

MOHAWK: NORTHERN IROQUOIAN

Ohkwari tanon’ tsitsho
 “The Bear and the Fox”

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., $\wedge \rightarrow en$, $u \rightarrow on$, $l \rightarrow r$, ...).
 REVISED TRANSLATION: F. Lounsbury (*FL*), 1953, modulo M. Bittner (*MB*) 4/16/2005.
 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			
$\varepsilon \Omega$		ε -dependent propositions	p$_{\varepsilon}$	p_{ε}			
εt		ε -domains	E	E			
$\varepsilon \varepsilon$		ε -chains (processes)	ee	ee			
$\omega \varepsilon$	\exists	ε -concepts	ℰ	\mathcal{E}			
$\exists \exists$		ε -concept chains	ℰℰ	$\mathcal{E}\mathcal{E}$			
$\omega \tau t$	θ	τ -domain concepts	ℳ	\mathcal{D}			
$\omega \tau v$	η^v	v -habits ($v \in \{\varepsilon, \sigma, \varepsilon \varepsilon\}$)	hv	h^v			
$\omega v n$	κ^n	n -kinds ($n \in \{\alpha, \beta, \tau, \pi\}$)	kn	k^n			
\vdots	\vdots	\vdots					
s		stacks (of dref objects)					
$\omega \times s \times s$	s	information-and-attention states		i, j			
sa		a -demonstratives (a , dref type)			da$_n$	da_n	
sst		updates					
$\omega \sigma \varepsilon$		state onset					BG
$\omega \varepsilon \sigma$		result state					RS
$\omega \varepsilon \alpha$		agent					AG
$\omega e \alpha$		dative ($e \in \{\varepsilon, \sigma\}$)					DA
$\omega e \beta$		theme object ($e \in \{\varepsilon, \sigma\}$)					OB
$\omega e \tau$		time ($e \in \{\varepsilon, \sigma\}$)					ϑ
$\omega e \pi$		place ($e \in \{\varepsilon, \sigma\}$)					Π

Form **MB gloss (stands for)** **1st ex** **Presuppositional test (^P); update; implicature (^I)**

Slot 1 (opt): CATEGORY-NEUTRAL prefix:

<i>n-</i>	<i>of</i>	§1.1	$[el\ d\kappa^\pi\{e\} =_{d\Omega}\ d\pi]$
		§1.3	$[k^\pi\ d\varepsilon\varepsilon: k^\pi\{\varepsilon\} =_{d\Omega}\ \Pi\{\varepsilon\}]$
<i>sh-</i>	<i>wth</i> (‘with’)	§4.3	
<i>th-</i>	<i>w/o</i> (‘without’)	§2.6	

Slot 2 (finite V): MOOD inflection = (CL_M^{*}) + MOOD + (CL_M)

<i>t(e)-</i>	EE (pl event)	§1.1	$[eel\ prc_{d\Omega}\ ee]$	§1.3	$[eel\ rcp_{d\Omega}\ ee]$
<i>(t)s-</i>	ⁿ EE (part of pl event)	§1.2 ³	$[\mathcal{E}\mathcal{E}\ d\exists = {}^1\mathcal{E}\mathcal{E}]$	§1.3	$[d\varepsilon\varepsilon =_{d\Omega}\ \langle {}^2d\exists, {}^3d\exists \rangle]$
<i>y(e)-</i>	XX (end of chain)	§1.1	$[d\varepsilon = {}^f d\varepsilon\varepsilon]$	§2.1	$[\mathcal{E}\mathcal{E}\ \mathcal{L}^f\ \mathcal{E}\mathcal{E} \subseteq \mathcal{L}]$
<i>t(e)-</i>	XX (beg. of chain)	§1.5	$[sl\ s \subseteq_{d\Omega}\ {}^1d\pi\pi]$		
<i>wa’-</i>	IND (indicative)	§1.1	$[\ \vartheta_{d\Omega}\ d\varepsilon < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$		(realized <i>event</i>)
		§1.2 ¹	$[\ \vartheta_{d\Omega}\ {}^1d\varepsilon\varepsilon < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$		(realized <i>1st</i> of <i>event-chain</i>)
		§1.2 ³	$[\ \vartheta_{d\Omega}\ {}^1d\exists < \vartheta_{d\omega}\ \mathbf{d}\varepsilon];$		(realized <i>1st</i> of <i>planned ev’s</i>)
		MB05	$[\ \vartheta_{d\Omega}\ {}^1d\eta^\varepsilon < \vartheta_{d\omega}\ \mathbf{d}\varepsilon]$		(realized <i>1st</i> of <i>habitual ev’s</i>)
<i>en-</i>	HYP (hypothetical)	§1.6 ²	$[\mathcal{J}\ \mathcal{J} =_{d\omega\Omega}\ \vartheta\text{RS}\ \mathbf{d}\varepsilon];$	¹	$[\ \text{RS}\ \mathbf{d}\varepsilon: \text{DA}\ \text{expect}_{d\Omega}\ \mathbf{d}\omega\Omega]$
		§2.1 ⁴	$[\ \mathbf{d}\omega\tau =_{d\omega\Omega}\ \vartheta\text{RS}\ d\exists];$	¹	$[\ \text{RS}\ d\exists: \text{DA}\ \text{expect}\ \mathbf{d}\omega\Omega]$
		BT97	$[\mathcal{D}\ \mathcal{D} =_{d\omega\Omega}\ \vartheta\text{RS}\ d\eta^\varepsilon];$	¹	$[\ \text{RS}\ d\eta^\varepsilon: \text{DA}\ \text{expect}\ \mathbf{d}\omega\Omega]$
<i>a(on)-</i>	OPT (optative)	§2.1 ³	$[\ {}^1d\exists \subseteq_{d\omega\Omega}\ \vartheta\text{RS}\ \mathbf{d}\varepsilon];$	¹	$[\ \text{RS}\ \mathbf{d}\varepsilon: \text{DA}\ \text{want}_{d\Omega}\ d\exists\exists];$
		§1.6 ⁴	$[\mathcal{E}\mathcal{E}\ \mathcal{E}\mathcal{E} \subseteq_{d\omega\Omega}\ \vartheta\text{RS}\ d\exists];$	¹	$[\ \text{RS}\ d\exists: \text{DA}\ \text{want}\ d\exists\exists];$
		§1.6 ³	$[\mathbf{p}_\omega\ \mathcal{A}\ \text{BG}\ \mathcal{S} \subseteq_{p\omega}\ \vartheta\text{RS}\ d\exists];$	¹	$[\ \text{RS}\ d\exists: \text{DA}\ \text{want}\ d\omega\mathcal{S}]$
<i>te-</i>	IRR (irrealis)	§2.6			

Slot 3: Pronominal AGR with S, O

	3sm _U	§1.1	${}^P[\ 3sm\ \mathbf{d}\alpha]; [\ \text{DA}\ d\varepsilon =_{d\Omega}\ \mathbf{d}\alpha]$
	2s.1s	§1.6	${}^P[\ 2s\ \mathbf{d}\alpha, 1s\ d\alpha]; [\ \text{AG}\ d\varepsilon =_{d\Omega}\ \mathbf{d}\alpha, \text{DA}\ d\varepsilon =_{d\Omega}\ d\alpha]$

Slot 4: V.BASE = ({*se, se.se*}) + (n + n/v +) v (+ v\v)

<i>at-</i>	<i>se-</i>	§1.1	$[\ \text{AG}\ d\varepsilon\varepsilon =_{d\Omega}\ \text{DA}\ \{\text{RS}\ d\varepsilon\varepsilon\}]$
<i>-stikahwah-</i>	<i>-go.along-</i>	§1.1	$[k^\pi\ d\varepsilon\varepsilon: \text{AG}\ go.along_{d\Omega}\ k^\pi]$
<i>-en, -on</i>	<i>-be</i>	§1.1	$[sl\ \text{DA}\ s =_{d\Omega}\ \text{AG}\ d\varepsilon\varepsilon]$
<i>-hakie</i>	<i>-prg</i>	§1.1	$[\ d\sigma =_{d\Omega}\ \text{RS}\ {}^1d\varepsilon\varepsilon]$
⋮	⋮	⋮	⋮

Slot 5: ASPECT inflection = ASPECT + (CL_A) asp-adjustment; τω-location; pre-fb ^ττ-update

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

N-determiners

<i>ne(n)</i>	D _τ	§1.2	$[\ \mathbf{d}\alpha =_{d\Omega}\ d\kappa^\alpha\{d\varepsilon\varepsilon\}]$	<i>tsi</i>	D _⊥	§1.1	$[\ l =_{d\Omega}\ d\kappa^\pi\{d\varepsilon\}]$
		§2.1	$[\mathcal{J}\ \mathcal{J} =_{d\omega\Omega}\ \vartheta\text{RS}\ \mathbf{d}\varepsilon]$			§1.2	$[el\ e = {}^f d\varepsilon\varepsilon]$
<i>ki</i>	N	§1.1	$[\mathbf{a}\ k^\alpha\ \mathbf{a} = k^\alpha\{\mathbf{d}\varepsilon\}]$	<i>tho</i>	K	§1.3	$[\mathbf{k}^\alpha\ al\ a =_{d\Omega}\ \mathbf{k}^\alpha\{d\varepsilon\}]$

§1. *Fox finds food and shares it with Bear*

- (•) *Speech start-up*
 [w| w = r]; [e| e: AG *speak.up*_{d_ω}]; [t| t =_{d_ω} θdε];

reality^τw*:

- ^τe*: speech event
- | ^τt*: e*-now

1.1 A fox... if: if

ki tsitsho
 N fox
 [a k^α| a = k^α{dεε}]; [l fox dκ^α]; ^l[p| p = Dom dκ^α];

...on the move... if: mf

te-
 EE-
 [eel prc_{d_Ω} ee]; (^A[t| t =_{d_Ω} RS ^ldεε];)
 ho-
 3sm_U-
^P[l 3sm_{d_Ω} dα]; [l DA {RS dεε} =_{d_Ω} dα];
 t- -stikahwah
 se- -go.along
 [l AG dεε =_{d_Ω} DA {RS dεε}]; [k^π| dεε: AG go.along_{d_Ω} k^π];
 -en -hákie
 -be -prg
 [s| DA s =_{d_Ω} AG dεε]; [l dσ =_{d_Ω} RS ^ldεε]
 -‘
 -STA
 [l dτ ⊆_{d_Ω} dσ];

reality^τw*:

- ^τe*: speech event
- | ^τt*: e*-now

w₀ ∈ ^τp₀ (p₀-story world)
 ••... ee₁: k^α₁-fox a₁ goes along k^π₁-path
 || ^τt₁ = θ_{w₀}^lee₁: result time of ee₁-time
 = s₁ = RS_{w₀}^lee₁: result state of ee₁-departure

- 1.1 ...suddenly ib
 thontaiawéhstsi
suddenly
 [el e ∈ dεε]; [t| t =_{dΩ} θdε];
- ...came upon mf
 yah- à-
 XX- IND-
 [l dε =_{dΩ} ^fdεε]; [l θ_{dΩ} dε < θ_{dω} dε];
- ra-
 3sm-
^P[l 3sm_{dΩ} dα]; [l AG dε =_{dΩ} dα];
- we-
 -arrive
^P[l dεε: AG go.along_{dΩ} dκ^π]; [l dε = ^fdεε];
- ,
 -EVT
 [l dε ⊆_{dΩ} dτ]; [t| t =_{dΩ} θRS dε];
- ...a place ff
 tsi- nón
 D₁- place/time
 [l l =_{dΩ} dκ^π{dε}]; [l Π{ε} ⊆ dκ^π{ε}]
- ...where a mare was lying down...
 ni- ka-
 of- 3sf-
 [el dκ^π{e} =_{dΩ} dτ]; ^P[k^α 3sf_{dΩ} k^α{dε}]; [l AG dε =_{dΩ} dκ^α{dε}];
- ya'kyónni- -∅
 lie.down -STA
 [l dε: AG lie.down_{dΩ}]; [s| s =_{dΩ} RS dε]; [l dτ ⊆_{dΩ} dσ];
- ko-
 3s.3s-
^P[l 3s AG dη^ε, 3s dκ^α{dη^ε}; [l DA{dη^ε} = dκ^α{dη^ε}]];
- hsaten- -s
 ride astride -DUR
 [l dη^ε: AG ride.astride DA]; [l dτ ⊆_{dω} dη^ε];
- ...asleep.
 yó- -tá'- -s
 3sf_U- -sleep- -DUR
^P[l 3sf_{dΩ} dκ^α{dσ}]; [l DA dσ =_{dΩ} dκ^α{dσ}]; [l dσ: DA sleep_{dΩ}]; [l dτ ⊆_{dΩ} dσ];

$w_0 \in {}^\top p_0$ ••...• = • • ===...	(p_0 -story worlds) ee_1 : k^{α}_1 -fox a_1 goes along k^{τ}_1 -path $t_1 = \vartheta_{w_0} RS_{w_0} ee_1$: result time of ee_1 -dep. $s_1 = RS_{w_0} ee_1$: result state of ee_1 -departure $e_1 = {}^f ee_1$: ee_1 -end; fox a_1 arrives at l_1 $t'_1 = \vartheta_{w_0} e_1$: e_1 -time ${}^\top t''_1 = \vartheta_{w_0} RS_{w_0} e_1$: e_1 -arrival result time e'_1 : k^{α}_1 -mare lies down in l_1 $s'_1 = RS_{w_0} e'_1$: k^{α}_1 -mare is still lying in l_1 k^{α}_1 -mare is asleep
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1.2¹ He sucked milk from... *mf*₁

wa-
 IND-
 [eel]; [$\vartheta_{d\Omega} {}^1 d\epsilon\epsilon < \vartheta_{d\Omega} d\epsilon$];

ha-
 3sm-
^P[l 3sm $d\alpha$]; [l AG $d\epsilon\epsilon =_{d\Omega} d\alpha$];

non'- -ké:ra-
 milk.of- -drink.from-
 [$k^{\beta} | k^{\beta}$ milk.of $d\kappa^{\alpha}$]; [$h^{\epsilon\epsilon} | h^{\epsilon\epsilon}$: AG drink $d\kappa^{\beta}$ from $d\kappa^{\alpha}$];

-'
 -EVT
 [l $d\epsilon\epsilon \in_{d\Omega} d\eta^{\epsilon\epsilon}$]; [l ${}^1 d\epsilon\epsilon \subseteq_{d\Omega} d\tau$]; [tl $t =_{d\Omega} \vartheta RS {}^1 d\epsilon\epsilon$]

...the mare *fb*₁

ki
 N
 [al $a =_{d\Omega} d\kappa^{\alpha} \{d\epsilon\epsilon\}$];

ko-
 3s.3s-
^P[l 3s AG $d\eta^{\epsilon}$, 3s $d\kappa^{\alpha} \{d\eta^{\epsilon}\}$]; [l DA $\{d\eta^{\epsilon}\} = d\kappa^{\alpha} \{d\eta^{\epsilon}\}$];

hsaten- -s
 ride.astride -DUR
 [l $d\eta^{\epsilon}$: AG ride.astride DA]; [l $d\tau \subseteq_{d\omega} d\eta^{\epsilon}$];

1.2³ ...and then
 tánon' if₃
 and
 [eel ¹ee ⊆_{dΩ} RS dε];
 ...took a little bit for a snack.
 stónha ib₃
 little.bit
^P[| dεε ∈ dη^{εε}]; [bl b =_{dΩ} dκ^β{RS^fdεε}, small{b, (dκ^β| RS^fdη^{εε})}];
 y- on.s.a- mf₃
 XX- ⁿEE- (s-) IND- (wa'-)
 [ℰ ℰ =_{dΩ} ^fdεε]; [ℰℰ| dε = ¹ℰℰ]; [| ϑ_{dΩ} ¹dεε < ϑ_{dω} dε];
 ha-
 3sm-
 [| 3sm_{dΩ} dα]; [| AG dεε = dα]
 (a)t- -énna't-
 se- -snack.on-
 [| AG dεε = DA {RS dεε}]; [| ^fdεε: AG snack.on dβ]; ¹[| process dεε]
 -e'
 -EVT
 [| ¹dεε ⊆_{dΩ} dτ]; [tl t =_{dΩ} ϑRS ¹dεε]

$w_0 \in {}^\top p_0$ \vdots ===== 1 ••••• 2 • 3 •• • 	(p_0 -story worlds) \vdots $s'_1 = RS_{w_0} e'_1$: k^{α}_1 -mare is still lying in l_1 k^{α}_1 -mare is asleep ee_2 : fox a_1 $h^{\varepsilon\varepsilon}_2$ -sucks k^{β}_2 -milk from k^{α}_1 -mare $e_2 = {}^f ee_2$: end of ee_2 -sucking, in e_2 -result state fox a_1 feels full $t_2 = \vartheta_{w_0} e_2$: e_2 -time $t'_2 = \vartheta_{w_0} RS_{w_0} e_2$: e_2 -result.time ee'_2 : fox a_1 again $h^{\varepsilon\varepsilon}_2$ -sucks k^{β}_2 -mlk fr k^{α}_1 -mare ${}^f ee'_2 = [{}^1 \mathcal{E}\mathcal{E}_2]w_0$: end of ee'_2 -sucking, resulting in b_2 -small amt (small for rs of $h^{\varepsilon\varepsilon}_2$ -sucking) of k^{β} -milk, 1st stage of $\mathcal{E}\mathcal{E}_2$ -action plan ${}^\top t''_2 = \vartheta_{w_0} [{}^1 \mathcal{E}\mathcal{E}_2]w_0$: result tm of 1st stg of $\mathcal{E}\mathcal{E}_2$
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$w_2 \in \text{Dom } {}^f \mathcal{E}\mathcal{E}_2$ $\bullet \dots \bullet$	($\mathcal{E}\mathcal{E}_2$ -action plan successfully completed) $\langle [{}^1 \mathcal{E}\mathcal{E}_2]w_0, \dots, \langle [{}^f \mathcal{E}\mathcal{E}_2]w_2 \rangle$: activity by fox a_1 , ending with fox a_1 snacking on b_2 -milk sucked out in \mathcal{E}_2
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1.3¹ He had just gone a short distance, when...

kwah		ken	if
just		some	
$P[\mathbf{d}\tau =_{\mathbf{d}\Omega} \vartheta\text{RS } ^1d\exists\exists]; [ee ee =_{\mathbf{d}\Omega} \langle ^2d\exists\exists, ^3d\exists\exists \rangle]; [t \mathbf{t} =_{\mathbf{d}\Omega} \vartheta\text{RS } ^1d\epsilon\epsilon]; [e e \in d\epsilon\epsilon];$			
ni-	yó-		
of-	3s _U -		
$[k^\pi d\exists\exists: k^\pi\{\epsilon\} = \Pi\{\epsilon\}]; P[3s d\pi]; [dk^\pi\{^1d\exists\exists\} =_{\mathbf{d}\Omega} d\pi];$			
re-	-a'		
distance-	-DIM		
$[^1d\exists\exists <_{\mathbf{d}\Omega} d\epsilon]; P[d\epsilon =_{\mathbf{d}\Omega} ^3d\exists\exists]; [\mathbf{l} =_{\mathbf{d}\Omega} dk^\pi\{d\epsilon\}];$			
n-	ye-	s-	
of-	XX-	"EE-	
$[dk^\pi\{d\epsilon\} =_{\mathbf{d}\Omega} \mathbf{d}\pi]; [d\epsilon = ^f d\epsilon\epsilon]; [d\epsilon\epsilon =_{\mathbf{d}\Omega} \langle ^2d\exists\exists, ^3d\exists\exists \rangle];$			
haw-			
3sm-			
$[3sm_{\mathbf{d}\Omega} \mathbf{d}\alpha]; [\text{AG } d\epsilon\epsilon = \mathbf{d}\alpha];$			
e-			
go-			
$[d\epsilon\epsilon: \text{AG } go.along_{\mathbf{d}\Omega} dk^\pi];$			
-non			
-STA			
$[s s =_{\mathbf{d}\Omega} \text{RS } ^1d\epsilon\epsilon]; [\mathbf{d}\tau \subseteq_{\mathbf{d}\Omega} d\sigma];$			

$w_0 \in {}^\top p_0$
 \vdots

(p_0 -story worlds)

•

${}^f ee'_2 = [{}^1\mathcal{E}\mathcal{E}_2]w_0$: end of ee'_2 -sucking, resulting in b_2 -small amt (small for rs of $h^{\epsilon\epsilon}_2$ -sucking) of k^b -milk, 1st stage of $\mathcal{E}\mathcal{E}_2$ -action plan

||

$t''_2 = \vartheta_{w_0} [{}^1\mathcal{E}\mathcal{E}_2]w_0$: result tm of 1st stg of $\mathcal{E}\mathcal{E}_2$

••

$ee_3 = \langle [{}^2\mathcal{E}\mathcal{E}_2]w_0, [{}^3\mathcal{E}\mathcal{E}_2]w_0 \rangle$: nxt 2 stgs of $\mathcal{E}\mathcal{E}_2$, fox a_1 goes (away from l_1) along path k^π_3 just a little bit (compared to planned ${}^f\mathcal{E}\mathcal{E}_2$)

||

${}^\top t_3 = \vartheta_{w_0} \text{RS}_{w_0} {}^1ee_3$: aft. 1st stg of ee_3 -short walk
 $e_3 = {}^f ee_3 = [{}^3\mathcal{E}\mathcal{E}_2]w_0$: ee_3 -end, jst 3rd $\mathcal{E}\mathcal{E}_2$ -stage
 fox a_1 arrives at ${}^\top l_3 = k^\pi_3 w_0 e_3$

=

$s_3 = \text{RS}_{w_0} {}^1ee_3$: result state of 1st stage of 1ee_3

$w_2 \in \text{Dom } {}^f\mathcal{E}\mathcal{E}_2$

($\mathcal{E}\mathcal{E}_2$ -action plan successfully completed)

•••••

$\langle [{}^1\mathcal{E}\mathcal{E}_2]w_2, \langle [{}^2\mathcal{E}\mathcal{E}_2]w_0, [{}^3\mathcal{E}\mathcal{E}_2]w_0, \dots, \langle [{}^f\mathcal{E}\mathcal{E}_2]w_2 \rangle$: activity by fox a_1 , ending with fox a_1 snacking on b_2 -milk sucked out in $[{}^1\mathcal{E}\mathcal{E}_2]w_2$

1.3² ...he bumped into a bear.

tho ib

K

[**k**^α al a =_{dΩ} **k**^α{dε}];

o- -hkwári

sg- -bear

[| one(dα, **dk**^α); | bear **dk**^α];

wa-

t-

mf

IND- EE-

[| $\vartheta_{d\Omega} d\epsilon < \vartheta_{d\omega} d\epsilon$]; [*eel recip*_{dΩ} ee]; [| dε ∈ dεε];

hy-

33m-

[| 33m_{dΩ} {dα, dα}]; [**A** | **A** = {dα, dα}]; [| ∪AG dεε =_{dΩ} dαt];

ate-

-ra'-

se-

bump.into-

[| dεε: AG{ε} =_{dΩ} DA{dεε(ε)}]; [| (dεε: AG *come.upon*_{dΩ} DA), (dεε: $\vartheta\epsilon =_{d\Omega} \vartheta d\epsilon\epsilon(\epsilon)$)]

-ne'

-EVT

[| dεε ⊆_{dΩ} dτ]; [**t** | **t** =_{dΩ} ϑ RS dεε];

reality ^τw*:

- ^τe*: speech event
- | t*: e*-now

w₀ ∈ ^τp₀
 ⋮

(p₀-story worlds)
 ⋮

•

^fee'₂: end of ee'₂-sucking, resulting in b₂-small amt (small for rs of h^{εε}₂-sucking) of k^β-milk

||

t''₂ = ϑ_{w_0} ^fee'₂: result tm of ee'₂-sucking

••

ee₃: fox a₁ goes (away from l₁) along path k^π₃ just a little bit (compared to $\mathcal{E}\mathcal{E}_2$ -plan)

||

t₃ = ϑ_{w_0} RS_{w₀}¹ee₃: aft. 1st stg of ee₃-short walk

•

e₃ = ^fee₃ = [³ $\mathcal{E}\mathcal{E}_2$]w₀: ee₃-end, jst 3rd $\mathcal{E}\mathcal{E}_2$ -stage fox a₁ arrives at ^τl₃ = k^π₃w₀e₃

=

s₃ = RS_{w₀}¹ee₃: result state of 1st stage of ¹ee₃

:

ee'₃ = {⟨e₃, ee'₃(e₃)⟩, ⟨ee'₃(e₃), e₃⟩}

||

fox a₁ and k^α₃-bear a₃ come upon each other
^τt'₃ = ϑ_{w_0} ee'₃: ee'₃'-meeting result time

1.4¹ The bear said:

wa-
 IND-
 [el]; [l $\vartheta_{d\Omega}$ dε < $\vartheta_{d\omega}$ dε];
 hèn-
 3sm-
 [l 3sm_{dΩ} dκ^α{dε}]; [l AG dε =_{dΩ} dκ^α{dε}];
 -ron-
 -say
 [l dε: AG speak_{dΩ}];
 -'
 -EVT
 [l dε $\subseteq_{d\Omega}$ dτ]; [tl t =_{dΩ} ϑ RS dε];
 n=
 D_T
 [l dα =_{dΩ} dκ^α{dε}];
 o- -hkwári
 sg- -bear
 [l one(dα, dκ^α); [l bear dκ^α];

mf

ff

$w_0 \in {}^T p_0$	(p ₀ -story worlds)
⋮	⋮
•	^f ee' ₂ : end of ee' ₂ -sucking, resulting in b ₂ -small amt (small for rs of h ^{εε} ₂ -sucking) of k ^β -milk
	t'' ₂ = ϑ_{w_0} ^f ee' ₂ : result tm of ee' ₂ -sucking
••	ee ₃ : fox a ₁ goes (away from l ₁) along path k ^π ₃ just a little bit (compared to $\mathcal{E}\mathcal{E}_2$ -plan)
⋮	⋮
:	ee' ₃ = {⟨e ₃ , ee' ₃ (e ₃)⟩, ⟨ee' ₃ (e ₃), e ₃ ⟩}
	fox a ₁ and k ^α ₃ -bear a ₃ come upon each other
•	t' ₃ = ϑ_{w_0} ee' ₃ : ee' ₃ '-meeting result time
	e ₄ : k ^α ₃ -bear a ₃ speaks
	^T t ₄ = ϑ_{w_0} RS e ₄ : e ₄ -result time

1.4² “ (shift to bear’s voice)

[el e = dε]; [tl t =_{dΩ} θdε];

(oh or begin question intonation)

WH

[ℰ | (dε: AG request_{dΩ} ℰ), (ℰ: AG specify OB)]; ^l[| AG dθ = DA dε];

what...

n= -ah -òt.en if

D_τ= -thing -kind.CL

[k^β | k^β =_{dΩ} OB dθ]; [| inanimate dk^β]; [| dΩ ⊆ Dom dk^β];

...is that...

ne' thiken ib

D_τ that

[b | b =_{dΩ} dk^β{dε}]; [| dε: AG point.at_{dΩ} dβ];

...stuff bulging in your cheeks

sa- mf

2s_U-

[| 2s_{dΩ} dα]; [s | DA s =_{dΩ} dα];

-hnoskw-

-a-

-hnont-

cheek.cavity-

-n/v-

-have.full.cheeks-

[k^π | k^π cheek.cavity.of DA]; ^P[| dk^π cheek.cavity.of DA]; [| dσ: dβ fill_{dΩ} dk^π];

-e'

-STA

[| dτ ⊆_{dΩ} dσ];

? (end of question intonation)

” (end bear’s voice)

[| dθ ⊆ θRS dε]; [tl t =_{dΩ} θRS dε]; [el e = dε₁]

w₀ ∈ ^τp₀
 ⋮

(p₀-story worlds)

:

ee'₃ = {⟨e₃, ee'₃(e₃)⟩, ⟨ee'₃(e₃), e₃⟩}

fox a₁ and k^α₃-bear a₃ come upon each other

||

t'₃ = θ_{w₀} ee'₃: ee'₃-meeting result time

•

^(τ)e₄: k^α₃-bear a₃ speaks, requesting ℰ₄-answer

||

t₄ = θ_{w₀} RS e₄: e₄-result time

||

t'₄ = θ_{w₀} e₄: e₄-request time

...=...

s₄: e₄-dat has his cheeks full of ^τk^β₄-stuff b₄

||

^τt''₄ = θ_{w₀} RS e₄: e₄-request result time

w₄ ∈ Dom ℰ₄

(e₄-requested worlds)

||

^τt''₄ = θ_{w₄} RS e₄: e₄-request result time

•

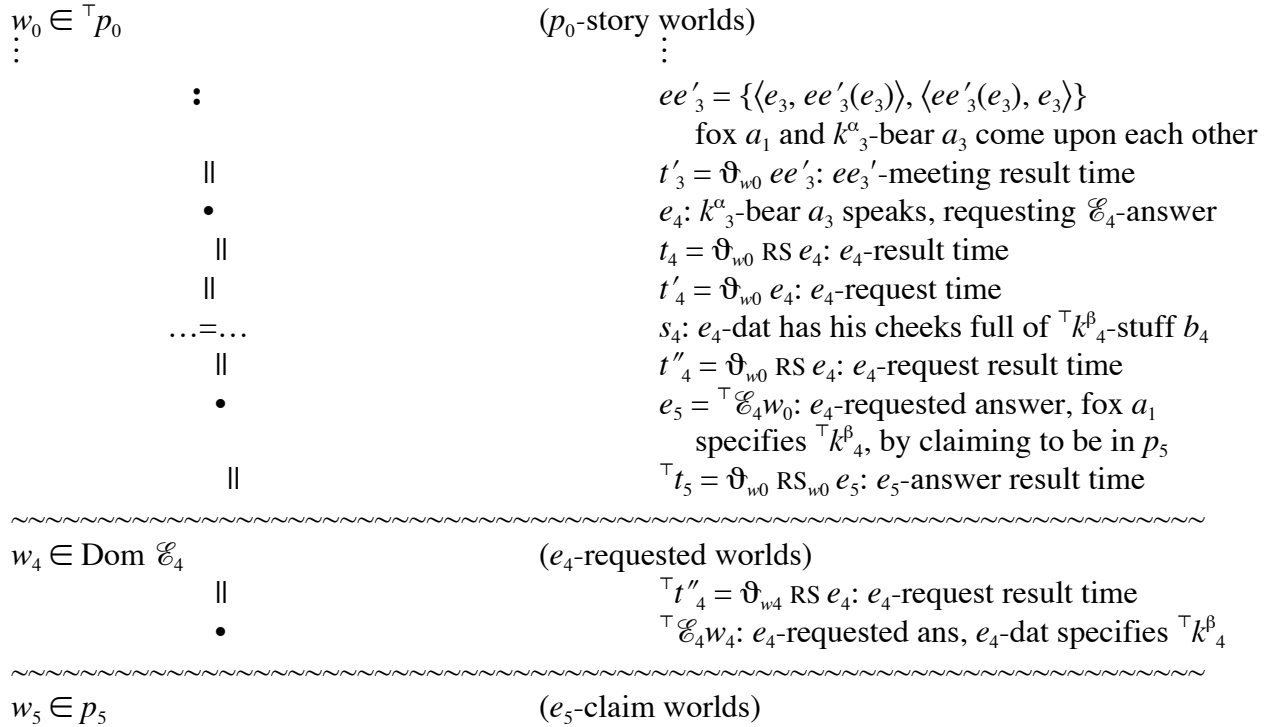
^τℰ₄w₄: e₄-requested ans, e₄-dat specifies ^τk^β₄

1.5¹ The fox said:

wa-
 IND-
 [el]; [l $\vartheta_{d\Omega} d\epsilon < \vartheta_{d\omega} \mathbf{d}\epsilon$];
 hèn-
 3sm-
 [l 3sm_{dΩ} $\mathbf{d}\alpha$]; [l AG $d\epsilon =_{d\Omega} \mathbf{d}\alpha$];
 -ron-
 -say-
 [pl $d\epsilon$: AG say_{dΩ} p]; [l $d\epsilon =_{d\Omega} \mathbf{d}\exists$];
 -'
 -EVT
 [l $d\epsilon \subseteq_{d\Omega} \mathbf{d}\tau$]; [tl t =_{dΩ} ϑ RS $d\epsilon$];
 ne tsitsho
 D_T fox
 [l $\mathbf{d}\alpha =_{d\Omega} d\kappa^\alpha\{d\epsilon\}$]; [l fox $d\kappa^\alpha$]

mf

ff



1.5² “ (shift to fox’s voice)

[**el e** = $d\varepsilon$]; [**tl t** = $_{d\Omega} \vartheta d\varepsilon$]; [**p_wl p_w** = $\lambda w \in d\Omega.d\Omega$];

[There is] a mare...

ko-

if: if

3s.3s-

^P[h^{ε} | 3s AG{ $d\eta^{\varepsilon}$ }, 3s DA{ $d\eta^{\varepsilon}$ }); [**k^αl** DA{ $d\eta^{\varepsilon}$ } = **k^α**{ $d\eta^{\varepsilon}$ }];

hsaten-

-s

ride astride

-DUR

[| $d\eta^{\varepsilon}$: AG *ride astride* DA]; [| **dt** $\subseteq_{d\Omega} d\eta^{\varepsilon}$];

...over there...

ise-

if: ib

there-

[**sl dε**: AG *point.to* $_{d\Omega} s$]; [| $d\alpha_1 =_{d\omega\Omega} d\kappa^{\alpha}\{d\sigma\}$]; [**a** | $a = d\alpha_1$];

-nekwa

-direction

[| $ll \Pi d\sigma \subseteq_{d\omega\Omega} {}^1 ll$, $\Pi d\varepsilon \subseteq_{d\Omega} {}^f ll$];

...sleeping, ...

k-

if: mf

xx-

[| $d\sigma \subseteq_{d\omega\Omega} {}^1 d\pi\pi$];

yó-

3sf_U-

^P[| 3sf_{dωΩ} **dκ^α**{ $d\sigma$ }); [| DA $d\sigma =_{d\omega\Omega} d\kappa^{\alpha}\{d\sigma\}$];

-tá’-

-s

-sleep-

-DUR

[| $d\sigma$: DA *sleep* $_{d\omega\Omega}$]; [| **dt** $\subseteq_{d\omega\Omega} d\sigma$];

1.5³ I have sucked milk from her.

mf

y-

a’-

xx-

IND-

[**eel dσ₁** = $_{d\omega\Omega} RS {}^f ee$]; [**el e** = ${}^f d\varepsilon\varepsilon$]; ^P[| $\vartheta_{d\omega\Omega} d\varepsilon < \vartheta_{d\Omega} d\varepsilon$];

ke-

1s.3s-

^P[| 1s **dα**, 3s $d\alpha$]; [| AG $d\varepsilon =_{d\omega\Omega} d\alpha$, DA $d\varepsilon =_{d\omega\Omega} d\alpha$];

non’-

ké:ra-

milk.of-

drink.from-

[| **dκ^β** *milk.of* **dκ^α**]; [$h^{\varepsilon\varepsilon}$ | $h^{\varepsilon\varepsilon}$: AG *drink* **dκ^β** *from* **dκ^α**]; [| $d\varepsilon\varepsilon \in_{d\omega\Omega} d\eta^{\varepsilon\varepsilon}$];

-‘

-EVT

^P[| $d\varepsilon = {}^f d\varepsilon\varepsilon$]; [| **dt** $\subseteq_{d\omega\Omega} RS d\varepsilon$]; [**tl t** = $_{d\omega\Omega} \vartheta RS d\varepsilon$]

$w_0 \in {}^\top p_0$ \vdots \vdots \bullet $\text{====}\dots$ \parallel \bullet \parallel $ $	<p style="text-align: center;">(p_0-story worlds)</p> \vdots e_4 : bear a_3 asks fox a_1 for \mathcal{E}_4 -ans ('what's k^β_4 ??') \vdots s_4 : e_4 -dat (fox a_1) has cheeks full of ${}^\top k^\beta_4$ -stuff b_4 $t''_4 = \mathfrak{D}_{w_0} \text{RS } e_4$: e_4 -request result time ${}^\top e_5 = {}^\top \mathcal{E}_4 w_0$: e_4 -requested answer, fox a_1 specifies ${}^\top k^\beta_4$ by claiming to be in p_5 $t_5 = \mathfrak{D}_{w_0} \text{RS}_{w_0} e_5$: e_5 -answer result time $t'_5 = \mathfrak{D}_{w_0} e_5$: e_5 -answer now
--	---

$w_5 \in p_5 = \text{Ran } {}^\top p_{\omega,5}$ $\dots \text{====}\dots$ $\bullet \bullet \bullet$ $\text{====}\dots$ $\parallel \parallel \parallel \parallel \parallel \dots$	<p style="text-align: center;">(e_5-claim worlds)</p> s_5 : ${}^\top k^\alpha_5$ -mare a_2 sleeps at beg of ll_5 -path (pointed at by ${}^\top e_5$ -agt = fox a_1), leading to ${}^\top e_5$ -here ee_5 : ${}^\top e_5$ -agt (fox a_1) $h^{\varepsilon\varepsilon}_5$ -sucks ${}^\top k^\beta_4$ -milk from ${}^\top k^\alpha_5$ -mare a_2 $s_4 = \text{RS}_{w_5} {}^f ee_5$: fox a_1 has cheeks full of ${}^\top k^\beta_4$ -milk ${}^\top t''_5 = \text{RS}_{w_5} {}^f ee_5$: ee_5 -sucking result time
--	--

1.5^f ” (end fox’s voice)
 [el e = dε₁];

1.6^l “ (shift to bear’s voice)
 [el (e: AG *speak*_{dΩ}), AG e =_{dΩ} DA dε, DA e =_{dΩ} AG dε]; [tl t =_{dΩ} θdε];

Gosh!

owá!

gosh (admiring tone)

[l dε: AG *exclaims.with.admiration* for_{dΩ} DA];

if

” (end bear’s voice)

[el e = dε₁];

...said the bear.

wa-

IND-

[el e = dε₁]; [l θ_{dΩ} dε < θ_{dΩ} dε];

mf

hèn-

3sm-

^P[l 3sm_{dΩ} dα₁]; [al a = dα₁]; [l AG dε =_{dΩ} dα];

-ron-

-'

-say-

-EVT

^P[l dε: AG *speak*_{dΩ}]; [l dε ⊆_{dΩ} dτ]; [tl t =_{dΩ} θRS dε];

ki'

o-hkwari

ff

N

sg-bear

[l dα =_{dΩ} dκ^α₁{dε}]; [k^α k^α = dκ^α₁]; [l bear dκ^α]

$w_0 \in {}^\top p_0$ \vdots \vdots \bullet $\text{====}\dots$ \parallel \bullet $ $ \parallel \bullet \parallel	<p>(p_0-story worlds)</p> \vdots e_4 : bear a_3 asks fox a_1 for \mathcal{E}_4 -ans (‘what’s k^β_4 ?’) \vdots s_4 : e_4 -dat (fox a_1) has cheeks full of ${}^\top k^\beta_4$ -stuff b_4 $t''_4 = \mathfrak{V}_{w_0} \text{RS } e_4$: e_4 -request result time $e_5 = {}^\top \mathcal{E}_4 w_0$: e_4 -requested answer, fox a_1 specifies ${}^\top k^\beta_4$ by claiming to be in p_5 $t_5 = \mathfrak{V}_{w_0} e_5$: e_5 -answer now $t'_5 = \mathfrak{V}_{w_0} \text{RS}_{w_0} e_5$: e_5 -answer result time e_6 : bear a_3 exclaims with admiration for fox a_1 ${}^\top t_6 = \mathfrak{V}_{w_0} \text{RS}_{w_0} e_6$: e_6 -exclamation result time
~~~~~	
$w_5 \in p_5 = \text{Ran } {}^\top p_{w_5}$ $\dots \text{====}\dots$ $\bullet \bullet \bullet$ $\text{====}\dots$ $\text{       }\dots$	<p>($e_5$-claim worlds)</p> $s_5$ : ${}^\top k^\alpha_5$ -mare $a_2$ sleeps at beg of $ll_5$ -path (pointed at by ${}^\top e_5$ -agt = fox $a_1$ ), leading to ${}^\top e_5$ -here $ee_5$ : ${}^\top e_5$ -agt (fox $a_1$ ) $h^{\varepsilon\varepsilon}_5$ -sucks ${}^\top k^\beta_4$ -milk from ${}^\top k^\alpha_5$ -mare $a_2$ $s_4 = \text{RS}_{w_5} {}^f ee_5$ : fox $a_1$ has cheeks full of ${}^\top k^\beta_4$ -milk $t'_5 = \text{RS}_{w_5} {}^f ee_5$ : $ee_5$ -sucking result time

1.6² “ (shift again to bear’s voice)

[**e**] (**e**: AG *speak*_{dΩ}), AG **e** =_{dΩ} AG  $d\varepsilon$ , DA **e** =_{dΩ} DA  $d\varepsilon$ ]; [**d** **τ** =_{dΩ} **θ****d** $\varepsilon$ ];

How about...¹

ká-

*if*

wh-

[**ℓ**] (**d** $\varepsilon$ : AG *request*_{dΩ}  $\mathcal{E}$ ),  $\mathcal{E} \subseteq \mathfrak{V} \text{RS } d\varepsilon$ ];

-ti’

-how

[**p**_w] **p**_w =  $\lambda w \in d\Omega$ . Dom  $d\varepsilon$ ];

¹ • In  $d\Omega$ ,  $d\varepsilon$  is an action (speech act) whose agent (speaker) requests the realization of  $\mathcal{E}$   
(**d** $\varepsilon$ : AG *request*_{dΩ}  $\mathcal{E}$ ) :=  $\lambda i. \forall w \in d\Omega_i. \text{request}_w(d\varepsilon_i, \text{AG}_w d\varepsilon_i, \text{Dom } \mathcal{E})$   
• Any realization of  $\mathcal{E}$  occurs during the result state of  $d\varepsilon$   
( $\mathcal{E} \subseteq \mathfrak{V} \text{RS } d\varepsilon$ ) :=  $\lambda i. \forall w \in \text{Dom } \mathcal{E}: \mathfrak{V}_w \mathcal{E} w \subseteq \mathfrak{V}_w \text{RS}_w d\varepsilon_i$

1.6² ...showing me...²

en-

mf

HYP-

[ $\mathcal{T}$ ]  $\mathcal{T} =_{\mathbf{d}\omega\Omega} \vartheta\text{RS } \mathbf{d}\varepsilon$ ; ¹[| RS  $\mathbf{d}\varepsilon$ : DA *expect*_{dΩ}  $\mathbf{d}\omega\Omega$ ]

-ske

-2s.1s

[**a** al 2s_{dΩ} **a**, 1s_{dΩ} **a**]; [| AG{*d*∂} =  $\mathbf{d}\alpha$ , DA{RS *d*∂} =  $\mathbf{d}\alpha$ ];

-natón

-show

[| *d*∂: AG *show* DA  $\mathbf{d}\pi$ ];

-ha

-hs-

-go.to

-dat-

[ $\mathcal{E}\mathcal{E}$ ] ( $\mathcal{E}\mathcal{E}$ : AG *go.along*  $\mathbf{d}\pi\pi$ ), *d*∂ ⊆  $\vartheta\text{RS } ^f\mathbf{d}\partial$ ∂]; [| DA{RS *d*∂} =  $\mathbf{d}\alpha$ ];

-e'

-EVT

[| *d*∂ ⊆_{dΩ}  $\mathbf{d}\omega\tau$ ]; [ $\mathcal{T}$ ]  $\mathcal{T} = \vartheta\text{RS } \mathbf{d}\partial$ ∂];

...where...

ka'-

-nón

ff

wh-

-plc/tm

^P[| ( $\mathbf{d}\varepsilon$ : AG *request*_{dΩ} *d*∂), *d*∂ ⊆  $\vartheta\text{RS } \mathbf{d}\varepsilon$ ]; [| *d*∂ ⊆  $\mathbf{d}\pi$ ];

...she's sleeping...

ni- -yó

of- -3sf_U

^P[| *d*σ ⊆_{dΩ}  $\mathbf{d}\pi$ ]; [| 3sf_{dΩ}  $\mathbf{d}\kappa^\alpha\{\mathbf{d}\sigma\}$ ]; [| DA *d*σ =_{dΩ}  $\mathbf{d}\kappa^\alpha\{\mathbf{d}\sigma\}$ ];

-ta'

-sleep

^P[| *d*σ: DA *sleep*_{dΩ}];

-s

-DUR

[|  $\mathbf{d}\tau$  ⊆_{dΩ} *d*σ]

- 
- ² • In any  $\mathbf{d}\omega\Omega$ -accessible world,  $\mathcal{T}$  is the time of the result state of  $\mathbf{d}\varepsilon$   
 $\mathcal{T} =_{\mathbf{d}\omega\Omega} \vartheta\text{RS } \mathbf{d}\varepsilon$  :=  $\lambda i. \forall w \in \text{Dom } \mathbf{d}\omega\Omega_i \forall w' \in \mathbf{d}\omega\Omega_i w: \mathcal{T} w' = \vartheta_{w'} \text{RS}_{w'} \mathbf{d}\varepsilon_i$
- In  $\mathbf{d}\Omega$ , the experiencer of the result state of  $\mathbf{d}\varepsilon$  expects  $\mathbf{d}\omega\Omega$   
 $\text{RS } \mathbf{d}\varepsilon$ : DA *expect*_{dΩ}  $\mathbf{d}\omega\Omega$  :=  $\lambda i. \forall w \in \mathbf{d}\Omega_i \exists s: s = \text{RS}_w \mathbf{d}\varepsilon_i \wedge \text{expect}_w(s, \text{DA}_w s, \mathbf{d}\omega\Omega_i w)$
- Any realization of *d*∂ is an action whose agent shows the experiencer the place  $\mathbf{d}\pi$   
*d*∂: AG *show* DA  $\mathbf{d}\pi$  :=  $\lambda i. \forall w \in \text{Dom } \mathbf{d}\partial \exists e: e = \mathbf{d}\partial_w \wedge \text{show}_w(e, \text{AG}_w e, \text{DA}_w e, \mathbf{d}\pi_i)$
- Any realization of  $\mathcal{E}\mathcal{E}$  is a walk along  $\mathbf{d}\pi\pi$ -path  
 $\mathcal{E}\mathcal{E}$ : AG *go.along*  $\mathbf{d}\pi\pi$  :=  $\lambda i. \text{process } \mathcal{E}\mathcal{E}$   
 $\wedge \forall \mathcal{E} \in \mathcal{E}\mathcal{E} \forall w \in \text{Dom } \mathcal{E}: \text{walk}_w(\mathcal{E}w, \text{AG}_w \mathcal{E}w)$   
 $\wedge \forall \mathcal{E} \in \text{Dom } \mathcal{E}\mathcal{E} \forall w \in \text{Dom } \mathcal{E}w' \in \text{Dom } \mathcal{E}\mathcal{E}(\mathcal{E}) \exists l \in \text{Dom } \mathbf{d}\pi\pi:$   
 $l \subseteq \Pi_w \mathcal{E}w \wedge \mathbf{d}\pi\pi_i(l) \subseteq \Pi_w \mathcal{E}\mathcal{E}(\mathcal{E})w'$
- In any  $\mathbf{d}\omega\Omega$ -accessible world, *d*∂ is realized within  $\mathbf{d}\omega\tau$ -frame  
 $\mathbf{d}\partial \subseteq_{\mathbf{d}\omega\Omega} \mathbf{d}\omega\tau$  :=  $\lambda i. \forall w \in \text{Dom } \mathbf{d}\omega\Omega_i \forall w' \in \mathbf{d}\omega\Omega_i w: \vartheta_{w'} \mathbf{d}\partial_w' \subseteq \mathbf{d}\omega\tau_w'$

$w_0 \in {}^\top p_0$ $\vdots$ <ul style="list-style-type: none"> <li>•</li> <li> </li> <li>  </li> <li>•</li> <li>  </li> <li>•</li> <li>...===...</li> </ul>	<p>($p_0$-story worlds)</p> $\vdots$ $e_5 = {}^\top \mathcal{E}_4 w_0$ : $e_4$ -requested answer, fox $a_1$ specifies ${}^\top k_4^\beta$ by claiming to be in $p_5$ $t_5 = \mathfrak{D}_{w_0} e_5$ : $e_5$ -answer now $t'_5 = \mathfrak{D}_{w_0} \text{RS}_{w_0} e_5$ : $e_5$ -answer result time $e_6$ : bear $a_3$ exclaims with admiration for fox $a_1$ ${}^\top t_6 = \mathfrak{D}_{w_0} \text{RS}_{w_0} e_6$ : $e_6$ -exclamation result time ${}^\top e'_6$ : bear $a_3$ requests & expects $\mathcal{E}_6$ dur RS $e'_6$ $s_5$ : ${}^\top k_5^\alpha$ -mare $a_2$ sleeps at beg $l_6$ of $ll_5$ -path
~~~~~	
$w_6 \in \text{Dom } \mathcal{E}_6 = \text{Ran } {}^\top p_{\omega,6}$ •• • 	<p>(e'_6-request/expectation of bear a_3)</p> $\mathcal{T}_6 w_6 = \mathfrak{D}_{w_6} \text{RS}_{w_6} e'_6$: e'_6 -request result time $\langle {}^1 \mathcal{E} \mathcal{E}_6 \dots {}^f \mathcal{E} \mathcal{E}_6 \rangle$: fox a_1 & bear a_3 go along ll_5 -path $\mathcal{E}_6 w_6$: during ${}^f \mathcal{E} \mathcal{E}_6$ -result, fox a_1 shows bear a_3 bg l_6 of ll_5 -pth, plc of s_5 -sleep of ${}^\top k_5^\alpha$ -mare a_2 ${}^\top \mathcal{T}'_6 w_6 = \mathfrak{D}_{w_6} \text{RS } \mathcal{E}_6 w_6$: \mathcal{E}_6 -showing result time
~~~~~	
$w_5 \in p_5 = \text{Ran } {}^\top p_{\omega,5}$ ...===... ••• =====...      ...	<p>($e_5$-claim by fox $a_1$)</p> $s_5$ : ${}^\top k_5^\alpha$ -mare $a_2$ sleeps at beg of $ll_5$ -path (pointed at by ${}^\top e_5$ -agt = fox $a_1$ ), leading to ${}^\top e_5$ -here $ee_5$ : ${}^\top e_5$ -agt (fox $a_1$ ) $h^{\varepsilon\varepsilon}_5$ -sucks ${}^\top k_4^\beta$ -milk from ${}^\top k_5^\alpha$ -mare $a_2$ $s_4 = \text{RS}_{w_5} {}^f ee_5$ : fox $a_1$ has cheeks full of ${}^\top k_4^\beta$ -milk $t''_5 = \text{RS}_{w_5} {}^f ee_5$ : $ee_5$ -sucking result time

1.6³ ...then it would be possible...³

aon-  
OPT-  
[ $\mathbf{p}_\omega \mathcal{A} \text{ BG } \mathcal{S} \subseteq_{\mathbf{p}_\omega} \vartheta \text{RS } d\exists$ ]; ¹[ $\text{RS } d\exists$ : DA *want*  $d\omega\sigma$ ];  
-Ø  
-3s_U  
[ $\text{I } 3s \mathbf{d}\omega\Omega$ ]; [ $\text{I Dom } d\omega\sigma =_{\mathbf{d}\omega\Omega} \mathbf{d}\omega\Omega$ ];  
-to  
-*be.possible*  
[ $\text{I } \text{can}\{d\omega\sigma, \text{RS } d\exists\}$ ];  
-Ø  
-STA  
[ $\text{I } \mathbf{d}\omega\tau \subseteq_{\mathbf{d}\omega\Omega} d\omega\sigma$ ];

1.6⁴ for me ...

n= í’i  
D_τ= me  
[ $\mathbf{d}\alpha =_{\mathbf{d}\omega\Omega} \text{AG}\{d\epsilon\epsilon\}$ ]; [ $\mathbf{a} \mid \text{AG}\{\mathbf{d}\epsilon\} =_{\mathbf{d}\omega\Omega} \mathbf{a}$ ];

*if*

...to suck [her] milk too.

a-  
OPT-  
[ $\mathcal{E}\mathcal{E} \mid \mathcal{E}\mathcal{E} \subseteq_{\mathbf{d}\omega\Omega} \vartheta \text{RS } d\exists$ ]; ¹[ $\text{RS } d\exists$ : DA *want*  $d\exists\exists$ ];  
-ke  
-1s  
^P[ $\text{I } 1s \mathbf{d}\alpha$ ]; [ $\text{I AG } d\exists\exists =_{\mathbf{d}\omega\Omega} \mathbf{d}\alpha$ ];  
-non’ -kéra-  
-*milk.of* -*drink.from*  
[ $\mathbf{d}\kappa^\beta \text{ milk.of } \mathbf{d}\kappa^\alpha$ ]; ^P[ $\text{I } d\eta^{\epsilon\epsilon}$ : AG *drink*  $\mathbf{d}\kappa^\beta$  *from*  $\mathbf{d}\kappa^\alpha$ ]; [ $\text{I } d\exists\exists \in_{\mathbf{d}\omega\Omega} d\eta^{\epsilon\epsilon}$ ]

*mf*

-‘  
-EVT  
[ $\text{I } \text{I } d\exists\exists \subseteq_{\mathbf{d}\omega\Omega} \mathbf{d}\omega\tau$ ]; [ $\mathcal{I} \mid \mathcal{I} = \vartheta \text{RS } \text{I } d\exists\exists$ ];

óni *ff*  
*also*  
^P[ $\text{I DA } \mathbf{d}\epsilon =_{\mathbf{d}\omega\Omega} \text{AG}\{d\epsilon\epsilon\}$ ,  $d\epsilon\epsilon \in_{\mathbf{d}\omega\Omega} d\eta^{\epsilon\epsilon}$ ];

1.6^f ” (end bear’s voice)

[ $\text{el } \mathbf{e} = \mathbf{d}\epsilon_1$ ];

³ • In any  $\mathbf{p}_\omega$ -accessible world, the beginning of  $\mathcal{S}$  is realized during the result state of the realization of  $d\exists$   
 $\text{BG } \mathcal{S} \subseteq_{\mathbf{p}_\omega} \vartheta \text{RS } d\exists := \lambda i. \forall w \in \text{Dom } \mathbf{p}_\omega \forall w' \in \mathbf{p}_\omega w: \vartheta_{w'} \text{BG}_{w'} \mathcal{S}_{w'} \subseteq \vartheta_{w'} \text{RS}_{w'} d\exists_i w'$   
 •  $d\omega\sigma$  is a possible realization of the result state of  $d\exists$   
 $\text{can}\{d\omega\sigma, \text{RS } d\exists\} := \lambda i. \text{Dom } d\omega\sigma_i \subseteq \text{Dom } d\exists_i$   
 $\wedge \forall w \in \text{Dom } d\omega\sigma_i: d\omega\sigma_i w = \text{RS}_w d\exists_i w$

$w_0 \in {}^\top p_0$ $\vdots$ <ul style="list-style-type: none"> <li>•</li> <li> </li> <li>  </li> <li>•</li> <li>  </li> <li>•</li> <li>...=====...</li> <li>•••</li> </ul>	<p>($p_0$-story worlds)</p> $\vdots$ $e_5 = {}^\top \mathcal{E}_4 w_0$ : $e_4$ -requested answer, fox $a_1$ specifies ${}^\top k_4^\beta$ by claiming to be in $p_5$ $t_5 = \mathfrak{D}_{w_0} e_5$ : $e_5$ -answer now $t'_5 = \mathfrak{D}_{w_0} \text{RS}_{w_0} e_5$ : $e_5$ -answer result time $e_6$ : bear $a_3$ exclaims with admiration for fox $a_1$ ${}^\top t_6 = \mathfrak{D}_{w_0} \text{RS}_{w_0} e_6$ : $e_6$ -exclamation result time ${}^\top e'_6$ : bear $a_3$ requests 1 (and expects) $\mathcal{E}_6$ dur RS $e'_6$ $s_5$ : ${}^\top k_5^\alpha$ -mare $a_2$ sleeps at beg $l_6$ of $ll_5$ -path $ee_5$ : fox $a_1$ $h^{\text{ee}}_5$ -sucks ${}^\top k_4^\beta$ -milk frm ${}^\top k_5^\alpha$ -mare $a_2$
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$\mathcal{S}_6 = \langle \text{RS}_w \mathcal{E}_6 w : w \in \text{Ran } {}^\top p'_{\omega,6} \rangle$ $w'_6 \in \text{Dom } \mathcal{S}_6 = \text{Ran } {}^\top p'_{\omega,6}$       •• •       == ••• 	<p>($\mathcal{E}_6$-result $p'_{\omega,6}$-desire of bear $a_3$)</p> $\mathcal{T}_6 w_6 = \mathfrak{D}_{w_6} \text{RS}_{w_6} e'_6$ : $e'_6$ -request result time $\langle {}^1 \mathcal{E} \mathcal{E}_6 \dots {}^f \mathcal{E} \mathcal{E}_6 \rangle$ : fox $a_1$ & bear $a_3$ go along $ll_5$ -path $\mathcal{E}_6 w_6$ : during ${}^f \mathcal{E} \mathcal{E}_6$ -result, fox $a_1$ shows bear $a_3$ bg $l_6$ of $ll_5$ -pth, plc of $s_5$ -sleep of ${}^\top k_5^\alpha$ -mare $a_2$ $\mathcal{T}'_6 w_6 = \mathfrak{D}_{w_6} \text{RS}_{w_6} \mathcal{E}_6 w_6$ : $\mathcal{E}_6$ -showing result time $\mathcal{S}_6 w'_6 = \text{RS } \mathcal{E}_6 w'_6$ : $\mathcal{E}_6$ -showing result state $\langle {}^1 \mathcal{E} \mathcal{E}'_6 w'_6 \dots {}^f \mathcal{E} \mathcal{E}'_6 w'_6 \rangle$ : bear $a_3$ $h^{\text{ee}}_5$ -sucks ${}^\top k_4^\beta$ -milk from ${}^\top k_5^\alpha$ -mare P 'also': $\mathcal{E} \mathcal{E}_6 \sim ee_5$ (fox $a_1$ $h^{\text{ee}}_5$ -sucks in ${}^\top p_0$ ) ${}^\top \mathcal{T}''_6 w_6 = \mathfrak{D}_{w_6} \text{RS}_{w_6} {}^1 \mathcal{E} \mathcal{E}'_6 w_6$ : aft 1st $\mathcal{E} \mathcal{E}'_6$ -stage
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$w_6 \in \text{Dom } \mathcal{E}_6 = \text{Ran } p_{\omega,6}$       •• • 	<p>($e'_6$-request/expectation of bear $a_3$)</p> $\mathcal{T}_6 w_6 = \mathfrak{D}_{w_6} \text{RS}_{w_6} e'_6$ : $e'_6$ -request result time $\langle {}^1 \mathcal{E} \mathcal{E}_6 \dots {}^f \mathcal{E} \mathcal{E}_6 \rangle$ : fox $a_1$ & bear $a_3$ go along $ll_5$ -path $\mathcal{E}_6 w_6$ : during ${}^f \mathcal{E} \mathcal{E}_6$ -result, fox $a_1$ shows bear $a_3$ bg $l_6$ of $ll_5$ -pth, plc of $s_5$ -sleep of ${}^\top k_5^\alpha$ -mare $a_2$ $\mathcal{T}'_6 w_6 = \mathfrak{D}_{w_6} \text{RS } \mathcal{E}_6 w_6$ : $\mathcal{E}_6$ -showing result time
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1.7 So... if₁  
 sok  
 so  
 $P[| d\exists\exists_1 \subseteq \mathbf{d}\omega\tau_2]; [\mathbf{t} \text{ eel } \mathbf{t} =_{\mathbf{d}\Omega} \mathbf{d}\omega\tau_2, ee =_{\mathbf{d}\Omega} d\exists\exists_1];$   
 ...the two of them turned around...  
 s- -a mf₁  
 "EE- -IND  
 $[h^{\varepsilon\varepsilon} | d\varepsilon\varepsilon =_{\mathbf{d}\Omega} {}^2h^{\varepsilon\varepsilon}]; [|\vartheta_{\mathbf{d}\Omega} {}^1d\varepsilon\varepsilon < \vartheta_{\mathbf{d}\omega} \mathbf{d}\varepsilon];$   
 hy-  
 33m-  
 $P[| 33m_{\mathbf{d}\Omega} \{\mathbf{d}\alpha + d\alpha\}]; [\mathbf{a} | \mathbf{a} = \mathbf{d}\alpha + d\alpha]; [|\text{AG } d\varepsilon\varepsilon =_{\mathbf{d}\Omega} \mathbf{d}\alpha];$   
 -áhket  
 -go.there  
 $[| d\eta^{\varepsilon\varepsilon}: \text{AG } go.along \mathbf{d}\pi\pi]; [|\text{}^f d\varepsilon\varepsilon \subseteq {}^1d\pi\pi];$   
 -e'  
 -EVT  
 $[| {}^1d\varepsilon\varepsilon \subseteq_{\mathbf{d}\Omega} \mathbf{d}\tau]; [\mathbf{t} | \mathbf{t} =_{\mathbf{d}\Omega} \vartheta\text{RS } {}^1d\varepsilon\varepsilon]$   
 ...and went back to...  
 tanon' if₂  
 and  
 $[e | e \subseteq_{\mathbf{d}\Omega} \text{RS } {}^1d\varepsilon\varepsilon];$   
 y- on.s.a- mf₂  
 XX- "EE- (s-) IND- (-wa)  
 $[| d\varepsilon =_{\mathbf{d}\Omega} {}^f d\varepsilon\varepsilon]; P[| d\varepsilon\varepsilon =_{\mathbf{d}\Omega} {}^2d\eta^{\varepsilon\varepsilon}]; [|\vartheta_{\mathbf{d}\Omega} d\varepsilon < \vartheta_{\mathbf{d}\omega} \mathbf{d}\varepsilon];$   
 n-  
 33m-  
 $P[| 33m_{\mathbf{d}\Omega} \mathbf{d}\alpha]; [|\text{AG } d\varepsilon =_{\mathbf{d}\Omega} \mathbf{d}\alpha];$   
 -ew-  
 -arrive-  
 $P[| d\varepsilon\varepsilon: \text{AG } go.along_{\mathbf{d}\Omega} \mathbf{d}\pi\pi]; [|\text{}^f d\varepsilon = {}^f d\varepsilon\varepsilon];$   
 -'  
 -EVT  
 $[| d\varepsilon \subseteq_{\mathbf{d}\Omega} \mathbf{d}\tau]; [\mathbf{t} | \mathbf{t} =_{\mathbf{d}\Omega} \vartheta\text{RS } d\varepsilon];$   
 áre' fb₂  
 again  
 $P[| d\varepsilon\varepsilon =_{\mathbf{d}\Omega} {}^2d\eta^{\varepsilon\varepsilon}];$



- 1.8¹ The bear... *if*₁  
 ki o- -hkwári  
 N sg- -bear  
 [a| a = dα₁]; [ | dα = dκ^α{dε}]; [ | one(dα, dκ^α)]; [ | bear dκ^α];
- ...right-away... *ib*₁  
 kwak- -óksak  
*just-* -immediately  
 [e| e =_{dΩ} BG{RS dε}]; [t| t =_{dΩ} θdε];
- ...set to... *mf*₁  
 t- -a  
 EE- -IND  
^P[ | *prc* dεε]; [ | θ_{dΩ}¹dεε < θ_{dΩ} dε];
- h-  
 3sm-  
^P[ | 3sm_{dΩ} dα]; [ | AG dεε =_{dΩ} dα];
- at  
 -se  
 [ | AG dεε =_{dΩ} DA{RS dεε}];
- áhsaw  
 -start  
 [ | dε =_{dΩ}¹dεε];
- en’  
 -EVT  
 [ | dε ⊆_{dΩ} dτ]; [t| t =_{dΩ} θRS dε];
- 1.8² ...and sucked milk... *mf*₂  
 wa-  
 IND-  
 [e| ee =_{dΩ} dεε]; [ | θ_{dΩ}¹dεε < θ_{dΩ} dε];
- ha-  
 3sm-  
^P[ | 3sm dα]; [ | AG dεε =_{dΩ} dα];
- non’- -ké:ra-  
*milk.of-* -drink.from-  
 [ | dκ^β *milk.of* dκ^α]; [ | dη^{εε}₁: AG *drink* dκ^β *from* dκ^α]; [h^{εε}| h^{εε} = dη^{εε}₁];
- ‘  
 -EVT  
 [ | dεε ∈_{dΩ} dη^{εε}]; [ | ¹dεε ⊆_{dΩ} dτ]; [t| t =_{dΩ} θRS ¹dεε]



