Acquaintance content and obviation

(1) KERNELS

a. A kernel K is a set of propositions that encode direct knowledge

b. K directly settles (whether) p iff $\exists q \in K\ [\ q\ \subseteq p\ \vee\ q \subseteq \neg p\ ]$

c. The proposition $\bigcap K$ is a vanilla epistemic modal base: the set of worlds compatible with what is known directly and indirectly

(2) MUST

a. $[\![\ must\ p\ ]\!]^{c,i}$ is defined only if K does not directly settle $\lambda i.[\![\ p\ ]\!]^{c,i}$

b. If defined, $[\![\ must\ p\ ]\!]^{c,i} = 1$ iff $\bigcap K \subseteq \lambda i.[\![\ p\ ]\!]^{c,i}$

(3) a. $[\![\ tasty\ ]\!]^{c,\langle w,j,K_{j,w}\rangle} =$
$\lambda o : K_{j,w}$ directly settles whether o is tasty for j in w. 1 iff o is tasty for j in w

b. $K_{j,w}$ directly settles whether p iff $\exists q \in K_{j,w}\ [\ q\ \subseteq p\ \vee\ q \subseteq \neg p]$

Applied to a sentence with a PPT (4a), such semantics yields (4b):

(4) a. This puerh is delicious.

b. $[\![$ The puerh is delicious $]\!]^{c,\langle w,j,K_{j,w}\rangle}$
$= \lambda o : K_{j,w}$ directly settles whether puerh is delicious for j in w. 1 iff puerh is delicious for j in w

(5) a. $[\![\ \text{must}\ p\ ]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,\mathbf{K_{j,w}}\rangle} = [\![\ \text{must}\ ]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}([\![\ p\ ]\!]^{c,\langle w,j,\{\bigcap \mathbf{K_{j,w}}\}\rangle})$

b. Given the semantics for PPTs:
$[\![$ must [PPT] $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}$ is defined
iff $\{\bigcap K_{j,w}\}$ directly settles whether p

c. vF&G's semantics for *must*:
$[\![$ must $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}$
$= \lambda p :\ K_{sp,w}$ does not directly settle whether p. 1 iff $\bigcap K_{sp,w} \subseteq p$

The full derivation is given in (6) (we do not take tense into account):

(6) a. The puerh must be delicious.

b. $[\![$ must [the puerh is delicious] $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}$
$= [\![$ must $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}([\![$ the puerh is delicious $]\!]^{c,\langle w,j,\{\bigcap K_{j,w}\}\rangle})$
$= \bigcap K_{sp,w} \subseteq$ (*puerh.delicious*), if defined; and
defined iff $\{\bigcap K_{j,w}\}$ directly settles whether puerh is delicious to j in w and
$K_{sp,w}$ does not directly settle whether puerh is delicious to j in w.

We extend our analysis of 'bare' uses to overt tasters DPs and propose that overt judges depend on the DP's kernel (7):

(7) $[\![$ delicious to α $]\!]^{c,i} = \lambda o$: the kernel of $[\![$ α $]\!]^{c,i}$ in w at t directly settles whether o is delicious for α in w. 1 iff o is tasty for α in w

For non-obviated cases, the semantics (8) is the same as with 'bare' uses in (4) (modulo the judge) and the AI arises because of the direct settlement requirement:

(8) a. The puerh is delicious to me.
b. $[\![$ the puerh is delicious to me $]\!]^{c,\langle w,j,K_{j,w}\rangle}$
is defined iff $K_{spkr(c),w}$ directly settles whether puerh is delicious for $speaker(c)$ in w.
If defined, 1 iff puerh is delicious for $speaker(c)$ in w.

(9) a. # The puerh must be delicious to me.
b. $[\![$ must [the puerh is delicious to me] $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{spkr(c),w}\rangle}$
$= [\![$ must $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}([\![$ the puerh is delicious to me $]\!]^{c,\langle w,j,\{\bigcap K_{j,w}\}\rangle})$
$=$1 iff $\bigcap K_{spkr(c),w} \subseteq$ (*puerh.delicious*), if defined; and
defined iff $K_{spkr(c),w}$ directly settles whether puerh is delicious to $speaker(c)$ in w and $K_{spkr(c),w}$ does not directly settle whether puerh is delicious to $speaker(c)$ in w.

Our analysis correctly predicts that modification with obviators will be possible with third-party overt tasters (10a). In such cases, *must* is anchored to the speaker while the PPT is dependent on the DP's kernel, therefore no contradictions ensue (10b).

(10) a. ✓The puerh must be delicious to Mo.
b. $[\![$ must [the puerh is delicious to Mo] $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}$
$= [\![$ must $]\!]^{\langle\ ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}([\![$ the puerh is delicious to Mo $]\!]^{c,\langle w,j,\{\bigcap K_{j,w}\}\rangle})$
$=$1 iff $\bigcap K_{spkr(c),w} \subseteq$ (*puerh.delicious*), if defined; and
defined iff $K_{Mo,w}$ directly settles whether puerh is delicious to Mo in w and $K_{spkr(c),w}$ does not directly settle whether puerh is delicious to Mo in w.