

Licensing future

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Major claims:

In some languages without temporal morphology:

- Future readings are peculiar: verbal forms without temporal morphology receive present or past, but not future reading – Chinese (Smith and Erbaugh 2005, Lin 2006), Lillooet Salish (Matthewson 2006), Gitksan (Jóhannsdóttir and Matthewson 2007), Yucatec (Bohnemeyer 2009), Paraguayan Guaraní (Tonhauser 2011), Washo (Bochnak 2016), Atayal (Chen (in preparation)).
- They are available with an overt future/modal marker; in its absence, availability of the reading indicates **the presence of a covert future/modal element**.
- Yet, even in those languages restrictions on future can be more fine-grained:
 - a) it is restricted only in some contexts (Washo, Paraguayan Guaraní, Atayal);
 - b) it is aspectually restricted – the perfective is not (always) available (Chinese, Yucatec).

Serbian:

- This language with rich aspectual morphology also observes restrictions on the perfective with future reading.
- **Claim:** the apparently unsystematic aspectual distribution in Serbian can be captured in a principled manner by the syntax-semantic interplay.
 - **Semantic component:** The perfective is possible in future (and past) contexts, but not when the reference time is very short (Todorović 2013, 2015, to appear).
 - **Morphological component:** present tense form (morphological present) is not necessarily semantic present. The availability of the perfective with morphological present indicates – there is **a covert modal/future element**.
 - **Syntactic component:** Covert future requires **syntactic licensing**; (im)possibility of the perfective reflects the presence/absence of a covert modal/future element; aspect reflects the structure of the higher, modal-temporal domain.
- Syntactic licensing of a future component can also be applied to Lillooet Salish (Matthewson 2006), Washo and Gitksan (Matthewson and Rullman in press).

Gitksan (joint work with Lisa Matthewson):

- In addition to root clauses, Gitksan provides evidence for the existence of future element *dim* in future-irrealis complements; in Indo-European languages, this component is only covertly assumed to exist.

1. Peculiarity of future: temporally unmarked languages

- In some of these languages, temporally unmarked forms receive present or past readings, but not future readings.
- Within those languages, some: a) do not always exclude future reading with bare forms (Washo,

Paraguayan Guaraní, Atayal), b) restrict it with the perfective (Chinese, Yucatec) (for an overview, see also Bohnemeyer 2017, Chen (in preparation), Matthewson (2018)).

1.1 Lillooet Salish (Matthewson 2006): future always requires overt marking

- In Lillooet Salish, there is no temporal marking on verbal forms.
- These forms are ambiguous between present and past readings (1); adverbials disambiguate between the two (2a,b).

- (1) a. Táyt-kan.
hungry-1sg.subj
'I am hungry/I was hungry.'
- b. K'ác-an'-lhkan.
dry-dir-1sg.subj
'I dried it/I am drying it.'

- (2) a. Táyt-kan **lhkúnsa.**
hungry-1sg.subj now
'I am hungry now.'
- b. K'ác-an'-lhkan **i-nátcw-as.**
dry-dir-1sg.subj when.past-one.day.away-3conj
'I dried it yesterday.'

- Crucially, adverbials alone cannot license future interpretation:

- (3) a. *Táyt-kan **natew** / **zánucwem.**
hungry-1sg.subj one.day.away / next.year
'I will be hungry tomorrow/next year.'
- b. *K'ác-an'-lhkan **natew** / **zánucwem.**
dry-dir-1sg.subj one.day.away / next.year
'I will dry it tomorrow / next year.'

- Matthewson (2006): There is a covert non-future Tense, which licenses present and past readings; temporal adverbials only establish the context.

- Future interpretation: licensed by an enclitic **kelh** (see section 5.1).

- (4) a. Táyt-kan **kelh.**
hungry-1sg.subj kelh
'*I was hungry / * I am hungry / I will be hungry.'
- b. K'ac-an'-lhkán **kelh.**
dry-DIR-sg.subj kelh
'* I dried it / * I am drying it / I will dry it.' Matthewson (2006: 678)

- Gitksan is similar to Lillooet Salish (Jóhannsdóttir and Matthewson 2007, *i.a.*; see section 6).

1.2 Washo (Bochnak 2016): future sometimes requires overt marking

- Tense morphology is optional on verbal forms (5a vs. 5b).
- With the morpheme *uɲil*, sentences receive past reading (5a). In out-of-the-blue context, unmarked forms receive present or past reading (5b).

(5) a. \emptyset -háʔaš-**uɲil**-i
3-rain-**past**-ind
'It rained/It was raining.'

b. Háʔaši.
 \emptyset -háʔaš-i
3-rain-ind
'It is raining/It rained/It was raining.'

Bochnak (2016:249)

- The contexts determines the interpretation:

(6) a. Context: You just finished dinner, and everyone left the kitchen except for Mona. You ask someone what she is up to now. They tell you:

Zi:ɡin hénuɲ \emptyset -ɡuwáwaʔ-i-š-ge mó:na míʔleʔ \emptyset -**ɡámaʔ**-i.
chicken little.bit 3-remain-IND-SR-OBJ.REL Mona all 3-eat.up-IND
'Mona is eating up all the little bits of chicken that are left over.'

b. Context: You just finished dinner; chicken was served, your favorite food.

Zi:ɡin di-**ɡámaʔ**-i.
chicken 1-eat.up-IND
'I ate up the chicken.'

(Bochnak 2016:253)

- Simple clauses with bare forms do not receive future reading (but see below).
- Importantly, adverbial *wá:diɲ dewp'áwit* 'tonight' in (7a) cannot license future reading, but a prospective marker *-ašaʔ* can (7b).

(7) a. Context: I ask you what the weather will be like later today.

#**wá:diɲ dewp'áwit** \emptyset -háʔaš-i
today evening 3-rain-ind
Intended: 'It will rain tonight.'

b. Context: I ask you what the weather will be like later today.

wá:diɲ dewp'áwit \emptyset -háʔaš-**ašaʔ**-i
today evening 3-rain-**prosp**-ind
'It is going to rain tonight.'

(Bochnak 2016:255)

- However, future readings without an overt marker are available in, e.g.:

a) plans for the future:

(8) Context: You want to know what Mona will cook for dinner later today.

Hut'anahe:š mona ʔ-i:bik'-ha-i dewp'awid d-emlu-lewe.
what-Q Mona 3-be.cooked-caus-ind evening D.poss-eat-for
'What will Mona prepare for dinner?'

(Bochnak 2016:256)

b) antecedents of conditionals:

- (9) Context: Herman is expecting his cousin to come some time this week, but you don't know exactly when. But if his cousin is going to arrive tomorrow, then Herman must be happy now.

Wát Herman ?-i.yelu? ?-i.bi?-iš wa:diŋ
tomorrow Herman 3-cousing 3-**come**-ind-sr now
ø-hamu-ʔaŋaw-i-gi k'eʔ-i
3-feel-good-ind-subj.rel 3-mod-ind
'If Herman's cousin comes tomorrow, he is happy now.'

(Bochnak 2016:260)

Future with no overt marking:

➤ Atayal and Paraguayan Guaraní, like Washo, can license future without an overt marker; Atayal with aspectually unmarked predicates in non-actor voice (Chen in preparation) and Paraguayan Guaraní, e.g. in a conjunct in which the other conjunct contains a prospective marker (Tonhauser 2011)).

- Restrictions on perfective aspect: In Yucatec, perfective verbs are necessarily interpreted in the past (Bohnenmeyer 2009), and in Chinese, the perfective *le* also receives past reading in matrix clauses, and modal *hui* used to obtain future readings, cannot combine with it (Smith and Erbaugh 2005, Lin 2006, *i.a.*) (see the Appendix).

2.Future interpretations in Serbian: restrictions on the perfective

- Serbian is an aspectually rich language; the aspectual value is always shown on the stem, and it can additionally be derived with a number of affixes.

- (10) a. kupiti b. kupovati
 buy-**pf**.inf buy-**impf**.inf
 'to buy' 'to be buying'

- Serbian also observes aspectual restrictions with future readings – the perfective is not always felicitous.

2.1 Matrix environments

- Future interpretations are obtained via:

- a) **auxiliary *hteti* 'will' + an infinitive**, which allows both imperfective (11a) and perfective aspect (11b):¹

- (11) a. Ja **ću** sutra u to vreme **kupovati** kola.
 I will.1.sg. tomorrow in that time buy.**impf**.inf car
 'I will be buying a car at that time tomorrow.'
 b. Ja **ću** sutra **kupiti** kola.
 I will.1.sg. tomorrow buy.**pf**.inf car
 'I will buy a car tomorrow.'

¹ *Htet* is used in its clitic form and it inflected for number and person.

b) **present tense form** (henceforth morphological present), which is crucially compatible only with imperfectives, as in (12), but not with perfectives, as in (13):

(12) Sutra kupujem kola.
tomorrow buy.**impf**.1.sg.pres car
'I am buying a car tomorrow.'

(13) *Sutra kupim kola.
tomorrow buy.**pf**.1.sg.pres car
'I will buy a car tomorrow.'

c) ***hteti* 'will' + element DA + morphological present**: both the imperfective (14a) and the perfective (14b) are available:

(14)a. On će sutra da kupuje kola.
he will.3.sg. tomorrow DA buy.**impf**.3.sg.pres. car
'He will be buying a car tomorrow.'

b. On će sutra **da** kupi kola.
he will.3.sg. tomorrow DA buy.**pf**.3.sg.pres. car
'He will buy a car tomorrow.'

The perfective can get future reading in matrix clauses when it occurs **with *hteti* 'will'**.

2.2 Embedded environments

➤ Embedded clauses in Serbian: typically expressed with an element **DA + morphological present**.

a) **Future irrealis complements**, i.e. complements of, e.g. *želiti* 'want': the embedded present necessarily receives future interpretation; both the imperfective (15a) and the perfective (15b) are available:

(15) a. Želim da sutra popodne **jedem** jabuku.
want.1.sg.pres DA tomorrow afternoon eat.**impf**.1.sg.pres. apple
'I want to be eating an apple tomorrow afternoon.'

b. Želim da sutra popodne **pojedem** jabuku.
want.1.sg.pres DA tomorrow afternoon eat.**pf**.1.sg.pres. apple
'I want to eat an (entire) apple tomorrow afternoon.'

b) **Propositional complements**, i.e. complements of, e.g. *verovati* 'believe': future interpretation of the embedded present is available only with the imperfective (16a), but not with the perfective (16b):

(16) a. Verujem da Jovan sutra kupuje kola.
believe.1.sg.pres. DA Jovan tomorrow buy.**impf**.3.sg.pres car
'I believe that John will be buying a car tomorrow.'

b. *Verujem da Jovan sutra **kupi** kola.
believe.1.sg.pres. DA Jovan tomorrow buy.**pf**.3.sg.pres car
'I believe that John will buy a car tomorrow.'

➤ Note a more general aspectual restriction in these complements: eventive predicates cannot co-occur with the perfective under the simultaneous interpretation, as in (17b).

- (17) a. Verujem da Jovan **kupuje** kola.
believe.1.sg.pres. DA Jovan buy.**impf**.3.sg.pres car
'I believe that John is buying a car (right now).'
- b. *Verujem da Jovan **kupi** kola.
believe. 1.sg.pres. DA Jovan buy.**pf**.3.sg.pres car
Intended interpretation: 'I believe that John has bought a car (just now).'
- c) **Tenseless complements**, i.e. complements of verbs like *pokušavati* 'try': future interpretation is altogether excluded:

- (18) a. *Pokušavam da sutra prevodim pesmu.
try.1sg.pres DA tomorrow translate.**impf**.1.sg.pres poem
'I am trying to translate a poem tomorrow.'
- b. *Pokušavam da sutra prevedem pesmu.
try.1sg.pres DA tomorrow translate.**pf**.1.sg.pres poem
'I am trying to translate the entire poem tomorrow.'

➤ However, in a non-future context, embedded present can with both the imperfective (19a) and the perfective (19b):

- (19) a. Pokušavam da **prevodim** pesmu.
try.1sg.pres DA translate.**impf**.1.sg.pres poem
'I am trying to translate a poem right now.'
- b. Pokušavam da **prevedem** pesmu.
try.1sg.pres DA translate.**pf**.1.sg.pres poem
'I am trying to translate the entire poem.'

Environment	Perfective under future reading
will + infinitive	√
morph. present	*
will+ <i>da</i> + morph. present	√
Future-irrealis	√
Propositional	*
Tenseless	*

Table 1: Distribution of the perfective in Serbian

➤ Proposal in short:

- 1) **Perfective puzzle—semantic component:** the perfective is possible in future (and past) contexts, but not in contexts where the reference time is very short (Todorović 2013, 2015, to appear); such is the semantic present.
- 2) The data shows that morphological present is not necessarily semantic present in Serbian; possibility of the perfective indicates that the structure contains a **covert future element**.
- 3) **Perfective puzzle—syntactic component:** covert future requires syntactic licensing; (im)possibility of the perfective reflects the presence/absence of a covert modal/future element. Aspect thus serves as a window into the higher, modal-temporal domain.

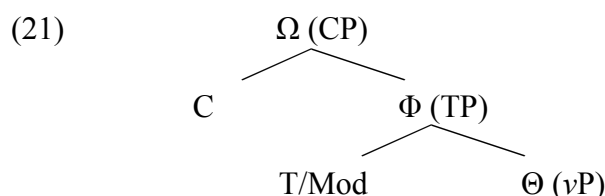
3. Architecture of embedded clauses in Serbian: Different clausal complement sizes (joint work with Susi Wurmbrand)

➤ Wurmbrand (2001 et. seq.): English infinitival complements in (20) are not equally transparent, involving domains of different sizes (à la Grohmann 2003):

- a) tenseless infinitives: a thematic domain (20a),
- b) future-irrealis infinitives: thematic and inflectional domain (20b),
- c) propositional simultaneous infinitives: an operator, thematic and inflectional domain (20c).

(20)	a. Leo <u>tried/began/managed/forgot</u> to eat (*tomorrow).	tenseless
	b. Leo <u>decided/planned/promised</u> to eat (tomorrow).	irrealis, future
	c. Leo <u>claimed</u> to be eating (*tomorrow).	propositional, simultaneous

➤ Size restructuring: Non-projection of the Φ and/or Ω domains — condition: recoverability



➤ Serbian counterparts: English infinitival complement in (20) can be expressed via (morphologically) finite clauses in Serbian, as in (22):

(22) a.	Jovan je pokušao da čita	/ pročita	knjigu.	<u>tenseless</u>
	Jovan is tried DA read. impf .3.sg.pres	/ read. pf .3.sg.pres	book	
	‘Jovan tried to read the (entire) book.’			
b.	Jovan je odlučio da čita	/ pročita	knjigu.	<u>future-irrealis</u>
	Jovan is decided DA read. impf .3.sg.pres	/ read. pf .3.sg.pres	book	
	‘Jovan decided to read the (entire) book.’			
c.	Jovan je tvrdio da čita/	*pročita	knjigu.	<u>propositional</u>
	Jovan is claimed DA read. impf .3.sg.pres/	*read. pf .3.sg.pres	book	
	‘Jovan claimed to be reading the book.’ IMPERFECTIVE			
	‘Jovan claimed to have finished reading the book (right then).’ PERFECTIVE			

➤ Rethinking finiteness: Todorović and Wurmbrand (T&W) (2015, to appear) – traditional view that:
a) associates finiteness with the presence of Tense, and b) encodes it in the C-domain (e.g., Rizzi’s 1997 FinP) is difficult to maintain in languages without (or with fewer) infinitives.

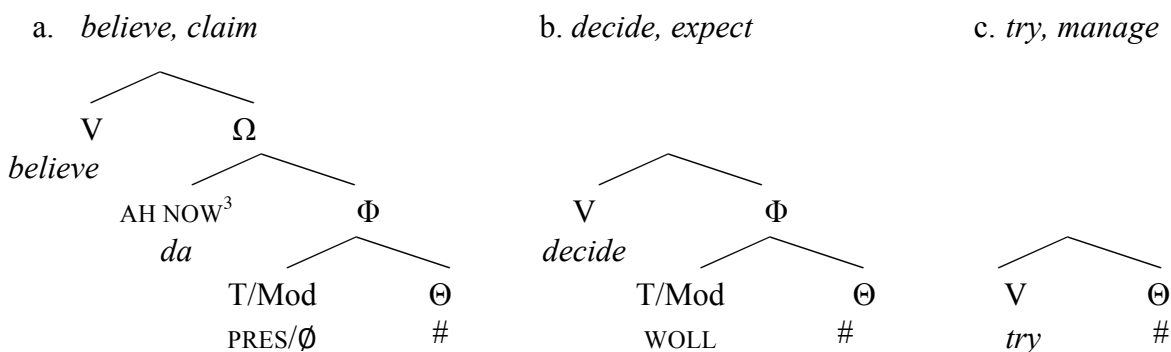
➤ Why? Embedded finite CPs are argued to be less transparent than non-finite complements.

➤ But, Serbian complements, although finite, show striking syntactic and semantic similarities to non-finite clausal complements in other languages. e.g. Italian, Czech (e.g. clitic climbing (Dotlačil 2004)).

Table 2	Claim	decide, expect	try, manage
Tense	Propositional, [+TENSE]	Future irrealis (<i>woll</i>)	Tenseless
<i>da</i> V.PRES	*PERFECTIVE	√PERFECTIVE	√PERFECTIVE
Infinitive possible	No	Yes(dialectal preferences)	Yes (dialectal preferences)
Clitic climbing	No	Yes, sort of	Yes
NPI licensing by matrix NEG	No	Yes	Yes
<i>wh</i> ordering	Matrix » embedded	Free	Free
Long passive (with INF)	No	No	Yes
Adverb positions	{ <i>da</i> } ADV {* <i>da</i> }	{ <i>da</i> } ADV { <i>da</i> }	{?-* <i>da</i> } ADV { <i>da</i> }
Size	Ω domain	Φ domain	Θ domain

Table 2: Syntactic and semantic indicators of different clausal complementation sizes in Serbian

➤ T&W show that the distribution of seemingly unrelated phenomena in Table 2 is explained if these complements in Serbian are also of different sizes:²



Proposal: These constellations can capture aspectual restrictions in embedded contexts and the distribution of a covert modal.

3.1 Aspect — A window into the composition of the temporal-modal domain

3.1.1 Propositional complements

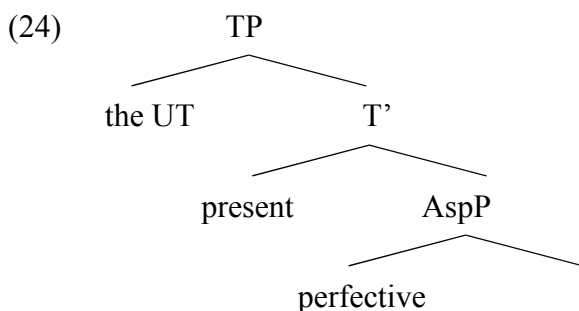
➤ Perfective puzzle: restrictions on finite complements in Serbian – episodic readings are unavailable in simple clauses (23a) and propositional complements (23b) (generics and statives may be different).

² T&W treat *da* as a marker of finiteness; it is realized in a Ω-/Φ-/Θ- domain when finiteness is not overtly marked in that domain (e.g. WOLL and *v* do not mark it, but Tense does).

³ Attitude Holder's Now

- (23) a. Milan prevodi/ ***prevede** pesmu. simple clause
 Milan translate. **impf.3.sg.pres**/*translate. **pf.3.sg.pres** poem
 ‘Milan is translating a poem.’/*‘Milan has translated a poem (just now).’
- b. *Verujem da Jovan **prevede** pesmu. propositional
 believe.1.sg.pres DA Jovan translate. **pf.3.sg.pres** poem
 Intended interpretation: ‘I believe that John has translated a poem (just now).’
- c. Odlučila sam da sutra popodne **prevedem** pesmu. future-irrealis
 decided.sg.fem aux.1.sg DA tomorrow afternoon translate. **pf.1.sg.pres** poem
 ‘I decided to translate the (entire) poem tomorrow afternoon.’
- d. Pokušala sam juče da **prevedem** pesmu. tenseless
 tried.sg.fem aux.1.sg yesterday DA translate. **pf.1.sg.pres** poem
 ‘I tried to translate the (entire) poem yesterday.’

- **Claim:** Aspectual restrictions in Serbian follow from the incompatibility of perfective viewpoint aspect and the temporal domain above it (Todorović (2013, 2015, to appear); for English, see Parsons 1990, Smith 1991, Kamp and Reyle 1993, Wumrbrand 2014, *i.a.*).
- Adopting von Stechow’s (1999) proposal: both Tense and Aspect are involved in the temporal ordering of the event time interval (the ET) with respect to the reference time interval (the RT; see also Klein 1994, *i.a.*).
- The RT is the Utterance Time (the UT), a near-instantaneous interval (cf. Giorgi & Pianesi 1997, *i.a.*), unless contextually specified otherwise.



- Compositionality: in (24), both Tense and Aspect are ordered with respect to the RT, i.e. the UT, but for Aspect, this is an indirect relation.
- All relations are strictly local – each temporal head establishes a relation with its sister: Tense establishes a direct relation with the RT (the UT); Aspect is then ordered with respect to **that time interval**: the interval that T establishes with the RT.
- Thus, Aspect is also ordered with respect to the RT, but this ordering is indirect, mediated via Tense.

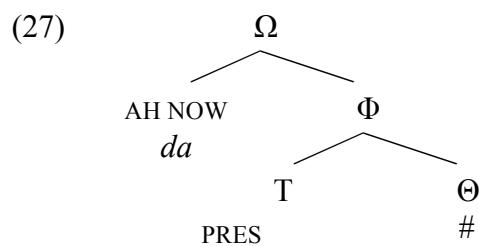
Restrictions in simple clauses:

- Perfective aspect (25a) requires the ET to be **included** in the RT, i.e. the UT.
- If Tense, which is directly ordered with respect to the UT, is specified for present (26), it introduces an ordering interval for Aspect **equal to the UT**.
- This interval is too short, and the requirements of the perfective (inclusion) cannot be met; the perfective is correctly ruled out.

- (25) a. Perfective: $\lambda P.\lambda t.\lambda w.\exists e [\text{time}(e) \subseteq t \ \& \ P(w)(e)]$ Kratzer (1998)
 Informally: event time must be **included** in the reference time
 b. Imperfective: $\lambda P.\lambda t.\lambda w.\exists e [t \subseteq \text{time}(e) \ \& \ P(w)(e)]$
 Informally: reference time must be included in the event time
 (26) $[[\text{PRESENT}_1]] = \lambda p.\lambda t.\lambda w.\exists t_1 [t_1 = t \ \& \ P(t_1)]$ (à la Pancheva and von Stechow 2004)

Restrictions in propositional complements:

- Present tense is ordered with respect the attitude holder's 'now', a very short interval, and it introduces this short interval as an ordering interval for Aspect.
- The ET cannot be included in this interval; perfective is impossible in simultaneous contexts in Serbian.



- **Implications:** If the RT is not a relatively short interval, the requirements of the perfective can be satisfied, and the form is correctly predicted to be felicitous.^{4,5}

- (28) a. PAST/**FUTURE**/PERFECT [√PERFECTIVE/√IMPERFECTIVE] (simplified)
 b. PRESENT/ATTITUDE HOLDER'S NOW [*PERFECTIVE/√IMPERFECTIVE]

3.1.2 Irrealis future complements: licensing a covert modal

- Certain matrix verbs require an embedded future interpretation, as in (29) (see T&W 2015 for similarities with English)

- Future contexts: [_{VP} *decide, expect* [_{XP} future]]

- (29) a. *Jovan je odlučio da je spavao u garaži.
 Jovan is decide.part.sg.masc DA is sleep.part.sg.masc in garage
 'Jovan decided to have slept in the garage.'
 b. Jovan je odlučio da spava u garaži.
 Jovan is decide.part.sg.masc DA sleep.impf.3.sg.pres in garage
 'Jovan decided **to sleep** in the garage.'
 *'Jovan decided to be sleeping in garage right then.' √FUT
*SIMULTANEOUS

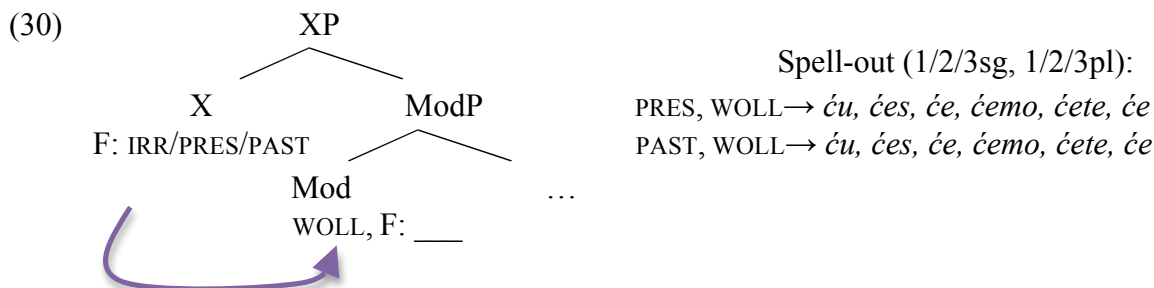
⁴ This type of restriction is also observed in English with non-progressive eventive predicates (see Wurmbrand 2014). Similarities in the distribution of perfective forms of eventives in Serbian and non-progressive eventives in English provide further support for treating the latter as perfectives (Kamp and Reyle 1993, Smith 1991, Cowper 1998, Wurmbrand 2014, *i.a.*; see Todorović 2015 for a detailed discussion).

⁵ For the discussion on forms containing past and perfect components in Serbian, see Todorović (2015).

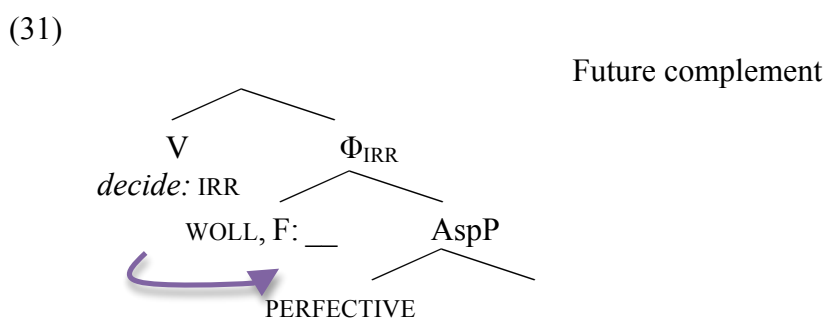
3.1.2.1 Future decomposed

- Finite future: semantic PRESENT + modal WOLL (Abusch 1985, 1988, Condoravdi 2001, Copley 2002, Kaufmann 2005, Wurmbrand 2014, Todorović 2015)

Assumption: WOLL must be licensed (valued) by either tense or an irrealis element.



- Semantic selection by the embedding verb: Verbs selecting a future infinitive can be assumed to have an irrealis feature which must match with an irrealis/future complement.
- Assuming selection is local, the matrix verb must combine with the projection hosting the relevant future element — future infinitives lack the Ω -domain (see also Progovac 1993a,b, 1994,1996, Stjepanović 2004, T&W 2015, to appear).



3.1.2.2 Perfective puzzle—repeated

- (32) a. *Tvrdim da prevedem pesmu.
 claim.1.sg.pres DA translate.**pf.**1.sg.pres. poem
 ‘I claim to translate the entire poem (right now).’
- b. Odučila sam da prevedem pesmu.
 decide.part.sg.fem aux.1.sg. DA translate.**pf.**1.sg.pres. poem
 ‘I decided to translate the (entire) poem.’

Future irrealis complements and the perfective:

- Future irrealis complements involve a modal component WOLL which quantifies over possible future world-time pairs (Abusch 1985 et seq., *i.a.*), extends the RT, and allows inclusion of the ET in the RT – the perfective is allowed (Abusch 1985, 1988, Wurmbrand 2014, Todorović 2013, 2015, to appear).
- One possibility: modal $\llbracket \text{WOLL} \rrbracket_{\text{MB}} = \lambda P. \lambda w. \lambda t. \forall w' [w' \in \text{MB}(w, t) \rightarrow ([t, _], w', P)]$ (Condoravdi 2002)
- Another possibility: modal + a prospective aspect:
 $\llbracket \text{PROSP} \rrbracket^{\text{g,C}} = \lambda P \langle i, st \rangle. \lambda t. \lambda w. \exists t' [t < t' \ \& \ P(t')(w)]$ (Rullman and Matthewson in press)

da PRESENT ≠ *da* morph. present (Progovac 1993a, b, 1994, 1996, Stjepanović 2004)

- Future flavor: Modal contexts allows for the quantification over possible future world-time pairs (Abusch 1985, 1988, 1997, Matthewson 2006, Cable 2013, *i.a.*)/ it comes from the prospective aspect.
- Perfective and futurity: The semantics of the perfective does not contribute futurity, but it requires the component that would open up the future for it.

3.1.3 WOLL *licensers*

- Assuming covert elements need to be licensed in some manner, WOLL is licensed by future selecting verbs, in exclamatives/wishes (33), optatives (34), questions (35), and in antecedents of conditionals (36).

(33) Da ti se sve želje ostvare!
DA you.dat. SE all wishes come.true.pf.3.pl.pres
'May all your wishes come true!'

(34) Da samo padne kiša danas! (based on Grosz 2012:91)
DA only fall.pf.3.pl.pres rain today
'If it only rains today!'

(35) a. Da Vesna pročita ovu knjigu?
DA Vesna read.pf.3.sg.pres this book
'Should Vesna read this book?' (Vrzić 1996: 292: (2a))

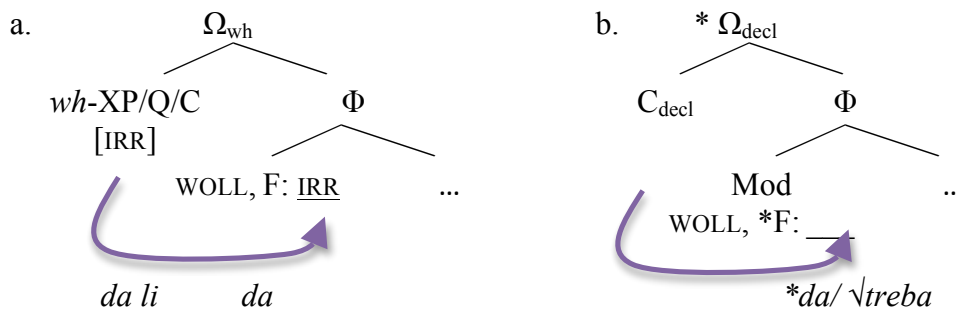
b. Da li da Vesna pročita ovu knjigu?
Q DA Vesna read.pf.3.sg.pres this book
'Should Vesna read this book?' (Vrzić 1996: 292: (2b))

c. Koju knjigu da Vesna pročita?
which book DA Vesna read.pf.3.sg.pres
'Which book should Vesna read?' [translation corrected] (Vrzić 1996: 292: (2c))

(36) Ako kupim kuću sutra na konju sam!
if buy.pf.1.sg.pres. house tomorrow on horse am
'If/when I buy a house tomorrow, I am good!'

- Interrogative C has irrealis feature (Givón 1995: 119, Palmer 2001: 172-173, Mauri 2008:175, Magni 2010: 243), as in (37a).

(37)



- Declaratives do not license this covert modal component, as in (37b); an overt modal is required, as shown by the contrast in (38).

- (38) a. **Da Vesna pročitā ovu knjigu.*
 DA Vesna read.pf.3.sg.pres this book
 ‘Vesna should read this book.’ (Vrzić 1996: 292: (2d))
- b. *Vesna treba pročitati ovu knjigu.*
 Vesna should read.pf.inf this book
 ‘Vesna should read this book.’ (Vrzić 1996: 292: (2e))

- **NB!** In (33)-(36), the perfective is felicitous under future reading.
- **Proposal:** Future interpretations of the perfective are enabled by the modal component WOLL, which independently needs to be syntactically licensed.

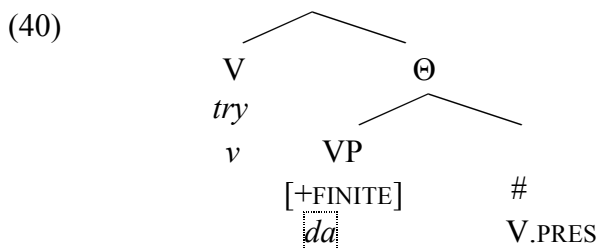
3.2 Propositional complements: future interpretation

- Propositional complements do not *per se* contain WOLL; the RT for the perfective cannot be extended and the perfective is disallowed with the embedded present – under the future (16) (and simultaneous (17)) interpretation.
- They can in principle contain WOLL, in which case it is overtly realized as *hteti* ‘will’.
- Importantly, once WOLL is present in the structure, the perfective is felicitous:

- (39) a. *Verujem da će Jovan sutra kupovati kuću.*
 believe.1.sg.pres. DA will.3.sg. Jovan tomorrow buy.3.sg.impf.inf house
 ‘I believe that John will be buying a house tomorrow.’
- b. *Verujem da će Jovan sutra kupiti kuću.*
 believe.1.sg.pres. DA will.3.sg. Jovan tomorrow buy.3.sg.pf.inf house
 ‘I believe that John will have bought a house tomorrow.’

3.3 Tenseless complements

- Based on the availability of Long Object Movement and adverb placement, T&W suggest that complements of verbs like *try* in Serbian project only the thematic domain (40).
- Note: *da* is located in the Θ -domain.



- The reduced structure and the lack of future-oriented reading: WOLL in (40) is excluded since the verb *try* does not select it, but instead requires a tenseless complement.

- (41) a. **Pokušavam da sutra prevodim pesmu.*
 try.1sg.pres DA tomorrow translate.impf.1.sg.pres poem
 ‘I am trying to translate a poem tomorrow.’

- b. *Pokušavam da sutra prevedem pesmu.
try.1.sg.pres DA tomorrow translate.pf.1.sg.pres poem
'I am trying to translate the entire poem tomorrow.'

- quesPotential problem: the perfective in a simultaneous *try* complement is possible (42b).
- Why is this a problem? The matrix tense is present, hence the short RT – the perfective should be out.

- (42) a. Pokušavam da prevodim pesmu.
try.1sg.pres DA translate.impf.1.sg.pres poem
'I am trying to translate a poem right now.'
- b. Pokušavam da **prevedem** pesmu.
try.1sg.pres DA translate.pf.1.sg.pres poem
'I am trying to translate the entire poem.'

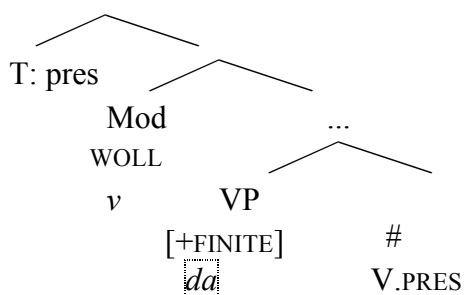
- Sharvit (2003): *try* includes the extensional + the intensional component.
- The intensional component introduces an unrealized presupposition, i.e. the event is not realized at the time of trying, but it continues as part of subject's beliefs; this provides the needed extension of the RT for the perfective.
- Difference from future-irrealis complements: eventives embedded under *try* **must be ongoing** at the time of trying in Serbian; this captures the ungrammaticality of (41).

4. Matrix clauses

'will'+da + morphological present

- Assuming *da* can occur in the Θ -domain (i.e. very low), then it can in principle combine with WOLL even in matrix clauses:

(43)



- **Prediction**: Once a modal component comes into play, the ban on the perfective should disappear:

- (44) a. On će sutra da kupuje kola.
he will.3sg.pres tomorrow DA buy.impf.3.sg. pres. car
'He will be buying a car tomorrow.'
- b. On će sutra da **kupi** kola.
he will.3sg.pres tomorrow DA buy.pf.3.sg. pres. car
'He will buy a car tomorrow.'

‘will’+infinitive

- Presence of an overt modal explains the availability of the perfective (45b):

- (45) a. Ja ću sutra u to vreme kupovati kola.
I will.1.sg. tomorrow in that time buy.**impf**.inf car
'I will be buying a car at that time tomorrow.'
- b. Ja ću sutra **kupiti** kola.
I will.1.sg. tomorrow buy.**pf**.inf car
'I will buy a car tomorrow.'

Morphological present

- The ban in (46) is captured by the lack of a modal component which would make it felicitous.

- (46) *Sutra kupim kola.
tomorrow buy.**pf**.1.sg.pres car
'I will buy a car tomorrow.'

- Importantly, the adverbial is not enough to license future interpretations.

Interim summary:

- Apparently unsystematic distribution of the perfective can be accounted for if the perfective is impossible in contexts where the RT is very short.
- In case of future reading, possibility of the perfective is an indication that the structure contains a covert modal/future element, which extends the RT for the perfective, but which independently requires syntactic licensing.

5. Syntactic licensing of future in Washo and Lillooet Salish

- In Lillooet Salish and Washo, an overt or a covert future component occurs along with Tense; Tense can be argued to be its syntactic licensor.

5.1 Lillooet Salish (Matthewson 2006)

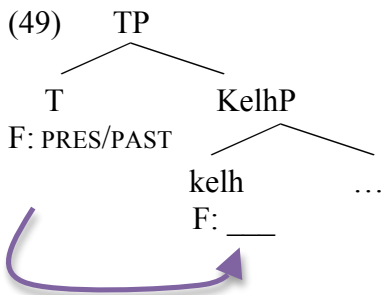
- Present and past readings: There is a covert non-future Tense, which licenses present and past readings (Matthewson 2006).
- Presupposition of non-future T: the RT does not follow the UT.

$$(47) \llbracket \text{non-future} \rrbracket^{g,C} = \lambda t : t \leq t_C . t$$

- Future readings: Obtained by *kelh*, a prospective aspect.

$$(48) \llbracket \text{PROSP} \rrbracket^{g,C} = \lambda P \langle i, st \rangle . \lambda t . \lambda w . \exists t' [t < t' \ \& \ P(t')(w)] \quad (\text{Rullman and Matthewson in press})$$

- *Kelh* is argued to occur with non-future T, which can be represented as in (49):
(following the analysis in Matthewson 2006):



- **Prediction:** *kelh* should occur in future-in-the-past environments:

(50) Situation: Mike Leech is currently chief of T’it’q’et. His (deceased) mother was called Julianne.

Zwát-en-as s-Julianne [k-wa-s kúkwpi7 **kelh** ta skúza7-s-a]
know-dir-3erg nom-Julianne det-impf-3sg.poss chief kelh det child-3sg.poss-det]

I kwís-as.
comp.past fall-3conj

‘Julianne knew when he was born that her child would become chief.’ (Matthewson 2006:706)

5.2 Washo (Bochnak 2016)

- Bochnak’s analysis: There is a covert Tense in Washo; however, tense feature is absent in clauses without temporal morphology
- No presupposition of T: because morphologically tenseless clauses lack a tense feature, they lack something that restricts the RT.
- **Prediction:** Verbal forms should freely receive present, past or future interpretations.
- Potential problem: Prospective marker **aša?** is typically needed to obtain future interpretations:

(51) Context: I ask you what the weather will be like later today.

wá:diŋ dewp’áwit ø-háʔaš-**aša?**-i
today evening 3-rain-**prosp**-ind
‘It is going to rain tonight.’

- However, future marker is not always needed with bare forms ((52) and (53)), which leads Bochnak to posit a Tense analysis without restrictions on the RT.

a) plans for the future:

(52) Context: You want to know what Mona will cook for dinner later today.

Hut’anahe:š mona ʔ-i:**bik**’-ha-i dewp’awid d-emlu-lewe.
what-Q Mona 3-**be.cooked**-caus-ind evening D.poss-eat-for
‘What will Mona prepare for dinner?’

(Bochnak 2016:256)

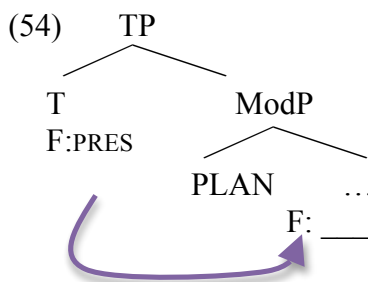
b) antecedents of conditionals:

(53) Context: Herman is expecting his cousin to come some time this week, but you don't know exactly when. But if his cousin is going to arrive tomorrow, then Herman must be happy now.

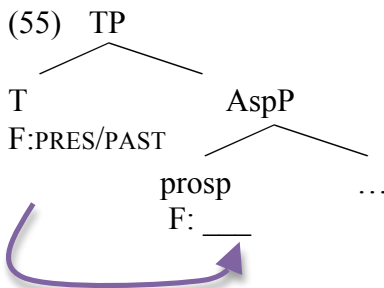
Wát Herman ʔ-i:yeɫuʔ ʔ-i:biʔ-iš wa:diŋ
tomorrow Herman 3-cousing 3-come-ind-sr now
ø-hamu-ʔaŋaw-i-gi k'eʔ-i
3-feel-good-ind-subj.rel 3-mod-ind
'If Herman's cousin comes tomorrow, he is happy now.'

(Bochnak 2016:260)

- Future interpretation in these contexts is established by:
 - a) planning contexts: a silent modal operator PLAN (Copley 2002, 2008, Thomas 2015);
 - b) conditionals: a silent modal operator COND (Tonhauser 2011);
- Planning contexts: They are compatible with a non-future analysis of Tense; Bochnak observes that they have present temporal reference with a future time introduced by PLAN
- **Proposal**: PLAN is licensed by a non-future Tense:



- The analysis should in principle allow for PAST to also combine with PLAN.
- Temporal analysis of conditionals is not always straight-forward (e.g. *If I come out smiling, the interview went well* (Kaufmann 2005:268)), but Bochnak doesn't exclude the possibility of non-future analysis with them.
- Overt prospective marker can be licensed in the same manner:



- **Prediction**: Prospective aspect can occur in future-in-the past contexts:

(56) Context: A mother bear was about to go gather food, leaving her children behind.

Mušé:gew ʔlémiʔgišuwaʔášaʔaʔ gitŋaʔmíʔmiŋ
 Mušé:gew Ø-ʔlémiʔ-giš-uweʔ-ašaʔ-aʔ git-ŋaʔmiŋ-red
 Bear 3-gather.food-along-hence-**prosp**-dep 3.poss.refl-child-pl

bó: ŋiyige wehigí:githayaʔ.

Ø-bó:ŋi-i-ge Ø-wehigí:git-ha-aʔ

3-call-ind-obj.rel 3-show.how-cause-dep

‘When the bear was about to go gathering food, she called out to her children, whom she told what to do’
 (Bear and Deer Story) Bochnak (2016:254)

- Potential problem: Future is possible in conjunctions with *-ud*, a sequential marker, it basically introduces sequence of events in narration. This events can be in the future.

(57) Context: Mother Bear is about to go out gathering food. She tells her children what to do when she is gone.

Le-iyeweʔ-**ud**-i-š ha:ʔda weʔ- ši memde:wi ŋaʔmiŋ~miŋ
 1-go-seq-ind-sr there 3.pro-du deer child~pl

ʔun-do:baš-ha-**ud**-i le: mi-ʔ**umdac**’awewe-ha-aʔ-š
 2-burn-caus-seq-ind 1.pro 2-pound.up.meat-caus-dep-sr

‘After I go, you’ll burn those two deer children to death and then pound them for me.’ (Bochnak 2016:257)

(*-ud* asserts the existence of time t' where P is true, and introduces a temporal relation of $t' < t$, where t is the RT of the following clause; this time can be future (as well as past)).

- Why is it a problem? If *-ud* can occur in absolute future, it is not compatible with the non-future T (i.e. T specified for present or past). Note, however, that (57) is a conditional.

6. Gitksan and overt WOLL element in embedded clauses (joint work with Lisa Matthewson)

6.1 Future in simple clauses

- Gitksan lacks temporal morphology, and in terms of temporal restrictions, behaves similarly to Lillooet Salish.
- Simple clauses: Temporally unmarked clauses receive present or past interpretation (Jóhannsdóttir and Matthewson 2007 (J&M); all the data in this section are from J&M). Future interpretations are excluded:

(58) a. Bax=t Yoko.
 Run=DM Yoko
 ‘Yoko ran’ / ‘Yoko is running’ / *‘Yoko will run’.

b. N’uw’-t John.
 die-cnn John
 ‘John died’ / ‘John is dying’ / *‘John will die.’

- To obtain future, adverbial is not sufficient ((59), (60)). Instead, future is licensed in the presence of *dim* (61), (62).

(59) *Yookw-t James ji taahlakxw.
eat-cnn James prep tomorrow
'James will eat tomorrow.'

(60) *Naks 'niin jo k'uul.
marry you next year
'You will get married next year.'

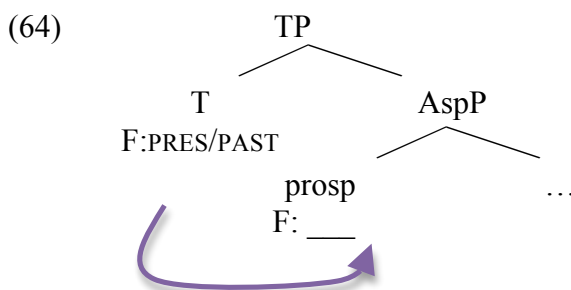
(61) **Dim** yookw-t James (ji taahlakxw).
fut eat-cnn James prep tomorrow
'James will eat (tomorrow).'

(62) **Dim** naks 'niin (jo k'uul).
fut marry you next year
'You will get married (next year).'

- *Dim* is an overt realization of prospective aspect (J&M (2007), Rullman and Matthewson (in press); see also Matthewson (2013) for the obligatory presence of *dim* under root modals)

(63) $[[\text{PROSP}]]^{s,C} = \lambda P \langle i, st \rangle. \lambda t. \lambda w. \exists t' [t < t' \ \& \ P(t')(w)]$

- The existing analysis of Gitksan can also syntactically be captured in the current approach:



- **Prediction:** *Dim* should occur in future in the past contexts.

(65) Gilbil=hl ganuutxw=hl hli=daa=t mahl-i=s Diana **dim** wil yee=t
Two=cnn week=cnn PRT=SPT=3.I tell-TR=PN Diana **prosp** COMP go=3.I
goo=hl Winnipeg ji hlaa (am) k'i'y=hl ganuutxw.
LOC=cnn Winnipeg IRR INCEP (only) one-CN week
'Diana said two weeks ago that she would go to Winnipeg after one week.'

6.2 Future in embedded clauses cross-linguistically

- Cross-linguistic debate: In future-irrealis complements, is the locus of futurity the complement itself (Abusch 2004, Wurmbrand 2014, Todorović 2015, T&W, *i.a.*) or the matrix verb (Ogihara 1996, Abusch 1997, Pearson 2017, *i.a.*)?

- Problem in Indo-European languages: there is no direct evidence, since the future element is covert; indirect evidence for it must be found.
- Gitksan overtly marks futurity even in these complements, providing support for the former view.

6.2.1 Future in embedded clauses in Gitksan

- Prediction of the proposed clausal constellations: in a language where futurity is always overtly rather than covertly marked, the following 3-way split will emerge (Wurmbrand (2014), Todorović (to appear), T&W):

complements of ‘want’	obligatory overt future element
complements of ‘believe’	overt future element iff the belief is about a future eventuality
complements of ‘try’	no overt future element

Table 3: Distribution of a future element in complement clauses

- Gitksan *dim* follows the pattern in Table 3, with one difference with ‘try’.
 - Complements of ‘want’: *Dim* in the complement is obligatory (All data are from original fieldwork.)
- (66) Context: There’s a charity run next weekend. We’re talking about who will run. I ask ‘What about Colin?’
- Hasak-t [#(**dim**) bax-t].
want-3SG.II [#(**WOLL**) run-3SG.II]
‘He wants to run.’
- Complements of ‘believe’: *Dim* is present if and only if the matrix subject’s belief is about a future event.

- (67) Context: I’m looking for Colin. I ask you ‘Where is Colin?’ You reply:

Ha’niigood-’y [(**dim**) yukw=hl bax-t].
believe-1SG.II [(**WOLL**) impf=cn run-3SG.II]

Without *dim*: ‘I think he is running (now).’

With *dim*: ‘I think he will run.’ (Consultant: “He’s just about to start; he’s going to start.”)

- English *try* can be translated into Gitksan in two ways: with a preverbal element *si’ix* and the verb *bak*.
- *Si’ix* in (68) is like Serbian ‘try’, in that *dim* cannot appear in the embedded clause.

(68) Context: Colin injured himself before the run. He is stubborn and decides to try anyway. We are watching the race and I spot him trying to run, limping along. I tell you:

Yukw *si'ix* [(#**dim**) bax̣t].

Impf *try* [(#**WOLL**) run-3SG.II]

'He's trying to run.'

➤ However, with *bak* (*bag* preverbally), *dim* is obligatory:

(69) *Bag-a-t* [(#(**dim**) bax̣-t].

try-TR-3SG.II [(#(**WOLL**) run-3SG.II]

'He's trying to run.'

➤ Note that, the two *try*-verbs in Gitksan can sometimes co-occur:

(70) **Si'ix** **bag-a-t** dim bax̣-t.

try **try-TR-3SG.II** **WOLL** run-3SG.II

'He's trying to run.'

➤ Preliminary suggestion for *si'ix*: There must be an attempt at the embedded event, simultaneous with the matrix RT. Its completion is in the future, due to the intensional component.

➤ Preliminary suggestion for *bak*: *Bak* is like 'decide' in embedding WOLL (see Grano (2011, 2017) for e.g. the initiation of a trying-event being just an intention/ mental action preceding the actual action).

7. Conclusion

➤ In languages in which future readings are restricted, there needs to be an overt/covert modal/future element that licenses this reading.

➤ On the example of Serbian (and Lillooet Salish, Gitksan and Washo), I proposed that this element needs to be syntactically licensed.

➤ The aspectual restrictions in Serbian can be captured by the syntax-semantics interplay and they serve to reveal the composition of the higher, modal temporal clausal domain.

➤ Overt future component in Gitksan future-irrealis complements provides support for the complement being the locus of futurity.

➤ Future tasks: Provide further cross-linguistic support, and account for future interpretations in e.g.,

1) Czech, Russian, Polish, where the morphological present specified for the perfective is one of the ways to express future (also German morphological present).

2) Javanese, where temporally unmarked forms seem to receive either present, past or future interpretation.

- 3) Griko, where the element *na* in subjunctives is compatible only with perfective non-past forms (Lekakou & Quer 2016) (cf. Greek, where *na* co-occurs with both perfective forms (e.g. Roussou 2000, Giannakidou 2009)).

Appendix

1. Chinese

Chinese (Lin 2006, Smith and Erbaugh 2005): aspectually constrained future

- There is no temporal marking on verbal forms; there is aspectual marking.
- In root clauses, perfective marker *le* receives past interpretation, and imperfective marker *zhe* receives present interpretation:

- (1) Ta da le majiang.
she play **pf.** mahjong.
'She played/has played mahjong.' (Smith and Erbaugh 2005:721)
- (2) Lisi chuan-zhe yi-jian qinzi.
Lisi wear-zhe one-cl skirt
'Lisi wears a skirt.' (Klein, Li and Hendriks 2000:727)

- A future-oriented adverbial alone cannot enable a future reading with either aspect:

- (3) a. *Ta **mingtian** da **le** majiang
she tomorrow play **pf.** mahjong.
*'She will play mahjong tomorrow.'
- b. Ta **mingtian** xiawu zai-youyong.
he tomorrow afternoon **prog-swim**
'He will be swimming tomorrow afternoon.' (Sihwei Chen, p.c.)

- Chinese uses a modal auxiliary *hui* (Lin 2006) to denote future, but only imperfective marker *zhe* and progressive marker *zai* can co-occur with it, *le* cannot:

- (4) Qiang shang **hui** gua-**zhe** yi-fu hua.
wall on will hang.Asp one-cl picture
'There will be a picture hanging on the wall.'
- (5) (Wangshang) ni **hui-bu-hui** hai **zai** jia-ban.
night you will-not-will still prog work-overtime
'Will you still be working overtime at night?' (Lin 2006:20)
- (6) *Lisi **hui** likai-**le** bangongshi.
Lisi will leave-pf. office
'Lisi will have left the office.' (Lin 2006:19)

- However, perfective is not completely excluded: it can occur in future contexts such as conditional clauses (7) or deng-clauses (types of temporal clauses) (8) (Lin 2006).

- (7) (Ruguo) Wo mingtian da-le maijang,
If I tomorrow play-**pf.** mahjong
houtian jui neng qu pashan.
the-day-after-tomorrow JUI can go mountain-climbing
'If I play mahjong tomorrow, I can go mountain climbing the day after tomorrow.' (Z. Shen, p.c.)
- (8) Deng ni nadao-**le** boshi xuewei, wo jiu mai xin che gei ni.
wait you get-**pf.** doctor degree I then buy new car for you
'After you have got your doctor degree, I will buy a new car for you.' (Lin 2006: fn 18)

2. Imperfective in Serbian with future interpretations

- Puzzle: Why is imperfective allowed with morphological present in environments in which the perfective is banned?
- (9) *Sutra kupim kola.
tomorrow buy.**pf.**1.sg.pres car
'I will buy a car tomorrow.'
- (10) Sutra **kupujem** kola.
tomorrow buy.**impf.**1.sg.pres car
'I am buying a car tomorrow.'
- Preliminary Proposal: If Serbian imperfective is similar to English progressive (see Todorović 2014, 2016 for evidence from VP-ellipsis and temporal interpretation), then it might contain a modal component (in addition to a temporal component), quantifying over possible continuations, and licensing its future interpretation (cf. Dowty 1979, Landman 1992).
- This also captures the availability of future reading of imperfectives in propositional complements:
- (11) a. Verujem da Jovan sutra **kupuje** kuću.
believe.1.sg.pres. DA Jovan tomorrow buy.**impf.**3.sg.pres house
'I believe that John will be buying a house tomorrow.'
- b. *Verujem da Jovan sutra kupi kuću.
believe.1.sg.pres. DA Jovan tomorrow buy.**pf.**3.sg.pres house
'I believe that John will buy a house tomorrow.'

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