Actuality Entailment and Evidentials

Synopsis: This paper concerns the rise of 'Actuality Entailment' in Turkish. **AE** (Bhatt 1999; Hacquard 2006, 2009, *ms*; a.o.) refers to an implicative inference from an ability modal statement that the semantic content expressed by the complement of the modal holds in the world of evaluation. In Turkish, the presence of the suffix *-DI* on the modal may give rise to AE; (1) implicates that tthe teacher did read the assignment. Such an implicative inference however disappears with the presence of the suffix –*Ir* (2).

(1) hoca   ödev-i   oku-yabil-**di**   'The teacher was able to read the assignment.'
     teacher assignment-ACC read-able-DI   ~>*the teacher read the assignment*

(2) hoca   ödev-i   oku-yabil-**ir-di**   'The teacher was able to read the assignment.'
     teacher assignment-ACC read-able-AOR-DI   ~/>*the teacher read the assignment*

The contrast between (1)-(2) is evidenced by their continuations with (3a), while the continuation of (1) with (3a) is contradiction, that of (2) with (3a) is coherent.

(3) a. fakat hiç   oku-ma-di '
         but   ever read-NEG-DI
      b. #(1)+(3a); ✓(2)+(9a)

–*DI* is usually taken to be a direct evidential marker (Aksu-Koç and Slobin 1986; Faller 2002; Şener 2011; a.o.) (4); –*Ir* has been taken to be described as an aorist morpheme and carries a generic/habitual flavor (5) (Kornfilt 1997; a.o.).

(4) Yağmur yağ-**dı**   'it rained, and the speaker has evidence for it'
     rain   rain-DI

(5) Hasan her   sabah   kahvalh eel-er   'Hasan has breakfast every morning.
      Hasan every morning breakfast do-AOR.   (Kornfilt 1997)

The focus of this paper is the contrast between (1)-(2); the claim is that i) AE in (1) may follow straightforwardly from a possible-world analysis of direct evidentials (Lecarme 2003, 2008; Faller 2011; a.o.) and the Hacquard-style semantics of root modals (Hacquard 2006; 2009), and ii) the lack of AE in (2) results from the generic component of –*Ir*.
        Current discussion on AE mostly focuses on Romance languages (e.g., Hacquard 2006, 2009; Mari and Martin 2007; Homer 2009; a.o.); in most analyses, the rise of AE has been derived from the interaction between modals and aspects (perfective vs. imperfective). It is however unclear how such analyses may be extended to the data above, for i) the presence and lack of AE in (1)-(2) cannot be directly linked to the perfective/imperfective contrast in morpho-syntactic make-up ,and ii) they fail to show how the evidential component of –*DI* may contribute to the rise of AE. The data above together with the proposal hence sheds light on this issue by broadening the cross-linguistic picture of this phenomenon and showing how an inference of this kind may be derived via a different strategy.

Events and evidentials: I assume i) that a statement *p-DI*, where *p* expresses the proposition p, presupposes that the speaker has the direct evidence for p and asserts that p is true in the word of evaluation (Şener 2011), and ii) that one has direct evidence for p iff p direct follows from (i.e. is entailed by) his epistemic state (e.g., knowledge) (e.g., Faller 2011). Departing from most analyses of evidentials (e.g., Matthewson et al. 2007) however, based on which evidentials are take to be an propositional operator, I suggest that the direct evidential –*DI* takes as its arguments an event e and (the intension of) an event description P (6); –*DI* presupposes that the existence of e follows from the speaker's epistemic state and asserts that e is a P-event. I further assume that the epistemic modal base EPIS(w)(x) is reflexive; hence, w∈EPIS(w)(x). For simplicity, the temporal contribution of –*DI* is put aside.

(6) $[\![DI]\!]^{w,\,x} = \lambda P_{<s,\,<v,\,t>}.\ \lambda e_v \colon \forall w'[w' \in \text{EPIS}(w)(x) \rightarrow \text{AT}(w')(e)]\colon P(w)(e)$

(where EPIS(w)(x)= ∩{p$_{<s, t>}$: p describes what x knows in w}, and AT(w)(e) iff e is in w)

Events and root modality: following Hacquard (2006, 2009, 2010), I assume that a root modal like *able-* is interpreted relative to events and combines with predicates of events rather than propositions (7).

(7) ⟦ *able* ⟧^{w} =λe$_v$. λP$_{<s, <v, t>>}$.. ∃w′[w′∈CIRC(w)(e) and P(w′)(e)]
   (where CIRC(w)(e)=∩{p$_{<s, t>}$: p(w) and p is contextually relevant to e}

I take as a default rule **PED** (Hacquard 2009) (6), according to which an event description for an event e expressed by the complement of the modal holds across worlds.

(8) **P**reservation of **E**vent **D**escription (Hacquard 2009):
   for all worlds w$_1$ and w$_2$, if e$_1$ occurs in w$_1$ and w$_2$, and e$_1$ is a P-event in w$_1$, then *ceteris parius*, e$_1$ is a is a P-event in w$_2$ as well.

The rise of AE with evidentials: with the LF in (9a) and the lexical entry of *–DI* and *able* above, modulo ∃ type-shifting operation on the event argument of *-DI*, the truth conditions (9b) are derived for (1).

(9) a. LF of (1) : [*DI* [1 [*able-e*$_1$ [*teacher read assignment*]]]]

   b. ⟦(1)/(9a) ⟧$^{w, x}$=1 only if there is an event e such that i) ∀w′[w′∈EPIS(w)(x)→AT(w′)(e)], and
                ii) ∃w′[w′∈CIRC(w)(e) and the teacher reads the assignment in e in w′]

The AE in (1) is derived from (9b) as follows: given that i) the relevant event e exists in all words in EPIS(w)(x), ii) w∈EPIS(w)(x), and iii) the teacher read the assignment in e in some world in the circumstantial modal base, it follows that e is in w as well. Together with **PED** (8), it then follows that the teacher read the assignment in e in the world evaluation w. The AE in (1) hence is captured.

The lack of AE with *–ir*: the lack of AE in (2) results from the extra layer of intensionality carried out by *–Ir*. I assume that *–Ir* carries a generic modal component (Kratzer 1981; Krifka et al. 1995) and involves ∀-quantification over worlds relevant, according to normality, to an event e (10); given an event e and an event predicate P, *–Ir* asserts that there is a P-event in all the relevant worlds.

(10) ⟦ *ir* ⟧^{w}= λe$_v$. λP$_{<s, <v, t>>}$. ∀w′[w′∈GEN(w)(e)→∃e′[P(w′)(e′)]
   (where GEN(w)(e)={w′: w′ is generically accessible to w with respect to e})

(10) together with the LF (11a) gives the truth conditions (11b) for (2). (11b) asserts that there is an event of the teacher reading the assignment in all the generically accessible worlds; while PED applies in this case as well, the world of evaluation w is not necessarily one of those worlds. Hence, the AE is not supported in (2).

(11) a. LF: [*DI* [1 [*ir-e*$_1$ [3 [*able-e*$_3$ [*teacher read assignment*]]]]

   b. ⟦(2)/(11a) ⟧$^{w, x}$=1 only if there is an event e such that i) ∀w′∈EPIS(w)(x)→AT(w′)(e), and
                ii) ∀w′[w′∈GEN(w)(e)→∃e′∃w″[w″∈CIRC(w′)(e′) and the teacher reads the
                        assignment in e′ in w″]

Summary: the above discussion shows that crosslinguistically, AE may arise through the interaction between modality and aspects (e.g., Romance languages) as well as from that between modality and evidentiality (e.g., Turkish). In the latter case, AE may be derived from a semantics of evidentials and root modals in which these elements are predicated of predicates of events rather than propositions.

Selected References: Bhatt, R. 1999. *Covert Modality in Non-finite context*. Faller, M. 2011. A possible worlds semantics for Cuzco Quechua evidentials. *SALT XX*. Hacquard, V. 2009. On the interaction of aspect and modal auxiliaries. *L&P*. Hacquard, V. *ms*. *Actuality Entailments*. Kornfilt, J. 1997. *Turkish*. Krifka, M, et al. 1995. *The Generic Book*. Şener, N. 2011. *Semantics and Pragmatics of Evidentials in Turkish*.