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What is a language error? A Discussion

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Why are we so afraid of making mistakes? Students in language classes, speakers of non-standard varieties, professionals working abroad – we all share the anxiety of dropping the ball. But where does this anxiety come from? Why do we perceive certain linguistic features as errors in the first place? Is there any inherent faultiness in such features, or is a language error arbitrary? And if it is arbitrary, are errors less real? In this discussion¹, Maria Khachaturyan, Maria Kuteeva and Svetlana Vetchinnikova zoom in on the social life of variation in language and its uneasy relationship with our normative ideas. After that, Gunnar Norrman and Dmitri Leontjev give their comments. The discussion closes with replies by the first three authors.

Keywords: language normativity, language processing, language socialisation

Kollegium Talk

Maria Kuteeva (hereafter Maria)

In this talk, our focus is on the question of language error. Why are we so afraid of making mistakes? And where does this anxiety come from? I will discuss this exciting topic from two perspectives with my colleagues Masha Khachaturyan and Svetlana Vetchinnikova, both Core Fellows at the HCAS. I'd like you to say a few words about yourselves.

¹ The first part of this paper is based on a discussion between Maria Khachaturyan, Maria Kuteeva (moderator), and Svetlana Vetchinnikova in a series of Kollegium Talks organized by the Helsinki Collegium for Advanced Studies on 9 December 2021. A video recording of the talk is available in the HCAS archive at <https://www.helsinki.fi/en/helsinki-collegium-advanced-studies/videos/kollegium-talks>

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Maria Khachaturian (hereafter Masha)

I'm a linguistic field worker, and I have been doing field work in West Africa for about 12 years now. I am interested in language in its socio-cultural context, and the influence of context of interaction on language - which language in particular, I will talk about in a minute. I have looked in my career into the language of Christian conversion as one of those contexts, and more recently I became interested in language socialization at home and in the community.

Svetlana Vetchinnikova (hereafter Svetlana)

My background is actually pretty diverse, and this is something that I'd like to draw on in today's discussion. In my PhD I looked at phraseological patterns and second language acquisition and use, but then I also worked for a project on English as a lingua franca and language change. For the last several years, I have been involved in a collaborative project with neuroscientists, looking at how speech is processed in real time in the brain. And currently in the Collegium, I am working on a project, which is kind of trying to draw on all of these strands together. It deals with individual variation, and how we can look at individual variation both from the point of view of processing, and the from the point of view of language use.

Maria

People usually come out of school with an idea that language is a set of rules. Language errors are penalized in examinations and in other high stakes communication domains. As Bourdieu put it, standard language acquires "the force of law" in and through the educational system (Bourdieu, 1991, p. 49). Juxtaposing linguistic description and prescription in his lecture to the British Academy, David Denison also remarked:

It's all very well pointing out vagueness, variation and difficulty, but in a school context, what is usually expected (...) is clear guidance on Right and Wrong. Teachers, pupils and ministers of state are presumably united on that point. (Denison, 2013, p. 178)

For those of us who work at the university, the idea of normativity in language use is deeply ingrained. What we tend to forget is that, on a large scale, language standardization is a relatively new phenomenon. It has developed over the last two centuries or so in connection to nation building projects and dictionary compilation. For example, in the 19th century there was a trend to compile first etymological dictionaries and descriptive grammars, like the *Deutsches Wörterbuch* by the Brothers Grimm. And that trend reached Britain with the compilation of *A New English Dictionary on Historical Principles* - or what we know today as *the Oxford English Dictionary*. The work on this dictionary started in 1857 but it was only in 1884 that the dictionary began to be published in unbound fascicles under the editorship of James Murray. For over a century now, the *OED* has been documenting the use of the English language. It regularly selects the word of the

year, which reflects current trends in language use (e.g. *vax* for 2021, *climate emergency* for 2019, or *post-truth* for 2016).

At the same time, the creation of the *OED* also coincided and even contributed to language standardization and introduction of literacy on a mass scale (e.g. Crowley, 2003). Bakhtin (1981) has described this centripetal trend as "unitary language", contrasting it with the messy reality of "heteroglossia", or diversity in speech and language stratification on the professional, social, generational and other levels.

So, traditionally, standard language has been closely associated with written language and / or with speech styles of the educated classes (e.g. in the case of English). A great deal of linguistic research has also taken the standard written language as its point of departure, and even contributed to idealizing the native speaker as a natural user of this type of language, as in Chomskyan linguistics. At the same time, linguists also draw a distinction between standard of usage and standard of norm -- in other words, what is common in language, or what is OK to say, and what is legitimate and prestigious. This distinction somewhat obscures the concept of language error. So my next question to you is: How do you understand error in your research?

Masha

My perspective on this matter comes from my own empirical research on the Mano language. It is spoken in Guinea and Liberia, where I've been doing field work. My initial interest in the language was through the perspective of a grammar writing project. Because writing a grammar means to a certain extent setting things "how they are" in the language, it obliges the grammar writer to make choices. So to begin with, it's the choice of whom to consult. Who is a good speaker of language? Is this someone who has the language as their dominant language? Do they need to have both parents speaking this language? What kind of community should they be from? Oftentimes we eliminate second language speakers as a source of information about the language; very often older male speakers are chosen over female speakers, let alone children, etc.

Then we proceed to discussing with our consultants specific questions about the language, what is OK to say and what's not. When we contrast their judgements to natural recordings of the language, oftentimes these two things are in contrast - so you can find certain patterns in spoken use, but the speakers will explicitly deny that it's a good form of language.

An example could be different kinds of contractions, like in English you can compare it with the contraction of "don't": It's "do" plus "not" which regularly contracts to "don't", and you can even find it in writing. A similar contraction in the Mano language would be judged worse than a non-contracted form, although it is very common in speech. So what should I do about it in the grammar? How should I describe it? And then, this becomes the question of normative judgments of the speaker.

So, the grammar writing enterprise was my first encounter with the problem of the norm, and it actually continues, because grammar writing is a never-ending process, even the grammar of English continues to be rewritten.

More recently, I became more and more interested in different kinds of speakers of the language and their relationship with what is perceived as the "norm" in the language.



Picture 1. Moussapé Faustin Kolié and Pé Mamy, speaking in Mano (Picture by Maria Khachaturyan)

To the right in the picture is someone who can on all counts be considered a “good” speaker of Mano: both his mother and father speak this language and he himself speaks it from childhood. He is married to a woman whose main language is Kpelle, another indigenous language of the area. To the left is his brother-in-law, who is married to his sister. So, he's also exposed to the Mano language through his wife but grew up in a multilingual community and speaks Mano from childhood as well, but his main language is again Kpelle. I'm very interested in the way the second man speaks Mano, but I'm even more interested in the way the children of both these men speak the language, because they are growing up bilingual, and they get different kinds of inputs from different adults and from other children.

Speaking a language in this area is in a complex relationship with having a particular ethno-linguistic identity. If you have a Mano name, if your father is Mano, you are expected to speak Mano properly. But, what does it mean to speak the language properly? It is a very interesting and controversial thing, and there are lots of discussions behind the backs of people about how they speak.

I have an example of a priest, who has a Mano mother and a Kpelle father, and he's a very proficient speaker in my uneducated view, but people all the time discuss his linguistic performance and say that he's not a very good speaker, he doesn't speak properly. And so, I'm interested in seeing how children develop into “good” language speakers, how they learn to differentiate between different kinds of input that they get, how profoundly their linguistic performance gets restructured over time as they learn, and what drives this process: are the social pressure and social norms the main drivers of this restructuring, or maybe it's a purely language internal process? So, that would be my take on it.

Svetlana

As a linguist interested in cognitive processing, I thought I'd try to bring a cognitive perspective on language error. So, what's a language error from the perspective of cognitive processing? The current understanding in cognitive science is that "brains are essentially prediction machines". This is a quote from Andy Clark's paper (Clark, 2013), but really there are multiple different theories of predictive processing or predictive coding out there in cognitive science (Bornkessel-Schlesewsky & Schlesewsky, 2019; Pickering & Gambi, 2018).

Brain scientists and cognitive scientists do not necessarily agree on how exactly this process is implemented in the brain, but overall, the process seems to be pretty clear. Instead of processing the world or things that happen to us as they happen, we usually predict what's going to happen, and then just assess whether our predictions are confirmed or not confirmed. And then, what remains to be done, is just to work with the prediction error. So you don't need to process all of the information, you only need to process that difference between what you predicted, and what actually happened.

So again, looking at Figure 1, what do we do as prediction machines? We predict what's going to happen, then we see what happens. Does it match what we predicted? If yes, well, we don't need to do anything, but if not, we get a prediction error signal, and we need to update the model.

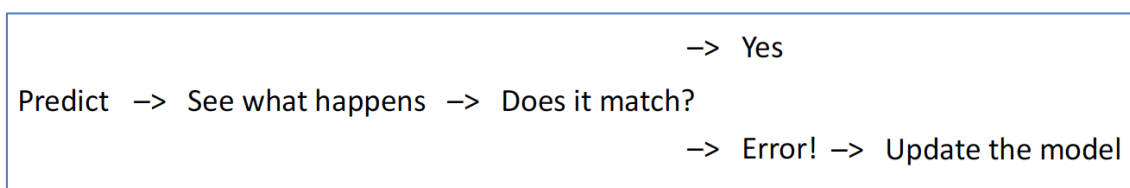


Figure 1. Predictive processing

So from this perspective, an error is a mismatch between the expected and the encountered. What about a language error, then? Language is no exception. We process language by prediction as well, and fortunately language is predictable at multiple different levels. We can predict the specific words that we're going to hear, but we can also predict the semantic field from which the words can come, or their syntactic features.

For example, when I asked the question: "Does it match?", and one of the answer options was "Yes", I'm sure you predicted the other option to be "No", but what you actually saw in Figure 1 was "Error!". This answer probably did not confirm your expectations in certain ways. If you had predicted specifically the word "No", you experienced a prediction error. But instead of expecting a specific word, you could have simply expected a contrasting answer. In this sense, "Error" still matched your expectations.

In fact, brain scientists have various different methods that can measure the prediction error, and there is a lot of research that has been done on different kinds of violations and anomalies in language. Let's look at an example from Hodapp and Rabovsky's recent paper (Hodapp & Rabovsky, 2021). If you hear a sentence, such as *After a long period of drought, the forecast finally called for...*, you probably don't expect to hear "sun", because if it has already been dry for quite a

long time, then the sun is the last thing we'll want there. Here you are likely to experience a prediction error signal, which means that you hear something you did not expect to hear.

In this case, brain scientists see an effect which is called N400 (Kutas & Federmeier, 2011; Kutas & Hillyard, 1980). This is a kind of a spike in electrical activity of the brain which happens 400 milliseconds after the event. So basically, after you see the word "sun", there is an effect that can be seen at the brain level. Since you did not expect to see "sun", the amplitude of the effect is pretty large. It shows how surprising the event was.

And in this case, it was pretty surprising and you need to update your internal system, which basically means that the next time you're more likely to expect the word "sun" there – well, just a little more likely, but this is what the model predicts.

In contrast to this, if you hear a sentence *After a long period of rain, the forecast finally called for...*, you are probably much more likely to expect to hear "sun" there. In this case, we still see an N400 effect, but its amplitude is much, much smaller, because "sun" is something that you predict is going to happen, and there is no need to make a large update of your expectations.

So, from this perspective, the prediction error is a matter of degree. How surprising is the event that you encounter? Is it something that you expected to happen, or is it something you did not expect to happen? And if so, to what extent? This is a matter of degree.

Maria

Thank you, both! So now we have come to context dependency. We all know that language use is context dependent. There is, of course, register variation of different kinds, particularly between written and spoken language. We have different speaker profiles, which encompass factors like, age, gender, class, etc. There are also differences when the language is used by speakers who share it as their first language, or don't share it and use it as an additional language. So, how does this context matter? Can you say something about contextual variation?

Svetlana

Yes, definitely. It makes common sense that if we process language by prediction, we probably take all information into account in making our predictions, in generating expectations of what's going to happen, and contextual information is something that must be taken into account as well.

Do we see it at the brain level? Does context matter? Here are a few examples from a more or less recent experiment by Van Berkum and colleagues (2008). The same sentence was read to listeners by different voices, and you could see that the sentence was most surprising if the speaker reading the sentence was inconsistent with what the sentence said. For example, the sentence *If only I looked like Britney Spears in her latest video* was more surprising to the listeners, when it was read by a male voice than when it was read by a female voice. The sentence *I have a large tattoo on my back* was more surprising to the listeners when it was read with an upper-class accent. And then again, the sentence *Every evening I drink some wine before going to sleep* was more surprising when it was read by a child rather than an adult.

In all these cases, it was possible to see the N400 effect, where the amplitude was larger for the most surprising contextual embedding. Masha, can you comment on these examples from the sociolinguistic point of view?

Masha

Yes. So these are very important things for sociolinguistics: social class, gender and age. These are all parameters that sociolinguistics has long taken into account, but it's also interesting and important to keep in mind that people are not classified into some kinds of boxes once and for all.

There's a lot of flexibility, actually, in linguistic behavior of people. For example, lower class and upper class: even if there are some correlates between class and linguistic behavior, people are able to shift their language. Following the now-classic work by William Labov, it is called style shifting which happens if you use more, let's say, upper-class features in your speech in particular circumstances, such as formal situations: a job interview or other contexts like this.

Similarly, when it comes to gender, it's not either or, it's not black or white. So, here we have a cultural feature – a particular musical preference – which is stereotypically associated with femininity, but things can be much more complex than that.

Following up on the gender differences question, female and male speech can be different, also quite formally different, in languages where there's gender marking, where speakers are obliged to make specific choices of markers "female" or "male", indexing themselves as speakers of particular gender (e.g. in Russian *I saw* would be morphologically marked by different verb inflections as *ya videl* (masculine) or *ya videla* (feminine)).

But then something interesting happens. There's a great study by Kira Hall (1997, also cited in Bucholtz and Hall, 2005), about the linguistic performance of social identity by *hijras*, a transgender category in India. Hindi has this feature of almost obligatory gender marking – at least, in many contexts, it becomes obligatory. And then, one of the features of transgender speech is using female markers instead of male markers. So, this is where people project a particular social identity linguistically.

And then the question is: one probably does not expect to hear markers of femininity – grammatical markers or stereotypical cultural features, such as reference to Britney Spears – uttered by a male-accented voice. But then, it all comes in a package of a sort: it's not only speech, it's also behavior, it's also particular ways of dressing, etc. So, if it's just this isolated male voice saying *If only I looked like Britney Spears in her latest video* – that's one thing, or the male voice spoke in Hindi and used female gender marking, that would probably spike a particular error signal. But if in our daily life we have a lot of experience of diversity and flexibility, and if there are other contextual clues and it all comes in a package of a sort, does this become, then, so unexpected?

Svetlana

Yeah, a very good question, a very good point. Indeed, prediction error is defined based on the kind of expectations we have, but we make our expectations based on our own experience, and each one of us has a very different experience. So something can be unexpected for one person, or pretty much expected for a

different person. Another, very important thing is that predictive processing is the same process that is also used for learning.

A very influential theory in cognitive science is error-driven learning. So basically, the same prediction error that draws our attention to something that's unexpected in what we are experiencing is the same phenomenon that makes us learn new things. For the first time something can very well be unexpected, but once you experience it again, and perhaps again and again, you adapt to it and you learn it. Because prediction error makes you update your model, and if you experience the same thing several times, your model is already pretty well adjusted to minimize the prediction error next time. So, the next time you hear it, you're going to take it into your stride.

And indeed, it's a very good point that it's not all fixed, and quite fluid, but our cognitive mechanism seems to be pretty well adapted to process such kinds of changes, such kind of fluidity.

Maria

Many examples of language use out of context come from formal settings, where more formal or "correct" language is used, so to speak, and this research often deals with educational settings. But language use can also be perceived as erroneous and confusing when so-called higher or formal registers are used in lower register contexts.

There is one example I still recall from my youth in Saint Petersburg in the 90s. That was a troublesome period, and street crime was quite common. In the evenings, there were sometimes groups of teenage boys mugging people on their way home. Quite accidentally, I discovered that using very formal register and form of address, like the honorific pronoun "*vy*" (pronounced *vy*) to mark second person singular, could be an effective defence tool. This form of address had an unexpected effect: it completely took the petty criminals by surprise, leaving them at a loss, because they were not expecting to be spoken to in this kind of language. At the time, this confusion opened a window of opportunity for me to get away, but now I find this recollection quite amusing. In this situation, there was no language error as such, but these petty criminals were still confused. They got the same error message as Svetlana described from being exposed to these formal registers in the context where they didn't expect them.

Svetlana

It's a really great example of how something which is standard can actually be unexpected in a given context, so it does look like context matters quite a lot. There is one context that probably interests all of us, and that's the context of a multilingual environment where non-native speakers speak a certain language: for example, our use of Finnish here in Finland, as non-native speakers of Finnish, or the use of English as a non-native language.

Nowadays, English is spoken as a non-native language by far more people than it is spoken as a native one. So can we adapt to non-native speech? That's the context that would be of interest to us. It looks like we can. Here is one experiment from cognitive neuroscience again, conducted by Hanulíková and colleagues (Hanulíková et al., 2012). The experiment was held in Dutch. The listeners in the experiment were Dutch speakers, and in Dutch, there is gender marking. So, there

are two genders, neuter and common genders. If you have gender in a language, it means that you have to follow the rules of gender agreement. For example, adjectives and nouns have to agree in gender.

In Dutch, there are specific determiners that are associated with a specific gender. In the experiment, the researchers read the sentences with and without gender agreement. Certainly, when a sentence was read with a gender agreement error, it generated a prediction error signal in the brain, in this case a P600 effect, in native speakers. Importantly, when the sentences were read by a Dutch native speaker, this resulted in a P600 effect: the usual effect that's observed in response to syntactic errors in speech. But when the same sentences were read by a non-native speaker voice with a clear foreign accent, the effect was reduced.

So it looks like, yes - we can take it into account that we are now listening to a non-native speaker, and errors are perhaps more common in such speech, so we don't really have to draw our attention to them - and this is visible even at the neuronal level. To reformulate this observation a bit differently, maybe we somehow expect those errors in non-native speech and we are not that surprised by them, and also pushing it a little bit further, maybe we tolerate errors in the speech of someone who is obviously not a native speaker.

Masha

And in that regard, I'd like to give an example from my field work. Once I was working inside the house of my main language consultant, I was discussing with his cousin, trying to figure out – still for that project of grammatical description – how a particular construction in the Mano language works. The problem was that there were some contradictory judgments: the speakers would say, that it's not correct to say things in a certain way, and then they would change their mind, and we would go back and forth all the time. And then again, I would compare their responses with the actual use, and I couldn't figure out what's right and what's wrong, and most importantly where this variation comes from.

And so, at some point, I was so tired of it, I went to sit on the porch, and I started to just randomly ask around: how would you say "She is washing herself?" – because this is the construction I was interested in, the so-called reflexive marking – and there was this girl, she was passing by, and she just dropped a sentence, a translation of this into Mano, and the way she used the construction, the way she formulated her answer, was precisely that "incorrect" way of saying it – or at least, what I was thinking was not correct.

Then I figured out what happened. She is not a native speaker of the language. Her native language is Kpelle. She was born in a different village, and she came to live with the Mano-speaking family only about a year or two prior to that conversation. She managed to learn Mano, and speak it quite proficiently, at least, get herself understood, but she was not a native speaker, and she was making a lot of those non-native speaker mistakes. Nevertheless, she felt that she was in a position to teach me the language. This means, first of all, that her non-native speech was tolerated, and also that she thought that I could adopt the same kind of pattern, and it's okay for me, because both for her and for me, nobody sets very high standards, because, well, I'm obviously a non-native speaker - you can see it – and neither is she, and it's fine for her as well. So both of us being "foreign" women in the family, who are not born and raised in Mano families, we can speak

with certain kinds of errors and it is fine - we are tolerated as long as we get ourselves understood.

Maria

Right. So, this brings us to our next question: do errors hinder communication?

Svetlana

A very good question, and something that we're definitely very much interested in. If we as non-native speakers make errors, do they hinder communication? There has been research on misunderstandings in English as lingua franca settings where non-native speakers talk to other non-native speakers. Basically in this scenario, you would expect more errors, and perhaps more misunderstandings. But the research shows that, actually, in English as a lingua franca communication misunderstandings are not more common, or as common, as you might expect them to be (Mauranen, 2006; Kaur, 2009; Pietikäinen, 2018).

Certainly, English as lingua franca communications also differ: different non-native speakers talk to other non-native speakers in very different contexts, in very different environments, and with very different levels of language proficiency. But still, in all of these different contexts, it seems like we're able to take context into account, we're able to make predictions of what the common ground between us is, and how much you can expect the same common ground from your interlocutor – and we can adapt to this.

One thing that English as lingua franca research has shown is that we consciously use pragmatic strategies to preempt misunderstandings (Mauranen, 2006, 2012; Pietikäinen, 2018). For example, English as lingua franca speech has been shown to be more explicit. Since you assume it's possible that you will be misunderstood, or perhaps, that misunderstandings might be more common in English as lingua franca, you make your speech more explicit. So, you explain more details, for example, in order to preempt misunderstandings. As such misunderstandings, perhaps, might be even more common when you talk to your partner, rather than to another non-native speaker, because when talking to somebody who is close to you, you take a lot of things for granted, and you're not doing as much work to preempt any possible misunderstandings (Mustajoki, 2012, for the common ground fallacy).

So, there is a very complex interplay between the kind of assumptions we make and how we're trying to counter possible problems in communication.

Maria

Right. And you could argue that this kind of process is not unique to English as a lingua franca. It would be the case in other lingua franca contexts, which are not necessarily of the same scale, and don't necessarily involve communication in different parts of the world. If you think about, for example, how Swedish is used by people with migrant backgrounds, you could observe, probably, the same kind of trends. Over the past couple of decades, there have been developments resulting in new varieties of Swedish, which can be probably explained by the same sort of lingua franca processes: on the one hand, simplification and

explicitness, but also, of course, the mixing of different languages and features from languages other than Swedish.

Svetlana

Absolutely, and in fact, from a certain perspective it's interesting that we notice mistakes or errors in the first place, because there is another area of cognitive research, which shows that there are lots of weird things in language, that we don't notice at all.

For example, if I ask you *How many animals did Moses take on the ark?* I bet you would answer "two". This is what participants in the experiment did, even though Moses is not the right person (Erickson & Mattson, 1981). And, in fact, the participants were actually tested on their knowledge. They knew it was Noah. And when they were asked to repeat the question, they said: "How many animals did Noah take on the ark?". So, they simply didn't notice that the original question was about Moses.

The same kind of illusions are observed with other kinds of sentences, such as *The dog was bitten by the man*. When asked "Who was bitten?" you would probably reply: "The man", because you don't expect the dog to be bitten by the man, and despite the fact that this is not what the structure tells you, you kind of processes it semantically (Ferreira, 2003).

Or here is another example: *The book fills a much-needed gap*. Well, we don't need gaps, do we? But in fact, if you google that phrase "The book fills a much-needed gap", you'll find examples used in actual book blurbs - do try it out.

Maria

So, there are lots of things we don't notice, but at the same time, there are also things we do notice in a language. Why do we do that?

Masha

Well, first of all, going back to that Moses problem, if you say *How many animals did Jack take on the ark?* that probably wouldn't be something that would be readily understood. So again, there are a lot of things that are presupposed here: Moses and Noah, they are both from that Biblical realm, and so, replacing one with the other probably doesn't change much. Maybe your interlocutor thinks that you made a slip of the tongue, but she understands what you meant. So again, it's all in context in a way and so misinterpretation doesn't arise precisely because it's not a random replacement.

So, we perceive things in context, and then in context we don't notice errors, because they don't matter, like in the Moses example. In contrast, certain minor things may suddenly start to matter. Indeed, we can make poor Moses pass unnoticed, but attend to very small phonetic or grammatical details in the speech of our interlocutors.

We can take an example of the Scottish variety. It is known - there even postcards about it - that they pronounce "cow" as "coo", and maybe you've seen this hairy brown cow, which is typical of Scotland, and it's written c-o-o, not cow, and this is a stereotypical thing in the speech of Scots.

Another interesting thing about it is that some people style shift: they would use, in an informal context, the "coo" variant, and then in a formal context, they would switch to "cow". There was an interesting study by Smith and her colleagues (2013) of small children, from 2 to 4 years old, and mothers, their main caregivers, and the way they use these two variants "cow" and "coo", and then the other, "house" and "hoose", for example. With this particular variant, it's quite exceptional with respect to other variety of variables that they studied, but I wanted to talk about it, even if it does not represent the entire picture. There would be style shifting in the adult speech from "coo" in informal speech - like in play, for example, they would use more "coo" - and then when they would instruct their kids, they would use more "cow", and their children, starting from the age of about three, they would do the same thing. The ears of three-year-olds would be so finely tuned to the variation in the adult speech that they would also be able to replicate the same thing. It's quite impressive, I think.

James Stanford (2008) did a very interesting study in China, with Sui, a language which has *clanlects*, varieties spoken by different clans. Sui children, as young as three years old, are able to distinguish between their father's variety and their mother's variety. They are also instructed to speak like their fathers, and not like their mothers. So again, this is a similar kind of problem that I alluded to, when I spoke about Mano. A child, a three-year-old would be seated on his mother's lap, and a question would be asked by the interviewer: "How do you say this thing?" The mother would say in the child's ear the variant in her own dialect, and the child would speak out with a variant of her father's dialect. So, three-year-olds are able to notice these kinds of differences and replicate them. But then again, "The dog was bitten by the man" - we just completely don't notice it.

Maria

This brings us to a question: How do we put the boundaries where one language ends and another begins? Because you could interpret that sort of variation in the child's speech as being *bidialectal*, or you could use the term "language" to describe those kinds of dialects.

Can you also tell us a little bit more about your example from the U.S., about "*assist*" - so that was a different situation, wasn't it?

Masha

Yeah, so you were talking about English as a *lingua franca*. As soon as I moved to Finland, here, I still don't speak Finnish well enough to communicate at the university, so I speak English, and everybody else around me speaks English. Is it because it's not a native language for all of us that we're trying to accommodate each other, or is it because it's Finland, and people are in general a bit more... I don't know... relaxed is not the word, but anyway. I didn't have communication issues as much, and anxiety about communication as much, as I had in the US, where I lived before coming to Finland.

One of the things I still remember was in the beginning of my stay there, and keep in mind that I came to the United States from France. I wanted to sit in a class by an anthropology professor, and I wrote an email to her asking whether I could do it, and I said, in my email I wrote, whether I can "*assist*" in her class. It's because in French to sit in a class or to study in the class, to take a class, is "*assister*"

au cours", so I just immediately used the same word. But she was quite surprised, and responded to me: "No, I'm fine. I have my teaching assistants."

And at first, I didn't understand why she would say this, and then I understood, of course: it's not "*assist*", it's "*attend*", and if you say *assist*, of course, she'll say she doesn't need assistance. So, in lingua franca contexts, yes, probably – we're all in the same boat. But when you are a non-native speaker, when you come to an environment where most of the people are either native speakers or are much more proficient, it's different. This professor had been living in the country for many years – and, in any case, she couldn't have any clue that I meant to say "*attend*" instead of "*assist*". So, in an environment where you are surrounded by more proficient speakers, there's certainly more space for misunderstanding.

Maria

Right. That also illustrates the fact that we don't necessarily only transfer from our first languages. In fact, if you are proficient, or not proficient but at least familiar with several languages, it's quite likely that you will have cross-linguistic transfer between additional languages rather than your first language. In this case, you were transferring from French to English and not from Russian, which is your first language, to English. When it comes to that sort of errors, there's a whole field of Third Language Acquisition (TLA) that deals with that kind of research.

Svetlana

Yeah, I wonder, did that professor speak other languages herself?

Masha

I think she speaks Arabic at least. I don't know about other languages, but at least Arabic.

Maria

Maybe someone with a knowledge of Romance languages would be able to figure out what you meant. But you can't expect that every time you are in a lingua franca situation.

Masha

Right. So you don't expect your interlocutor to have all the options laid out and figure out where it comes from. And also as a professor, of course, she didn't have a lot of time to dig into the question, why I asked specifically this.

Maria

Yeah, because it made perfect sense. Except that it's not what you meant.

Masha

Except that it didn't make sense actually. Like, why would you offer assistance, if you hadn't even met the person?

Svetlana

It's unfortunate, perhaps, that in that context it was actually plausible. There's research by Ted Gibson's lab at MIT showing that if you hear a person with a non-native accent say something implausible, you are more likely to interpret it in a plausible way (Gibson et al., 2017). They actually argue in their paper that perhaps non-native speakers have an advantage over native speakers because they are given the benefit of the doubt.

Maria

Right, but that is because Masha used "*assist*" in the written mode, and this language use was completely out of context in terms of her speaker profile. We can't figure out the rest of the factors, I suppose. But are we always aware of errors? Or how does it work?

Svetlana

Well, it's an interesting question. It looks like there are lots of things that we don't notice, and what I haven't said is that researchers describe this kind of processing as "good enough language processing" (Ferreira, 2003; Ferreira & Patson, 2007): when good enough language processing is enough. As Masha pointed out, Moses is close enough to Noah. They come from the same semantic field, so it doesn't really matter which one you have in the sentence, as long as it makes sense. So, being oriented to this global meaning is something that seems to be important for us. There are certainly other things we do notice. What do you think about it, Masha?

Masha

Maybe a flip of that question: Even if we are aware of errors, or of variation, and we have very strong judgments about them, what do we do about them? There's an interesting recent dissertation by Daniel Lawrence (2018). He studied the speech of Yorkshire residents, and he was focusing on language change in progress. There are different variables in this variety that are in contrast with, for example, standard English. So, instead of "goat", they would say "go:t", right? It's a more of a single long vowel instead of a diphthong-like sound that we would have in standard British English.

Daniel interviewed people about this linguistic feature and found out that many had very strong judgments about it. They would recognize this pronunciation as a feature of the local variety, and it would be valued, because it then brings back the question of identity, et cetera.

But then, even those who claimed to be Yorkshire-born and bred, so manifestly adopting that Yorkshire identity, in their speech they would not necessarily use the local variety, and they would be shifting towards that more standard English-

like variety, and the younger the speakers were, the more prominent that shift would be.

You can be very much aware of certain things, and claim them to be important for your identity, but nevertheless, your linguistic performance may not match. So awareness and performance, for example, are linked in a very complex way and depend a lot on the variable and the language we are talking about - and also the group of speakers. I'd like to refer here to a fantastic volume edited by Anna Babel (2016) digging into precisely the questions of awareness and control of linguistic variation.

Maria

Right. So why are we so anxious about making mistakes?

Svetlana

If there are so many different things that we don't notice, why are we so anxious about them? Perhaps I can give a personal example from my own family. My daughter speaks three languages: we speak Russian at home, and then she learnt Finnish in the daycare, and then English at school. There are all kinds of things that she might try to say in Russian, and for example, one thing that she says in Russian is "take a picture".

This is perfectly fine in English, but in Russian it should be "make a picture", not "take a picture" - *сделать фотографию*.

This is clearly an example of cross-linguistic transfer: she's transferring from English into Russian. She speaks English a lot at school, and with her friends, and she's just transferring that phrase from her English to her Russian.

Well, I'm a linguist - I know about cognitive processing, I know about identities, I know about multilingualism, English as a lingua franca, non-native speech and everything. Do I correct my daughter's language? Yes. Why? Because she needs to speak proper Russian. Is it perfectly understandable, what she says? Yes, it is. What kind of information does this reflect about her? Well, it reflects that she is a multilingual speaker, who speaks not only Russian, but also English. In principle it's something that's considered an asset in today's society. So, there is absolutely nothing bad in her saying "take a picture" in Russian. Do I correct her language? Yes, why? Because she needs to speak proper Russian.

Maria

That's interesting because, of course, as a mother and knowing her linguistic profile, you can figure out what she actually means. But when you told me what she says in Russian, it actually also made sense - it was a bit like Masha's example with "assist" your classes. '*Mozhno voz'mu fotografiyu*' (*можно возьми фотографию*) - it actually means taking a physical print of some picture, like taking an old class picture to show someone rather than the act of photographing someone. So, for someone who is not familiar with her profile and someone who doesn't understand that she's multilingual, it actually makes sense but means something else.

Svetlana

So I may be unconsciously trying to prevent a misunderstanding in her future communication?

Maria

Yes, I think it may be that -- it's not only the question of being proper, but also the question of misunderstanding.

Svetlana

And then what's a proper language is such a difficult question.

Maria

Yeah, we've figured that we all have our own ideas about what proper means.

Svetlana

And our ideas about what proper means are so entrenched.

Maria

Indeed. Masha, what about you? Why are we so anxious of making mistakes? What do you think?

Masha

Well, here is where I think the problem lies. I think your anxiety, Svetlana, that you were not happy about your daughter's particular way of saying "take a picture" in Russian, was because it made it obvious that your daughter is a native speaker but there is this transfer feature in her Russian - that it's not "proper" Russian in the sense that it got "contaminated", so to say, by something else.

That's what you didn't like, and you want your daughter's language to be as pure as someone's who grows up in Russia, right? So we can be anxious about making mistakes because we are afraid of being misunderstood - as you say Maria, this is also an example of a potential source of misunderstanding - or, because we don't want to make our linguistic performance make us appear as somebody we don't want to be perceived as by other people.

If you want to appear to other people as a highly educated speaker of a standard variety, then you would be anxious that some non-standard features may appear in your speech. If you struggle to sound like a native speaker of a language and not a foreigner, then you would be afraid of those transfer effects, et cetera.

So, the whole idea is that it's not an error itself that makes us anxious - it's our linguistic or sociolinguistic self that we are trying to project, and if what we intend to project doesn't match what people actually hear from us, this is what makes us

anxious, probably. So it's about losing face, or rather a mask, sociolinguistic appearance, or an identity we're trying to communicate.

Maria

Right, so I think we're coming to an end of our discussion. To conclude, we may argue that language errors may or may not lead to prediction errors in the brain. So we end up with a kind of double standards again, coming back to standards of usage and standards of norm - what is understandable and what the brain can easily adapt to, versus what is prestigious or socially acceptable. And that, of course, brings us into the field of language ideologies, which we won't have time to discuss today, but that will be a good topic for another talk.

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Response 1

Expectation and the epistemology of language errors

Gunnar Norrman

The observation that the native speaker is often conflated with notions of normative language use provides an apt outset for the discussion of language error. This observation clearly shows that what is regarded as “correct” language in linguistics succumbs to the allure of explaining language in terms of some underlying principle, in this case whatever governs the linguistic ability of the native speaker. This view influences how language errors are understood. In the study of language – and second language acquisition in particular – errors have long constituted the bedrock of empirical inquiry as it signals occasions of breakdown of this linguistic mechanism. This has been the guiding principle in the study of second language acquisition for the past half-century, where speaker error has been used to identify the “language internal” mechanisms behind the utterance (i.e. Corder, 1967; Lado, 1959; albeit from different theoretical positions).

The enjoyable discussion in the *Kollegium Talk* deviates in many ways from these assumptions. From one perspective, error is observed through the linguistic community: what is considered “good” language, what variety should be deemed as apt for language description, and how these varieties are learned by children. Here, forms of language use and errors index different states of belonging to the community. From another perspective, error is considered in terms of the modern epistemology of predictive processing. Here, error is used in a dual sense: on the one hand, in a typical sense as a mismatch of expected and actual outcomes, and on the one hand in terms of deviations relative to expected language use.

Still, the traditional notion of language error lingers on, specifically through the distinction between what is considered “language internal” and what is not. In my comment, I will focus on this point as a way to outline some tacit assumptions that are involved in the study of language errors, and to propose a different way to look at the problems involved.

This epistemology of error is particularly clear in the discussion of how the brain processes deviations, as reflected in the N400 effect. This electrophysiological effect, observed using EEG as a negative deflection in the scalp potential over occipital parts of the scalp, is argued to reflect prediction error in semantic processing. That is, the less expected a particular word is in a specific context, the stronger the effect will be. However, I will argue that expectation is not the same as prediction. In fact, prediction is merely a way in which expectation is approached within a specific epistemology in cognitive science, that of predictive processing. Regardless of whether the theory of predictive processing turns out to be successful or not, there will still be expected behavior, in language and otherwise.

In the literature on the mechanisms underlying the N400 effect, the explanation is by no means clear-cut. The debate stands between proposals of prediction of upcoming stimuli versus the integration of previous stimuli. That is, between prediction and plausibility. There is evidence in support of both views, or a combination of both. Rather than adhering to the predictive processing view, I thus prefer the following description by which the same effect can be characterized more broadly:

The N400 window [...] provides a temporally delimited electrical snapshot of the intersection of a feedforward flow of stimulus-driven activity with a state of the distributed, dynamically active neural landscape that is semantic memory. (Kutas & Federmeier, 2011)

In other words, the ever-shifting landscape of the brain can be characterized as a complex system that creates states of expectation. Experimental psychology provides a set of highly constrained dynamics under which specific neural reactions can be elicited, through the presentation of specific linguistic or other sensory stimuli, task instructions, or context manipulations, all of which have been shown to influence the N400 separately or in concert. (There is nevertheless still little evidence that the N400, or any other ERP component for that matter, indexes any specific mechanism that is necessarily involved outside of highly constrained experimental contexts.) The fluidity and flexibility that this entails is aptly recognized by the speakers in the *Kollegium Talk*, but I think it deserves to be elaborated further.

Just like in traditional linguistics, cognitive psychology assumes that utterances are matched against some implicit model in order to be understood or generated, under the tacit assumption that this information is instantiated in a mental model of the situation. But what the anthropological studies of the Mano language show is that context is by no means hidden from view: the way that people speak is observed, judged, and talked about. How a speaker is understood, and how language errors are discussed, furthermore depends crucially on the background of the speaker and the context where the utterance takes place.

Along these lines, and in adherence to our contribution to this special issue (Salö & Norrman, this volume), I propose a different epistemology in which language error should be understood at this very confluence between the history of the speaker and the context in which the speaker dwells (Ingold, 2000). In this view, language skills are not given beforehand, but develop in accord with circumstances, both internal (physiological, genetic, etc.) *and* external (social, acoustic etc.) to the individual. Context is thus not just a backdrop, or a source of information *to* a cognitive mechanism that is already present in the mind, but it is where such a mechanism actually develops and resides. Thus, context fundamentally influences how language is understood, produced, and processed in the brain.

The theoretical question of speaker error should thus not be so much about whether it stems from transfer from another language or from variability in a generative mechanism – that is, from one “language internal” process or another – but rather what it says about the individuals’ ability to act in line with the expectations of a specific context. This involves not only what has been said or by whom, but also the present state of the individual that is uniquely adapted to respond in that context. When language errors are produced, this reflects the (in)ability of the speaker to respond in expected ways in a given context, that is, either by identifying the context or acting within it, or both. How errors are perceived also inherently involves what is known about the speaker. Language error is thus still informative about language insofar as it reflects the developmental trajectory of the speaker in relation to situational demands (see Norrman, 2020, for a longer discussion of this point).

When the traditional “language internal” notion of speaker error is updated into one that takes context into consideration, the notion of error also changes. From something that should be considered as inadequate, or to be overcome by language teachers, to a projection of speaker characteristics into a complex web of social interactions and expectations. That contextual and individual factors are included in the understanding of spoken utterances should thus come as no surprise. The reason that deviations in language are attended to in such detail is because they matter. In this way, the speaker’s anxiety to commit errors can also be explained. As observed in the *Kollegium Talk*, the urge to speak “proper” is a proactive attempt to alleviate the possibly damaging impact of the judgments of others. In other words, language error needs to be resolved on part of the listener, but not only at a linguistic level, but also at the individual, contextual, and social levels. Anxiety stems from the speaker being apprehensive of the solution.

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Response 2

What's a language error? Joining the discussion between Maria Khachatryan, Maria Kuteeva and Svetlana Vetchinnikova

Dmitri Leontjev

First of all, I would like to thank the editors for creating the opportunity for me to join this discussion of language errors, as well as multilingualism, belonging, and becoming, which happened among the scholars having very different academic backgrounds – generally speaking, sociolinguistic and neurolinguistic – and entry points into the field.

I am aware that no review in its conventional sense is expected of this discussion, in which the academic and the personal come together organically, creating a glimpse of the participants' research on this topic and a multifaceted understanding of what language error is and why it matters. Instead, I will add my reactions to some thoughts and topics that emerged in the discussion.

Just like the participants in the discussion, I will start with a brief “who I am in academia”. My research background has been strongly influenced by sociocultural theory research on language learning, teaching, and assessment. My particular interest lies in language assessment, meaning that issues related to correctness/incorrectness have often emerged in my research. This topic emerges particularly frequently in my Vygotskian praxis-informed collaborations with language teachers, in which we work together towards moving from assessment being about marking learner errors, informed by the codified norm, to being about learner development. In fact, my dissatisfaction with the deficiency-focused classroom teaching/learning process where learners are penalised for, essentially, developing their linguistic competence and repertoire, as mentioned by Maria, was what led me to pursue my PhD in applied linguistics. My reactions to the paper come from my research background and experience in multilingual contexts.

The first reaction has to do with the term used quite frequently in the discussion – *native speaker* (or, rather, *non-native speaker*). I will not attempt to summarise the discourses surrounding the term, perhaps, most vividly emerging in Paikeday (1985), except for highlighting the socially constructed nature of the notion and adding that the native speaker is still very much alive and thriving. However, in light of the overall discussion, I found it particularly important that

Maria brought the idealised (and ideal) nature of the *native speaker* construct, hence challenging a view of a non-native speaker as a deficient version of a native speaker. This set the tone for the unfolding discussion, which I very much support, including Masha's (if I may) challenging the dismissal of non-native speakers as legitimate sources of information about language (see also, e.g., Ennser-Kananen, 2019).

I note that I was aware of *predictive processing* from my very limited engagement with cognitive linguistics and neurolinguistics, mostly from discussions with colleagues; hence, I found it to be a detailed and accessible description. However, I have been wondering how (and when) the update of the model happens. Can you reject something, e.g., that a child drinks some wine every evening having heard a child's voice pronounce the sentence "Every evening I drink some wine before going to sleep" without passively accepting it first? Reasoning informed by Spinozan philosophy would suggest this is impossible (see, e.g., Mandelbaum, 2014), and that explains how our model can be updated (through active acceptance or rejection following passive acceptance). Still, I wonder if neurolinguistic research has something to say about this. I think this could be important when not just describing, for example, what happens when raters' high-stakes decisions about individuals' language proficiency are based on the accents these individuals have and not only on intelligibility, complexity, accuracy, and fluency (see, e.g., Halonen et al., 2020), but also work towards changing such biases. Having to passively accept that an individual with a strong accent associated with lower proficiency, counter to one's prediction, performs better than our prediction tells us suggests a higher malleability of the model based on such stereotypes. Working towards a change being a driving force for my research stems from my theoretical and metatheoretical entry into the field, of course, but in my opinion, such research should be really important considering the inequities created by such biases.

I also agree with Svetlana that context does matter. My own (trans)language learning in this regard stems from my research conducted with Japanese learners of English in a content and language integrated classroom, where my colleague and I traced the learners' internalisation and appropriation of the dialectical unity of a scientific concept and language used to externalise the understanding of this concept. Based on my experience with the English language use (see also Alanen, 2003), I assumed that (what I assumed was) learner agency – them using "I think" – in interaction with their peers was a sign of them appropriating the words of an L1 speaker talking about what the learners termed "earth breathing". As my colleagues told me, the meaning of "I think" in that context was different. In effect, the learner was telling their peers it was only *their* opinion, which they did not want to impose onto the rest. The Japanese learners were not just speaking English, but were translanguaging, their joint histories allowing all those in the interaction to recognise the meaning of "I think". The learner using "I think" in that interaction was not making an error. The only individual who needed to update their model due to a prediction error was me. "Correct" and "incorrect", therefore, become the outcome of rather complex interactions of a great number of factors, as emerges from the discussion of Masha's experience involving "assist" and Svetlana's experience with "*vzyat' fotografiyu*" ("take a picture"). I wonder, therefore, particularly with reference to Maria's question of how to put boundaries between languages, whether translanguaging would be a better

concept to inform our discussions of language errors – Li Wei's (2018) discussion of translanguaging comes to mind here.

These are just some thoughts I have had while reading the discussion. Thank you for inviting me to join it!

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Authors' responses to the reviewers

Svetlana Vetchinnikova

I would like to thank both reviewers for generously sharing their thoughts with us and inviting further thinking around the question of language error. Let me start by saying that I think we did not see our talk as a debate between the social and the cognitive perspectives; rather we were interested in exploring how the two fields, broadly speaking, can come together in informing our understanding of language error and the anxiety which is associated with it. Instead of focusing on the differences that can be found between the two perspectives, we primarily looked for the points of convergence. In this sense, our presentation of the fields was necessarily selective.

In his review, Gunnar rightly points out that predictive processing is not the only possible interpretation of the brain effects we discussed in the talk. Dmitri's question about passive and active acceptance seems to relate to the same issue. Indeed, in each specific case it is often very difficult to unambiguously distinguish prediction from integration (Pickering & Gambi, 2018). At the same time, there are some phenomena in language, such as our ability for rapid turn-taking in conversation without any planning time in between, where predictive processing appears to be the only plausible explanation (Sacks et al., 1974; de Ruiter et al., 2006). The distinction might also be exaggerated since top-down (predictive) and bottom-up (integrative) processes routinely interact and work simultaneously (Bornkessel-Schlesewsky & Schlewsky, 2019).

In any case, the prediction vs integration debate does not have a crucial bearing on our discussion. A more important point I aimed to espouse is that something

which in educational contexts can be judged as right or wrong in effect comes out gradient in cognitive research: somewhere along the continuum between less expected and more expected. In addition, what is expected is modulated by context: a gender agreement error produced by a non-native speaker does not cause an effect of the same magnitude (Hanulíková et al., 2012). And here is where the cognitive perspective seems to agree with the sociolinguistic perspective. The theory of predictive processing allows for flexible adaptation to change (=learning) and appears to highlight the same variables that are so important for sociolinguistics: individual variation and uniqueness of individual language experience, the salience of social factors, context and an essentially gradient nature of expectations.

The talk did not by any means aim to settle the issue of language error. On the contrary, by digging out a plethora of examples from our respective academic backgrounds and setting them against each other, we intended to reveal the complex nature of the phenomenon and show how the concept of language error itself changes in different contexts. As Masha summarized at the end of the talk, it is often not understanding which seems to be at stake but our sociolinguistic face, the sociolinguistic self we want to project. At the same time, parents might also correct their children's language mistakes out of a deep-seated commitment to a socially established convention rather than out of anxiety about their children's future per se. After all, we commit to many other social practices which are meant to bring order to our collective existence. Isn't the EU now adopting a single charger to be used with all electronic devices? Somehow, we want to keep variation under control.

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Maria (Masha) Khachaturyan:

Dmitri observes an interesting situation where the same surface form in English, *I think*, can express a propositional attitude and be used in interaction as a way to advance an argument – or, as the Japanese learners of English that the reviewer observed, as a way to backtrack and emphasize that it was only their opinion, without wishing to make a stronger claim. As I understood it, the reviewer refers to a discursive strategy in Japanese whereby a propositional attitude verb

equivalent to *think* is used to express doubt and weaken a claim and suggests that this strategy was transferred to English as a case of translanguaging (I would call it an instance of transfer) – in the same way as the French meaning of *assister* ‘attend’ got mapped onto the English *assist*, or the Finnish *ottaa valokuva* ‘take a photo’ got mapped onto the Russian *vzyat’ fotografiyu*. Interestingly enough, English ‘I think’ is in fact routinely ambiguous between precisely a propositional attitude verb and an epistemic marker, similar in use to the one that the Japanese speaker seem to be using (Brandt et al., 2016). (To which I would like to add that in child-directed language, it is used in neither function, but in strong assertions which do not allow any doubt at all, as in *I think you need to go to bed now!*) While the reviewer is most likely correct in their observation about the influence of Japanese, it is important to keep in mind the real practice of language and what seems to be transfer, or translanguaging, could already exist in a language, so that there is no “norm-breaching”, but exploitation of existing possibilities.

In response to Gunnar, the idea, so dear to me, of language as it is produced in relation to situational demands reminds me of the now classical field of grammar-in-interaction (how grammatical means are deployed to achieve interactional outcomes, Ochs et al., 1996) or the emerging field of interaction-in-grammar (how grammar is shaped by interactional requirements, Ozerov, 2021; Ozerov & Khachaturyan, 2021). But this arguably “externalist” consideration should not mean that there are no internal constraints on language production. There are in fact interesting debates in the literature between those who seek interactional and pragmatic explanations of patterns in language (Evans & Levinson, 2009) and those who suggest “internalist”, structuralist explanations with, arguably, more predictive power (Reuland & Everaert, 2010). My contribution to our Collegium debate has probably made clear where my heart lies – where language is spoken by real people in real interactional situations. Nevertheless, I deeply respect and engage myself with the alternative position which explores the irreducible side of language structure. There is much to be learned from generative linguistics about structural “errors” which are expected to occur in L2 learning (Tsimpili & Sorace, 2006) – or not to occur at all, if the theory predicts categorical, inviolable restrictions applying even to language transfer in L2, incomplete acquisition or similar settings where speakers often deviate from monolingual “norms”.

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Maria Kuteeva

I would like to thank Masha and Svetlana for a thought-provoking discussion, and Gunnar and Dmitri for engaging with our ideas and raising further interesting points. The reviewers' responses have shown that this discussion can continue in many different directions, exploring the interplay between language structure, social interaction, and human cognition. As Dmitri pointed out, researching language in use can imply going beyond the boundaries of established languages, but, at the same time, there is evidence that languages and their varieties are perceived as distinguishable from each other, even by three-year olds without any formal schooling (as in Masha's example of Sui clanlects studied by Stanford 2008). Due to limitations of space, we need to draw this discussion to a close, but we very much hope that it opens up avenues for further research.

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