Overriding negative concord[1]

Erwin R. Komen
SIL-International / Radboud University of Nijmegen, CLS

Abstract
Negative concord languages require the presence of a sentence negator in clauses containing a negative quantifier. Chechen is a negative concord language, but overrides negative concord in certain question types: those with a polar question marker and those with an argument *wh* word. This paper describes Chechen's behaviour using a context-sensitive markedness constraint derived from harmonically aligning an existing context-free one to a newly proposed question type hierarchy. This solution predicts that there may be other languages where different question types override negative concord.

Keywords: Optimality Theory, Negative Concord, Chechen

1 Introduction

Negative concord normally requires the presence of a sentence negator when a negative quantifier is used (van der Wouden & Zwarts, 1993). This rule applies in affirmative as well as interrogative mood.

Example (1) illustrates this behaviour for Russian. The Negative Polarity Item (NPI) *nichego* 'nothing' requires the presence of a Sentence Negator *ne* 'not' in declarative mood (1a), for a subject question (1b) and for a polar question (1c).

(1) a. On nichego *(ne) znajet.
he nothing not knows
'He doesn't know anything.'

b. Kto nichego *(ne) znajet?
who nothing not knows
'Who doesn't know anything?'

c. Onnichego *(ne) znajet li?
he nothing not knows QM
'Doesn't he know anything?'

[1] I would like to thank Helen de Hoop, Bettelou Los as well as the participants of the Semantics in the Netherlands workshop for valuable comments.

The Northeast Caucasian language Chechen is a negative concord language too, as illustrated by example (2)[2]. The appearance of the NPI *cwa a*, 'no one', requires the presence of a sentence negator *ca* 'not'.[3]

(2) a. Cwa a vist *(ca) xilla.
no one speak not happened
'No one started to speak.' (Noxchalla, 2007)

The problem is that Chechen negative concord can be overridden in certain situations. It is the purpose of this paper to investigate this and offer a solution.

2 Negative concord

2.1 Describing negative concord

Negative concord is best described by a bidirectional OT approach as proposed by de Swart (Swart), in turn building on the work of OT pioneers Prince and Smolensky (1993/2004). Bidirectional OT requires additional constraints to express faithfulness, which now has to be two-ways: from form to meaning and from meaning to form. These constraints, the FAITH constraints, build on the traditional MAX and DEP constraints, which respectively express faithfulness from underlying form to output form and from output form to underlying form (Prince & Smolensky, 1993/2004).

Constraints FAITH(Neg) and *NEGATION apply to production and comprehension, the constraints INTERPRET-NEGATIVE is used for comprehension only (mapping a form onto a meaning), and the constraint EXPLICATE-NEGATIVE only applies for production processes, where the input meaning is mapped onto an output form.

[2] Data from Chechen are based on grammaticality judgments from native speakers.
[3] Chechen *cwa a* consists of the number *cwa* 'one' and a clitic *a* which in other contexts serves purposes such as intensification and conjunction. Chechen transcription follows the practical orthography introduced by Nichols for the related Ingush language Nichols, J. (2007). An all-ASCII Latin practical orthography for Ingush.. The letter ***y*** is the rounded high vowel, ***hw*** is the voiceless fricative, and ***w*** is a voiced epiglottal stop on its own, while indicating pharyngealisation of the following vowel when it comes after a consonant.

(3) FAITH(Neg**)**
Assign one violation mark to every negation in the input (meaning or form) that is not expressed in the output (form or meaning).

(4) ***NEGATION**
Assign one violation mark to every negation in the output (form or meaning).

(5) INTERPRET-NEGATIVE (Comprehension)
Assign 1 violation mark to every negation in the input form that does not contribute to a semantic negation at the first-order level of the output meaning.

(6) EXPLICATE-NEGATIVE (Production)
Assign 1 violation mark to every negative variable ($\neg\exists x$) in the input meaning that does not have a corresponding negative quantifier in the output form.[4]

Languages all express an intended negation (meaning) using a negator (form), as illustrated by example (7). Such behaviour is captured by adopting a universal ranking hierarchy of FAITH(Neg) >> *NEGATION.

(7) a. Tom sees Mary. ←→ see(t, m)
b. Tom doesn't see Mary. ←→ ¬see(t, m)

De Swart argues that languages with negative concord have a constraint hierarchy such as shown in (8).

(8) FAITH(Neg) >> EXPLICATE-NEGATIVE >> *NEGATION >> INTERPRET-NEGATIVE

This hierarchy can be seen to hold for Chechen too. Consider the problem of producing a sentence where the meaning contains a negative variable $\neg\exists x$ as well as an affirmative proposition *p*. Tableau (9) compares the winning candidate, which uses the NPI *cwa a* 'no one' in the output, with the losing

[4] The constraints introduced here are all derived from the work of de Swart (2004). The EXPLICATE-NEGATIVE constraint is the same as de Swart's MAXNEG, but has been renamed in order to avoid a mix-up with the traditionally known family of MAX constraints. De Swart finds a functional motivation for this constraint in work from Haspelmath, who claims that n-words are used to mark the participants affected by a negation Haspelmath, M. (1997). *Indefinite pronouns.* Oxford: Clarendon press..

candidate, which uses the indefinite *cwa'* 'someone'.[5] The losing candidate violates EXPLICATE-NEGATIVE, since the negative variable ¬∃ x in the input does not have a corresponding NPI in the output. Both candidates violate *NEGATION, which is why EXPLICATE-NEGATIVE must dominate *NEGATION.

(9) EXPLNEG >> *NEGATION

	¬∃ *x*[p(*x*)]	FAITH(Neg)	EXPLNEG	*NEG	INTNEG
a. ☞	NPI + SN: *cwa a ciga ca vyedu*			**	
b.	indef + SN: *cwa' ciga ca vyedu*		*W	*L	

The losing candidate in (10) does have a NPI in the output, but no sentence negator, which violates the FAITH(Neg) constraint. This means that FAITH(Neg) must also dominate *NEGATION.

(10) FAITH(Neg) >> *NEGATION

	¬∃ *x*[p(*x*)]	FAITH(Neg)	EXPLNEG	*NEG	INTNEG
a.	NPI: *cwa a ciga vyedu*	*W		*L	
b. ☞	NPI + SN: *cwa a ciga ca vyedu*			**	

Tableau (11) illustrates the interpretation problem of example (2), which contains the NPI *cwa a* 'no one'. Leaving aside candidates with an indefinite instead of a NPI for the moment, the winning candidate, which has an affirmative proposition *p*, is compared with the losing candidate, which has a negated proposition ¬*p*. The winning candidate violates INTERPRET-NEGATIVE, since the sentence negator *ca* 'not' in the input form does not lead to a negated proposition ¬*p* in the output meaning. The winning candidate only has one negation in the output meaning, which violates *NEGATION only once, whereas the losing candidate has two violations of *NEGATION. For the winning interpretation, which has an affirmative proposition, to be more harmonic, the constraint *NEGATION must dominate INTERPRET-NEGATIVE.

(11) *NEGATION >> INTERPRET-NEGATIVE

	NPI+SN: *cwa a vist ca xilla* 'No one spoke up'	FAITH(Neg)	EXPLNEG	*NEG	INTNEG
a. ☞	¬∃ *x*[p(*x*)]			*	*
b.	¬∃ *x*[¬p(*x*)]			**W	L

[5] The tableaux used are *combination* tableaus, which consist of violation marks, as well as the letters W and L in loser lines, indicating whether a loser wins (W) or loses (L) compared for one constraint McCarthy, J. J. (2008). *Doing optimality theory.* Blackwell publishing..

The relative ranking of FAITH(Neg) and EXPLICATE-NEGATION cannot be determined by the data considered in this paper, which is why these constraints are separated by a dotted line.

2.2 Chechen "only" as an NPI

The semantics of *only* can be illustrated by the logical definition of the simple sentence in (12), where m denotes Musa, and S is the collection of all who spoke. (12b) shows that "only" can be argued to contain a negative variable ¬∃ x: there is no person who is not Musa, yet did speak up. There is an alternative definition without a negative variable, the positive definition of *only* in (12c): the number of speakers equals 1, and the one who spoke is Musa. Languages apparently vary in whether they look at "only" from the positive or the negative side. And they may even do both.

(12) a. Only Musa spoke.

b. $\exists x[\mathrm{S}(x) \wedge \neg\exists y[\mathrm{S}(y) \wedge x \neq \mathrm{m}]]$

c. $(|\mathrm{S}| = 1) \wedge \forall x[\mathrm{S}(x) \rightarrow x = \mathrm{m}]$

Russian sides with languages like English, German and Dutch in allowing the quantifier "not only" to be expressed as a combination of a negator and the quantifier "only" (e.g. "not only", "nicht nur", "niet alleen", "ne tol'ko"), which shows that it has opted for the more positive definition of "only" in (12c). French allows for two ways to express "only" and "not only". The first approach, using *seulemant* and *non seulement,* is more in line with the positive definition of "only". The second approach, using the particle *que,* which triggers the sentence negator *ne,* is the expected behaviour of a NPI in a negative concord language like French. The meaning "not only" can be expressed in the second situation using the particles *pas que*, which again triggers the appearance of the sentence negator *ne*.

Chechen differs from the two systems mentioned above. It comes close to French, since it uses a particle *bien* 'except' to modify the NP in the scope of "only", which triggers the appearance of a sentence negator, as shown in (13a). Chechen differs from the languages discussed so far by its inability to express the quantifier "not only" by means of the particle that is normally used to express "only". Instead, the particle *hwovxa* 'not only' can be used, as illustrated in (13b). This particle does not trigger negative concord.

(13) a. K'illuochynga bien dalur daac iza.
coward-LOC except can.do not it
'Only a coward can do this.'

b. Shina t'amuo beerash hwovxa, diinna xalq' a ghieldina.
two war-ERG children besides whole nation too weakened
'Two wars did not only weaken the children, but the whole nation.'

These facts suggest that the Chechen form *bien* "only" follows definition (12b), which contains the negative variable. And since Chechen is a negative concord language, it requires the presence of a sentence negator. The examples in (14) offer support for the hypothesis that *bien* implies the presence of a NPI, and that it triggers negative concord. Example (14a) contains an overt NPI *cwa a* 'no one', which requires the presence of a sentence negator. Example (14b) shows that replacing the NPI with an only-expression still requires the presence of a sentence negator. Example (14c) shows that the NPI, which, as argued, is implicitly present in (14b), can be made explicit, while the same negative concord effect is retained.

(14) a. Cwa a *(ca) vyedu ciga.
no one not goes there
'No one goes there.'

b. So bien *(ca) vyedu ciga.
I except /not goes there
'Only I go there.'

c. So bien cwa a *(ca) vyedu ciga.
I except no one /not goes there
'No one goes there, except for me.'

To sum up, Chechen *bien* can be used as a probe to investigate negative concord behaviour where the use of NPIs might lead to sentences which would skew grammaticality judgments.

2.3 Negative concord in interrogative mood

Chechen data show that negative concord is not obligatory in the context of certain question types. The statement in example (15a) requires the presence of a sentence negator in the context of the NPI *bien*, while the polar question in example (15b) does not.

(15) a. So bien vyedush *vu/vaac ciga.
I except going am/am.not there
'Only I am going there.'

b. So bien vyedush vuj/vaacii ciga?
I except going am/am.not there
'Am I the only one going/not-going there?'

The data also show that Chechen distinguishes between question types. Example (15b) illustrated that negative concord disappears within a question using an overt polar question marker suffix. Example (16a) shows that an argument *wh* question does not show negative concord either, unlike the same sentence in declarative mood, witness (16b).

The usage of NPIs within other question types does lead to negative concord. Example (16c) illustrates this for a time adjunct question, and (16d) for a *why* question. While a polar question *with* question marking suffix does not show negative concord, example (16e) shows that a polar question *without* question marking suffix does.

(16) a. Muusas taxana bien ghaalahw buolx *(ca) bina
Musa today only in.the.city work not did
'Musa worked in the city only today.'

b. Taxana bien ghaalahw buolx hwaan (ca) bina?
today only in.the.city work who not did
'Who worked/did-not-work in the city only today?'

c. Muusa c'ahw bien buolx biesh maca *vu/vaac?
Musa at.home except work doing when is/is.not
'When is Musa working only at home?'

d. So bien hunda *(ca) vyedu ciga?
I except why not go there
'Why do only I go there?'

e. So bien vyedush *vu/vaac ciga?
I except going am/am.not there
'Am only I going there?'

Since Chechen distinguishes question types, the next section explores the idea that languages in general consider question types in a hierarchy.

3 Question types

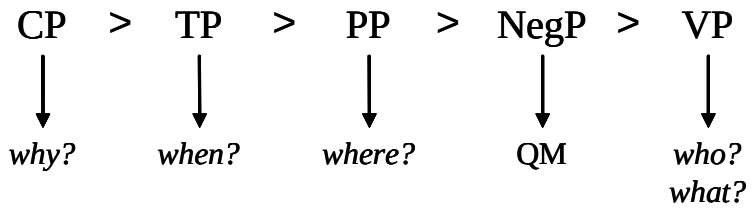
Several researchers have noted a difference between arguments and adjuncts in the area of *referentiality* and *long-distance extractability* (Cinque, 1990, Huang, 1982, Rizzi, 1990).

Subject and object NP questions like *who* and *what* refer to arguments of the finite verb, which forms the core of a clause, and are therefore on one end of a natural scale—an observation that has already been made in connection with *wh*-extraction (Legendre, Wilson, Smolensky, Homer & Raymond, 1995). The polar question marker (realized as a verbal suffix in Chechen) comes, as I argue, next, since it concerns the affirmation or negation of the verb phrase as a whole. Locative and temporal questions like *where* and *when* are still one level higher, since they involve non-arguments, and therefore are more loosely connected to the core. Finally, a *why* question concerns the whole clause, including all of the previously mentioned elements.

The rationale given above does not crucially depend on any particular syntactic theory, but for the sake of concreteness I would like to suggest a link between the proposed question type hierarchy and a generative framework, as illustrated in figure (17). Argument subject questions *who* and argument object questions *what* involve NPs that are governed by the VP (which possibly includes a *v*P). That is to say, argument questions originate in the VP, and then, depending on the language, they move further up in the syntactical tree, possibly reaching the specifier of the CP. A negation phrase, the NegP, projects above the VP, and it is this phrase that is most closely connected with polar questions. Locative questions like *where* involve adjuncts (APs), which are realized as PPs in a language like English. Temporal questions like *when* also originate in adjuncts, but these must be closely related to the TP, the element of the inflectional phrase that has to do with time and tense. The CP finds itself hierarchically above the TP, and the specifier of the CP forms the natural place where global question words like *why* are generated.

The question type hierarchy does *not* include intonation-only questions, which usually are one way of forming polar questions. I suggest languages differ in whether they see the toneme that distinguishes polar question intonation as phonemic as other markers.

(17) Question type hierarchy in relation to a generative framework.



Confirmation of the hierarchy in question types can be gained from independent sources. The first confirmation comes from Spanish inversion (Bakovič, 1995). Bakovič investigated Spanish dialects and found that certain dialects allow only particular types of *wh*-phrases to be fronted: (a) none, (b) argument *wh*-phrases,

(c) argument and location (where/when) questions, (d) argument, location and manner (how) questions, (e) all *wh*-phrases, including reason (why).

Languages differ with respect to the derivations they allow to be made from question words. The English suffix *–ever* can be attached to almost all question words to create indefinites, with the exception of the reason question word *why*. Russian, on the other hand, allows the indefinite derivational suffix *-nibud'* to be attached to all question words, as illustrated in Table 1. Russian allows all but the reason question words to be negated, while Chechen has its cut-off point earlier, and does not allow the manner question word to be negated.

Table 1 Derivations from question words

Question type		**Indefinite**		**Negated**		
		English	**Russian**	**English**	**Russian**	**Chechen**
argument	who	whoever	kto-nibud'	noone	nikto	cwa a
argument	what	whatever	chto-nibud'	nothing	nichto	humma a
location	where	wherever	gde-nibud'	nowhere	nigde	cwanhhwa a
time	when	whenever	kogda-nibud'	notime	nikogda	cq'a a
manner	how	however	kak-nibud'	noway	nikak	-
reason	why	-	pochemu-nibud'	-	-	-

A final confirmation for a question type hierarchy comes from child language acquisition. Stromswold (1990) found this hierarchy at work in how children acquire auxiliary inversion which is obligatory for *wh*-questions. She noted the following stages: (a) no inversion, (b) inversion with argument questions (who, what), (c) inversion includes location (where, when) and manner (how) questions, and (d) inversion also includes the reason (why) question.

Based on the theoretical motivation and the observations made above, I propose a question type hierarchy as in (18).

(18) **Question type hierarchy**

Argument-question (who? what?) <
Polar-question (Question Marker) <
Locative-question (where? when?) <
Manner-question (how?) <
Reason-question (why?)

The application of the proposed question type hierarchy to negative concord leads me to predict that there will be languages in which the regular negative concord is overridden in the context of different subsets of the question type hierarchy. The facts today only provide us with two points on the scale. A language like Russian is on one end, as it does not allow negative concord to be overridden in the context of any question. Chechen takes a position somewhere in the middle on the scale in that it overrides negative concord in the context of

question markers and argument who/what questions, but not in the context of other question types.

Taking the question type hierarchy postulated in (18) into account, I propose a context sensitive INTERPRET-NEGATIVE constraint, which is aligned to this hierarchy. The constraint is called INTERPRET-NEGATIVE/QM-ARGWH, and is defined in (21).

(21) **INTERPRET-NEGATIVE/QM-ARGWH** (Comprehension)
Assign 1 violation mark to every negation in a question proposition with a polar question marker or an argument *wh*-question word that does not contribute to a semantic negation at the first-order level of the output meaning.

Section 4 continues by exploring whether the proposed new constraint is enough to account for the Chechen data.

4 Overriding negative concord

This section considers crucial negative concord situations in declarative and interrogative mood, in order to verify whether the addition of the constraint defined in (21) allows us to explain the behaviour observed in Chechen. That negative concord is overridden in the context of certain question types can only be explained in terms of bidirectional OT, which is why section 4.1 presents an analysis of negative concord in these terms, paving the way for section 4.2 to show what happens in the context of the polar and *wh* question types.

4.1 Analysing negative concord in declarative mood

Let us consider the problem of expressing an affirmative and a negative sentence containing a NPI in declarative mood. The bidirectional OT analysis we are going to pursue requires us to give a set of surface forms and intended meanings. The set of surface forms is given in (22). The first example (22a) contains a NPI but no sentence negator, and is ungrammatical. Example (22b) contains a NPI and a sentence negator, but expresses an affirmative meaning. The last example, (22c), expresses a negative meaning, and does so by using a cleft construction.[6]

[6] Chechen only has pseudo-clefts. In this case the pseudo-cleft consists of the subject *so bien* 'only I', the auxiliary *vaac* 'am not' and the complement NP *ciga ca vyedurg* 'the one who does not go there'. This complement NP is a free relative—a relative clause without a nominal head.

(22) a. *So bien vyedush vu ciga. → NPI
I except going am there
'Only I am going there.'

b. So bien vyedush vaac ciga. → NPI+SN
I except going am.not there
'Only I am going there.'

c. So bien vaac ciga ca vyedurg. → NPI+SN+SN
I except am.not there not going.one
'Only I am not going there.'

The addition of example (22c) forces us to take one more constraint into account in order to justify the fact that a cleft construction is a marked one. The reason a cleft construction is marked is the fact that it adds structure—a syntactic analysis would regard the sentence as having at least two IPs (inflectional phrases). While several different constraints have been proposed promoting economy in the literature, the analysis here suffices with the simple one defined in (23). The syntactic analysis of any sentence at least contains one IP. The constraint *IP militates against using more than 1 IP to express a proposition.

(23) ***IP**
Assign 1 violation mark to every IP generated on top of the basic IP.

The bidirectional OT analysis is illustrated in tableau (24), where the surface forms are summarized using the labels in (22). Each line contains one of the possible form-meaning pairs. Lines a-c contain all three forms from (22), attributing an affirmative meaning to them, while lines d-e consider these same forms, while contributing a negative meaning to them. The overall winner is the one that has the least violations. In tableau (24) this is the form from (22b) with the affirmative meaning of the proposition. Note that it is the constraint defined in (23) that breaks the tie between the candidates in line *b* and *c*, which otherwise fare equally well. The overall winning form-meaning pair is to be regarded as a combination of the unmarked form with the unmarked meaning.

(24) Negative concord in declarative mood – unmarked winner

		Meaning	Form	INTNQ	FAITH(Neg)	*IP	EXPLNEG	*NEG	INTNEG
a.		(¬∃ *x*[p(*x*)])!	NPI		*			**	
b.	✌	(¬∃ *x*[p(*x*)])!	NPI+SN					***	*
c.		(¬∃ *x*[p(*x*)])!	NPI+SN+SN			*		***	*
d.		(¬∃ *x*[¬p(*x*)])!	NPI		**			***	
e.		(¬∃ *x*[¬p(*x*)])!	NPI+SN		*			****	
f.		(¬∃ *x*[¬p(*x*)])!	NPI+SN+SN			*		****	

Bidirectional OT seeks other (more marked) winners by looking at form-meaning pairs that have both a different form as well as a different meaning from the overall winner. Lines *a* and *b* have candidates with a different form but the same meaning as the winner, which means that they cannot contain a second winner. Line *e* has a candidate with a different meaning but the same form as the winner, so that it cannot contain a second winner either. The remaining competition is between lines *d* and *f*, as illustrated in (25). The competition is won by the candidate in line *f*, which fares better with respect to the constraint FAITH(Neg). The losing candidate in line *d* has two negation signs in the meaning, but no matching negators in the form. The winning candidate in line *f* has two negation signs in the meaning and two sentence negators in the form, so that it is the most harmonic one in the proposed constraint hierarchy.

(25) Negative concord in declarative mood – marked winner

		Meaning	Form	INTNQ	FAITH(Neg)	*IP	EXPLNEG	*NEG	INTNEG
d.		(¬∃ *x*[¬p(*x*)])!	NPI		**			***	
f.	✌	(¬∃ *x*[¬p(*x*)])!	NPI+SN+SN			*		****	

This section shows that the bidirectional OT analysis proposed for Chechen correctly selects a negative quantifier in an affirmative proposition to be expressed by one sentence negator, while a negative quantifier in a negative proposition can best be expressed by a cleft with one sentence negator in each of its two clauses.

4.2 Analysing negative concord in interrogative mood

Negative concord works differently in the context of interrogative mood sentences, which is why this section considers whether the bidirectional OT analysis selects the correct form-meaning pairs in such a context. The three different forms given in (22) are transformed into interrogative mood forms in (26). All three forms are grammatical, although the last form would probably be used more in the context of focus, which is outside the scope of this current

paper. We will again consider two possible meanings: one with an affirmative proposition and one with a negative proposition.

(26) a. So bien vyedush vuj ciga? → NPI+QM
I except going am there
'Am only I going there?'

b. So bien vyedush vaacii ciga? → NPI+QM+SN
I except going am.not there
'Am only I not going there?'

c. So bien vaacii ciga ca vyedurg? → NPI+QM +SN+SN
I except am.not there not going.one
'Am only I not going there?'

Tableau (27) illustrates the bidirectional OT analysis of the possible form-meaning pairs. The candidate in line *a* is the overall winner due to the fact that the INTERPRET-NEGATIVE/QM-ARGWH constraint (abbreviated as INTNQ in the tableau) is ranked above the FAITH(Neg) one. This constraint, as well as its lower ranked context-free counterpart INTNEG, is violated whenever a sentence negator (part of the form) does not to a negated proposition in the meaning. Form-meaning pairs *b* and *c* have violations, since these have a sentence negator in the form, but they don't have a corresponding ¬p(*x*)—instead they have an affirmative p(*x*). The winning candidate *a* has a negative variable within an affirmative proposition, which violates the FAITH(Neg) constraint, which would prefer a form having at least one negator to match the negative variable. The candidate in line *a* beats the otherwise more harmonic variant *b* due to the higher ranking of INTERPRET-NEGATIVE/QM-ARGWH, which would require a sentence negator to match up with a negated proposition. Variants *e* and *f* are rejected mainly because they contain too many violations of *NEG.

(27) Negative concord in interrogative mood – unmarked winner

	Meaning	Form	INTNQ	FAITH(Neg)	*IP	EXPLNEG	*NEG	INTNEG
a. ✌	(¬∃ *x*[p(*x*)])?	NPI+QM		*			**	
b.	(¬∃ *x*[p(*x*)])?	NPI+SN+QM	*				***	*
c.	(¬∃ *x*[p(*x*)])?	NPI+SN+SN+QM	*		*		***	*
d.	(¬∃ *x*[¬p(*x*)])?	NPI+QM		**			***	
e.	(¬∃ *x*[¬p(*x*)])?	NPI+SN+QM		*			****	
f.	(¬∃ *x*[¬p(*x*)])?	NPI+SN+SN+QM			*		****	

When we look for a possible second winner, lines *b-d* have to be disregarded, since they either have the same form or the same meaning as the winning

candidate in line *a*. This leaves the competition to lines *e* and *f*. The current set of constraints give no preference to either the one or the other, for which reason both forms (26b) and (26c) can be regarded as expressing the negative question proposition containing a NPI equally well.

(28) Negative concord in interrogative mood – marked winners

		Meaning	Form	INTNQ	FAITH(Neg)	*IP	EXPLNEG	*NEG	INTNEG
e.	✌	(¬∃ *x*[¬p(*x*)])?	NPI+SN+QM		*			****	
f.	✌	(¬∃ *x*[¬p(*x*)])?	NPI+SN+SN+QM			*		****	

This section on negative quantifiers in the context of negative propositions has shown that the proposed bidirectional OT analysis correctly selects the form-meaning pairs found in Chechen.

4.3 Implications

The previous sections show that negative concord in Chechen can be described by using a constraint hierarchy as given in (29).

(1) INTERPRET-NEGATIVE/QM-ARGWH >> FAITH(Neg), *IP, EXPLICATE-NEGATIVE >> *NEGATION >> INTERPRET-NEGATIVE

Other negative concord languages, like for instance Russian, don't allow negative concord to be overridden in any situation. This shows that for such a language the context-sensitive markedness constraint INTERPRET-NEGATIVE/QM-ARGWH is ranked as low as the context-free one.

Adopting a harmonic alignment solution in which the INTERPRET-NEGATIVE constraint is linked up with a question type hierarchy leads to typological predictions. There may be other negative concord languages that do not show negative concord effects in the context of certain questions, but only certain possibilities support the solution offered in this paper. Languages are only expected to override negative concord in the context of the following groups of question types:

- Type 0: (no question type, e.g. English);
- Type 1: overt polar question markers;
- Type 2: question markers + argument *wh* questions (e.g. Chechen);
- Type 3: like type 2 + non-argument *wh* questions;
- Type 4: like type 3 + *why* questions;

5 Conclusions

Negative concord languages generally require the presence of a sentence negator in the context of a negative quantifier. Chechen is a negative concord language,

but does not require a sentence negator when a negative variable is used in questions involving a polar question marking suffix or an argument *wh* question word. This present study has considered the nature of the constraint allowing negative concord to be overridden.

A language needs to choose between two possible roles of a sentence negator: whether it negates a proposition or expresses the inherent negativeness of a negative quantifier. In OT terms this choice has been expressed as a ranking choice between INTERPRET-NEGATIVE, which would have negators contribute to the negation of a proposition, and FAITH(Neg), which promotes every negation—including that of a negative quantifier—to be accompanied by a negator. Negative concord languages are characterized by the ranking of FAITH(Neg) >> INTERPRET-NEGATIVE, which results in negators being interpreted as belonging to negative quantifiers, which means that they can no longer signal the negation of a proposition.

Chechen too is a negative concord language, characterized by FAITH(Neg) >> INTERPRET-NEGATIVE, but, in addition to the context-free INTERPRET-NEGATIVE markedness constraint, the proposed analysis argues that it also has a context-sensitive version. This constraint is sensitive to the presence of the polar question marker or the argument *wh* question words. It ranks higher than the faithfulness constraint FAITH(Neg), so that negative concord is overridden whenever a polar question marker or an argument *wh* word is present.

The rationale behind the context-sensitive nature of the INTERPRET-NEGATIVE/QM-ARGWH constraint comes from a proposed Question type hierarchy. Questions form a natural scale with respect to a measure of the distance of the question word to the core of the clause.

The analysis proposed in this paper predicts that there might well be other negative concord languages with slightly different behaviour in the context of questions. Neutralization of negative concord can occur in the following contexts, depending on the language: (1) with question markers, (2) also with argument *wh* words, (3) also with adjunct *wh* words, (4) also with *why* question words.

Another prediction is related to first language acquisition. Children are expected to first use argument *wh* words, later learn non-argument *wh* words, and only in a final stage use polar question morphemes (if these exist in their mother tongue).

The data for this research come from native speakers' grammaticality judgments, making use of the fact that Chechen regards *only* as a NPI. The special properties of *only* might also be used to test the operation of negative concord in other languages whose behaviour resembles that of Chechen.

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Erwin R. Komen
Centre for Language Studies
Radboud University of Nijmegen
Box 9103, 6500 HD Nijmegen
E.Komen@Let.ru.nl