MOHAWK: NORTHERN IROQUOIAN

Ohkwari tanon' tsitsho

"The Bear and the Fox" (§2)

ONLINE UPDATE

Maria Bittner (4/24/2005)

In Mithun, M. & Woodbury, H. eds. 1980 *Northern Iroquoian Texts*, 77–95, U. Chicago Press.
REVISED TRANSCRIPTION: Standard Mohawk orthography (e.g., ʌ → en, u → on, l → r, …).
REVISED TRANSLATION: F. Lounsbury (*FL*), 1953, modulo M. Bittner (*MB*) 4/6/2005.
ONLINE UPDATE: See Bittner 2004 'Online Update: Quantified *de se* and polysynthesis'.
The following table lists some basic symbols of the semantic representation language to be used:

TABLE 1. Variables, demonstratives, and logical constants of *Logic of Centering*

Type	Abbr.	Name of objects	$^{\top}$Var	$^{\perp}$Var	$^{\top}$Dem	$^{\perp}$Dem	Con
t		truth values					
ω		worlds	**w**	w			
ε		events	**e**	e			
σ		states	**s**	s			
α		animates	**a**	a			
β		inanimates	**b**	b			
τ		times	**t**	t			
π		places	**l**	l			
ωt	Ω	ω-domains (propositions)	**p**	p			
εΩ		ε-dependent propositions	$\mathbf{p}_{\varepsilon}$	p_{ε}			
εt		ε-domains	**E**	E			
εε		ε-chains (processes)	**ee**	ee			
ωε	϶	ε-concepts	$\mathfrak{E}$	$\mathscr{E}$			
϶϶		ε-concept chains	$\mathfrak{E}\mathfrak{E}$	$\mathscr{E}\mathscr{E}$			
ωt	θ	τ-domain concepts	$\mathfrak{D}$	$\mathscr{D}$			
ωτv	η^{v}	v-habits (v ∈ {ε, σ, εε})	$\mathbf{h}^{v}$	h^{v}			
ωvn	κ^{n}	n-kinds (n ∈ {α, β, τ, π})	$\mathbf{k}^{n}$	k^{n}			
⋮	⋮	⋮					
s		stacks (of dref objects)					
ω×s×s	s	information-and-attention states		i, j			
sa		a-demonstratives (a, dref type)			$\mathbf{da}_{n}$	$d\mathsf{a}_{n}$	
sst		updates					
ωσε		state onset					BG
ωεσ		result state					RS
ωεα		agent					AG
ωeα		dative (e ∈ {ε, σ})					DA
ωeβ		theme object (e ∈ {ε, σ})					OB
ωeτ		time (e ∈ {ε, σ})					ϑ
ωeπ		place (e ∈ {ε, σ})					Π

Form	*MB* gloss (stands for)	1st ex	Presuppositional test (^{P}); update; implicature (^{I})
Slot 1 (opt): CATEGORY-NEUTRAL prefix:			
n-	*of*	§1.1	$[e\vert\ d\kappa^{\pi}\{e\} =_{d\Omega} d\pi]$
		§1.3	$[k^{\pi}\vert\ d\varepsilon\varepsilon\colon k^{\pi}\{\varepsilon\} =_{d\Omega} \Pi\{\varepsilon\}]$
sh-	*wth* ('with')	§4.3	
th-	*w/o* ('without')	§2.6	
Slot 2 (finite V): MOOD inflection = (CL_M*) + MOOD + (CL_M)			
t(e)-	EE (pl event)	§1.1	$[ee\vert\ prc_{d\Omega}\ ee]$
(t)s-	^{n}EE (part of pl event)	§1.2^{3}	$[\mathscr{E}\mathscr{E}\vert\ d\vartheta = {}^{1}\mathscr{E}\mathscr{E}]$
y(e)-	XX (end of chain)	§1.1	$[\vert\ d\varepsilon = {}^{f}d\varepsilon\varepsilon]$
t(e)-	XX (beg. of chain)	§1.5	$[s\vert\ s \subseteq_{d\Omega} {}^{1}d\pi\pi]$
wa'-	IND (indicative)	§1.1	$[\vert\ \vartheta_{d\Omega}\ d\varepsilon < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$ (realized *event*)
		§1.2^{1}	$[\vert\ \vartheta_{d\Omega}\ {}^{1}d\varepsilon\varepsilon < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$ (realized *1st* of *event*-chain)
		§1.2^{3}	$[\vert\ \vartheta_{d\Omega}\ {}^{1}d\vartheta\vartheta < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$; (realized *1st* of *planned ev*'s)
		MB05	$[\vert\ \vartheta_{d\Omega}\ {}^{1}d\eta^{\varepsilon} < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$ (realized *1st* of *habitual ev*'s)
en-	HYP (hypothetical)	§1.6^{2}	$[\mathscr{T}\vert\ \mathscr{T} =_{d\omega\Omega} \vartheta\text{RS}\ \mathbf{d}\varepsilon]$; $^{I}[\vert\ \text{RS}\ \mathbf{d}\varepsilon\colon \text{DA}\ expect_{d\Omega}\ \mathbf{d}\omega\Omega]$
		§2.1^{4}	$[\vert\ \mathbf{d}\omega\tau =_{d\omega\Omega} \vartheta\text{RS}\ d\vartheta]$; $^{I}[\vert\ \text{RS}\ d\vartheta\colon \text{DA}\ expect\ \mathbf{d}\omega\Omega]$
		BT97	$[\mathscr{D}\vert\ \mathscr{D} =_{d\omega\Omega} \vartheta\text{RS}\ d\eta^{\varepsilon}]$; $^{I}[\vert\ \text{RS}\ d\eta^{\varepsilon}\colon \text{DA}\ expect\ \mathbf{d}\omega\Omega]$
a(on)-	OPT (optative)	§2.1^{3}	$[\vert\ {}^{1}d\vartheta\vartheta \subseteq_{d\omega\Omega} \vartheta\text{RS}\ \mathbf{d}\varepsilon]$; $^{I}[\vert\ \text{RS}\ \mathbf{d}\varepsilon\colon \text{DA}\ want_{d\Omega}\ d\vartheta\vartheta]$;
		§1.6^{4}	$[\mathscr{E}\mathscr{E}\vert\ {}^{1}\mathscr{E}\mathscr{E} \subseteq_{d\omega\Omega} \vartheta\text{RS}\ d\vartheta]$; $^{I}[\vert\ \text{RS}\ d\vartheta\colon \text{DA}\ want\ d\vartheta\vartheta]$;
		§1.6^{3}	$[\mathbf{p}_{\omega}\ \mathscr{S}\vert\ \text{BG}\ \mathscr{S} \subseteq_{p\omega} \vartheta\text{RS}\ d\vartheta]$; $^{I}[\vert\ \text{RS}\ d\vartheta\colon \text{DA}\ want\ d\omega\sigma]$
te-	IRR (irrealis)	§2.6	
Slot 3: Pronominal AGR with S, O			
	$3sm_U$	§1.1	$^{P}[\vert\ 3sm\ \mathbf{d}\alpha]$; $[\vert\ \text{DA}\ d\varepsilon =_{d\Omega} \mathbf{d}\alpha]$
	2s.1s	§1.6	$^{P}[\vert\ 2s\ \mathbf{d}\alpha,\ 1s\ d\alpha]$; $[\vert\ \text{AG}\ d\varepsilon =_{d\Omega} \mathbf{d}\alpha,\ \text{DA}\ d\varepsilon =_{d\Omega} d\alpha]$
Slot 4: V.BASE = ({*se, se.se*}) + (n + n/v +) v (+ v\v)			
at-	*se-*	§1.1	$[\vert\ \text{AG}\ d\varepsilon\varepsilon =_{d\Omega} \text{DA}\ \{\text{RS}\ d\varepsilon\varepsilon\}]$
-stikahwah-	*-go.along-*	§1.1	$[k^{\pi}\vert\ d\varepsilon\varepsilon\colon \text{AG}\ go.along_{d\Omega}\ k^{\pi}]$
-en, -on	*-be*	§1.1	$[s\vert\ \text{DA}\ s =_{d\Omega} \text{AG}\ d\varepsilon\varepsilon]$
-hakie	*-prg*	§1.1	$[\vert\ d\sigma =_{d\Omega} \text{RS}\ {}^{1}d\varepsilon\varepsilon]$
-(ha)k	*-habit*	§2.1^{4}	$[\vert\ \vartheta d\omega\sigma \subseteq d\eta^{\varepsilon\varepsilon}]$
⋮	⋮	⋮	⋮

Slot 5: ASPECT inflection = ASPECT + (CL_A) asp-adjustment; $^{\top}\tau\omega$-location; pre-*fb* $^{\top}\tau$-update

-(e)', -ne	EVT (eventive)	§1.1	$([e\vert\ e =_{d\Omega} \text{BG}\ d\sigma];)$	$[\vert\ d\varepsilon \subseteq_{d\Omega} \mathbf{d}\tau]$;	$[\mathbf{t}\vert\ \mathbf{t} =_{d\Omega} \vartheta\text{RS}\ d\varepsilon]$
		§2.1^{4}		$[\vert\ \mathbf{d}\omega\tau \subseteq_{d\omega\Omega} d\eta^{\varepsilon\varepsilon}]$;	$[\mathscr{D}\vert\ \mathscr{D} = \vartheta\text{RS}\ {}^{1}d\eta^{\varepsilon\varepsilon}]$
-(h)s, -ha	DUR (durative)	§1.1	$([s\vert\ s =_{d\Omega} \text{RS}\ d\varepsilon];)$	$[\vert\ \mathbf{d}\tau \subseteq_{d\Omega} d\sigma]$;	
(-en), -on	STA (stative)	§1.1	$([s\vert\ s =_{d\Omega} \text{RS}\ d\varepsilon];)$	$[\vert\ \mathbf{d}\tau \subseteq_{d\Omega} d\sigma]$;	
-s-kwe'	DUR.^{h}PRF ('used to')	BT98	$[s\vert\ \text{BG}\ s =_{d\omega} \text{BG RS}\ {}^{f}d\eta^{\varepsilon}]$;	$[\vert\ \mathbf{d}\tau \subseteq_{d\omega} d\sigma]$;	
-en-hne'	STA.^{n}PRF (*n*th res state)	BT98	$[s\vert\ s =_{d\omega} \text{RS}\ {}^{n}d\varepsilon\varepsilon]$;	$[\vert\ \mathbf{d}\tau \subseteq_{d\omega} d\sigma]$;	

N-determiners

ne(n)	$D_{\top}$	§1.2	$[\vert\ \mathbf{d}\alpha =_{d\Omega} d\kappa^{\alpha}\{d\varepsilon\varepsilon\}]$	*tsi*	$D_{\perp}$	§1.1	$[l\vert\ l =_{d\Omega} d\kappa^{\pi}\{d\varepsilon\}]$
		§2.1	$[\mathscr{T}\vert\ \mathscr{T} =_{d\omega\Omega} \vartheta\text{RS}\ \mathbf{d}\varepsilon]$			§1.2	$[e\vert\ e = {}^{f}d\varepsilon\varepsilon]$
ki	N	§1.1	$[\mathbf{a}\ k^{\alpha}\vert\ \mathbf{a} = k^{\alpha}\{\mathbf{d}\varepsilon\}]$	*tho*	K	§1.3	$[\mathbf{k}^{\alpha}\ a\vert\ a =_{d\Omega} \mathbf{k}^{\alpha}\{d\varepsilon\}]$

§1. *Fox finds food and shares it with Bear*
(final context)

$w_0 \in {}^\top p_0$ (p_0-story worlds)

⋮ ⋮

• e'_6: bear a_3 requests ${}^{\mathrm{I}}$(and expects) $\mathscr{E}_6$ dur RS e'_6

…============… s_5: ${}^\top k^\alpha_5$-mare a_2 sleeps at beg l_6 of ll_5-path

••• ee_5: fox a_1 $h^{\varepsilon\varepsilon}_5$-sucks ${}^\top k^\beta_4$-milk frm ${}^\top k^\alpha_5$-mare a_2

|||||||| $\mathscr{T}_6 w_0 = \vartheta_{w0}$ RS$_{w0}$ e'_6: e'_6-request result time

•• $ee_7 = \langle {}^1\mathscr{E}\mathscr{E}_6 w_0, \ldots {}^f\mathscr{E}\mathscr{E}_6 w_0 \rangle$: p_0-realization of $\mathscr{E}\mathscr{E}_6$
fox a_1 & bear a_3 go along ll_6-path (to beg. l_6,
where ${}^\top k^\alpha_5$-mare a_2 is s_5-sleeping)

|| $t_7 = \vartheta_{w0}$ RS ${}^1 ee_7$: aft. 1st stg of ee_7-walk to l_6

• $e_7 = {}^f ee_7$ (= ${}^2 ee_7$): fox a_1 & bear a_3 arrive at l_6

|||||| $t'_7 = \vartheta_{w0}$ RS$_{w0}$ e_7: aft. e_7-arrival

|| $t_8 = \vartheta_{w0}\, e_8$: right after e_7-arrival

• e_8 = BG$_{w0}${RS$_{w0}$ e_7} = ${}^1\mathscr{E}\mathscr{E}'_6 w_0$:
beg of e_7-res state, bear a_3 starts $\mathscr{E}\mathscr{E}_6$-sucking

|| $t'_8 = \vartheta_{w0}$ RS$_{w0}$ e_8: aft. 1st stg of $\mathscr{E}\mathscr{E}'_6$-sucking

••• $ee_8 = \langle {}^1\mathscr{E}\mathscr{E}'_6 w'_0 .. {}^f\mathscr{E}\mathscr{E}'_6 w'_0 \rangle$: p_0-realization of $\mathscr{E}\mathscr{E}'_6$
bear a_3 $h^{\varepsilon\varepsilon}_5$-sucks ${}^\top k^\beta_4$-milk from ${}^\top k^\alpha_5$-mare

• $e'_8 = {}^f ee_8$: end of ee_8-sucking,
in e'_8-result state bear a_3 feels full

|| $t''_8 = \vartheta_{w0}\, e'_8$: e'_8-now

||| ${}^\top t'''_8 = \vartheta_{w0}\, e'_8$: aft. e'_8-end of ee_8-sucking

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$\mathscr{S}_6 = \langle$RS$_w$ $\mathscr{E}_6 w$: $w \in$ Ran ${}^\top p'_{\omega,6} \rangle$ ($\mathscr{E}_6$-result $p'_{\omega,6}$-desire of bear a_3)

$w'_6 \in$ Dom $\mathscr{S}_6$ = Ran ${}^\top p'_{\omega,6}$

|||||||| $\mathscr{T}_6 w_6 = \vartheta_{w6}$ RS$_{w6}$ e'_6: e'_6-request result time

•• $\langle {}^1\mathscr{E}\mathscr{E}_6 \ldots {}^f\mathscr{E}\mathscr{E}_6 \rangle$: fox a_1 & bear a_3 go along ll_5-path

• $\mathscr{E}_6 w_6$: during ${}^f\mathscr{E}\mathscr{E}_6$-result, fox a_1 shows bear a_3
bg l_6 of ll_5-pth, w. ${}^\top k^\alpha_5$-mare a_2 is s_5-sleeping

|||||| ${}^\top\mathscr{T}'_6 w_6 = \vartheta_{w6}$ RS $\mathscr{E}_6 w_6$: $\mathscr{E}_6$-showing result time

== $\mathscr{S}_6 w'_6$ = RS $\mathscr{E}_6 w'_6$: $\mathscr{E}_6$-showing result state

••• $\langle {}^1\mathscr{E}\mathscr{E}'_6 w'_6 \ldots {}^f\mathscr{E}\mathscr{E}'_6 w'_6 \rangle$:
bear a_3 $h^{\varepsilon\varepsilon}_5$-sucks ${}^\top k^\beta_4$-milk from ${}^\top k^\alpha_5$-mare
${}^{\mathrm{P}}$'also': $\mathscr{E}\mathscr{E}_6 \sim ee_5$ (fox a_1 $h^{\varepsilon\varepsilon}_5$-sucks in ${}^\top p_0$)

|| ${}^\top\mathscr{T}''_6 w_6 = \vartheta_{w6}$ RS$_{w6}$ ${}^1\mathscr{E}\mathscr{E}'_6 w_6$: aft 1st $\mathscr{E}\mathscr{E}'_6$-stage
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§2. *Fox makes a proposal*

2.1[1] The fox [then] said:
wa- *mf*
IND
[*e*|]; [| $\vartheta_{\mathbf{d}\Omega}\, d\varepsilon < \vartheta_{\mathbf{d}\omega}\, \mathbf{d}\varepsilon$];

hen-
3sm-
^{P}[| *3sm*$_{\mathbf{d}\Omega}$ ($\mathbf{d}\alpha_1 - \mathbf{d}\alpha$)]; [**a**| **a** = ($\mathbf{d}\alpha_1 - \mathbf{d}\alpha$)]; [| AG $d\varepsilon =_{\mathbf{d}\Omega} \mathbf{d}\alpha$];

-ron-
-say
[| $d\varepsilon$: AG *speak*$_{\mathbf{d}\Omega}$];

-'
-EVT
[| $d\varepsilon \subseteq_{\mathbf{d}\Omega} \mathbf{d}\tau$]; [**t**| **t** $=_{\mathbf{d}\Omega} \vartheta$RS $d\varepsilon$];

ne -tsitsho *ff*
$D_{\top}$ *-fox*
[k^{α}| $\mathbf{d}\alpha =_{\mathbf{d}\Omega} k^{\alpha}\{d\varepsilon\}$]; [| *fox* $d\kappa^{\alpha}$];

2.1[2] "(shift to fox's voice)
[**e**| **e** = $d\varepsilon$]; [**t**| **t** $=_{\mathbf{d}\Omega} \vartheta\mathbf{d}\varepsilon$];

It might…[1]
toka'- -nonw -a *if*
maybe- *-plc/tm* -CL
[$\mathbf{p}_{\omega}$ $\mathscr{E}$| $\mathscr{E} \subseteq_{\mathbf{p}\omega} \vartheta$RS $\mathbf{d}\varepsilon$]; [$\mathscr{S}$| $\mathscr{S}$ = RS $d\text{ə}$]; [$\mathscr{T}$| $\mathscr{T} = \vartheta d\omega\sigma$];

…be nice… *ib*
yo-
$3s_{U}$-
^{P}[| *3s* $\mathbf{d}\omega\Omega$]; [| Dom $d\omega\sigma =_{\mathbf{d}\Omega} \mathbf{d}\omega\Omega$];

-yáner-
-be.nice-
[| $d\omega\sigma$ *nice.for* DA];

-e'
-STA
[| $\mathbf{d}\omega\tau \subseteq_{\mathbf{d}\omega\Omega} d\omega\sigma$];

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[1] • Any state realizing $d\omega\sigma$ is nice for the experiencer
$d\omega\sigma$ *nice.for* DA := $\lambda i.\ \forall w \in \text{Dom}\ d\omega\sigma_i \exists s$: $s = d\omega\sigma_i w \wedge nice.for_w(s, \text{DA}_w\ s)$

2.1[3] …to carry her off (bodily)…[2]

ne *mf*
$D_{\top}$
$[\mathcal{T}|\ \mathcal{T} =_{\mathbf{d}\omega\Omega} \vartheta\text{RS}\ \mathbf{d}\varepsilon];$

y-	aon-	sa-
XX-	OPT-	^{n}EE-

$[\mathcal{E}\mathcal{E}\ \mathcal{L}|\ {}^{f}\mathcal{E}\mathcal{E} \subseteq \mathcal{L}];\ [|\ {}^{1}d\ni\ni \subseteq_{\mathbf{d}\omega\Omega} \vartheta\text{RS}\ \mathbf{d}\varepsilon];\ {}^{I}[|\ \text{RS}\ \mathbf{d}\varepsilon\text{: DA}\ want_{\mathbf{d}\Omega}\ d\ni\ni];\ [|\ d\ni = {}^{f}d\ni\ni];$

yeteni-
12.3sf-
$^{P}[\mathbf{a}|\ 12_{\mathbf{d}\Omega}\ \mathbf{a},\ 3sf_{\mathbf{d}\Omega}\ d\alpha];\ [|\ \text{AG}\ d\ni\ni = \mathbf{d}\alpha,\ \text{DA}\ d\ni\ni = d\alpha];$

ya't-	-enhaw-
body-	*-carry-*

$[k^{\beta}|\ k^{\beta}\ body.of\ d\alpha];\ [|\ d\ni\ni\text{: AG}\ carry\ d\kappa^{\beta}];$

-'
-EVT
$[|\ {}^{1}d\ni\ni \subseteq_{\mathbf{d}\omega\Omega} \mathbf{d}\omega\tau];\ [\mathcal{T}|\ \mathcal{T} = \vartheta\text{RS}\ {}^{1}d\ni\ni];$

$w_0 \in {}^{\top}p_0$ (p_0-story worlds)
⋮ ⋮

- ••• $ee_8 = \langle {}^{1}\mathcal{E}\mathcal{E}'_6 w'_0 .. {}^{f}\mathcal{E}\mathcal{E}'_6 w'_0 \rangle$: p_0-realization of $\mathcal{E}\mathcal{E}'_6$
  bear a_3 $h^{\varepsilon\varepsilon}{}_5$-sucks $^{\top}k^{\beta}{}_4$-milk from $^{\top}k^{\alpha}{}_5$-mare
- • $e'_8 = {}^{f}ee_8$: end of ee_8-sucking,
  in e'_8-result state bear a_3 feels full
- || $t''_8 = \vartheta_{w0}\ e'_8$: e'_8-now
- ||| $t'''_8 = \vartheta_{w0}\ e'_8$: aft. e'_8-end of ee_8-sucking
- • $^{\top}e_1$: fox a_1 speaks about $\mathcal{E}_1$ (to bear a_3)
- |||||| $t_1 = \vartheta_{w0}\ \text{RS}_{w0}\ e_1$: e_1-result time
- | $^{\top}t'_1 = \vartheta_{w0}\ e_1$: e_1-now

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$w_1 \in \text{Dom}\ \mathcal{E}_1 = {}^{\top}p_{\omega,1}w_0$ (e_1-suggested desirable possibility)

- ||||||||| $\vartheta_{w1}\ \text{RS}_{w1}\ e_1$: time of $^{\top}e_1$-desired result
- • $\mathcal{E}_1 w_1 = {}^{f}\mathcal{E}\mathcal{E}_1 w_1$: end of $\mathcal{E}\mathcal{E}_1$-carrying,
- ====== $\mathcal{S}_1 w_1 = \text{RS}_{w1}\ \mathcal{E}_1 w_1$: result state of $\mathcal{E}\mathcal{E}_1$-carrying,
  nice for dat = fox a_1 +bear a_3
- ||||||||||||||| $^{\top}\mathcal{T}_1 w_1 = \vartheta_{w1}\ \mathcal{S}_1 w_1$: time of $\mathcal{S}_1$ (desired res state)
- ||||||||| $\mathcal{T}'_1 w_1 = \vartheta_{w1}\ \text{RS}_{w1}\ e_1$: time of $^{\top}e_1$-desired result
- •• $\langle {}^{1}\mathcal{E}\mathcal{E}_1 w_1 \ldots {}^{f}\mathcal{E}\mathcal{E}_1 w_1 \rangle$: fox a_1 + bear a_3 carry
  $k^{\beta}{}_1$-body of mare a_2 off to $\mathcal{L}_1 w_1$
- || $^{\top}\mathcal{T}''_1 w_1 = \vartheta_{w1}\ \text{RS}_{w1}\ {}^{1}\mathcal{E}\mathcal{E}_1 w_1$: during $\mathcal{E}\mathcal{E}_1$-carrying

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[2] • Any realization of the final stage of $\mathcal{E}\mathcal{E}$ occurs within $\mathcal{L}$
$^{f}\mathcal{E}\mathcal{E} \subseteq \mathcal{L}$:= $\lambda i.\ \forall w \in \text{Dom}\ {}^{f}\mathcal{E}\mathcal{E} \exists e, l\text{: } e = [{}^{f}\mathcal{E}\mathcal{E}]w \wedge l = \mathcal{L}w \wedge \Pi_w\ e \subseteq l$

• $d\ni\ni$ is a process-chain of stage concepts such that in any realization of any stage the agent carries $d\kappa^{\beta}$
$d\ni\ni$: AG *carry* $d\kappa^{\beta}$:= $\lambda i.\ process\ d\ni\ni_i \wedge \forall \mathcal{E} \in d\ni\ni_i \forall w \in \text{Dom}\ \mathcal{E}\text{: } carry_w(\mathcal{E}w,\ \text{AG}_w\ \mathcal{E}w,\ d\kappa^{\beta}{}_i w(\mathcal{E}w))$
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2.1[4] …then for ever it would make her our milking mare.[3]

khná:'a
then *if*
[$\mathcal{T}$| $\mathcal{T}$ =$_{\mathbf{d}\omega\Omega}$ ϑRS *d*ə];

kyótkon
always
[$h^{\varepsilon\varepsilon}$| $h^{\varepsilon\varepsilon}$ =$_{\mathbf{d}\omega\Omega}$ (*d*$\eta^{\varepsilon\varepsilon}$| **d**$\omega\tau$)]; [$\mathfrak{D}$| $\mathfrak{D}$ $\subseteq_{\mathbf{d}\omega\Omega}$ *d*$\eta^{\varepsilon\varepsilon}$]; ^{I}[| *d*$\eta^{\varepsilon\varepsilon}$ $\subseteq_{\mathbf{d}\omega\Omega}$ **d**θ]

n= é:'e *ib*
D$_{\top}$= (*s*)*he*
[| *d*α =$_{\mathbf{d}\Omega}$ **d**κ^{α}{*d*$\varepsilon\varepsilon$}]; ^{P}[| *3s*$_{\mathbf{d}\omega\Omega}$ *d*α]; [| *d*α =$_{\mathbf{d}\omega\Omega}$ **d**κ^{α}{*d*$\eta^{\varepsilon\varepsilon}$}]

en- *mf*
HYP-
[| **d**$\omega\tau$ =$_{\mathbf{d}\omega\Omega}$ ϑRS *d*ə]; ^{I}[| RS *d*ə: DA *expect* **d**$\omega\Omega$];

yonkeni-
12$_{U}$-
^{P}[| *12*$_{\mathbf{d}\Omega}$ **d**α]; [| DA *d*$\omega\sigma$ =$_{\mathbf{d}\omega\Omega}$ **d**α];

nahskwa- -yen-
animal.of- *-be(.at)-*
[| *d*$\omega\sigma$: **d**κ^{α} *animal.of* DA]; [| DA *d*$\omega\sigma$ ≠ **d**κ^{α}{*d*$\omega\sigma$}];

-(h)t -(h)ak
-cause *-itr*
[| *d*$\omega\sigma$ = RS *d*ə]; [| ϑ*d*$\omega\sigma$ $\subseteq$ *d*$\eta^{\varepsilon\varepsilon}$];

-e'
-EVT
[| **d**$\omega\tau$ $\subseteq_{\mathbf{d}\omega\Omega}$ *d*$\eta^{\varepsilon\varepsilon}$]; [$\mathfrak{D}$| $\mathfrak{D}$ = ϑRS ^{1}*d*$\eta^{\varepsilon\varepsilon}$];

" (end fox's voice)
[**t**| **t** =$_{\mathbf{d}\Omega}$ ϑRS **d**ε]; [**e**| **e** = **d**ε_1];

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[3] • In any **d**$\omega\Omega$-accessible world, $h^{\varepsilon\varepsilon}$ is the restriction of *d*$\eta^{\varepsilon\varepsilon}$-habit to *d*$\eta^{\varepsilon\varepsilon}$-processes occurring during **d**$\omega\tau$
$h^{\varepsilon\varepsilon}$ =$_{\mathbf{d}\omega\Omega}$ (*d*$\eta^{\varepsilon\varepsilon}$| **d**$\omega\tau$) := $\lambda i.\ \forall w \in \mathrm{Dom}\ \mathbf{d}\omega\Omega_i \forall w' \in \mathbf{d}\omega\Omega_i w$: $h^{\varepsilon\varepsilon}w' = \langle d\eta^{\varepsilon\varepsilon}{}_i w' t\colon t \in \mathrm{Dom}\ d\eta^{\varepsilon\varepsilon}w' \,\&\, t \subseteq \mathbf{d}\omega\tau_i w' \rangle$
• In any **d**$\omega\Omega$-accessible world, any $\mathfrak{D}$-time is a *d*$\eta^{\varepsilon\varepsilon}$-frame, ^{I}(and any *d*$\eta^{\varepsilon\varepsilon}$-frame is a $\mathfrak{D}$-time)
$\mathfrak{D} \subseteq_{\mathrm{d}\omega\Omega} d\eta^{\varepsilon\varepsilon}$:= $\lambda i.\ \forall w \in \mathrm{Dom}\ \mathbf{d}\omega\Omega_i \forall w' \in \mathbf{d}\omega\Omega_i w$: $\mathfrak{D}w' \subseteq \mathrm{Dom}\ d\eta^{\varepsilon\varepsilon}{}_i w'$
$d\eta^{\varepsilon\varepsilon} \subseteq_{\mathbf{d}\omega\Omega} \mathfrak{D}$:= $\lambda i.\ \forall w \in \mathrm{Dom}\ \mathbf{d}\omega\Omega_i \forall w' \in \mathbf{d}\omega\Omega_i w$: $\mathrm{Dom}\ d\eta^{\varepsilon\varepsilon}{}_i w' \subseteq \mathfrak{D}w'$
• In any **d**$\omega\Omega$-accessible world, *d*α instantiates **d**κ^{α} at every stage of any *d*$\eta^{\varepsilon\varepsilon}$-process
dα =$_{\mathbf{d}\omega\Omega}$ **d**κ^{α}{*d*$\eta^{\varepsilon\varepsilon}$} := $\lambda i.\ \forall w \in \mathrm{Dom}\ \mathbf{d}\omega\Omega_i \forall w' \in \mathbf{d}\omega\Omega_i w \forall ee \in \mathrm{Ran}\ d\eta^{\varepsilon\varepsilon}{}_i w' \forall e \in ee$: $d\alpha_i = \mathbf{d}\kappa^{\alpha}{}_i w' e$
• The experiencer of any realization of the result state of *d*ə expects to be in a **d**$\omega\Omega$-accessible world
RS *d*ə: DA *expect* **d**$\omega\Omega$:= $\lambda i.\ \forall w \in \mathrm{Dom}\ d\ə_i \exists s$: $s = \mathrm{RS}_w\ d\ə_i w \wedge expect_w(s, \mathrm{DA}_w\ s, \mathbf{d}\omega\Omega_i w)$
• In any state realizing *d*$\omega\sigma$, there is a **d**κ^{α}-animal belonging to the experiencer, who is not that animal
d$\omega\sigma$: **d**κ^{α} *animal.of* DA := $\lambda i.\ \forall w \in \mathrm{Dom}\ d\omega\sigma_i \exists s$: $s = d\omega\sigma_i w \wedge animal.of_w(s, \mathbf{d}\kappa^{\alpha}{}_i w s, \mathrm{DA}_w\ s)$
DA *d*$\omega\sigma$ ≠ **d**κ^{α}{*d*$\omega\sigma$} := $\lambda i.\ \forall w \in \mathrm{Dom}\ d\omega\sigma_i \exists s$: $s = d\omega\sigma_i w \wedge \mathrm{DA}_w\ s \neq \mathbf{d}\kappa^{\alpha}{}_i w s$
• In any *d*$\omega\sigma$-world, the time of *d*$\omega\sigma$ is included in the period ($\cup_\tau$) spanned by *d*$\eta^{\varepsilon\varepsilon}$-frames
$\vartheta d\omega\sigma \subseteq d\eta^{\varepsilon\varepsilon}$:= $\lambda i.\ \forall w \in \mathrm{Dom}\ d\omega\sigma_i \exists s$: $s = d\omega\sigma_i w \wedge \vartheta_w\ s \subseteq \cup_\tau \mathrm{Dom}\ d\eta^{\varepsilon\varepsilon}{}_i w$

$w_0 \in {}^{\top}p_0$	(p_0-story worlds)
⋮	⋮
•••	$ee_8 = \langle {}^1\mathscr{E}\mathscr{E}'_6 w'_0 .. {}^f\mathscr{E}\mathscr{E}'_6 w'_0 \rangle$: p_0-realization of $\mathscr{E}\mathscr{E}'_6$ bear a_3 $h^{\varepsilon\varepsilon}{}_5$-sucks ${}^{\top}k^{\beta}{}_4$-milk from ${}^{\top}k^{\alpha}{}_5$-mare
•	$e'_8 = {}^f ee_8$: end of ee_8-sucking, in e'_8-result state bear a_3 feels full
ll	$t''_8 = \vartheta_{w0}\ e'_8$: e'_8-now
lll	$t'''_8 = \vartheta_{w0}\ e'_8$: aft. e'_8-end of ee_8-sucking
•	e_1: fox a_1 speaks about $\mathscr{E}_1$ (to bear a_3)
lllllll	$t_1 = \vartheta_{w0}\ \mathrm{RS}_{w0}\ e_1$: e_1-result time
l	$t'_1 = \vartheta_{w0}\ e_1$: e_1-now
lllllll	$t''_1 = \vartheta_{w0}\ \mathrm{RS}_{w0}\ e_1 = t_1$: e_1-result time

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$w_1 \in \mathrm{Dom}\ \mathscr{E}_1 = {}^{\top}p_{\omega,1}w_0$	(e_1-suggested desirable possibility)
llllllllll	$\vartheta_{w1}\ \mathrm{RS}_{w1}\ e_1$: time of ${}^{\top}e_1$-desired result
•	$\mathscr{E}_1 w_1 = {}^f\mathscr{E}\mathscr{E}_1 w_1$: end of $\mathscr{E}\mathscr{E}_1$-carrying,
======	$\mathscr{S}_1 w_1 = \mathrm{RS}_{w1}\ \mathscr{E}_1 w_1$: result state of $\mathscr{E}\mathscr{E}_1$-carrying, nice for dat = fox a_1 +bear a_3 ${}^{\top}k^{\alpha}{}_5$-mare a_2 is an animal of (owned by) dat
llllllllllllllll	$\mathscr{T}_1 w_1 = \vartheta_{w1}\ \mathscr{S}_1 w_1$: time of $\mathscr{S}_1$ (desired res state)
llllllllll	$\mathscr{T}'_1 w_1 = \vartheta_{w1}\ \mathrm{RS}_{w1}\ e_1$: time of ${}^{\top}e_1$-desired result
••	$\langle {}^1\mathscr{E}\mathscr{E}_1 w_1 \ldots {}^f\mathscr{E}\mathscr{E}_1 w_1 \rangle$: fox a_1 + bear a_3 carry $k^{\beta}{}_1$-body of mare a_2 off to $\mathscr{L}_1 w_1$
ll	$\mathscr{T}''_1 w_1 = \vartheta_{w1}\ \mathrm{RS}_{w1}\ {}^1\mathscr{E}\mathscr{E}_1 w_1$: during $\mathscr{E}\mathscr{E}_1$-carrying
llllllllllllllll	$\mathscr{T}_1 w_1 = \vartheta_{w1}\ \mathrm{RS}_{w1}\ \mathscr{E}_1 w_1$: time of desired res state
••… ••	$h^{\varepsilon\varepsilon}{}_1 w_1 = \{h^{\varepsilon\varepsilon}{}_5 w_1 t \colon t \in \mathscr{T}_1 w_1\}$ agt $h^{\varepsilon\varepsilon}{}_5$-sucks from $k^{\alpha}{}_5$-mare a_2 dur ${}^{\top}\mathscr{T}_1 w_1$
llll…llll	$\mathscr{D}_1 w_1 = \mathrm{Dom}\ h^{\varepsilon\varepsilon}{}_1 w_1$: $h^{\varepsilon\varepsilon}{}_1$-milk.sucking times
ll… ll	${}^{\top}\mathscr{D}'_1 w_1 = \{\vartheta_{w1}\ \mathrm{RS}_{w1}\ {}^1 ee \colon ee \in \mathrm{Ran}\ h^{\varepsilon\varepsilon}{}_1 w_1\}$ during $h^{\varepsilon\varepsilon}{}_1$-milk.sucking (1st stg-after.times)
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