NSYILXCEN EPISTEMIC MODALS

Stacey Menzies
University of British Columbia

1) Introduction: Research on the modal systems of Pacific Northwest languages provides empirical support for the recent claim that some epistemic modals encode evidential restrictions (Matthewson 2011, von Fintel & Gillies 2010). For example, the St'át'imcets and Gitksan modal systems lexically specify the source of evidence used to make an epistemic modal statement (Matthewson et al. 2007, Rullmann et al. 2008, Peterson 2010). In addition, von Fintel and Gillies (2010) argue that English *must* also has an evidential component indicating that the speaker is making an inference based on indirect evidence. In this paper, I investigate the semantics of the epistemic modal system of Nsyilxcen (Okanagan), an Interior Salish language spoken in South Central British Columbia and Northern Washington. The data comes from original fieldwork and involves two Nsyilxcen epistemic modals, *mat* and *cmay*. Similar to modal systems in other Salish languages, the Nsyilxcen modals have a lexically specified conversational background; they are both unambiguously epistemic. Furthermore, both modals encode an evidential restriction that the speaker is making an inference about the truth of the proposition based on indirect evidence. The modals differ in modal force (variable modal force for *mat*; possibility for *cmay*) but also in their specific evidence restrictions. *Mat* is permitted in contexts with indirect evidence based on reasoning or the results of an action or event. *Cmay* is restricted to contexts where there is evidence based on reasoning.

2) Nsyilxcen Epistemic Modals: The epistemic modals *mat* and *cmay* are felicitous in contexts with indirect evidence, and are infelicitous in contexts where there is direct evidence of the described event. This is shown in (1) where *mat* and *cmay* are both infelicitous in a context where direct evidence is present.

1) Context (Direct Evidence): You look outside and see that it is raining.
a) way   qait   b) # **mat/cmay** qait
    AFFIRM RAIN   **MOD**   RAIN
    'It is raining'   'It might/must be raining'

Mat and *cmay* are distinguished based on the type of indirect evidence they encode. (2) shows that *mat* and *cmay* are both permitted in contexts with weak indirect evidence from intuition, logic or previous experience. In this case both *mat* and *cmay* have a possibility interpretation.

2) Context (Reasoning): You know that Mary loves to go running and often goes on runs randomly. I ask you, where is Mary?

a) Mary **cmay** ac-s-qic-lx   b) Mary **mat** ac-s-qilc-lx
    MARY **MOD** CONT-NOM-RUN-3.ERG   MARY **MOD** CONT-NOM-RUN-3.ERG
    'Mary might have gone running'   'Mary might have gone running'

However, (3) shows that in a context with strong indirect evidence based on reasoning, *cmay* is infelicitous and *mat* is felicitous with a necessity interpretation.

3) Context (Reasoning): Mary runs everyday to train for a marathon. She usually runs at 6pm on Tuesdays. Today is Tuesday and its 6pm. I ask you, where is Mary?

a) # Mary **cmay** ac-s-qic-lx   b) Mary   **mat**   ac-s-qilc-lx
     MARY **MOD** CONT-NOM-RUN-3.ERG   MARY **MOD** CONT-NOM-RUN-3.ERG
     'Mary must have gone running'   'Mary must have gone running'

Finally (4) shows that in a context with indirect sensory evidence from the results of an event, *cmay* is infelicitous. In this context, *mat* prefers a necessity interpretation.

4) Context (Results): You and your friend are working together and her stomach starts to growl. You think she might/must be hungry.

a) # **cmay** tali   ilxʷut   b) **mat** tali   ilxʷut
   MOD VERY HUNGRY   **MOD** VERY HUNGRY
   'She might be hungry'   'She must be hungry'

The data shows that *mat* is permitted in contexts that contain weak and strong evidence based on results or reasoning. *Cmay* is restricted to contexts with weak indirect evidence based on reasoning only.

3) Discussion: The data presented here shows similarities between the evidential restrictions on the Nsyilxcen epistemic modals *mat* and *cmay* and the Gitksan epistemic modal *=ima* (Peterson 2010). Like *mat* and *cmay*, *=ima* is used in contexts of indirect inferential evidence. (5) presents Peterson's lexical entry for *=ima*:

5) $[\![=ima]\!]^{c,w}$ is only defined if c provides a modal base B such that for all worlds w' $\in$ B(w), the inferential evidence in w holds in w'.
        If defined $[\![=ima]\!]^{c,w} = \lambda p. \exists w'$ [w' $\in$ Og(w) (B(w)) $\wedge$ p(w') =1]   (Peterson 2010: 179)

B(w) specifies an epistemic modal base and the ordering source, Og, places an evidential restriction on the set of accessible worlds. Peterson also assumes a fixed existential quantificational force, where the different modal force readings for *=ima* are determined by the evidential restrictions provided by the ordering source. If the ordering source is empty it will yield a possibility reading. Strengthened interpretations arise when the ordering source contains progressively more propositions narrowing down the set of worlds quantified over. Peterson's analysis could account for *mat* which, similar to *=ima*, is felicitous in contexts that correspond to both necessity and possibility interpretations. Also, the ordering source in this analysis allows for evidential restrictions based on reasoning or results. This analysis could also be extended to *cmay* if the ordering source can account for the fact that *cmay* is restricted to contexts with evidence based on reasoning and to contexts with possibility interpretations. Furthermore, Deal's (2011) discussion of the Nez Perce circumstantial modal *oqa* raises the issue that modals like *mat* and *=ima* may only correspond to a full range of strengths in upward entailing contexts. Further research is necessary to determine how the Nsyilxcen epistemic modals behave in downward entailing contexts.

4) References: Deal, Amy Rose.(2011).*Modals without scales*.Language. 87:3•Matthewson, Lisa, Hotze Rullmann and Henry Davis. 2007. Evidentials as Epistemic Modals: Evidence from St'at'imcets. *The Linguistic Variation Yearbook*.7•Matthewson, Lisa. 2011. Evidence about evidentials: Where fieldwork meets theory•Peterson, Tyler. 2010. Epistemic Modality and Evidentiality in Gitksan at the Semantics-Pragmatics Interface. Doctoral Dissertation, University of British Columbia •Rullmann, Hotze, Lisa Matthewson and Henry Davis. 2008. Modals as Distributive Indefinites. *Natural Language Semantics*. 16. 317-357• von Fintel, Kai, and Anthony Gillies. 2010. Must…Stay…Strong!. *Natural Language Semantics*.18(4). 351-383.