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What are we asking with a polar question in Serbian?

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ABSTRACT

This paper discusses contextual distribution of Serbian polar questions with or without high or low negation. The aim is to contribute to cross-linguistic understanding of the interpretation of (negative) polar questions. All polar questions in Serbian are shown to be sensitive to: epistemic bias, tied to speaker's beliefs and expectations, and evidential bias, tied to the evidence available in the conversation (Sudo 2013). The distribution of Serbian polar questions can be systematically captured by the interplay of syntax, semantics and pragmatics, along the lines of AnderBois' (2019) inquisitive semantics for questions. The current proposal provides further support for (a) two syntactic positions for negation in Serbian (Progovac 2005, Milićević 2006), and (b) both negations being contentful (building on Milićević 2006).

KEYWORDS polar questions · negation · Serbian

1 POLAR QUESTIONS ACROSS LANGUAGES

Polar questions which contain negation have received considerable attention in the literature. This is because they concern: (a) the syntax-semantics interface, in terms of the position of negation and its effect on the interpretation of polar questions, and (b) the semantics-pragmatics interface, in terms of how the speaker's expectations of a particular answer affect the distribution of those questions. In this paper, I discuss polar questions with and without negation in Serbian and address the syntactic, semantic and pragmatic component involved in their distribution.

To set the stage, consider polar questions in English. A Positive Polar Question (henceforth PosQ) is typically formed by Aux-Subj inversion, as in (1).

(1) Is Vanessa playing a table tennis match today? (PosQ)

A polar question can also contain negation (henceforth NegQ), which occurs either in a non-preposed position, as with Low Negation Polar Question (henceforth LowNegQ) in (2), or in a preposed position, as with High Negation Polar Question (henceforth HighNegQ) in (3).[1]

(2) Is Vanessa not playing a table tennis match today? (LowNegQ)

(3) Isn't Vanessa playing a table tennis match today? (HighNegQ)

In terms of semantics, questions have traditionally been analysed as sets of propositions that count as their possible answers (e.g., Hamblin 1973, Groenendijk & Stokhof 1984). Such an analysis predicts that PosQs and NegQs have the same denotations (Krifka 2017, a.o.). The set of possible answers for (1) is as in (4-a): either Vanessa is playing a table tennis match today or she is not. For (2) and (3), negation is a part of what is being questioned. So, one possible answer is that Vanessa is not playing a table tennis match today. Another possible answer is negation of that. Given the effects of double-negation,

[1]The classification is from AnderBois (2019).

that answer is positive: Vanessa is playing a table tennis match today, as in (4-b). Thus, the sets of answers for PosQs and for NegQs are predicted to be the same.

(4) a. {p = Vanessa is playing a table tennis match today; ¬p = Vanessa is not playing a table tennis match today}
b. {¬p = Vanessa is not playing a table tennis match today; ¬¬p = It is not the case that [Vanessa is not playing a table tennis match today]}

In terms of pragmatics, however, Ladd (1981) observes that PosQs and NegQs do not have the same distribution. In a neutral context as in (5), only PosQ is felicitous, as in (5-a), while LowNegQ, as in (5-b), and HighNegQ, as in (5-c), are not.

(5) [Questions on a fair exam:]
a. Is [b] a fricative? (AnderBois 2019:355)
b. #Is [b] not a fricative? (AnderBois 2019:358)
c. #Isn't [b] a fricative?

Since Ladd's observation, it has been extensively shown that LowNegQs and HighNegQs are biased questions (see Büring & Gunlogson 2000, van Rooy & Šafárová 2003, Romero & Han 2004, a.o.): when asking these questions, the speaker expects one of the answers (positive or negative) to be more likely than the other. LowNegQs and HighNegQs in (5) are infelicitous because there is no bias in the context. Furthermore, LowNegQs and HighNegQs differ among themselves. Sudo (2013:279) (building on Büring & Gunlogson 2000) defines two types of biases relevant for the distribution of these questions: (a) epistemic bias, i.e., the speaker's expectations or beliefs about which answer is true and (b) evidential bias, i.e., evidence available in conversational context about which answer is true.[2] Sudo argues that a featural approach to bias settings – neutral, negative or positive value – can capture different distribution of NegQs within and across languages. For example, in (6), there is a neutral epistemic bias (the speaker doesn't know the bus schedule) and a negative evidential bias (there is no early bus). Only LowNegQ is felicitous. In (7), there is a positive epistemic bias (speaker's brother travelling early in the morning) and a negative evidential bias (there is no early bus). Only HighNegQ is felicitous.[3]

(6) [Tomorrow you need to go from Hamilton to Toronto very early. You have no idea what the bus schedule is. You go to the station in the morning and the operator says: 'The only bus available is at 2 p.m.' You ask:]
a. Is there no bus in the morning? (LowNegQ)
b. #Isn't there a bus in the morning? (HighNegQ)

(7) [Tomorrow you need to go from Hamilton to Toronto very early. Your brother travels that route often and he usually takes the bus early in the morning, before 7 a.m. You go to the station in the morning and the operator says: 'The only bus available is at 2 p.m.' You ask:]
a. #Is there no bus in the morning? (LowNegQ)
b. Isn't there a bus in the morning? (HighNegQ)

Beyond English, the interplay of bias and negation has received cross-linguistic coverage for, e.g., Greek, Spanish, Korean (Romero & Han 2004), German (Büring & Gunlogson 2000, Repp 2009, 2013), Hungarian (Guyris 2017, Gärtner & Gyuris 2017), Italian (Frana & Rawlins 2019), and in Slavic, Bulgarian (Rivero 1993, Romero & Han 2004, Dimitrova 2020), Czech (Staňková 2023, Staňková & Šimík to appear, Šimík In press) and Russian (Zanon to appear). This paper focuses on Serbian, contributing to the discussion in Slavic.

[2]While this paper focuses on these two biases, this is not an exhaustive list.
[3]Both examples are adapted from (Domaneschi et al. 2017:12).

In Serbian, there are PosQs as in (8-a), LowNegQs, as in (8-b), and HighNegQs, as in (8-c).[4,5]

(8) a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

LowNegQs and HighNegQs in Serbian are discussed in Milićević (2006). Based on the distribution of NPIs, she argues that negation in LowNegQs is below TP while in HighNegQs it is above TP (in line with Progovac 2005; see §4). She also argues that both negations are semantically interpretable (contra Progovac 2005), with different readings resulting from different syntactic heights of negation. In LowNegQs, negation has low scope, such that (8-b) can be paraphrased as 'Is it the case that Milana didn't make a cake?'. In HighNegQs, negation scopes high, such that (8-c) can be paraphrased as 'Is it not the case that Milana made a cake?'.

While this successfully captures examples like (8-b) and (8-c), Milićević focuses on the syntax-semantics of these questions, and not their pragmatics. As it turns out, polar questions in Serbian are also sensitive to biases. In (9), there is a neutral epistemic bias (you don't know if Milana makes cakes) and negative evidential bias (there are no leftovers). Only LowNegQ in (9-b) is felicitous, while PosQ in (9-a) and HighNegQ in (9-c) are not.

(9) [Your roommate was at Milana's birthday party. One typically makes a cake for that occasion, but you don't know if Milana does that too. Whenever there's a cake at some party, your roommate brings you the leftovers. You open the fridge, but don't see any cake leftovers. You ask your roommate:]

a. #Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

This paper discusses the contextual distribution of polar questions in Serbian. In terms of theory, the distribution of these questions can be captured by the existing analysis from AnderBois (2019). The key component of that analysis is the syntax-semantics of negation. Depending on where negation is syntactically, and how its semantic content is distributed, different interpretations are derived, corresponding to different bias settings.

Through discussion of the distribution of polar questions in Serbian, this paper also addresses an ongoing question of whether high negation is true negation in Slavic (for Russian, see Brown & Franks 1995, Abels 2005, Zanon to appear, for Czech, see Šimík In press). This paper provides support for Milićević (2006)'s idea that high negation is true

[4]I treat both *je* and *l'* in (8-a) and (8-b) as realization of a question operator, as discussed in §3.
[5]Here I focus on indicative polar questions, but Serbian also has subjunctive polar questions. For discussion, see Oikinomou & Ilić (2023) and Todorović (to appear).

negation in Serbian. Only if negation is contentful in both LowNegQs and HighNegQs can we capture their distribution.

This paper is organized as follows. §2 shows the distribution of Serbian polar questions with respect to epistemic and evidential bias. §3 discusses their morphology. §4 discusses the syntax of polar questions and negation. §5 applies a syntax-semantics-pragmatics account along the lines of AnderBois (2019) to Serbian. §6 concludes the paper.

2 DISTRIBUTION OF POLAR QUESTIONS IN SERBIAN

Domaneschi et al. (2017) conducted a preferential ranking scale study of English polar questions with respect to different settings of epistemic/evidential bias, as in Table 1.[6]

Table 1: (Domaneschi et al. 2017:17) – Polar questions in English

	Epistemic bias		
Evidential bias	positive	neutral	negative
positive	N/A	PosQ / *really* PosQ	*really* PosQ
neutral	HighNegQ (outer)	PosQ	
negative	HighNegQ (outer/inner)	LowNegQ	N/A

In a similar vein, I manipulated the settings of the epistemic and evidential bias for Serbian polar questions. Similarly to English, all the questions are infelicitous when the biases have the same value. In (10), both epistemic and evidential bias are positive – you think that Milana made a cake and you see cake leftovers. None of the question forms are felicitous. The same result obtains when both biases are negative as in (11), in which you think that Milana did not make a cake and there are no leftovers in the fridge.

(10) [Your roommate was at her friend Milana's birthday party. One typically makes a cake for that occasion. You know that Milana likes making cakes and you think that she made one this time as well. Whenever there's a cake at some party, your roommate brings you the leftovers. You open the fridge and you see cake leftovers. You ask your roommate:]

a. #Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. #Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

[6] *Really* PosQ refers to questions like *Really?! Is there a train in the early morning?* (Domaneschi et al. 2017:13). Inner and outer reading of HighNegQ refer to the scope of negation. Inner reading, as in *Isn't Jane coming either?*, double-checks ¬p, i.e., if Jane is not coming. Outer reading, as in *Isn't Jane coming too?*, double-checks p, if Jane is coming (Ladd 1981:166). But see §5 for further discussion.

(11) [Your roommate was at Milana's birthday party. One typically makes a cake for that occasion. You know that Milana doesn't like making cakes and you think that she didn't make anything this time either. Whenever there's a cake at some party, your roommate brings you the leftovers. You open the fridge and you do not see cake leftovers. You ask your roommate:]

a. #Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. #Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

In the remaining contexts, at least one of the forms is felicitous. In (12), there is a neutral epistemic bias (you don't know if Milana makes cakes) and neutral evidential bias (you don't know if Milana made a cake). PosQ in (12-a) is felicitous, while the NegQs are not.

(12) [Your roommate was at her friend Milana's birthday party. One typically makes a cake for that occasion, but you don't know if Milana does that too. You also don't know if she made the cake this time. You ask your roommate:]

a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. #Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

PosQs are also felicitous when one of the biases is positive and the other is neutral. In (13-a), there is a positive epistemic bias (you think that Milana made a cake) and neutral evidential bias (you don't know if she did). In (14), there is a neutral epistemic bias (you don't know if Milana typically makes cakes) and positive evidential bias (there are cake leftovers). LowNegQ in (13-b) and (14-b) and HighNegQ in (13-c) and (14-c) are out.

(13) [Your roommate was at her friend Milana's birthday party. One typically makes a cake for that occasion. You don't know if Milana made a cake. But you know that Milana likes making cakes and you think that she made one this time as well. You ask your roommate:]

a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. #Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

(14) [Your roommate was at her friend Milana's birthday party. One typically makes a cake for that occasion, but you don't know if Milana does that too. Whenever there's a cake at some party, your roommate brings you the leftovers. You open the fridge and see cake leftovers. You ask your roommate:]

a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. #Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNeQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

PosQs are also felicitous with negative epistemic bias (you think that Milana didn't make a cake) and positive evidential bias (there are cake leftovers), as in (15). However, they require special intonation.

(15) [Your roommate was at Milana's birthday party. You know that Milana doesn't like making cakes and you think that she didn't make anything this time either. Whenever there's cake at a party, your roommate brings you the leftovers. You open the fridge and you see cake leftovers. You ask your roommate:]

a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ, special intonation)

b. #Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNeQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

NegQs are not always out. They are felicitous with a positive epistemic bias (you think that Milana made a cake) and negative evidential bias (there are no cake leftovers), as in (16). PosQs are not felicitous in this context.

(16) [Your roommate was at Milana's birthday party. One typically makes a cake for that occasion. You know that Milana likes making cakes and you think she made one this time as well. Whenever there's cake at a party, your roommate brings you the leftovers. You open the fridge but you don't see any cake leftovers. You ask your roommate:]

a. #Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

b. Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

NegQs differ in certain contexts. When one of the biases is negative and the other one is neutral, only LowNegQ is felicitous. This was shown in (9) with a neutral epistemic bias (you don't know if Milana makes cakes) and negative evidential bias (there are no

leftovers). This is also shown in (17) with a a negative epistemic bias (you think that Milana didn't make a cake) and neutral evidential bias (you don't know if she did). PosQ in (17-a) is also felicitous, if asked in an ironic way.

(17) [Your roommate was at Milana's birthday party. You don't know if Milana made cake. But you know that Milana doesn't like making cakes and you think that she didn't make anything this time either. You ask your roommate:]

a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ, ironic)

b. Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

c. #Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

Table 2 summarizes the distribution of polar questions in Serbian. PosQs occur (a) with a positive bias, (b) with a negative epistemic bias, but with special intonation or if used in an ironic way, (c) in a neutral context. LowNegQs require negative bias. HighNegQs require conflicting biases, i.e., positive epistemic bias and negative evidential bias.

Table 2: Distribution of PosQs, LowNegQs and HighNegQs in Serbian

	Epistemic bias		
Evidential bias	**positive**	**neutral**	**negative**
positive	N/A	PosQ	PosQ, special intonation
neutral	PosQ	PosQ	LowNegQ; PosQ, ironic
negative	LowNegQ; HighNegQ	LowNegQ	N/A

To account for these patterns, I first provide morphosyntax of Serbian negation and questions in §3 and §4. In §5, I show that those properties align with the distribution of these questions under AnderBois' (2019) account.

3 MORPHOLOGY OF SERBIAN POLAR QUESTIONS

In the discussion of Serbian polar questions, I focus on a past-related form, consisting of an auxiliary clitic *biti* 'be' and a past participle. The reasons are as follows. The negative particle in Serbian is adjoined to the auxiliary, as in (18). In questions, the negation+auxiliary complex can stay in-situ, as with LowNegQ in (8-b), or move, as in HighNegQ in (8-c) (movement is not possible with synthetic forms, such as present tense). This in turn can help us determine different syntactic positions of negation.

(18) Milana nije pravila tortu.
Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Milana didn't make a cake.'

A question contains a question particle *li* (see (8) to (17)), which is a second position enclitic, following the first prosodic word (Browne 1974, Franks & King 2000, Rivero 1993, Bošković 2001, a.o.). With more clitics, clitic cluster is rigid (Browne 1974):

(19) *li* - AUX (other than *je* 'is') - DAT - ACC/*se* (REFL) - *je* 'is'

There are several possible hosts of *li*. I focus on *je* + *li*, which I take to be a stressed form of

li (Browne 1974, Tomić 1996, Bošković 2001).[7] *Je li* cannot combine with a past-related form, as in (20) (cf. Bošković 2001 for 3SG). On the other hand, a contracted form *je l'* can occur with any past form, as in (21); when it occurs with 3SG, the auxiliary *je* 'is' is optional (21-a). In what follows, I will use the contracted form *je l'*, with all the examples containing 3SG.

(20) *Je li su one pravile tortu?
Q BE.3PL.PRS.CL they.F make.PTCP.F.PL cake
'Did they make a cake?'

(21) a. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?'
b. Je l' su one pravile tortu?
Q BE.3PL.PRS.CL they.F make.PTCP.F.PL cake
'Did they make a cake?'

Regarding the interaction of NegQs and *li*, negation+auxiliary can occur (a) below it, in LowNegQ, as in (8-b), or (b) above it, in HighNegQ, as in (8-c).

4 SYNTAX OF SERBIAN POLAR QUESTIONS

With regard to the syntax of questions, I entertain the following assumptions. First, *li* is a question operator in C (Rivero 1993, Bošković 1997, Progovac 2005, a.o.). Second, 3SG auxiliary *je* is generated in vP (Bošković 2001, Talić 2018) and it can move up (cf. Franks 2017). Third, T-to-C movement is obligatory in questions in Serbian (along the lines of Franks 2017, p.c.).

Turning to negation, there are two possible syntactic positions (Progovac 2005, Milićević 2006), which captures the distribution of NPIs. First, NPIs are licensed only in the presence of a clause-mate negation (Progovac 1994). This captures the contrast in the distribution of *nikog* 'no one' in (22-a) and (22-b). Second, negation that can license an NPI has to be within TP (Progovac 1994, 2005, Milićević 2006). This is the case with LowNegQ in (22-b). With HighNegQ in (22-c), NPI is not licensed. Progovac (2005) and Milićević (2006) argue that negation in examples like (22-c) is above TP (but below CP); as such, it cannot license the NPI. If negation were in TP, the NPI would incorrectly be predicted to be licensed.

(22) a. *Je l' (je) nikog primetila?
Q BE.3SG.PRS no.one notice.PART.F.SG
Intended: 'Did she not notice anyone?' (PosQ)
b. Je l' nije nikog primetila?
Q NEG.BE.3SG.PRS no.one notice.PART.F.SG
'Did she not notice anyone?' (LowNegQ)
c. *Nije li nikog primetila?
NEG.BE.3SG.PRS Q no.one notice.PART.F.SG
Intended: 'Didn't she notice anyone?' (HighNegQ) (Milićević 2006:5)

As for the position of negation, a clause can have two polarity phrases (Laka 1990, Kramer & Rawlins 2009, a.o.). Progovac (2005) claims that the same holds for Serbian, with at least one of the phrases being specified for a {pos/neg} feature. To capture the lack of NPI licensing in PosQ in (22-a), Progovac argues that neither polarity phrase has negative features. To capture the lack of NPI licensing in HighNegQ in (22-c), Progovac argues that only the higher polarity phrase, which is above TP, has negative features; hence, TP-bound NPI cannot be licensed (see also Milićević 2006). For NPI to be licensed

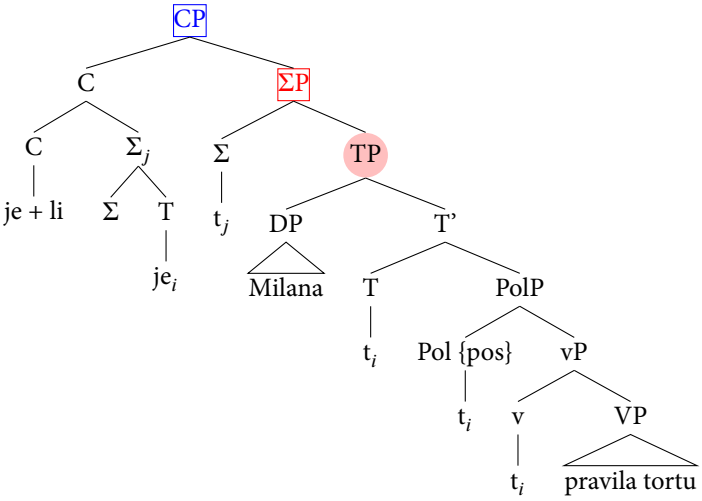
[7] Other stressed form is *da li*. PosQs are also formed with V-fronting and a particle *zar* (see §5.6 and §5.7).

in LowNegQ in (22-b), the lower polarity phrase has to be within TP and it has to be specified for the {neg} feature.

Taking all of the above into consideration, I posit the syntactic representation for PosQ in (23) as in (24), for LowNegQ in (25) as in (26), and for HighNegQ in (27) as in (28). I label higher polarity phrases as ΣP (Laka 1990). I assume that *li* is higher than *nije* in syntax in (28), but surfaces below it due to the 2P PF requirement.

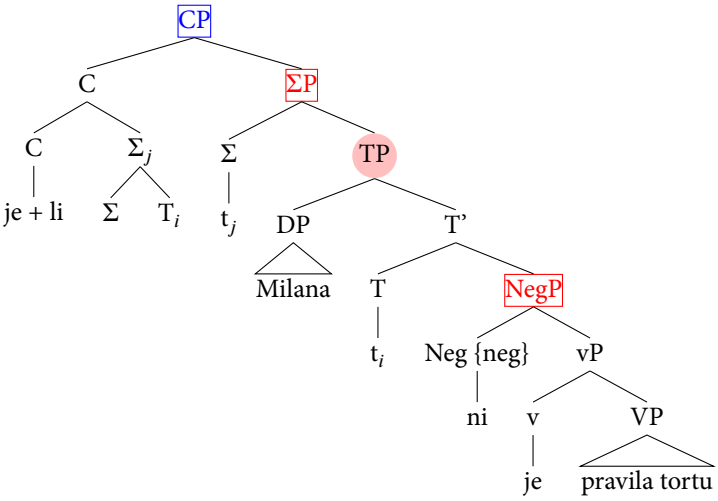
(23) Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ)

(24)



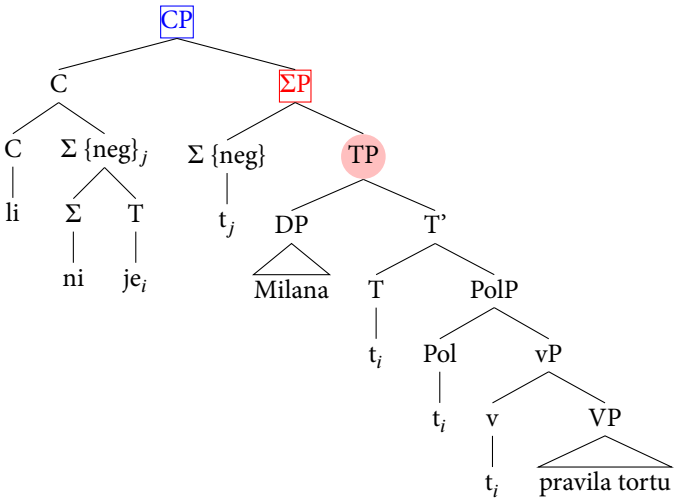
(25) Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?' (LowNegQ)

(26)



(27) Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?' (HighNegQ)

(28)



In the following section, I provide further motivation for Milićević's (2006) claim that both high and low negation are semantically motivated. Only if they are both contentful, can we capture the different distribution of LowNegQs and HighNegQs.

5 ANDERBOIS (2019) SEMANTICS AND SERBIAN QUESTIONS

In this section, I briefly outline AnderBois' (2019) solution for the distribution of English polar questions. I then show how his analysis plus syntax from §4 capture the distribution of Serbian polar questions.

AnderBois (2019) re-examines English polar questions. With respect to HighNegQ, for example, AnderBois argues that the inner/outer ambiguity (see footnote 6) is not real – all the examples in the literature include NPIs or hedges (e.g., *I guess*) and once those are removed, the 'inner' reading disappears. Instead, he shows that the distribution of English polar questions is more nuanced, as in Table 3.

Table 3: English polar questions

English questions	Bias	Additional inferences
PosQ	neutral / weak positive epistemic	default
LowNegQ	weak negative epistemic	possibility of extended discussion
HighNegQ	positive epistemic	emphasizes the truth value of *p*
	negative evidential	trying not to revise the initial bias

He argues that the distribution of English polar questions can be captured through the syntax-semantics interplay in the inquisitive semantics framework. I argue that the Serbian data in Table 2 can also be captured with AnderBois' (2019) analysis.

5.1 INQUISITIVE SEMANTICS

In inquisitive semantics, there are two layers of meaning – informative and inquisitive. Informativity refers to truth-conditional semantics. Inquisitivity refers to raising potential issues that might be addressed in further discourse. The meaning of assertion is represented through sets of alternative propositions. In Figure 1, there are two propositions *p*

and q and four possible worlds, with 1 indicating that the proposition is true, 0 indicating that the proposition is false. Informativity refers to at least one of the alternatives being true. Inquisitivity raises the issue of which alternatives are true.

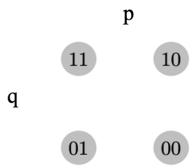


Figure 1: Alternatives in inquisitive semantics

To show how this works, consider disjunction. (29-a) and (29-b) have the same informative content, i.e., there is precipitation, but only (29-a) is inquisitive. The disjunction in (30) highlights alternatives of sets where it rains and those where it snows, as in Figure 2.

(29) a. It's raining or snowing.
b. It's precipitating. (AnderBois 2019:120)

(30) $[\![\varphi \vee \psi]\!]^{\mathcal{M},g,w} = \textsc{Alt}\{\alpha \subseteq W \mid \exists \beta \in [\![\varphi]\!]^{\mathcal{M},g,w} : \alpha \subseteq \beta \text{ or } \exists \gamma \in [\![\psi]\!]^{\mathcal{M},g,w} : \alpha \subseteq \gamma\}$

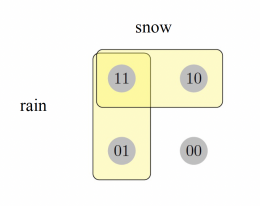


Figure 2: $[\![\varphi \vee \psi]\!]$

Consider now negation as in (31). Negation contains two components: set complementation, which creates the opposite of the introduced alternatives, and universal quantification, which quantifies over alternative sets and creates a singleton set. By creating a singleton set, negation in inquisitive semantics rejects all the alternatives.

(31) $[\![\neg\varphi]\!]^{\mathcal{M},g,w} = \textsc{Alt}\{\alpha \subseteq W \mid \text{every } \beta \in [\![\varphi]\!]^{\mathcal{M},g,w} \text{ is such that } \alpha \cap \beta = \varnothing\}$

When negation is applied to disjunction, as in (32), set complementation gives us the opposite of the alternatives introduced by the disjunction, as in Figure 3, and universal quantification introduces a singleton set in which it didn't rain or snow, as in Figure 4.

(32) It is not raining or snowing. $[\![\neg(\varphi \vee \psi)]\!]$

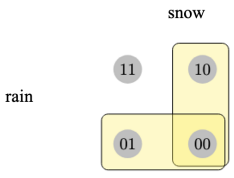


Figure 3: Negation – set complementation

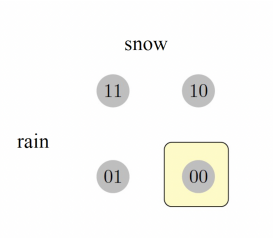


Figure 4: Negation – universal quantification

Importantly, negation is never vacuous in inquisitive semantics. Consider double-negation in (33).

(33) It's not the case that [it is not raining or snowing]. (AnderBois 2019:120)

In terms of informativity, two negations cancel each other out, so the content of (33) is the same as with the disjunction in (29-a): it is raining or snowing. In terms of inquisivity, however, (33) and (29-a) are not the same – (33) lacks the inquisitiveness. In (33), one negation gets rid of the alternatives and picks the world in which there is no precipitation (as in Figure 4). The second negation picks out the complement of that, as in Figure 5. This is the same set of worlds as in Figure 2 (hence the same informative content). However, the negation in (33) gets rid of the alternatives, creating a singleton set in which there was precipitation; it is not important whether there was rain or snow.

$$[\![\neg\neg(\varphi \vee \psi)]\!]$$

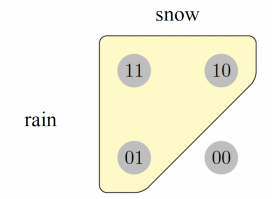


Figure 5: Double negation

What AnderBois argues and what will be relevant for us is that, if there are two polarity phrases in syntax, both of them can be contentful.

5.2 MAIN ISSUE, PROJECTED ISSUE, THE UTILITY PRINCIPLE

Consider now the following questions:

(34) Is Josè bringing a date to the wedding?

(35) Isn't Josè bringing a date to the wedding? (AnderBois 2019:121)

AnderBois argues that in both examples, the main question is the same: Is Josè bringing a date or not? However, they differ in the additional potential question: (34) is asking about who Josè is bringing to the wedding, whereas (35) is asking if Josè is really bringing someone to the wedding. For AnderBois, this comes down to main and projected issue. A main issue is a main question; a set of alternatives whose resolution is expected (akin to Question Under Discussion (QUD); Ginzburg 1996, Roberts 1996). A projected issue

is a potential additional question; a set of alternatives which is made salient as a potential QUD, but whose resolution is not necessarily expected (AnderBois 2019:121). The projected issue follows the Utility Principle: where possible, cooperative speakers choose projected issues whose resolution is expected to be useful in the discourse (AnderBois 2019:151). AnderBois' proposal is that sentence meaning is a two-tiered ordered pair: $\mathscr{M}$ is a set of alternatives for the main issue and $\mathscr{P}$is a set of alternatives for the projected issue.

The upshot of AnderBois' analysis is that: (1) all polar questions raise the same main issue, but different projected issues; (2) the issues are determined by the syntax-semantics interaction of inquisitive elements and, crucially, two polarity heads; (3) differences in projected issue capture different biases of questions. I argue that AnderBois' semantics plus the syntax of Serbian polar questions and negation can systematically capture their distribution. In the following subsections, I apply his semantics to Serbian.

5.3 POSQS IN SERBIAN

PosQs in Serbian are felicitous in the contexts in Table 4.

Table 4: Distribution of PosQs in Serbian

	Epistemic bias		
Evidential bias	**positive**	**neutral**	**negative**
positive		PosQ	PosQ, special intonation
neutral	PosQ	PosQ	PosQ, ironic

Consider first the setting of a positive epistemic bias and a neutral evidential bias, as repeated in (36). The relevant parts of syntax are repeated in (37).

(36) [Your roommate was at her friend Milana's birthday party. One typically makes a cake for that occasion. You don't know if Milana made a cake. But you know that Milana likes making cakes and you think that she made one this time as well. You ask your roommate:]

Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake

'Did Milana make a cake?'

(37) [CP *je* + *li je* [ΣP Σ [TP *Milana* T [PolP Pol {pos}[vP *pravila tortu*]]]]]

We can now calculate the meaning of a PosQ. First, I assume that the noun *torta* 'cake' comes with a covert existential quantifier. Existentials introduce alternatives (AnderBois 2014): the cake can be e.g., a chocolate or fruit cake, etc. Building up, PolP is not specified for {neg} feature, so it does not affect the introduced alternatives. Assuming that every clause comes with an existential quantifier (thus, alternatives) (AnderBois 2014), at the level of TP the following alternatives arise: Milana made e.g., a chocolate cake, a fruit cake, or both, as in Figure 6.[8]

We feed this further to the $\Sigma_{\exists 1}$P, a higher Polarity Phrase (hereafter $\Sigma_{\exists 1}$P; see §5.7 for $\Sigma_{\exists 2}$P). In this framework, $\Sigma_{\exists 1}$P introduces an existential alt-closure operator (akin to Kratzer & Shimoyama 2002), as in (38). Informally, $\Sigma_{\exists 1}$ takes TP as an argument, and creates a two-tiered set. The main issue is a single-alternative set, on the left-hand side of Figure 7. The projected issues are previously introduced alternatives from TP, on the right-hand side.

[8]An anonymous reviewer correctly points out that examples without an existential NP, such as *Did Milana see Mary?*, lack an inquisitive element within the TP (see also AnderBois 2014). These kinds of questions can also contain negation and are, presumably, also sensitive to biases in Serbian. It remain to be seen how the analysis followed here can capture their distribution. I leave this question open for future research.

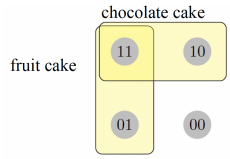


Figure 6: ⟦TP⟧

(38) $$\langle\langle \Sigma_{\exists 1}(\text{TP})\rangle\rangle^{\mathcal{M},g,w} = \frac{\{\{w' : \text{there is some } \alpha \in [\![\text{TP}]\!] \text{ s.t. w'} \in \alpha\}\}}{[\![\text{TP}]\!]}$$

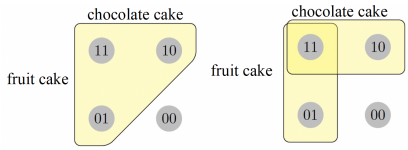


Figure 7: ⟦$\Sigma_{\exists 1}$P⟧, main issue and projected issue

Now we introduce the Q operator. AnderBois (2014) assumes that questions also come with a covert existential quantifier, so they always introduce alternatives ($[\![Q_{\text{OP}}]\!] = p \vee \neg p$). These are the alternatives to the main issue only. The Q-operator as in (39) embeds $\Sigma_{\exists 1}$P. Since $\Sigma_{\exists 1}$P introduced a singleton set in which Milana made a cake (as in Figure 7), a covert existential quantifier creates a set with two alternatives to the main issue: Milana made a cake or she didn't. This is the new main issue. The projected issue of $\Sigma_{\exists 1}$P, i.e., alternatives introduced by TP, is retained, as in Figure 8.

(39) $$\langle\langle \text{Q}_{\text{op}}(\Sigma_{\exists 1}\text{P})\rangle\rangle^{\mathcal{M},g,w} = \frac{\{w' : \text{there is some } \alpha \in \langle\langle \Sigma_{\exists 1} P\rangle\rangle_{\text{MAIN}} \text{ s.t. w'}\in\alpha\}, \{w' : \text{for all } \gamma \in \langle\langle \Sigma_{\exists 1} P\rangle\rangle_{\text{MAIN}} : \alpha \cap \gamma = \varnothing\}}{\langle\langle \Sigma_{\exists 1} P\rangle\rangle_{\text{PROJ}}}$$

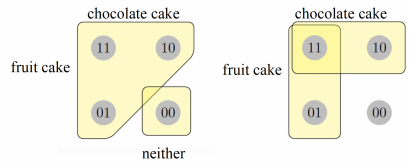


Figure 8: ⟦CP⟧, main issue and projected issue

The main issue is whether Milana made a cake and the projected issue is what kind of a cake she made, as in Table 5. Given the Utility Principle, the listener might wonder what the purpose of the projected issue is. If we look at Figure 8, the alternatives of the projected issue are the sub-alternatives of the positive main issue alternative. This is where the bias matters. The speaker expects the answer to the main issue will be affirmative (Milana made a cake). In that case, the projected issue will also be relevant for the follow-up discussion (What kind of a cake did she make).

Main issue: Did Milana make a cake or not?
Projected Issue: What kind of a cake did Milana make?
Utility principle: Why might the speaker potentially be asking about a type of a cake?
Reason: Positive epistemic bias - speaker expects the positive resolution of the main issue

Table 5: PosQs in Serbian

Recall that PosQs are also felicitous in (40), with neutral epistemic bias (you don't

know if Milana typically makes cakes) and positive evidential bias (there is a cake in the fridge).

(40) [Your roommate was at her friend Milana's birthday party. One typically makes a cake for that occasion, but you don't know if Milana does that too. Whenever there's a cake at some party, your roommate brings you the leftovers. You open the fridge and see cake leftovers. You ask your roommate:]

Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?'

This setting differs from the one in (36) only in that the evidential, and not the epistemic, bias is positive. Although not discussed by AnderBois, this setting is in principle compatible with his analysis. Suppose that the speaker takes both epistemic and evidential information into account before asking a question, i.e., that the biases are built incrementally in the conversation. If that is the case, then in (40), the speaker again ends up with a positive bias. This can then be captured in a similar way to (36).[9]

PosQ can also be used with neutral epistemic and evidential bias. PosQs in Serbian, like in English, seem to be the default choice in a neutral context. I leave it for future research to determine how the proposed system can capture this use.

Finally, PosQs can be used with negative epistemic bias. I return to this in §5.7.

5.4 LOWNEGQS IN SERBIAN

LowNegQ are felicitous with negative biases, as shown in Table 6.

Table 6: Distribution of LowNegQs in Serbian

	Epistemic bias		
Evidential bias	**positive**	**neutral**	**negative**
neutral			LowNegQ
negative	LowNegQ	LowNegQ	

Consider first the context of a negative epistemic bias and a neutral evidential bias, as repeated in (41). Relevant parts of syntax of LowNegQ are in (42).

(41) [Your roommate was at Milana's birthday party. You don't know if Milana made cake. But you know that Milana doesn't like making cakes and you think that she didn't make anything this time either. You ask your roommate:]

Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?'

(42) [CP *je* + *li* [ΣP Σ [TP *Milana* T [NegP [Neg {neg}*ni* [vP v *je*[VP *pravila tortu*]]]]]]]

Recall that the negation contains set complementation (which creates the opposite of the introduced alternatives) and universal quantification (which quantifies over alternative sets and creates a singleton set). Now, nothing in principle prevents an option that these two components are distributed across two polarity heads: NegP introduces complementation and ΣP introduces universal quantification (henceforth $\Sigma_{\forall}$P). This is what AnderBois proposes for English LowNegQ and this is what also fits with the syntax in (42).

[9]I would like to thank Mariia Onoeva for discussion of this topic.

Consider the syntax-semantics interaction step-by-step. First, a covert existential of *torta* 'cake' introduces a set of alternatives, e.g., a chocolate or fruit cake. At the level of TP, there is a covert existential quantifier, which would mean that Milana made a chocolate cake or fruit cake or both, as in Figure 9. However, there is NegP in (42). NegP introduces complementation of what TP would normally derive: Milana did not make a chocolate cake, a fruit cake, or either, as in Figure 10.

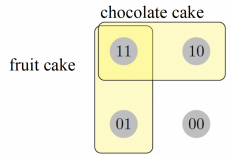


Figure 9: TP without negation

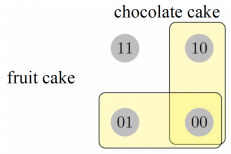


Figure 10: TP with negation

$\Sigma_\forall$P now introduces universal complementation, as in (43). When applied to TP, this leaves us with one world – the one where Milana did not make any cake, as at the left-hand side of Figure 11. This represents the main issue. Alternatives introduced by the TP represent the projected issue. Splitting the negation content now contributes to both the main issue (via $\Sigma_\forall$P) and the projected issue (via NegP). Crucially, the projected issue, i.e., the alternatives introduced by TP, survive.

(43) $\langle\langle \Sigma_\forall(\text{TP})\rangle\rangle^{\mathcal{M},g,w} = \frac{\{\text{w': for all}\alpha \in [\![\text{TP}]\!] \text{ s.t. w'}\in\alpha\}}{[\![\text{TP}]\!]}$

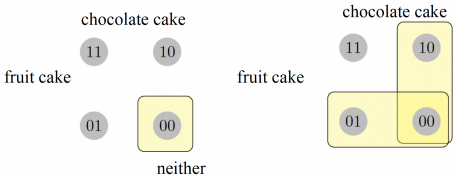


Figure 11: $[\![\Sigma_\forall \text{P}]\!]$, main issue and projected issue

Finally, we introduce CP, which contains a QOP and introduces a set of alternatives. When applied to ΣP, the main issue contains two sets: one negative alternative, the world in which no cake is baked, and one alternative that has all the other possibilities, as in Figure 12. The projected issue is left intact; what was established at the level of TP remains as the projected issue.

The main issue is as with PosQ: Did Milana made a cake or not? The projected issue is whether she didn't make a chocolate cake or didn't make a fruit cake, as in Table 7. The listener can then ask why the speaker might be asking about not making a specific type of cake. If we look at Figure 12, the projected alternatives are supersets of the negative main issue alternative. From the position of the speaker, if they get an answer to the projected issue, this answer also gives a partial answer to the negative main issue alternative. This can be explained if the speaker has a negative bias: if the speaker is biased to the negative

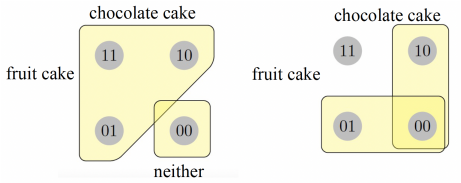


Figure 12: ⟦CP⟧, main issue and projected issue

answer, then the answer to the potential question will say something about the negative answer whereby no cakes were made.

Main issue: Did Milana make a cake or not?
Projected Issue: Did Milana not make a chocolate cake or did she not make a fruit cake?
Utility principle: Why is there a question about not bringing a specific type of cake?
Reason: Neg. epis. bias – answer to projected issue is a partial answer to the negative main issue alternative

Table 7: LowNegQs in Serbian

Recall that LowNegQs are also felicitous in (44) with a neutral epistemic bias (you don't know if Milana makes cakes) and negative evidential bias (there are no leftovers). If biases are built incrementally, then in (44), the bias is negative. (44) can be captured similarly to (41): the syntax-semantics interface would be the same. The difference would be in the type of bias: the speaker has a negative evidential bias, which makes them seek a way to get a negative answer to Milana making a cake.[10]

(44) [Your roommate was at Milana's birthday party. One typically makes a cake for that occasion, but you don't know if Milana does that too. Whenever there's a cake at some party, your roommate brings you the leftovers. You open the fridge, but don't see any cake leftovers. You ask your roommate:]

Je l' Milana nije pravila tortu?
Q Milana NEG.BE.3SG.PRS make.PTCP.F.SG cake
'Did Milana not make a cake?'

Finally, LowNegQ is also felicitous with positive epistemic and negative evidential bias. This is the same setting in which HighNegQs is felicitous, as discussed in the following section.

5.5 HIGHNEGQS

HighNegQs are only felicitous with a positive epistemic bias and negative evidential bias (see Table 8), as repeated in (45). The relevant parts of syntax are repeated in (46).

[10] An anonymous reviewer points out that nothing in principle excludes an option of both components of negation being in NegP. Indeed, lumping two components together, but above TP, is what is argued for HighNegQs and some LowNegQs in section 5.5. Consider how having both the negation components in NegP in LowNegQs would work. At the level of TP, without the negation, there would be alternatives in which Milana made a fruit cake and the ones in which she made a chocolate cake. With NegP, and with both components lumped together, it would get rid of all the alternatives; the result is the world in which Milana didn't make any cakes. I am not sure at this point whether getting rid of the alternatives with LowNegQs would work. At least in English, AnderBois (2019) argues that having alternatives as the projected issue in LowNegQs explains why LowNegQs are felicitous in the context in which the speaker expects elaboration of a negative answer (with the alternatives). Whether the alternatives are always required in Serbian LowNegQs remains to be seen.

Table 8: Distribution of HighNegQs in Serbian

	Epistemic bias
Evidential bias	**positive**
negative	HighNegQ

(45) [Your roommate was at Milana's birthday party. One typically makes a cake for that occasion. You know that Milana likes making cakes and you think she made one this time as well. Whenever there's cake at a party, your roommate brings you the leftovers. You open the fridge but you don't see any cake leftovers. You ask your roommate:]

Nije li Milana pravila tortu?
NEG.BE.3SG.PRS Q Milana make.PTCP.F.SG cake
'Didn't Milana make a cake?'

(46) [CP *li ni+je* [ΣP Σ {neg}[TP *Milana* T [PolP Pol [vP v [VP *pravila tortu*]]]]]

Recall the two components of negation which can be split into two heads. But they do not have to be. AnderBois proposes that both set complementation and universal complementation in HighNegQs are in the higher polarity head and only that head has negative features. This also aligns with the proposal for the high position of negation in Serbian HighNegQs in (46), explaining why NPIs are not licensed in HighNegQs.

Let us do step-by-step analysis. A covert existential with *torta* 'cake' introduces alternatives such as a chocolate or fruit cake. At the level of TP, a covert existential introduces a set of alternatives of Milana making a chocolate cake, a fruit cake or both, as in Figure 13. This is the main issue. In HighNegQ, lower polarity phrase is specified for {pos} feature, so it does not affect the alternatives in the TP (unlike in the case of LowNegQs).

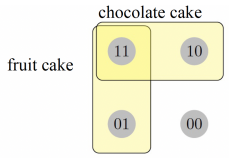


Figure 13: ⟦TP⟧

When we introduce the ΣP, it carries both universal quantification and set complementation (henceforth Σ_{NEG}P), as in (47). Without set complementation as the intermediate step to create negative alternatives, we get rid of the alternatives introduced by TP. The main issue is the world in which no cakes were made and the projected issue is empty, as in Figure 14.

(47) $\langle\langle \Sigma_{\text{NEG}}(\text{TP})\rangle\rangle^{\mathcal{M},g,w} = \frac{\{\{\text{w': for all}\alpha \in [\![\text{TP}]\!] \text{ s.t. } \text{w'} \notin \alpha\}\}}{\varnothing}$

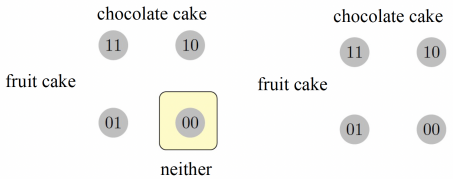


Figure 14: Σ_{NEG}P, main issue and projected issue

Adding QOP on top introduces a positive alternative to the main issue: either Milana made a cake or not. But the projected issue remains empty.

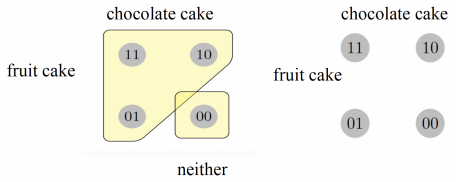


Figure 15: ⟦CP⟧, main issue and projected issue

The main and only issue the speaker is raising with HighNegQ is whether Milana made a cake or not, as in Table 9. Since there is no potential question raised by the projected issue, the listener might be wondering why the speaker puts so much emphasis on the main issue, in particular the negative main alternative. According to AnderBois (2019), HighNegQs put emphasis on the negative main alternative because the speaker has a positive epistemic bias, but they have obtained negative evidence; so, they want to make sure whether the answer is negative, which they hope it is not.

Main issue: Did Milana make any cake or not?
Projected Issue: N/A
Utility principle: Why is the speaker focusing so much on the main issue?
Reason:Positive epistemic bias + bias for the addressee to resolve the issue positively

Table 9: HighNegQs in Serbian

Note finally that LowNegQ is acceptable in the same context as HighNegQ: with a positive epistemic bias and negative evidential bias (see (16-b). One option is that, in that case, negation is interpretable only in Σ_{NEG}P, rather than being split into ΣP and NegP. In that case, the reading would be derived in a similar vein as with HighNegQ. This is in principle possible, but it would also have consequences for NPI-licensing in those contexts. That might involve a mismatch between where we see negation in syntax and where it is interpreted, which is far from a trivial issue. I leave this issue open for further research.

The proposed analysis captures LowNegQs, HighNegQs and most PosQs. In the next section, I will show that our system allows for additional question-asking strategies which pattern with one of the remaining PosQ settings.

5.6 *ZAR + NE* QUESTIONS PATTERN WITH HIGHNEGQS

A polar question in Serbian can also be asked with a question particle *zar* plus negation:

(48) Zar nije Marija upoznala Jovana?
ZAR NEG.IS Marija meet.PART.F.SG Jovan
'Didn't Marija meet Jovan?' (Progovac 1993:337)

These questions are felicitous in the same context as HighNegQs, with positive epistemic bias and negative evidential bias (Table 10), as shown in (49).

Table 10: Distribution of *zar+ ne* questions in Serbian

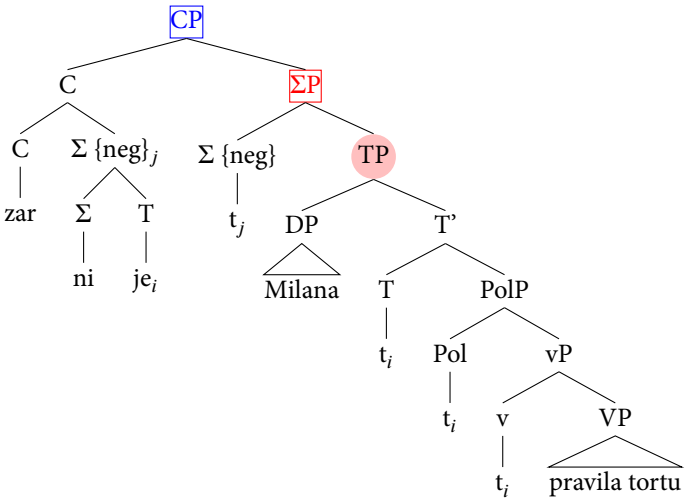
	Epistemic bias
Evidential bias	**positive**
negative	*zar+ ne*

(49) [Your roommate was at Milana's birthday party. One typically makes a cake for that occasion. You know that Milana likes making cakes and you think she made one this time as well. Whenever there's cake at a party, your roommate brings you the leftovers. You open the fridge but you don't see any cake leftovers. You ask your roommate:]

Zar nije Milana pravila tortu?
ZAR NEG.BE.3SG.PRS Milana make.3.SG.PRS cake
'Didn't Milana make a cake?'

I propose the syntax in (50), where *zar* is a realization of Q. I also propose that in these questions negation is in high position, as in HighNegQ.

(50)



The computation then proceeds in the same manner as with HighNegQ in Figures 13–15. As with HighNegQ, the crucial part is that there are no projected alternatives, so the focus of the conversation is the main issue – Did Milana make a cake or not? This question needs to be answered in order to resolve the conflict between the positive epistemic bias and the negative evidential bias.

There is an apparent problem, though – negation can occur below the subject as well, as in (51).

(51) Zar Marija nije pravila tortu?
ZAR Milana NEG.IS make.PART.F.SG cake
'Did Marija not make a cake?'

A preliminary investigation shows that, even though the negation is low in (51), the distribution with respect to biases is the same as with HighNegQ. But syntactically, the NPI-licensing is as with LowNegQ. As shown in (52) and (53), regardless of whether negation is in a pre-subject or post-subject position, NPI licensing is allowed. The difference is that *nije* seems emphasized in (53). If negation is indeed low, it would correctly license NPI in both cases. One option is that, in both cases, negation starts below TP, licensing NPIs, but that in (53) it moves to a higher position, e.g., FocP. [11]

(52) Zar Marija nije ništa pravila?
ZAR Milana NEG.IS nothing make.PART.F.SG
'Did Marija not make anything?'

[11] I'd like thank an anonymous reviewer for this idea.

(53) Zar nije Marija ništa pravila?
ZAR NEG.IS Milana NEG.IS nothing make.PART.F.SG
'Didn't Marija make anything?'

What if the negation that we see in *zar+ ne* questions is syntactically (initially) low, but semantically high? In terms of biases, it would match LowNegQs with positive epistemic and negative evidential bias. It might be the case that with *zar+ ne* questions, and such LowNegQs, the content of negation is interpreted only in the higher position. Again, a non-trivial question of syntax and interpretation position arises. I leave this issue for further research.

5.7 *ZAR* PATTERNS WITH POSQ WITH SPECIAL INTONATION

It is also possible to use *zar* without negation. *Zar* questions without negation require a negative epistemic and positive evidential bias, as in (54). They pattern with PosQs with special intonation and rising declaratives, as in Table 11.

(54) [Your roommate was at Milana's birthday party. You know that Milana doesn't like making cakes and you think that she didn't make anything this time either. Whenever there's cake at a party, your roommate brings you the leftovers. You open the fridge and you see cake leftovers. You ask your roommate:]

a. Zar je Milana pravila tortu?
zar BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana really make a cake?' (*zar* question)

b. Je l' (je) Milana pravila tortu?
Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?' (PosQ with special intonation)

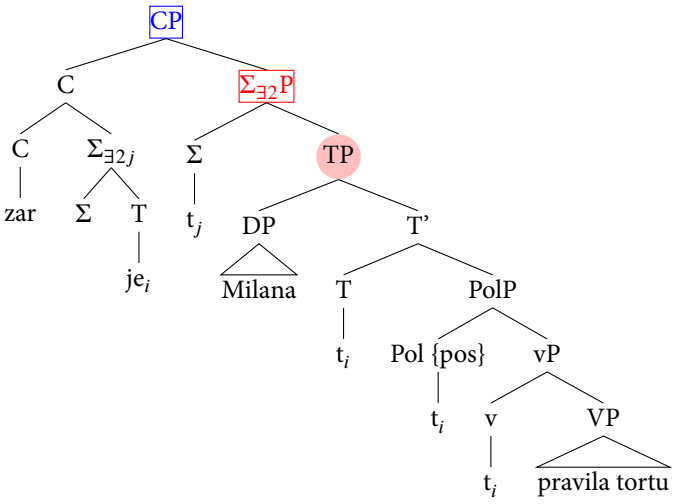
c. Milana je pravila tortu?
Milana BE.3SG.PRS.CL make.PTCP.F.SG cake
'Did Milana make a cake?' (rising declarative)

Table 11: Distribution of *zar*, some PosQs and rising declaratives in Serbian

	Epistemic bias
Evidential bias	**negative**
positive	*zar*; PosQ with special intonation; rising declarative

My extremely tentative proposal is that these questions contain an existential phrase as the higher polarity phrase (henceforth $\Sigma_{\exists 2}$P). While this would need to be corroborated with further diagnostics, the current system in principle allows for this theoretical option (cf. PosQs in §5.3). The structure would be as in (55).

(55)



At TP, Milana made a chocolate cake, fruit cake or both:

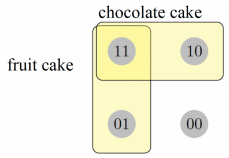


Figure 16: ⟦TP⟧

I stipulate that $\Sigma_{\exists 2}$ is defined as in (56). It introduces a single alternative as the main issue, but it gets rid of individual alternatives, by making the projected set of alternatives empty. By creating the single alternative issue, $\Sigma_{\exists 2}$ is similar to Σ_{NEG}. However, it lacks the set complementation component, so the main issue at this level is a positive main alternative, i.e., worlds in which Milana makes a cake. This is shown in Figure 17.

(56) $$\langle\langle \Sigma_{\exists 2}(\text{TP})\rangle\rangle^{\mathcal{M},g,w} = \frac{\{\{w\text{': there is some } \alpha \in [\![\text{TP}]\!] \text{ s.t. } w' \in \alpha\}\}}{\varnothing}$$

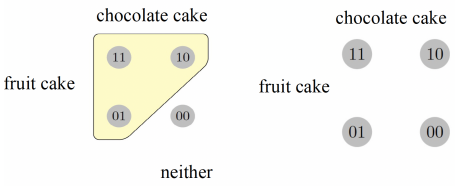


Figure 17: ⟦$\Sigma_{\exists 2}$P⟧, main issue and projected issue

At the level of CP, the main issue is now a set of alternatives where Milana made a cake or she didn't. The projected issue is still empty, as in Figure 18.

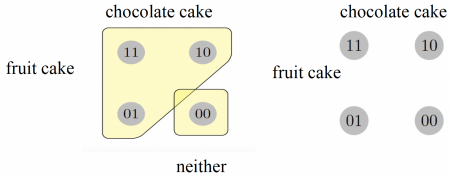


Figure 18: ⟦CP⟧, main issue and projected issue

The result is in Table 12. It is somewhat similar to what we've seen with HighNegQs and *zar+ ne* questions in Table 8. Both groups are compatible with the conflicting biases. The speaker is focusing on the main issue and there is no projected issue. The difference is that with HighNegQ and *zar+ ne* questions, the emphasis is on the negative main alternative, while with *zar* questions, the emphasis is on the positive main alternative. I suggest that *zar* questions put emphasis on the positive main alternative because the speaker has negative epistemic bias, but they have obtained positive evidence, so they emphasize the positive alternative to check if it holds.[12]

Main issue: Did Milana make any cake or not?
Projected Issue: N/A
Utility principle: Why is the speaker focusing so much on the main issue?
Reason: Negative epistemic bias + bias for the addressee to resolve the issue negatively

Table 12: *Zar* in Serbian questions

The interesting bit for further research would be to see what kind of role is played by intonation in PosQs. In addition, the remaining unresolved pattern is PosQ with negative epistemic bias (you think that Milana didn't make a cake) and neutral evidential bias (you don't know if she did), as in (57). PosQ is felicitous if asked in an ironic way. It would need to be determined how different connotations interact with the semantic intrepretation and biases in Serbian polar questions. I leave this issue for future research.

(57) [Your roommate was at Milana's birthday party. You don't know if Milana made cake. But you know that Milana doesn't like making cakes and you think that she didn't make anything this time either. You ask your roommate:]

Je l' (je) Milana pravila tortu?
JE Q BE.3SG.PRS.CL Milana make.PTCP.F.SG cake
'Did Milana make a cake?'

6 CONCLUSION

In this paper, it was shown that Serbian polar questions are sensitive to epistemic and evidential bias. Their distribution can be systematically captured by the interplay of syntax, semantics and pragmatics, by applying AnderBois' (2019) analysis. Since this system crucially relies on the negation being distributed across two syntactic heads and contributing semantically in either place, the analysis provides further support for (a) two syntactic positions for negation in questions in Serbian (Progovac 2005, Milićević 2006), and (b) both negations being contentful (Milićević 2006). Hopefully, this paper contributes to the empirical pool and theoretical insights on polar questions cross-linguistically.

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[12] An anonymous reviewer wonders if *zar* itself might be contributing bias since it's found only in a biased context. That is certainly an option, although it would need to be seen how to formally implement it. According to the analysis proposed here, *zar* is just a spell-out of C, while the biases can be compositionally derived from its interaction with the polar phrase.

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ABBREVIATIONS

3	third person	NegQ	polar question containing negation
ACC	accusative	NEG	negation
AUX	auxilliary	PL	plural
CL	clitic	PosQ	Positive Polar Question
DAT	dative	PTCP	participle
F	feminine	QUD	question under discussion
HighNegQ	High Negation Polar Question	REFL	reflexive
LOC	locative	SG	singular
LowNegQ	Low Negation Polar Question		

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