

# Polar responses in Russian across modalities and across interfaces\*

**Abstract** This paper investigates gestures and prosody in polar responses in Russian as part of a larger research program of studying meaning as it is expressed in various modalities and constrained at various levels of grammar and their interfaces. Based on the data on head nods and a gestural–intonational cluster used to question the rationale behind the antecedent speech act in Russian responses, it argues that gestures and intonational contours should be treated on a par with spoken morphemes when it comes to fitting them into typologies of meaning-encoding expressions. It also shows, based on the data on linear placement of gestural and spoken polarity markers as well as prosodic grouping in Russian (and English) polar responses, that studying gestural content and prosodic properties of utterances can help us reveal various interface constraints in natural language.

## 1. Introduction

The question of how different types of polarity are encoded cross-linguistically in polar responses to questions and assertions, such as in (1), has received much attention in semantics literature (Farkas & Bruce 2010; Krifka 2013; Roelofsen & Farkas 2015, etc.).

- (1) A: {Did Nina pass the exam?, Nina passed the exam.}  
B: {Yes she did, No she didn't}<sup>1</sup>

However, natural language utterances are more than strings of spoken (or signed) morphemes. Gestures (i.e., movements of hands, head, and other body parts, as well as facial expressions) and prosody contribute significantly and non-trivially to the meaning of utterances. Polar responses are an especially rich empirical ground for studying multimodal meaning and how it is constrained at various levels of grammar and their interfaces, because they are sensitive both to the utterance-internal and the utterance-external material, and because linguistic communities typically have conventionalized gestures that occur in polar responses. More recently, thus, researchers started incorporating fine-grained gestural and prosodic data into the picture (e.g., González-Fuente et al. 2015). In this paper, I will continue this effort by making novel empirical observations about gestures, intonational contours, linear order of polarity markers, and prosodic grouping in Russian polar responses and discussing their theoretical implications for how “secondary modality” content contributes meaning and for the grammar of polar responses.

In section 3, I argue that gestural and intonational morphemes should be treated as first-class citizens when it comes to fitting them into typologies of meaning-encoding expressions. I support my conclusion with the following case studies:

- (i) Russian doesn't have a spoken particle to mark positive ABSOLUTE POLARITY, i.e., polarity of the response itself—as opposed to RELATIVE POLARITY, i.e., polarity with respect to the antecedent speech act (the two polarity types are introduced in section

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<sup>1</sup> Throughout the paper, I omit all punctuation marks from the target responses so that they don't get interpreted as indicators of how these responses are most naturally prosodified.

2). Head nods fill this gap, marking both types of positive polarity and only those (contra González-Fuente et al. 2015). Thus, nods fit into the typology of polarity markers from Roelofsen & Farkas 2015 in a predictable way, but lexicalize independently of spoken particles.

- (ii) Russian polar responses can also contain a gestural–intonational cluster that is not used to mark polarity or to comment on the propositional content of the spoken utterance it is hosted by, but rather to question the rationale behind the antecedent speech act. This cluster needs to be fit into the typology of rising declaratives (Jeong 2018), as well as into the typology of expressions that are prosodically and/or syntactically integrated with utterances they don’t seem to compose with semantically, such as certain expressives (Esipova 2019), which includes both spoken and “secondary modality” morphemes. I also give examples of spoken morphemes that have meanings similar to this gestural–intonational cluster, highlighting the fact that the same meaning can lexicalize in different modalities.

In section 4, I raise the question of how polar responses are constrained at the interfaces. I conclude that while it is not clear how exactly absolute vs. relative polarity need to be distinguished syntactically, if at all, pragmatics often forces us to structure our polar responses in a certain way. I base my conclusion on the following observations:

- (i) There exist various constraints on relative linear placement of markers, spoken and gestural, realizing different polarity types. While some of those constraints in some languages might be syntactic, I adduce data on head gestures in Russian suggesting existence of a pragmatic constraint on how we disagree with antecedent speech acts.
- (ii) Relative-polarity-realizing particles tend to be more prosodically independent than absolute-polarity-realizing particles. I maintain that this offers further evidence for pragmatics imposing constraints on how polar responses are structured.

In section 5, I summarize the main points of the paper and their broader implications.

Before I proceed, let me add an important caveat that no intonation-labeling system based on assumptions of the autosegmental-metrical approach, akin to MAE-ToBI (Beckman & Ayers 1997), currently exists for Russian. Therefore, my discussion of Russian intonation will be mostly couched in pre-theoretical descriptive terms. Sound files with accompanying TextGrid files and pitch contour drawings as well as videos for selected examples discussed in this paper can be found at <https://osf.io/fx9gu/>.

## 2. Absolute and relative polarity in polar responses

Roelofsen & Farkas (2015) maintain that polar responses to questions and assertions are categorized by two polarity types: ABSOLUTE POLARITY, i.e., polarity of the response itself ([+] or [−]), and RELATIVE POLARITY, i.e., polarity with respect to the antecedent speech act ([AGREE] or [REVERSE]). Roelofsen & Farkas treat the objects in square brackets as morphosyntactic features; I adopt their terminology descriptively. Notation-wise, I show both features for each response and enclose the feature realized by the given particle instance (when it’s clear what it is) in a box.

Languages have different inventories of polarity markers used in polar responses with respect to the features they can realize. For example, English *yes* and *no* can realize both types of polarity, which can be seen in responses to negative polar questions or assertions:

- (2) A: {Did Nina not pass the exam?, Nina didn't pass the exam.}  
 B: (i) Yes she didn't [AGREE, -]  
 (ii) No she didn't [AGREE, -]  
 (iii) Yes she did<sup>2</sup> [REVERSE, +]  
 (iv) No she did [REVERSE, +]

In both (2-i) and (2-ii), the absolute polarity is negative ([−]), as the PREJACENT (i.e., the part of the response without the polarity particle) contains sentential negation, but the relative polarity is positive ([AGREE]), since the response matches the antecedent in polarity. In (2-i), the polarity particle *yes*, thus, realizes relative polarity, while in (2-ii), the polarity particle *no* realizes absolute polarity. Conversely, in (2-iii) and (2-iv), the absolute polarity is positive ([+]), since the prejacent contains no negation, but the relative polarity is negative ([REVERSE]), since the response reverses the polarity of the antecedent. Accordingly, *yes* in (2-iii) realizes absolute polarity, while *no* in (2-iv) realizes relative polarity.

Many languages have a dedicated particle for [REVERSE, +] responses only. For example, French uses *si* exclusively in [REVERSE] responses to negative antecedents:

- (3) A: Nina n'a pas passé l'examen {?, .}  
 Nina NEG-has NEG passed the-exam  
 'Did Nina not pass the exam?, Nina didn't pass the exam.'  
 B: {Si, \*oui, ?non} elle l'a passé  
 SI OUI NON she it-has passed<sup>3</sup>  
 'Yes she passed it' [REVERSE, +]
- (4) A: {Est-ce que Nina a passé l'examen ?, Nina a passé l'examen.}  
 is-it that Nina has passed the-exam Nina has passed the-exam  
 'Did Nina pass the exam?, Nina passed the exam.'  
 B: (i) {\*Si, oui} elle l'a passé.  
 SI OUI she it-has passed  
 'Yes she passed it' [AGREE, +]  
 (ii) {\*Si, non} elle ne l'a pas passé.  
 SI NON she not it-has not passed  
 'Yes she passed it' [REVERSE, −]

Russian has a gap in the spoken polarity particle inventory, as shown in (5). Like English *no*, Russian *net* can realize both types of negative polarity, i.e., both [REVERSE] and [−]. However, unlike English *yes*, Russian *da* can only realize relative, but not absolute positive polarity, i.e., it can only realize [AGREE], but not [+].

- (5) A: Nina ne sdala ekzamen{?, .}  
 Nina NEG passed exam  
 'Did Nina not pass the exam?, Nina didn't pass the exam.'

<sup>2</sup> Not all English speakers find this response fully natural, especially when it's a reaction to a question rather than an assertion. Furthermore, prosodification is especially important in this case. Whatever the source of this degradedness, it's still different from the categorical nature of the corresponding Russian data.

<sup>3</sup> According to Paloma Jeretič (p.c.), the most natural response here would be one with a reduplicated *si-si*.

- B: (i) Net ne sdala  
NET NEG passed  
‘No she didn’t’ [AGREE, −]
- (ii) Da ne sdala  
DA NEG passed  
‘Yes she didn’t’ [AGREE, −]
- (iii) Net sdala  
NET passed  
‘No she did’ [REVERSE, +]
- (iv) \*Da sdala  
DA passed  
Intended: ‘Yes she did’ [REVERSE, +]

In subsection 3.1, I will show that this gap in Russian is filled with head nods, which can realize both [AGREE] and [+].

### 3. Gestural and intonational morphemes in polar responses

Many linguistic communities have conventionalized head gestures, such as head nods, head shakes, upward head movements,<sup>4</sup> etc., that are used, among other things, in polar responses. Polar responses can also contain less obvious head and upper body movements that are more likely to fly under the radar of metalinguistic awareness, but also come with robust meaning associations; the same can be said about intonational contours in polar responses.

In this section, I look at how some of such gestural and intonational morphemes are used in Russian polar responses and discuss how they fit into existing typologies of meaning-encoding expressions. In particular, I show that head nods and head shakes follow the general typological rules for polarity markers, as described in Roelofsen & Farkas 2015 (contra González-Fuente et al. 2015), but they lexicalize independently of spoken polarity particles. I also discuss a gestural–intonational cluster consisting of a complex gesture whose most prominent feature is a head tilt and a distinct rising contour that can accompany Russian responses and is used to question the rationale behind the antecedent speech act. I argue that this cluster needs to be fit into the typology of rising declaratives, as well as into the modality-neutral typology of expressions that integrate with spoken utterances they co-occur with at some level of representation (for example, in prosody), but not compositionally.

#### 3.1. Head nods

In many cultures, head nods are used in polar responses.<sup>5</sup> González-Fuente et al. (2015) adduce production data showing that Russian (and Catalan) speakers produce nods in both [AGREE] and [REVERSE] responses.<sup>6</sup> González-Fuente et al. offer no formal analysis for ges-

<sup>4</sup> These are single abrupt head movements upwards used, for instance, in Bosnia, Bulgaria, Greece, etc., in negative responses. Contra to popular belief, they are distinct from nods used in positive responses and, in some cultures, are accompanied with a click sound. I thank Maria Kouneli and Dunja Veselinović (p.c.) for clarifying these facts to me.

<sup>5</sup> Of course, head nods have other functions, such as backchanneling, which I will not talk about.

<sup>6</sup> They use different terms, but the gist is the same.

tures, but informally suggest that nods can be used both for confirming and rejecting an antecedent proposition. That would make them unlike any described spoken polarity particles and would run against the typological predictions in Roelofsen & Farkas 2015.

There are two main issues with the (interpretation of the) data in González-Fuente et al. 2015, however. First, when making their generalizations, they don't distinguish between what they call "strong" vs. "repeated" nods. Those "strong" nods or a subset thereof might be forward head movements that are used cross-linguistically to mark (contrastive) focus (e.g., House et al. 2001; Dohen et al. 2006), in particular, in [REVERSE] responses. These focus-marking head gestures are articulatorily and perceptually distinct from polarity-marking nods, but can be mistaken for them in a coarse-grained analysis. Throughout this paper I make sure that the nods I am talking about are repeated nods (which I gloss as NOD-NOD), even if the amplitude of the nods in a sequence drops dramatically after the first nod and regardless of how emphatic the first nod in the sequence is (which can perhaps sometimes be a fusion of a focus-marking and a polarity-marking head gesture). This should not be taken to mean, of course, that only repeated nods can mark polarity; for instance, a single large-amplitude nod can certainly be used as a standalone affirmative response.

Second, and most importantly, when making generalizations about responses used to reject antecedent propositions, González-Fuente et al. don't distinguish between [REVERSE, +] vs. [REVERSE, -] responses. However, I observe that, in Russian, nods are good in [AGREE] and [REVERSE, +], but not in [REVERSE, -] responses, as shown in (6) and (7).<sup>7</sup>

- (6) A: 'Did Nina pass the exam?'  
 B: (i)  $\overline{\text{Da sdala}}^{\text{NOD-NOD}}$  [AGREE, +]  
 (ii)  $*\overline{\text{Net ne sdala}}^{\text{NOD-NOD}}$  [REVERSE, -]
- (7) A: 'Did Nina not pass the exam?'  
 B: (i)  $\overline{\text{Net ne sdala}}^{\text{NOD-NOD}}$  [AGREE, -]  
 (ii)  $\overline{\text{Net sdala}}^{\text{NOD-NOD}}$  [REVERSE, +]

It should be noted that the nod sequence in (7-ii) is prosodically different from those in (6-i) and (7-i) (in particular, the former seems to be more rapid overall, and the first nod in the sequence seems to have a larger amplitude). However, like with other co-speech gestures, the prosody of NOD-NOD is to a large extent parasitic on the prosody of the speech string the gesture co-occurs with,<sup>8</sup> and in (7-ii), said prosody is contrastive. To the extent that it is not parasitic on the vocal prosody, the prosody of the nod sequence likely is also contrastive. Thus, the difference between the nod sequences in the two cases with respect to their prosodic properties is expected. That said, in both cases, it is still identifiably a sequence of repeated nods. Proposing that in these two cases we are dealing with two different, independently lexicalized gestures would make as much sense as proposing that two instances of the same spoken morpheme produced with two different intonational contours are, in fact, instances of two different, independently lexicalized morphemes.

I, therefore, maintain that in Russian, nods can realize both [AGREE] and [+], which

<sup>7</sup> I write head gestures co-occurring with speech as superscripts and use overlining to indicate their approximate temporal alignment.

<sup>8</sup> See, e.g., Loehr 2004 for prosodic properties of co-speech hand gestures.

puts them in the same typological bin as English *yes*. They furthermore fill the gap in the Russian polarity marker inventory created by the lack of a spoken particle that could realize [+], showing that gestural polarity markers aren't simply gestural manifestations of spoken polarity particles within a given language, but lexicalize independently of those.

### 3.2. Head shakes

Head shakes (labeled SHAKE), which are also common cross-culturally, are used in Russian to mark both [REVERSE] and [−], as shown in (8). This makes them akin to English *no* and Russian *net*.

- (8) A: 'Did Nina not pass the exam?'  
 B: (i)  $\overline{\text{Net ne sdala}}^{\text{SHAKE}}$  [AGREE, −]  
 (ii)  $\overline{\text{Net sdala}}^{\text{SHAKE}}$  [REVERSE, +]

However, (8-ii) is somewhat awkward to produce (but not impossible), as aligning a head shake with contrastive vocal prosody seems articulatorily challenging. Furthermore, there might be pressure to realize contrastive focus gesturally, which has to be suppressed in (8-ii), since, unlike nods, head shakes are articulatorily incompatible with the focus-marking head movements discussed in the previous subsection.

### 3.3. The “why would you even say that?” gestural–intonational cluster

Yet another gesture that often emerges in polar responses, but as far as I know, has not been discussed in any great detail, is a complex gesture consisting of a head tilt, an (optional?) lip purse, and an (optional) slight shrug. This gesture is articulatorily incompatible with repeated nods or head shakes and typically comes hand in hand with a distinct rising intonational contour. The latter is illustrated in Figure 1 for the response in (5-iii), where it is juxtaposed with a regular contrastive focus contour for the same response.

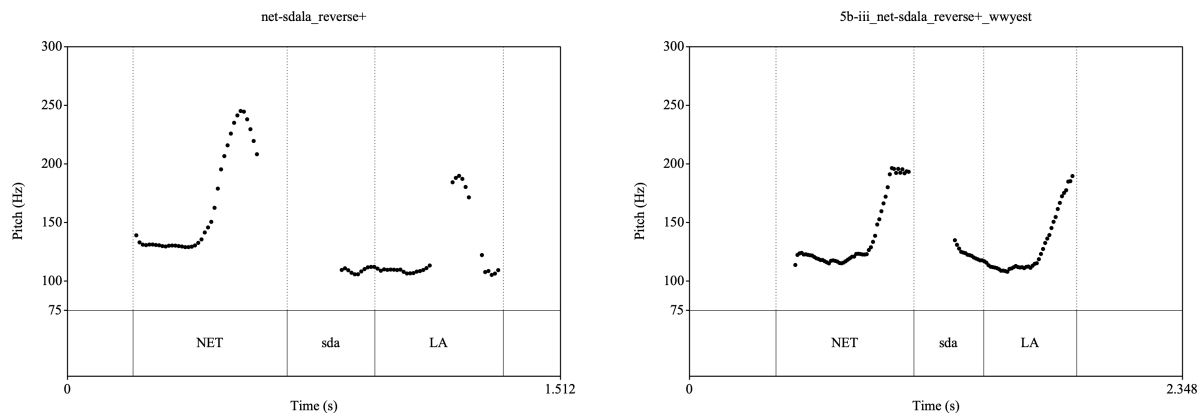


Figure 1: Intonational contours in regular [REVERSE, +] responses with contrastive focus (left) vs. “why would you even say that?” [REVERSE, +] responses (right) in Russian. Both examples consist of two prosodic phrases (one for the particle, one for the prejacent), and the contours are repeated twice in each instance.

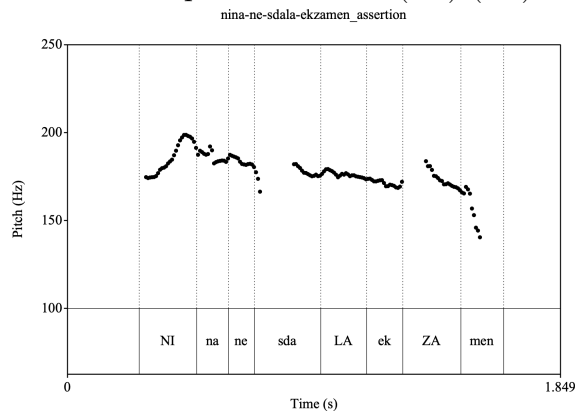
This gestural–intonational cluster can occur outside of polar responses as well, so it

doesn't mark polarity. I maintain that its role is to signal that the speaker is questioning the rationale behind the antecedent speech act. For example, it can be used in responses in which the speaker disagrees with the antecedent assertion or the bias in a biased question to create a “why would you even say that?” (WWYEST) effect. Or it can be used in response to unbiased questions, polar or constituent, if the speaker believes that the person who asked the question should already know the response, so they are questioning the reasons for asking the question in the first place. Further decomposition of both the gestural and the intonational components of this cluster into smaller meaningful units is a potentially intriguing endeavour, but falls outside the scope of this paper.

If I were to use MAE-ToBI to label Russian intonation, I would label the WWYEST contour as L\* H-L%,<sup>9</sup> the contrastive contour on the left in Figure 1 as L\*+H L-L%, and the regular, non-contrastive, non-questioning contours in Russian polar responses as (L+)H\* L-L% or H+!H\* L-L%. Of course, using MAE-ToBI in this way would be inappropriate. That said, rising contours in English declaratives have been claimed to have various “questioning” functions as well (see Jeong 2018 for a recent discussion). As far as I know, questioning the rationale behind the antecedent speech act has not been explicitly listed among those. Note that this is not the same as questioning some part of the content of the antecedent utterance (including its presuppositions), which is what both English and Russian “incredulous” rising declaratives, like in (9) and (10), do.<sup>10</sup>

- (9) A: John went to the airport to pick up his sister.  
 B: John has a sister? L\* H-H% (Jeong 2018, (1b))

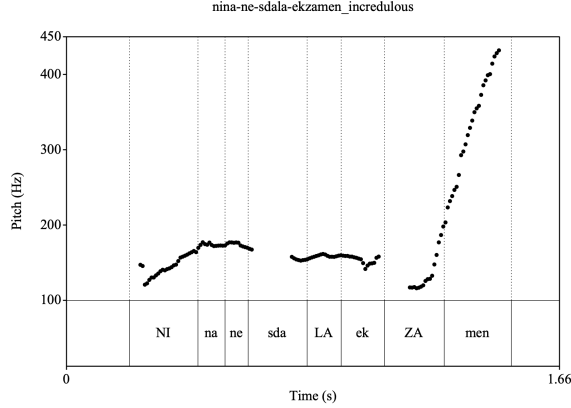
- (10) A: Nina ne sdala ekzamen.  
 Nina NEG passed exam  
 ‘Nina didn’t pass the exam. (H\*) (H\*) H\* L-L%’



- B: Nina ne sdala ekzamen?  
 Nina NEG passed exam  
 ‘Nina didn’t pass the exam? L\* H-H%’

<sup>9</sup> This is not very easy to see in Figure 1, but when there is more segmental material after the nuclear pitch accent, the tail of the WWYEST contour plateaus out, similarly to H-L% in English.

<sup>10</sup> See Gunlogson 2003 for an earlier discussion of these in English.



Apart from the robust phonetic difference between the two types of rising contours in Russian (a rise to a mid-to-high plateau vs. an extra-high rise), in “incredulous” rising declaratives, the rising contour compositionally combines with the propositional content of the utterance it is hosted by and questions it. However, in WWYEST responses in Russian, there is no questioning of the content of the response itself (for example, the response can contain adverbs like *konečno* ‘of course’); instead, what is questioned is the rationale behind the antecedent speech act. The WWYEST gestural–intonational cluster, thus, seems to form an independent speech act parasitizing on the string of spoken morphemes it co-occurs with; in a way, it is hijacking the host utterance’s prosody for its own purposes. This would make WWYEST responses akin to “uptalk” rising declaratives from the typology of English rising declaratives in Jeong 2018, where the contour doesn’t compositionally comment on the content of the host utterance either, but is used to build rapport, signal a persona, etc.

I, thus, maintain that, on the one hand, WWYEST responses need to be fit into the typology of rising declaratives. On the other hand, they need to be fit into a modality-neutral typology of expressions that integrate with the host utterance at some level(s) of representation (for example, in prosody), but either don’t integrate with it compositionally, or do so vacuously. The beginnings of such a typology can be found in Esipova 2019, where it was argued that some spoken expressives are prosodic parasites that don’t integrate with their hosts syntactically, and some other spoken expressives are syntactic parasites, who do integrate with their hosts syntactically—and, thus, compositionally—but said composition is locally vacuous. Having established this need, I leave its proper fulfillment for future research.

At this point, one might wonder if there exist languages that lexicalize the WWYEST meaning as a spoken morpheme. Russian adversative *da* (which is distinct from the polarity-marking *da*) in *da net* polar responses also seems to contribute a WWYEST-like flavor (*da net* responses are especially good in co-occurrence with the WWYEST gestural–intonational cluster). Similarly, Russian *že* particle can be used with a WWYEST-ish flavor in response to (polar and constituent) questions to signal that the person asking the question should have known the answer. French has *mais* {*oui*, *non*, *si*} polar responses, and while my French-speaking consultants were not able to come up with precise generalizations as to when those are used, some of the uses of *mais* (‘but’) in polar responses seem to be of the WWYEST-like kind. I leave a proper investigation of WWYEST cross-linguistically and cross-modally for future research, but it is clear that WWYEST-like meanings can lexicalize in various ways and should be analyzed uniformly, regardless of the modality in which they are expounded.



## 4. Absolute and relative polarity at the interfaces

While the existence of the two types of polarity, absolute and relative, is an empirical fact, it is not at all clear how they are represented at various levels of the grammar and their interfaces. For instance, how are the two types of polarity represented syntactically? And how does a cooperative speaker structure their polar responses, given the syntactic possibilities at hand? In this section, I will argue that there exist pragmatic constraints on the structure of polar responses that go beyond what is in principle possible in the syntax. Based on the data on relative linear placement of gestural and spoken polarity markers within one utterance in Russian, I will argue for a pragmatic constraint that urges the speaker to disagree with the antecedent speech act first, before asserting what they believe to be the case. I will also adduce data on prosodic grouping in both Russian and English polar responses that suggest that there exists yet another pragmatic constraint that encourages the speaker to package their reaction to the antecedent speech act as its own speech act (when the grammar of a given language allows that).

### 4.1. Linear order constraints on the two polarity types

It is uncontroversial that both types of polarity can be marked within one utterance (however this process is operationalized in the syntax/semantics interface). This seems to be the case with the previously mentioned French *si*, which is only licensed in responses that are both [REVERSE] and [+], and, even more obviously, with bi-morphemic particle clusters like the Romanian *ba nu* and German *ja doch*. These particle clusters have a fixed particle order (which is why I refer to them as “clusters”), so I will set them aside and will focus instead on cases of co-occurring polarity markers in which one could in principle expect more flexibility.<sup>11</sup>

Generally speaking, having two standalone spoken particles realizing two different types of polarity, like in (11), is not impossible in either English or Russian.

- (11) A: Did Nina not pass the exam?  
 B: Yes no she didn't [AGREE, −]<sup>12</sup>

At the very least, such responses seem to be frequently produced in non-sterile speech, even though they do often come off as confused. Because of the overall entropic nature of such mixed responses, it is often hard to judge whether they exhibit further constraints on the relative linear placement of the polarity markers. It turns out, however, that such judgements are much clearer when one of the target polarity markers is gestural.

We have already seen that we can realize the two types of polarity simultaneously within one utterance by a gesture and a spoken particle in examples like (7), where *net* is realizing [−] or [REVERSE] while NOD is realizing [AGREE] or [+], respectively. The linear placement of the gestural marker is crucial, however. Pre-speech nods are OK in [AGREE], but not in [REVERSE] responses to negative questions or assertions:

- (12) A: ‘{Did Nina not pass the exam?, Nina didn't pass the exam.}’  
 B: (i) NOD-NOD net ne sdala [AGREE, −]

<sup>11</sup>I am also setting aside English responses like *yeah no*, *yeah no for sure*, etc.

<sup>12</sup>Here and in similar examples, the order of the features in [] reflects the linear order of the particles trying to realize them.

(ii) ??NOD-NOD net sdala [+, REVERSE]

However, a similar contrast doesn't seem to obtain for head shakes:

- (13) A: ‘{Did Nina not pass the exam?, Nina didn’t pass the exam.}’  
 B: (i) SHAKE da ne sdala [−, AGREE]  
 (ii) SHAKE  $\overline{\text{sdala}}^{\text{NOD-NOD}}$  [REVERSE, +]

The generalization seems to be that it is possible to realize both polarity types within one utterance with a head gesture and a spoken particle, but in [REVERSE, +] responses, relative polarity should preferably come first linearly.

The nature of this constraint can't be syntactic. Utterances consisting solely of standalone spoken particles or gestures are in principle possible, therefore, a standalone polarity marker can in principle form an entire speech act, however it is derived (via ellipsis or not). Furthermore, utterances can contain several speech acts. Therefore, the syntax should in principle be able to derive any linear string of polarity markers. Furthermore, the contrast above cuts across the absolute vs. relative distinction in a way that singles out [REVERSE, +] responses, which make up a natural class from a pragmatic, but not obviously from a syntactic standpoint. [REVERSE, +] responses are always reactions to assertions or biased questions and, thus, always lead to a CONVERSATIONAL CRISIS in Roelofsen & Farkas's (2015) terms, i.e., they always signal incompatible commitments or biases of the speech act participants.

With that in mind, I am putting forward a pragmatic principle *Disagree First!*, which requires that if the speaker is going to both disagree with the content or biases of the antecedent speech act and assert what they believe to be the truth, they should disagree first and only then make their assertion.

Moving on, one might ask whether *Disagree First!* applies to responses with two spoken particles. As I said above, the entropy they create might be too high to have strong introspective judgements, more so than for gestures, which are easier to ignore and are often produced unconsciously. However, the gestural data make the contrasts clearer, so now we know what to look for in examples with two spoken particles.

## 4.2. Prosodic grouping in polar responses

Spoken polarity particles exhibit preferences with respect to prosodic grouping. In particular, in both English and Russian, relative-polarity-realizing particles tend to be in their own prosodic phrases (PrPs).<sup>13</sup> This is especially obvious in the case of Russian *da*, which can only realize relative polarity and, thus, always prefers to be in its own PrP:

- (14) A: ‘Did Nina pass the exam?’  
 B: (i)  $\{(_{PrP} \text{ Net}) (_{PrP} \text{ ne sdala}), (_{PrP} \text{ Net ne sdala})\}$  REVERSE or −  
 (ii)  $\{(_{PrP} \text{ Da}) (_{PrP} \text{ sdala}), ??(_{PrP} \text{ Da sdala})^{14}\}$  AGREE

We can furthermore observe that in English [REVERSE, +] responses, *yes* prefers to be in

<sup>13</sup>In line with the caveat at the end of the Introduction, I remain ignorant about the specific prosodic grouping inventory in Russian, hence the vague term.

<sup>14</sup>Beware of the previously mentioned adversative *da*, though, which is always a clitic and has a completely different set of uses than the polarity-marking *da*. Here it would be signalling the speaker's annoyance.

the same PrP as the prejacent, but the same doesn't seem to hold for *no* in [AGREE, -] responses:

- (15) A: Nina didn't pass the exam.  
 B: (i)  $\{(p_{rP}$  Yes she did),  $??(p_{rP}$  Yes)  $(p_{rP}$  she did) $\}$  [REVERSE,  $\boxed{+}$ ]  
 (ii)  $\{(p_{rP}$  No she didn't),  $(p_{rP}$  No)  $(p_{rP}$  she didn't) $\}$  [AGREE,  $\boxed{-}$ ]

So, there seems to be a general tendency for relative-polarity-realizing markers to be prosodically independent across the board, on the one hand, and for absolute-polarity-realizing markers to be prosodically close to the prejacent in [REVERSE, +] responses, on the other.

Once again, the contrasts at hand seem to ultimately have pragmatic rather than syntactic roots. I take the prosodic grouping facts above to reflect the tendency for relative-polarity-realizing markers to be independent speech acts, which are packaged into their own PrPs. The dispreference for two PrPs in (15-i) then is due to the fact that in the “high stakes” [REVERSE, +] case, the speaker should probably avoid misleading the addressee, even briefly, into thinking that they are agreeing with them.

Now, it was observed by Paloma Jeretić (p.c.) that placing *yes* after the prejacent in [REVERSE,  $\boxed{+}$ ] responses doesn't help:

- (16) A: {Did Nina pass the exam?, ??Did Nina not pass the exam?}  
 B: ( $_{PRP}$  She did) ( $_{PRP}$  yes)

This is puzzling. Such a response shouldn't be "misleading", since by the time the speaker gets to utter the polarity particle, they would have already asserted what they believe to be the case. Therefore, this string should be possible under the construal whereby *yes* is realizing [+ ] in its own speech act packaged into its own PrP. Donka Farkas (p.c.) suggested that in such cases realizing absolute polarity by a postposed polarity particle would be redundant, given that the preadjacent-only speech act has already done so. This seems plausible, but I do think that more needs to be said about postposed polarity particles in general. This is yet another issue I leave for future research.

One final note is that the contrast in (15) also holds for the epistemic adverbs *sure* and *konečno* in English and Russian, respectively:<sup>15</sup>

- (17) A: I will not pass this exam.  
B: {??( $P_{rP}$  Sure) ( $P_{rP}$  you will), ( $P_{rP}$  Sure you will)} [REVERSE, +]

(18) A: ‘I will not pass this exam.’  
B: {??( $P_{rP}$  Konečno) ( $P_{rP}$  sdaš’), ( $P_{rP}$  Konečno sdaš’)}  
                sure                      pass.FUT.2SG  
‘Sure you will’ [REVERSE, +]

I take it that it is the same pragmatic process as in (15) that prevents the split into two speech acts (and, consequently, two PrPs) in the [REVERSE, +] responses in (17) and (18).

Moving on, it would be interesting to investigate how prosodic grouping considerations in polar responses apply to gestures, especially, considering that, unlike spoken morphemes,

<sup>15</sup>This was observed by Russian-speaking non-linguists in the comment thread under a Facebook post by Asya Pereltsvaig.

those typically have the option of linearizing as co-speech.

## 5. Conclusion

In this paper, I aimed to show that by studying natural language utterances multi-modally we can gain a better understanding of how “secondary modality” expressions, such as gestural and intonational morphemes, contribute meaning, on the one hand, and of how our utterances are constrained more generally, on the other. To do so, I focused on gestural content and prosodic properties of polar responses in Russian.

I have argued that gestural and intonational morphemes should be treated as bona fide linguistic objects across the board and, in particular, when it comes to fitting them into typologies of meaning-encoding expressions. I have used two case studies to support this view. By investigating head nods in Russian polar responses, I have shown that we can fit head gestures into the typology of polarity markers in a predictable way, and we can do so independently of spoken polarity particles within a given language. I have also argued that the gestural–intonational cluster that emerges in Russian responses (polar and otherwise) and is used to question the rationale behind the antecedent speech act needs to be fit into the typology of rising declaratives as well as the modality-neutral typology of expressions that integrate with the utterances they are hosted by at some level(s) of representation (for example, in prosody), but not compositionally.

I have also demonstrated that investigating gestural and prosodic data can reveal pragmatic constraints that might not be evident if we only look at utterances as strings of spoken morphemes. To that effect, I have looked at relative linear placement of polarity markers, gestural and spoken, within a single response (in Russian), which has revealed the existence of a pragmatic constraint that urges cooperative speakers to disagree with the antecedent speech act before they assert what they believe to be the case. I have also shown that certain prosodic grouping properties of polar responses (in Russian and English) indicate that speakers tend to package relative-polarity-realizing markers into their own speech acts and tend to avoid doing so with absolute-polarity-realizing markers when the conversational stakes are high.

I hope that the multi-modal approach to meaning and interface interactions will be extended to other empirical domains in the future.

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