Again on Tense, Aspect, Mood morpheme order and the "Mirror Principle"*

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1. The pre- and post-verbal orders of Mood, Tense and Aspect morphemes. If we set aside for a moment certain apparent exceptions, to which we return in section 2, the preverbal order of (free or bound) mood, tense, and aspect morphemes appears to be, across languages, Mood > Tense > Aspect.[1]

Postverbally, the order of the same morphemes is predominantly the mirror image of the preverbal one (namely, Aspect > Tense > Mood), a fact which recalls, modulo the head vs. phrasal status of the elements involved, Greenberg's Universal 20 on the order of demonstratives, numerals, and adjectives with respect to the noun.[2]

The characteristic mirror-image relation of the preverbal and postverbal orders of mood, tense, and aspect morphemes has been raised in different frameworks to the status of a general principle. See Gerdts's (1982,193fn4) "Satellite Principle", within a Relational Grammar approach, Bybee's (1985) "Principle of Relevance", within a functional-typological approach[3], Foley and van Valin's (1984), and Van Valin and LaPolla's (1997,46) "Principle of scope assignment", within Role and Reference Grammar, and the (generalized) "Mirror Principle", within a Principles and Parameters approach.[4]

We know however that in the DP the order A Num Dem (the mirror image of the prenominal order) is the predominant but not the exclusive order found postnominally, where the same order as the prenominal one is also found, albeit much less frequently (cf. the references given in fn.2, and Cinque 2005,fn.10). Moreover, Greenberg's formulation of the Universal allows for the possibility that in one and the same language some of the elements Dem Num A appear prenominally while others appear postnominally (as long as they conform to the unique prenominal order Dem Num A, and to one or the other of the two postnominal orders, A Num Dem and Dem Num A).

In Cinque (2005) I reviewed other attested orders of the same elements, claiming that all of the attested ones (even those contradicting Greenberg's Universal 20), and none of the unattested ones, can in fact be derived from either not moving, or moving, the NP, alone, or within a larger phrase.

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[1] As the term 'mood' is used in the literature to refer to different grammatical notions, corresponding to functional heads differently ordered with respect to Tense (cf. Cinque 1999,55ff, and chapter 4), I will reserve it here to *speech act* mood, which traditionally ranges over such values as declarative, interrogative, imperative, etc., and which is unquestionably higher than Tense.

[2] Prenominally, the only order is Dem Num A, while postnominally the predominant order is A Num Dem (Greenberg 1963,87; Hawkins 1983,119).

[3] Actually Bybee (1985, chapter 2) considers it a tendency rather than a rigid principle. Cf. also Foley and Van Valin (1984).

[4] Baker's (1985; 1988) original Mirror Principle was in fact limited to argument (or valency) changing morphemes. It established a strict correspondence between the order in which syntactic processes affecting a verb take place and the order in which morphemes marking those processes are added to the verb. Under this view, different orders of morphemes are expected to correspond to different orders of application of the corresponding syntactic processes, and, characteristically, to different meanings. The principle was later generalized to tense and agreement inflectional morphemes (Belletti 1990) and to mood, modal, aspectual, voice, etc. morphemes (Pollock 1989, Cinque 1999, Baker 2002, 326, Julien 2002b,54f, and references cited there), and acquired the status of a rigid principle governing the relation between the order of attachment of morphemes to a verb and the order (and hierarchy) of the free functional heads corresponding to those morphemes. On the possibility that even (circumstantial) argument changing morphemes are rigidly ordered underlyingly, see Damonte (2007).

So the question arises whether the picture of the clause, seen as the extended projection of the VP, is different, or not, from that of the DP, seen as the extended projection of the NP.

I will argue that it is not, and that in fact many more orders of (speech act) Mood, Tense, and Aspect morphemes are documented in the languages of the world than the above principles would have us expect (among them, the orders in (I)c, (I)d, (I)m, (I)n, (I)v below).[5]

As with the DP, of the 24 mathematically possible combinations of Mood, Tense, Aspect and V only some are attested. Of these, those indicated with a '√' in (I) below will be argued to derive from the raising of the VP, or of a larger phrase containing it (much as the attested orders of Dem Num A N in the DP have been argued to derive from the raising of NP, or of a larger phrase containing it, in Cinque 2005).[6] (I)e,f,i,l will instead be argued to arise in a fundamentally different way: through the raising of a Tense or Aspect particle to the left of a second position speech act Mood particle, comparable to the special raising within the DP of an Adjective Phrase to the specifier of a Focus projection – cf. Cinque 2005,fns. 2 and 23). (I)w, if genuine, will be argued to arise from a separate, and more marked, derivation. The orders indicated with a plain asterisk (which are apparently unattested) will instead turn out not to be derivable.

Representative cases of the orders indicated with '√' in (I) are given below, under Roman (II)).

Cases representing (I)e,f,i,l, and w will be discussed in section 2.

(I)_____

a.	√	Mood	Tns	Asp	**V**	
b.	√	Mood	Tns	**V**	Asp	
c.	√	Mood	**V**	Tns	Asp	
d.	√	**V**	Mood	Tns	Asp	
_____						
e.	(*)	Tns	Mood	Asp	**V**	(see section 2)
f.	(*)	Tns	Mood	**V**	Asp	(see section 2)
g.	*	Tns	**V**	Mood	Asp	
h.	*	**V**	Tns	Mood	Asp	
_____						
i.	(*)	Asp	Mood	Tns	**V**	(see section 2)
l.	(*)	Asp	Mood	**V**	Tns	(see section 2)
m.	√	Asp	**V**	Mood	Tns	
n.	√	**V**	Asp	Mood	Tns	
_____						
o.	*	Mood	Asp	Tns	**V**	
p.	√	Mood	Asp	**V**	Tns	

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[5] Violations of the (generalized) Mirror Principle have repeatedly been reported in the literature, though some, those involving subject and object agreement, may be spurious, if agreement projections can appear in more than one position (See Cinque 1999, chapter 5). For genuine violations, see, more recently, Bartos (2000), Koopman (2005, 2006) and Buell and Sy (2005,2006). Koopman, Buell and Sy actually propose accounting for (some of) them through phrasal rather than head movement, as we also suggest here.

[6] Many languages display more than one order, depending on the particular tense, or (more often) aspect, involved. See for example the alternative orders (V-Asp-Tns and V-Tns-Asp) displayed by Gidabul, or Gidabal, (Pama-Nyungan) (for a list of abbreviations see the Appendix below):

(i) nyula-yu kangka-**le-hn**-i yaraman, yaraman yangkiwa-**hn-du** (Geytenbeek 1964,106))
   he-actor call-**CONT-PAST**-when horse, horse come-**PAST-HAB**
  'When he called the horse repeatedly, the horse used to come'

Also note that to the extent that it is clear whether a certain morpheme is a tense, aspect, or mood, morpheme, the question of exact cross-linguistic correspondences (whether what is called durative in the grammatical description of one language should be identified with what is called durative in another or with what is called there progressive) does not affect the main point being made here.

q.	√	Mood	**V**	Asp	Tns		
r.	*	**V**	Mood	Asp	Tns		

s.	*	Tns	Asp	Mood	**V**	
t.	√	Tns	Asp	**V**	Mood	
u.	√	Tns	**V**	Asp	Mood	
v	√	**V**	Tns	Asp	Mood	

w.	(*)	Asp	Tns	Mood	**V**	(see section 2)
x.	*	Asp	Tns	**V**	Mood	
y.	√	Asp	**V**	Tns	Mood	
z.	√	**V**	Asp	Tns	Mood	

(II)a (Mood Tns Asp V)

This order is attested in some Khoisan languages (see for example (1) from Nama, drawn from http://instruct1.cit.cornell.edu/courses/ling700/nama.htm,[7] as well as the case of /Xam in http://instruct1.cit.cornell.edu/courses/ling700/xam.htm.); in a number of Niger-Congo languages (see, for example, the case of Yoruba in (2), provided by Ọládiípò Ajíbóyè, p.c; that of Eton – Van de Velde 2008,237; and that of Cinyanja – Lehmann 2002, 37 and 39); in some Amerindian languages (Apinajé (Macro-Jê))[8], Canela–Crahô (Cariban – see (3), from Popjes and Popjes 1986,157 and 182), Sochiapan Chinantec (Otomanguean) - Foris 1993)[9]; and in a number of Austronesian languages (Nabukelevu – Pawley and Sayaba 1982,68 and 85; Samoan - Cinque 1999,160; and in Seediq – Holmer 1996,114 and 2006,92 and 109 – where it is an alternative order). It is also a possible order in Papago (Tohono 'O'odham) – Mason (1950,40,45, and 48), Zepeda (1983,14 and 63).

(1) 'áop   **ke**   **kè-**   **rè**   !úu
    man+cl   **DECL**   **RemPAST**   **PROG**   go
    'the man was going'

(2) Ǹjé Adé **yóò máa** wá   ní ìròlé?
    Q   Ade **FUT HAB** come in evening
    'Will Ade be coming in the evenings?'

(3)a **xà** capi   **te**   po curan?
    Q Capi **PAST** deer kill
    'Did Capi kill a deer?'

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[7] Nama also instantiates the orders (II)b and (II)c with the perfect particle in place of the progressive particle. See (i) and (ii), also drawn from http://instruct1.cit.cornell.edu/courses/ling700/nama.htm):
(i) 'áop   **ke**   **kè**   !úu   **hàa** 'ií
    man+cl   **DECL**   **RemPAST**   go   **PERF** PARTICLE
    'the man had gone'
(ii) 'áop   **ke**   !úu   tama   **kè**   **hàa** 'ií
    man+cl   **DECL**   go   Neg   **RemPAST**   **PERF** neg.cop.
    'the man was not going' or 'the man had not gone'
[8] In Apinajé, the Question particle precedes the Realis/Hearsay (evidential) particles, which precede the Past Tense particle, which in turn precedes Aspect particles. See Cunha de Oliveira (2003,255f,265).
[9] The order of prefixes given in Foris (1993,156) includes Hortatory illocutionary force > Tense > Continuous aspect.

b **pê** wa **ajco apu** to hane
  PAST(distant) 1sg **HAB PROG** do thus
  'I always used to do that'

(II)b (Mood Tns V Asp)
This order appears instantiated in Khoisan (see (4) below from N|uu, and (i) of fn.7 from Nama) and Austronesian (Maori – Bauer 1993,35 and section 2.1.33; Seediq, with Perfect Aspect - Holmer 2006, 102 and 109; Nabukelevu, with Progressive Aspect – Pawley and Sayaba 1982,53ff; and Easter Island Language (see (5)).[10] It is also an alternative order in Hmong Njua (Sino-Tibetan) (see (6)).[11]

(4) ŋ **ke** **xŋ** ‖ʔae-**a** !gari (N|uu - Collins 2004,188)
  1sg **DECL** **PAST** go-**ASP** Upington
      'I went to Upington'

(5)a **Hoki e** haga rō koe ki te puaka mo hakahere? (Easter Island - Chapin 1978,168)
  Q NONPAST want rō you DAT the cattle INF buy
      'Do you want to buy cattle?'
  b **E** tagi **ā** te poki (Easter Island - Chapin 1978,153)
  NONPAST cry **PROG** the boy
      'The boy is crying'

(6)a Yog kuv moog koj **puas yuav** quaj (Hmong Njua - Harriehausen 1990,226)
      Comp 1sg go, 2sg **Q FUT** cry
          'If I go, will you cry?'
  b kuv **tau** moog tsev **lawm** (Hmong Njua - Harriehausen 1990,57)
      1sg **PAST** go house **COMPL**
          'I have gone home'

(II)c (Mood V Tns Asp)
This order is documented in some Australian languages (see (7), from Kalaw Kawaw Ya (Pama-Nyungan), and (8), from Ngarinjin (Kimberley, North Western Australia));[12] it is also found in Uto-Aztecan (see (9), from Tümpisa Shoshone and (10), from Ute), as well as in the Panoan language Shipibo (see (11)), and in the Munda language Kharia (Biligiri 1965,59,98)[13]; it is also instantiated, as an alternative to the order Mood Tns Asp V, in Nama (Khoisan). See (ii) of fn.7 above.

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[10] Good (1989) gives examples from another Austronesian language, Kosreanan (Kusaenian), with a preverbal future particle and a Perfect aspect suffix, saying that yes/no interrogative sentences can be introduced by a question particle (with the overall order Mood Tns V Asp).

[11] The interrogative particle can also occur postverbally (followed by modal particles). See (i):
(i) Nwg nug saib kuv tuaj **puav tau** (Harriehausen 1990,227)
  3sg ask Comp 1sg come **Q MOD**
    'he asked if I can come'
Continuative aspect, differently from completive aspect, precedes the verb (Harriehausen 1990,57).

[12] The order V Tns Asp (which could either belong here or to (II)v) is also found in the Australian languages Duungidjawu, Muruwari, and Wunambal (see Dixon 1976,107,346,634), as well as in Anfillo, an Omotic language of Ethiopia. See: (to) yorro uts-**ate yagi** (lit. (I) water drink-**PAST PERF**.aux) 'I had drunk water' (Yigezu and Yehualashet 1995,110).

[13] Kharia also has Mood V-Asp-Tns with Perfect aspect (see Biligiri 1965,71).

(7) Ezoera **midh** mul-**i-z** kedha+Gabu nga-n im-a-n (Kalaw Kawaw Ya - Ford and Ober 1991,129)
　　 Ezra 　 **Q** 　 say-**PRES-PERF** thus Gabu who-Acc see-**PRES-PERF**
　　 'Who did Ezra say that Gabu saw?'

(8)a irani 　 **widjiga** 　 a-**ŋga** 　 (Ngarinjin - Coate and Coate 1970,75)
　　 your father 　 **Q** 　　 go-**PAST**
　　　 'Did your father go?'
　 b ŋ-a-**ŋge-ri** 　　　　　　 (Ngarinjin - Coate and Coate 1970,43)
　　 I-go-**PAST-CONT**
　　 'I was going'

(9)a mungku **ha** pungi punikka-**mmaa**? 　　　 (Tümpisa Shoshone - Dayley 1989,325)[14]
　　 you (dl) **Q** horse see-**PAST**
　　　 'Did you two see the horse?'
　 b …püe tammin tüpanna nayaa-**tu'i-ppüh** (Tümpisa Shoshone - Dayley 1989,348)
　　 … already our pinehut be taken-**FUT-PERF**
　　 '…our pinehuts will already have been taken'

(10)a kúaw-**aa** 　　 pag̑á-nukwí-kya (Ute - Givón 1980,242)
　　 yesterday-**Q** go-run-**ANT**
　　 'Did he/she leave yesterday?'
　 b tuká-xˆa-**paa-mi** 　　　 (Ute - Givón 1980,92)
　　 eat-**PL**-**FUT-HAB**
　　 '(They) are supposed to always eat'

(11) ja-tian-**qui** jahuerano mia i-cáti-ai? (Shipibo – Black 1992,54)
　　 3s-time-**Q** 　 where 　 2s be-**PAST-CONT**
　　 'At that time, where were you living?'

(II)d (V Mood Tns Asp)
This order appears to be instantiated in some Salish languages.[15] See, for example, (12), from
Comox (Central Coast Salish - Harris 1977, Watanabe 2003):[16]

(12) qałeʔʌmm-**a**-ĉxʷ-**xʌm** 　 ʔot^h 　 (Harris 1977,139)
　　 work-**Q**-you(sg)-**FUT** 　 **ASP$_{INCEPTIVE}$**
　　 'Are you (sg) going to work?'

To judge from Aikhenvald's (2006) glosses for (13)a-b below, it also appears to be realized (at least
for some combinations of Mood, Tense and Aspect) in Tariana (North Arawak):[17]

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[14] The order is instead Mood V Asp Tns with Habitual, Durative, Continuative, and Completive aspects. The question particle *ha* "virtually always occurs in second position in the sentence" (Dayley 1989,324).

[15] Other Salish languages appear instead to instantiate the order Asp V Mood Tns (see under (II)m below).

[16] The interrogative suffix '-a' can also be suffixed to a clause initial determiner, or interrogative particle (Watanabe 2003,91) or can follow the Past tense suffix (Harris 1977,136; Watanabe 2003,41,91,515), which can also follow the Perfect aspect suffix on the verb (Watanabe 2003,112), thus giving V-Asp-Tns-Mood as an alternative order (see (II)z).

[17] It is however unclear whether the suffix which Aikhenvald (2006) refers to as Declarative-assertive, and which precedes (Present and Past) Tense, is a genuine speech act marker or an affirmative/emphatic marker (see Aikhenvald 2003, section 16.9).

(13)a kawhi   nu - iſa – **ka - sita**   (Aikhenvald 2006,179)

     manioc.flour   1sgA – drink - **REC.PAST.VIS.- PERFECTIVE**

     'I have already drunk manioc flour (mixed with water)'

    b ñama - ita   [nu - eku   nu – pinita – **ka - na**]   (Aikhenvald 2006,190)

     two-numeral.cl:anim 1sg – run   1sg-pursue – **DECL – REM.PAST.VIS.**

     'I pursued two (pigs) by running'

(II)m (Asp V Mood Tns) This order is attested in Xârâcùù (see (14)), and Tinrin (see (15)), two Melanesian (Austronesian) languages of New Caledonia[18], and in the Coast Salish languages Saanich (Montler n.d. - see (16)a-b) and Sooke (Efrat 1969 – see (17)a-b):

(14)a è   wâ catoa   (Xârâcùù - Moyse-Faurie 1995,116)

    3sg **PERF** go.out

    'He went out'

   b è nä kwé   (Xârâcùù - Moyse-Faurie 1995,117)

    3sg **PROG** dance

    'He is dancing'

  c ke xâpârî **kae na** mûduè-nâ?   (Xârâcùù - Moyse-Faurie 1995,157)

    2sg see   **Q PAST** brother-1sg

    'Have you seen my brother?'

  d è   xwa **kae na** amû   (Xârâcùù - Lynch 2002a,774)[19]

    3sg rain **Q PAST** yesterday

    'Did it rain yesterday?'

(15)a wiri tramwâ **ghai nrâ**   (Tinrin - Osumi 1995,204)

    2pl   know   **Q PAST**

     'Did you know?'

   b nrâ **re ubwê** mwage tenisù (Tinrin - Osumi 1995,188)

    3sg **HAB ITER**   play   tennis

     'He often plays tennis'

(16)a ɁənɁé **ə** čə **sə**   (Saanich - Montler, n.d., section 2.6.2.1.1)

    come **Q** Evid **FUT**

     'Is he coming?'

   b **kʷɫ**   xʷəy Ɂal   (Saanich - Montler, n.d., section 2.6.1.1)[20]

    ASP_REALIZED die Limit

     'He already died'

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[18] Frequentative, progressive, and perfect aspect also precede the verb in Tinrin (see Osumi 1995,184,187f). Future tense precedes the aspect particles and the verb (Osumi 1995,191,204f,228), thus giving Tns Asp V Mood as an alternative to the Asp V Mood Tns order. If Future is lower than Past (see Cinque 1999, 72f), the above orders are not really alternative. Both would be derivable by moving the constituent containing the Future head (and all lower heads) above the Past Tense and (speech act) mood heads: [(FUT) HAB FREQ PERF PROG ITER V]_K Q PAST t_K.

[19] To judge from Lynch (2002a,774), who gives (i) as an alternative to (14)d in the text, with the interrogative particle following the tense particle, Xârâcùù instatiates also the order Asp V Tns Mood:

(i) è wa **na**   amû   **kae**

  3sg rain **PAST** yesterday **Q**

  'Was it yesterday that it rained?'

Again, to judge from the different translations given by Lynch, these may not really be alternative orders. Rather, it seems that the interrogative head attracts to its specifier whatever falls directly under its scope (the VP in (14)c-d, and the adverb in (i), with further raising of the backgrounded material).

[20] Montler (n.d., section 2.6.1.1) says that **kʷɫ** is an aspectual particle closely corresponding to English 'already'.

(17)a qʷáč   s ə́ iəʔ sxʷ   (Sooke - Efrat 1969,189)
     beat.up 1p **Q Past** 2p
     'Did you beat me up?'
   b **huʔ**   yéʔ **łə** łt   (Sooke - Efrat 1969,43)[21]
     ASP_{CONTEMPORARY} go **FUT** 1pl
        'We'll go'

(II)n (V Asp Mood Tns)
This order is instantiated in Kanoê (a language isolate of Brasil), with Past tense (see (18)); it also appears instantiated in Lummi (Coast Salish - Steele 1981; Jelinek 2000), with Iterative aspect (see the order V-Mood-T in (19), and the fact, pointed out in Jelinek and Demers (1997,310f), that Iterative aspect in Lummi is expressed by reduplication of the root):

(18)a kamitsi   aj kwini   po   ō-**e**   **tsere**-re   (Kanoê - Bacelar 2004,222)
     yesterday 1sg fish   catch 1-**DECL**   **PAST**-Aux
      'Yesterday, I caught fish'
   b oj   ty-**e**-ro-**e**-re   (Kanoê - Bacelar 2004,226)[22]
     3sg   move-**PROG**-CLV-3-**DECL**-AUX
     'He is leaving [ele está indo]'

(19) xčit-**ə-lə**-sxʷ   (Lummi - Steele 1981,60)[23]
    know-**Q-PAST**-you
    'Did you know it?'[24]

Another language displaying the order V Asp Mood Tns may be Lotha (Naga, Tibeto-Burman). Acharya (1983,127) says that the structure of the verb with an aspect marker is V-aspect-tense, and

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[21] Efrat (1969) does not explain what "contemporary" aspect is, but she explicitly states that aspectual particles precede the predicate (p.38ff), while interrogative and tense particles follow the predicate, in that order (p.188f).

[22] Progressive aspect is also expressed by reduplication of the root (Bacelar 2004,223). The order with Future Tense is instead V-Asp-Tns Mood. Once again the Future Tense head behaves differently from the Past Tense head. Similarly to the Tinrin case seen in fn.18 the two orders suggest the presence of a roll-up movement of V around the aspect and the Future Tense heads, followed by movement of [V Asp Fut] above the Past Tense and (speech act) Mood heads.

[23] Given their second position clitic nature, the Mood and Tense morphemes can also precede (in that order) the main V if some constituent other than the verb is in first position:

(i)a λ'el-**ə-sə**-sən   ʔuʔ   xčit   cə swəyʔqə?   (Steele 1981,63)
    also-**Q-FUTURE**-I   connective particle   know   the man
     'Will I know the man too?'
   b mək'ʷ=**ə**=**lə'**=sxʷ   'əw'   ŋa-t-Ø   (Jelinek 2000,225)
     All=**Q**=**PAST**=Nom2s Link   eat-C:Trans-Abs3
     'Did you eat it up completely/eat all of them?'
Also see the V-M-T of Klallam, another Salishan language, in (ii):
(ii) ʔítt_**u_ya**ʔ   cə nəsčáʔča?   (Montler 2004,304)
    sleep_**Q_PAST** det my friend
    'Did my friend sleep?'

[24] 'lə' appears to be either Past or Anterior Tense, as it can also follow alethic modals of possibility:
(i)a xčit-ə-q-**lə**-sxʷ   (Steele 1981,60)
    know-Q-POSSIBILITY-**PAST(ANTERIOR?)**-you
    'Could you have known it?

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says that "the structure of the interrogative verb is as follows: Verb+interrogative marker- Present tense marker". Although no examples are given with tense, aspect, and interrogative mood markers occurring together, at p.158 the author says that the structure of the verb is V(-aspect)(-mood)-tense.[25]

(II)p (Mood Asp V Tns)
This order is documented (as Mood Asp-V-Tns) in Nevome (Uto-Aztecan – Shaul 1986) (see (20)a-b),[26] and in Gunwinggu, a North Australian language of Arnhem Land (Oates 1964). See (21)a-c. Apparently, it is also instantiated in Slave (Athapaskan – Rice 1989), as Mood Asp-V Tns. See (22)a-c:

(20)a **n'**-apimu **ta** am'-nonorha (Nevome - Shaul 1986,85)
    Q-2pl   **PERF** Loc-return (Perf,pl)
    'Did you all return there?'
  b an'-**t'**-haquirid'-**cada** (Nevome - Shaul 1986,25)
   1s-**PERF**-count-**PAST**
    'I had counted'

(21)a dja:gdu-**ŋi** (Gunwinggu - Oates 1964,49)
    rain-**PAST.CONT**
   'It was raining'
  b ŋa-**yawoyʔ**-may (Gunwinggu - Oates 1964,53)
   1sg-**ASP$_{REPETITIVE}$**-good
   'I am good again'
  c **yidog** manme yidjare (Gunwinggu - Oates 1964,82)
    Q   food   want
   'Do you want some food?'

(22)a **ʔasi̧** netá ʔeghálayeda (Slave – Rice 1989,1003)[27]
    Q 2sg.father 3.works
   'Is your (sg.) father working?'
  b rahéhdze   **yi̧lé** (Slave - Rice 1989,420)
   1sg.shout.repeatedly **PAST**
    'I shouted repeatedly'
  c **de**déhji (Slave – Rice 1989,588)
   ASP$_{INCEPTIVE}$ripe
   'It is getting ripe'

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[25] Another non mirror-image order of postverbal markers in Lotha appears to be provided by the coccurrence of Past and Future tenses in that order (which is the direct order found preverbally – see Cinque 1999,72f):
(i) ā-nā   ótsì tsō-**t^{h}āk-c^{h}ò-v**   (Acharya 1983,138)
  I-nom rice eat-**PERF-PAST-FUT**
  'I should have eaten rice'
[26] The Nevome example glossed by Julien (2002,219), after Shaul (1986), as 3sg-Perf-Fut V is possibly to be thought as 3sg-Asp$_{perf}$-Asp$_{prospective}$. See the discussion in footnotes 41 and 54 below.
[27] Rice (1989,1003) explicitly says that "[q]uestion complementizers [..] are sentence-initial", pointing the overall order Mood > Asp > V > Tns.

(II)q (Mood V Asp Tns)

This order is attested in the Amerindian languages Sahaptin (Sahaptian) (see (23)), Nez Perce (Sahaptian) (Rude 1985,52 and 129), Northern Pomo (Hokan) (see (24)[28], Sliammon (Comox Salish – Watanabe 2003,457 and 515), Caddo (Caddoan – see (25)); in the Uto-Aztecan languages Comanche (Wistrand-Robinson and Armagost 1990,256 and 315), Timbisha (McLaughlin 2006, 58), and Nevome, with progressive aspect (Shaul 1986,22 and 84f); as well as in the Australian languages Gidabal (see (26), from Geytenbeek and Geytenbeek (1971), Ngiyambaa (Pama-Nyungan - Donaldson 1980,196 and 263), Ngawun (Breen 1981,59 and 70), Nunggubuyu (Hughes and Healey 1971,57 and 65), and Pitjantjatjara (Glass and Hackett 1970, 32 and 74).[29] It is also attested in Iatmul (Papuan – Staalsen 1972,49,50 and 57), in Bhojpuri (Indo-Aryan – Shukla 1981,280 and 310), and in the Munda languages Santali (Gosh 1994,106 and 152) and Kharia (see fn.13 above).

(23) **watxán**=am   á-qinu-**šan-a**..   (Sahaptin -Rigsby and Rude 1996,679)
        Q=2sg   3Abs-see-**IMPF-PAST**
            'Did you see..?'

(24)a hosaha **ta** mito ʔuy dithal-**e**   (Northern Pomo – O'Connor 1992,269)
        smoke **Q** 2s eye hurt-**PRES**
        'Is the smoke hurting your eyes?'
    b mo:wal ʔa: dade:-**d-e**   (Northern Pomo – O'Connor 1992,47)
        3sm 1sA push-**PROG-PRES**
        'I am pushing him'

(25)a (ʔi)káh-**nunʔ-ʔaʔ**   (Caddo - Melnar 2004,76)
        shoot-**ITER-FUT**
        'He will holler at intervals'
    b t'án#si-**wah**-ʔawi-wid(i)-**ʔaʔ**   (Caddo - Melnar 2004,86)[30]
        PARTIAL.NEG#2PAT-**Q**-ABS.SG-arrive-**FUT**
            'Won't you come?'

(26) **niaŋ**   dařbaŋ gawa-**le-:n**   njulaŋam   (Gidabal - Geytenbeek and Geytenbeek 1971,45)
        Q   sticks break-**REP-PAST** they
        'Were they breaking sticks?'

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[28] The order of the evidential and tense/aspect suffixes in Northern Pomo would appear not to conform to the Mirror Principle, if the former suffixes correspond to a head higher than Tense and Aspect (Cinque 1999, chapter 3, section 3.6). See O'Connor (1992,51), where it is explicitly noted that "evidentials may be followed by the past/perfect marker", and where examples such as (i) are given:
(i) mo:w duhú-**do-y**
    3sm.A leave-**EVID-PERF**
    'He left, I heard tell'
[29] It is also instantiated with free morphemes (the preverbal Exhortative particle *pa*, the postverbal Progressive particle *me*, and the Past and Future auxiliaries (*(a)yi*) and (*(a)tu*)) in Maranungku (Northern Australia – Tryon 1970,44ff).
[30] The first position (separated by "#" from the prefixes) is a proclitic position, which can host over one hundred clitics, among which tense, aspect, and mood ones (Melnar 2004,57ff). This may give rise to apparent violations of the Mood > Tense > Aspect order. See section 2 for discussion of such cases.

(II)t (Tns Asp V Mood)

This order appears to be instantiated in a number of Oceanic (Austronesian) languages (Gapapaiwa - see (27)), Loniu (Hamel 1994,149), Tigak (Beaumont 1979, 35 and 78ff), and Taiof (Ross 2002f, 437f):

(27)a a-**na-tu**-tutui   (Gapapaiwa - McGuckin 2002,309)
　　　1sg-**FUT-IMPF(PROG?)**-hammer
　　　'I will be hammering'
　　　b Namada　　　ku-vi-kovin=I　　　　　　　**bo** (Gapapaiwa - McGuckin 2002,317)
　　　already　　2sg.non-PRES-CAUS.PAST-finish=Trans　**Q**
　　　'Did you already finish?'

It is also displayed, with free morphemes, by Kom (Benue-Congo – see (28)), Thai (Tai-Kadai – see (29)), Cambodian (Khmer – cf. Jacobs 1968,61; Spatari 2005,490), and Coast Tsimshian (Sm'algyax) (Penutian - Mulder 1994,80 and 178); with bound morphemes (Tns-Asp-V-Mood)**,** by Tiwi (Australian – see (30)) and Blackfoot (Algonquian – see Franz 1991, 33 and 132f); and with both bound and free morphemes (Tns Asp-V Mood) by Cogtse Gyarong (Tibeto-Burman – see (31)).[31]

(28) Sam **tí**　　**men**　　　gwì　**a**?　　　(Kom - Chia 1976,231)
　　Sam **PAST COMPL/PERF** come　**Q**
　　'Did Sam come?'

(29)a khun **cà** pay hăa phîan **máy**　　　(Thai - Hudak 1987,45)
　　　you　**FUT** go　see friend　**Q**
　　　'Are you going to see a friend?'
　　b lom khong **cà?** **kamlang** phát　　(Thai - cf. Cinque 1999,159)
　　　wind EPIST **FUT** **PROG**　　blow
　　　'The wind must be blowing'

(30)a ŋə-**ru-untiŋ**-apa　　　　　(Tiwi - Osborne 1974,42)[32]
　　　I-**PAST-PROG**-eat
　　　'I was eating'
　　b waija tuap-**ana**　　　　　(Tiwi - Osborne 1974,68)
　　　already you.ate-**Q**
　　　'Have you eaten?'

(31)a na　**ke-nə**-pya-n　　　　　(Cogtse Gyarong - Nagano 2003,477)
　　　1sg **TNS-PERF**-take-1sg
　　　'I had taken (it)'

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[31] Hoan (Khoisan) seems to be another case (see (i)a-b, from the grammatical sketch found in the Cornell University Khoisan web-site http://instruct1.cit.cornell.edu/courses/ling700/hoan.htm):
(i) a Ma　　　**i**　　!hon　　ku　　@koa
　　1sg　　**PAST** kill.sg　sheep　two
　　'I killed two sheep'
　b U　　　　**'a-**'am　//ka"e **ya**
　　2sg　　　**PROG**-eat　meat　**Q**
　　'Are you eating meat?'
[32] Osborne (1974) glosses the prefix 'untiŋ' as Durative Aspect, but his characterization of it (on p.42) appears to fit the characterization of Progressive Aspect more closely. Judging from his translations, also the prefix glossed 'future' may correspond to a lower Prospective Aspect head, rather than to Future Tense. See fn. 41 below.

b ni-gyo tə-rgyap **nət**-sarn **mo** nos   (Cogtse Gyarong - Nagano 2003,476)
   2PL (HON) marriage **PERF.**2PL-marry **Q** AUX
   'Have you got married?'

(II)u (Tns V Asp Mood)
This order is attested in a number of Oceanic (Austronesian) languages. See (32), from Urak Lawoi', Kaulong (Ross 2002e,400f and 407ff), and Kairiru:[33]

(32)a kaw **naʔ** pi kaʔ lawoc **gə**   (Urak Lawoi' - Hogan 1999,38)
      you **FUT** go to sea   **Q**
      'Will you go to sea?'
   b siyaʔ   **dah**   **gər**   (Urak Lawoi' - Hogan 1999,40)[34]
      ready **ASP**_{STATIVE} **Q**
      'Are we ready?'

It is also documented in Ouldeme (a Chadic language of Cameroon– Kinnaird 1999), where Future and Aorist precede the V, Habitual and Completive aspect are suffixed to the V, and an interrogation particle is found sentence finally (only followed by afterthoughts) (see (33)), and in the Bantu language Kîîtharaka (Muriungi 2006) (see (34)):

(33)a …, k-ə-ndəb-ar   a gubar gwakw ziŋ **a**   (Kinnaird 1999,15)
        2sS-Aorist-offer-3sSIO to man   your   really **Q2**
         '…, do you in fact offer any to your husband?'
   b ana   k-ə́-bek-**erge**   aghar yo áne də di n-ə́-sliyo   (Kinnaird 1999,26)
      if 2sS-**FUT**-drive-**COMPL** co-wife my this Neg Top 1sS-FUT-leave
      'If you don't drive out with my co-wife, I'll leave'

(34)a Maria   a- **rî**- tûmir-a ki-a Musa   (Kîîtharaka - Muriungi 2006,28)
     1-Maria SM1-**PRES**-use- FV 7-AS 1Musa
       'Maria is using of Musa's [class 7 objects]'
   b aga i- kû- mam- **ag**- a   mbea   nyinî mûno (Kîîtharaka - Muriungi 2006,43)
      here F-SM-17-sleep-**HAB**-FV 10-mouse many very
       'Here sleep many mice'
   c Gi-ciati kî-rî   nja   î-no **anga**   (Kîîtharaka - Muriungi 2006,38)
      7-broom SM7-be 9-out 9-this **Q**
       'Is the broom here outside?'

(II)v (V Tns Asp Mood)
Quite a number of languages and language families appear to instantiate this order. Fernandez (1967,30 and 44) explicitly claims that this is the order of the tense, aspect, and interrogative mood suffixes of Remo (Munda)). See (35)a-b:[35]

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[33] Ross (2002a) explicitly says that tense particles are preverbal (p.211), that aspectual distinctions are as a rule expressed by postverbal particles (p.211), and that the negative imperative particle *sabin* occurs at the end of the clause (p.214). Longgu might be another case of Tns V Asp Mood if the particle *ho*, which Hill (2002) calls irrealis, is in fact Future Tense, as the glosses seem to suggest.
[34] Urak Lawoi' also has Asp V Tns Mood as an alternative order. See fn. 43 below.
[35] On p.30, he states that the order of verb, modality, tense, aspect, and person agreement suffixes is: Root + Modality + Tense + Aspect + Person, adding on p.44 that the interrogative suffix is "after the closing 'personal ending' morpheme".

(35)a sum-**to**-no-**ki**   (Remo - Fernandez 1967,51)
      eat-**IMPF**-Pers.agr-**Q**
      'Do you eat?'

   b sum-**oʔ**-no-**ki**   (Remo - Fernandez 1967,51)
      eat-**PAST**-Pers.agr-**Q**
      'Did you eat?'

   c o-sum-**oʔ-ti**-iŋ   (Remo - Fernandez 1967,56)
      caus-eat-**PAST-IMPF**-Pers.agr
      'I have caused to eat'

The same order is attested in some Niger-Congo languages: Mundang (Adamawa) (see (36)) and Noon (West Atlantic) (see (37)a-b), and in some Nilo-Saharan languages (Me'en – Will 1989,sect.5.1), with Past Tense.[36]

(36) mò dòŋ fɨ̃ɛ̄ **Ɓāā də̀mn ē**   (Mundang - Elders 2000,389)
     2sg do what **PAST HAB Q**
     'What did you usually do?'

(37)a Ya toon-**ee-ra** wa   (Noon - Soukka 2000,200) [37]
       s/he sell-**PAST-ASP**$_{PUNCTUAL}$ obj(C1sg)
       'S/he sold it'

    b Fu wo'-**in** Peer-**e**   (Noon - Soukka 2000,181)
       you tell-**PERF** Pierre-**Q**
      'Have you told Pierre?'

The same order appears to be instantiated in Osage (Siouan), with Continuative aspect, (see (38)) [38]; and, with Inchoative aspect, in Hup (Maku) (which has the order V-Asp-Tns-Mood with other aspects); see (39); in Creek (Muskogean – Martin 2000,388); in the Dravidian language Abujhmaria (with V-Tns-Asp Mood: Natarajan 1985, 199, 225) and in the (non-Austronesian) Papuan languages Salt-Yui (Irwin 1974,11),[39] Golin (Bunn 1974,21), and Amanab (with Habitual aspect). See Minch (1991,83).

(38) šoošówe naniópa ðaašóe hta apai   (Osage - Quintero 2004,328)
     šoošówe naniópa Ø-ðaašóe **hta apa-ðe**
     always   pipe   A3s-smoke **FUT 3.CONT-DECL**
     'He will always smoke'

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[36] As Will (1989) notes, "the perfective aspect is possible only with verbs in the past or in the imperative mood" (p.142). In both cases it follows (see (i) and (ii)). Will (1989,146) also notes that questions are formed by "adding the suffix –(k)o or –wo to the end of the sentence", thus giving with (i) the order V-Tns-Asp-Mood. (i) and (ii) might also suggest the order V-Mood-(Tns)-Asp.
(i)a nen ak-**aa-boy**
      he hit-**PAST-PERF** 'he has hit'
   b nen ak-**aa**   nor-**boy**
      he hit-**PAST** elephant-**PERF** 'he has hit the elephant'
(ii) ir-**a-boy**
      drink-**IMP**(sg)-**PERF** 'Drink (it) – and make sure you finish it!
[37] Soukka (2000,175) refers to this aspect as "punctual", and glosses it on p.185 "for a moment", saying that with Past Tense it is also used to form the pluperfect (p.184f). Other aspects that follow the verb are the Habitual, and the Perfect. The Progressive aspect particle instead precedes the verb.
[38] With Iterative aspect it is instead V Asp Tns Mood. See Quintero (2004,279).
[39] The order of suffixation given by Irwin (1974,11,19-22) is V-Neg-Tense-subject-Aspect-(speech act) Mood.

(39) yũ' wəhəd-tég-ay-há   (Hup - Epps 2005,222)
     João old.man-**FUT-INCH-DECL**
     'João will get old'

It is also documented in a number of Tibeto-Burman languages. Examples instantiating the order V-Past-Impf(Prog?)-Q are given for Limbu in Van Driem (1987) (see (40)); Tolsma (2006,105 and 147) gives examples instantiating the order V-Past-Cont-Q; Ebert (1997,49 and 53) documents the same order in Athpare with Progressive aspect (alternating with V-Asp-Tns-Mood with Perfect aspect); Abraham (1985,95) documents the orders V-Past/Fut-Prog and V-Past-Perf in Apatani, saying that "yes/no questions are formed by adding 'ha' to the end of the sentence" (p.103), which means that the language has V-Tns-Asp Mood at least as one of its orders.[40]

(40) Kɛ-ips-ɛ-tchi-**ba-ị**   (Limbu - Van Driem 1987,90)
     2-sleep-**PAST**-du.ABS-**IMPF-Q**
     'Have you being sleeping?'

Another Tibeto-Burman language which displays this order with free morphemes is Hmar. (41) shows the postverbal order of tense and aspect morphemes:

(41) ká pèk **lái**   **ziŋ/mè:k**   (Hmar - Dutta Baruah and Bapui 1996,67)
     Isg give **PAST**   **PROG**
     'I was giving'

Dutta Baruah and Bapui (1996,137) further say that although yes/no questions are generally formed by simply adding interrogative intonation, "an element like /ti/ or /ni/ could optionally appear in the final position in the sentence", thus displaying an overall order V Tns Asp Mood.[41]

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[40] With phasal aspects (Completive and Inceptive) the order is instead: V-Asp-Tns Mood. See (i)a-b:
(i)a mó ó mi bi-**ja-ne**   (Apatani - Abraham 1985,96)
      he beer Acc give-**ASP_COMPLETIVE-PAST**
      'He completed the giving of beer'
    b lu-**ri-ne**   (Apatani - Abraham 1985,96)
      tell-**ASP_INCEPTIVE-PAST**
      'began to tell'
[41] Mishmi (Tibeto-Burman - Devi Prasada Sastry 1984, 129ff) might also display this order, with bound morphemes (but, given the lack of information about the position of Mood morphemes, it could also be an instance of the orders (II)c, or (II)d,). See (i) and (ii):
(i) thá-**so-biri**   (Mishmi - Devi Prasada Sastry 1984,130)
     eat-**PAST-PROG**
     'was/were eating'
(ii) thá-**ne-biri**   (Mishmi - Devi Prasada Sastry 1984,129)
     eat-**FUT-PROG**
     '(I) shall be eating'
In the same language, one finds other non 'mirror-image' orders such as V-HAB-CAUS (see (i)), where a high aspect suffix (Habitual) is closer to the verb than the low causative suffix:
(i) ajyindyabya páhwãkyã kêstiyà khí-**à-bo**   (Mishmi - Devi Prasada Sastry 1984,181)
    queen-Nom frog-Loc case-Acc reach-**HAB-CAUS**
    'The queen brought the case on the frog'
To judge from Bjӧrverud's (1998,126) gloss of the sentence (ii) below, another Tibeto-Burman language displaying the order V Fut Impf (or Prog) would seem to be Lalo; but one should be cautious given that Future Tense morphemes are often identical to Prospective Aspect morphemes, which are located lower than Imperfective/Progressive Aspect morphemes (see Cinque 1999, 209fn.63). In fact the translation given by Bjӧrverud makes one think of Prospective Aspect rather than Future Tense (thus making the order of functional morphemes in Lalo the mirror image of the order of the corresponding preverbal ones):

(II)y (Asp V Tns Mood)

This order is attested in a number of (non-Austronesian) Papuan languages of New Guinea: Amanab (Minch 1991,10,17ff,60), Namia (see (42) from Feldpausch and Feldpausch 1992), Nend (Harris 1990,139 and 154), Yagaria (see (43), from Renck 1975)[42], in the Austronesian languages Urak Lawoi' (Hogan 1999)[43], and Pazeh (Li 2000,104), in the Hokan language Diegueño (see (44) from Langdon 1970), in the Athapaskan language Slave (Rice 1989,1114,1131), in Hungarian (Finno-Ugric – Cinque 1999,154), and, with Habitual aspect, in the Tibeto-Burman language Nocte (Das Gupta 1971,16ff):

(42)a ne wala wir-**e-a**   (Namia - Feldpausch and Feldpausch 1992,55)
    2s place build-**PRES-Q**
    'Are you building a house?'

  b ija Tai **par-po**-ko-kwam-**e**…   (Namia - Feldpausch and Feldpausch 1992,55)
    and T. **REP-PERF**-tr-say-**PRES**
    'And Tai talked again saying…

(43)a havi-**d**-i-**vie**   (Yagaria - Renck 1975,101)
    hear-**PAST**-3sg-**Q**
    'Did he hear?'
  b **no**-d-a-**pie**   (Yagaria - Renck 1975,101)
    PROG-eat-2sg-**Q**
    'Are you eating?'

(44)a **tu**-yak   (Diegueño - Langdon 1970,147)
    PROG.3sg-is lying there
    'He is lying there9
  b ma'=**x**=**a**   (Diegueño - Langdon 1970,186)
    you.go=**FUT**=**Q**
    'Are you going?'

This order is also found with free morphemes in Tondi Songway Kiini (Nilo-Saharan), where the Imperfect aspect morpheme precedes the verb and both the Past Tense morpheme and the question marker *wàlá* follow it in that order (cf. Heath 2005,175,182), in Mina (Chadic), where the future and interrogative particles follow the verb, in that order, and the Habitual aspect particle precedes the verb (Frajzyngier and Johnston 2005,183,200), and in the Adamawa-Ubangi (Niger-Congo) language Ngbaka (Thomas 1963), where aspectual morphemes precede the V (p.203), and tense and interrogative mood morphemes follow the V (in that order) (p.200 and p. 252).

(II)z (V Asp Tns Mood) Very many languages instantiate this order, the mirror image of the preverbal Mood Tense Aspect order. It is found in many languages of the Caucasus (see, for example, Lezgian – Haspelmath 1993,140 and 417, Dargwa – Sumbatova and Mutalov 2003,135),

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(ii) thùdzí tjhə ku dí à tjhígə   tjhə ku bìq   pɛ **wu à**
  pine tree one CLF on Top suimi-rice one CLF throw stick on **FUT IMPF [PROSP PROG]**
  '[She] was going to throw some suimi-rice onto some pine trees'

[42] Other (non-Austronesian) Papuan languages of New Guinea display the order V Asp Tns Mood. See under (II)z.

[43] Hogan (1999) mentions the existence of a Continuative Aspect particle preceding the V (p.7f), of a postverbal particle expressing Past Tense (p.8), and of an interrogative particle "which occurs at the end of a yes/no question" (p.19).

in Dravidian (Hill Madia – Vaz 2005, 10 and 23, Malayalam – Jayeseelan 2005,20, Telugu – Vijayanarayana 1993,105) in Eskimo-Aleut languages (Aleut – Cinque 1999,158, West Greenlandic – Fortescue 1984,11 and 275; Sadock 1984, 213); in many Tibeto-Burman languages (Belhare – Bickel 2003,568, Burmese – Soe 1999, 133 and section VI, Chepang – Caughley 1982,46, Garo – Burling 2003,391 and 399, 2004, 94f, Karbi –Jeyapaul 1987, 115,120, Kinnauri – Sharma 1988,155, Saxena 2000,230, Kokborok – Pushpa Pai 1976,68,72f, Lai Chin - Kavitskaya 1997,210, Manipuri - Bhat and Ningomba 1997, chapter 11 and 14, Mao Naga[44], Newari[45], Thulung Rai – Lahaussois 2002,183 and 2003,18, Tshangla – Andvik 2003,446ff, Athpare - Ebert 1997,53); in some Munda languages (Korku – Nagaraja 1999,86,101)[46]; in Manchu-Tungusic (Evenki – Cinque 1999,154, Nedyalkov 1994,2 and 256, and Bulatova & Grenoble 1999,27,52f), Turkic (Turkish - Kornfilt 1997, sections 1.1.1.2.1, 2.1.3.2, and 2.1.3.3; Sezer 2001; Cinque 1999,155 and 2001; Enç 2004)[47], Mongolian (Cinque 1999,154), Japanese (Nakau 1976), and Korean (Cinque 1999,154), all attributed to the Altaic family); in Indo-Aryan (Marathi - Pandharipande 1997,417 ; Oriya – Ray 2003,457 and 459; Asamiya – Goswami and Tamuli 2003,426 and 436); in some Niger-Congo languages (Obolo – Aaron 1999); in various (non-Austronesian) Papuan languages (Auyana - see (45)), Menya - Whitehead 1991,266; 2004,122), Sanio-Hiowe (Lewis 1972)[48] Fore, Wahgi – cf. Cinque 1999,66 and 161f, and references cited there; Tauya (MacDonald 1990,200); Tainae – Carlson 1991,13,106; Mauwake - Berghäll 2006; Eipo – Heeschen 1998,155); in some Oceanic (Austronesian) languages (Takia)[49]; in various Amerindian languages: Lakota and Tutelo (Siouan – Ingham 2003,33f, Oliverio 1996,118), Nuuchahnulth (Nootka) (Wakashan – Nakayama 2001,31 and 87 and Davidson 2002,288 citing Swadesh 1933,109), Sabanê (Nambikwaran – see (46)), Hup (Maku – Epps 2005,670); in various Australian languages (Walmadjari – Hudson 1976,656f, 661f; Panyjima – Dench 1991,172,207); in Chukotko-Kamchatkan (Itelmen - cf. Georg and Volodin 1999,157, ex. (249)).

It is also found in a number of isolate languages: Cohahuilteco (Cinque 1999,165), and Urarina (Olawsky 2006, 456ff).

(45) Ati-yuwa-na-um-no   (Auyana - McKaughan and Marks 1973,188))
    pour-**COMPL-FUT**-1sg-**Q**
    'Will I pour it all out?'

(46) Uli   ay-i-**say-al-a**   (Sabanê - Antunes de Araujo 2004,206)
    2SUBJ go-VERB.SUFF-**PROG-PRES-Q**
    'Are you leaving?'

Of the 24 mathematically possible combinations of (speech act) Mood, Tense, and Aspect, 13 (namely (I)a, (I)b, (I)c, (I)d, (I)m, (I)n, (I)p, (I)q, (I)t, (I)u, (I)v, (I)y, and (I)z) can be derived if the

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[44] Giridhar (1994) gives the order V Prog Fut (p.295) and the order V Fut Interrogative (p.398).

[45] Richardsen Westergaard (1988) gives the orders V Past Interrogative (p.23) and V Prog Past (p.25).

[46] *..soT-khu-ba* (stay-HAB-NONPAST 'would stay' p.101) and *je-ba ki co:ch* (give-NONPAST Q 'will you give?' p.86)

[47] Enç (2004), even if converging on the order (Past) Tense > Aspect> V, claims that Turkish provides evidence against the rigid ordering of functional categories suggested in Cinque (2001b). Her arguments however do not seem to me cogent. Although she adds interesting observations on further readings available in the presence of the auxiliary verb *ol-* 'become', she does not consider the possibility that negation may occur in more than one position, and that the suffix -*ecek* may be ambiguous in Turkish between Future Tense ('will') and Prospective Aspect ('be about to').

[48] With the Prohibitive Mood marker, the order is Mood V Asp-Tns:

(i) **o**   aiwawi asi **ro-we**   (Sanio-Hiowe - Lewis 1972,13)
   PROH this.way load **DUR-PAST**
   'Don't load the canoe in that way!'

[49] Ross (2002b, 239ff) gives evidence for the following order of postverbal enclitic particles: V > Durative > Future > Interrogative.

following assumptions are adopted (see Cinque 2005 on the attested orders of demonstrative, numeral, and adjective modifiers in the DP):

47)a. Order of merge: $[…[_{MoodP}$(speech act) Mood$…[_{TenseP}$Tense$…[_{AspP}$Aspect $[_{VP}$V$]]]]]$[50]
    b. Parameters of movement:
        i) No movement, or
        ii) VP movement without Pied-piping, or
        iii) VP movement plus Pied-piping of the *whose pictures*-type[51], or
        iv) VP movement plus Pied-piping of the *pictures of who*-type[52]
        v)   *total* vs. *partial* movement of the VP with or without Pied-piping
        vi) *obligatory* vs. *optional* application of movement.
        vii) No movement of a phrase not containing the VP is possible (except for (focus) movements to the left of a second-position element).[53]

 (I)a is derived if nothing moves; (I)b is derived if VP raises to a Spec between Tense and Aspect, with no further movement involved (Mood Tns VP_k Asp t_k); (I)c is derived if the VP moves further to a Spec between Mood and Tense (Mood VP_k Tns (t_k) Asp t_k); (I)d is derived if the VP moves further to a Spec higher than Mood (VP_k Mood (t_k) Tns (t_k) Asp t_k); (I)m is derived if VP moves to a Spec higher than Mood pied piping the projection dominating Asp ($[$ Asp $VP]_i$ Mood (t_i) Tns t_i); (I)n is derived if VP raises to a Spec between Tense and Aspect, and then raises to a Spec higher than Mood pied piping the projection dominating it and Aspect ($[VP_k$ Asp $t_k]_i$ Mood (t_i) Tns t_i); (I)p is derived if VP moves to a Spec between Mood and Tense pied piping the projection dominating Asp (Mood $[$Asp $VP]_i$ Tns t_i); (I)q is derived if VP raises to a Spec between Tense and Aspect, and then raises to a Spec between Mood and Tense pied piping the projection dominating it and Asp (Mood $[VP_k$ Asp t_k $]_i$ Tns t_i); (I)t is derived if VP moves to a Spec higher than Mood pied piping the projection dominating Tense, Aspect and VP ($[$Tns Asp $VP]_i$ Mood t_i); (I)u is derived if VP raises to a Spec between Tense and Aspect, and then raises to a Spec higher than Mood pied piping the projection dominating Tense, VP and Aspect ($[$Tns VP_k Asp $t_k]_i$ Mood t_i); (I)v is derived if VP raises to a Spec between Mood and Tense, and then raises to a Spec higher than Mood pied piping the projection dominating it, Tense and Aspect ($[VP_k$ Tns (t_k) Asp $t_k]_i$ Mood t_i); (I)y is derived if VP moves to a Spec between Mood and Tense pied piping the projection dominating Aspect, and then raises to a Spec higher than Mood pied piping the projection dominating Aspect, VP and Tense ($[[$Asp $VP]_i$ Tns $t_i]_j$ Mood $t_j]$); (I)z is derived if VP moves to a Spec between Tense and Aspect, then moves to to a Spec between Mood and Tense pied piping the projection dominating VP and Aspect, and then raises to a Spec higher than Mood pied piping the projection dominating it, Aspect and Tense ($[[[VP_i$ Asp $t_i]_j$ Tns $t_j]_l$ Mood $t_l]$).
The other attested orders appear to have special marked derivations, as discussed in the following section.

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[50] Although I assume Move (when it takes place) to be interspersed with Merge, in accord with the Extension Condition (Chomsky 1995,327f), in (47)a I have just indicated the applications of Merge, for simplicity.
[51] Namely movement of [VP [XP]].
[52] Namely movement of [XP [VP]].
[53] For which see Section 2. It remains to be seen whether V (head) raising can be dispensed with entirely in favour of VP or $[_{XP}$ ..VP..] raising. Perhaps not, if English-type Subject Auxiliary Inversion (*Will he like the book*?), or the incorporation (left-adjunction) of a lower particle to a higher one in languages like So (see fn.57 below) are tyo be analysed as movements of a (functional) head.

2. Apparent violations of the Mood > Tense > Aspect preverbal order.

Abstracting away from arguably spurious cases of preverbal orders different from Mood > Tense > Aspect which arise from a non appropriate attribution of some morpheme to a certain category[54], there appear to be some genuine exceptions to the generalization that preverbally the order is rigidly (speech act) Mood > Tense > Aspect.

The first class of apparent exceptions involves reversals of either Tense or Aspect with (speech act) Mood. Such reversals can plausibly be argued to arise from special A-bar (focus) movements (much as with reversals of the prenominal order Dem Num A in the DP – cf. Cinque 2005,fns. 2 and 23). One such case is provided by Amanab (Papuan – Minch 1991,1992), where one finds the order Perfective Aspect particle > Interrogative particle > V (i.e. Asp Mood…V) as one of the possible orders of these elements. From Minch's description, however, it appears that the interrogative particle is a focussing particle attracting to its Spec what falls under its scope: "The yes/no question clause [..] is also marked by the question marker *ho* (QM) at the end of the clause or immediately following the particular argument questioned" (Minch 1992,140). See:[55]

(48)a ne-ba   bu ne-gim **ho**?   (Minch 1992,140)
    You-TOP water eat-INF **Q**
    'Do you want a drink of water?'
  b **ati ho** Kuma-ba   rakona sis-ba   (Minch 1992,140)
   PERF Q Kuma-TOP shoot kapul-TOP
   'Did Rata pound sago?'

Mbili (Grassfield Bantu (Niger-Congo) – Ayuninjam 1998) may be another case in point. See (49):

(49)a a **mi   la** (i)n nuu ntse daŋ   (Ayuninjam 1998,347)
    he **PAST₄ Q** LINK drink water any
     'Did he drink any water?'
  b a **mi ləgə** (i)n nuu ntse čə   (Ayuninjam 1998,347)
    he **PAST₄ DECL** LINK drink water some
     'He drank some water'

The question marker *la* appears to be a focussing particle (for example, it obligatory precedes wh-words (p.361) apparently forcing the remnant to raise to its left (cf. (50)):

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[54] See for example the order Aspect (progressive) > Tense (future) > V in van Minde's (1997) description of (Ambonese) Malay, in Osborne's (1974,42) description of Tiwi, mentioned in fn. 32 above, and in Tarpent's (1987) description of Nisgha (Tsimshianic). As is apparent from the way the authors translate the relevant sentences, what they gloss as Future is plausibly to be analysed as Prospective aspect ('be about to/on the verge of'); an aspect which is ordered below Progressive aspect (and obligatorily cooccurs with it in many languages). See Cinque (1999, chapter 4, section 4.22, and p.209,fn.63).
(i)a Be **ada mo** nae   (Minde 1997,173)
   1s **PROG FUT** climb 'I'm about to go into the interior'
  b Iyo, beta **ada mo** pi (Minde 1997,231)
    Yes, 1s **Prog Fut** go 'Yes, I'm about to go'
(ii) **yùkʷ=ł   tim** yò?okswé:ntkʷ-y (Tarpent 1987,205)
  PROG=NC FUT brush.o's.teeth-part
  'I am about to brush my teeth'
The same may apply to Palancar's (2004,58) gloss of the Otomi (Otomanguean) sentence in (i)
(i) **ma gà** kəde(-Ø)
  PROG FUT put.something.on.below.the.waist(-3obj)
  'I'm going to put it on (i.e., a skirt)'
[55] The first of the two cases can be in fact be seen as a special case of the second.

(50) nɨ zwen **la** (a)kəə   (Ayuninjam 1998,234)
    2pl buy **Q** what
    'What did you buy?'

If so (49)a might also involve raising of [*nuu ntse daŋ* 'drink water any'] to Spec.Focus, followed by merge of *la*, in turn followed by raising of the remnant to Spec,*la*. (possibly meaning more literally: "was it drink water that he did?").[56]
The same analysis may carry over to Yurok (Algic (California) - see (51), from Dryer 2005,374), as the question particle *hes*, to judge from Robins (1958,139) ("*hes* is usually the second word, but it may occur anywhere except initially") appears to be a second position particle, and to the Salishan languages Sliammon Comox (see (52)) and St'át'imcets (see (53), which also have second position interrogative morphemes:

(51) **kic** **hes** neskʷec-okʷ ku wɹʔyɹs
    PAST **Q** come-3sg   Def girl
    'Has the girl come back yet?'

(52) **taʔat_a_**čxʷ   θə.θt'$^{\theta}$- am'-**uɬ**   nəgi   (Sliammon Comox - Watanabe 2003,93)
    HAB_Q_2sg.Ind Red.Impf-jig-Mdl-**PAST**   2sg.Indp
    'Did you use to go jigging yourself?'

(53) **waʔ** **ha** **tu**ʔ čukʷ? (St'át'imcets - Matthewson 2003,69)
    IMPF **Q** **PAST** finish
    'Did he already stop?'

Interestingly, such reversals appear to be limited to languages with second position elements and with free Mood, Tense and Aspect morphemes (particles), which are susceptible of independent movement. As far as I have seen no reversals of Mood, Tense, and Aspect is attested with bona fide prefixes. Such orders thus seem not to represent genuine counterexamples to the order of Merge: (speech act) Mood > Tense > Aspect.[57]

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[56] The Declarative case (49)b may be analysed similarly, as the Declarative marker apparently also has focussing usages in Mbili (see Ayuninjam 1998,260).

[57] A possible variant of such limited reversals is represented by the existence, in certain languages, of complex functional morphemes which encode two such elements in the unexpected order. So, for example, Samoan (Austronesian) has a particle (*'olo'ua/'olo'o 'ua*) combining the progressive (*'olo'o*) and the perfect (*'ua*) particles, which "[a]ccording to the meaning of *'olo'o* expresses that the event is simultaneous with the moment of utterance or some other point of reference given by the context [and] [a]ccording to the meaning of *'ua* it indicates that this event is something new resulting from a change of the situation" (Mosel and Hovdhaugen 1992, 354).
While the expected order is Perfect Aspect > Progressive Aspect > V (cf. Cinque 1999,67 and 193fn42 for evidence to that effect), it could be that what is referred to as Perfect Aspect is actually a Perfect of result, which is lower than Progressive (see Cinque 2001b,51 for this apparent possibility in Turkish).
A similar situation is found in So (Africa, of uncertain classification), where the Progressive Aspect prefix precedes the Perfective aspect prefix (see (i)a). Even though Carlin (1993,54) says that the prefix "also has a perfect of result reading", examples like (i)b seem to suggest an incorporation analysis, as the progressive aspect prefix also comes to precede the (negative) past tense prefix:
(i)a **mut-i-**baa-k-as   (Carlin 1993,54)
    PROG-PERFV-tell-IMPERSONAL-1sg
     'I was told'
  b **mu-laan-**ab-dɛs   ratan   (Carlin 1993,57)
    PROG-NEG.PAST-warm-INGR stone
     'The stone didn't get warm'
In such cases, one could perhaps hypothesize the incorporation (left adjunction) of the Progressive Aspect head to the Perfect Aspect head.

A second class of exceptions may be represented by the systematic reversal of the order of Tense and Aspect morphemes in Athabaskan.

Speas (1991a,b) and Potter (1996), observe that the basic order of (conjunct) Subject/Object Agreement, Tense and Aspect prefixes in Navajo and Western Apache, respectively, is the opposite of what is taken to be the order of the corresponding syntactic heads preceding the verb: Object Agr-Aspect-Tense-Subject.Agr V (at least if what is called "primary aspect" in the Athabaskan literature, which comprises perfective, imperfective and progressive aspect, is taken to be the closest representative of Tense in these languages)[58]. Should this turn out to be a genuine reversal of the order of Merge (Mood>) Tense > Aspect, one could think of obtaining it from movement of the VP as in the languages of type (I)z (V-ObjA-Asp-Tns-SubjA), followed by raising of VP to a higher Spec($[VP_i$ [t_i-ObjA-Asp-Tns-SubjA]], followed by movement of the remnant ([[t_i-ObjA-Asp-Tns-SubjA]$_k$ [VP_i t_k]]. But this case needs to be investigated further.

The remaining, unattested, cases appear not to be derivable under any of the derivational options assumed here.

Appendix: List of abbreviations

A = adjective; Acc = accusative; ANT= anterior tense; ASP= aspect; CAUS= causative; CLF = classifier; COMP= complementizer; COMPL= completive (aspect); CONT= continuous (aspect); DECL= declarative; Def = definite; Dem = demonstrative; dl = dual; Det = determiner; DUB= dubitative (mood); DUR= durative (aspect); EPIST= epistemic (mood); EVID= evidential (mood); FUT= future (tense); FV= final vowel; HAB= habitual (aspect); HON = honorific; IMP= imperative (mood); IMPF= imperfect (aspect); INCH = inchoative (aspect); INGR = ingressive (aspect); IRR= irrealis (mood); ITER= iterative (aspect); Loc = locative; MOD= modal; N = noun; Num = numeral; PERF= perfect (aspect); PERFV = perfective (aspect); PL = plural; PRES= present (tense); PAST= past (tense); PRES = present (tense); PROG= progressive (aspect); PROH= prohibitive (mood); Q= yes/no interrogative (mood); RemPAST= remote past (tense); REP= repetitive (aspect); SM = subject marker; TNS= Tense; V = verb; VIS= visual (evidential).

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[58] Secondary aspect (here simply Aspect) "includes markers for aspectual elements such as seriative, terminative and inceptive" (Potter 1996,292), some of which may (also) be lower than (Im)perfective and Progressive Aspects (Cinque 2001a, 153).

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