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# Encyclopedia of Slavic Languages and Linguistics Online

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## Factivity and Factualness

(6,417 words)

Factive predicates exhibit a series of contrasts with respect to their nonfactive counterparts, both in Slavic and cross-linguistically. At the level of interpretation, factives such as *know* and *regret* typically project presuppositions, which are assumed to be true by the speaker, whereas nonfactives such as *think* and *say* do not introduce such presuppositional readings. Factive constructions also differ from others at the level of morphosyntax. One syntactic area in which factives exhibit distinctive features in some Slavic languages, in particular Bulgarian, Macedonian, and BCMS, has to do with complementizer selection: factive predicates in these languages may select for a special factive complementizer. The broader questions in the quite rich literature on factivity surround the semantic and the syntactic distinctions between the class of true factives, as opposed to nonfactives or semifactives, the role of semantic vs. constituent selection of the complement clause, and the role of complementizer selection in defining factivity as a linguistic phenomenon. The Slavic data discussed in this article help us shed new light on these issues.

Diagnosing factivity

Table of Contents

[Diagnosing factivity](#)

[Presupposition versus entailment](#)

[Factive versus semifactive predicates](#)

[Emotive factives](#)

[Dedicated complementizers in South Slavic](#)

[Factivity and veridicality](#)

[Bibliography](#)

In linguistics, the term “factivity” has been employed in two, rather incommensurable, meanings. In one usage, it is practically synonymous to (degree of) factuality (or factualness), as it refers to the degree of epistemic support that the speaker (or some other judging subject) lends to the propositional content of an utterance. This usage falls into the “domain” of veridicality and epistemic modality (see Modality), and it will only be treated briefly in the last section. In a more specific usage, which is the topic of this entry, “factivity” denotes the relation between a sentence containing a factive verb and the truth of the embedded proposition (Colonna Dahlman 2015). In the seminal paper by Kiparsky and Kiparsky (1970), factive-type predicates like *know*, *regret*, and *realize*, are distinguished from nonfactive ones like *believe*, *think*, *assume*, and *suppose*, in that they trigger/carry a presupposition by the speaker that their clausal complement expresses a true proposition (1970: 143). As an illustration, see the examples in (1) from Russian (presuppositions will be marked with the symbol >>, absence thereof by the symbol //>>).

(1) a. Ru	<i>Ivan</i>	<i>duma-et,</i>	<i>čto</i>	<i>Mari-ja</i>	<i>ego</i>	<i>zameti-l-a,</i>
	Ivan.	think.	COMP	Maria.	him	notice.
	M(.NOM)	IPFV-PRS.3SG		F-NOM		PFV-PST-SG.F

*no on ošibaetsja*

‘Ivan thinks that Maria noticed him, but he is wrong’

//>> no presupposition, i.e., ‘Maria did not (necessarily) notice Ivan’

b. Ru	<i>Ivan</i>	<i>zna-et,</i>	<i>čto</i>	<i>Mari-ja</i>	<i>ego</i>	<i>zameti-l-a,</i>
	Ivan.	know.	COMP	Maria.	him	notice.
	M(.NOM)	IPFV-PRS.3SG		F-NOM		PFV-PST-SG.F

#no on ošibaetsja

'Ivan knows that Maria noticed him #but he is wrong'

>> presupposition 'Maria noticed Ivan'

The complement clause in (1b), embedded under the factive *znat* 'know', is not part of what the speaker asserts but part of what he/she presupposes and thus cannot be contradicted or canceled via an explicit denial, which is why the continuation *but is wrong* is infelicitous (marked by the sign #). There is no such presuppositional reading in (1a) involving the nonfactive *dumat* 'think', and hence the embedded complement can be contradicted by the speaker (cf. also Padučeva 1988a). The same type of factive vs. nonfactive contrast is observed across Slavic and beyond.

In addition to the cancelability test in (2), there is a further series of tests that can be used in order to distinguish factive from nonfactive predicates. For example, complement clauses embedded under a factive predicate are inferred to be true even if the main clause contains a nonveridical matrix operator like negation, a question, or a modal (see Veridicality), all of which generally affect the truth value of propositions. Presuppositions thus can be said to project outside the scope of these operators (on presupposition projection, see Langendoen and Savin 1971; Karttunen 1973; Heim 1992; Beaver and Geurts 2011, among others). Observe in this respect the examples (2)–(4) illustrating the different presuppositional import of factive vs. nonfactive predicates in such contexts: on the one hand, the (a) sentences containing a nonfactive verb such as *believe* or *claim* do not give rise to a presuppositional reading (indicated here with the symbol //>>) and can even reverse the truth value of the embedded proposition; on the other hand, the (b) sentences containing a factive verb carry the presupposition that the embedded proposition is true (indicated here with the symbol >>):

(2) a. Cz	<i>Ne-věří-m,</i>	<i>že</i>	<i>Mari-e</i>	<i>odeš-l-a</i>
	NEG	COMP	Maria.	go.away.
	-believe.		F-NOM	PFV-PST-SG.F
	IPFV-PRS.1SG			

'I do not believe that Maria left'

//>> 'Maria left'

b. Po	<i>Nie</i>	<i>żał-uj-ę,</i>	<i>że</i>	<i>Mari-a</i>	<i>odesz-ł-a</i>
	NEG	regret. IPFV-PRS-1SG	COMP	Maria .F-NOM	go.away. PFV-PST-SG.F

'I do not regret that Maria left'

>> Maria left

(3) a. BCMS	<i>Tvrđi-š</i>	<i>li</i>	<i>da</i>	<i>je</i>	<i>Mari-ja</i>	<i>otiš-l-a?</i>
	claim. IPFV-PRS.2SG	Q	COMP	be. PRS.3SG	Maria. F-NOM	go.away. PFV-LPT-SG.F

'Do you claim that Maria left?'

//>> 'Maria left'

b. BCMS	<i>Zna-š</i>	<i>li</i>	<i>da</i>	<i>je</i>	<i>Mari-ja</i>	<i>otiš-l-a?</i>
	know. IPFV-PRS.2SG	Q	COMP	be. PRS.3SG	Maria. F-NOM	go.away. PFV-LPT-SG.F

'Do you know that Maria left?'

>> 'Maria left'

(4) a. Bg	<i>Ivan</i>	<i>mož-e</i>	<i>da</i>	<i>vjarvja,</i>	<i>če</i>	<i>Marija</i>	<i>e</i>	<i>zamina-l-a</i>
	Ivan.	can.	SBJV	believe.	COMP	Maria.	be.	leave
	M	PRS-3SG		IPFV.PRS.3SG		F	PRS.3SG	-LPT-SG.F

'Perhaps Ivan believes that Maria left'

//>> 'Maria left'

b. Bg	<i>Ivan</i>	<i>mož-e</i>	<i>da</i>	<i>sážaljav-a,</i>	<i>če</i>	<i>Marija</i>	<i>e</i>	<i>zamina-l-a</i>
	Ivan.	can.	SBJV	regret	COMP	Maria.	be.	leave
	M	PRS.-3SG		.IPFV.PRS-3SG		F	PRS.3SG	-LPT-SG.F

'Perhaps Ivan regrets that Maria left'

>> 'Maria left'

The contrasts that we observe in these examples make a strong case that presuppositions project in factive embeddings only.

## Presupposition versus entailment

Presuppositions have received, and continue to receive, an enormous amount of attention in linguistics and the philosophy of language. However, while there is broader consensus that factive predicates introduce a presupposition, there is less agreement as to

the defining characteristics of presuppositions themselves. One of the subjects of controversy in this context is whether presuppositional readings are determined on the level of semantics or pragmatics, or at the interface between the two.

Under a semantic view of presuppositions, initiated with the works of Frege (1948) and Strawson (1950), presuppositions are akin to implications in that they are logically or semantically dependent on the presupposing sentence *S*. This logical dependency can be formulated as the following truth-conditional relation:  $S(x \vee p)$  is true, if *p* is true. In other words, the question of the truth of sentence *S* depends on the truth of the embedded proposition *p*, so that in sentences such as the one in (1b), 'Ivan knows *p*' is true iff *p* 'Maria left' is true. Presuppositions are thus viewed as akin to truth entailment (i.e.,  $\forall p \models p$ ; see Veridicality). Ensuing work tried to capture the different ways in which this semantic relation obtains across various contexts involving presuppositional readings (Strawson 1952; Austin 1962; van Fraassen 1968; Keenan 1971).

In the semantic approach that views presuppositions in terms of truth entailment, factivity implies veridicality (i.e.,  $\forall p \models p$ ). However, the survival of presuppositions also in contexts in which entailments fail (i.e., when they are embedded under operators like negation or modals) is an argument in favor of keeping presupposition projection separate from truth entailment. Not all predicates that entail the truth of their complement clause are also factive: *be right*, *be true*, and *be clear* imply the truth of *p*, but only when used in a positive declarative form. The same is true for so-called implicative predicates like *manage to* and *forget to*.

Moreover, as first pointed out by Karttunen (1971a), although presuppositions tend to project in embedded environments (unlike entailments), they may sometimes fail to do so (for much relevant work, see Karttunen 1974; Gazdar 1979; Heim 1992; van der Sandt 1992; Simons 2001; Abbott 2008; Beaver 2010). Some factive predicates, like for instance *realize*, are presuppositional when appearing in a simple declarative, such as (5a), although they switch to being nonpresuppositional in environments involving a nonveridical operator such as the antecedent of a conditional in (5b).

(5) a. En *He just realized that Mary left*

>> 'Mary left'

b. En *If I later realize that I had not told the truth, I will confess it to everyone*

//>> 'I had not told the truth' (Karttunen 1971a: 63, his example 25b)

The possibility of canceling the presupposition under certain lexically specified or contextual conditions raises the question as to the very nature of presuppositions and is one of the main reasons behind the shift of perspective toward a pragmatic approach toward the problem of presupposition projection

## PROBLEM OF PRESUPPOSITION PROJECTION

This approach, originally expressed by Stalnaker (1972; 1973; 2002), views presuppositions not in terms of entailment but rather as backgrounded assumptions referring to what the speaker takes for granted and keeps implicit in the message that he/she wishes to convey. Presuppositions thus involve relations between propositions and speakers rather than just between propositions (cf. also Kiparsky and Kiparsky 1970: 143). Stalnaker's own pragmatic approach to presuppositions (1972; 1973; 2002), which is at the basis of most current pragmatic treatments of factivity, relies on the notion of common ground – the set of all those propositions that the speaker shares with the other discourse participants in the relevant context either because they have been introduced in previous discourse or because they constitute commonly shared beliefs.

Under this view, presuppositions are close to conversational implicatures and as such are more difficult to cancel. This, however, is possible if the speaker fails to assume that a certain presupposition is part of the common ground or if the backgrounded assumption itself is inconsistent with the common knowledge of the participants. While Karttunen (1971b; 1974) discussed presuppositions in terms of conventional implicatures and in relation to felicity conditions (cf. also Heim 1992), more recent pragmatically oriented proposals argue that presuppositions can be best understood as inferences that follow from conversational strategies (Simons 2007) and rules of cooperation in a Gricean sense (Grice 1975; Hazlett 2010; Beaver et al. 2015). Much work has focused on contexts in which presuppositions constitute *new* rather than *given* information, as in e.g., *En I discovered that he is in Canada now*, as well as with pragmatic distinctions between presuppositions and other information structure components such as the “main point” of an utterance (Abrusán 2010), “foregrounded information” (Geurts 1999), and “at issue” content (Beaver et al. 2010).

## Factive versus semifactive predicates

The issue of presupposition projection opened up a debate on the triggering problem: which item in the sentence is responsible for the projection of a presupposition? The most obvious answer is that this depends on some lexical property, say [+ factive] lexical feature, encoded in the meaning of the predicates themselves. However, as pointed out already by Karttunen (1971a), some factive verbs lose their presuppositional readings more easily than others, especially in questions and in antecedents of a conditional. See the example pair from Bulgarian (6); (6a) translates the English example (5b).

(6) a. Bg	<i>Ako</i>	<i>edin</i>	<i>den</i>	<i>osǎzna-ja,</i>	<i>če</i>	<i>ne</i>	<i>sǎm</i>	<i>kaza-l</i>	<i>istina-ta,</i>
	if	one	day	realize.	COMP	NEG	be.	say	truth
				PFV-1SG			PRS 1SG	-I.PT( SG M)	-DEF.SG F

<i>šte</i>	<i>si</i>	<i>go</i>	<i>prizna-ja</i>	<i>pred</i>	<i>vsički</i>
FUT	REFL.DAT	it. ACC	confess. PFV-PRS.1SG	in.front	all

'If one day I realize that I have not told the truth, I will confess it to anyone'

//>> 'I have not told the truth'

b. Bg	<i>Ako</i>	<i>sážaljava-š,</i>	<i>če</i>	<i>si</i>	<i>sgreši-l,</i>	<i>se</i>	<i>izvin-i</i>
	if	regret. IPFV-PRS.2SG	COMP	be. PRS.2SG	make.mistake. PFV-LPT(.SG.M)	REFL	apologize. PFV-IMP.2SG

'If you regret that you have made a mistake, just say sorry'

>> 'You made a mistake'

Karttunen (1971a) suggested that presupposition triggers might differ in strength and introduced a distinction between true or full factives and semifactives, which was later translated in terms of the more general distinction between “hard” and “soft” presupposition triggers (Abusch 2002; 2010; Abbott 2000; 2006; Simons 2001; 2007; 2013,): hard triggers always give rise to presuppositions, presumably because they operate on the level of semantics, while soft triggers allow for their presuppositions to be suspended under certain conditions like the presence of a nonveridical operator (e.g., negation, interrogation, if-clause, and modal verbs). They can thus be said to arise pragmatically, as some sort of conversational implicatures (but see Abrusán 2016 for a criticism). Along the lines of the hard vs. soft presupposition triggers, factive predicates are usually divided in two subgroups that also differ semantically: those in (7a), the true factives, express an emotional attitude of the main-clause subject, as well as a presupposition that the subject also believes p, while those in (7b), the semifactives, denote a cognitive activity of some sort:



- (7) a. emotive factives: *regret, appreciate, be sad, be happy, hate*  
 b. cognitive/doxastic factives: *realize, discover, forget, learn*

Both the coherency of the two groups and the individual membership into each group are often put into question and are still subject to much debate in the literature (Kiparsky and Kiparsky 1970; Abbott 2000; 2006; Simons 2001; 2007; 2013; Hazlett 2010; Abrusán 2016; Dudley et al. 2017, etc.) Some authors propose that cognitive factives are semantically ambiguous between a factive and a nonfactive reading and exploit either one or the other according to whether the presupposition projects or not (Tsohatzidis 2012: 452; Colonna Dahlman 2015). Furthermore, cognitive factives are often treated as assertive predicates (Hooper and Thompson 1973) in that they allow for Main Clause Phenomena on a par with (strongly) assertive predicates like *say, claim*, etc., which usually introduce new information and which also exhibit various common syntactic properties like e.g., V2 in Germanic. On the other hand, in the tradition which goes back to Kiparsky and Kiparsky 1970), cognitive factives count as non-assertive predicates in that they project a presupposition rather than introducing an assertion (see discussion in Sheehan and Hintzen 2011; Djärv 2019).

Slavic data reveal a mixed behavior of semifactives. While most cognitive verbs show a behavior typical of soft triggers, some members of this class (e.g., *understand*) are semantically ambiguous and may switch to hard triggers. For example, the presupposition projects under the negative form of a verb such as Bg *razbiram* when its interpretation is that of ‘understand’ (see 8a), but it fails to do so when the meaning of ‘find out/come to know’ is contextually selected instead, as in (8b). Grammatical properties of the factive predicate are also relevant. Thus, 1st-person utterances and conditionals tend to evoke the ‘come to know’ meaning, which does not imply that p is true, as in (8b), while non-1st-person utterances and past tense are easier to accommodate with the ‘understand’ meaning triggering a presupposition whereby p is true, as in (8a).

(8) a.	<i>Ne</i>	<i>be-še</i>	<i>u doma i</i>	<i>ne</i>	<i>razbra,</i>	<i>če</i>	<i>majka</i>	<i>mu</i>	<i>e</i>	<i>boln-a</i>
Bg										
	NEG	be- IMPF.3SG	at home and	NEG	understand .PFV(.AOR.3SG)	COMP	mother	POSS.CL	be. PRS.3SG	sick- SG.F

#*No vsaštност majka mu e živa i zdrava*

'He was not at home, and he did not understand that his mother is sick #but in fact his mother is in good health'

>> 'His mother is sick'

b. Bg	<i>Ako</i>	<i>edin</i>	<i>den</i>	<i>razber-a,</i>	<i>če</i>	<i>si</i>	<i>mi</i>	<i>izneverjava-l,</i>
	if	one	day	find_out.pfv-	COMP	be.	me.	cheat.
				PRS.1SG		PRS.2SG	DAT	IPFV-LPT(.SG.M)
	<i>šte</i>	<i>te</i>	<i>napusn-a</i>					
	FUT	you.	leave.					
		ACC	PFV-PRS.1SG					

'If one day I find out that you have cheated on me, I will leave you'

//>> 'You have cheated on me'

In a semantic approach to factivity, the different interpretations of *understand* in (8) may have to do with the veridical status of the predicates themselves in the sense of Giannakidou (2009). Baunaz and Puskas (2014) and Baunaz (2018) observe, on the basis of several languages, that with hard triggers the embedded proposition is true for both the speaker and the matrix-clause subject, while soft triggers relax this condition and require that the proposition be true for either the subject or the speaker, though not for both. The shift in the relevant epistemic model allows for different readings depending on whether the presupposition is projected under cognitive factives.

Other contexts that might be indicative of a distinction between hard and soft presupposition triggers are indirect (i.e., embedded) questions. In fact, questions usually cannot be used as complements of emotive factives, as, e.g., in Ru \**Mne žal', na kom on ženilsja* 'I regret whom he married'. However, as Padučeva (1988a: 23; 1988b) shows, the situation is more complicated since also some cognitive

factives, like Ru *dokazat'* ‘prove’, cannot normally take an embedded question and, more generally, the capability of embedding questions turns out to be an unreliable diagnostic for the factivity status of predicates (Bulygina and Šmelev 1988/1997; Padučeva 2010, *pace* Vendler 1980).

## Emotive factives

While pragmatic accounts concentrate on soft triggers aiming to account for the ease with which presuppositions can be canceled, recent work focusing on emotive factives like *regret*, *be happy*, and *be sad* has revealed that they too are quite controversial and nonhomogeneous as a class. In typical environments, including those in which the emotive is under the scope of a nonveridical operator (as, e.g., in [6b] above and [9] below), such predicates do indeed trigger a presupposition, i.e., ‘X regrets/is happy/is sad that p’ generally presupposes the truth of p for both X and the speaker.

(9) BCMS	<i>Ako</i>	<i>ti</i>	<i>je</i>	<i>žao</i>	<i>što</i>	<i>je</i>	<i>otiš-l-a,</i>
	if	you	AUX.PRS.3SG	sorry	COMP.FACT	AUX.PRS.3SG	leave.
		(.SG).DAT					PFV-LPT-SG.F

*pozovi je natrag*

‘If you are sorry that she left, call her back’

>> ‘She left’

According to Egré (2008), *regret* (and emotive predicates in general) is a non-truth-entailing predicate, i.e., the truth of p is not a condition for the truth of the sentence containing *regret*, although it can still be labeled factive in the pragmatic sense of the term, since the inference associated with it is crucially dependent on the context of conversation (Stalnaker 1973: 447). This makes *regret* look like a soft trigger (Abusch 2010). In fact, some authors consider all factives to be soft triggers (Simons 2007; Abrusán 2011). Such views undermine the standard taxonomy in (7) and raise the question as to what exact conditions underlie the different presuppositional behavior of factive predicates and how to account for the fact that in most contexts, emotives like *regret* do trigger a

presupposition also for the speaker (for a discussion, see Baunaz and Puskas 2014; Baunaz 2018; also Kiparsky and Kiparsky 1970; Giannakidou 2006; Abrusán 2011; Djärv et al. 2016, among others). Even if a pragmatic approach is adopted, this does not exclude the possibility that some presuppositions are specified in the lexicon (Stalnaker 1974), so the two approaches should not be seen as mutually exclusive (accepting one type of account for a particular trigger does not preclude accepting the alternative for other triggers, cf. Dudley et al. 2017). This issue calls out for in-depth studies on the particular predicates involved and their cross-linguistic comparability.

## Dedicated complementizers in South Slavic

Most Slavic languages feature a single complementizer with both factive and nonfactive complements, which cannot be dropped, differently from English, where (the unavailability of) complementizer drop is one of the syntactic diagnostics for factivity. Compare (10) from Russian with (11) from English:

(10) a. Ru	<i>Ivan</i>	<i>duma-et,</i>	<i>*(čto)</i>	<i>Marij-a</i>	<i>uš-l-a</i>
	Ivan.	think.	COMP	Maria.	go.away.
	M.NOM	IPFV-PRS.3SG		F-NOM	PFV-PST-SG.F

‘Ivan thinks that Maria left’

b. Ru	<i>Ivan</i>	<i>sožale-et</i>	/	<i>ponja-l,</i>	<i>*(čto)</i>	<i>Marij-a</i>	<i>uš-l-a</i>
	Ivan.	regret	/	understand.	COMP	Maria.	go.away.
	M.NOM	.IPFV-PRS.3SG		PFV-PST-SG.M		F-NOM	PFV-PST-SG.F

‘Ivan regrets / understood that Maria left’

- (11) a. En *Dean believes / says / thinks (that) Lily doesn't eat vegetables* (Shim and Ihsane 2017, example 2a)  
 b. En *Dean knows / realizes / regrets \*(that) Lily doesn't eat vegetables* (Shim and Ihsane 2017, example 3)

The South Slavic languages Bulgarian, Macedonian, and BCMS have two different sets of complementizers: in addition to their default complementizer (Bg *če*, Mk *deka*, BCMS *da*), they exhibit a second complementizer series (Bg *deto*, Mk/BCMS *što*), presumably due to a Balkan feature in their grammars (Asenova 2002). Such complementizers typically occur with emotive factives (BCMS *žaliti* / Bg *sážaljavam* ‘regret’, BCMS *biti sretan* / Bg *radvam se* ‘be happy’, BCMS *drago mi e* ‘feel good about’, Bg *máčno mi e* ‘be sad’; see [12b], [13b]), but they do not occur with cognitive (semi)factives (see [12a], [13a]; for more details on South Slavic, cf. van der Auwera and Kučanda 1985; Rudin 1986; Krapova 2010).

(12) a. Bg	<i>Ivan</i>	<i>zna-e</i>	<i>če</i>	/ *	<i>deto</i>	<i>Marija</i>	<i>si</i>	<i>e</i>	<i>zamina-l-a</i>
	Ivan.	know.	COMP	/ *	COMP.FACT	Maria.	REFL.DAT	be.	leave.
	M.NOM	IPFV- PRS.3SG				F		PRS.3SG	PFV-LPT-SG.F

‘Ivan knows that Maria has left’

b. Bg	<i>Ivan</i>	<i>sážaljava</i>	<i>če</i>	/	<i>deto</i>	<i>Marija</i>	<i>si</i>	<i>e</i>	<i>zamina-l-a</i>
	Ivan.	regret.	COMP	/	COMP.FACT	Maria.	REFL.DAT	AUX.PRS.3SG	leave.
	M.NOM	IPFV.PRS.3SG				F			PFV-LPT-SG.F

'Ivan regrets that Maria has left'

>> 'Maria left'

(13) a.	<i>Ivan</i>	<i>je</i>	<i>otkri-o</i>	<i>da</i>	/ *	<i>što</i>	<i>Petr-a</i>	<i>dolazi</i>
BCMS								
	Ivan.	AUX.PRS.3SG	discover.	COMP	/ *	COMP.FACT	Petra-	come.
	M.NOM		PFV-LPT(.SG.M)				F.NOM	IPFV.PRS.3SG

'Ivan discovered that Petra is coming'

b. BCMS	<i>Ivan</i>	<i>je</i>	<i>sret-an</i>	<i>da</i>	/	<i>što</i>	<i>Petr-a</i>	<i>dolazi</i>
	Ivan.	be.	happy-	COMP	/	COMP.FACT	Petra-	come.
	M.NOM	PRS.3SG	SG.M				F.NOM	IPFV.PRS.3SG

'Ivan is happy that Petra is coming'

>> 'Petra is coming'

(12b) and (13b) suggest that, even with emotive factives, the South Slavic factive complementizers are optional, although BCMS displays some regional variation; for instance, Serbian speakers appear to use *što* more robustly with emotive factives than do Croatian speakers. Optionality of complementizer choice turns out to be apparent, however. This is most clearly seen in the so-called false belief contexts illustrated in (14) from Bulgarian (adapted from Klein 1975, quoted in Gazdar 1979: 122) and in (15) from BCMS (adapted from Baunaz 2018: 158).

(14) Bg	<i>Edip</i>	<i>pogrešno</i>	<i>misle-še,</i>					
	Edip.	wrongly	think.					
	M		IPFV-IMPF.3SG					
	<i>če</i>	<i>e</i>	<i>nanesă-l</i>	<i>smărtonosna</i>	<i>rana</i>			
	COMP	AUX.PRS.3SG	inflict.	deadly	wound			
			PFV-LPT(.SG.M)					
	<i>i</i>	<i>săžaljava-še,</i>	<i>če /</i>	<i>deto</i>	<i>e</i>	<i>ubi-l</i>	<i>strannik-a</i>	
	and	regret.	COMP /	COMP.FACT	AUX.PRS.3SG	kill.	stranger-	
		IPFV-IMPF.3SG				PFV-LPT(.SG.M)	DEF	

‘Oedipus wrongly thought that he had inflicted a fatal wound, and he regretted killing the stranger’

(15)	<i>Ivan</i>	<i>vjeruje</i>	<i>da</i>	<i>se</i>	<i>Marij-a</i>	<i>već</i>	<i>uda-l-a,</i>	
BCMS								
	Ivan	believe.	COMP	REFL	Marija	already	marry	
	.M.NOM	IPFV.PRS(.3SG)			.F-NOM		.PFV-LPT- SG.F	
	<i>i</i>	<i>žao</i>	<i>mu</i>	<i>je</i>				
	and	sorry	him.	be.				
			DAT	PRS.3SG				
	<i>da</i>	<i>/</i>	<i>#što</i>	<i>je</i>	<i>uš-l-a</i>	<i>u</i>	<i>brak</i>	<i>s t-im</i>

COMP / COMP.FACT AUX.PRS.3SG enter. in marriage with DEM-  
 PFV-LPT- INS.SG  
 SG.F

*Ne znam otkud mu ta ideja: Marija je i dalje neudana*

‘Ivan believes that Maria got married, and he is sorry that she entered into marriage with that guy. I do not know where he got that idea from: Maria is still single’

False-belief contexts, i.e., contexts in which X’s regrets are founded on false belief, have been used as an argument in favor of a pragmatic rather than a semantic approach to factivity (see discussion in Gazdar 1979; Abrusán 2011): (14) and (15) are true even though the embedded proposition is false, consequently emotive factives do not (or not always) entail the truth of the embedded proposition (Egré 2008). This is the case when the default complementizers Bg *če*, Mk *deka*, or BCMS *da* are used. The dedicated complementizers Bg *deto* and Mk/BCMS *što*, however, are infelicitous in such contexts. This can be taken to mean that these complementizers introduce a proposition that must necessarily be true for the speaker. This presupposition outscopes the propositional attitude of belief expressed by the subordinate clause ‘wrongly believing that’, which creates a conflict between the possible world of the subject (Ivan) and the actual world assumed by the speaker. In other words, *deto/što* complements introduce facts and also involve speaker commitment to the fact. It has been proposed that facts are ontologically different from propositions or events (Peterson 1997; “special cases of situations” Kratzer 2006) since they are unique and are anchored to a single possible world (epistemic model), namely that of the speaker, while all other propositions are anchored to a set of possible worlds in which the proposition gets evaluated for truth or falsity. This strongly suggests that dedicated factive complementizers act as hard triggers.

From this point of view, the all-purpose complementizers of the other Slavic languages are not hard triggers, so they are compatible with both presupposed (in the canonical factive usages) and non-presupposed embeddings (in the false-belief context like that of [16] from Russian containing the verb *sozalet’*; Pavel Duryagin, personal communication):

(16) Ru *Ošibočno&* *duma-ja,* *čto* *on* *nanes* *smertel'nu-ju* *ranu,*



wrongly	believe. IPFV-GER	COMP	he. NOM afflict. PFV(.PST.3SG)	deadly- ACC	wound- ACC
<i>Ėdip</i>	<i>sořale-l</i>	<i>řto</i>	<i>on</i>	<i>ubi-l</i>	<i>neznakomc-a</i>
Ėdip .M(.NOM)	regret. IPFV-PST(.SG.M)	COMP	he. NOM	kill. PFV-PST(.SG.M)	stranger- ACC.SG.M

‘Wrongly believing that he inflicted a deadly wound, Oedipus regretted killing the stranger’

With some factive predicates (e.g., *znat'* ‘know’), Russian tends to use *to řto* ‘it that’ (with a demonstrative preceding the complementizer), rather than simply *řto* ‘that’, for introducing “facts presupposing that the situation in the embedded clause did really take place or will take place” (Hansen et al. 2014: 177; see also Serdobolskaya and Egorova 2019).

Given that factive complementizers are generally not available with so-called semifactive predicates in Slavic (see [12a], [13a]), apart from some interspeaker variation regarding BCMS *znati* ‘know’ (cf. Baunaz 2018), and, given also that so-called true factive predicates can have their presuppositions canceled for contextual reasons (although only if the ordinary complementizer is used), it can be concluded that factivity is triggered not just by the factive predicate itself but rather by its complementizer (Kratzer 2006). Several syntactic effects not discussed here also point into this direction.

A particular predicate that has always caused controversies in the literature on factivity is the cognitive verb *know*. For Karttunen (1971a), *know* is semifactive, since it triggers a presupposition only in some tense and person forms. In the pragmatic account of Stalnaker (1972), speakers typically presuppose the complement of *know*, but context again may decide to the contrary (a similar analysis may apply to verbs such as *realize* and *understand*). Such contexts are, for instance, embedded *wh*-questions as complements of *know* (Bulygina and řmelev 1988/1997; Padučeva 2010: 482f.), as well as embedded interrogatives when *know* is negated. Padučeva (2010) demonstrates for Ru *znat'* ‘know’ that the presuppositions that it may carry partially depend on sentence prosody. Moreover, her

findings based on the embeddability of questions show that this property does not “map” neatly onto the general distinction between predicates of knowledge and predicates of opinion (Ru *predikaty znanija* vs. *mnenija*), which seems to correspond to the semifactive vs. nonfactive distinction, and that translational equivalents of such verbs do not always behave alike (cf. also Padučeva 2004: 256–272).

Another view is offered by Egré (2008), who considers *know* both truth entailing and (pragmatically) factive: in order for ‘X knows p’ to be true, p must be true. Consequently, knowledge cannot be ascribed in the same way as a mental state of regret; as we saw above, regret p can be true even if p is false. Indeed, replacing *regret* with *know* in the false-belief contexts (14)–(15) produces an infelicitous sentence (see also Colonna Dahlman 2015). Nevertheless, in some contexts, e.g., conditional antecedents, the presupposition triggered by *know* can be suspended, as shown in (17).

(17) BCMS	<i>Ako</i>	<i>zna-š</i>	<i>da</i>	<i>je</i>	<i>zemlj-a</i>	<i>ravn-a,</i>
	if	know. IPFV-PRS.2SG	COMP	be. PRS.3SG	earth- NOM.SG.F	flat- SG.F

*onda je čitava znanost u krivu i jedino ti u pravu*

‘If you know that the earth is flat, then the entire science is wrong and only you are right’

//>> ‘The earth is flat’

Other Slavic languages appear to not use *know* in nonfactive embeddings. Russian, for example, prefers *sčitat’* ‘consider’ or *polagat’* ‘think, believe’ in the equivalents of the famous examples of nonfactive uses of En *know* (according to Hazlett 2010: 501).

(18) Ru	<i>Vs-e</i>	<i>sčita-l-i</i> / <i>polaga-l-i</i>	<i>čto</i>	<i>stress</i>	<i>vyzyva-et</i>	<i>jazv-y,</i>
	all- NOM	consider. IPFV-PST-PL	COMP	stress (.NOM)	cause .IPFV-PRS.3SG	ulcer- ACC.PL

*poka dva avstralijskix vrača v načale 80-x godov ne dokazali, čto pričinoj jazv javljaetsja bakterial'naja infekcija*

‘Everyone knew [thought, considered] that stress caused ulcers, before two Australian doctors in the early 80s proved that ulcers were actually caused by bacterial infection’

Other nonfactive properties of *know* in English also seem to indicate that this lexical item is ambiguous and can be used in a manner similar to *think* or *believe*. As discussed by Dudley et al. (2017), the presuppositions of *know* are often not contextually supported; discourse-initial uses of ‘X knows p’ are felicitous as well as “informative” in that they provide new information and cannot be taken for granted. More recent accounts treat *know* as lexically ambiguous between a factive and a nonfactive reading depending on whether it triggers a presupposition (Tsohatzidis 2012: 452; Colonna Dahlman 2015: 50–56).

## Factivity and veridicality

The area of complementizer selection can be used in some Slavic languages to distinguish among different grammatical and semantic categories more broadly, not only in the context of factivity, but also, for instance, in the context of veridicality. Bulgarian is especially illuminating here, because certain predicates allow for a variety of different readings depending on the complementizer that they select. This is the case, for instance, with the verb *pomnja* ‘remember’ (cf. also Smirnova 2012).

(19) a.	<i>Ne</i>	<i>pomnj-a</i>	<i>Marija</i>	<i>da</i>	<i>e</i>	<i>id-va-l-a</i>	<i>njakoga</i>	<i>u</i>	<i>nas</i>
Bg									
	NEG	remember. IPFV-PRS.1SG	Maria. F	SUBJ	AUX.PRS.3SG	go- IPFV-LPT- SG.F	ever	at	our.place

‘I do not remember Maria having ever visited me’

° nonveridical: no truth entailment or presupposition

b. Bg	<i>Pomnj-a,</i>	<i>če</i>	<i>Marija</i>	<i>dojd-e</i>	<i>vednăž</i>	<i>u</i>	<i>nas</i>
	remember.	COMP	Maria.	come-	once	at	our.place
	IPFV-PRS.1SG		F	AOR.3SG			

'I remember that Maria came to visit me once'  
 \* veridical / nonfactive: truth entailment / no presupposition

c. Bg	<i>Pomn-iš</i>	<i>li</i>	<i>deto</i>	<i>s</i>	<i>Marija</i>	<i>se</i>	<i>zapozna-xte</i>	<i>u</i>	<i>nas?</i>
	remember.	Q	COMP.FACT	with	Maria.	REFL	meet.	at	our.place
	IPFV-PRS.2SG				F		PFV-AOR.2PL		

'Do you remember (the fact) that Maria and you met at my place?'  
 \* presupposition: factive

When *pomnja* 'remember' selects factive *deto* (typically in interrogative clauses), it introduces a factive/presuppositional reading (19c); with nonfactive *če* (19b), the verb loses the factive reading and acquires a veridical reading (i.e., it involves truth entailment); in turn, when it selects *da* (19a) (which is usually seen as a subjunctive marker; cf. e.g., Rudin 1986; Krapova 2001; Sočanac 2017; see also Da clauses; Complementizers; Mood), it becomes nonveridical, involving neither truth entailment nor presupposition. Note that this verb can only select the nonveridical *da* when it is negated. So, even if semifactives typically select the default complementizer, examples like (20c) show that, in certain cases, semifactives like *razbiram* 'understand' can select a factive complementizer and acquire a presuppositional reading as well (especially when appearing in questions).

A comparable semantic effect is obtained in Russian by the complementizer choice between *čto* 'that' and *čtoby* 'that.SBJV' (the latter resulted from a fusion of *čto* with the subjunctive morpheme *by*) after negated *pomnit'* 'remember'.

(20) a. Ru	<i>Ja</i>	<i>ne</i>	<i>pomn-ju,</i>	<i>čto</i>
	I.	NEG	remember.	COMP
	NOM		IPFV-PRS.1SG	
	<i>Tamar-a</i>	<i>razdava-l-a</i>	<i>kaki-e-to</i>	<i>zapisk-i</i>
	Tamara.	deliver.	some-	note-
	F-NOM	IPFV-PST-SG.F	ACC	ACC.PL

'I do not recall that Tamara gave out certain notes'  
(p is true, but I do not remember it)

b. Ru	<i>Ja</i>	<i>ne</i>	<i>pomn-ju,</i>	<i>čtoby</i>	
	I.	NEG	remember.	COMP.SBJV	
	NOM		IPFV-PRS.1SG		
	<i>ty</i>	<i>mne</i>	<i>govori -l</i>	<i>ob</i>	<i>ét-om</i>
	you	me.	speak.	about	DEM-LOC.SG.N
	(.SG).NOM	DAT	IPFV-PST(.SG.M)		

'I do not remember that you have told me about that' (Hansen et al. 2016: 180)  
(p may or may not be true)

Therefore, the issue of complementizer selection in some Slavic languages brings to the fore a complex intersection among syntax, semantics, and pragmatics. This provides insights into the broader interaction among these different linguistic components, in the context of factivity and beyond. In particular, we have seen that South Slavic languages provide a diagnostic to distinguish strong

presupposition triggers from soft ones and offer evidence that strong factive triggers may reside in the complementizer selected by a factive predicate rather than in the predicate itself.

## Abbreviations used in this article

iff      if and only if

⊨      entails

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