What I Will Tell You about "Matrix" *Wh*-"Exclamatives"!

Maria Esipova

1. Introduction

It's been long known (Elliott 1974 et seq.) that in English you can exclaim strings like (1), e.g., to express feelings about how very smart she is, but not like (2), e.g., to express feelings about who came.

(1)　{How smart she is! / What a terrible friend you are!}
(2)　*{Who came! / What I am about to tell you!}

Following Rett (2011), I will maintain that English *exclamatives*, i.e., sentences with a special syntax whose primary goal is to express the speaker's feelings about some prejacent, have to be about degrees, i.e., positions on an ordered scale, supplied overtly or covertly, and I will call this constraint *the degree constraint*.[1] Of course, you can have *exclamations* of other sentence types in English, which are not subject to the degree constraint, including imperative or declarative exclamations with embedded *wh*-clauses:

(3)　{Look / I can't believe / You won't believe} who came!

Nouwen & Chernilovskaya (2015) claim that some other languages, e.g., Dutch (which they focus on), German, Italian, Russian, and Turkish, don't have the degree constraint, i.e., there you can exclaim strings like both (1) and (2). However, they don't discuss any differences in prosody or meaning between the two.

In this paper, I focus on Russian and show that while we can, indeed, exclaim strings like (1) and (2), Russian has two types of exclamations involving *wh*-items, *Type 1* and *Type 2*, which differ in both form (in particular, prosody; section 2) and meaning (epistemic and affective; section 3). Type 1 sentences are subject to the degree constraint, but Type 2 sentences aren't. In section 4, I propose that Type 1 sentences are instances of expressive degree intensification with the expressive component being the primary speech act, thus, departing from the analysis of English *wh*-exclamatives in Rett 2011 and offering a more explanatory account of the degree constraint. Type 2 sentences involve embedding of interrogatives under a mirative predicate that is exponed prosodically and can operate on propositions (i.e., Russian 'Who came!' is structurally akin to English *{Look / I can't believe / You won't believe} who came!*). I conclude by briefly speculating about the typological differences between Russian and English (section 5).

The main lesson of this paper is, thus, that there are no "secondary" aspects of form or meaning, despite the tendency in formal semantics to ignore prosody (as well as interjections/vocalizations and gesture) and nuances of affect-related meaning—especially when affect-related meaning is conveyed through prosody, with such meaning–form mappings often labeled "paralinguistic" and, thus, unworthy of our attention.

2. Type 1 vs. Type 2: form

In this section, I discuss the differences in surface form between Type 1 and Type 2, focusing primarily on prosody, but also noting some facts about interjections/vocalizations and gesture. My discussion of

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[1] Rett calls it *the degree restriction*; I want to use a more general term and avoid associations with domain restriction.

the prosody of the target sentences is very descriptive, although I do rely on some core notions from the Autosegmental-Metrical model of intonational phonology (see, e.g., Beckman & Ayers 1997, Ladd 2008).

In (4), I give examples of strings that can be produced with Type 1 prosody, exemplified in (4a). This prosody involves a falling boundary contour and an L+H pitch accent on the *wh*-item, with the low tone aligned with the lexically stressed syllable. There can also be additional prominence on the predicate associated with the *wh*-item (a single high tone, as in (4a)), or also bitonal, placing extra emphasis on the predicate). More gradient aspects of prosody, e.g., voice quality or intensity, and gesture (including facial expressions) convey the specific flavor of the affect. The degree constraint manifests at this level in that only *wh*-items that can range over degrees can participate in exclamations produced with Type 1 prosody.

(4)   a.   Do čego   (že) on naglyj!   (how-audacious.wav)
            to   what.N (ŽE) he audacious
            ≈'Damn he's audacious!'
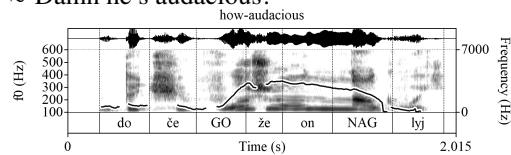
       b.   Kakaja   (že) ona umnaja!
            what.ADJ (ŽE) she smart
            ≈'Damn she's smart!'
       c.   Kak (že) ty   menja dostal!
            how (ŽE) you me   reached
            ≈'Damn I'm fed up with you!'

Type 2 sentences can be produced with a variety of contours (all distinct from Type 1 prosody), with further differences in meaning. I will focus on three subtypes of Type 2 prosody, illustrated in (5a): Early Peak, Late Peak, and Plateau. In (5), I give some examples of strings that can be produced with Type 2 prosody, with further indication of which subtypes these strings are in principle compatible with.

(5)   a.   (Oj!) Skol'ko   zdes' narodu! (Early/Late Peak, Plateau; oj-how-many-people-... .wav)
            (OJ) how-much here people
            ≈'[Look / I can't believe / You won't believe] how many people there are here!'
            (i)

            (ii)

            (iii)
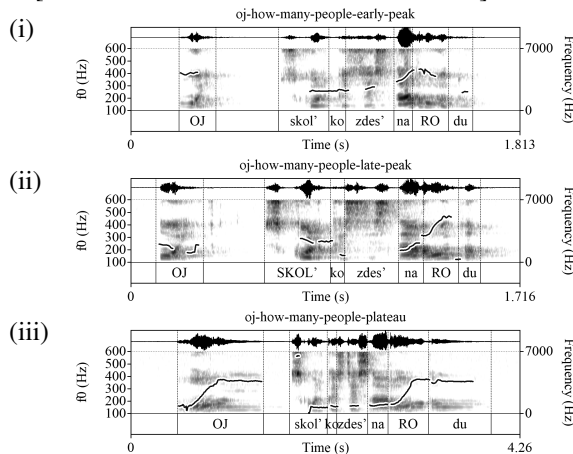
       b.   (Oj!) Kto k nam prišël! (Early/Late Peak, Plateau)
            (OJ) who to us   came
            ≈'[Look / I can't believe / You won't believe] who came to us!'
       c.   (Oj!) Čto   ja sejčas rasskažu! (Late Peak, Plateau)
            (OJ) what.N I now   will-tell
            ≈'[You won't believe] what I am about to tell you!'

In all three subtypes of Type 2 prosody, the main prominence is on the last lexically stressed syllable of the utterance—in contrast to Type 1. In Early and Late Peak, this prominence is an L+H pitch accent (hence "peak"), followed by a falling boundary contour. The main difference between Early and Late Peak is the alignment of this pitch accent (hence "early" vs. "late"); the peak also tends to be sharper in Late Peak. In both cases, the *wh*-item can also bear prominence (more so in Late Peak), but this prominence is distinct from that in Type 1 (no L aligned with the lexically stressed syllable of the *wh*-item in any Type 2 subtype). In Plateau, the main prominence is a low pitch accent, followed by a sing-songy mid-plateau boundary contour. No ostensible prominence (especially high targets) is allowed elsewhere in the utterance.

Type 2 sentences are typically preceded by interjections or vocalizations. These can be in principle suppressed, but it is very natural to have them. A range of these can be used (e.g., *oj*, *mmm*, gasp, etc.), with potential differences in meaning contributions, although I believe all of them have an attention-drawing function. Here I systematically use *oj*, which can mark suddenness, as a general interjection appropriate for all Type 2 subtypes. Interjections in Type 2 are their own utterances, packaged into separate intonational phrases. I believe they systematically carry the same contour as the main utterance, although this is much harder to see in the Peak cases, as interjections are very short there and can have irregular phonation.

Early Peak sentences are often accompanied by a head/upper body movement backwards, likely conveying surprise. Late Peak sentences can be very naturally accompanied by a clap aligned with the interjection, likely conveying excitement. Plateau sentences are often accompanied by a side-to-side rocking head/upper body movement, which I believe to be primarily a rhythmic device.

Type 2 sentences aren't subject to the degree constraint and can in principle contain any *wh*-item; e.g., *skol'ko* 'how much/many', as in (5a), ranges over degrees and can occur with Type 1 or Type 2 prosody.

3. Type 1 vs. Type 2: meaning

The main differences in meaning between Type 1 and Type 2 sentences concern (i) the epistemic status of the prejacent, and (ii) the nature of the affect expressed—with the two being interconnected.

In Type 1 sentences, the prejacent has to be old information/referent, but it has to be recent enough or reactivated to trigger the affect (e.g., (4b) can be exclaimed if the speaker has long believed that the referent of 'she' is very smart, but now they see yet another display of that). Relatedly, Type 1 sentences can't express the speaker's immediate surprise as a reaction to some new information or referent. Even if this information/referent was introduced recently, it first must be added to the speaker's beliefs/referent stack. Type 1 sentences are then used to express some other type of affect about it, such as admiration, anger, annoyance, awe, etc. These two properties are connected, as these types of affect are factive in the sense that in order for you to experience, say, anger about something, you need to first accept its truth/existence.

In contrast, Type 2 sentences are always uttered in information acquisition contexts. Early Peak indicates information acquisition by the speaker; such exclamations are a reaction to something new and convey genuine surprise (which is why (5c) is not readily compatible with this contour). Late Peak indicates information acquisition by the addressee; it conveys that the speaker is about to tell the addressee something that they themselves find noteworthy/exciting and expect the same sentiment from the addressee. Plateau Type 2 sentences can be used either as a reaction to something or in 'I'm about to tell you something exciting' contexts (although they seem to have a strong attention-drawing component either way). They do not convey genuine surprise on behalf of the speaker, though, but are typically used either ironically or in child-directed speech.[2] E.g., (5b) can be uttered with a Plateau in a very informal context when someone comes in who the speaker did expect, but perhaps hasn't seen in a while and wants to draw everyone's attention to their arrival in a mildly ironic, amicable way (cf. sarcasm in (20)). Or it can be used, say, when trying to draw a child's attention to someone's arrival that is expected to be exciting for the child.

Let me now illustrate these differences between Type 1 and Type 2 by looking at a series of scenarios in which I, the speaker, am hosting a party. In both (6) (degree *wh*-item) and (7) (non-degree *wh*-item), I react to something new and unexpected, with Early Peak Type 2 being the appropriate contour (Plateau is possible, too, but would convey irony and at best mild amusement rather than genuine surprise).

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[2] This is in line with the general cross-linguistic association of plateau contours with lack of speaker investment (cf. the English "calling contour", discussed, e.g., in Jeong & Condoravdi 2017, or the "disinterested" list intonation, illustrated, e.g., in Beckman & Ayers 1997: <<oregano>>).

(6)   *Scenario A1: I am hosting a party that starts in an hour. I need to run out and grab something from a nearby store. I open the door and see Anya, one of my guests.*
        Oj! Kak rano ty   prišla! (Early Peak; oj-how-early-early-peak.wav)
        oj how early you came
        ≈'Oh wow! [I can't believe] how early you came!'
(7)   *Scenario B1: The party is on. I need to run out and grab something from a nearby store. I open the door and see Anya, who I did not expect to come.*
        Oj! Kto k nam prišël! (Early Peak; oj-who-came-early-peak.wav)
        oj who to us   came
        ≈'Oh wow! [I can't believe] who came to us!'

(8) is a continuation of scenario A1, in which Anya's early arrival is no news to either me or my addressee (no information acquisition), and I am expressing my annoyance about it via a Type 1 sentence. However, I cannot do a similar thing in (9), with a non-degree *wh*-item. In fact, (9) is quite hard to produce and can be at best read as a frustrated *wh*-question (≈'Who came to us then?'; see (12b)), although the intonation would be a little off for the question reading. In (10), however, we have an addressee-oriented information acquisition context, and we can, thus, felicitously produce the target string with the Late Peak contour. We, thus, see that Type 1 sentences are indeed subject to the degree constraint, but Type 2 sentences aren't.

(8)   *Scenario A2: I am annoyed that Anya showed up so early, it really disrupted my preparation process. I am now in a different room, talking to my partner, who also saw her come in.*
        Kak že Anja rano prišla! (Type 1; how-early-type1.wav)
        how ŽE Anya early came
        ≈'Damn Anya came early!' (I;m expressing my annoyance at how early Anya came.)
(9)   *Scenario B2: I am annoyed that Anya showed up; I didn't even invite her, because I don't like her. I am now in a different room, talking to my partner, who also saw her come in.*
       *Kto že k nam prišël! (Type 1; who-came-type1-attempt.wav)
        who ŽE to us   came
        Intended: ≈'Damn that Anya came to us!'[3] (I'm expressing my annoyance that this person came.)
(10)   *Scenario B3: I am excited that Anya showed up, it was a pleasant surprise. I run to a different room to tell my partner, who didn't see her come in; I expect them to be excited, too.*
        Oj! Kto k nam prišël! (Late Peak; oj-who-came-late-peak.wav)
        oj who to us   came
        ≈'[You won't believe] who came to us!'

Now, let me add two further notes. One concerns Type 1 sentences, surprise, and counter-expectation. Type 1 sentences are, of course, compatible with the speaker finding the prejacent generally noteworthy and/or unlikely, especially considering that Type 1 sentences aren't just about any degrees, but about extreme degrees, which enjoy low probability by virtue of being extreme. Type 1 sentences are also compatible with the speaker themselves finding the prejacent unexpected at some point in the past. However, Type 1 sentences do not express surprise as a reaction to something (immediate affect), nor do they talk about some past counter-expectation of the speaker (no immediate affect; this would be done via non-expressive means, e.g., 'I was surprised that *p*' or 'To my surprise, *p*'—see Esipova 2020 for more on expressive vs. non-expressive affective meanings). Instead, they express other types of immediate affect about some old information/referent. In fact, in some cases, it would be odd for the speaker to explicitly state that they (used to) find the prejacent unexpected. E.g., in (11), the speaker is talking about something that has been clearly boiling under the surface for a while, and there is no sense in which this is/was unexpected to them.

(11)   Kak (že) ty   menja dostal! (Type 1) # Ne ožidala.
       how (ŽE) you me   reached   not expected
       ≈'Damn I'm fed up with you! #[I] did not expect [this].'

The second note is about the particle *že*. It isn't obligatory in Type 1 sentences, but it's very natural to

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[3] Note that such declarative-embedding interjections are grammatical for some English speakers (Zyman 2018).

have it there. While I don't think it is always out in Type 2 sentences, it isn't inherently licensed there in the way that it seems to be in Type 1 sentences. I don't know for a fact what *že* does, especially considering how many uses it has elsewhere in the language. It has been proposed that *že* marks Kontrast, i.e., grammatically evoked contrast (McCoy 2003). I am quite skeptical about this idea, however, especially with respect to Type 1 vs. Type 2 sentences (there is no intuitive sense in which the former are more contrastive than the latter). It is possible, however, that in Type 1 sentences *že* marks reactivation of some information/referent from before, as it seems to have this general effect in confirmation-seeking yes/no questions, reactivated 'I thought I knew the answer, but oops' *wh*-questions, passive-aggressive 'You should know this already' answers, reminders, "emphatic" repetitions, etc.—some of which are exemplified in (12).

(12) a. Ty že idëš' na večerinku?
       you ŽE go   on party
       ≈'You're going to the party, right?' (confirmation-seeking yes/no question)

   b. *Context: Someone came in 5 minutes ago. I was sure it was Nina, but she just texted me that she's still stuck in traffic.*
       Kto že togda prišël?
       who ŽE then   came
       'Who came then?' (reactivated *wh*-question)

   c. A: Čja   èto kružka? B: Olina že.
       A: whose this mug   B: Olya's ŽE
       'A: Whose mug is this? B: Olya's (and you should already know this).'

4. Type 1 vs. Type 2: analysis

4.1. English wh-*exclamatives in Rett 2011*

Before I present my proposal for Russian, let's quickly look at Rett's (2011) analysis of English *wh*-exclamatives like (1). There, *wh*-clauses in such exclamatives denote properties of degrees, which get converted to propositions of the form $S(\mathsf{a}, d)$ (a has the degree d on the scale S; the value of S can be supplied contextually). These propositions combine with a left periphery E-Force operator, which binds the free d variable via an unselective existential closure, and the resulting speech act expresses that there is a d such that the speaker had not expected that $S(\mathsf{a}, d)$ at some time prior to the utterance time, e.g.:

(13) *How smart Anya is!* in Rett 2011
     E-Force($\mathsf{smart}(\mathsf{a}, d)$) expresses that $\exists d$ s.t. the speaker had not expected that $\mathsf{smart}(\mathsf{a}, d')$

In this paper, I will not properly evaluate whether this is a good analysis for English *wh*-exclamatives, beyond noting that I believe expressive speech acts have to express the speaker's current emotional state (although, again, these emotions can be triggered by reactivating something old), i.e., there is no such thing as an expressive speech act about a past counter-expectation. Note, however, that under Rett's analysis, it's unclear why the complement of E-Force has to be about degrees if it's a proposition, e.g., why can't it be $\mathsf{came}(x)$, with the unselective existential closure applying to x? In fact, Rett uses the same operator for sentence exclamations conveying counter-expectation like *Wow, John won the race!*, where the prejacent is not about degrees. In other words, the degree constraint on *wh*-exclamatives remains unexplained.

4.2. Type 1: left periphery expressive intensification

Of course, the reason why Rett's E-Force takes propositions is because she wants to model counter-expectation, and it's common to model expectations via propositions. But, as we have established, Russian Type 1 sentences do not express immediate surprise, nor do they talk about past counter-expectations (even if they are compatible with the latter); instead, they express some other type of affect, such as anger or admiration. But those other types of affect do not have to be about (i.e., triggered by, directed at, etc.) propositions, i.e., facts; they can very well be about individuals, events, or degrees. I, thus, propose that at least in Russian the complement of E-Force is not a proposition, but a property of degrees, and E-Force itself is an expressive intensifier permanently promoted to the left periphery with its expressive component

thus being the primary speech act. To better understand this proposal, let's look at two relevant facts.

First, there is an intimate connection between expressives and extreme degrees outside of exclamatives. For one thing, expressives often re-lexicalize as intensifiers, which both encode a high degree meaning (typically affecting the truth conditions of the sentence) and allow for a non-truth-conditional expression of affect on the side (see, e.g., Esipova 2019, 2020, Gutzmann 2019). This is quite common in English:

(14)   She's {fucking / (god)damn / bloody} smart!
        ≈'She's very smart, and also, I am expressing some feelings.'

Russian can also use expressives to convey high degree meanings, as shown in (15),[4] although the syntax of such constructions in Russian is ostensibly different from that in (14)—for one thing, these Russian expressive intensification constructions can and sometimes have to include *wh*-items. The expressive component of these expressive intensifiers can also be promoted to be the primary speech act, as shown in (16) (the English translations in (15) vs. (16) capture the spirit, if not the syntax of the phenomenon).[5]

(15)   a.   Ona {pizdec / pipec} (kakaja)   umnaja!
              she {PIZDEC / PIPEC} (what.ADJ) smart
              ≈'She's damn smart!'
        b.   Mne   {zaebis' / zašibis'} kak xorošo!
              me.DAT {ZAEBIS' / ZAŠIBIS'} how well
              ≈'I'm feeling damn good!'
(16)   a.   {Pizdec / Pipec} (kakaja)   ona umnaja!
              {PIZDEC / PIPEC} (what.ADJ) she smart
              ≈'Damn she's smart!'
        b.   {Zaebis' / Zašibis'} kak mne   xorošo!
              {ZAEBIS' / ZAŠIBIS'} how me.DAT well
              ≈'Damn I'm feeling good!'

The second relevant fact is that Russian *wh*-items *kakoj* ('what.ADJ') and *kak* ('how') can be used in Type 1 sentences (as in (4b), (4c)), and as relativizers in what I believe to be definite descriptions of degrees (as in (17)), but not to ask questions about degrees (as in (18)):

(17)   Menja {vpečatljaet / besit}   to,   {kakaja   ona umnaja / kak on talantliv}.
        me.ACC {impresses / peeves} that.DEM {what.ADJ she smart   / how he talented}
        'I am {impressed / peeved} by how {smart she is / talented he is}.'
(18)   a.   {*Kakaja   / naskol'ko   / do kakoj stepeni} ona umnaja?
              {*what.ADJ / to.how.much / to what degree} she smart
              'How smart is she?'
        b.   {*Kak / naskol'ko   / do kakoj stepeni} on talantliv?
              {*how / to.how.much / to what degree} he talented
              'How talented is he?'

I, thus, propose that in Russian Type 1 sentences, the *wh*-constituent denotes a property of degrees and does not get converted to a proposition, contra Rett 2011. E-FORCE is essentially an expressive intensifier permanently promoted to the left periphery, with no segmental exponent. I remain agnostic as to which, if any, component of Type 1 prosody expones E-FORCE, but note that expressive intensification can be done via prosody only (Esipova 2019). Now, there are many ways to cut this pie compositionally; in (19), I present the simplest option, but I'm not at all committed to it. There, E-FORCE is a determiner over degrees, which modifies the input property of degrees by saying that *d* is "extreme" or "high",[6] binds the

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[4] *Pipec* and *zašibis'* are euphemisms of very obscene *pizdec* ('bad situation'; can be a standalone interjection) and *zaebis'* (IMP.SG of *zaebat'sja* 'get tired'; typically used as a standalone interjection meaning 'Great!', can be sarcastic).

[5] At this point, I remain agnostic about the syntax of (15) and (16), in particular, as to whether in (16), the expressive is base-generated or fronted, together with the *wh*-item or independently.

[6] More precisely in this case, perhaps, that *d* is such that it would make one go *Pizdec! / Zaebis'!*

d variable with the iota operator (cf. unselective existential closure in Rett 2011), and expresses feelings about the referent of the resulting definite description, e.g., the extreme degree to which Anya is smart:

(19) E-FORCE(λd.smart(a, d)) expresses the speaker's feelings about ιd.extreme(d) $\land$ smart(a, d)

As things stand, the existence of the relevant extreme degree is presupposed in the same way the existence of any referent of a definite degree description is. However, a weaker requirement might be sufficient.

The details can be further fine-tuned, but I believe that connecting the left periphery E-FORCE operator to expressive degree intensification makes the degree constraint on exclamatives less arbitrary.

4.3. Type 2: embedding under a mirative predicate

I propose that Russian Type 2 sentences involve embedding under a mirative predicate—or rather a family of complex mirative predicates that share some meaning–form mapping pieces. These predicates get exponed prosodically (and perhaps partially via gesture) and can operate on propositions. I will not propose a specific formalization of this insight, nor will I discuss how the various meaning components of these predicates map onto specific sub-exponents, but I will offer two further notes.

First, by "mirative" I mean that all these predicates have the information acquisition meaning component and convey some surprise-related affect (see AnderBois 2018, Submitted for a proper discussion of surprise and meaning components associated with mirativity).

Second, instead of embedding, one might posit a left periphery mirative projection, distinct from the expressive intensifier E-FORCE, which I'm not opposed to. One reason why I currently prefer the embedding story is the Dutch word order facts from Nouwen & Chernilovskaya 2015 (Dutch counterparts of Russian Type 2 sentences resemble embedded clauses). Another reason is Russian *smotri(te)-ka* ('look.IMP(.PL/V)-KA') sentences, exemplified in (20). All the variants in (20) are interpreted, roughly, as a sarcastic 'Look who came!', with sarcasm conveyed through both the particle *-ka* and the Fall-Rise intonational contour. *Smotri-ka* itself can be omitted (yielding yet another Type 2 subtype), then Fall-Rise is realized utterance-finally; when *smotri-ka* is present, Fall-Rise can be realized either utterance-finally or on *smotri-ka*.

(20) Oj! (Smotri-ka)   kto prišël! (oj-smotrika-who-came... .wav)
       OJ (look.IMP.SG-KA) who came
       ≈'Look who came!' (Sarcastic, ≈'Huh, would you look at that!')

a.

b.

c.
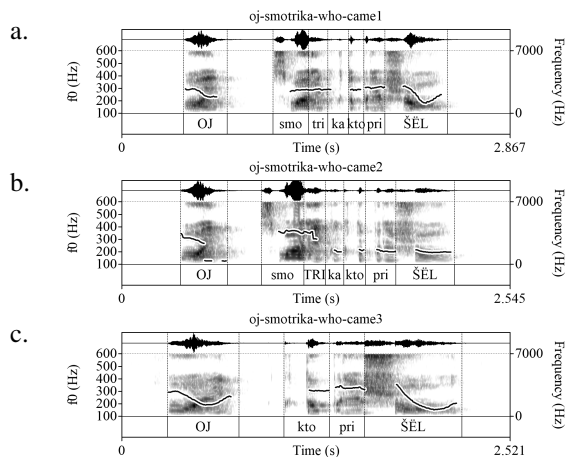
One way of thinking about these sentences is that they all contain a complex SMOTRI-KA predicate, whose various pieces get exponed via *smotri*, *-ka*, and/or Fall-Rise, but only the latter is obligatory to indicate the presence of SMOTRI-KA in the structure. One could still say that, despite the verbal etymology of *smotri-ka*, SMOTRI-KA is a left periphery object, not an embedding predicate. I don't see it as an economical analysis, though, especially considering that *smotri-ka* can be used as a standalone interjection (like English *Look!*).

5. Conclusion: typological picture?

While I am currently in no position to draw any definitive typological conclusions about exclamations involving *wh*-items, let me offer some preliminary ideas as a wrap-up.

If this paper is on the right track, in Russian (and possibly the other languages listed in Nouwen & Chernilovskaya 2015), the left periphery E-Force can only combine with properties of degrees, as it is just a permanently promoted expressive degree intensifier. If information acquisition and counter-expectation do indeed operate on propositions, they need to be conveyed via other means, e.g., sentence-level particles, supplements, embedding predicates, etc., including prosodically exponed Type 2 mirative predicates.

English, however, doesn't seem to have any Russian-style prosodically exponed mirative predicates that can embed *wh*-clauses in its lexicon. What is unclear is to what extent English *wh*-exclamatives resemble Russian Type 1 sentences. Even if the former are also instances of left periphery expressive intensification (and, thus, do not directly encode counter-expectation, contra Rett 2011), there could be further differences between Russian-style and English-style E-Force, which could hopefully be better understood by further investigating the differences in how the two languages do expressive intensification. Another potentially relevant fact is that Russian lacks English-style nominal exclamatives, as shown in (21) (the only way to express the meaning of (21a) in Russian is via a Type 1 sentence), which might be related to the differences in both expressive intensification and DP structure between the two languages.

(21) a. The pianos I've shifted! (Ivy Russell, 'The Daily Mirror', Oct. 1, 1937, p. 12)
      b. *Pianino, {kotorye / čto}   ja dvigala!
          pianos   {REL.1   / REL.2} I shifted
      c. {Kakie   pianino ja dvigala!   / Skol'ko   pianino ja podvinula!}
          {what.ADJ pianos I shifted.IPFV / how-many pianos I shifted.PFV}
          ≈'What pianos I've shifted!' / 'How many pianos I've shifted!'

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