by adding the nominalizer *-i* to an active third-person verb, sometimes dropping the classifier prefix, as in:

**S<sub>1</sub>** (*hone...lten* ‘to teach’ (IPFV)) = *honetteni* [3IPFV:teach + *-i*] ‘teacher’, *sekwi honetteni* ‘child-teacher’

**S<sub>1</sub>** (*k’ó...ldher* ‘to rule’) = *k’ódheri* [3ipfv:rule + *-i*] ‘chief’, ‘ruler’

For a few culturally salient roles, Dene has borrowed a foreign word in place of or in addition to these nominalized verbs, e.g. **Syn**(*k’ódheri* ‘chief’) = *okímahgan* ‘chief’ (a Cree borrowing, monomorphemic to the Dene).

The second means of coining a noun is through the syntactic conversion of a clause into a noun. Compare: [*ber kalt’éth*]<sub>S</sub> {food for:3IPFV:cook} ‘s/he cooks [for people]’ and **S<sub>1</sub>**(*ber ka...lt’éth* ‘to cooks [for people]’) = [*ber kalt’éth*]<sub>N</sub> ‘a cook’, as in [*ber kalt’éth*]<sub>N</sub> *həl̩̄ n̩̄* {cook 3IPFV:be PAST} ‘she was a cook’. This may be

phonologically reduced to *bekalt'éth*. Declausal nouns are quite rare and tend to exist in competition with overtly nominalized forms such as *bekalt'édhi*.

The final major means of coining  $S_i$  derivatives is through compounding following the pattern  $S_{3IPFV} + \text{dene}$  'person' +  $-\acute{e}$  possessed suffix. For example:

$S_1(\text{ná...lze}$  'to hunt') = *nálze dené* {3IPFV:hunt person:CONS} 'hunter'

$S_1(\text{dene ná...tsi}$  'to catch people') = *dene nátsi dené* {people 3IPFV:catch person:CONS} 'police officer', lit. "a person-catching person".

The above derivatives are available for a few socially salient roles for important activities such as leading the tribe, teaching and hunting. But for the vast majority of verbs, such as *teghá...ldhi* 'to kill' (SG, IPFV), there is no agentive  $S_1$  derivative. 'The killer' could be rendered with a relative clause using an active verb, i.e. as *t'ahj dene/ʔasí teghájlther* {REL.HUM people/game.animals 3PFV:kill (SG, PFV)} 'one who killed the person(s)/the animal(s)'. Even such constructions are used sparingly, though; people are not usually identified by their actions but by name. Someone who habitually fulfills a certain agentive role may be indicated using a habitual reading of an active verb clause, i.e. not 'those women are moosehide makers' or 'those men are hunters' but as 'those women (habitually) make moose hide', or 'those men (habitually) hunt'. No examples of  $S_2$  or  $S_3$  nouns can be found in the corpora or have been elicited; people in DSyntA-II roles such as 'the students' might be designated as *t'ahj school nádé* {REL.HUM school 3IPFV:stay (PL)} 'those who go to school' or *t'ahj dene háhonetlen* {REL.HUM Dene 3IPFV:be.taught} 'those who are being taught Dene'. We can conclude that  $S_2$  and  $S_3$  are not present and that  $S_1$  is not a standard lexical function in Dene. Although we do find a diversity of expression of agentive nouns,  $S_1$  lacks the wide applicability we expect of standard LFs.

**LFs 11-15:** the derivatives  $S_{instr}$ ,  $S_{med}$ ,  $S_{mod}$ ,  $S_{loc}$ ,  $S_{res}$ . These represent the names of circumstantials of a linguistic situation: the instrument, medium, and mode with which the action was carried out, and the location and result of the situation. For example:

$S_{instr}(\text{shoot}) = \text{firearm}$       $S_{med}(\text{shoot}) = \text{ammunition}$

$S_{\text{mod}}(\text{cook}) = \text{fry}$      $S_{\text{loc}}(\text{camp}) = // \text{ campsite}$

$S_{\text{loc}}(\text{war}) = \text{theater of} \sim$      $S_{\text{res}}(\text{wound}) = \text{scar}$

Crucially, these semantic derivations have analytical meanings, which entails that the value of the function must have as one of its semantic components the meaning of the keyword. The value is related to the keyword through its linguistic meaning, not using the speakers' extralinguistic knowledge.  $S_{\text{instr}}$  means 'object used to do L', so  $S_{\text{instr}}(\text{murder})$  is *murder weapon*, not *gun* or *knife*. While it is part of our encyclopedic knowledge that murders are frequently carried out using guns and knives, 'used to murder people' is not a component of the meaning of 'gun' or 'knife'. Any innocuous object such as *shoelace*, *fish* or *marshmallow* could be labeled a *murder weapon* in English if a forensic investigator explained to us how they had been used as such.  $S_{\text{loc}}(\text{hunt})$  would be *hunting grounds*, not *forest*, *tundra* or the proper name of a place where the speakers know hunting occurs. Labels like *hunting grounds*, *murder weapon*, like *student* and *teacher* described as values of LF 10, are useful in mass societies such as ours in which speakers need to inform each other about the roles people, objects and places play in events. Dene people traditionally lived in small kinship-based bands and regional groups based on face-to-face contact, intermarriage and cooperation in carrying out complex hunting and gathering tasks. Dene speakers rarely had need of abstract terms like *hunting grounds* or *murder weapon* because they shared so much tacit knowledge about their land and the people who lived on it. Everyone knew in subtle detail the spots where each type of game was hunted in each season, and what tools were used for, and which individuals had done what to whom. Even today, many Dene speakers bristle when asked to translate uninformative sentences like "knives are a cutting tool" or "X is a good place to hunt moose", reacting with sentences like "why would you say something that everyone knows", or "our language is not nonsense like English". Similar reactions obtain when labeling people with words like *victim* or *recipient*; in a society with no anonymity, people would be referred to by their names. Today, if someone must identify an unknown person or object according to their roles in a situation, one can use a relative clause, such as *t'a ʔá legháyiltheri* {REL with 3D:3PFV:kill:REL} 'that [thing] with which he killed him', or *eyi dene t'ah̄i*

*legháldheri* {that person REL:HUM 3PFV:get.killed:REL} ‘that person who got killed’, i.e. ‘the victim’, *t’ahuk’é dene etelgháli* {REL:where people REC:3PFV:club:REL} ‘where people clubbed each other’, i.e. ‘the theater of war’. But these are all free phrases, not values of lexical functions.

There are a few exceptions, particularly for a few places that needed to be defined analytically because they could be used for a time but not permanently for a particular activity, or items that might have a few different uses. Examples include:

$S_{loc}(ber -tsa \text{ ‘to cache meat’}) = etsa k’é$  {cache place} ‘a meat cache’.

$S_{loc}(gah -lú \text{ ‘to snare rabbits’}) = gah bit k’é$  {rabbit snare:CONS place} ‘rabbit snaring place’

$S_{instr}(eghála...na \text{ ‘to work’}) = la yúé$  {work tools:CONS} ‘work tools’

The words *k’é* ‘place’ and *yúé* ‘items’ or ‘tools’ the examples above cannot be used as unbound words (*\*diri k’é* ‘\*this place’; *\*yúé* as simply ‘tools’ or ‘things’). The bound word *k’é* describes a culturally noteworthy place.

**LFs 16-17:** **Able<sub>i</sub>** and **Qual<sub>i</sub>** describe qualities of DsyntAs I and I. **Able<sub>1</sub>** means ‘it can L easily’ and **Able<sub>2</sub>** ‘it can be L-ed easily’; **Qual<sub>1</sub>** means ‘it is likely to L’ and **Qual<sub>2</sub>** ‘it is likely to be L-ed’, as in:

**Able<sub>1</sub>**(*cry<sub>v</sub>*) = *tearful*

**Able<sub>2</sub>**(*trust<sub>v</sub>*) = *trustworthy*

**Qual<sub>1</sub>**(*cry<sub>v</sub>*) = *sad*

**Qual<sub>2</sub>**(*cry<sub>v</sub>*) = *heartbreaking, tragic*

Abilities and qualities in the above sense are conveyed in Dene through free grammatical constructions. The relation **Able<sub>1</sub>** exists between a situation and a state which indicates that the situation can easily take place. This sort of state proximal to an action would be described with a variety of free means in Dene. Among them are:

a. *X [V] (ha) wale* {X [V] (FUT) PROB} ‘X should likely [V]’

**Able<sub>1</sub>** (*build*) = *capable, able [at building]* = ‘X can easily make new things’

⇒ *sijeze t’a holtisi wali k’asjene holtisi wali* ‘my son can make almost anything that is possible to make’

**Able<sub>1</sub>** (*imagine*) = *creative* = ‘can easily think of new ideas’

⇒ *sįyeze t’at’ú ʔasi holı wali ghq nánedher*

b. *X [V] ha ahunedi* {*X [V]* FUT 3IPFV:seem} ‘it seems that X will [V]’

**Able<sub>1</sub>** (*cry*) = *tearful* = ‘in a state where X can easily cry’

⇒ *hetsagh ha ahunedi* ‘it seems that s/he will cry’

Such constructions lack the traits of the LF **Able<sub>1</sub>** because they are not phraseologically bound. Even further from Dene stylistics is the case of **Able<sub>2</sub>** and **Qual<sub>2</sub>**. A moment of reflection will suffice to show us how odd it is that European languages conceive of concepts like ‘edible’ and ‘tragic’ as properties of objects and events. Ontologically, ‘edible’ and ‘visible’ are not a properties of berries or cooked fish, but statements about humans’ probable interaction with those entities given people’s capacities. It therefore seems more logical that such descriptions should be predicated of the human subject common to the keyword and the output of **Able<sub>2</sub>** and **Qual<sub>2</sub>**. This is exactly how such abilities and propensities are described in Dene.

**Able<sub>2</sub>**(*eat*) = *edible* = ‘can easily be eaten by people’

⇒ *beghą shélyi* ‘one eats it’

**Able<sub>2</sub>**(*use*) = *useful, usable* = ‘X can easily be used by people to do Y’

In the traditional aboriginal life in which hunger was a danger, Dene people used almost every resource available to them, and never wasted food, so statements like ‘people eat it (sometimes)’ or ‘it is (sometimes) used’ were equivalent in denotational range to *edible* and *useful*. In a 21<sup>st</sup> century context, if one must define a foreign object as *edible* or *useful* it is possible to say *beghą shélyi asųt’e ile / ha dúé ile* {3:of 3IPFV:pl.eat 3IPFV:has.problem NEG / FUT it.is.impossible NEG} ‘it is not a problem / not impossible to eat it’. What are values of **Qual<sub>2</sub>** in European languages are also rendered as active verbs predicated of the subject X, even if X is impersonal:

**BonQual<sub>2</sub>**(*imagine*) = *brilliant* [idea] (quality as adverbial of clause):

⇒ *eyi t’a nįdheni ha dé eltth’i ʔá nįdhen*

{that REL 3IPFV:think as.for correctly with 3IPFV:think}

‘As for what he thinks, he thinks correctly’

Active clause with an impersonal subject verb:

**Qual<sub>1</sub>**(*surprise*) = *surprising*

⇒ *honi begħa noríya*

{story 3:of 3IPFV:be.surprised}

‘one is surprised’

**Able<sub>2</sub>**(*understand*) = *comprehensible, intelligible, understandable*

⇒ *hotié beyatié ditth’ak*

{well 3PO:words:CONS 3IPFV:understand}

‘his words are understood well’

Impersonal verb + areal (subject?) agreement:

**Qual<sub>2</sub>**(*fear<sub>v</sub>*) = *scary, frightening*

⇒ *bech’á honejer* {3:against AR:3IPFV:imp.fear} ‘it is scary’

**Qual<sub>2</sub>**(*love<sub>v</sub>*) = *lovable, adorable*

⇒ *seghanotq* {1OB:AR:3IPFV:love} ‘I am lovable’

Often these Dene constructions are more precise by virtue of their being free. While the English semantic derivations **Able** and **Qual** allow some flexibility in determining to what degree L is possible or easy to realize, the choice of the matrix verb in Dene forces the speaker to distinguish, for example, between actions that are possible in principle, actions that are actually performed and those that are easy to carry out, as in:

**BonQual<sub>2</sub>**(*sit*) = *comfortable*, e.g. *this chair is comfortable*

⇒ *daschené bek’é ts’ida nezq* {seat 3:on DS:sit.down 3IPFV:be.good}

‘it is good [that] one sits on this chair’

**Able<sub>2</sub>**(*shoot*) = *in range, shootable*, e.g. *the moose was in range*.

⇒ *bóreni deni hilk’edh* {3IPFV:be.easy moose SEM:3IPFV:shoot}

‘it is easy [that] one shoots the moose’

**AntiAble<sub>2</sub>(carry)** = [not transportable], e.g. *the whole moose is not transportable*

⇒ *ɫáh dení nálti ha dúé ʔa*

{once moose 3IPFV:imp.carry.anim FUT it.is.impossible ASSERT}

‘It is impossible [that] one carries the moose all at once’

**AntiMagnAble<sub>2</sub>(find)** = [hard to locate / find / trace]

⇒ *bórenj íle ʔa bulʔá*

{3IPFV:be.easy NEG ASSERT 3OB:3IPFV:imp.find}

‘It is not easy [that] one finds it’

Often what are considered “qualities” of DSyntA-II in linguistic situations in European languages are in fact quite abstract. To cite just one example, the descriptor in *an attractive offer* refers not to the beauty or eloquence of the offer but to the quantity or money or resources that X offers to Y. This would be rendered in Dene literally, i.e. *sebeschené ha tsqba lq sets’énila* {1PO:vehicle for money it.is.much 1OB:to:3PFV:bring.plural} ‘he made an attractive offer for my truck’, lit. “he offered me a lot of money for my vehicle”. Conversely, qualities of objects can be described abstractly, e.g. not as ‘interesting’, ‘useful’ or ‘fun’ on one hand or ‘dull’, ‘ugly’ or ‘cheap’ on the other, but simply as ‘of good quality’ or ‘of bad quality’.

**Qual<sub>1</sub>(bore)** = *boring* = ‘can easily make people feel bored’

⇒ *eyi ts’ékwi behonié benúnj íle*

{that woman 3PO:story:CONS 3OB:be.good NEG}

‘That woman’s story is boring’, lit. “it is no good”

**AntiBonQual<sub>2</sub>(buy)** = *cheap<sub>2</sub>* = ‘X can be purchased with little money because

X is of low quality’, e.g. *his car is cheap*.

⇒ *bebeschené benúnj íle ahunedi*

{3PO:car:CONS 3OB:be.good NEG 3IPFV:seem}

‘it seems that his car is no good’

It is part of our encyclopedic knowledge that goodness, for a story, is equivalent to ‘entertaining’ or ‘informative’, while for a knife it involves the ability to cut, so words used to denote these DSyntAs do not have to explicitly include L as a component of their definitions, and **Able<sub>i</sub>** and **Qual<sub>i</sub>** are not found as lexical relations.

**LF 18-19:** **A<sub>i</sub>** and **Adv<sub>i</sub>** derivatives. These are the adjectival and adverbial phrases coined from the keyword, such as:

**A<sub>1</sub>**(*anger*) = *in* [anger], // *angry*      **Adv<sub>1</sub>**(*anger*) = *with* [anger], // *angrily*

As described above for LFs **A<sub>0</sub>** nor **Adv<sub>0</sub>**, in Dene qualities are usually denoted by intransitive verb which embedded as clauses headed by *ú* ‘when’ in the main clause to denote a modifier relation to that clause, adverbial or adjectival according to the context. This construction is free, so neither **A<sub>i</sub>** nor **Adv<sub>i</sub>** are standard lexical functions in Dene. realized as embedded clause headed by *ú* / *t’ú* ‘when’.

**LFs 20-21:** **Imper** and **Result** fulfill similar functions as inflectional meanings in some languages; their outputs may be used instead of a particular grammeme of the keyword, as in the following cases:

**Imper**(*shoot*) = *fire!*      **Imper**(*be quiet*) = *sssh!, hush!*

**Result**(*learn*) = *know.*

The only **Imper** which occurs in our sample or in the corpus concerns motion verbs. It can be the **Imper** derivative for *dene ba núne...zá* ‘to make room for a person’ or of *edíne...gha* ‘to move elsewhere (SG, HUM, IPFV)’

**Imper**(*dene ba núne...zá* ‘to make room for a person’) = *nuzi!; k’éré!* ‘move!’,  
‘make way!’.

**Result** is also an available LF in Dene:

**Result**(*hahone...lten* ‘to be taught’) = *k’ó...lyaf* ‘to know’

**Result**(*-ldél* ‘to eat a lot’) = *hháshíre...ldhi* ‘to be stuffed full’

Sometimes, however, results are simply indicated by a resultive perfective rather than by a new LU:

**Result**(*age<sub>v</sub>*) = *to be old*



⇒ núnĩlther {3PFV:get.old} ‘s/he is old’, lit. ‘s/he has gotten old’

**Result**(*get angry*) = *be angry*

⇒ hĩlch’é {3PFV:get.angry} ‘s/he is angry’, lit. ‘s/he has gotten angry’

Table IV-1 summarizes the standard syntagmatic lexical functions from Mel’čuk (1998) which do and do not occur in Dene. Some combinations are shaded in gray to indicate semantic incompatibility: the example, there is no antonymic value for motion verbs, or conversive for those semantic fields whose verbs have only one semantic actant.

	Em	Char	PhysDesc	Mot	Pos	Atm	Top
Syn	✓	✓	✓	✓	✓	✓	✓
Anti	✓	✓	✓				✓
Conv	R*						
Gener	✗	✗	✓	✗	✗	✗	✓
Figur	✗	✗	✗	✗	✗	✗	✗
S <sub>0</sub>	✗	✗	✗	✗	✗	✗	✗
A <sub>0</sub>	✗	✗	R	✗	✗	✗	✗
V <sub>0</sub>							
Adv <sub>0</sub>	✗	✗	✗	✗	✗	✗	✗
S <sub>i</sub>	✗	✗	✗	✗	✗		
S <sub>inst-res</sub>				R			
Able <sub>i</sub>	✗			✗			
Qual <sub>i</sub>	✗			✗			
A <sub>i</sub> /Adv <sub>i</sub>	✗	✗	✗	✗	✗	✗	✗
Imper				R	R		
Result	✓			✓		✓	

\* R = the LF exists in Dene but is restrictedly expressed [few phraseologized instances]

**Table IV-I. Standard Paradigmatic Lexical Functions in Dene.**

**1.2. Syntagmatic Lexical Relations.** LFs 22-46 involve constructing a phrase based on the keyword, either as a means of changing its lexical class or because it is simply a common phrase in the language. This includes **Centr**, a conventional phrase for the culminating part of a situation, e.g. **Centr**(*crisis*) = *the peak* [*of the ~*], and modifier relations such as **Magn**, described above. **Centr** does not appear to be an LF in Dene because there are no situation nouns.

**Magn**, on the other hand simply adds the component ‘intense’ or ‘intensely’ to the keyword. This is certainly a lexical function in Dene, although it is much less common than in European languages, in which one can find a very rich array of **Magn** semantic derivations in all semantic fields, from emotions (*sad ~ miserable; surprised ~ shocked, flabbergasted*); character (*mean ~ vicious; kind ~ saintly, etc.*), physical description (*small ~ tiny; beautiful ~ gorgeous; tall ~ a giant*), weather (*rain ~ pour; snow ~ blizzard*), and almost any other semantic field one can think of. European languages also have a repertoire of free modifiers and adverbs equivalent to *very, really, a lot, etc.*, in English. These are not values of lexical functions, because they are not phraseologized. In Dene, one finds a similar repertoire of free intensifying adverbs, such as *huy’édhé, hotié, ts’éthhîle, deʔázé* and *hoʔázé*, which can all be glossed roughly as ‘very’ or ‘really’. One can also emphasize a verb through reduplication, e.g. *nezq* {3IPFV:be.good} ‘it is good’ ⇒ *nezq ʔá nezq* {3IPFV:be.good REDUP 3IPFV:be.good} ‘it is excellent’. These intensifiers are not wholly interchangeable but the semantic differences between them are regular and their use is not phraseologized.

Of the verbs in the semantic fields chosen for this study (emotion, character, physical description, motion, position, atmospheric and topographical terms), not all are equally compatible for pragmatic reasons with the free intensifying adverbs. Intensifiers can be used most naturally with physical description and atmospheric verbs. They do not apply to motion and position verbs. Also, ‘really’ and ‘a little’ adverbs are not used with topographical features, and are pragmatically odd with emotion and character verbs. It sounds odd to Dene people in many cases to try to rank or quantify

character traits or emotions. Indeed, even where intensifying adverbs or verb reduplication are permitted, they are seldom used in the spare Dene style. As mentioned earlier, adjectives such as *a brilliant person* or *a gorgeous woman* are translated in Dene simply as *dene huyq* {person 3.is.intelligent} ‘an intelligent person’ and *ts’ékwi ahhenet’i* {woman 3.is.beautiful} ‘a beautiful woman’. Someone is simply called ‘intelligent’ or ‘beautiful’ based on the overall impression he or she makes on other people — quantifying this with adverbs is not a frequent Dene way of speaking, even if it is not technically incorrect.

In some cases within each semantic field there are lexical pairs which differ only or mostly in the presence or absence of the component ‘intense’/‘intensely’, as with the pairs *X ba horelya ile ~ estenedhen*; *bejere ~ beslini*, *hodohe/a ~ hodarilger*. Such cases are rare, however.

LFs 24-25: **Ver** and **Bon** are adjectival, indicating that an action was done in a way fully characteristic of the situation in the case of **Ver**, or according to community expectations of quality with **Bon**.

**Ver**(*surprise*) = *genuine, sincere*      **Bon**(*cut*) = *neatly, cleanly*

**Ver** does not seem to be a function relevant to Dene; it is simply realized by the adverb *hotie* ‘really’. **Bon** is also not relevant to Dene as it is realized by free adverbs such as *nezo* ‘good’ and *elth’i* ‘properly’.

LFs 26-28: **Loc<sub>in</sub>**, **Loc<sub>ad</sub>**, **Loc<sub>ab</sub>** are the adpositions specifying location in, movement into and out of a place or object.

**Loc<sub>in</sub>**(*tth’ái* ‘cup’) = *yághe, yé<sub>2</sub>* ‘in’      **Loc<sub>ad</sub>**(*tth’ái* ‘cup’) = *yé<sub>1</sub>* ‘into’

**Loc<sub>in</sub>**(*dechen* ‘forest’) = *yághe* ‘in’      **Loc<sub>ad</sub>**(*dechen* ‘forest’) = (*ho*)*ts’én* ‘to’

**Loc<sub>ab</sub>**(*tth’ái* ‘cup’) = *yé<sub>3</sub>* ‘from’      **Loc<sub>ab</sub>**(*dechen* ‘forest’) = *hots’i* ‘from’

**Loc<sub>in</sub>**(*Ejéresché* ‘Dillon’) = --      **Loc<sub>in</sub>**(*nih* ‘ground’) = *k’é* ‘on’

LFs 29-30: **Inst** and **Propt** indicate the prepositions used

**Inst**(*bes* ‘knife’) = *ʔá<sub>1</sub>* ‘using’      **Propt**(*este* ‘sadness’) = *ʔá<sub>2</sub>* ‘in’

**Propt**(*este* ‘sadness’) = *ʔá<sub>1</sub>* ‘because of’

LFs 31-33 are support verbs which are extremely important in European

languages because they are phraseologized meanings used to form a verbal phrase from a noun. The function **Oper<sub>i</sub>** (from the Latin *operari* ‘to perform’) denotes the support verb meaning ‘to perform X’, where X is an action or situation that can be carried out, as the verbs in *take A STEP*, *throw A PARTY*, *lodge or make A COMPLAINT*:

**Oper<sub>1</sub>**(*step*) = *take*

**Oper<sub>1</sub>**(*party*) = *throw*

**Oper<sub>2</sub>**(*support*) = *receive*

**Oper<sub>1</sub>**(*nasué* ‘party’) = *-łtsi* ‘to make’

**Func<sub>i</sub>** is similar, but has the unit of action as the subject; **Labor<sub>ij</sub>** is similar to **Oper<sub>i</sub>** but allowing multiple actants. The following examples are also from Mel’čuk (1998):

**Func<sub>0</sub>**(*rumors*) = *circulate*

**Func<sub>1</sub>**(*blow<sub>N</sub>*) = *comes* [from N]

**Func<sub>2</sub>**(*blow<sub>N</sub>*) = *falls* [upon N]

**Labor<sub>12</sub>**(*question*) = [to] *pepper*

**Labor<sub>32</sub>**(*lease<sub>N</sub>*) = [to] *grant* [N to N on ~]

While there are a few examples of support and realization verbs, notably some instances of **Oper<sub>1</sub>** as indicated above, there is little evidence for considering any of the LFs 31-33 as standard lexical functions in Dene. Most nouns denote natural and cultural kinds or proper names, while situations are already expressed with verbs, so there is no need for support verbs to collocate them into a verb phrase.

LFs 34-36: **Incep**, **Fin** and **Cont** are relations between the keyword, linguistic situation, and phasal verbs that express the entry into, exit from or continuation of the situation denoted by the keyword:

**Incep**(*travel*) = // *set off*

**FinFunc<sub>0</sub>**(*offer*) = *expire*

**ContFunc<sub>0</sub>**(*offer*) = *stand*

**Fin**(*try*) = // *give up*

Taking Dene verbs a whole group, **Incep** and **Fin** do not appear as lexical functions relevant to Dene. The beginning of a situation is denoted by the inceptive particle *héjá*, or its perfective allomorph<sup>20</sup> *ájá*: *ja nasther héjá*, *Ejeresché* {here 1IPFV:live INCEP Dillon} ‘I started living here in Dillon’; *skidoo t’adáadorilzá héjá ní* {skidoo DIST:1PL.IPFV:use INCEP PAST} ‘we all started using skidoos’. Exit from a situation is

<sup>20</sup> These two forms of the inceptive postverbal particle are etymologically derived from the imperfective and perfective forms of the verb (*a...*)*ja*<sub>1</sub> ‘to begin’, or (*a...*)*ja*<sub>2</sub> ‘to become’, but the particle is different because its form is fixed and not conjugated; *héjá* is also sometimes used after perfective verbs.

expressed by the same means, but negating the verb with *ile*, placed before the inceptive particle: *eghálana ile ájá* {3IPFV:work NEG INCEP (PFV)} ‘he stopped working’, lit. ‘he began not working’. The continuation of an action is rendered by the free adverb *qhú* ‘still’, e.g. *qhú eghálana* {still 3IPFV:work} ‘he kept working’. It is not obligatory to add the inceptive particle or the negation plus the inceptive to indicate entry and exit from the situation; Dene speakers often simply use the verbs and their negation by themselves, and the phasal meaning is understood in context: *sólághe saritt’izé kut’a eghálasna ile* {five o’clock:CONS that’s.it 1IPFV:work NEG} ‘I stopped working at five o’clock’. In fact, using the inceptive particle, as in *kut’a eghálasna ile héjá* {that’s.it 1IPFV:work NEG INCEP} ‘I stopped working’ is felt to strongly imply that the person does not work there any more — the action used to be repeated and has now been stopped permanently, similar to *kut’a eghálasna anast’e* {that’s.it 1IPFV:work 1PFV:stop} ‘I quit working there [for good]’. Still, one has the option of adding the inceptive particle.

There are a number of exceptions. From the sample in this study, Dene speakers find it unnatural to indicate entry into or exit from emotional states at all. Much as Dene speakers preferred not to quantify emotions, they find it odd to draw attention to the moment begins or stops feeling a certain way. The beginning of an emotion is indicated (respectively) just with positive form of the verb itself, understood in the discourse to denote inception e.g. *bel nather, holq bel yasti ú kú ts’ínathé beghqnitq* {3:with 1IPFV:stay, many.times 3:with 1IPFV:speak and then finally 3OB:1IPFV:love} ‘I spent a lot of time with her and talked with her often, and in the end I fell in love with her’, lit. ‘after a long time I loved her’. There are one or two exceptions, where there exists a verb whose meaning is ‘start feeling [X]’:

**Incep**(*estenedhen* ‘he is despondent’) = // *esteyídhher* ‘he becomes despondent’

Cessation of an emotion is expressed a bit differently from an exit from other situations. Speakers find it pragmatically odd to indicate the end of an emotional state with the negated inceptive particle, e.g.

*?beghą danúsnı* ⟨*?beghąnitą; ?estenıdhen; ?sa dúé*⟩ *ıle héjá*

{3:of 1IPFV:want.own ⟨3OB:1IPFV:love; 1IPFV:sad; 1:for it.is.bad⟩ NEG INCEP}

?‘I stopped wanting [to own] it ⟨?loving him/her; ?being sad; ?feeling bad⟩’

For most emotion words, one would rather indicate the cessation of the emotion by narrating the events or process which caused the person to move on, followed by *ts’ınathé beghą nánesther ıle* {after.time 3:of 1IPFV:think NEG} ‘after a while, I didn’t think about it any more’. It is possible to indicate with the inceptive particle or negation plus the inceptive particle, entry into and exit from almost any other type of situation, including the beginning of a pattern of repetitive action (*skıdoo t’adádorıl’á héjá nı* {skıdoo DIST:1PL.IPFV:use INCEP PAST} ‘we all started using skıdoo’s; *edırı sekwi TV nelnı héjá dé* {these children TV 3IPFV:watch INCEP when} ‘when the children (in general) started watching TV’), the beginning of isolated action (*seghą nárádlogh héjá* {1:of DIST:3IPFV:laugh INCEP} ‘they started laughing at me’; *denı dhéth holé héjá dé, t’atthé...* {moose hide:CONS 3IPFV:be.made INCEP when, first} ‘when one starts making moosehide, the first thing [you do]...’), the beginning of an uncontrolled event (*dene leghąldé héjá* {people 3IPFV:pl.die INCEP} ‘people started dying [the in the epidemic]’; *del bedhé hhát’ı héjá* {blood 3PO:mouth out:3IPFV:pl.fall INCEP} ‘blood started dripping out of their mouths’), and entry into a state (*hhait’ázi deten héjá dé* {autumn 3IPFV:freeze.up INCEP when} ‘when [the rivers] freeze’; *lepadá dánechóz héjá dé* {potatoes DIST:3IPFV:be.big INCEP when} ‘when the potatoes grow big’). So the fact that it is not acceptable for speakers to speak of entry into and exit from emotional states is not a fact about Dene verbs or even about how states are structured in Dene, but a pragmatic restriction on this semantic field.

But Dene also has derivational prefixes to indicate the beginning of a situation. The inceptive prefix *telhe-* can be used, in principle, to indicate the beginning of actions, while the inchoative *ı-* indicates entry into a state:

**Incep**(*tarıchá* ‘the waves are big’) = // *tarıchá* ‘the waves are getting big’

**Incep**(*deghel* ‘[the lake] is calm’) = // *díghel* ‘[the lake] is getting calm’

**Incep**(*delk’os* ‘it is red’) = // *dik’os* ‘it turns red’

**Incep**(*honedhel* ‘[area] is hot’) = // *honídhil* ‘[area] is heating up’

**Incep**(*-gha* ‘sg walks’) = // *te...gha* ‘sg sets off walking’

**Incep**(*honedhel* ‘[area] is hot’) = // *honídhil* ‘[area] is heating up’

For motion verbs and a few others, one can use the inceptive derivation. For most color words, a few texture and atmospheric terms, there is an inchoative derivation. But for many other textures and other states there is no inchoative form: one can use the inceptive or inchoative prefixes. But for most situations these prefixes cannot be used:

\**dídogh* {INCH:3IPFV:be.thick} \*‘[substance] is thickening’

\**diker* {INCH:3IPFV:be.slippery} \*‘it is getting slippery’

\**hík’a* {INCH:3IPFV:be.fat} \*‘he is getting fat’.

For most activities, there is no inceptive derivation:

\**eghátatena* {INCEP:3IPFV:work} \*‘he is starting to work’

\**tthebahegal* {INCEP:3IPFV:run} \*‘he runs off’

For a handful of verbs, there is a “derivation marker” *ne-*, known as the “momentaneous” in Cook (2004), which indicates entry into the state:

**Incep**(*-da* ‘sg sits’) = // *ne...da* ‘sg sits down’

For *-yi* ‘sg stands’ the inchoative is used instead of *ne-*; for *-ti* ‘sg lies’, *ná-*, etymologically ‘down’, is used:

**Incep**(*-yi* ‘sg stands’) = // *í...yi* ‘sg [stops walking and] starts standing’

**Incep**(*-ti* ‘sg lies’) = // *ná...té<sub>1</sub>* ‘sg lies down’

The fact that these (formerly) derivational markers are used in unpredictable ways means that the possibility of adding inchoative and inceptive (or even “momentaneous”) must be specified as an output of the lexical function **Incep** for those lexemes that have the derivation.

The difference between those verb stems which have an inchoative or inceptive derivation appears to be random: ‘waves are big’ and ‘[the lake] is calm’ have an inchoative form, but most other atmospheric words do not; ‘the wind blows’ actually uses the inceptive prefix (or rather its quasi-morph) to indicate the beginning of the situation: **Incep**(*nilts'i* ‘the wind blows’) = // *telts'i*. The phraseme meaning ‘[the] sky becomes lighter [at dawn]’ also takes the “inceptive” (at least etymologically): **Incep**(*yélkq* ‘it is dawn’) = // *hoba hegai* {AR:3IPFV:grey INCEP:3IPFV:white } ‘it just starts to be light’. The verb ‘to fly’ can even take either the inceptive or the inchoative: **Incep**(-*t'a* ‘to fly’) = // *í...t'ak* ‘[bird, plane] lifts off’; **Incep**(-*t'a* ‘to fly’) = // *te...t'ak* ‘[bird, plane] takes off’: *nuha edza sî kut'a dezî tuht'ak* {1PL:for it.is.cold EMPH that's.it here INCEP:2PL:fly} ‘we’re freezing, hurry up and take off this way [to rescue us]’; *tahhq híft'ak* [INCH:3PFV:fly] ‘It [the plane] suddenly lifted off’. One could surmise that the inchoative derivation refers to entry into a state of flight, while the inceptive puts the focus on the action of flying, but what is the difference when one uses both to refer to a bird taking off? In light of these irregularities, it makes sense to consider many of these verbs as morphological phrasemes rather than as true examples of the inceptive or the inchoative. Given the frequency of these phraseologized forms and the seemingly random presence or absence of an inchoative/inceptive derivation, it makes sense to describe the inceptive and inchoative as outputs of the lexical function **Incep** than as productive derivational morphemes.

Finally, even for those groups of verbs, such as colors and motion verbs, which do take the inchoative or inceptive rather productively, these derivations seem to add an unpredictable semantic component beyond indicating just the beginning of the situation. This is indicated by the semantic difference between indicating inception with the inceptive particle *heja* and using the prefix. The semantic difference depends on the semantic field: for motion verbs it seems to be a contrast between ‘to [V] away’ or ‘to set off [V]-ing’ when the prefix is used, while the inceptive particle means ‘to start [V]-ing (in general)’ or else ‘to suddenly start [V]-ing’ after being at rest:

*tegha* {INCEP:3IPFV:sg.walk} ‘he takes off walking’



*ghegal heja* {3IPFV:sg.walk INCEP} ‘he [baby] starts walking (in general)’

For colors, the inchoative seems to indicate a more permanent or long-lasting change of color, while the inceptive particle implies a temporary change:

*kafi la ghesda, senaghé delk’ós ájá* ⟨?dík’os⟩

{coffee much 1PFV:drink, 1PO:eyes 3IPFV:be.red INCEP (PFV) ⟨?INCH:3PFV:be.red⟩}  
‘my eyes turned red from drinking too much coffee’

*betthíghá dígai* ⟨?delgai ájá⟩

{3PO:hair INCH:3PFV:be.white ⟨?3IPFV:be.white INCEP (PFV)⟩}  
‘his hair turned white’

This, too, supports the idea of treating these forms as outputs of **Incep** rather than as productive morphemes. In cases, where output may actually be a quasi-idiom, i.e. /AB/ = ‘A’ + ‘B’ + ‘C’, the added or magnified component must be indicated in some way, such as by a subscript note on the LF, e.g.

**Incep**<sub>depart</sub>(-gha ‘sg walks’) = // *te...gha* ‘sg sets off walking’

LFs 37-39, **Caus**, **Perm**, **Liqu**, are verbs of causation, which also take verbs as their keywords if they are not combined with other meanings.

**CausFunc**<sub>0</sub>(*attack*) = *incite*

**LiquFunc**<sub>0</sub>(*pain*) = *soothe*

**PermFunc**<sub>0</sub>(*attack*) = *condone*

**LiquFunc**<sub>1</sub>(*sadness*) = *cheer* [N] *up*

Causation is a regular meaning in Dene, and there is some diversity of expression. The standard way of expressing causation is by adding the free verb *a...lle*<sub>1</sub> ‘to cause’ after any verb, e.g. *bech’ásdi, begħanitq asíla* {3OB:1IPFV:hate, 3OB:1IPFV:love 1OB:3PFV:cause<sub>1</sub>} ‘I hated her, [but then] she made me love her’. Caused or coerced actions are indicated with *a...ldhen* ‘to make<sub>3</sub> [action]’, e.g. *deneyu k’ezí eghálasna asíłthen setíkwi* {man like 1IPFV:work 1OB:3PFV:cause.action 1PO:parents} ‘my parents made me work like a man’. Also common is to use an embedded clause with the verb *horel.../i* ‘to want’, which is understood in context to apply force or near-coercion: *tthot’yné zá dáyaíłti ha nuhoret’l* {English with DIST:1PL.IPFV:speak FUT

1PL.OB:3IPFV:want} ‘one wanted us to speak English’, ‘one made us speak English’.

A small and seemingly random set of verbs obtain causative derivatives by using the fossilized classifier prefixes, with a causative meaning:

**Caus**(*tegháldé* ‘they died’) = *tegháldé* ‘he killed them’

**Caus**(*naghelna* ‘he’s healing’) = *naghelna* ‘he’s healing him’

The (few) verbs which take this derivation must be learned. **Caus** may thus be considered to be restrictedly expressed in Dene. Permission and stopping seem to be indicated by entirely free means. Permission willfully allocated by an agent may be indicated simply by adding ‘it is not a problem’, i.e. ‘it is allowed’ after the verb. For example, *telk’édhi dzirelye asut’e ile* {gun PERM:3IPFV:carry 3IPFV:have.problem NEG} ‘people are allowed to carry guns around’. In English, ‘allow’ also encompasses circumstances which, while not being conscious agents, render a second situation possible. This would be indicated by two clauses linked by *eyer de* ‘therefore’. For example ‘these moccasins allow people to walk without being heard (by moose)’ would be rendered as *dechen yá dzíresa kekákké hel eyer dé ditth’ah ile* {bush in PERM:1IPFV:sg.walk moccasins with therefore 3IPFV:hear NEG}. Prevention can be indicated simply by putting the prevented action in an embedded clause and adding the negated form of the verb *hore...lji* ‘to want’ as the matrix verb: *setikwi dáts’édil nassa ha sorél?j ile za* {1PO:parents dance REV:1IPFV:sg.walk FUT 1OB:3IPFV:want NEG ASSERT} ‘my parents didn’t want me to go / wouldn’t let me go to the dance’.

One can also use a verb like *náne...zen* ‘to prevent’: *hubeyatié zá dayalti ch’á nanet’en* {3PL.PO:language:CONS with DIST:3IPFV:speak against 3OB:3IPFV:prevent} ‘they were prevented from speaking their (native) language’. This means that **Perm** and **Liqu** are not LFs relevant to Dene.

LFs 40-42: Fulfillment Verbs **Real<sub>i</sub>**, **Fact<sub>0/i</sub>**, **Labreal<sub>ij</sub>** These are fulfillment verbs which are extremely frequent and important phraseologized relations European languages. They take nouns as their keywords.

**Real<sub>1</sub>**(*accusation*) = *prove*

**Real<sub>2</sub>**(*law*) = *abide by*

**Fact**<sub>0</sub>(*tower*) = *stand*

**Labreal**<sub>12</sub>(*saw*<sub>N</sub>) = *saw*<sub>V</sub>

However, these are much less frequent in Dene because nouns are generally limited to artifacts, natural kinds, people, etc:

**Real**<sub>1</sub>(*bes* ‘knife’) = *ʔasi –t’ath* ‘to cut something’

**Labreal**<sub>1</sub>(*konbes* ‘saw’) = *ʔasi na...t’ath* ‘to chop up something’

**Real**<sub>1</sub>(*beschené* ‘vehicle’) = *k’é...lɩni* ‘to drive’

Dene is rich in **Func**<sub>0</sub>, especially for topographical features:

**Func**<sub>0</sub>(*tulú* ‘road’) = *niʔá* ‘it stretches out’; *dzírqʔá* ‘it winds’

**Func**<sub>0</sub>(*tu* ‘lake’) = *–ʔq* ‘to be there (heavy)’

**Func**<sub>0</sub>(*des* ‘river’) = *te...li* ‘to flow’, *hóre...dʒi* ‘to be visible’

**Func**<sub>0</sub> (*dechen1* ‘tree’) = *náʔá* ‘it stands’

Occasionally the **Func**<sub>0</sub> value is redundant and optional:

**Func**<sub>0</sub> (*tsít* ‘falling snow’) = *i–kar; i–tth’e; –jer* ‘to fall (as granular substance)’

Sometimes a topographical verb can be turned into a noun by conversion, and serves as its **Func**<sub>0</sub>, e.g. **Func**<sub>0</sub>(*hhátaili* ‘a spring’) = *hhátaili* ‘a spring is there’

LFs 43-45 (**Involv**, **Manif**, **Degrad**) are verbs which express external effects linked to causation. **Involv** is the verb which determines the keyword’s effect on another actant Y; **Manif** is similar, but focusing less on the keyword’s physical effect on Y than on its sensory manifestation on or in Y:

**Involv**(*snowstorm*) = *hit* [Y]

**Manif**(*star*) = *light up* [the sky]

Some examples with weather terms. **Manif** No because keyword is N, and N are limited in Dene - *horet’i* ‘it is seen’, ‘it is visible’

**QualResDegrad**(*yú* ‘clothing’) = *ch’élé* ‘worn out’

**Degrad**(*ber* ‘meat’) = *–tjer* ‘to rot’

**Degrad**(*dene* ‘person’) = *núni...ldhi* ‘to get old’

The final standard lexical function from Mel’čuk (1998) is **Son**, which describes the characteristic sound of the keyword. **Son** is a standard lexical function in Dene with

many examples and varied expression:

**Son**(*denī* ‘moose’) = *de...lʔó* ‘bellow’

**Son**(*lī* ‘dog’) = *de...lghus* ‘bark’

**Son**(*ts’úze* ‘fly’) = *de...lzī* ‘buzz’

**Son**(*ten* ‘ice’) = *de...lt’ál* ‘crunch’

Table IV-2 summarizes the standard syntagmatic lexical functions from Mel’čuk (1998) which do and do not occur in Dene.

	Em	Char	PhysDesc	Mot	Pos	Atm	Top
Centr	✗	✗	✗	✗		✗	
Magn	R	R	R			✓	✓
Ver	✗	✗	✗	✗		✗	✗
Bon				✗			
Loc <sub>in-ab</sub> *				✗			
Instr*	✗	✗	✗	✗			
Propt	✗	✗	✗	✗	✗	✗	
Oper <sub>i</sub> **	✗	✗	✗	✗	✗	✗	✗
Func <sub>i</sub>	✗	✗	✗	✗	✗	✗	✗
Func <sub>0</sub>						✓	✓
Labor <sub>ij</sub>	✗	✗	✗	✗	✗	✗	✗
Incep	R	✗	✗	R	✗	R	
Fin	✗	✗	✗	✗	✗	✗	
Cont	✗	✗	✗	✗	✗	✗	
Caus	R	✗	R	✗	✗		
Perm	✗	✗	✗	✗	✗	✗	✗
Liqu	✗	✗	✗	✗	✗	✗	✗
Real <sub>i</sub> *	✗	✗	✗	✗	✗	✗	✗
Fact <sub>0</sub>	✗	✗	✗	✗	✗	✗	✗
Involv	✗	✗	✗	✗	✗	R	✗
Manif	✗	✗	✗	✗	✗	✗	✗
Degrad*							
Son*				R			

\*Exist in Dene for relevant keywords (not in sample).

\*\*Restrictedly expressed in Dene for relevant keywords (not in sample).

Table IV-II. Standard Syntagmatic Lexical Functions in Dene.

Those combinations shaded in gray are considered to be semantically incompatible: for example, **Centr** expresses the culmination of a dynamic situation, while position verbs denote a static situation.

## 2 COMPLEX STANDARD LEXICAL FUNCTIONS IN DENE SŪLINÉ

MTT's framework of lexical functions an even more powerful tool for describing lexical relations than one would gather from simply surveying the list of standard LFs, because the standard LFs can be combined with each other to form a wide array of very specific lexical relations. These are referred to as complex lexical functions. In these cases, the leftmost LF has semantic scope over those to its right. For example, **AntiMagn** means 'not intensely [V]' rather than 'intensely un-[V]'. Some examples of complex LFs in English include:

**AntiMagn**(rain) = // *drizzle; lightly* ~    **IncepOper<sub>1</sub>**(depression) = *sink into* ~  
**CausOper<sub>2</sub>**(joy) = *fill with* ~                      **AntiReal<sub>2</sub>**(class) = *fail a* ~

Naturally, complex lexical functions can only be present if their constituent LFs exist in the language. In Dene, at least the paradigmatic LFs **Syn**, **Anti**, **Conv** (restrictedly expressed), **Gener** (for some semantic fields), and **Result** occur. The syntagmatic functions **Magn** (for some semantic fields), **Oper<sub>i</sub>** (restrictedly expressed), **Loc<sub>in-ab</sub>**, **Incep** (restrictedly expressed), **Cause** (restrictedly expressed), **Real<sub>i</sub>**, **Func<sub>0</sub>** (for some semantic fields), **Involv** (restrictedly expressed), **Degrad** and **Son** also occur. Combinations of these LFs sometimes occur in the semantic fields in the sample.

The semantic field of atmospheric phenomena is particularly rich in Dene, with a variety of related words linked by idiosyncratic complex lexical relations. This is particularly true of *nilts'i* 'the wind blows':

**AntiBon**(*nilts'i* 'the wind blows') = ~ *déni* 'it is sharp'

**Conv<sub>21</sub>Involv<sub>1</sub>**(*nilts'i* 'the wind blows') = *dáhishal* 'it flies away [in wind]';

*naríts'i* ‘it is blown away [by wind]’

Those atmospheric terms, such as *tsíl* ‘falling snow’ or ‘snow falls’, which have a wide variety of **Func**<sub>0</sub> derivations, also have complex function involving **Func**<sub>0</sub> meanings:

**Magn**<sub>size</sub> **Func**<sub>0</sub>(*tsíl* ‘falling snow’) = ~ *hikar* ‘it falls in big flakes’

A number of atmospheric terms also have complex LFs involving phasal derivations:

**IncepPlus**(*taretj* ‘there are waves’) = // *taríchá* ‘the waves are getting bigger’

**IncepMinus**(*taretj* ‘there are waves’) = // *díghel1* ‘[lake] calms down’

**IncepPlus**(*nilts'i* ‘the wind blows’) = ~ *chogh héjá*; // *k'eʔáné náłts'i*

**IncepMinus**(*nilts'i* ‘the wind blows’) = // *díghel2* ‘[wind] calms down’

**BonFin**(*náheʔq* ‘sun goes down’) = // *yéhtsǐ* ‘[pretty] red end of sunset’

**S<sub>res</sub>Fin Func**<sub>0</sub>(*tsíl* ‘falling snow’) = *yath* ‘snow [on ground]’

Topographical features are also rich in **Func**<sub>0</sub> derivations, as seen in Section IV-1.2; in this semantic field one also finds **S<sub>res</sub>FinFunc**<sub>0</sub> derivations for ‘remains of [X] that happened / existed’, and **S<sub>loc</sub>Func**<sub>0</sub> derivations for ‘the place where there [X] exists’ (limited to trees):

**S<sub>res</sub>FinFunc**<sub>0</sub> (*dechen* ‘tree’) = *teses* ‘[remains of] dead tree’

**S<sub>res</sub>Func**<sub>0</sub>(*horek'án* ‘a [forest] fire burns’) = *hobaé* ‘a burned clearing’

**S<sub>loc</sub>Func**<sub>0</sub>([tree species]) = *k'es* ⟨*gani*; *k'i*⟩ *néné* {poplar ⟨pine; birch⟩ land:CONS}, etc.

Configurations of lexical functions are cases in which more than one semantic change occurs in the keyword, but one of these relations does not clearly have semantic scope over the other. Among the lexical items in our sample, combined LFs can be found for a few atmospheric terms:

**Motor + Func**<sub>0</sub>(*tsíl* ‘falling snow’) = ~ *dítth'e* ‘it falls while moving around’

**Magn + AntiBon + Sing**(*nilts'i* ‘the wind blows’) = ~ *stini* ‘tornado’

**Magn + Involv1 + Sing**(*nilts'i* ‘the wind blows’) = [Y] *nánelth'er* ‘it hits [Y] as a big gust’

The frequency of these configurations is, naturally, a function of the prominence of the component relations in the language .

### 3 NONSTANDARD LEXICAL FUNCTIONS IN DENE SŪLINÉ

Up to this point, we have searched for the standard lexical functions that are already well-established in Meaning-Text lexicography. But looking at Dene texts in an open-ended way, one can search for language-specific nonstandard (or even standard) lexical functions that have not appeared in the current inventory, which is largely based on lexicographic studies of Indo-European languages. In examining the texts and notes which constitute the corpus for this study, we do not find any new standard lexical functions; in general one is struck by the much lower frequency of phraseologized language with respect to what one finds in English or other European texts. There are, however, several nonstandard lexical functions, meaning those that describe a semantic relation which appear regularly, though infrequently, but which have a certain diversity of expression. Some of the standard lexical functions from the canonical list described above are found as nonstandard LFs in Dene. However, a few more Dene-specific nonstandard LFs seem to be present.

The Dene lexicon regularly uses different verb stems to describe a similar situation, depending on the physical shape and texture of the main semantic actant X. This is particularly true of verbs describing motion, travel or position. The most famous example of this phenomenon is the classificatory verbs, but it is not limited to them. The same differences in shape and texture are reflected in several unrelated sets of lexemes.

One could therefore posit a series of nine nonstandard lexical functions, **Comp**, **Fabr**, **Stick**, **Mud**, **Gran**, **LCont**, **SCont**, **ECont**, and **Anim**, which express this regular relation.

**Comp**(‘fall’) = *ná...ltth'i*      **Gran**(‘throw’) = *-tsir*

**Fabr**(‘fall’) = *niri...lchuth*      **SCont**(‘be there’) = *-kq*

One could therefore posit a series of nine nonstandard lexical functions, **Comp**, **Fabr**, **Stick**, **Mud**, **Gran**, **LCont**, **SCont**, **ECont**, and **Anim**, which express this regular relation.

One finds a similar relation between sets of verb stems, also mostly referring to positions and movement, which differ based on the number of the subject. It would not be correct to view these stems as suppletive, because the dual number is not a grammeme of the category of number, nor does the third person systematically differentiate according to number.

<i>Direct Object Shape</i>	<i>'throw' (IPFV)</i>	<i>'pick up' (IPFV)</i>	<i>'be there' (IPFV)</i>	<i>'fall' (IPFV)</i>
<b>Compact</b>	<i>-shúl</i>	<i>niri...zá</i>	<i>-zq</i>	<i>ná...ltth'i</i>
<b>Fabriclike</b>	<i>-zer</i>	<i>niri...lchuth</i>	<i>-lchuth</i>	<i>te...kar</i>
<b>Sticklike</b>	<i>-hhál</i>	<i>niri...tĭ</i>	<i>-tq</i>	<i>ná...té<sub>1</sub></i>
<b>Mudlike</b>	<i>-tlé<sub>2</sub></i>	<i>niri...tlé</i>	<i>-tlé<sub>1</sub></i>	
<b>Granular</b>	<i>-tsir</i>	<i>niri...dzai</i>	<i>-dzai</i>	<i>í...tth'e</i>
<b>Large Full Container</b>	<i>-hhes</i>	<i>niri...tĭ</i>	<i>-ltq</i>	
<b>Small Full Container</b>	<i>-nil</i>	<i>niri...ká</i>	<i>-kq</i>	
<b>Empty Container</b>	<i>-hhál</i>	<i>niri...tĭ</i>	<i>-tq</i>	
<b>Animate</b>	<i>-ne</i>	<i>niri...tí</i>	<i>-da / -yĭ</i>	<i>ná...ltth'i</i>
<b>Plural</b>	<i>-dél</i>	<i>niri...le</i>	<i>-la</i>	<i>ná...tĭ'i</i>

**Table IV-III. Verb Stems Classified by Shape and Texture.**

One finds a similar relation between sets of verb stems, also mostly referring to positions and movement, which differ based on the number of the subject. It would not be correct to view these stems as suppletive, because the dual number is not a grammeme of the category of number, nor does the third person systematically



differentiate according to number. These are simply sets of unrelated stems which differ based on the regular different of subject number. Table IV-IV lists some examples of this relation. It would therefore be useful to posit three more nonstandard Dene lexical functions, **Sing<sub>subj</sub>**, **Dual<sub>subj</sub>**, and **Plural<sub>subj</sub>** which express this relation.

**Sing<sub>subj</sub>**(*ná...tes* 'pl lie down') = *ná... tĭ*

**Plural<sub>subj</sub>**(*-da* 'sg sits') = *-tth'i*

<i>Subject Number</i>	<i>'sit'</i>	<i>'lie'</i>	<i>'biped walk' (IPFV)</i>	<i>'stay'</i>	<i>'fall' (IPFV)</i>
<b>X = 1</b>	-da	-tĭ	-gha	ná...dher	ná...ltth'i
<b>X = 2</b>	-ké	-tes	-ʔás	ná...dher	ná...tʔ'i
<b>X = 3 or more</b>	-tth'i	-tes	-dél	ná...dé	ná...tʔ'i

**Table IV-IV. Singular, Dual and Plural Subject Verb Stems.**

Finally, like many languages Dene regularly has different words to differentiate between male, female and young animals. A few of these are listed in Table IV-V.

	<i>dení</i> 'moose'	<i>sas</i> 'bear'	<i>dih</i> 'spruce grouse'
<b>Male</b>	yáné	deyeth	etthéré //
<b>Female</b>	ts'údai	dets'ie	dih //
<b>Young</b>	deníaze //; tats'éniaze //	yíaze	diaze //

**Table IV-V. Terms for Male and Female Animals.**

We can posit two more nonstandard lexical functions, **Masc**, **Fem** to express this difference, e.g. **Fem**(*dení* 'moose') = *ts'údai* 'cow [moose]'.

It is important to note that there is disagreement between speakers about the restrictiveness of some of these terms, with some speakers using *yáne* and *dets'ie* as default 'male' and 'female' terms respectively, with other cases being exceptions which must be listed in an ECD as outputs of lexical functions. Most of these are adjectives,

but some are cumulatively expressed with the keyword.

## CHAPTER V

### Linguistic Typology and the Lexicon

So far, the focus of this study has been on two main topics within lexical semantics. The first has been the description of individual word meanings. This has been attempted by suggesting possible decompositions of these meanings into simpler and more universal ones. The second subject has been the exploration of the Dene keywords' lexical relations, the patterns by which groups of lexical units resemble and differ from each other. The results obtained from these two lines of inquiry correspond to the information the semantic and lexical combinatorial zones of the lexical entries.

To accomplish both of these descriptive tasks, we have employed two empirically-compiled inventories claimed to be cross-linguistically attested or possible. Semantic decomposition of lexical units has been represented by using a combination of Meaning-Text Theory's lexicographic definitions and semantic network and meanings from the Natural Semantic Metalanguage (NSM), adapted to Dene Sų́liné. The list of lexical relations were those formalized as lexical functions (LFs). Taken together, the NSM and lexical functions constitute a solid framework for single-language and crosslinguistic semantic description.

As mentioned in the introduction to this thesis, sorting universal from language-specific features is a core aim of linguistics. Once comprehensive descriptions have been made of many natural languages, qualitative and quantitative linguistic typologies can be posited which provide valuable insight into the general tendencies in interlinguistic variation. Up to this point, in our estimation, typological studies of language have usually focused on areas such as word order, morphology, or topics in grammatical relations such as nominative-accusative versus ergative systems. Comparatively less attention has been devoted to classifying word meanings and lexica in the same manner. However, once lexical semantic studies such as this one have been carried out on more languages, such a semantic typology is imaginable. "Typology" is

used here in an informal way, to refer to any and all patterns by which human languages systematically differ from each other as well as the possible reasons that could motivate such differences. Just as one can compare lexica one can compare sociolinguistic contexts of languages based on factors such as oral versus written language and languages spoken by small groups with much shared knowledge versus those used by mass societies.

This chapter aims to explore the possible typological implications of this survey of the Dene Sł̓liné lexicon by linking the differences found between the Dene and English lexical to wider linguistic tendencies including both structural and sociolinguistic factors. We consider the crosslinguistic implications of two types of differences between Dene and English lexica, word meanings themselves and lexical relations. Contrasts between English and Dene word meanings run include divergences at the most basic level of semantic primitives as well as more complex word-specific meanings. These will be discussed in order, followed by a survey of the relationship between word meanings and lexical classes from a comparative perspective. Lastly, in Section 2, we will consider the distinct patterns of lexical relations in Dene and English and the factors which may have contributed to the divergences found.

## **1 CROSSLINGUISTIC VARIATION OF WORD MEANINGS**

When one learns a new language, one is burdened most severely by the task of learning many thousands of new sound-meaning pairs as well as any language-specific features of their phonological and semantic poles. One expects word meanings to often be unique, especially when the topics or culture of the target speech community are far removed from the realm of experience of the source language. A language learner or linguist faces the issue of untranslatability when approaching complex and culturally specific lexical units such as NOSTALGIA, SAUDADE or K'ENE...TA<sub>2</sub>. At the same time, there does not seem to be much of a basis for assuming a limitless diversity of word meanings. If we ever manage to learn new word meanings we must ultimately be relying on translation and accessing some common conceptual framework. Learning

the lexicon of a language involves learning the language-specific correspondences between non-linguistic conceptual representations and specifically linguistic meanings:

$$(29) \quad \{\text{ConceptR}_h\} \Leftrightarrow \{\text{SemR}_i\} \quad | \quad 0 < h, i \leq \infty$$

It is claimed in the Natural Semantic Metalanguage approach that there is not an infinite diversity in this mapping, but that there are certain basic, possibly innate, human concepts which map more or less directly onto conceptual representations and which would have translation equivalents in all languages. These are the semantic primitives. However, there seem to be differences between Dene (and a set of other languages) and English (and other languages) even in terms of some NSM semantic primitives.

**1.1. Semantic Primitives.** In Section III-2.2, it was shown that no Dene translation equivalent could be found for several semantic primitives from the current NSM inventory (Goddard 2007), specifically BAD, MOMENT, CAN, FEEL, KIND, and PART. (The meanings ‘bad’, ‘near’ and ‘small’ were considered quasi-complex and thus not genuine primitives in MTT’s antonymy framework.) In the case of BAD, NEAR, SMALL, Dene preferred to express these concepts as their antonyms accompanied by the negation marker *ile*, despite the existence of low-frequency lexical items corresponding to NEAR and SMALL in Dene (although there was no verb for the latter).

The status of MOMENT, however, could be questioned because a ‘moment’ is not really an entity at all, but is actually a kind of attenuative modifier for time concepts. The expressions *this moment* and *for a moment* really mean ‘exactly now’ and ‘for a very short time’, so there is no reason to expect other languages to have a lexical item common to all of these situations, much less a name for a small unit of time conceived as a putative “thing”. Nor does CAN appear to be a coherent, let alone universal concept. Its deontic and epistemic senses are expressed differently in Dene. Not only are they realized as free phrases, but these are formed by the negation of a semantically simpler unit. It appears that the conflation of these as ‘can’ verbs in European languages is both culturally specific and masks the semantic complexity of CAN which really means ‘absence or removal of an obstacle’ and is semantically more complex than CAN’T, which means ‘presence of an obstacle’.

Another traditional NSM primitive is FEEL in its sense ‘to experience an emotional state’. The semantic primitive FEEL apparently does not exist in Dene; rather, specific emotions are expressed by their own verbs and phrasemes. Also absent from Dene is a lexical item corresponding to KIND, which does not seem to be a universal human concept or necessary to express taxonomic relationships. The final “absent” NSM primitive is PART, which denotes an array of different relations between two entities. In Dene this is not rendered by a single lexeme denoting the relation. Of course the part-whole relations or kind-instance relations must be part of human conceptualization (otherwise Dene could not have naive-linguistic ontologies of animals, plants, materials and so forth). But it does not follow that this must be expressed as a lexical item, or that the concepts of ‘kind’ and ‘part’ are *linguistic* meanings.

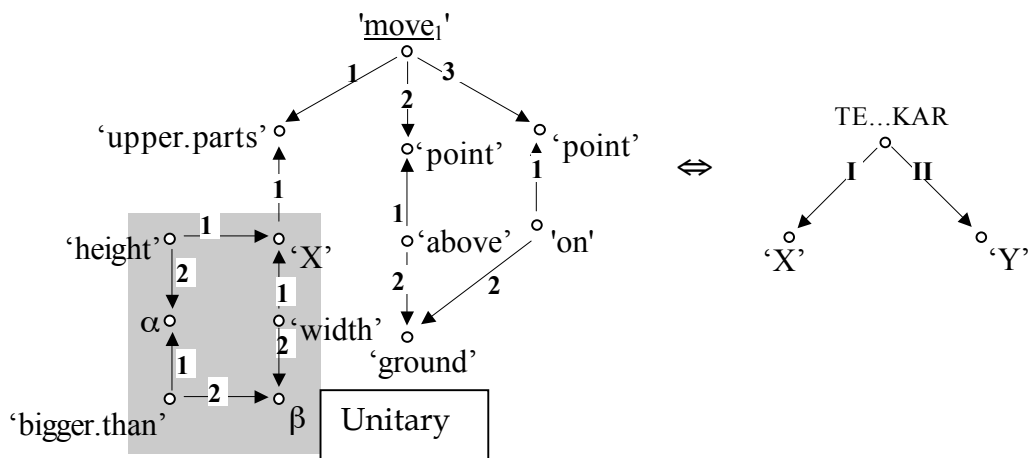
Interestingly, Junker (2008) found that the NSM semantic primitives PART and KIND were absent from a variety of Cree, an Algonquian language which neighbors Dene: “‘parts’ in East Cree are not viewed in an abstract way. [...] After several years of sustained attention to this question in East Cree, I have come to the conclusion that there is a fundamental difference in perspective between a language like East Cree and a language like English... The status of this prime must therefore be questioned”. Not only are the same semantic primitives “missing” from Dene and East Cree, but the two languages seem to show similarities in how concepts like KIND and PART are rendered in as opposed to how they are expressed in many other languages. At a minimum, these findings suggest that languages can be classified according to how they express part-whole and kind-genus relations, and raise the question of the extent to which ‘kind’ and ‘part’ are in fact unitary concepts. Although Junker does not claim it, these findings could even suggest a typological or areal commonality how some boreal or indigenous Canadian languages conceptualize of taxonomy and paronomy relations.

**1.2. Language-Specific Meanings.** Even once one eliminates the contested semantic primitives from the list and works only with those common to English and Dene lexica, important differences emerge in the patterns in how these meanings are combined into more complex configurations. One naturally expects to find a great deal of interlinguistic variation where more complex and specific word meanings are concerned. In many cases concepts nameworthy enough to be adopted as specifically

linguistic meanings simply reflect the interests (at least historically) of their speakers. Wierzbicka (1997: 5) writes, “culture-specific words are conceptual tools that reflect a society’s past experience of doing and thinking about things in certain ways”. Fishman (1996) calls this the “indexical relationship” between language and culture: “a language long associated with a culture is best able to express most easily, most exactly, most richly, with more appropriate overtones, the concerns, artifacts, values and interests of that culture”. We saw this in the emotions and character terms and how, for example, notions of ‘bravery’ and ‘generosity’ did not have precise equivalents in Dene, for presumably cultural reasons.

In other cases, what is lexicalized may be random. Some languages may lexicalize “non-salient” features. Verbs may include as components of their meaning the number, shape or material of one of the actants, or even whether the subject had previously carried out the action denoted by the verb.

While it may not be meaningful of any deeper difference, one of the most striking differences between the Dene and English lexica, based on the words in the sample, is precisely the former’s tendency to lexicalize presuppositions about the subject’s shape, number and texture. The various position and motion verbs in our sample showed this. ‘Fall’ verb, for example, varied according to their presuppositions about X’s shape, so *te...kar* meant ‘the upper part of X, whose width is greater than its height, moves from [a point] above ground toward the ground to [a point] in contact with the ground’, i.e. ‘X (wide or fabriclike object) falls flat’.



This lexicalization of X's physical features in position and motion verbs can be found in a few colloquial verbs in English such as *plop down* [*on the couch*]. But it is not such a pervasive feature of the English lexicon as it is in Dene.

Talmy (2007) explores the typological patterns by which languages lexicalize semantic roles into the meanings of position and motion verbs. Citing data from Atsugewi (Hokan family, California) and other languages, Talmy suggests a typological grouping of languages in which verbs expressing presuppositions about X's shape, texture and so forth ("Motion + Figure verbs" in Talmy's terminology) figure more prominently than in most Indo-European and other languages. This and other research into lexicalization patterns or conflation patterns is an exciting beginning into this question of semantic typologies. In Dene one also find, in the current sample, various position and motion verbs that have nonassertional semantic components about the number of the experiencer or agent X as part of their meanings, e.g. one verb meaning 'one person walks' and another 'two people walk', and so forth. This lexicalization of X's number can frequently be found in Native American languages such as Hopi and Papago (Uto-Aztecan family) as well as in some Caucasian languages such as Georgian. It is important to note that these are not really cases of grammatical suppletion — the alternation of the verb depends on the semantic number of the actants rather than the grammatical number. This can be seen in various cases where there is a conflict between the grammatical and semantic multiplicity of the subject (see the discussion of Navajo, Hopi, Papago and Georgian in Mel'čuk 2006a: 423-424)

**1.3 Variation of Linguistic Ontologies.** The term "linguistic ontology" refers here to each natural language's naive-linguistic classification of meanings as entities or situations, as evidenced by their expression as nouns or verbs. This is, in Meaning-Text Theory, part of the semantic component, or the language-specific correspondence between semantic structures and deep syntactic structures:

$$(30) \quad \{\text{SemS}_i\} \Leftrightarrow \{\text{DSyntS}_j\} \mid 0 < i, j \leq \infty$$

Why, for example, are the meanings 'grove of trees' or 'cliff' conceived of as "things" in English, but as linguistic situations in Dene? Differences in what is considered an



entity versus a situation, as evidenced by lexical classes, appears as one of the most significant typological differences between Dene and English in this study. The majority of what are expressed as nouns in English ('beauty', 'truth', 'sound', 'sake', 'wind', 'wave') and as adjectives ('sad', 'happy', 'big', 'far', 'true', 'clever', 'shy', 'purple') are expressed as verbs in Dene:

'a cliff', 'a slope'	⇒	<i>hodárilger</i>	'it (land) goes down suddenly'
'wind'	⇒	<i>nilts'i</i>	'it (wind) blows'
'waves'	⇒	<i>taretĭ</i>	'the water is making waves'
'a grove of trees'	⇒	<i>erét'i</i>	'they (trees) form a line/group'
'a wet place'	⇒	<i>húlʔa</i>	'a wet place is there'
'a depression'	⇒	<i>hháróʔa</i>	'it (land) does down in a spot'
'a spring (of water)'	⇒	<i>hhátailĭ</i>	'water flows out of the ground'
'a waterfall'	⇒	<i>hhanádlĭ</i>	'water flows out and down'

This type of semantic content is often referred to as being prototypically nominal, i.e. expressed as nouns. On initial examination, we have no obvious reason to regard referents like cliffs or tree groves as less static, physical or "object-like" than individual trees, or dogs or people, which are all realized as nouns in Dene. Indeed, if physical staticity is to be the criterion for such a division, one would sooner expect 'dog' or 'person' to be conceptualized as a situation rather than 'cliff'. Presumably, any referent which is a rigid designator should be realized as a noun rather than as a verb.

Physical and moral traits are almost invariably realized as active verbs, and are thus conceived as being ways of the subject's thinking and being rather than as object like 'the soul' (a noun in Dene) in some way separable from the subject.

'fairness'	⇒	<i>horelyú ʔasí elk'ézi aldden hoʔa</i> {all things REC:like 3IPFV:cause it.must} 'each thing must be made the same as the others'
'creative'	⇒	<i>ʔasí lq theltsi wali ghq nánedher</i> {things are.many 3PFV:make POSS about 3IPFV:think} 'he thinks about many things he would make'
'risk'	⇒	<i>t'á bet'á dué nódhí wale</i>

‘plan’	⇒	{REL 3:because.of it.is.bad 3IPFV:happen POSS} ‘that which because of it something awful may happen’ <i>t’qtú bek’énáts’édé ha</i>
‘social effect’	⇒	{REL:how 3OB:DS:3IPFV:do FUT} ‘how one will do it’ <i>t’qt’ú dene ch’álanié net’i ha</i>
‘challenge’	⇒	{REL:how people actions:CONS 3IPFV:be.seen FUT} ‘how people’s ways will be (seen to be)’ <i>t’a bet’á la nechá ha</i>
		{REL 3:because.of work 3IPFV:be.big FUT} ‘that which because of it the work will be great’

It should be stressed that the above Dene phrases are merely renderings of meanings corresponding to property concepts nouns in English in the left column; more literal Dene renderings would be ‘to be fair’, ‘to be challenging’, and so forth. In Dene, the noun class is virtually always limited to perceptible entities and, within these, a majority appear to be rigid designators, especially natural kind and artifact terms. While Dene does have a means of converting verbs to nouns, either through the addition of the nominalization suffix *-i* or through (very rare) noun derivation — such as  $S_0$ (*ghe...na* ‘to live’) = *eghenai* ‘life’ — these means are very seldom used.

Beck (2002) has examined the typology of parts of speech systems in detail, focusing on the differences between Native American languages and “Standard Average European” ones. Beck’s typology begins with certain “semantic classes” such as “property concepts”, “human characteristics”, “states”, “objects”, “actions”, “events”, and so forth, which are deemed to be universal. These somewhat recall Apresjan’s (2000) “main human systems”, mentioned several times in this work. There are simply some situations, mostly extralinguistic, which speakers from all cultures will want to express in words. When languages divide up these semantic classes or human systems differently, one finds typological variation in the inventory of lexical classes, ranging from NAV languages with three distinct, large lexical classes of nouns, adjectives and verbs, to N[AV] languages, which express the semantic content of European adjectives using verbs, and possibly [NA]V languages as well. Beck (2002) suggests that this typology of lexical classes is based on an algorithm which takes into account both semantic and syntactic characteristics, but giving priority to the semantic

considerations, provides the best working definition of lexical classes which could have cross-linguistic validity:

The first step in the algorithm would be the identification of those words which are to be classified as semantic predicates (verbs) and those words that are to be classified as NAMES (nouns)—that is, an N[AV] lexical inventory. If no further (major class) distinctions are made in the lexicon, the process stops there with the class of semantic predicates being designated WFM<sup>21</sup> syntactic predicates and the class of names as wfm actants... otherwise, the algorithm subdivides the lexicon, separating those semantic predicates which are WFM modifiers (i.e. adjectives) from those which are not [generating a full NAV inventory].

Semantic definitions of nouns and verbs often assume that nouns are prototypically semantic names and verbs prototypically predicates. In MTT, predicates are those meanings which describe situations — such as actions, activities, events, states, properties, and relations — which thus require the presence of others (semantic actants or obligatory participants) to be conceived of and uttered; semantic names have no such requirement. However, the conflation name-noun and predicate-verb may be problematic: quasi-predicates are meanings describe entities which have arguments. These can be considered a special class whose actants actually express the actants of situation which links the keyword to its (and the verb's) arguments. For example PROFESSOR is part of the linguistic situation TEACH, and so PROFESSOR borrows the actant STUDENT from the verb. If we consider the quasi-predicates as a kind of abbreviation for a larger situation, the general equation noun-name and verb-situation generally holds. Nonetheless, it will not be clear that all entity names which are predicates are in some way derived from other predicates without more wide-ranging typological studies.

## 2 **CROSSLINGUISTIC VARIATION OF LEXICAL RELATIONS**

Beyond a crosslinguistic comparison of word meanings, one can also suggest a typology of lexica in terms of lexical relations. While the semantic primitives of the Natural Semantic Metalanguage were claimed to be universal in the sense that each language would have some translation equivalent of each of them, Meaning-Text

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<sup>21</sup> A reference to Hengeveld's (1992) formula "without further measures", which refers to the amount of "morphosyntactic machinery" required to use a lexical item in a (marked) syntactic context.

Theory's inventory of lexical relations, formalized as lexical functions (LFs), is only claimed to represent a current list of attested lexical relations, a subset of which may be found in each language. In fact, most of the examples of the 60 lexical relations current in MTT are described with examples from the lexica of major Indo-European languages such as English, Russian, French and Spanish. While lexical functions as frequent, abstract semantic relations with a diversity of phraseologized expressions can in principle be looked for in any language, there has been little focus so far on testing the extent to which these lexical functions are in fact attested crosslinguistically.

This study of the Dene lexicon suggests that only a small subset of the 60 phraseologized lexical relations in the current inventory are in fact relevant to this language. Conversely, when examining Dene corpora in an open-ended way, one does not find a competing list of unmentioned lexical relations (aside from some nonstandard LFs). The Dene texts and conversations analyzed for this study simply appear to contain far fewer set phrases than their European counterparts. It is important to note that many paradigmatic as well as syntagmatic lexical relations whose outputs must be lexically listed in European languages are realized by free means in Dene. For example the various idiomatic **Magn** (intensifier of the keyword) semantic derivations mentioned in Section II-3.1.4 — such as **Magn(armed)** = *to the teeth* and **Magn(applause)** = *heavy, thunderous* — were realized by free adverbs in Dene that meant 'really' or 'very'. Of the paradigmatic relations, only **Syn** (synonymy), **Anti** (antonymy) and **Result** (resulting states of events) appearing as relevant lexical functions for the lexical units in the sample. Why is the expression of so many lexical relations heavily phraseologized expressed in English and French, but with realized with free, non-phraseologized means in Dene? Could this be indicative of a wider crosslinguistic tendency? There are essentially two ways in which it might be, not mutually exclusive:

- The structural explanation: the polysynthetic structure of Athabaskan languages precludes many lexical relations common in English — the same meanings are added regularly via the richer morphology.
- The sociolinguistic explanation: the widespread use of writing for European languages fixes much more language into set phrases, while oral languages have a

different relationship with phraseology, regardless of structural questions. Similarly, a language spoken by a large mass society will require more semantic derivations than one spoken by a group with more shared knowledge.

In the following sections, we will explore how these hypotheses could apply to Athabaskan languages.

**2.1. Lexical Relations and Polysynthetic Structure.** “Polysynthesis” is not a rigorously defined term but an impressionistic statement about the comparatively high number of morphs in most wordforms of a given language. Usually, a verb in a polysynthetic language, as many Native American languages are, has the same informational content as an entire clause in a European language. At least for some such languages, the prominence and centrality of the verb in the lexicon at the expense of other lexical classes such as adjectives and nouns, as one finds in Dene, means that the language does not use the noun class to refer to semantic fields such as abstract ideas, qualities and phenomena,. Consequently, all of the lexical relations which denote the standard phrasal metaphors (**Centr**, **Ver**), support verbs (**Oper<sub>i</sub>**, **Func<sub>i</sub>** and **Labor<sub>ij</sub>**) and adpositions (**Propt**) are absent or rare. Indeed, the use of semantically light support verbs such as **Oper<sub>i</sub>** serves to transform a noun which really indicates a linguistic situation, such as in *a step towards me*, back into a verb phrase, e.g. **Oper<sub>1</sub>(step) = take**. In a language like Dene, where such situations are always referred to by verbs, these semantic relations are unnecessary.

For other syntagmatic relations, such as **Incep** (beginning of a situation) and **Fin** (end of a situation), these meanings are realized by free morphological means involving the inceptive derivation or the inceptive particle (see Chapter IV). In contrast, English has many verbs, some phrasal, that are semantic derivations for starting and ending phases of the keyword, e.g. **Incep(travel) = set off //** or **Fin(try) = give up //**.

The emergence of phrasal verbs such as these in European languages has been linked with the typological shift from a fusional to more analytical verb structure. Masini (2006) associates the emergence of phrasal verbs in Italian with internal structural pressures resulting from factors such as the loss of the Latin case system, the decreased transparency and productivity of Latin verbal prefixes, including locative derivation markers. This shift has parallels in the historical development of Germanic

and other Indo-European languages. In contrast, Athabaskan languages still retain a complex and productive system of locative, adverbial and directional prefixes as well as inceptive and inchoative markers. At least considering the current sample and corpus, these prefixes are less likely to lose their transparency and result in morphological phrasemes than other left-side material such as Aktionsart prefixes and (former) incorporated nouns. Athabaskan languages, therefore, would not have the same structural pressures to develop multi-word verb phrases, which could then form become phraseologized, due to the enduring transparency of some derivational prefixes.

**2.2. Lexical Relations and Orality.** Another factor possibly influencing phraseologized lexical relations, not mutually exclusive with the structural account above, stems from the fact that Athabaskan languages have traditionally been spoken by a very different kind of speech community with respect to European languages. One major difference is that Dene has historically been an oral language, while standard written language has had great prestige in anglophone speech communities.

Krauss (2000) posits a pre-contact sociolinguistic *modus vivendi* for Athabaskan peoples characterized by dialect continua in which mutually unintelligible Dene languages shaded into each other over a wide geographical area. In spite of this, there would have been extensive language contact due to the particularly northern need to travel extensively to exploit various resources in the course of hunting and gathering land use cycles. For Krauss, this means that an Old World model of the dialect continuum would not apply to Athabaskan societies because Dene speakers would have grown up with extensive multilingualism overlaid on the dialect continuum.

The European dialect continua, such as the post-Latin dialect continuum before the advent of standard national languages such as Italian, French and Spanish, contrasted in some ways with this model. These populations, relying on agriculture and living in villages, were less mobile than Athabaskan groups and there was less of a tradition of multilingualism in other mutually unintelligible local varieties than what Krauss identified for Athabaskan. In historical times, national languages were created by superimposing one local variety over the continuum of local dialects, which are not mutually intelligible with the national languages. In theory this would result in a stark local-national diglossia, but in the 20<sup>th</sup> century there is more of a continuum between

the basilect and acrolect. Iacobini (2009), for example, identifies four language levels for Italian speakers: the local dialect, the regional dialect, regional Italian and standard Italian. According to Iacobini, the local Romance varieties would have had phrasal constructions for internal typological and structural reasons like those outlined in Masini (2006) but it may have been the process of written standardization spread such local spoken constructions outside of their original speech communities. For the author, regional speakers of the national language would have acted as historical intermediaries who, while not proficient in the local language, would have adopted some local grammatical constructions such as phrasal verbs and introduced them into the standard national language. In this way, Iacobini outlines a diachronic process involving written language and standardization which, while it did not create some of the phrasemes that feature prominently in syntagmatic lexical relations, made them much more prominent.

This theory still does not explain why individual spoken varieties such as the Dene of a particular area would have a much lower frequency of phraseologized expressions of syntagmatic lexical relations, even taking into account morphological phrasemes. Other authors have associated cultural contrasts in literary poetics which may have resulted in a heightened relevance of some syntagmatic relations, such as phraseologized intensifiers, in European languages.

Hans (1994), tracing the use of **Magn** intensifier outputs (“boosters”) in English from the 15<sup>th</sup> century to the present, found a gradual in diachronic change by which a concrete meaning becomes an abstract degree adverb, e.g. *terribly*. Interpretation of such inventive metaphorical use of modifiers that requires more disambiguating effort on the part of the speaker and the hearer, which Hans associates with their use as prestige forms by prominent writers demonstrating their eloquence and creativity:

One reason for the ever-continuing change regarding boosters can be seen in a “taste for hyperbolic expression” in language: speakers desire to be “original”, to demonstrate their verbal skills, and to capture the attention of their audience. The knowledge and use of a particular booster often signals in-group membership. When the use of that booster spreads to other groups in the speech community, the word loses its function of group identification, and the linguistic “trend-setters” will then normally put a new group-symbol into circulation.

This literary taste, perhaps rooted in social class and literary specialization, may not transfer to an Athabaskan context. Phraseologized intensifiers are markedly absent for

the keywords in several of the semantic fields in the current sample. In the Dene corpora used, one also rarely finds non-free **Magn** outputs of emotion, character or physical description terms. While a place or person may be described as ‘beautiful’, ‘intelligent’ or ‘large’, descriptions rarely go beyond that. There is usually no equivalent of hyperbolic or intense adjectives like ‘gorgeous’, ‘brilliant’, or ‘huge’. Indeed many speakers bristle when asked to translate such adjectives into Dene, finding it strange and inappropriate to insist on degrees of beauty, speed, intelligence, smallness or other traits. “If it’s beautiful it’s beautiful, we just say that. We don’t go on and on like in English about the beauty of a sunset or a place”, said one consultant. In Dene traditional narratives, we are rarely provided with a detailed physical description of a place or an explicit analysis emotions and character of the protagonists. Murray & Rice (1996: 7-8), speaking of detail in storytelling, identify this as a specifically Athabaskan or Northern linguistic aesthetic:

In situations where we have versions of the same story by the same storyteller, one told in English to a younger fieldworker, the other in Haida or Tlingit to an older fieldworker, the Native-language version will be more implicit and laconic, the English version more explicit and detailed. [...] Outsiders tend to find the versions with the most explanation and detail to be most satisfying and coherent. From an indigenous point of view, the best versions are the most laconic. [...] It is important to be aware of this tendency, and how it relates to cultural values regarding literary taste. It is also very important to note that most ‘retellings’ of Native stories aimed at English-language readers tend to be overstated in style.

A more authentic Dene style is to use descriptive words sparingly and to reveal the intensity of thoughts, emotions and character traits through the character’s actions — the speakers consulted felt that high frequency and explicit of emotion and character terms using modifiers in Dene resulted in an artificial and didactic tone unusual for Dene speech. Such aesthetic differences between Dene and English (or between languages generally) may have an influence on the emergence of some phraseologized lexical relations over time.

For other syntagmatic relations, the motivating differences may go beyond the mere orality of the Dene languages and extend into the general social history of Athabaskan peoples. The best example of this is the absence of all the **S<sub>i</sub>** lexical functions, which provide the names for actants and circumstantials of verbs. Among the actants, **S<sub>1</sub>** is usually the agent ( $X \Leftrightarrow I$ ), **S<sub>2</sub>** the patient ( $Y \Leftrightarrow II$ ), **S<sub>3</sub>** an oblique object ( $Z$



⇔ III), e.g.  $S_1(\textit{teach}) = \textit{teacher}$ ;  $S_2(\textit{teach}) = \textit{subject}$ , and  $S_3(\textit{teach}) = \textit{student, pupil, disciple}$ .  $S_{\textit{instr}}$ ,  $S_{\textit{med}}$ ,  $S_{\textit{mod}}$ ,  $S_{\textit{loc}}$ ,  $S_{\textit{res}}$  refer to circumstantial participants such as the means, instrument, or place of the situation, e.g.  $S_{\textit{instr}}(\textit{murder}) = \textit{murder weapon}$ . Crucially, these names must have analytical definitions based on the linguistic situation. They must have that situation as part of their linguistic meaning, without relying on the speakers' encyclopedic knowledge.  $S_{\textit{instr}}$  means 'object used to do L', so  $S_{\textit{instr}}(\textit{murder})$  is *murder weapon*, not *gun* or *knife*. While it is part of our encyclopedic knowledge that murders are frequently carried out using guns and knives, 'used to murder people' is not a component of the meaning of 'gun' or 'knife'. Any innocuous object could be labelled a *murder weapon* in English if there were proof it had been used as such. It is not part of our extralinguistic notions that *victim* and *crime* are related — 'crime' is part of the meaning of 'victim'.  $S_{\textit{loc}}(\textit{hunt})$  would be *hunting grounds*, not *forest*, *tundra* or the proper name of a place where the speakers know hunting occurs.

In the Dene lexicon, this sort of name is rarely available.  $S_1$  names exist for a few socially salient roles for important activities such as leading the tribe, teaching and hunting. But for the vast majority of verbs, such as *leghá...ldhi* 'to kill' (SG, IPFV), there is no agentive  $S_1$  derivative, and there is virtually never an  $S_2$  or  $S_3$ . 'The killer' could be rendered with a relative clause using an active verb, i.e. as *t'ah̄i dene/ʔasi legháɪlther* {REL.HUM people/game.animals 3PFV:sg.kill (PFV)} 'one who killed the person(s)/the animal(s)'. Even such constructions are used sparingly, though; people are not usually identified by their actions but by name. It would be conceivable for the Dene lexicon to have such names, as nouns are plentiful in Dene, if not for actants of verbs. Their conspicuous absence (from our perspective) therefore seems to be related to cultural and historical factors rather than to the language's polysynthetic nature. Analytical labels like 'hunting grounds', 'murder weapon', 'teacher' and 'victim' are useful in mass societies in which speakers need to inform each other about the roles people, objects and places play in events. Dene people traditionally lived in small kinship-based bands and regional groups based on face-to-face contact, intermarriage and cooperation in carrying out complex hunting and gathering tasks. Dene speakers rarely had need of abstract terms like 'hunting grounds' or 'murder weapon' because

they shared so much tacit knowledge about their land and the people who lived on it. Everyone knew in subtle detail the spots where each type of game was hunted in each season, and what tools were used for, and which individuals had done what to whom. Even today, many Dene speakers bristle when asked to translate uninformative sentences like “knives are a cutting tool” or “X is a good place to hunt moose”, reacting with sentences like “why would you say something that everyone knows”, or “our language is not nonsense like English”. Similar reactions obtain when labelling people with words like *victim* or *recipient*; in a society with no anonymity, people would be referred to by their names. Today, if someone must identify an unknown person or object according to their roles in a situation, one can use a relative clause, such as *t’a zá legháyiltheri* {REL with 3D:3PFV:kill:REL} ‘that [thing] with which he killed him’, or *eyi dene t’ahí legháldheri* {that person REL:HUM 3PFV:get.killed:REL} ‘that person who got killed’, i.e. ‘the victim’, *t’ahuk’é dene eelgháli* {REL:where people REC:3PFV:club:REL} ‘where people clubbed each other’, i.e. ‘the theater of war’. But these are all free phrases, not values of lexical functions. There are a few exceptions, particularly for a few places that needed to be defined analytically because they could be used for a time but not permanently for a particular activity, or items that might have a few different uses. Examples include:

$S_{loc}(ber -tsa$  ‘to cache meat’) = *etsa k’é* {cache place} ‘a meat cache’

$S_{loc}(gah -lú$  ‘to snare rabbits’) = *gah bíl k’é* {rabbit snare:CONS place} ‘rabbit snaring place’

$S_{instr}(eghála...na$  ‘to work’) = *la yúé* {work tools:CONS} ‘work tools’

The words *k’é* ‘place’ and *yúé* ‘items’ or ‘tools’ the examples above cannot be used as unbound words (*\*diri k’é* \*‘this place’, *yúé* unacceptable as simply \*‘tools’ or ‘things’). The bound noun *k’é* describes a culturally noteworthy place.

In summary, it seems likely that a combination of structural and sociolinguistic factors may have limited the relevance of phraseologized lexical relations in Athabaskan languages with respect to major standard European languages. There may

be different explanations for the reduced frequency of different lexical relations. For some derivations, e.g. phasal and locational ones, the richness of Athabaskan verb morphology means that more is done through free morphological means than through phraseology (although the language is replete with morphological phrasemes involving other types of prefixes). Sociolinguistically, a number of factors may have influenced the lexicon in this respect. First, it is at least possible that the exclusive use of oral over written channels would privilege the use of free rather than set phrases. This could be due to historical reasons or to a certain cultural resistance to the use of hyperbole or the stating of redundant information, which may be the case for some syntagmatic lexical relations. Finally, when the speech community shares a great deal of tacit knowledge and there is little anonymity, there seems to be less of a need to specify certain semantic derivatives when they can be referred to by proper names of people and places. Taken together, these factors constitute a sociolinguistic framework with which typology of lexica could be constructed, in concordance with or independently of structural classification.

## CONCLUSION

In addition to an interest in the Dene language and culture, this research was motivated by a series of questions concerning the extent of diversity of natural languages. It is presumed that languages must share some common core in order for language to have evolved and to be learned by all people in the same manner. While in the latter 20<sup>th</sup> century the search for universals has focused primarily on grammar, there is also a long intellectual tradition of applying this optic to lexica, with the hypothesis that languages share some core meanings — semantic primitives — that correspond to basic conceptual categories. From these, each speech community constructs an array of language-specific word meanings in accordance with the interests and priorities of that culture. Comparing lexemes from the Dene lexicon with the corresponding English vocabulary was seen as a way of shedding light on such questions.

As it is not a priori clear which meanings would be language-specific and which would be more universal, it was decided that an open-ended, systematic description of a sample of lexical units from the Dene language might best elucidate differences and similarities between the two languages. Over 200 lexical units from seven semantic fields were chosen — lexemes and idioms denoting emotions, human character, physical description, motion, position, atmospheric and topographical phenomena. Following Apresjan (2000), the aim of a systematic lexicographic study was not simply to compile a list of facts about individual lexical units, but to elucidate a more cohesive, language-specific picture of the world recorded in the language at hand. Using a fieldwork and elicitation-based methodology, as well as relying on corpora to some extent, this study attempted to detail the core semantic and syntactic properties of the keywords as well as their lexical relations, arranging them into synonym series and making comparisons with similar English vocabulary where possible.

This study presented a number of challenges, both intellectual and methodological. First there is the choice of defining Dene keyword using a semantic metalanguage based on English, so as to render the description accessible to readers. This raises questions of semantic and translation equivalence that must be faced in bilingual lexicography.

Caution was used and every effort was made to include in the defining metalanguage only those English meanings for which corresponding semantic units existed in Dene (or at least corresponding semantic content such as the inexpressible common meaning of a set of Dene verbs). Nonetheless, it is vital to elaborate more Dene-language definitions of these lexical units and to continue to verify their equivalence with English-based ones.

In terms of the research methodology, this sort of study requires a deep knowledge of the language and the culture of the speech community, which is difficult for an outsider to obtain. Most lexical semantic studies using the Meaning-Text approach, particularly the Explanatory and Combinatorial Dictionary projects in course around the world, are carried out by teams of researchers working on their own (Indo-European) languages. While extending this lexicographic approach to typologically diverse languages can be illuminating for linguistics and for language documentation, one must also recognize that the results obtained by non-native speakers for lesser-studied endangered languages may be much more challenging to obtain and more tentative. The intuitions of native speakers are therefore particularly vital for this sort of lexicographic project, which should be seen as a starting point rather than an endpoint, even for the semantic fields under study.

Despite such challenges, interesting systemantic differences between the Dene and English lexica emerged. Certain semantic primitives in the Natural Semantic Metalanguage —such as KIND, PART and CAN — apparently inexistant or inexpressible as lexical units in Dene. Additionally, the two languages appeared to have highly language-specific vocabulary for the semantic content described by the sample. At the same time, there was sufficient consistent partial equivalency between the two languages for Dene words to be described by some version of an English-based semantic metalanguage. For example, the Dene vocabulary for emotions – while lacking lexemes translating to ‘feel’, or a generic ‘to feel sad’, ‘to feel happy’ and so forth, could at least be explicated in terms of schema or scripts set out by Wierzbicka and Apresjan.

There was a weaker correspondence between English and Dene character terms, as the latter language tended to use more indirect means of describing people’s

personalities. Those character terms which could be found in Dene corresponded to nameworthy qualities or transgressions in the context of traditional Athabaskan society. Dene motion and position verbs were very interesting in that their meanings often incorporated, much more frequently than English, nonassertional information about the shape, material, texture and number of the semantic subject. Topographical vocabulary was extremely rich and many meanings referred to specific layouts of the land or vegetation that can routinely be found on Dene lands.

The lexical items also displayed important syntactic differences with respect to the corresponding English vocabulary. One divergence with respect to English came in the addition of third and fourth deep-syntactic actants into the clause. As one sees in the government patterns of the lexical units in the sample, when a linguistic situation involved more than two semantic actants, the third or fourth actants were expressed in a second clause rather than in embedded clauses. For example, a meaning of the type ‘X is-afraid to do Y because Z is happening’ might instead be rendered syntactically as two clauses: ‘Z is happening, X is-afraid to do Y’. This highlights some tendency of Dene to rely on “semantic recursion”, or the ability of the listener to infer the conditional or causal relationship between the two adjacent clauses in an utterance, where English would use more extensive syntactic recursion.

Lexical relations in Dene also stood in stark contrast with their English counterparts. While approximately 60 lexical relations had phraseologized expressions in English, formalized in Meaning-Text Theory as lexical functions, only a small subset of these were relevant to the Dene lexical items in the sample. Many lexical relations expressed by free derivational means or by adding a particle. In many European languages, similar derivation markers had become semantically less transparent over the centuries, giving rise to morphological phrasemes and ultimately to multi-word idioms. In other cases, Dene prefixes had lost their transparency and the formerly derived form had to be listed in the lexical entry.

The theoretical approach used was based on semantic decomposition. In Meaning-Text Theory (MTT), meanings are described by decomposing them into semantically simpler units. The resulting definitions must be a paraphrases which are semantically equivalent, though perhaps not stylistically the same, as the keywords. At the deepest

level of semantic decomposition one presumes to find semantic primitives. These have been most strongly posited by the Natural Semantic Metalanguage approach, which makes an important claim of the universality of the semantic primitives. Finally, the lexical combinatorial section of the entries described lexical relations in terms of MTT's lexical functions, claimed to be a working inventory of possible phraseologized lexical relations found to date.

The approach was most successful in the first and last aspects. In general, the decompositional approach to systematic lexicography provided a successful framework for systematic empirical description of the Dene lexicon. Apresjan's idea of focusing on vocabulary referring to "main human systems" uncovered a range of themes in the language that are deserving of future research. Furthermore, Apresjan's approach of organizing word meanings into series of quasi-synonyms seems to be highly effective in uncovering subtle semantic and pragmatic information about keywords that could be missed by an approach using only stand-alone lexical entries.

It is more complex to analyze the success of the NSM semantic primitives. The researchers working in the NSM project have together undertaken an admirable effort to describe universal semantic primitives, and they naturally invite empirical testing of the inventory in order to refine it. As described in Section II-3.3.1, the NSM list has changed much over the years as the body of research has extended to a greater and greater number of geographically diverse and unrelated languages. Over the course of these revisions, some semantic primitives have remained while others have vanished and new semantic primitives have been added to the list. The Dene data from the present study suggest that further changes to the current (Goddard 2007) inventory may be necessary. The NSM inventory may be too ample in that it contains elements that are not present in Dene languages.

In other cases, the NSM inventory may be too restrictive. The NSM literature, as outlined in Chapter II, is heavily tilted in favor of studying words for mental predicates such as emotions, and focuses less on other areas of vocabulary. If we recall Apresjan's "main human systems", while it is true that people's feelings and mental life constitute two important semantic fields, other human systems — speech, physical manipulation of objects, physical description, and so forth — are equally deserving of attention. Even

within the field of emotions, the NSM studies tend to provide analyses of the “negative” emotions such as ‘fear’, ‘sad’, and ‘anger’-type words. In this study, emotions such as ‘humor’ were difficult to explicate using the NSM even though ‘humor’ seems to as basic and common to human experience as ‘fear’ or ‘anger’. It was also particularly challenging to use the NSM primitives to adequately define motion, atmospheric and topographical verbs. As Wierzbicka and Goddard have always made clear, the framework will be in continual evolution as more languages are analyzed. While the NSM currently works best for describing the cross-linguistic variation in emotion meanings, greater focus should be placed on other human systems. The more this is done, the closer semanticists will be to having an accurate the list of universal semantic primitives.

The results of this study could be applied to at least four domains beyond semantics. The first and most immediate application could be to endangered language documentation efforts. In our era, the majority of natural languages (including, sadly, most Athabaskan languages) are endangered. General large-scale descriptions of endangered languages aspects are urgently needed rather than just targeted investigation of specific phenomena. Indeed, as we cannot know all aspects of languages that will eventually reveal themselves to be of scientific interest, future studies of specific questions about human language will be greatly hampered if we lack comprehensive descriptions of many language families. Furthermore, it is particularly vital that the lexica be studied systematically. Unfortunately, due perhaps in part to some of the difficulties in studying lexical semantics mentioned above, and partly to the 20<sup>th</sup> century disconnect between theoretical linguistics and lexicography, for many languages the lexicon remains the least understood or most haphazardly described area. In this context, the Explanatory Combinatorial Dictionary approach to systematic lexical semantic description could complement grammatical studies to yield the fullest possible documentation of disappearing languages.

The second area on which studies like this could shed light is linguistic typology, understood in a loose sense of systematic crosslinguistic comparison. It seems that lexical semantic typologies, both focusing on patterns in word meaning and in lexical relations, can be posited in a similar way to morphological and syntactic typologies.



For instance, one finds in this study a great deal of variation underlying parts of speech systems, as exemplified by the opposing cases of Dene and English. In the case of topographical formations, this sort of semantic content is typically realized as nominal in English but in Dene is conceived of as a situation. For European languages, one can cite many examples of phrases or sayings in which qualities and human personality concepts are described as “things” that exist independently of a human participant, or even as agents affecting people, such as *Misery loves company*. In artistic and literary it is pervasive to speak of representations of emotions and descriptive concepts as putative “objects” which one can possess, acquire or lose such as *When forty winters shall beseege thy brow / And dig deep trenches in thy beauty’s field* (Shakespeare, sonnett II) or *Tu bella fosti e saggia, e in te ripose / Tutte le grazie sue cortese il cielo* (“You were beautiful and wise, and in you placed / Heaven all her delicate graces” — A. Striggio, libretto for Monteverdi’s *L’Orfeo*). In Athabaskan languages like Dene it is not possible to refer to qualities in this way. In Dene, human characteristics are expressed as active verbs, as ways of the subject’s thinking and being, rather than as objects he or she possesses, such that people can discuss ‘beauty’, ‘truth’, ‘kindness’, or ‘sadness’ without ever using nouns or adjectives. It is not necessary to adopt “Whorfian” position that sees thought and language as closely interrelated to want to explore the extent to which languages differ in translating meanings into lexical classes. One wonders whether there is some invariant semantic content which languages always express as a particular lexical class, and if interlinguistic differences are related to morphological such as verb polysynthesis. In addition, there are a number of sociolinguistic and historical factors that could shape word meanings and lexical relations. Access to more general lexical semantic descriptions would make it easier to isolate such variables and to understand the role they play in shaping lexica.

Thirdly, this study could yield theoretically interesting results for morphology and in particular questions of language change and grammaticalization. Most theoretical models of morphology describe the evolution of morphological systems as an irreversible process of grammaticalization: over time, “content” morphs become semantically more abstract and more regularized in their application as they come to be exploited as purely grammatical markers. However, Chapter IV described cases where

the inceptive or inchoative were applied unpredictably or where the (formerly) iterative marker had become an intensifier. This would suggest that sometimes, morphological material may come to be recycled and used in novel ways, not only as a new kind of grammatical marker but as a new “strong” content meaning, perhaps even more “full” than its preceding role. Viewing complex wordforms and morphological phrasemes such as one finds in Dene through the prism of lexical relations rather than looking only at the surface morphological form could thus lead to interesting lines of inquiry in morphology itself.

Finally, the Meaning-Text approach to semantic and lexicographic description could be highly valuable in the development of pedagogical materials aimed at language revitalization. The Dene Sų́́né language, while endangered, is seen by most Dene people as an irreplaceable part of their identity and culture. Currently, most Dene Sų́́né communities have implemented or are in the process of creating language retention programs aimed at teaching all areas of the language to children. These efforts are hampered by a lack of teaching materials which can clearly explain to English-dominant Dene children how Dene words should be used in various contexts. Even those English-speaking children in Dene classes who learn Dene grammar correctly may utter sentences like \**yath dedogh* {snow.on.ground 3IPFV:be.thick<sub>5</sub>} instead of *yath detan* {snow.on.ground 3IPFV:be.thick<sub>1</sub>} to say ‘the snow is thick’. The first word means ‘[liquid X] is so difficult to move that it is almost solid’, as in *thick stew* in English. The second means ‘[layer of substance X] has a greater than normal distance between its two surfaces’, as *thick snow* or a *thick blanket*. In English both meanings are expressed by lexemes in the same vocable in English, which leads to semantic interference. While teachers sense the difference between the two vocabularies, it may be difficult to explain the difference concisely. The Meaning-Text approach to lexicography, with its focus on such subtle mismatches between lexical units belonging to different languages and within a language, provides a linguistic framework that could easily be adapted to developing community-based dictionaries and other pedagogical materials to teach First Nations languages at a time when such resources are badly needed.



## APPENDIX A

## Index of Dene Lexical Units and Definitions

Below is an index of lexical units described in this work, listed in capital letters following Dene alphabetical order (see Appendix B). The alphabetical order follows the initial part of the verb stem, traditionally known as the verb theme, rather than the root. Phrasemes appear in the list in the order of the initial segment of their first component words.

- ʔA *<XY k'é theʔq: X, which is a compact object, is on surface Y>*
- BĪ *<XY k'é/yaghe hebj: living being X travels on/in liquid Y by pushing Y back with X's limbs>*
- DA *<XY k'é theda: X is in a position with X's body upright but folded and close to the ground on surface Y>*
- DUTH *<XY k'é heduth: X travels on surface Y by twisting X's body against Y>*
- DZAI *<XY k'é thedzai: X, which is a granular substance, is on surface Y>*
- GAL *<X ghegal Y k'é: X travels on surface Y by putting one of X's two feet in front of the other>*
- JER *<X hejér: X, which is a flaked substance, moves from the sky toward the ground>*
- KA *<XY k'é theka: X, which is a full small container, is on surface Y>*
- LA *<XY k'é thela: multiple Xs are on surface Y>*
- TA<sub>1</sub> *<XY k'é thetq: X, which is sticklike, is on surface Y> Example Xs include 'stick', 'pencil', 'television' (in some communities)*
- TA<sub>2</sub> *<XY k'é thetq: X, which is an empty container, is on surface Y>*
- TĪ<sub>1</sub> *<XY k'é thetj: Often living beings need to be in this position || X is in a position with X's body flat on surface Y>*
- TĪÉ *<XY k'é thetlé: X, which is a very soft shapeless substance, is on surface Y>*
- YĪ *<XY k'é theyj: X is in a position with X's body upright supported by X's feet on surface Y>*
- ANE...ʔÁ<sub>1</sub> *<X anezá: person X feels sad because X does not have anyone to talk to>*
- ANE...ʔÁ<sub>2</sub> *<X anezá: person X feels sad because of X no longer is in contact with situation or entity [Y]>*
- BA...DHI<sub>1</sub> *<XY badhi: living being X feels a desire to ingest Y>*
- BA...DHI<sub>2</sub> *<XY badhi: living being X feels a desire to have sex with living being Y>*
- BANE...TAL *<XY banetal: living being X wants to ingest Y>*
- CH'Á...DI ÍLE *<XY ch'ádi ile Z ʔá: person X feels something bad towards situation or*

entity Y because of a bad situation or quality Z that Y did or is like>

CH'ÁRE...T'E <Y X *ha ch'árit'e* Z *zá*: person X feels something bad towards person Y because of a bad situation Z that Y did>

CH'ÉRE...LʔI <X Y *hel ch'érelʔi*: person X tends to do things without a reason that make other people {Y} feel very bad>

CHÁ <∅<sub>sg</sub> *chq*: drops of water fall from the sky>.

CHÁ...DI<sub>2</sub> <X Y *heni ch'ádi*: living being X likes living being Y unusually intensely and craves Y's affection>

DÁ...ʔÁ<sub>2</sub> <X Y *zá dáizá*: person X feels something bad because of bad situation Y that has existed for a long time>

DÁ...ʔÁ<sub>3</sub> <X Y *ts'én dáizá*: person X feels very sad because X intensely wants to be in contact with Y which X can't be in contact with>

DAKURE...LA <X Y Z-*i dakurela*: person X feels something bad toward situation or entity Y that continues to make a sound that X does not like or who continues to do action Z that makes a sound that Y does not like>

DANÚ...LNI <X Y *ghq danulni*: person X feels a desire to own object Y>

DE...TŁ'OGH <X's surface has hair growing from everywhere on it>

DE...LBA <X : X is of a color similar to the sky in twilight>

DE...LGAI <X : X is of a color similar to the color of snow>

DE...LK'ÉS<sub>1</sub> <X *delk'es*: people know that the surfaces of most Xs have hair growing from them || X's surface has no hair growing from it>

DE...LK'OS <X : X is of a color similar to the color of blood>

DE...LTSES <'X : X is of a color similar to the color of dirt>

DE...LTTHOUGH <X : X is of a color similar to the color of the sun>

DE...LZEN <X : X is of a color similar to the color of darkness>

DE...CH'ÉL <X *dech'él*: X's surface is rough and feels bad to touch>

DE...CH'OGH <X *dech'ogh*: X's surface is covered with small sharp points>

DE...CH'ÉR <X *dech'é*: X is hard and elastic in a way which people do not like>

DE...DDHÉR <X *deddhér*: granular X's grains are smaller than for most Xs>

DE...DHÍ<sub>1</sub> <X *dedhí*: it is less difficult to move liquid X than to move most liquids>

DE...DHÍ<sub>2</sub> <X *dedhí*: people know liquid X has [Y] in it || liquid X has less of [Y] in it than in most Xs because X has more water in it than is most Xs>

DE...DHUL <X *dedhul*: large hard thing X has nothing inside it so that people can put things in X>

DE...DOGH <X *dedogh*: it is more difficult to move liquid X than to move most liquids>

DE...GHEL<sub>2</sub> <∅<sub>sg</sub>/X *deghel*: there are no lines of raised water moving across the surface of the body of water>

DE...KER <X *deker*: things move very easily over the surface of X so it is difficult for things

to stay in contact with X>

DE...NAGH<sub>2</sub> <X *denágh*: liquid X is dense so that when living things are in X it is difficult for them to move>

DÉ...NI<sub>1</sub> <X *déni*: X's surface has a thin edge or point which can easily cut things>

DE...NUR <X *denur*: X's surface is made of or covered with something uneven and soft and feels good to touch>

DE...T'US <X *det'us*: X's surface is made of or covered with something that stays in contact with other things it touches>

DÉ...TŁ'ÉS <X : X is of a color similar to color of the sky without clouds>

DE...TŁEGH <X *detlegh*: X is soft and cannot to move>

DE...YER <X *deyer*: it is very difficult to move X's parts or sides closer or farther apart>

DLOGH <'X *dlogh hēlj*: X does bad things that children usually do>

DZAGOTHE...LT'I < $\emptyset_{sg}$  *dzagothelt'i* : a flash of light happens in the sky that usually happens before thunder during rainstorms>

DZE K'OZÉ LÁHÓ...T'I / DZE LÁHÓ...T'I lit. "it looks like (pink) spruce gum". <X : X is of a color similar to the color of pink spruce gum>

DZÍRE...LCH'OGH <X *dzírelch'ogh gha nádher Y*: person X is very angry and moves to many places within area Y>

DZÍRE...L?UL <X Y k'é *dzírel?ul*: X travels around the surface of liquid Y partly by pushing Y back with X's limbs and partly by floating on surface of liquid Y>

DZÍRE...LI <X Y *yághe hulé*: X travels around in liquid Y by pushing through Y using X's gills or propellar>

EDERE...LCHÁ<sub>1</sub> <X *ederelchá*: person X tends behave like X thinks X is better than other people>

EKE...LTTH'I <X *ekéltth'i*: X, who is a standing person, moves toward the ground>

EŁXONE...DLI < $\emptyset_{sg}/X$  *elhhonedli*: river {X} turns sharply>

EŁEÍ...DLI < $\emptyset_{sg}$  *elidli*: two rivers flow together>

ERE...LYEL < $\emptyset_{sg}$  *erelyel* : a loud noise happens in the sky that usually happens after lightning during rainstorms>

EREH...T'I < $\emptyset_{sg}/X$  *erét'i*: there is an area of trees that / trees X extend as as a long narrow area>

ESTENE...DHEN <X Y *zá estenidhen*: person X feels very sad because of situation Y and does not want to do things that X should do>

EYÚNE <'X *eyúne hēlj*: X is very mentally ill'>

GHANE...TA <X Y *ghaneta*: singular living being X loves singular living being Y>

GHE...T'AŁ <X *ghet'at*: X is travelling quickly through the air>

HASNE...DHEN <X Z Y *zá hasnidhen*: person X feels bad because person Z did not cause situation Y that X wanted Z to cause>

HHANÁ...DLĪ <ø<sub>sg</sub> *hhqnádlj*: water permanently flows from a height to the ground>

HHÁTANE...LĪ <ø<sub>sg</sub> *hhátailj*: water permanently flows out of the ground>.

HENE...LĪ ÍLE <X Y *heneli íle Z zá*: living being X feels something bad towards situation or entity Y because of Z>

HENE...LĪ<sub>1</sub> <X Y *heneli*: person X likes entity or X's activity Y>

HENE...LĪ<sub>2</sub> <X *heneli*: living being X feels something good for a long time>

HHAHORE...ĪI <X Y *hhórelj* or X Z(N) *hhórelj* Y(V<sub>subj.agr=Z</sub>) *ha*: person X is afraid that Z may cause situation Y which would be bad for X>

HHÁRÁHONE...?Á <ø<sub>sg</sub>/X *hharózá*: there is an area / the land X in an area goes down in places>

HO...LTÚN <X *holtún*: area X is very soft because there is a lot of water in every part of X>

HO...?A <X Y (*k'é*) *hoza*: X, which is a compact object larger than a person but small enough to be seen at once, is on surface Y or in area Y>

HO...BA <ø<sub>sg</sub> *hoba*: there is very little light in the sky>.

HOBA...DHI <X *hobádhj*: living being X feels a desire to have sex>

HODÁ-H-NE...?Á <ø<sub>sg</sub>/X *hodájzá*: there is an area that / the land X goes down in a place>.

HODÁHOHE...?Á <ø<sub>sg</sub>/X *hodóhezá*: viewed from above, there is / land X forms a gentle slope :

HODÁHOHE...GAI <ø<sub>sg</sub>/X *hodóhegai*: viewed from above, there is / land X forms a gentle slope much lighter in color than the surrounding land>

HODEH...LGER <ø<sub>sg</sub>/X Y *ts'én horilger*: viewed from above, there is / land X forms a steep slope >

HOKÁDE...DHÁ <ø<sub>sg</sub>/X *hokáredhá*: viewed from below, there is / land X forms a steep slope>

HOKÁHOHE...?Á <ø<sub>sg</sub>/X *hokóhezá*: viewed from below, there is / land X forms a gentle slope>

HORE...L?Ī <X Y *horelj*: living being X feels a desire for Y>

HOTE...?A<sub>1</sub> <ø<sub>sg</sub>/X *hotéza*: there is / land X forms a long narrow strip of empty regular land>

HOTE...TS'ÍĪ <ø<sub>sg</sub> *hotéts'it*: tiny water drops fall from clouds in sky>

HU...DHI <X Y *hudhj*: disembodied entity X moves through area Y>

HU...LĪ <X Y *hulj*: X, which is a portion of entities or substance X, is in area Y>

HŪL?A <ø<sub>sg</sub> *húlza*: there is a permanently watery area of land>.

HUNE...LCH'OGH <X *hulch'ogh*: X tends to speak in a way that makes other people feel bad, and tends to suddenly become very angry as if X is going to attack other people>

HUNE...LCH'OGH <X *hunelch'ogh*: person X feels very angry many times because of situations that people do>

HUNEH...LDAI <X Y *ha hunildai*: person X tends to have tantrums because of repeated

situation {Y}>

Í...LCH'É <X Y *ts'én hilch'é* Z *ʔá*: person X starts to feel anger at person Y because of situation Z that Y did>

Í...LTTH'E <X *hiltth'e*: X, which is a granular substance, moves toward the ground >

Í...KAR <X *hikar*: X, which is a large-flaked substance, moves toward the ground>

–JERÉ <X obj.agr<sub>X</sub>–*jeré*: living being X tends to say and do bad things to living beings {Y} whom X has contact with>

JÍE TTHOGHÉ LÁHÓT'Í lit. “it looks like an orange”. <X : X is of a color similar to the color of oranges>

JÍETUÉ LÁHÓT'Í lit. “it looks like wine”. <X : X is of a color similar to the color of purple grapes>

K'É...LÍ<sub>1</sub> <X Y *k'éli*: person X feels sad because X is sorry for situation Y that X caused and wishes X had not caused>

K'ÉSE...LNI <X *k'éselni*: person X tends to be more worried about physical pain or the possibility pain than is normal>

KANE..ʔÁ <X Y *kaneʔá*: living being X feels sad because X is no longer in contact with situation or entity Y>

KANE...DHEN <X Y *kanidhen*: person X feels a desire to obtain inanimate object Y that X needs>

K'É <[S] *k'é*: person X, who is the Speaker, feels surprise when X that situation S is happening / happened>

K'ÉNE...TA<sub>2</sub> <X Y *k'énetq*: person X suddenly feels intensely afraid that something bad might happen or have happened to person Y after X has not been in contact with Y for a long time>

K'ÉNE...TA<sub>1</sub> <X Y *k'énetq*: person X feels very sad because X suddenly wants to be in contact with person Y intensely a long time after X has lost Y>

K'ENIRÉ...LYA ÍLE <X Y *ghq k'énirélya*: person X feels afraid because X thinks that something bad is happening or might happen to entity Y>

–LCHUTH <X Y *k'é thelchuth*: X fabriclike> Example Xs include ‘blanket’, ‘shingle’, and ‘tarp’.

–LGOL <X Y *k'é helgol*: X travels on surface Y by placing one of X's four or more limbs in front of the others>

–LGOS <X Y *k'é helgos*: X travels on surface Y by by placing two of X's four feet in front of the others at a regular rhythm so quickly that all of X's feet leave the ground at the same time between movements>

–LKATH <X Y *k'é helkath*: X travels on surface Y by putting one of X's four feet in front of the others at a regular rhythm without all X's feet leaving the ground at the same time>

–LNETH <X Y *helneth*: living being X loves entity Y and depends on Y emotionally>



–ŁTA <*X Y k'é thełta*: X full large container>

–ŁTS'I < $\emptyset_{sg}$  *nılts'i*: air moves in a current>.

NÁ...LCH'OGH <*X nálch'ogh Z ʔá*: person X feels intense anger at person [Y] because of situation Z that Y did>

NÁ...ŁKEDH <*X nálkedh*: X, which is, a full container, moves toward the ground>

NA...LTŁÉS <*X naltlés*: thing X is very soft because X has a lot of liquid in it>

NÁ...LTTH'I <*X náłtth'i*: X, which is heavy, round or animate, moves toward the ground>

NÁ...DHER<sub>3</sub> <*X Y nádher*: X, who is a living being, is in area Y>

NÁ...GHEZ <*X nághez*: X, which is a standing sticklike object, moves toward the ground>

NÁ...KEDH <*X nákedh*: X, which is sticklike, moves toward the ground>

NA...TSE<sub>3</sub> <*X Y náts<sub>3</sub>er*: people know liquid X has Y in it || liquid X has more [Y] in it than most Xs>

NÁ...TŁ'Í<sub>2</sub> <*X natł'i*: X, which is plural, moves toward the ground>

NABÁ...DHI <*X Y Z nabádhi*: person X tends to watch people [Y] do actions [Z] that X does not need to know because X wants to know that [Y] is doing something bad>

NÁDENE...L CH'É <*X nádenelch'é*: X tends to suddenly become very angry with people, as if X is going to attack other people>

NÁHE...ʔA < $\emptyset_{sg}$  / *X náheʔa*: the sun goes down>.

NÁNI...ʔA <*X Y (k'é) náıʔa*: X, which is an upright sticklike object of any size, stands on surface Y or in area Y>

NE...LJER <*X Y ch'á neljer*: living being X feels afraid of Y>

NE...DÁDH <*X nedádh*: it is more difficult to move X up from the ground than it is for most things the same size as X >

NE...DDHÁ <*X neddhá*: X moves toward the ground more slowly than most things because X is very light>

NE...ZQ<sub>3</sub> <*X nezq*: living being X tends to interact with others in a way that makes Y feel good, more than Y normally feels in interactions with others>

NE...DHEN<sub>2</sub> <*X Y nıdhen*: person X feels a desire that event Y takes place in the future and is planning for Y>

Nİ DÉ <[S] *nı dé*: person X, who is the Speaker, feels a desire that situation S were happening / had happened / would happen>

NÍNI...ʔA <*X Y níıʔa*: X, which is a geographical feature too long to be seen at once, goes through area Y>

SAHÓRE...LNI / SÓRE...LNI <*X Y ghq sahórełni*: person X intensely loves divine being Y>

SAÑE...DHEN <*X Y sqıdhen*: person X loves living being Y>

SŁINI <*X dene slini hełı*: X tends to intentionally do unjustified things that are very bad for other people>

TACH'AI LÁHÓT'Ī lit. “it looks like leaves”. <X : X is of a color similar to the color of vegetation>

TADENE...CHÁ < $\emptyset_{sg}$  *tarichá* : tall lines of raised water move across the surface of the body of water>

TARE...TĪ < $\emptyset_{sg}$  *taretj*: there are lines of raised water moving across the surface of the body of water against the foot of land Y / into container Y>.

TE...ŁGHETH <X *telgheth Y zá*: living being X suddenly feels intensely afraid because X saw or heard Y that X thinks could do something bad to X>

TE...KAR <X *tekar*: X, which has a wide surface, moves toward the ground so that all of X's wide surface is in contact with the ground >

THAIDÁHOHE...ŹÁ < $\emptyset_{sg}$  *thaidóhezá*: viewed from above, there is a sandy / the sand forms a gentle slope>

TS'ÉNE...T'Ī < $\emptyset_{sg}/X Y$  *ts'énit'ĭ*: there is an area of trees that / trees X extend as a long narrow area to area Y>

TS'ÓNE...DHER <X Y *ghq ts'ónidher*: person X gives other people less of X's resources Y than people normally give each other>

TS'ÚRE...DÍE <X *ts'úredie*: living being X tends not to make a normal effort to do work [Y]>

TS'É...ŹAL < $\emptyset_{sg}/\{X\}$  *ts'ézal*: the sun is clearly visible>.

TS'ÉNE...ŹA < $\emptyset_{sg}/X Y$  *yá hots'ĭ ts'énizá*: the sun comes out from behind Y>.

TSĪĪ < $\emptyset_{sg}$  *tsĭt*: flakes of frozen water fall from the sky>.

YÁ...ŁKA < $\emptyset_{sg}$  *yálka*: most daylight appears at the beginning of the day>.

YENORÍ...YA or NORÍ...YA <X Y *ghq yenoriya*: person X feels surprise at entity or situation Y>.

YÉTSĪ < $\emptyset_{sg}$  *yétsĭ*: there is bright red light at the end of the sunset>.

ŹÓRÍ <[S] *žóri*: person X, who is the Speaker, feels surprise when X sees that situation S is happening / happened>

X AHHE DÓHE...LŹĪ lit. “X pretends beauty”. <Z *zá X ahhe dóhelžj*: person X tends to want other people [Y] to think that X is more attractive than them in activity {Z}>;

X AHHE HEREH...T'Ī <X *ahhe herit'ĭ*: person X tends to want other people [Y] to think that X is better than them>

X BA EHHÚLE lit. “for X it is useless”. <X *ba ehühle*: X has a physical and mental problem that causes that X feels very sad and does not want to do anything>

X DENE CH'Á NETHE...ŁŹÁ lit. “X pushes people away”. <X *dene ch'á nethelzá*: person X tends not to want to be with other people because X loves other people less than normal>

X HA ASONE...T'Ī ÍLE lit. “for X there is no problem”. <person X feels that nothing bad is

happening>

X HA DÚÉ<sub>2</sub> lit. “for X it is bad”. <ø-sg *X ha dúé Y zá*: person X feels very sad because of situation Y>

X HA HORÉ...LYA ÍLE lit. “for X [area] is not pleasant”. <ø-sg *X ha horélyq íle*: person X feels intense sadness and does not feel good towards all of the things that X often feels good towards>

X HA SUGHA lit. “for X it is good”. <person X feels something good>;

X OBJ.AGR<sub>X</sub>-HENE...ŁKON <*X benelkon Z zá*: person X feels angry because person [Y] does or did situation Z that some people sometimes do that many people feel is bad>;

X OBJ.AGR<sub>X</sub>-INIÉ<sub>1</sub> <*X OBJ.AGR<sub>X</sub>-inié*: person X feels something good for a short time>

X OBJ.AGR<sub>X</sub>-INIÉ<sub>2</sub> <*X Y OBJ.AGR<sub>X</sub>-inié*: living being X likes situation Y>

X OBJ.AGR<sub>X</sub>-TÍ <*X betí*: living being X tends to interact with others in a way that makes Y feel good, more than Y normally feels in interactions with others >

X OBJ.AGR<sub>X</sub>-HEDERÉDLİNE <*X bederédliṅe*: people think that most people will behave like this | X tends to behave with other people in a way that makes other people feel good >

X OBJ.AGR<sub>X</sub>-HÓRE...NI ÍLE <*X bóreni íle*: X tends to want or try to hurt other people>

X OBJ.AGR<sub>X</sub>-K'ÉHONÍ...GIS <*X Y ha bĭni bek'éhonĭgis*: X tends to suddenly become very angry with people over situation {Y} as if X is going to attack other people>

X PO<sub>X</sub>-DZIÉ NATSER ÍLE, lit. “X’s heart is weak”. <*X bedzié natser íle Y ha*: person X feels afraid because X knows that X will be in contact with situation Y which may be bad for X>

X PO<sub>X</sub>-İNÍ K'ÉCH'Á lit. “against X’s mind”. <*X bĭni k'éch'á Z zá*: person X feels angry because person [Y] does or did situation Z that X does not want>

X PO<sub>X</sub>-İNÍ ŁA lit. “X’s mind is much”. <*X bĭni lq Y zá*: X feels afraid for a long time because of continued situation(s) Y>

X PO<sub>X</sub>-İNÍ NÁTSER lit. “X’s mind is strong”. <person X feels something good because X thinks that something difficult will happen in a way that will be good for X>

X PO<sub>X</sub>-İNÍ NÁTSER ÍLE lit. “X’s mind is weak”. <*X bĭni nátser íle*: X feels very sad because many bad things have happened or many good things that X wanted to happen did not happen>

X PO<sub>X</sub>-İNÍ NETTHETH lit. “X’s mind is extinguished”. <*X bĭni nettheth*: X feels very bad because situation Y that X wanted to happen did not happen

X PO<sub>X</sub>-İNÍ SĪINI lit. “X’s mind is evil”. <*X bĭni slini*: person X tends to say bad things to living beings {Y} whom X has contact with>

## APPENDIX B

## The Dene Alphabet and Phonemes

The Dene language data in this work are transcribed using the standard orthography official in Saskatchewan Dene communities. This orthography, which contains numerous digraphs, is mostly similar to the orthography used in other Canadian provinces for Dene Sų́líné and closely related languages. Below is list of corresponding segments in the International Phonetic Alphabet (IPA).

Official	IPA	Official	IPA
a	/a/	n	/n/
ą	/ã/	o	/o/
b	/b/	q	/õ/
ch	/tʃ/	s	/s/
ch'	/tʃ'/	t	/t/
d	/d/	t'	/t'/
dh	/ð/	th	/θ/
ddh	/dð/	tth	/tθ/
e	/e/	tth'	/tθ'/
ę	/ẽ/	tł	/tł/
g	/g/	tł'	/tł'/
gh	/ɣ/	ts	/ts/
h	/h/	ts'	/ts'/
ı̇	/ĩ/	u	/u/
i	/i/	u̇	/ũ/
j	/dʒ/	w	/w/
k	/k/	hh	/x/
k'	/k'/	y	/j/
l	/l/	z	/z/
ł	/ł/	ʔ	/ʔ/
m	/m/		



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