CONTACT WITH AND WITHOUT SHIFT:
THE EXAMPLE OF *NADO*

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Language contact ecologies are often classified into two broad categories, stable language contact and unstable contact. The first is categorized by contact-induced change, which often involves convergence, whereby the structures of the different languages become more similar to one another. It has been argued that there is a borrowing hierarchy (Friedman & Joseph 2014, 2020, Matras 2007). Another kind of contact involves language shift, whereby the speakers of one language gradually replace that language with another. This paper investigates the structural differences between the two kinds of contact, and further examines whether we can identify stages in language shift that would lead us to determine a loss and replacement hierarchy, analogous to a borrowing hierarchy, but going the other way.*

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1. Introduction. Language contact ecologies are often classified into two broad categories, stable language contact and unstable contact. The first is categorized by contact-induced change, which often involves convergence, whereby the structures of the different languages become more similar to one another. Another kind of contact involves language shift, whereby the speakers of one language gradually replace that language with another. One prevalent hypothesis is that sustained language contact often (although not necessarily) leads to, for example, linguistic convergence, reducing the typological differences between languages, as is well-known in the Balkan Sprachbund and in negative borrowing, the process by which features that are not shared by both languages are more susceptible to loss over time. This paper provides a preliminary step toward identifying stages in language shift that would lead us to determine a loss-and-replacement hierarchy, analogous to a borrowing hierarchy, but one that can predict the order of loss. In language attrition, it is generally known that linguistic phenomena that are acquired late are likely to be lost early; is such a hierarchy possible with language shift?

Contact in the Russian Federation provides an ideal situation for getting at the answers to these questions. Russian has been in sustained contact with multiple languages for centuries. These languages are typologically and genealogically diverse, providing an excellent testing ground for analyzing the linguistic effects of a single contact language (Russian) on multiple others.

The local language ecologies vary considerably in terms of

(1) the demographics of the speaker populations, including variation in the numbers and ages of speakers, the density of the population, and the degree to which they live more dispersed or more compactly;

(2) levels of multilingualism within communities, including differences in daily contact with speakers of the local language, and the percentage of the local population that speaks a local language, identifies as a member of an indigenous minority group, is a monolingual Russian speaker, and/or identifies as ethnically Russian; and

(3) levels of proficiency in any of the languages spoken in the community.

These are dynamic language ecologies, changing over time, as is the larger Russian language ecology. It is possible to find striking differences in local language ecologies even in neighboring villages.

At present, there is massive and rapid shift to Russian in all areas of the Russian Federation, and it is prevalent among Indigenous minorities in particular. There are virtually no monolingual speakers of an Indigenous language in the Russian Far North and Siberia. Thus we find at present ongoing contact-induced change and language shift on a massive scale. This situation enables us to examine contact in process, and to raise questions about the nature of contact-induced change in attrition situations. Are there differences in the kinds of change we find in stable contact ecologies versus shift ecologies? We would anticipate not only acquisition of features and structures found in the dominant language, but also loss of those features that are not found in it. Can we identify a hierarchy of loss of structures, similar to the borrowing hierarchy proposed by Matras (2007)?

Investigating the processes of contact-induced loss is challenging, as there is little documentation of language shift in process. Rather, documentary linguistics to date has put an emphasis on recording the 'last' speakers while still possible, attempting to capture languages as spoken preshift, and often attempting to record precontact varieties. (See Evans 2001 for more discussion of the status of the last speakers, and Grenoble 2013 for discussion of current practices and challenges.) Here I focus on the spread of one construction in Eurasian languages that are in contact with Russian, the NADO-CONSTRUCTION, used to encode the expression 'it is necessary to VERB' in Russian. The morphosyntax of this construction and the mechanics of borrowing are provided in §3. Data illustrating its use and spread are taken mainly from my own fieldwork on Evenki, a Tungusic language that was once widely spoken in much of Russian Eurasia although still spoken in some villages and among reindeer-herding families, particularly in Iengra, Sakha Republic. Iengra, located in the southern part of the Sakha Republic, is a village of approximately 1,000 inhabitants where Evenki

continues to be used daily. Supporting data come from other Eurasian languages that have also borrowed the construction, or parts of it, and from Russian lexifier pidgins (§5).

The linguistic profiles of the languages discussed here are as follows, with speaker counts taken from the 2010 All-Russia Census, except for Itelmen, where more current information was provided by David Koester (personal communication). The data provide at best a broad estimate of the number of (self-declared) speakers when the last census was conducted.

- Evenki (ISO 639-3 evn; Tungusic; 4,802 speakers from ethnic population of 38,396, or 12.5%)
- Itelmen (ISO 639-3 itl; Chukotko-Kamchatkan; with possibly 2 elderly speakers today; 3,193 total population in 2010)
- Kalmyk (ISO 639-3 kal; Mongolic; 80,500 speakers of ethnic population of 183,000, or 44%)
- Kildin Saami (ISO 639-3 sjd; Uralic; 340 speakers from population of 1,770, or 19%)
- Russian lexifier pidgins

The languages considered here are endangered to varying degrees, and the 2010 census speaker counts are almost certainly too high, in part because they are outdated and many of those speakers were already elderly in 2010 and are likely no longer with us, and in part because the figures were almost certainly inflated even in 2010.

2. A framework for contact and language change. Usage and frequency are important factors in language change. A usage-based model of language change provides the theoretical framework that brings together typological and social factors involved in contact-induced change. The model views language as socially embedded and constantly evolving, and recognizes speakers as multiple agents in language situations. In a usage-based model, speaker behavior is both interactionally and functionally based, and is determined by a confluence of social and cognitive constraints and motivations (Bybee 2003, Diessel 2007).

Language change in communities with small numbers of speakers poses challenges for implementing a usage-based model. If we take the situation of contact between Russian and Indigenous language, there are a set of problems involving the nature and size of the corpora and the nature and quality of the data. With regard to challenges with the corpora, in general there are only very small databases, and most are not digitized; this is a problem for working with nearly any endangered Indigenous language. The corpora are quite small compared to those of the colonizing languages. (Even where there was early literacy and a significant amount of writing and publications, as in the cases of Māori and Hawaiian, the corpora are considerably smaller than what we have for English, as an example.) In the case of Eurasian languages, many, or even most, of the earlier records are not morphologically glossed or even given word-by-word translations. Instead, a loose Russian translation is provided. Thus a considerable amount of work needs to be done to make them searchable, and

in many cases it will be challenging to gloss them fully. This is, of course, the broader challenge of working with historical documentation. The lack of consistency across databases—including how the data are transcribed and processed, as well as the kinds of data—makes cross-linguistic comparisons difficult if not impossible. Historically, primarily folklore was collected, and it is relatively conservative, uses archaic forms and lexical items, and does not reflect a full range of linguistic structures.

And there are numerous questions about the data themselves. The data have often been normalized and 'purified' of Russian elements; this is especially true of earlier recordings made when speakers were fully fluent and often monolingual. Documentation from the early- to mid-Soviet period was written, not oral, and so we cannot go back and check the record. For example, in Evenki recordings of the 1950s, the verb is consistently in sentence-final position followed by a period. The period most probably reflects an orthographic convention and not an intonational contour, but there is no way to verify this. The texts suggest that Evenki was rigidly verb final at the time, but the absence of a finite verb in other positions does not necessarily mean that it did not occur there in actual speech. Rather, it could have been edited. This makes it difficult to assess changes in word order, as spoken Evenki today is not rigidly verb final; speakers who are highly proficient in Russian tend to use more Russian-like word order. Although this most likely reflects a change under Russian influence, it is difficult to evaluate when that change started, and how drastic the change is as earlier descriptions do note that word order could change with information structure (Kolesnikova 1966:179). Similarly, the absence of any Russian code-mixes in the texts does not necessarily mean that they did not occur; they would have been edited out. In addition, the grammars and pedagogical materials published in the Soviet era often contain artificial and unnatural sentences that are rejected by speakers, leading to concerns about the overall accuracy of any of the sentences. Some earlier documentation has information about the speakers who produced the texts, but in some it is entirely lacking. Assessing variation in and across collections is thus challenging.

2.1. Contact with and without shift. Language contact without shift may or may not involve contact-induced change, but often does. I distinguish the borrowing of phonetic material (MAT borrowing) and the replication or copying of grammatical structure or morphosyntactic patterns (PAT borrowing). Of course, the two can co-occur, as is illustrated in the spread of the Russian *nado*-construction in Evenki (§3).

3. Modality and the spread of the nado-construction. Modality in Russian is encoded in several different morphosyntactic constructions.

- Deontic modality: *dolžen* 'must', a predicate adjective that takes a nominative subject and an auxiliary verb *byt'* 'to be' to form the future and past tenses. The verb agrees with the nominative subject.
- Two impersonal verbs *sledovat'* 'have to' and *prixodit'sja* 'have to' are also used to signal deontic modality; as impersonal constructions, the logical subject is in the dative case.

- Necessity is signaled in Russian by the modal *nado* or *nužno* 'need'.

Here I focus on the spread of the word *nado* 'necessary', 'need' and the *nado*-construction, which belongs to the broad category of impersonal constructions in Russian, that is constructions that do not take a nominative subject (see Timberlake 2004:382–83). The word *nado* 'necessary, need' is a modal adverb that takes a dative experiencer and an infinitive complement; the future or past tense is marked by the auxiliary *byt′* 'to be' in the 3rd singular neuter and the present is realized as Ø 1.

(1) The *nado*-construction:

$$
\text{DATIVE} + nado + +
\left\{
\begin{array}{ll}
\text{'be'} & \text{3.SG.NEUT} \\
\text{Ø} & \text{PRESENT} \\
bylo & \text{PAST} \\
budet & \text{FUTURE}
\end{array}
\right\}
\text{INFINITIVE}
$$

Examples 2a, b, c illustrate the formula in 1. (Here and throughout, *nado* is glossed as 'nado': its semantics in the borrowing languages is not always well-defined, and differs somewhat in the various attestations, but the source is clearly the Russian adverbial.)

(2) a. Mne   nado sdelat′ remont.
         1SG.DAT nado do.INF renovations.ACC.SG
         'I need/have to do some renovations.'
     b. Mne   nado bylo   sdelat′ remont.
         1SG.DAT nado be.PST.NEUT.3SG do.INF renovations.ACC.SG
         'I needed/had to do some renovations.'
     c. Mne   nado budet   sdelat′ remont.
         1SG.DAT nado be.FUT.NEUT.3SG do.INF renovations.ACC.SG
         'I will need/have to do some renovations.'

The *nado*-construction is very frequent in contemporary Russian. In a lemma count of the 1,000 most frequent words in the Russian National Corpus (1950–2000), *nado* ranks 91 (coefficient variant D = 96) (Ljaševskaja & Sharov 2009). More specifically, we see *nado* occurs at a rate of 993.2 instances/million (coefficient variant D = 97).

3.1. The spread of nado and the nado-construction. The modal adverb *nado* is reported by fieldworkers to be widely borrowed into Eurasian languages in contact with Russian. Although its actual usage is underdocumented, it is widespread in Evenki and is the only means of expressing deontic modality that I have been able to elicit. This is an illustration of MAT borrowing, but the *nado*-construction is a model for grammatical replication, PAT borrowing, as illustrated in the following data from Evenki, which also has two native (inherited) suffixes of deontic modality, -*ŋat* (Vasilevich 1940:108) and -*matʃin* (Konstantinova 1964:186–88, Nedjalkov 1997:263–64). The distribution of these is largely geographic: -*ŋat* is found in the eastern dialects, and -*matʃin* in the southern. In the eastern dialects, historically at least, the suffix

was used with the verbal root and combined with finite forms of the verb *bi-* 'be' to indicate tense, as in 3a-c.

(3) a.   bi: surugu-ŋət-eβ
          1SG.NOM   go-DEB-1SG
          'I should go.' (without indication of tense)

     b.   bi: surugu-ŋət-eβ   bi-dʒə-ŋə-β
          1SG.NOM   go-DEB-1SG   be-IPFV-FUT-1SG
          'I will have to go.'

     c.   bi: surugu-ŋət-eβ   bi-tʃə-β
          1SG.NOM   go-DEB-1SG   be-PST-1SG
          'I had to go.'

Speakers of the eastern dialects, living in the Amur region and the Sakha Republic, do not recognize the suffix -*matʃin* and were unable to provide any forms. Konstantinova (1964:187–88) provides examples such as 4, with tense marked on the auxiliary *bi-* 'be' as in 4b.

(4) a.   bi: sun-tiki   ulgutʃə:-mətʃi-m
          1SG.NOM   2PL-ALL   tell-DEB-1SG
          'I must tell you.' (Russian: *Ja dolžen vam rasskazat.*)

     b.   baka-matʃin   bi-tʃə-β
          find-DEB   be-PST-1SG
          'I had to find.'

The critical point is that in the native Evenki construction, there is a nominative subject which agrees with a finite verb form in the synthetic form (*ulgutʃə:mətʃim* in 4a), and with the auxiliary in the analytic construction (*bitʃəβ* in 4b). When asked to translate the Russian prompt in 4a, speakers provided 5 with the verb in the form of a purposive converb. The subject is in the nominative, and *na:da* is in the position of the sentence occupied by the verb.

(5) bi: sin-du: ulgutʃə:-nə-β   na:da
     1SG.NOM   2SG-DAT   tell-CV.PURP-1SG   nado
     'I must tell you.'

5 is not an exact copy of the Russian *nado*-construction, which would have no nominative subject but rather a dative experiencer and an infinitive form of the lexical verb. There is no morphological infinitive in Evenki, but the language does use a complex system of nonfinite converbs. The purposive converb is a good match semantically for an infinitive in the Russian *nado*-construction, so it is logically repurposed in 5. Use of the modal *na:da* is not native to Evenki, which does not have forms like this. Use of the dative with a verb of speech also reflects Russian influence: the allative case is the expected, inherited form.

In Russian, *nado* also occurs with nouns and pronouns without an overt verb, again with a dative experiencer as in the *nado*-construction in 1. Translation of the target Russian sentence in 6a ('what do you need?') produced two variants. 6b is a calque of the Russian original, and in 6c, which uses Evenki grammar, *na:da* is reinterpreted

as a verbal stem and takes verbal morphology (tense, aspect, and person markings), 'what' is given as an accusative direct object of this verb, and the nominative subject (*si*: 'you') agrees with the verb in person and number.

(6) a. čto   tebe   nado
      what.NOM.SG   2SG.DAT   nado

   b. e:kun   sin-du: na:da
      what.NOM.SG   2SG-DAT   nado

   c   e:kun-ma   si: na:da-dʒa-nni
      what-ACC   2SG.NOM   nado-IPFV-2SG
      'What do you need?'

Similarly the Russian target ('I need meat') elicited two variants, replacing the short form adjective *nužno* 'need' with Ev *na:da* copying the construction in 7b, versus 7c which uses native syntax and a finite verb.

(7) a. Mne   nužno   mjaso.
      1SG.DAT   need   meat.NOM

   b. min-du: ull-ə   na:da
      1SG-DAT   meat-NOM   nado

   c. bi: na:da-dʒa-m   ull-əjo:
      1SG.NOM   nado-IPFV-2SG   meat-ACC.INDEF
      'I need meat.'

7c is interesting because it combines native Evenki morphosyntax but copies Russian word order; we would expect the verb to be in final position. Full use of *na:da-* as an Evenki root is seen in 8, where it is used with nominal morphology, such that it is a noun meaning something like 'necessary or needed thing'.[1]

(8) nuŋan   na:da-l-βa-n   o:-kal
      3SG.NOM   nado-PL-ACC-3SG   make-IMP.2SG
      'Make the things that s/he needs.' ; 'Make his/her necessary things.'

Examples 5, 6b,c, and 7b/c represent different levels of synthesis of the original *nado*-construction: 6b is an exact copy, 5 a partial copy, and 6c an integration into native Evenki grammar. Since these different variants were elicited through translation of a Russian sentence, it is difficult to know how to interpret the differences in morphosyntax: do the differences represent different stages of borrowing (or shift), or interference of Russian? In my fieldwork, only fully proficient elderly speakers produced variants that use *na:da-* as a verbal stem as in 6c, and these forms do not occur in spontaneous texts.

Instead, in spontaneous speech we find a calqued form of the *nado*-construction, using a converb and *na:da* as an independent word without additional inflectional or derivational morphology. It consistently is found at the end of the sentence, in the

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[1] In this region, home to eastern dialects, personal pronouns are used instead of the possessive pronouns found in other regions. Possession is doubly marked with the pronoun and a person suffix on the noun.

position where we would expect to find a finite verb as in 9, or immediately preceding a finite auxiliary as in 10.

(9)　tar　　oron-mo　　　　ajat　itʃəːt-tə-s　　　　　　　na:da
　　　that　reindeer-ACC　　well　look.after-CVB.PURP-2SG　nado
　　　'You have to look after that reindeer well.'

In 9 the purposive converb agrees with an elided second-person singular nominative subject. Similarly in 10, where the converb is first given with an Evenki root (*tat-*) and then repeated, with Evenki morphology again, but with a Sakha root (*oːrən-*), an indication of Evenki-Sakha contact in the village Iengra, where this text was recorded.

(10)　Bu:　　　　tat-ta-βun　　　　　oːrən-də:-βun　　　　na:da　bi-tʃəː-n
　　　1.NOM.PL　study-CVB.PURP-1PL　study-CVB.PURP-1PL　nado　be-PST-3SG
　　　'We had to study, to study.'

What is interesting in 10 is the use of the 3rd person singular on the auxiliary *bitʃəːn*, which copies the Russian 3rd singular neuter (e.g. *by-l-o* was- PST-3SG.NEUT) found in the R *nado*-construction. Thus the converb agrees with the morphological subject, but not the auxiliary. In Russian this kind of mismatch in agreement does not occur, since only the auxiliary has person-number marking (i.e. is finite) not the infinitive.

Examples using *naːda* with a converb abound in spontaneous speech; it is most frequently found with a purposive converb but can occur with other kinds of converbs, depending on the semantics. The use of *nado* is so firmly part of Evenki grammar that it is given in a conversational guidebook, written by Anna Myreeva, an Evenki linguist who was fully fluent in Evenki. Myreeva's guidebook is a reliable source for Evenki as spoken in her homeland, in the Sakha Republic.[2] The example in 11 uses a purposive converb.

(11)　Min-du　　potʃta-la　　　　suru-məltʃə-də-β　　　　　　nada
　　　1-DAT.SG　post office-ALL　go-QUICK.ACTION-CVB.PURP-1SG　nado
　　　'I have to quickly go to the post office.'　　　　　　　(Myreeva 1992:9)

This book is intended for language learners who wish to hold a conversation in an Eastern Evenki dialect. The purposive converb is marked with the subaspect of quick action, reflecting a relatively sophisticated use of morphology. (Less fluent speakers generally do not produce subaspects.) The use of *nada* here indicates it is incorporated into Evenki with a converb and the dative experiencer. The book was published in 1992, indicating that by that time, *nado* was already fully part of Evenki grammar.

Myreeva does supply an example with the expected Evenki deontic morpheme *-ŋat-*.

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[2] Myreeva did not indicate vowel length in her book, so it is omitted here as well. There is some variation in the use of (phonemic) vowel length in speakers, and not all authors write it where it is used.

(12)   R: Nado   zvoni-tʹ   otc-u.
       nado   call-INF   father-DAT.SG

     Ev: Amin-du-βi   zvoni-ŋat-i-β.
       father-DAT-REFL.SG   call-DEON-EV-1SG

     'I need to call my father.'　　　　　　　　(Myreeva 1992:9)

The inclusion of this deontic modal form in her guidebook indicates that its usage was still current in the early 1990s. Myreeva was not overly prescriptive in her description, as shown by use of *nado* in an example from the same page, and by use of the Russian borrowing *zvoni-* here for the verb 'to call'. In the late 1990s, when I began conducting fieldwork in the region, speakers certainly recognized the suffix and could produce forms, but elicitation through translation of both Russian *nado* and *dolžen* 'should' resulted only in sentences with the *nado*-construction; however, this may be an effect of translation.

   Code-mixing in Evenki and Russian is the norm today and was already so in the late 1990s; my own field recordings of spontaneous, natural conversations do not have monolingual discourse. Rather, I have only been able to elicit monolingual texts when speakers are asked to use only Evenki in elicited narratives, and here many inadvertently switch to Russian. In communities where Evenki is still used, multilingualism is the norm: much of life is conducted in Russian and it is nearly impossible to escape it. Even older speakers use some Russian phrases in speech that is predominantly in Evenki, as in this excerpt from a narrative about preparing squirrel pelts, with Russian in boldface.

(13)   a.   inəŋiː-βə   loku-tʃadaː-s　　　　naːda
       day-ACC   hang-CVB.PURP-2SG   nado
      'during the day you have to hang [them] up'

     b.   **k**　　**večer-u**　　luk-taː-s
       toward   evening-DAT   take down-CVB.PURP-2SG
      'toward evening you have to take [them] down'

     c.   **opjatʹ** huŋtu-l-bu   hig-dəː-s　　　　naːda
       again   other-PL-ACC   skin-CVB.PURP-2SG   nado
      '[and] again you'd have to skin other ones'

Lines 13b and 13c show the use of adjuncts in Russian which do not otherwise affect the syntax of the sentences.

   Frequently, this results in a mix of Russian and Evenki in the *nado*-construction, as seen in 14. The sentence begins in Russian (boldface), switches to Evenki, and then back to Russian.

(14)   **okazyvaetsja** dulindulin   tʃiku-daː   　　**nado bylo**
     turns out   in middle   cut-CVB.PURP   nado be.PST.N.SG
     'It turns out, you have to cut it in the middle.'

Here the construction uses the Russian neuter singular of the verb 'be' to mark tense/aspect. The status of *nado* is unclear, as the Russian and Evenki words are pronounced the same. The *nado*-construction here is closer to the Russian impersonal in that there

is no subject (in the nominative or the dative) and no person marking on the converb. It is a more generic statement, referring to how one—anyone—needs to cut into the double stomach of an elk. Note that the code-mixing seen in this example is not indicative of language shift: the speaker is highly proficient in Evenki and recognized in the village of Iengra as being an excellent speaker. Married to a hunter, Evenki is the primary language in her home and her adult children are also fully fluent.

3.2. DISCUSSION. Given a lack of diachronic data, we can only speculate on the stages involved in borrowing. One hypothesis would have *nado* first borrowed as a lexical item, a likely first step, and borrowing would be relatively easy since it is a frozen form in Russian that does not take any morphology. This would also require relatively little knowledge of Russian, as the word is used in stand-alone utterances with the illocutionary force of an imperative or a statement of necessity. It is used in these situations both in the positive, *nado* '[you] have to', and in the negative, *ne nado*, pragmatically equivalent to English 'don't'. It could then have been reinterpreted as an Evenki word and reanalyzed as a lexical root, then taking Evenki morphology. We might hypothesize that the *nado*-construction was only subsequently copied, as it requires much deeper knowledge of Russian, and an understanding that an Evenki converb would be a good substitute for a Russian infinitive. This posits a cline of change, possibly with the following stages:

1. *nado* is borrowed as an individual word >
2. *nado* is interpreted as an Evenki root (with Evenki morphology) >
3. the *nado*-construction is borrowed with Evenki morphology

Step 3 involves copying the morphosyntactic frame of the *nado*-construction in example 1, with a dative experiencer (with Evenki morphology), tense marked with the Evenki auxiliary *bi-* 'be' replacing Russian *byt'*, and an Evenki converb instead of the Russian infinitive. Here is the result is the use of the Evenki this result in (tense is marked with an auxiliary (Ev *bitʃəːn* for R *bylo* 'was'), and a converb instead of a Russian infinitive.

There is no strong evidence that step 2 preceded step 3. Only older, highly proficient speakers offered it in elicitation, but it does require use of converbal morphology, which less proficient speakers do not appear to have acquired, or at least are not always confident in producing.

There is also no evidence for a stage in which the *nado*-construction served as a 'gateway' construction, that is, that the morphosyntactic frame was copied and served as a model for the spread of more either language-internal innovations or copies of other Russian impersonals. Similarly, there is no evidence that a morphological infinitive has developed in Evenki, as a result of copying the *nado*-construction or otherwise. Rather, introduction of a new morphosyntactic construction appears to be limited to this single construction, tied to the lexeme *nado*.

The prevalence of code-mixing in the region and the use of the *nado*-construction in contexts like 13 suggests another stage of change, in which *nado* is no longer interpreted as Evenki but rather as a Russian word that triggers the switch to Russian

lexicon (and morphology). As speakers shift to Russian, they are more likely to code mix than to replicate or borrow. A strong view of this hypothesis argues that Russian is cognitively dominant, so that an item (like *nado*) that could be interpreted as belonging to either language is the pivot for a switch to the dominant language, as in 14.

4. Data from other Eurasian languages. One impact of the widespread use of Russian in Eurasia is the borrowing of *nado* into a range of languages, although I know of no examples of languages other than Evenki that show the wholesale borrowing of R *nado* and its reinterpretation as a native root as seen in examples 5c, 6c, and 7. Fieldworkers in Russian Eurasia report the use of *nado*: Straughn (2011:46) notes extensive borrowing of R *nado* into Turkic languages, citing specifically Sakha *naada*; Burykin (1991) provides the Even (Tungusic) *Xu jav **nádas**?* for 'What do you need?' (95) and *Xindu fotografirujmi **nada*** 'You need to get your picture taken' (106), alongside the use of native constructions. But in general there is limited historical documentation of its use except in a handful of languages, unless it has replaced inherited forms (as in the case of Itelmen, §4.3). Here I provide examples from three languages: (1) Kalmyk (Mongolic); (2) Kildin Saami (Uralic); and (3) Itelmen (Chukotko-Kamchatkan). Each of these presents a somewhat different kind of adaptation of the *nado*-construction.

4.1. Kalmyk. In general in Kalmyk there is use of native deontic morphology, but there are a few examples of code-mixing where the *nado*-construction is found in Russian, as in 15.

(15) kelʒä-nä   enčǝn bičkǝn fotokartočka k   pasportu nado
      say-PROG-PRS this   little   picture card to passport nado
      'He says: you have to [glue] a little picture card to your passport.'

                                                    (Baranova & Saj 2009:770)

Here the sentence begins in Kalmyk, and the final clause is in Russian. The trigger for the switch is *fotokartočka* 'picture card' (a Russian word), best analyzed as a loanword here as it is not in the accusative case as would be expected if it were part of the Russian clause, where it would be the direct object of an elided verb. In Kalmyk use of the *nado*-construction is tied to code-mixing, but native deontic morphology is used elsewhere (in Kalmyk stretches of text).

4.2. Kildin Saami. The construction has also been replicated in Kildin Saami. The normal construction in other Saami varieties would be to use a main verb with a nominative subject, such as the verb *dárbbahit* 'to need, to have use of' (Rießler 2007:332). Instead, in Kildin Saami, where there is long-standing contact with Russian, the illative case, not the nominative, is used with the logical subject, as seen in 16b. The change from nominative to illative occurs under the influence of uses of the Russian dative that are analogous to the Kildin Saami illative (see Szabo 1984:36–37).

(16) a.   Tebe   ne   nado
            2SG.DAT   NEG   nado
      b.   Tonnƀe e=   be   tīdtƀe
           2SG.ILL   NEG   is necessary.3SG to know
           'You don't need to know.'   Rießler (2007:232)

The Russian construction in 16a provides the model for 16b, which replicates the morphosyntactic frame as seen here. Rießler sees this as clear evidence of Russian influence.

4.3. ITELMEN. Itelmen speakers have been in contact with Russian for over 300 years, and this intense contact has meant long-standing effects of Russian. As Volodin (1994:324) points out, even Itelmen texts from V.I. Jochelson's documentation from the early 1900s (see Worth 1961) show the same structural changes as in recordings from later in the 20th century; the only difference between the earlier and later documentation is in an increase in Russian lexical borrowings. Itelmen inherited two modal forms, a desiderative and a mood for impossibility. Epistemic and deontic modality are expressed by *nado*; 'deontic modality is expressed in almost all Paleoasiatic and Samoyedic languages with the borrowing of Russian *nado*, in differing phonetic variants' (Volodin 1994:336). In Itelmen, the *nado*-construction is generally a copy from Russian, using an analytic form *nada ełes, nuzno ełes* 'experience need, necessity'. This construction is recorded by Jochelson in the early 1900s (published in Worth 1961), cited by Volodin, given here in 17 with Volodin's glosses in Russian, and English correspondences.

(17) a.   Ememqut aŋqa nuznə kułqzuʔin
            Emequt   čto   nužno bylo-emu
            Emequt   what need   be.PST-3SG.NEUT-3SG.DAT
      b.   nuʔin   kskʔan
           to-i   sdelal-on-èto
           that-and   did-he-this
           'What Emequt needed, that's what he did.'   (Volodin 1994:332)

The copied *nado*-construction is the norm in Itelmen; normally it is found with a dative experiencer and the Itelmen I infinitive (with -*s*), as in 18, using the Itelmen allative-dative case for the Russian dative (*kəmmanke*).

(18) L'vi   tqeʔnikitʃen, kəmmanke qen'eska-s nada haq   uʎuq
      sovsem   ja-ustal   mne   otdoxnu-tʹ nado xotʹ   nemnogo
      completely I-was tired   me.ALL.DAT rest-INF nado at least little
      'I was completely tired; I had to rest, just a little bit.'

                                                        (Volodin 1994:336)

Constructions of the type *nado* + infinitive in Russian are directly calqued into Itelmen, with the infinitive and no subject.

(19) Nu   ŋonx′al   t?ałke   stʃ?elka-s   nada
      Nu   ottuda   dal′se   exa-t′   nado
      well from there further   go-INF   nado
      'Well, [you] have to travel further from there.'   (Volodin 1994:336)

Use of *nado* with Itelmen syntax, as in 20, is a rare occurrence (Volodin 1994:336) and found only in isolated examples. An illustrative example here shows no infinitive and no independent experiencer/subject (in the allative-dative or in any other case). Rather, person marking is on the verb, along with object marking.

(20) Ti?nβe?n   ne   nado   isne?n
      ètix   ne   nado   ona-byt′-sejčas-ix
      these.GEN.PL   NEG   nado   she-be-now-3PL
      'She doesn't need these.'   (Volodin 1994:336)

Notably here the marker of negation, *ne*, is copied from Russian, but the syntax is otherwise Itelmen. Such usage appears to be a relic, and it is important to keep in mind that these examples were recorded some 30 years (or more) ago. By the time of Volodin's own fieldwork, the Russian *nado*-construction had firmly been adapted into Itelmen and become part of its grammatical system.

4.4. DISCUSSION. The examples presented here in Kalmyk, Kildin Saami, and Itelmen present different levels of borrowing of the *nado*-construction. Kalmyk shows fewer signs of language shift, and the use of *nado* appears to be more limited to code-switching, at least in Baranova & Saj's (2009) texts. In contrast, both Kildin Saami and Itelmen exhibit replication of the *nado*-construction, and language shift in both speaker communities is well-established. Shift from Itelmen to Russian is apparent in the earliest documentation, and was extensive by the time of Volodin's fieldwork.

5. RUSSIAN LEXIFIER PIDGINS. Russian lexifier pidgins provide useful evidence about the borrowing of *nado* and the *nado*-construction. They have been documented since the mid 1700s and provide historical evidence of the spread of *nado* at greater time depth than the documentation of Indigenous languages. A number of pidgins emerged in different trade situations and were recorded by journalists and explorers, as well as in guidebooks for merchants designed to help them navigate the local trade economies. So, for example, Cherepanov's (1853) analysis of Kyakhta Chinese-Russian pidgin, a trade variety that was used in Kyakhta, on the Russian side of the Chinese-Russian border, provides documentation that predates any existing documentation of the other languages discussed here. An example is given in 21, where the lexical verb is given in what is in the imperative form in Russian.

(21) Skazyvaj   ne   nado!   sama   podumaj   moženo
      tell.IMP   NEG   nado   self.1SG.F.NOM   think.IMP   may
      tell   NEG   nado   oneself   think   possible
      'No need to tell [him], [you] need to think about [your]self'
                                              (Cherepanov 1853, in Shapiro 2010:55)

The glosses in 21 provide morphological information for Russian, not Kyakhta Pidgin, in which the forms are frozen and do not take inflectional morphology. Note that the morphosyntactic frame, with (Russian) imperative + modal adverb, is not exclusive to the *nado*-construction but also occurs with *moženo* as seen here.

The earliest records of this variety date to the mid-18th century, thus there is long-standing borrowing of *nado*. Its use is widespread in Russian lexifier pidgins, where it occurs as a stand-alone utterance, or with the negative particle *ne*, and/or is found with an imperative form of the lexical verb as in 21. It is not exclusive to Russian-Chinese pidgins but occurs more generally in other Russian lexifier pidgins. An example from Finno-Russian pidgin is in 22, with the same morphosyntax as in 21.

(22)   Finno-Russian pidgin

Streljaj	ne	nado!	Moja	ljudi!
shoot.IMP	NEG	nado	POSS.1SG.F.NOM	people.NOM.PL
shoot	NEG	nado	I	person

'Don't shoot! I'm a person!'   (Perexval'skaja 2008:195)

6. Conclusion. The data show widespread borrowing of *nado* and the *nado*-construction. The lexeme is frequent in spoken Russian (§3) and we might speculate that it was frequently used in contact situations where Russian lexifier pidgins emerged as well as the ecologies where Indigenous languages were spoken alongside Russian. These language ecologies are characterized by a social hierarchy where ethnic Russians have more social and economic power, as well as political power. It is easy to imagine a scenario where they give instructions to speakers of other languages, using it as a bald imperative (*nado*! 'have to!'). Thus *nado* falls into the category of what Friedman & Joseph (2014:15) identify as E.R.I.C. loans: lexemes that are Essentially Rooted In Conversation, used by speakers in sustained, everyday conversation. Moreover, *nado* is readily borrowable: it takes no morphology and thus is a frozen form, with relatively simple phonology that is easily pronounceable in a range of languages.

The analysis given here presents certain challenges. At present, we lack longitudinal data to track the acquisition of the *nado*-construction and to tie it to loss of the borrowing language. If the Kalmyk data are indicative, the construction itself is first used in code-mixes with Russian. Itelmen provides an example of a language that has fully adopted the *nado*-construction, where it has appeared as a new modal form, not replacing inherited modalities but augmenting the inventory. The synchronic snapshot of Evenki data does not necessarily support or contradict an order of borrowing the morphosyntactic frame (the *nado*-construction) prior to or after reinterpretation of *na:da-* as an Evenki root. It is telling that while older speakers use both native deontic morphology (-*ŋat-*) and the *nado*-construction, younger speakers only use the *nado*-construction, I have not identified any speakers who use only native deontic morphology. And in contrast to Kyakhta Pidgin Russian, where the (Russian) morphosyntactic frame imperative + modal adverb is not exclusive to the use of *nado*,

there is no evidence that it has become productive in Evenki. This may be an indica-
tion of language shift to Russian, or may just be coincidental.

  A full-scale usage-based study of the kind envisioned by Bybee (2003) is not possi-
ble due to insufficient data. The work-around that I have implemented here, drawing
on data from multiple languages helps fill out the larger picture of borrowing of the
nado-construction, but the data are insufficient to provide conclusive evidence of loss
pathways. Still, it can be argued that evidence from the distribution of *nado* in Evenki
indicates that it can be borrowed twice, once as lexical item and then again as a con-
struction, supporting the concept of a hierarchy of shift. Data from other Eurasian
languages supplement this argument.

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