

# The remote and the impossible in Serbian

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## 1 Conditionals and X-marking

- Conditionals can serve to characterize epistemic possibilities in a given conversation.

(1) *If they invite me to that party tomorrow, I will go.*  
**O(ordinary)-marked**, indicative conditional

- Conditionals can also characterize states of affairs that are remote (in different ways/to different degrees) from what counts as epistemically possible.

- Markers of remoteness (**X-marking**, von Fintel and Iatridou 2023) include specialized verbal moods and seemingly repurposed ('fake', Iatridou 2000) tense/aspect.

(2) English uses '**fake**' past:  
a. *If they invited me to that party tomorrow, I'd go.*  
**Simple Past (SP), X-marked**; present-counterfactuals  
b. *If they had invited me to that party tomorrow, I'd have gone.*  
**Past Perfect (PP), X-marked**; past-counterfactuals

- Note:** The new terms X-marking and O-marking seek to avoid morphosyntactic categories ('subjunctive', 'simple past'...) that hinder crosslinguistic comparison, and semantic categories ('counterfactual', 'potentialis', 'realis', 'irrealis'...) that pre-empt investigations of what is conventionally encoded.

- Some theoretical concerns:
  - What exactly is this 'remoteness' semantically?
    - \* Different X-marking constructions?
    - \* Default assumption: same remoteness-concepts across languages
  - How is remoteness encoded compositionally in different languages?
  - To what extent, if at all, can X-marking (e.g., English 'fake' past) be unified with 'the regular' uses of the marker?

**Goal:** investigate Serbian X-marking, which

- combines (i) choice of connective, (ii) verbal mood, (iv) tense/aspect marking to express different types of remoteness,
- transparently displays a split into modally and temporally interpreted X-marking as hypothesized in the recent literature.

## 2 Basics of Serbian X-marking

### 2.1 Background: Conditionals

- Semantic theories largely agree that conditionals 'IF  $p$  (=antecedent),  $q$  (=consequent)'
  - express that  $q$  is true at all evaluation points in the relevant domain that make true  $p$ ; and
  - mark what domains supply the relevant  $p$ -indices.
- Recent theories distinguish three domains (e.g., Schulz 2017; Mizuno and Kaufmann 2019; von Prince 2019) that roughly correspond to three degrees of remoteness in the descriptive literature (e.g. realis–potentialis–irrealis):
  - D1: *the speaker's / participants' epistemic alternatives at the time of evaluation*  
D1 is the quantificational domain of O-marked ('indicative') conditionals like (1).
  - D2: *epistemic alternatives (D1) together with relevant remote or impossible worlds.*  
D2 is the quantificational domain of English simple-past X-marked conditionals like (2a).
  - D3: *worlds that can be ruled out based on current knowledge, but were live possibilities at an earlier point ('how things could have turned out').*  
D3 is the quantificational domain of English past perfect X-marked conditionals like (2b).
- Note:** as reflected in the traditional terminology ('potentialis' vs. 'irrealis'), the form types that we associate with D2 and D3, respectively, are often distinguished by *degrees* of

remoteness ('far-fetched, but possible' vs. 'impossible'). We follow recent works that characterize the distinction in terms of *how* remote possibilities are reached; see arguments in Sect. 3.3.

## 2.2 The Serbian X-marking Pattern

Serbian O- vs. X-marking employs:

- an analytic mood “conditional” (aorist of *biti* ‘be’ + past participle of lexical verb);
- a switch in complementizer (*ako/da*)
- present vs. perfect in *da*-antecedents (D2<sub>da</sub> vs. D3)

- (3) D1: Ako me **pozovu** na žurku, **ići ću**.  
AKO I.DAT invite.3PL.PRES on party go.INF. will.1SG  
‘If they invite me to the party, I’ll go.’
- D2<sub>ako</sub>: Ako **bi** me **pozvali** na žurku, **išla bih**.  
AKO be.3PL.AOR I.DAT invited.M.PL on party gone.F.SG be.1SG.AOR
- D2<sub>da</sub>: Da me pozovu na žurku, **išla bih**.  
DA I.DAT invite.3PL.PRES on party gone.F.SG be.1SG.AOR  
‘If they invited me to the party, I’d go.’ (i.e., D2<sub>ako</sub> and D2<sub>da</sub> are synonymous)
- D3: Da **su** me **pozvali** na žurku, **išla bih**.  
DA be.3PL.PRES I.DAT invited.M.PL on party gone.F.SG be.1SG.AOR  
‘If they had invited me to the party, I’d have gone.’

Type	Connective	Antecedent	Consequent
D1	<i>ako</i>	indicative (present)	indicative (future)
D2	<i>ako</i>	conditional ( <i>bi</i> +past.part)	conditional ( <i>bi</i> +past.part)
	<i>da</i>	indicative (present)	conditional ( <i>bi</i> +past.part)
D3	<i>da</i>	indicative (perfect)	conditional ( <i>bi</i> +past.part)

Table 1: Serbian main-form types

- Perfective vs. imperfective aspect does not seem to play a role for X-marking in Serbian (patterning with Russian and unlike e.g., Hindi, see Iatridou 2009).

**Comment:** The form types exemplified in (3) and summarized in Table 1 do not exhaust the possibilities for expressing conditionals in Serbian. For instance, *ako* can be replaced with other connectives like *ukoliko* ‘in case’ or *kada* ‘when’:

- (4) a. {Ukoliko / kada} me pozovu na žurku, ići ću.  
in.case / when I.DAT invite.3PL.PRES on party go.INF. will.1SG  
‘In case / when they invite me to the party, I’ll go.’ (D1)
- b. {Ukoliko / kada} bi me pozvali na žurku, išla bih.  
in.case / when be.3PL.AOR I.DAT invited.M.PL on party gone.F.SG  
be.1SG.AOR  
‘In case / when they invited me to the party, I’d go.’ (D2)
- c. {Ukoliko / ??kada} me pozovu na žurku, išla bih.  
in.case / when I.DAT invite.3PL.PRES on party gone.F.SG  
be.1SG.AOR  
‘In case / when they invited me to the party, I’d go.’ (D2)

Antecedents can be marked with fronting of the verb + interrogative marker *li*:

- (5) Pozovu li me na žurku, ići ću / išla bih.  
invite.3PL.PRES Q I.DAT on party go.INF. will.1SG / gone.F.SG be.1SG.AOR.  
‘In case / when they invite me to the party, I’ll go / I’d go.’ (D1/D2)

As in other languages investigated for this (and see Arsenijević 2021 for Serbian), consequents can be imperative clauses (only D1 and D2) or interrogative clauses:

- (6) a. Ako te pozovu na žurku, idi!  
AKO you.DAT.SG invite.3PL.PRES on party go.IMP.2SG  
‘If they invite you to the party, go!’ (D1)
- b. Ako bi te pozvali na žurku, idi!  
AKO be.3PL.AOR you.DAT.SG invited.M.PL on party go.IMP.2SG  
‘If they invited you to the party, go!’ (D2)
- c. Da te pozovu na žurku, idi!  
DA you.DAT.SG invite.3PL.PRES on party go.IMP.2SG  
‘If they invited you to the party, go!’ (D2)
- (7) a. Ako te pozovu na žurku, hoćeš li ići?  
AKO you.DAT.SG invite.3PL.PRES on party want.2SG Q go.INF  
‘If they invite you to the party, will you go?’ (D1)
- b. Ako bi te pozvali na žurku, bi li išla?  
AKO be.3PL.AOR you.DAT.SG invited.M.PL on party be.2SG.AOR Q  
gone.F.SG  
‘If they invited you to the party, would you go?’ (D2)
- c. Da te pozovu na žurku, bi li išla?  
DA you.DAT.SG invite.3PL.PRES on party be.2SG.AOR Q gone.F.SG  
‘If they invited you to the party, would you go?’ (D2)

- d. Da su te pozvali na žurku, bi li  
 DA be.3PL.PRES you.DAT invited.M.PL on party be.2SG.AOR Q  
 išla?  
 gone.F.SG  
 ‘If they had invited you to the party, would you have gone?’ (D3)

All these cases merit closer investigation in future work, but we are optimistic that many of them can be understood straightforwardly in terms of the account developed here in combination with independently motivated assumptions (see e.g., Kaufmann and Kaufmann 2021 for imperative consequents, Isaacs and Rawlins 2008 for interrogative consequents; Grosz 2012 for verbal inversion antecedents).

### 3 Analyzing Serbian X-marking

#### 3.1 The main ideas

- All **conditionals** if  $p$ ,  $q$  express that all relevant  $p$  situations are  $q$  situations. They differ in what counts as relevant. Conditional connectives (*ako*, *da*, *ukoliko*, ...) combine with the antecedent proposition  $p$  to introduce the set of (relevantly accessible) antecedent situations.
- Interpretation is sensitive to a **salient belief state**: Mood marking (*indicative mood* vs. *conditional mood*) indicates whether a proposition is interpreted on this belief state. By default, the salient belief state is the context set CS of the on-going conversation (what is common ground between the participants). Counterfactuals are evaluated (partly) outside of the context set. Indicative cannot be used in them – unless the belief state parameter has been shifted... *da* ‘meddles with mood marking’: it picks up a salient state possibly different from the currently salient information state and makes that the one relevant for indicative marking.
- **Perfect** embedded in the antecedent of a *da* signals modal expansion through ‘history rerun’ at a salient past point.

In Section 4 we discuss extensions to a few other phenomena.

#### 3.2 Serbian conditionals interpreted in a $W \times T$ -model

##### General semantic framework:

- Interpretation proceeds in a model containing a set of worlds  $W$  and temporal instants  $T$  (variables  $w, w', w'', \dots$  and  $t, t', t'', \dots$ , respectively) (For simplicity we work with temporal instants; we could derive intervals if needed.)

- Indices (variables  $i, j, \dots$ ), our points of evaluation, are world-time pairs (e.g.  $i = \langle w, t \rangle$ )
- Declarative clauses characterize sets of indices (simplifyingly, denote sets of indices)
- Indices with the same world component are linearly ordered by temporal precedence, noted as  $<$
- Interpretation depends on an index of evaluation  $i$  and a salient information state  $S$  (Yalcin 2007), where  $S$  is a set of indices (noted  $[[\cdot]]^{i,S}$ )  
 By default,  $S = CS$  (the context set of the on-going conversation).

##### Conditionals as universal quantification:

- Conditional antecedents refer to the set of indices that (i) are relevantly accessible from the index of evaluation  $i$  (indicated by  $R$ ), and (ii) verify the antecedent proposition  $\phi$ .

$$(8) \quad [[\text{IF}^R \phi]]^{i,S} = \{j \in W \times T \mid [[\phi]]^{i,S}(j) \wedge R(i, j)\}$$

(8) can be obtained from either of two popular accounts of conditional antecedents: (i) via abstraction over the index argument ( $\approx$  relative clause formation, e.g., Bhatt and Pancheva 2017; Arsenijević 2021) or (ii) as a plural definite of indices (e.g., Schlenker 2002; Yang 2023).

The consequent is predicated of the antecedent referent pointwise, yielding universal quantification (Schlenker 2002):

$$(9) \quad [[\text{IF}^R \phi, \psi]]^{i,S} = \forall i' \in [[\text{IF}^R \phi]]^{i,S}: [[\psi]]^{i',S}$$

##### Accessibility relation $R$ :

- The value of  $R$  is context dependent and constrained by mood marking and connectives. (We abstract away from the details, but you can think of  $R$  as a free variable in the object language interpreted by a contextually given assignment.)  
 Once the value of  $R$  is set, at each index of evaluation  $i$  it characterizes a set of accessible indices  $j$ :

$$(10) \quad R(i) = \{j \in W \times T \mid j \text{ is compatible with what } R \text{ records at index } i\}$$

- **Non-predictive indicative conditionals** evaluate the consequent on the indices compatible with the speaker’s belief, a subset of the indices in the current information state of the conversation (the context set, Stalnaker 1978):

$R = R_{\text{dox}}$  ‘the speaker’s beliefs’

$$(11) \quad \text{a. } \textit{If Mary is working from home right now, her cat is happy.}$$

- b.  $\llbracket \text{IF}^R \text{ Mary is working from home right now} \rrbracket^{i,S} = \{j \mid \text{workhome}(\text{mary})(j) \wedge j \in R_{\text{dox}}(i)\}$

For unembedded occurrences (matrix clause),  $R_{\text{dox}}(i) \subseteq S (= \text{the context set } CS)$ .

- **Predictive indicative conditionals** involve antecedents that are evaluated at indices in the future of what the speakers thinks is the case currently (a subset of the futures of the indices in the current information state) (S. Kaufmann 2005b):

$R = R_{\text{dox}}^*(i)$  (possible futures according to the speaker):

$$(12) \quad R^*(i) = \{j \mid \exists j' [j' \leq j \wedge j' \in R(i)]\}$$

- (13) a. *If Mary comes home before 6 tonight, her cat will be happy.*  
 b.  $\llbracket \text{IF}^R \text{ Mary comes home before 6 tonight} \rrbracket^{i,S} = \{j \mid j \in R_{\text{dox}}^*(i) \wedge \text{comehome-b6}(\text{mary})(j)\}$

- **Counterfactuals/subjunctive conditionals** quantify over a set of indices obtained by **causal intervention** (S. Kaufmann 2005a, 2023) to make room for remote or impossible antecedents. The set given by the antecedent is a superset of, or fully disjoint from,  $S$ .

$$(14) \quad R^{\text{caus}}(i)(p) := \{j \mid j \text{ shares the history of } i \text{ modulo causal ancestors of } p \text{ and general laws in conflict with } p\}$$

Roughly: a set of co-temporal indices that retains causally independent facts and general laws of nature not in conflict with the antecedent proposition (Veltman 1996), but can differ on parameters causally determining or determined by the antecedent from evaluation index  $i$  ('the intervention time') on.

- (15) a. *If Mary had come home before 6 tonight, her cat would have been happy.*  
 b.  $\llbracket \text{IF}^R \text{ Mary had come home before 6 tonight} \rrbracket^{i,S} = \{j \mid j \in R^{\text{caus}}(i)(\text{comehome-b6}(\text{mary})) \wedge \text{comehome-b6}(\text{mary})(j)\}$

The role of mood marking:

- Mood marking checks the status of the proposition with respect to the currently salient information state  $S$ .
- We take **indicative mood** to be semantically marked (Leahy 2011 for English): a sentence carrying indicative morphology is defined only on the salient information state (and its future continuations compatible with shared beliefs about the future).

$$(16) \quad \llbracket \phi^{\text{indicative}} \rrbracket^{i,S} = \llbracket \phi \rrbracket^{i,S} \text{ if there is } i' \in S \text{ and } i' \leq i, \text{ undefined otherwise.}$$

- **Conditional mood** (Serbian *bi* + PARTICIPLE) is the semantically unmarked form. Its use signals that  $R$  is interpreted to pick a domain that is not a subset of the current information state and its future continuations (**antipresupposition**, Heim 1991)  $\Rightarrow R^{\text{caus}}$ .

- **The twist with *da***: unlike the other connectives (e.g. *ako*, *ukoliko*, *kada*), *da* overwrites the information state parameter for its scope *with the set of indices accessible through the relation it combines with*:

$$(17) \quad \llbracket da^R \phi \rrbracket^{i,S} = \{j \mid j \in R^*(i) \wedge \llbracket \phi \rrbracket^{j, \{j \mid j \in R^*(i)\}}\}$$

Thereby, the indices accessible through  $R$  count as relevant for indicative on the proposition under *da*, explaining the occurrence of indicative in *da*-antecedents.

### 3.3 Deriving Serbian X-marking

Connectives and mood marking:

- The domains of D2 and D3 conditionals lie (partly) outside of the overall salient information state  $S$   
 $\Rightarrow$  *bi*-marking on the consequent shows that its evaluation cannot be restricted to  $S$  and its future (as would be presupposed by the indicative mood).
- *ako* and *da* differ in what counts as the salient information state for the interpretation of the antecedent proposition:

*ako* is like other IF-markers, see (8); *da* overwrites the currently salient information state ((18b) repeats (17)):

$$(18) \quad \begin{array}{l} \text{a. } \llbracket \text{ako}^R \phi \rrbracket^{i,S} = \{j \mid j \in R^*(i) \wedge \llbracket \phi \rrbracket^{j,S}\} \\ \text{b. } \llbracket \text{da}^R \phi \rrbracket^{i,S} = \{j \mid j \in R^*(i) \wedge \llbracket \phi \rrbracket^{j, \{j \mid j \in R^*(i)\}}\} \end{array}$$

$\Rightarrow$  To describe a domain (partly) outside of the current information state  $S$  (through  $R^{\text{caus}}$ ), *da* combines with indicative, *ako* requires subjunctive.

D3 marking and 'fake' past/perfect under *da*:

- D3 conditionals are marked by including perfect in the antecedent of a *da*-clause.
- Serbian perfect plays the role of an all purpose past (Browne and Alt 2004), but Todorović (2016) argues that it semantically encodes anteriority relative to a reference time (i.e., doesn't express 'absolute' past w.r.t. the utterance time).

Either way (as past or as anteriority marker), the perfect in the antecedent of D3 conditionals seems 'fake' in D3 (similarly to English 'fake' past).

- The perfect in the D3 antecedent does not serve to locate the event described by the antecedent before the utterance time; focused future adverbials can appear (Durović 2019's 'Serbian fake past'; up to speaker variation):

$$(19) \quad \begin{array}{l} \% \text{Da sam} \quad \text{SUTRA} \quad \text{prodala} \quad \text{kola,} \quad \text{bolje} \quad \text{bih} \quad \text{prošla.} \\ \text{da be.1SG.PRES tomorrow sold.F.SG car} \quad \text{better be.1SG.AOR passed.F.SG} \\ \text{'If I had sold my car TOMORROW, I would've gotten a better price.'} \end{array}$$

- Perfect in D3 antecedents need not contribute anteriority w.r.t. the consequent either as evidenced by so-called *backtrackers* (consequent provides evidence for/against antecedent):

(20) Context: We are worrying that John might've been at the meeting and might've heard the news about impending budget cuts (we hope he won't hear about it before some other decisions have been made). I aim to reassure you:

- a. Sigurna sam da Jovan sinoć na kraju nije  
 sure be.3SG.PRES DA Jovan last.night on end not-be.3SG.PRES  
 bio na sastanku. [Da je bio na sastanku,  
 been.M.SG on meeting. [DA be.3SG.PRES been.M.SG on meeting  
**morao bi** da ode pre ručka], a ručao  
 must.M.SG been.M.SG DA go.3SG.PRES before lunch] and had.lunch.M.SG  
 je sa mnom u menzi. Tako da, nemoguće da  
 be.3SG.PRES with I.INSTR in cafeteria. So DA impossible DA  
 je bio tamo.  
 be.3SG.PRES been.M.SG there  
 'I am sure that John wasn't at last night's meeting in the end. [If he had been at the meeting, he'd have had to leave before lunch], and he did have lunch with me at the cafeteria. So no, he really can't have been there.'

⇒ the anteriority expressed by the perfect in the *da*-antecedent is an instance of X-marking, 'fake' past.

- Literature on 'fake' past ('X-marking past') is divided on whether 'fake' past is temporal ('*past-as-past*' approaches, e.g. Ippolito 2013; Mirrazi and Ippolito t.a.) or modal ('*past-as-modal*', e.g. Iatridou 2000; Mackay 2019).

Recent literature provides evidence against a uniform treatment of 'fake' past (Schulz 2017; Mizuno and Kaufmann 2019; Mizuno 2023; Kaufmann 2023):

- 'Fake' past in English Simple Past conditionals signals modal expansion.
- Second layer in English Past Perfect signals temporal backshift.

Semantic evidence: backshift past encodes causal intervention ('rerunning of history') from a salient past time *before the antecedent became settled false in the actual world*:

- (21) *If I had sold my car tomorrow* [rather than yesterday when I actually sold it], *I would have made more money.*  
 ⇒ involves backshift to a moment before the salient past selling even within yesterday

Antecedents that are not associated with a salient past point cannot be expressed with PP-X-marking, e.g. *countermathematicals* (see also discussion in Lewis 1973).

- (22) a. *If 9 were prime, it wouldn't be divisible by three.*  
 b. *#If 9 had been prime, it wouldn't have been divisible by three.*  
 (ok if there is a salient past at which the antecedent was under consideration, e.g., we're discussing what you got wrong during a math exam you failed yesterday)

Morphosyntactic evidence from Japanese (Mizuno and Kaufmann 2019): remoteness can, but need not be marked with ('fake') past tense. Past-marking yields the semantic equivalent of English PP-counterfactuals (D3):

- (23) Mosi [Jo-ga asita ku]-reba, [paatii-wa totemo moriagar]-u daroo.  
 ADV Jo-NOM tomorrow come-COND party-TOP very be.fun-NPST MODAL  
 (i) 'If Jo comes tomorrow, the party will be very fun.' (D1)  
 (ii) 'If Jo came tomorrow, the party would be very fun.' (D2)
- (24) Mosi [Jo-ga asita ku]-reba, [paatii-wa totemo moriagar]-**ta** daroo  
 ADV Jo-NOM tomorrow come-COND party-TOP very be.fun-PAST MODAL  
 'If Jo had come tomorrow, the party would have been very fun' (D3)
- (25) a. Mosi [kyuu-ga sosuu dear]-eba, [san-de warikir-e-na]-i.  
 ADV nine-NOM prime be-COND three-by divide-able-NEG-NPST  
 'If nine were prime, it would not be divisible by three.'  
 b. ??Mosi [kyuu-ga sosuu dear]-eba, [san-de warikir-e-na]-**katta**.  
 ADV nine-NOM prime be-COND three-by divide-able-NEG-PAST  
 ??'If nine had been prime, it would not have been divisible by three.'

- Semantically, Serbian D3 conditionals pattern with English PP-counterfactuals and Japanese past-marked counterfactuals. Atemporal countermathematicals are expressed with D2-conditionals ((26) with *da* or *ako*).

D3 is infelicitous (27) (at least absent a specific event in the past at which it was relevant):

- (26) a. Da je 9 prost broj, ne bi bio deljiv  
 da be.3SG.PRES 9 simple number not be.3SG.AOR been.M.SG divisible  
 sa 3.  
 with 3  
 b. Ako bi 9 bio prost broj, ne bi bio deljiv sa 3.  
 ako be.3SG.AOR 9 been.M.SG simple number not be.3SG.AOR been.M.SG  
 deljiv sa 3.  
 divisible with 3  
 'If 9 were prime, it would not be divisible by 3.' (D2)

(27) #Da je 9 bio prost broj, ne bi bio  
 da be.3SG.PRES 9 been.M.SG simple number not be.3SG.AOR been.M.SG  
 deljiv sa 3.  
 divisible with 3  
 ‘If 9 had been prime, it would have not been divisible by 3’ (D3)

- We take D3 to be interpreted like D2, but embedded under temporal backshift to ‘rerun history’:

(28) a. ‘If Mary had come home before 6, her cat would have been happy.’  
 b.  $\exists i'[i' < i \wedge \forall j[[j \in R^{caus}(i')(comehome-b6(mary)) \wedge comehome-b6(mary)(j)] \rightarrow happy(cat-of-mary)(j)']]$

- Note that this leaves us with a **compositionality puzzle**: PERFECT within antecedent seems to scope over the counterfactual semantically. Similar problems result for English, see Ippolito (2013) (in contrast to scopally transparent Japanese).

Further evidence for semantically encoded backshift in D3 (past-as-past) (adopted from Mizuno 2023):

- Antecedents of D2-conditionals cannot talk about indices in the past (neither with *ako*, (29), nor with *da*, (30)).

(29) \*Ako bi Miloje otišao na žurku juče, žurka bi  
 AKO be.3SG.AOR Miloje gone.M.SG on party yesterday party be.3SG.AOR  
 uspela.  
 succeeded.F.SG

(30) \*Da Miloje ode na žurku juče, žurka bi uspela.  
 DA Miloje go.3SG.PRES on party yesterday party be.3SG.AOR succeeded.F.SG  
 Int.: ‘If Miloje were to have been on the party yesterday, the party would have been successful.’

- D3-conditionals can describe past eventualities (as well as present or future ones, (19)):

(31) Da je Miloje otišao na žurku juče, žurka bi  
 DA be.3SG.PRES Miloje gone.M.SG on party yesterday party be.3SG.AOR  
 uspela.  
 succeeded.F.SG  
 ‘If Miloje had been at the party yesterday, the party would have been successful.’

## 4 Possible implications beyond conditional clauses

### 4.1 *da*-complements and *da*-purpose clauses

- Connective *da* itself triggers (i) forward expansion (like any conditional connective), and (ii) overwrites what counts as the salient belief state (the domain of indicative mood).

⇒ Serbian *da*-complements with indicative morphology appear also under **predicate types** that cross-linguistically tend to take infinitival (Serbian: optional) or subjunctive complements (e.g. WANT- or TRY-predicates) (in addition to appearing in non-factive indicative complements like under SAY or BELIEVE; Browne and Alt 2004; Todorović and Wurmbrand 2020; Kaufmann et al. acc.).

(32) a. Petra želi trčati.  
 Petra want.3SG.PRES run.INF.  
 ‘Petra wants to run’  
 b. Petra želi da trči.  
 Petra want.3SG.PRES DA run.3SG.PRES  
 ‘Petra wants to run’

We assume that *da*’s *R* variable is anaphoric to the modality of the matrix clause.

- *da*-clauses also realize **purpose clauses**, where they can optionally be indicative or conditional marked (Arsenijević 2021, his (24)):

(33) Polomio je staklo da { uskoči / bi  
 broken.M.SG be.3SG.PRES glass DA jump-in.3SG.PRES / be.1SG.AOR  
 uskočio } u sobu.  
 jumped-in.M.SG in room  
 ‘He broke the glass in order to jump into the room.’

We consider this evidence that purpose clauses are sensitive to two different information states:

1. the belief state of the agent, and
2. the state where all the agent’s goals are realized

The goal proposition (‘that he jumps into the room’) has to be evaluated on the goal state; if *da*’s contextual variable *R* is set to the goal state as well, the purpose clause carries indicative; if *da*’s contextual variable *R* is set to the agent’s belief state, the purpose clause carries conditional mood (*bi* + past.participle). (See Nissenbaum 2005 for a compositional analysis of purpose clauses in English.)

## 4.2 Standalone uses for directives and optatives

- *da-* and *ako-*clauses can also appear as standalone matrix clauses
- Both *da*-clauses (discussed in Grosz 2012) and *ako*-clauses can serve as *optatives*:

- (34) Da Jovan { makar / samo } poslušā Mariju!  
 DA Jovan { at.least / only } listen-to.3SG.PRES Marija  
 ‘If only Jovan were to listen to Marija!’
- (35) Da je Jovan { makar / samo } poslušāo Mariju!  
 DA be.3SG Jovan { at.least / only } listened-to.M.SG Marija  
 ‘If only John had listened to Mary!’ Grosz 2012:(43c)/(536d)
- (36) Ako bi me samo poslušāla!  
 AKO be.3SG.AOR I.ACC only listened-to.F.SG  
 ‘If you were to only listen to me!’

- Grosz (2012) discusses standalone uses of *if* and *that*-clauses as *optatives* and *exclamatives*

- (37) a. Oh, that I had told them both a year ago!  
 (Martin F. Tupper. 1851. *The Twins; A Domestic Novel*, Grosz 2012, (1a)
- b. If only I had told them both a year ago! Grosz 2012: (1b)

Grosz assumes that these standalone occurrences express propositions that are marked for mood (for him, relation to the context set). They combine with a covert *exclamative operator* that expresses that the proposition surpasses a contextually given threshold for desirability (optatives) (or unexpectedness, exclamatives; – *ako* does not express exclamatives, *da* remains to be tested more carefully.)

- In addition, for *da*-clauses, we observe *directive readings* (Vrzić 1996; Kaufmann et al. acc.; Oikonomou and Ilić acc.).

- (38) Da pročitaš ovu knjigu!  
 DA read.2SG.PRES this book  
 ‘Read this book (already)!’

We assume that there is a covert prioritizing (deontic or bouletic) necessity modal (Kaufmann et al. acc.) that combines with the *da*-marked proposition and sets the value of *R*.

## 5 Conclusions

We have proposed a compositional analysis of the interplay of connective, mood, and perfect marking as encoding different types of remoteness in Serbian conditionals.

- Mood marking indicates sensitivity to the contextually salient belief state, indicative is *marked* to restrict interpretation to this state; conditional mood is unmarked.

Connective *da* interacts with the information state parameter (resets it to the modality it depends on); the other conditional connectives (*ako*, *ldots*) do not.

- Perfect in the antecedent of *da* conditionals indicates backshift to a salient point in the past.
- The Serbian data fit the semantic characterization of (co-temporal) modal expansion (D2) and backshift to ‘rerun history’ (D3) as hypothesized in the formal literature (Mizuno and Kaufmann 2019; Mizuno 2023; Kaufmann 2023).

Serbian fills a gap in the crosslinguistic picture so far: it marks modal vs. temporal X-marking *transparently*.

In contrast to previously discussed languages:

- English uses ‘fake’ past/perfect for both types
- Japanese leaves D2 unmarked, marks D3 (backshift) with past tense
- Slovenian only marks modal expansion (Mizuno 2023).

- (39) Če bi Rok imel denar, bi ti ga posodil.  
 if B1 Rok have.PART.3.SG.M money B1 to.you it lend.PART.3.SG.M  
 ‘If Rok had any money, he would lend it to you.’ Mizuno 2023:(3a)

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