Chapter 9. Discourse

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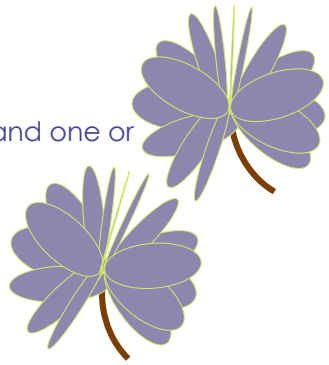


STATEMENTS may stand alone, but very often they are part of a communication SESSION.

> A **SESSION** is a consistent flow of messaging between one or more senders and one or more receivers.

A simlar concept is DISCOURSE, so a simple definition is in order.

> **DISCOURSE** is an act of communication involving language and consisting of more than one message.

Here, DISCOURSE is taken to be roughly parallel to SESSION, translated into the realm of sociolinguistics, as opposed to digital communication. DISCOURSE adds a social aspect to communication that may be missing or difficult to identify in the OSI model of electronic message transmision, upon which Nwehu Nuswei's message structure is roughly based (see §4.1).

A DISCOURSE or SESSION can take many forms depending on the CHANNEL. For example, in spoken communication, a SESSION might be a conversation, a lecture, or an announcement. In written communication, a SESSION could be a letter, a thread in email or social media, a memo, an article, or a book.

There are many ways of characterizing DISCOURSE, including the number of entities involved, level of formality, channel, social aspects and implication. Languages need (and natural languages have) ways of connecting individual MESSAGES into a larger whole, a DISCOURSE.

SESSIONS are often bound together by inserting words into statements to provide transitions and logical structures. Let's take a brief look at these now.

Short DISCOURSES – two or three MESSAGES – may need less connective effort than longer DISCOURSES. Informal settings may also require less connective effort. But in general, the longer and more formal a DISCOURSE, the more effort is needed to connect its MESSAGES meaningfully.

Some of these techniques take the form of specialized words and rules for their use. At this point, no specific DISCOURSE rules have been developed specific to Nwehu Nuswei (NN), and it is unlikely that any ever will. Much connective effort falls into the realms of style and rhetoric – the art or science of communicating effectively – but languages must provide techniques to do so. In keeping with similar issues,

speakers of NN are simply expected to use the techniques from their first language(s) together with words made available in NN.

Many languages provide MESSAGE and DISCOURSE connectivity by requiring "agreement" between classes of words; in some cases, these provide not only connectivity but helpful redundancy in case of "noisy" CHANNELS. Here are a few examples from various langauges which have been **avoided in NN, or made optional**:

- Gender agreement between nouns, adjectives and pronouns (most Indo-European (IE) languages); absent in NN
- Verb forms that reflect the NUMBER and PERSON (singular, plural, 1st, 2nd, 3rd persons) of ACTORS involved (most IE and many other families); absent in NN
- Words to indicate what category of entity is being discussed (languages of East Asia); a limited set of categories is optionally available as MARKERS in NN
- Verb forms that indicate the relative social status of the participants in a DISCOURSE (widespread); optional in NN by using MARKERS; in DISCOURSE, these can help disambiguate the intended receiver if more than one is present (as well as fulfill socially-mandated requirements).

Discourse connectives in NN fall into two general categories: NARRATIVE and SEMANTIC.

> **NARRATIVE CONNECTIVES** connect parts of a discourse together by providing logical, temporal or locational information.
>
> **SEMANTIC CONNECTIVES** function to clarify the connections between ideas that recur in a discourse

These will be discussed separately in the following sections.

9.1. Semantic Connectives

SEMANTIC CONNECTIVES are principally found in the DEICTICS of the ŀ--- *H*--- FAMILY of NN. The purpose of a DEICTIC is to "point" to something else:

- in space: LOCATIVE DEICTICS (§7.6)
- among the participants in a narrative or DISCOURSE: PERSONAL PRONOUNS (§7.3)
- in a subordinate clause: RELATIVE PRONOUNS (§7.4)
- among IDEAS mentioned: ARTICLES (§7.5)

DEICTICS are discussed in Chapter 7, so here we'll focus on the connective functions of the two classes that connect elements of a discourse: the RELATIVE PRONOUNS and the ARTICLES.

9.1.1. Relative pronouns

Words in the ŧ--- *H*--- family with a palatal consonant as the third letter are relative pronouns. Their purpose is to connect a noun phrase in a message to a clause in the same message, as in "The big bad wolf who ate Grandmother is outside":

Yoxo	tupo	nuxw	**hoyoi**	jane~	**xoigw**	mumwe	**xoha**	sekw.
wolf	big	bad	**who***	eat	**did^**	grandmother	is †	outside

'Big bad wolf who ate Grandmother is outside.'

* C1 *hoyoi*: DEICTIC; V1: DEFINITE ACTOR; C2: ANIMATE RELATIVE PRONOUN; V2: SINGULAR THIRD PERSON;

^ C1 *xoigw*: VERB; V1: SUBORDINATE CERTAIN; C2: WAVE COMPLETE; V2: PAST

† C1 *xoha*: VERB; V1: CERTAIN; C2: FIELD ONGOING; V2: PRESENT

RELATIVE PRONOUNS immediately follow the NOUN PHRASE and are immediately followed by the CLAUSE which they connect to the NOUN PHRASE. In the example above, each letter of the RELATIVE PRONOUN *hoyoi* is explained.

Connections: The ROLE (ACTOR) connects *hoyoi* to the CLAUSE as its ACTOR; ANIMACY (ANIMATE), NUMBER and PERSON (3RD PERSON SINGULAR) connect the ACTOR in the clause with the superodinate noun (PARTICLE) 'wolf'.

The word *xoigw* has *i* in V1, indicating that it is the verb of a subordinate clause. The second verb *xoha* lacks *i*, so by default it is the verb of the main message. The clause ending word *sutwa* could optionally be placed after *mumwe*; this is described in the §9.2.1 below.

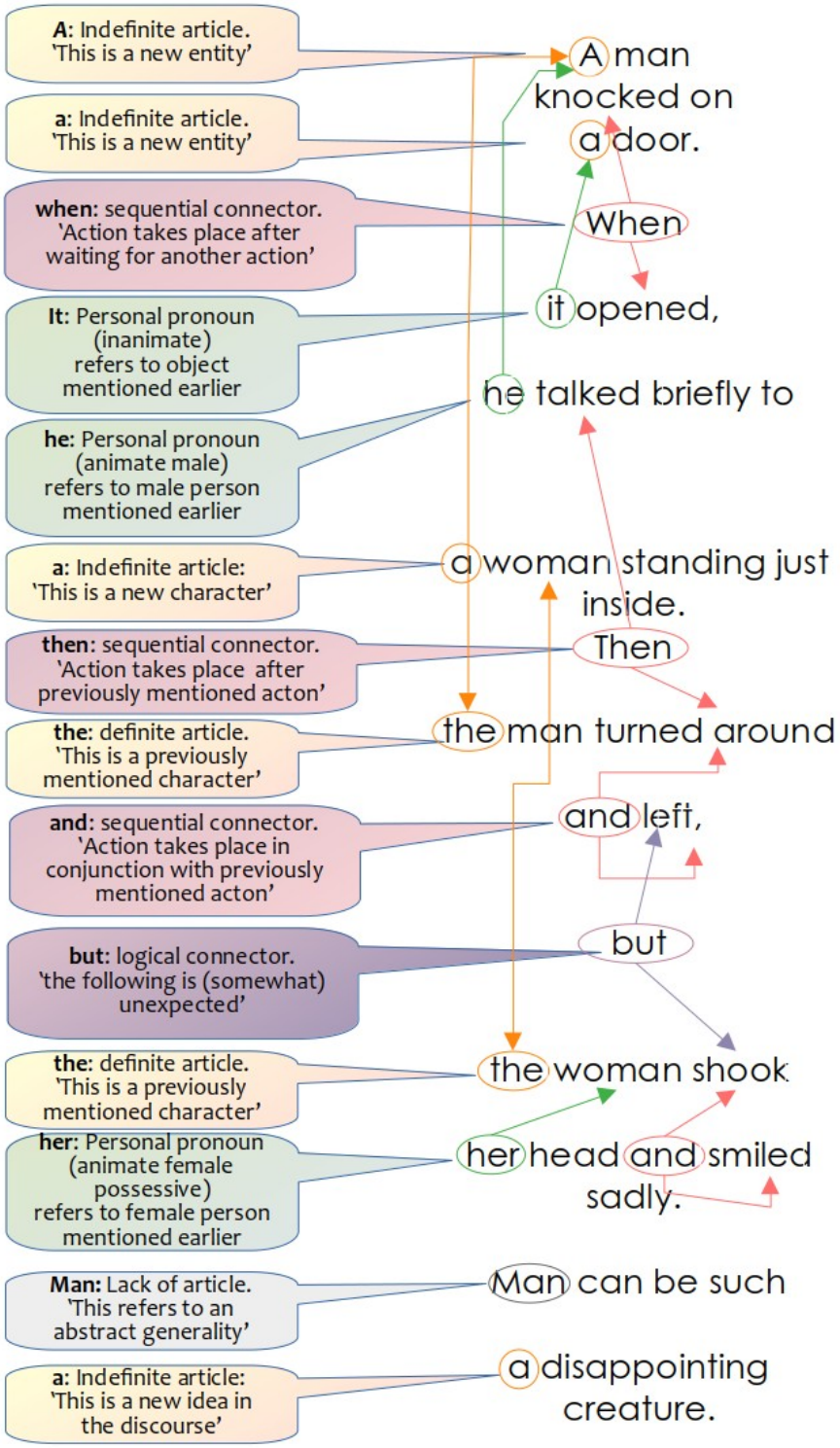
In natural languages, ARTICLES usually have multiple functions. This makes their purpose complex and difficult to explain. For purposes of discussion, we'll define it simply this way:

> An **ARTICLE** is a word or morpheme, part of a noun phrase, clarifying the role and nature of the noun in the message and discourse.

Most IE languages and many others use ARTICLES. Engish uses the contrast between *the*, *a,* and lack of ARTICLE to help clarify references to IDEAS. These words are used to stitch together DISCOURSE by indicating whether a noun refers to something that has been talked about already, one that has not, or a more general kind of familiarity. Though the general principle is the same in most IE languages, the practical application can be different in very subtle ways.

To illustrate, let's use a very simple English narrative (diagrammed in 𝔇ρ 9.1):

> A man knocked on a door. When it opened, he talked briefly to a woman standing just inside. Then the man turned around and left, but the woman shook her head and smiled sadly. Man can be such a disappointing creature.



𝔇ρ 9.1: Discoure linking illustration

In the first sentence, the article "a" is used with "man". This little word carries several concepts:

- INDEFINITE (1): "man" refers to an entity that has not yet been "defined" (discussed) in this DISCOURSE.
- INDEFINITE (2): "man" does not refer to a specific person or to someone of importance to the narrative. The narrator might have used "the man" even though this is the beginning of the story, even though this is the beginning of the story and no man has been mentioned, to indicate that this is a particular "man" of some significance to the DISCOURSE. (In English, this narrative technique is not the more common way of telling a story.)
- SINGULAR number: there is only one "man" being discussed

In the second sentence, a second character is introduced using "a" to indicate she is also new singular entity in this DISCOURSE. In the third sentence, both "man" and "woman" are preceded by the definite article "the". It's primary concept:

- DEFINITE: indicating that the following word refers to an entity which is the same as an entity mentioned before, thus "stitching together" the narrative.

And finally, "Man" in the last sentence, without an article, indicates 'man' in the more general sense of 'humans' or 'human males'. In a way the lack of an ARTICLE in English serves as a sort of INDEFINITE ARTICLE without implying singular number, since in this sense "man" is a very indefinite IDEA. NN provides specific options for handling all these concepts by providing a much richer set of ARTICLES than most natural languages.

In NN, all ARTICLES**,** PRONOUNS**, and** DEICTICS **are either** DEFINITE **or** INDEFINITE**. (**Speakers who don't want to commit themselves to either should use the INDEFINITE form, which is more general.)

- DEFINITE words are used to **indicate that this idea has been mentioned before**. "Then <u>the</u> man turned around and left" (from narrative above)
- INDEFINITE words **do not imply a previous mention or any familiarity.** "<u>A</u> man knocked..." (from narrative above)

In addition to DEFINITE and INDEFINITE, NN articles can indicate FOCUS, NUMBER, GENDER, DISTANCE, ROLE, and ANIMACY, which will be duscissed in the following sections.

9.1.2. Personal Pronouns also Function as Connectives

PERSONAL PRONOUNS are **words that substitute for names of entities in discourse.** They have a connective role, stitching together a DISCOURSE in which a full name or identification of an entity is mentioned in one message, and a later message in the same DISCOURSE uses a PRONOUN as a reference to the full name of the previously mentioned entity. In decoding the MESSAGE, the receiver must associate the PRONOUN with the previously mentioned entity by matching semantic attributes of the entity with those encoded in the PRONOUN.

For example, in the previous narrative, the sentence, "Then the man turned around and left, but the woman shook her head and smiled sadly" could equally well have been ENCODED as, " Then he turned around and left, but she shook her head and smiled sadly." The PRONOUNS link the narrative by refering to semantic attributes given in the previous sentence: "man" and "he" share the semantic attribute of male gender; "woman" and "she" likewise share female gender. PRONOUNS work in this context because singular English PRONOUNS encode for gender, and the two participants are of different genders. If the participants had been of the same gender, the use of PRONOUNS (both "he" or both "she") would have left the meaning ambiguous.

Other attributes encoded in English PRONOUNS include NUMBER (singular-plural), ANIMACY (living-unliving), and sentence ROLE (actor-object-possessive). Not all attributes are ENCODED in all English PRONOUNS: singular has gender and animacy ('he-she-it') but plural does not ('they' serves for all). In contrast, NN preserves all encoded attributes in all forms, extending the usefulness of PRONOUNS and ARTICLES by providing more distinctive attributes with which to link a DISCOURSE.

However, two characteristics of NN ARTICLES and PRONOUNS vary from many natural language characteristics of related word classes: First, NN does not encode gender in any of these words; and also, ARTICLES are optional. Full description and analysis of ARTICLES and PRONOUNS is found in Chapter 7, "Deictics".

9.1.3. Encoded Attributes of Articles and Pronouns

Ɗρ 9.2 lists semantic attributes that can, must, or cannot be encoded in articles and pronouns. Speakers wishing to use unavailable attributes for linking a discourse may consider the alternative "Workarounds" shown, many of which involve the use of FUNCTIONALS.

Using such a FUNCTIONAL by itself, in place of a DEICTIC, is quite acceptable. However, many of the FUNCTIONAL SPECIES do not offer a way to show the attributes FOCUS, ROLE, or NUMBER. If message senders feel a need to encode any of those attributes, they should append the FUNCTIONAL as a MARKER to the PRONOUN or ARTICLE. For example:

'She is here'

(FUNCTIONAL only) ɬɪʃɻ ɻɻɪʅ *Hume sehi* /həˈmɛ sɛˈhi/
Animate female here: 'She is here' (*Hume*: §8.2.8)

(PRONOUN+MARKER) ɬʅʃꭰ–ɪɪʃɻ ɻɻɪʅ *Himoi-hume sehi* /hiˈməjˌmɛ sɛˈhi/
Pronoun personal focused animate actor singular+animate female here: 'She is here'

'The sheet is white'

(FUNCTIONAL only) ɬɪʅᒃ ʃʅɻʅ *Hupa nifi* /həˈpa niˈfi/
Sheetlike flat class of objects white: 'The sheet is white' (*Hupa*: §8.2.12)

(PRONOUN+MARKER) ɬʅɻʅ–ɪɪʅᒃ ʃʅɻʅ *Hipi-hupa nifi* /hiˈpiˌpa niˈfi/
Pronoun personal inanimate definite singular any person+flat class of objects white: 'It sheet is white'

'Your honor is correct'

(FUNCTIONAL only) ɬɪʅɾ ʃɪʏɻ *Hujo nuge* /həˈʤɔ nəˈgɛ/
Honored (social class) correct: 'Sir/Madam is correct' (*Hujo*: §8.2.14)

(PRONOUN+MARKER) ɬʅʃᗡ-ɪɪʅɾ ʃɪʏɻ *Himai-hujo nuge* /hiˈmajˌʤɔ nəˈgɛ/
Personal pronoun animate definite singular second person+honored social class correct: 'Your honor is correct'

Dp 9.2: Encoded Attributes of Articles and Pronouns

Attribute	ARTICLE	PRONOUN	NN method of expression
ROLE: ACTOR	~	~	(see Key in last row of this display)
ROLE: OBJECT	~	~	
ROLE: indirect obj.	~	~	INDIRECT
ROLE: Possessor	-	-	Use INDIRECT if unambiguous; otherwise a FUNCTIONAL or appended MARKER of SPECIES ɬɪɻ- *Huf-*
DEFINITE | INDEFINITE	+	+	Must be specified. For ARTICLES, this is a major function; for PRONOUNS, normal usage is DEFINITE
FOCUS	~	~	
ANIMACY	~	~	
NUMBER	~	~	
DISTANCE	~	-	Use PRONOUN to indicate PERSON
PERSON (1st, 2nd,3rd, any)	-	+	To indicate distance, append MARKER of SPECIES ɬɪr- *Hur-* to PRONOUN: ɪɪrɻ *hure* 'close' (§8.2.5) ɪɪrɾ *hura* 'mid' ɪɪrɹ *huro* 'far'
Gender	-	-	Append MARKER to ARTICLE or PRONOUN: (§8.2.8) ɪɪʃɻ *hume* 'female' ɪɪʃɾ *huma* 'flex gender' ɪɪʃɹ *humo* 'male'
Social status	-	-	Add MARKER OF SPECIES ɬɪʈ- *Huj* (§8.2.14) ɪɪʈɻ *huje* 'equal, companion' JP 'ちゃん' SP 'tu' ɪɪʈɾ *huja* 'respected' JP 'さん ' SP 'Usted' ɪɪʈɹ *hujo* 'honored' JP 'さま' SP 'Vuestra merced'
Class (by shape)	-	-	Substitute FUNCTIONAL or append MARKER, SPECIES ɬɪɻ- *Hup-* (§8.2.12)
		Key	~ Optional; an "unspecified" form is available + Required; NO "unspecified" form is available - No form is available to express this attribute; see Workaround

9.2. Narrative Connectives

As STATEMENTS are put together to form DISCOURSES, these narrative CONNECTIVES are usually inserted at or near the beginning of STATEMENTS, though they may be placed anywhere, including the end. Almost always,

they are put at the beginning or end of a PHRASE or clause so as not to disrupt the form of these grammatical structures. Placement of narrative CONNECTIVES is one of several rhetorical tools in the toolchest of effective speakers.

The choice of words to use as connectives is quite flexible, but there are several categories of words especially useful for this purpose, discussed in the following sections.

9.2.1. Verbal Punctuation (cf. §8.2.22)

SPECIES ᓕᐞᓗ- *Sut-* is intended for use in spoken MESSAGES when, for whatever reason, the intonation of the MESSAGE doesn't accurately convey phrasing and MESSAGE ending. Such situations could include conversation between NN speakers whose native language intonation systems are different enough, when used in NN, to cause confusion; or in transmission through CHANNELS that don't convey intonations or pauses well, such as low-bandwidth radio.

SPECIES ᓕᐞᓗ- *Sut-* contrasts with SPECIES ᓚᕆᒪ- *Nwep-* 'Session level of communication', discussed in §9.2.4 below, in that *Sut-* is intended specifically for beginning and ending various levels of MESSAGES, while *Nwep-* is intended primarily for technical discussion about communication. Dimentional organization of SPECIES ᓕᐞᓗ- *Sut-* is shown in 𐑛𐑜 9.3.

𐑛𐑜 9.3: Verbal Punctuation Dimensions

Dimension 1:	ᑲ ᑫ ᑫ-ᑲ	**i w w-i**	
	Beginning of structure	ᑲ	*i*
	Ending of structure	ᑫ	*w*
	Subordinator ending	ᑫ-ᑲ	*w-i*
	General	(no peripheral vowels)	
Dimension 2:	ᐦ ᑭ ᐧ	**e a o**	
	Phrase-level	ᐦ	*e*
	Clause-level	ᑭ	*a*
	Discourse-level	ᐧ	*o*
	General	(no central vowel)	

𐑛𐑜 9.4 charts the vocabulary of ᓕᐞᓗ- *Sut-*.

Dp 9.4: Sut- Verbal Punctuation Vocabulary

Core value	General			Beginning		Ending		Subordinator ending	
		𝼥 *u*			𝼦 *i*		𝼧 *w*		𝼧𝼦 *w-i*
unspecified, general		𝼟𝼥𝼥 *sutu*	General connective	𝼟𝼥𝼦 *suti*	General beginning	𝼟𝼥𝼧 *sutw*	General stop	𝼟𝼥𝼧𝼦 *sutwi*	General subordinator ending
Phrase-level	𝼤 *e*	𝼟𝼥𝼤 *sute*	Phrase-level connective	𝼟𝼥𝼤𝼦 *sutei*	Phrase-level subordinator beginning	𝼟𝼥𝼤𝼧 *sutwe*	Lowest level (phrase) stop	𝼟𝼥𝼤𝼧𝼦 *sutwei*	Lowest level (phrase) subordinator ending
Clause-level	𝼣 *a*	𝼟𝼥𝼣 *suta*	Clause-level connective	𝼟𝼥𝼣𝼦 *sutai*	Clause-level subordinator beginning	𝼟𝼥𝼣𝼧 *sutwa*	Mid-level (clause, sentence) ending	𝼟𝼥𝼣𝼧𝼦 *sutwai*	Mid-level (clause, sentence) subordinator ending
Discourse-level	𝼤𝼣 *o*	𝼟𝼥𝼤𝼣 *suto*	Discourse level connective	𝼟𝼥𝼤𝼣𝼦 *sutoi*	Discourse-level subordinator beginning	𝼟𝼥𝼤𝼣𝼧 *sutwo*	High-level (discourse, paragraph) ending	𝼟𝼥𝼤𝼣𝼧𝼦 *sutwoi*	High-level (discourse, paragraph) + subordinator ending

9.2.2. Exclamations as Connectives

As discussed in the §4.5, there is a SPECIES of NN words for exclamations. (These words are also listed in §8.2.1.) Certain exclanations are also useful as connectives, primarily in oral conversation (dialog). The words in 𝔇p 9.5 may be helpful as links.

Dp 9.5: Connective Exclamation Words

Connection Task		NN		Meaning
Starting a conversation	𝼡𝼥𝼦	*huhei*	/hɛj | ɛj/	'getting attention'
	𝼡𝼥𝼣	*huhai*	/haj | aj/	'greeting'
	𝼡𝼥𝼧	*huhwi*	/hwi | wi/	'question'
Hesitation or desire to speak next	𝼡𝼥𝼥	*huhu*	/ə/	'uhhh'
General reactions to statements	𝼡𝼥𝼦	*huhi*	/hi | i/	'yes'
	𝼡𝼥𝼧	*huhw*	/hu | u/	'no'
	𝼡𝼥𝼤	*huhe*	/hɛ | ɛ/	'maybe'

Responding emotionally to statements	ɪʊɪᑭ	*huha*	/ha | a/	‘pleasure, mirth’
	ɪʊɪᑯ	*huho*	/hɔ | ɔ/	‘surprise’
	ɪʊɪᑰ	*huhoi*	/hɔj | ɔj/	‘pleasant surprise’
	ɪʊɪᖵ	*huhwa*	/hwa | wa/	‘disappointment’
	ɪʊɪᖽ	*huhwai*	/hwaj | waj/	‘anger’
	ɪʊɪᖾ	*huhwo*	/hwɔ | wɔ/	‘alarm’
	ɪʊɪᖿ	*huhwoi*	/hwɔj | wɔj/	‘fear’

9.2.3. Narrative Connectives (cf. §8.2.20)

SPECIES ᔑᐞᓀ- *Suk-* was developed specifically to provide words for MESSAGE connectivity. Two semantic dimensions are used to assign final vowels, as shown in ᗤᑭ 9.6.

ᗤᑭ 9.6: Narrative Connective Dimensions

Dimension 1:	ᒐ ᓀ ᓀ-ᒐ	**i w w-i**		
	Emphasis		ᒐ	*i*
	Alternative		ᓀ	*w*
	Unexpected		ᓀ-ᒐ	*w-i*
	Simple sequence	(no peripheral vowels)		
Dimension 2:	ᐞ ᐳ ᐢ	**e a o**		
	Example + listing		ᐞ	*e*
	Temporal sequence		ᐳ	*a*
	Alternatives of logic or discourse		ᐢ	*o*
	Simple	(no central vowels)		

Functons and meanings of SPECIES ᔑᐞᓀ- *Suk-* are listed in ᗤᑭ 9.7.

Dρ 9.7: Narrative Connective Terms

Roman	IPA WORD | MARKER	NN	Semantics	Closest Natural Words
suku	sə'kə | ˌskə	𐑕𐑢𐑒	sequence	and
suki	sə'ki | ˌski	𐑕𐑢𐑓	emphatic sequence	and also
suke	sə'ke | ˌske	𐑕𐑢𐑔	listing	next
sukei	sə'kɛj | ˌskɛj	𐑕𐑢𐑔𐑦	emphatic listing	next also
suka	sə'ka | ˌska	𐑕𐑢𐑐	temporal sequence	then
sukai	sə'kaj | ˌskaj	𐑕𐑢𐑐𐑦	emphatic temporal sequence	and then
suko	sə'kɔ | ˌskɔ	𐑕𐑢𐑑	first logical alternative	ὁ μεν 'on the one hand'
sukoi	sə'kɔj | ˌskɔj	𐑕𐑢𐑑𐑦	emphatic logical sequence	so of course
sukw	sə'ku | ˌsku	𐑕𐑢𐑒	alternative	or
sukwi	sə'kwi | ˌskwi	𐑕𐑢𐑓	unexpected sequence	but next
sukwe	sə'kwe | ˌskwe	𐑕𐑢𐑔	alternative listing	or else
sukwei	sə'kwɛj | ˌskwɛj	𐑕𐑢𐑔𐑦	unexpected listing	but what is more
sukwa	sə'kwa | ˌskwa	𐑕𐑢𐑐	temporal alternative	or then
sukwai	sə'kwaj | ˌskwaj	𐑕𐑢𐑐𐑦	unexpected temporal sequence	but then
sukwo	sə'kwɔ | ˌskwɔ	𐑕𐑢𐑑	second logical alternative	ὁ δε, on the other hand
sukwoi	sə'kwɔj | ˌskwɔj	𐑕𐑢𐑑𐑦	unexpected logical alternative	but on the other hand

9.2.4. Session Layer Terms

NN is loosely built around a model of communication called the **Open Systems Interconnection (OSI)** Model (§4.1). This is used primarily in electronic data communication systems, and divides the end-to-end process into seven "layers". The fifth of these is the "Session Layer". To accomodate and embody this model, the 𐑓𐑢𐑤- *Nwep-* SPECIES provides terms for the main concepts in the Session Layer. These terms may be unlikely candidates for informal conversation, but in more structured situations they may prove useful. Dρ 9.8 charts these.

𐤃𐤒 9.8: Session Layer Terms

Core value		General		Starting		Ending		Continuing	
		𐤉 *u*		𐤋 *i*		𐤇 *w*		𐤇-𐤋 *w-i*	
unspecified, general		𐤓𐤄𐤋𐤉 *nwepu*	communication session concept	𐤓𐤄𐤋𐤋 *nwepi*	session beginning	𐤓𐤄𐤋𐤇 *nwepw*	sesson ending	𐤓𐤄𐤋𐤌 *nwepwi*	session interaction
WAVE	𐤄 *e*	𐤓𐤄𐤋𐤄 *nwepe*	activity of a session	𐤓𐤄𐤋𐤊 *nwepei*	starting a session	𐤓𐤄𐤋𐤆 *nwepwe*	ending a session	𐤓𐤄𐤋𐤎 *nwepwei*	activity during a session
FIELD	𐤃 *a*	𐤓𐤄𐤋𐤃 *nwepa*	session rules & systems	𐤓𐤄𐤋𐤁 *nwepai*	rules for starting a session	𐤓𐤄𐤋𐤐 *nwepwa*	rules for ending a session	𐤓𐤄𐤋𐤏 *nwepwai*	rules for session interaction
PARTICLE	𐤀 *o*	𐤓𐤄𐤋𐤀 *nwepo*	a session	𐤓𐤄𐤋𐤈 *nwepoi*	start of a session	𐤓𐤄𐤋𐤆 *nwepwo*	end of a session	𐤓𐤄𐤋𐤈 *nwepwoi*	session interaction

Although these are primarily for discussions **about** SESSIONS, another possible application of these words would be to preface a SESSION (such as a formal lecture or meeting) with 𐤓𐤄𐤋𐤊 *Nwepei* 'SESSION starting', 𐤓𐤄𐤋𐤌 *Nwepwi* when interaction is appropriate, 𐤓𐤄𐤋𐤎 *Nwepwei* 'SESSION ending' to invite interaction, and 𐤓𐤄𐤋𐤆 *Nwepwo* when the lecture or meeting is concluded.

9.2.5. Logical Connectives

"Formal logic" defines the relations between logical propositions, each represented by symbolic "operators". NN defines a SPECIES of words to refer to these relationships or operators. These are available for use as logical CONNECTIVES in discourse.

This SPECIES is 𐤕𐤉𐤅- *Tuy*, shown in 𐤃𐤒 9.9. Like session connectives, these are more likely to be used in formal messages rather than informal discourse.

𐤃𐤒 9.9: Logical Operators

	𐤕 *u*		𐤉 *i*		𐤅 *w*		𐤅-𐤉 *w-i*	
	𐤔𐤕𐤒𐤕 *tuyu*	∴ Therefore (Logical Operators)	𐤔𐤕𐤒𐤉 *tuyi*	→ Material condition ‘imply’	𐤔𐤕𐤒𐤅 *tuyw*	¬ Negation ‘not’	𐤔𐤕𐤒𐤆 *tuywi*	← Converse implication ‘if’
𐤄 *e*	𐤔𐤕𐤒𐤄 *tuye*	⊤ Truth, tautology	𐤔𐤕𐤒 𐤃 *tuyei*	∃ ‘there exists’	𐤔𐤕𐤒𐤇 *tuywe*	⊥ Falsity, contradiction	𐤔𐤕𐤒𐤈 *tuywei*	↔ Biconditional ‘if and only if’
𐤐 *a*	𐤔𐤕𐤒𐤐 *tuya*	∧ Conjunction ‘and’	𐤔𐤕𐤒𐤁 *tuyai*	∀ ‘for all’	𐤔𐤕𐤒𐤖 *tuywa*	↛ material nonimplication ‘but not’	𐤔𐤕𐤒𐤋 *tuywai*	↑ Alternative denial ‘not both’
𐤏 *o*	𐤔𐤕𐤒 𐤏 *tuyo*	∨ Disjunction ‘or’	𐤔𐤕𐤒 𐤂 *tuyoi*	↚ Exclusive or	𐤔𐤕𐤒𐤎 *tuywo*	↓ Joint denial ‘neither nor’	𐤔𐤕𐤒𐤑 *tuywoi*	∅ Absurd

9.2.6. Cause-and-effect Connectives (cf. §8.2.17)

SPECIES 𐤔𐤕𐤉- *Suh-* refers to cause and effect relations by assuming two states: 𐤔𐤕𐤉𐤋 *suhi* ‘before’ and 𐤔𐤕𐤉𐤅 *suhw* ‘after’.

In the ‘before’ state, a 𐤔𐤕𐤉𐤐 *suha* ‘situation’ may exist, which may be identified with the 𐤔𐤕𐤉𐤁 *suhai* ‘cause’ which may bring about change to a different 𐤔𐤕𐤉𐤖 *suhwa* ‘resulting condition’. A 𐤔𐤕𐤉𐤑 *suhwoi* ‘instrument’ may be used in the process – itself not directlty part of the cause.

These ‘conditions’ may arise due to certain 𐤔𐤕𐤉𐤏 *suho* factors, bringing about 𐤔𐤕𐤉𐤂 *suhoi* ‘change’ that results in the 𐤔𐤕𐤉𐤅 *suhw* ‘effect’, or 𐤔𐤕𐤉𐤇 *suhwei* ‘unintended effects’ which may take place also.

Change may take place as a result of a certain 𐤔𐤕𐤉𐤃 *suhei* ‘action, impulse’, and may be carried forward by some entity 𐤔𐤕𐤉𐤂 *suhoi* ‘mover’ (animate or inanimate, singular, plural, or group indicated by a 𐤄𐤕𐤋 - *Hux-* or 𐤄𐤕𐤇- *Hub-* FUNCTIONAL), possibly with a 𐤔𐤕𐤉𐤆 *suhwi* ‘goal’.

The action causing the change to occur is the 𐤔𐤕𐤉𐤃 *suhei* ‘impulse’ and brings about the 𐤔𐤕𐤉𐤖 *suhwa* ‘resulting condition’, but 𐤔𐤕𐤉𐤋 *suhwai* ‘negative conditions or factors’ may impede or prevent the change.

The final vowel is arranged according to the two dimensions shown in 𐤃𐤒 9.10.

𐤃𐤒 9.10: Cause and Effect Dimensions

Dimension 1:	𐤋 𐤍 𐤍-𐤋	**i w w-i**	
	Before	𐤋	*i*
	After	𐤍	*w*
	Purposiveness	𐤍-𐤋	*w-i*
	Situation	(no peripheral vowels)	
Dimension 2:	𐤄 𐤃 𐤀	**e a o**	
	Wave	action	𐤄	*e*
	Field	condition	𐤃	*a*
	Particle	Concept, entity	𐤀	*o*
	General	(no central vowels)	

Meanings of the words are listed in 𐤃𐤒 9.11.

𐤃𐤒 9.11: Cause and Effect Vocabulary

Core value	***Situational***		***Before***		***After***		***Purposiveness***	
			𐤋 *i*		𐤍 *w*		𐤍-𐤋 *w-i*	
	𐤉𐤕𐤕 *suhu*	Cause-effect relation in general	𐤉𐤕𐤋 *suhi*	Cause	𐤉𐤕𐤍 *suhw*	Effect	𐤉𐤕𐤍𐤋 *suhwi*	Goal
action (WAVE) 𐤄 *e*	𐤉𐤕𐤄 *suhe*	Means (manner of accomplishment)	𐤉𐤕𐤄𐤋 *suhei*	Impulse, action causing change	𐤉𐤕𐤍𐤄 *suhwe*	Process of change	𐤉𐤕𐤍𐤄𐤋 *suhwei*	Unintended effect
condition (FIELD) 𐤃 *a*	𐤉𐤕𐤉𐤃 *suha*	Condition (physical, psychological, etc.)	𐤉𐤕𐤉𐤃𐤋 *suhai*	status quo, original condition	𐤉𐤕𐤉𐤍 *suhwa*	Resulting condition, "after" environment	𐤉𐤕𐤉𐤍𐤋 *suhwa i*	Hinderance, counter-measure, preventive
concept (PARTICLE) 𐤀 *o*	𐤉𐤕𐤉𐤀 *suho*	Factors or occasions associated with change	𐤉𐤕𐤉𐤀𐤋 *suhoi*	Mover, agent of change	𐤉𐤕𐤉𐤍𐤀 *suhwo*	After-effect	𐤉𐤕𐤉𐤍𐤀𐤋 *suhwoi*	Instrument

9.2.7. Sequence Words (cf. §8.2.5)

SPECIES 𐤄𐤓- *Hur* words can be used as markers or stand-alone words; as discourse connectives or to express sequences within narratives and lists. This is discussed in more detail in §8.2.5.

Dp 9.13: Sequencer Vocabulary

Core value		Ordered		Before		After		Neighboring	
				ᒐ i		ᓀ w		ᓀ-ᒐ *w-i*	
Unmodified direction		ᚼᚱᚢ *huru*	Ordered sequence; marks ordinal number	ᚼᚱᒐ *huri*	ahead, before	ᚼᚱᓀ *hurw*	behind, after	ᚼᚱᓂᒐ *hurwi*	neighboring
near	ᕽ *e*	ᚼᚱᕽ *hure*	close (in space or time)	ᚼᚱᕽᒐ *hurei*	next	ᚼᚱᕽᓀ *hurwe*	previous	ᚼᚱᕽᓂᒐ *hurwei*	same position, two in same position, simultaneous
mid-distance	ᕿ *a*	ᚼᚱᕿ *hura*	Moderate distance	ᚼᚱᕿᒐ *hurai*	somewhat ahead	ᚼᚱᕿᓀ *hurwa*	somewhat behind, soon after	ᚼᚱᕿᓂᒐ *hurwai*	multiples in same position, multiple simultaneity
far	ᕾ *o*	ᚼᚱᕾ *huro*	distant	ᚼᚱᕾᒐ *huroi*	farthest ahead, first	ᚼᚱᕾᓀ *hurwo*	last	ᚼᚱᕾᓂᒐ *hurwoi*	all in same position, no sequence, unordered

9.2.8. Discourse Links (cf. §8.2.7)

The ᚼᚢᒍ- *Hun-* species provides words for linking and managing DISCOURSE. Dp 9.14 lists these with notes.

Dp 9.14: Discourse Links

Roman	IPA	NN	Semantics	Usage
hunu	hə'nə | ʱəˌnə	ᚼᚢᒍᚢ	DISCOURSE	Can be used at the opening of a DISCOURSE
huni	hə'ni | ʱəˌni	ᚼᚢᒍᒐ	reason	Refers to the mental process by which a MESSAGE is formed
hune	hə'nɛ | ʱəˌnɛ	ᚼᚢᒍᕽ	MESSAGE (received)	general term for transmission of IDEAS, usually by language. 'MESSAGE received' acknowledges receipt, 'I hear you'
hunei	hə'nɛj | ʱəˌnɛj	ᚼᚢᒍᕽᒐ	understand	AS response to a MESSAGE, 'Message successfully decoded', 'I understand'
huna	hə'na | ʱəˌna	ᚼᚢᒍᕿ	time (when)	Refers and links to the general temporal context of a MESSAGE
hunai	hə'naj | ʱəˌnaj	ᚼᚢᒍᕿᒐ	period of time (when)	Refers and links to the specific time mentioned in a MESSAGE
huno	hə'nɔ | ʱəˌnɔ	ᚼᚢᒍᕾ	place	Refers and links to the general location of a MESSAGE

hunoi	hə'nɔj | ʱᵊˌnɔj	𐤉𐤕𐤋𐤁	location	Refers and links to the specific location of a MESSAGE
hunw	hə'nu | ʱᵊˌnu	𐤉𐤕𐤋𐤄	question	A MESSAGE that seeks a response; can be attached as a MARKER to point out the specific item in question
hunwi	hə'nwi | ʱᵊˌnwi	𐤉𐤕𐤋𐤅	explanation	Response to a request for information about the reasoning behind a STATEMENT
hunwe	hə'nwɛ | ʱᵊˌnwɛ	𐤉𐤕𐤋𐤇	repeat	Request to repeat a MESSAGE. 'What?'
hunwei	hə'nwɛj | ʱᵊˌnwɛj	𐤉𐤕𐤋𐤆	explain	Request for information about the reasoning behind a STATEMENT
hunwa	hə'nwa | ʱᵊˌnwa	𐤉𐤕𐤋𐤃	when?	Request for the temporal context of a MESSAGE
hunwai	hə'nwaj | ʱᵊˌnwaj	𐤉𐤕𐤋𐤂	specify time	Request for the specific time of a MESSAGE
hunwo	hə'nwɔ | ʱᵊˌnwɔ	𐤉𐤕𐤋𐤁	where?	Request for the physical context of a MESSAGE
hunwoi	hə'nwɔj | ʱᵊˌnwɔj	𐤉𐤕𐤋𐤀	specify place	Request for the specific location of a MESSAGE

This concludes the discussion of DISCOURSE-level tools.