

**Comprehension and production of anaphoric demonstratives  
by German, Bulgarian and Russian speaking children**

## Outline of the talk

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- Comprehension data
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  - Russian, Bulgarian & German
  - Summary: comprehension of demonstratives
  
- Conclusion
  - Age effects & typologically induced differences

## Aim of the study and resulting questions

- Consent in the field of anaphora resolution research:  
**More salient referents are referred to by less complex anaphors**
- Different conceptions of salience determining factors:  
grammatical role, givenness, topic-focus status, structural parallelism ...

### What makes referents salient for children?

- Are there common salience factors initially guiding the process of anaphora acquisition for children learning typologically different languages?
- Are there age induced changes in the salience hierarchy of referent properties?
- When and in which contexts do children use structural contrasts between pronominal classes to uniquely identify ambiguous referents?

## Comparative prerequisites - typological properties

	German	Bulgarian	Russian
Word order	<b>Relatively free SOV</b>	<b>Relatively free SVO</b>	<b>Relatively free SVO</b>
Information structure	<b>Subject/Agent orientated</b>	<b>Pronominal marking of object topics</b>	<b>Topic orientated</b>
Case system	<b>4 cases</b>	<b>No nominal cases</b>	<b>6 cases</b>
Nominal definiteness	<b>pre-posed definite articles</b>	<b>post-posed definite articles</b>	<b>no definite articles</b>
Subject marking	<b>non-pro-drop expletive subjects</b>	<b>strong pro-drop</b>	<b>weak pro-drop</b>

## Pronominal systems

- German utilises the opposition between **personal** and **demonstrative** pronouns for the disambiguation of referents.

**German:** Der Musiker<sub>i</sub> traf den Maler<sub>k</sub>. Er<sub>i</sub> / Der<sub>k</sub> war erkältet.

The musician met the painter. He / this one was sick.

**Russian:** Musikant<sub>i</sub> vstretil xudozhnika<sub>k</sub>. Tot<sub>k</sub> / etot<sub>i/k</sub> prostudil'sja.

**Bulgarian:** Musikantât sreštna xudozhnika. Toj / ? tozi beshe nastinal.

- Russian may use **demonstratives for distance and proximity**
- Bulgarian **does not employ bare demonstratives**, neither in opposition with personal pronouns, nor within the distance/proximity classes

## Working hypothesis

**We assume a division of labour between personal and demonstrative pronouns according to the salience of their referents**

In the study we examine the effects of **Animacy** and **Grammatical role** on children's perception of salience and possible age effects on their ranking.

- Children producing Zero and Personal pronouns will preferably choose referents which are Animate and / or Subjects
- Children producing Demonstratives will opt for referents which are Inanimate and / or Objects
- Strengthening of this correlation with increasing age

## Experimental method

Exp 1 (narrator):

*Look, that's a bear and that's a ball. (both toys are white)  
The bear likes to play football. The ball is in front of the bear.*

**Antecedent sentence:**

*The bear is kicking the ball.*

**Target sentence:**

*∅ / He / This is white.*

Exp 2 (distracted puppet):

*Oh, what did she say?*

Child: (production)

*∅ / He / **This** is white.*

Exp 2:

*Who is white?*

Child: (comprehension)

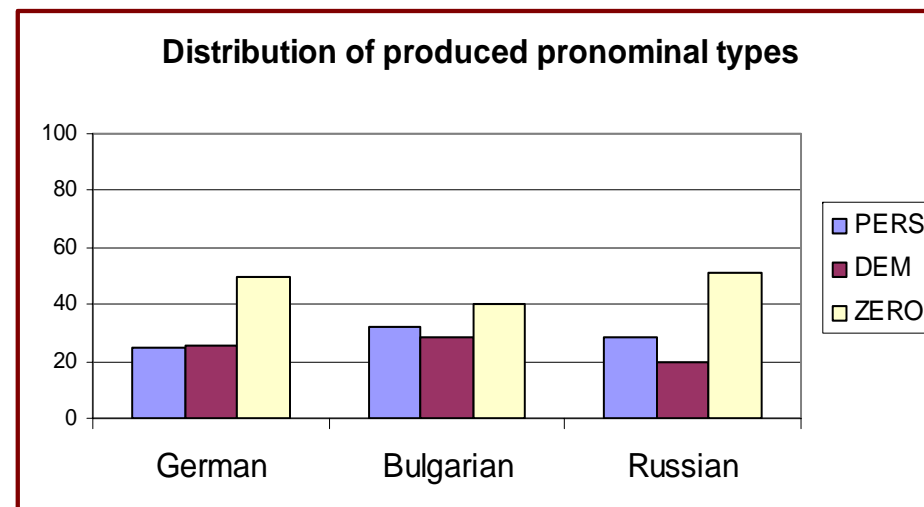
*The bear.*



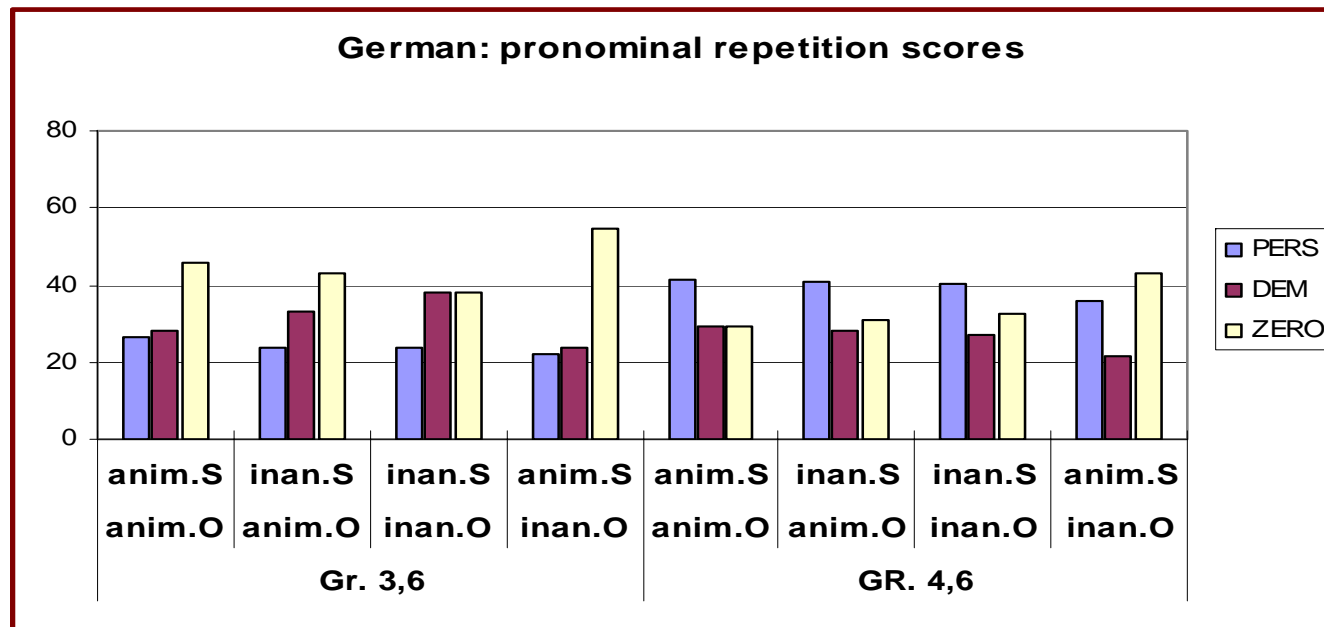
## Experimental design and data description

- Participants: ca. 30 children per age bracket (2,6 - 3,0 – 3,6 – 4,0 – 4,6 - 5,0)
- The children were presented with 4 settings representing the factors of animacy and syntactic role of the referents
- German, Bulgarian and Russian children exhibit different production patterns of Personal, Demonstrative and Zero Pronouns

<b>A</b>	<b>Animate Subject</b>	<b>Animate Object</b>
<b>B</b>	<b>Inanimate Subject</b>	<b>Animate Object</b>
<b>C</b>	<b>Inanimate Subject</b>	<b>Inanimate Object</b>
<b>D</b>	<b>Animate Subject</b>	<b>Inanimate Object</b>

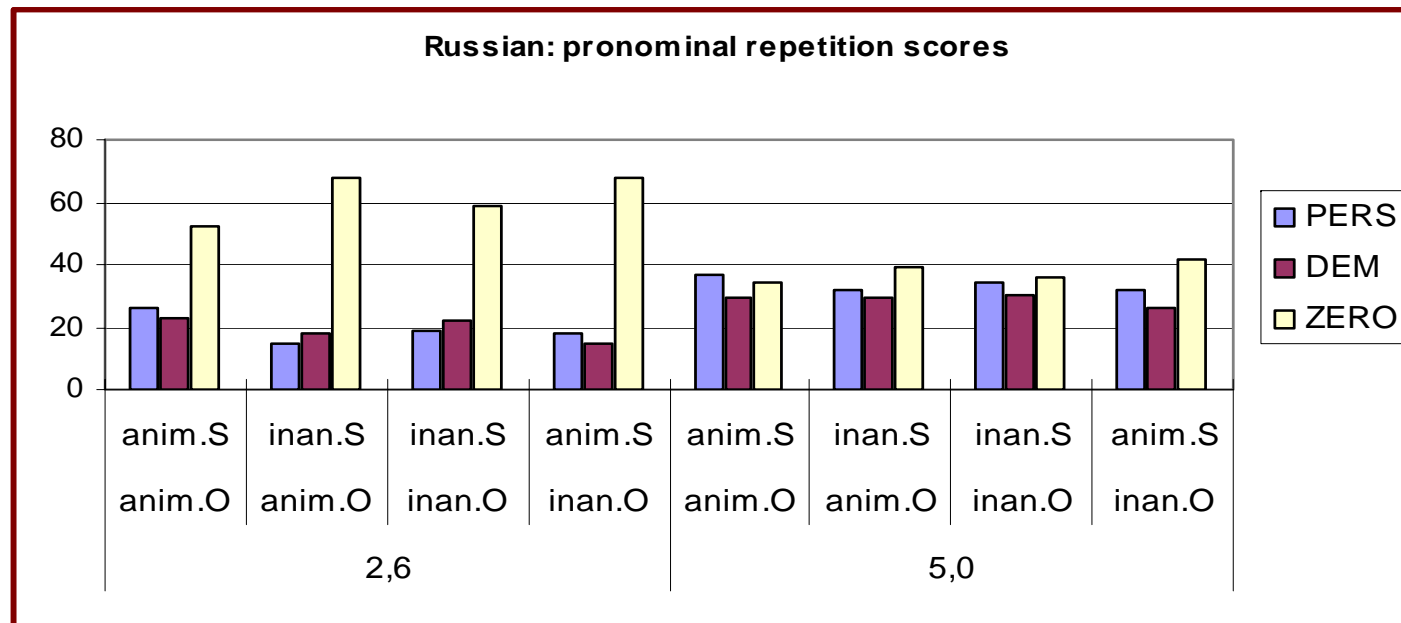


## German – effects of animacy and syntactic role on production



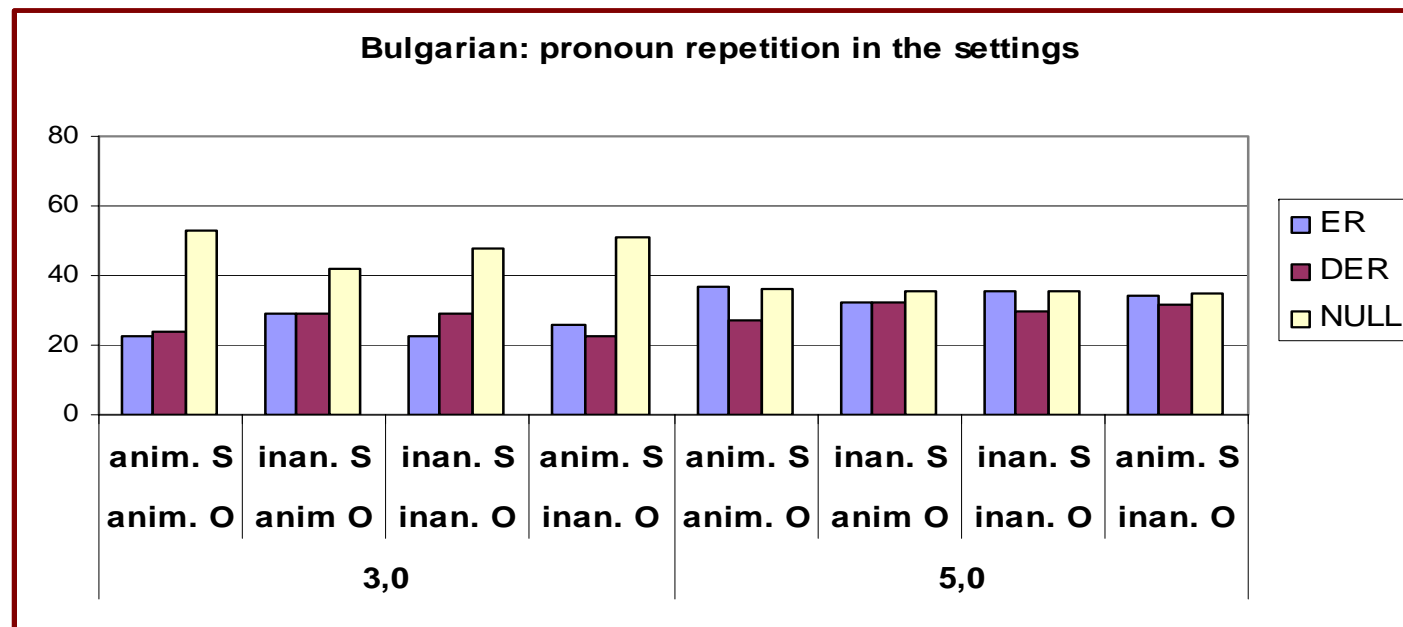
- High rate of pronoun omissions (zero pronouns) decreasing with age  
Highest scores: in conditions with animate subjects
- Demonstratives: in non-prototypical settings with inanimate referents

## Russian – effects of animacy and syntactic role on production



- Predominant production of zero pronouns, decreasing with age
- Demonstratives are avoided in the prototypical referent constellation

## Bulgarian – effects of animacy and syntactic role on production



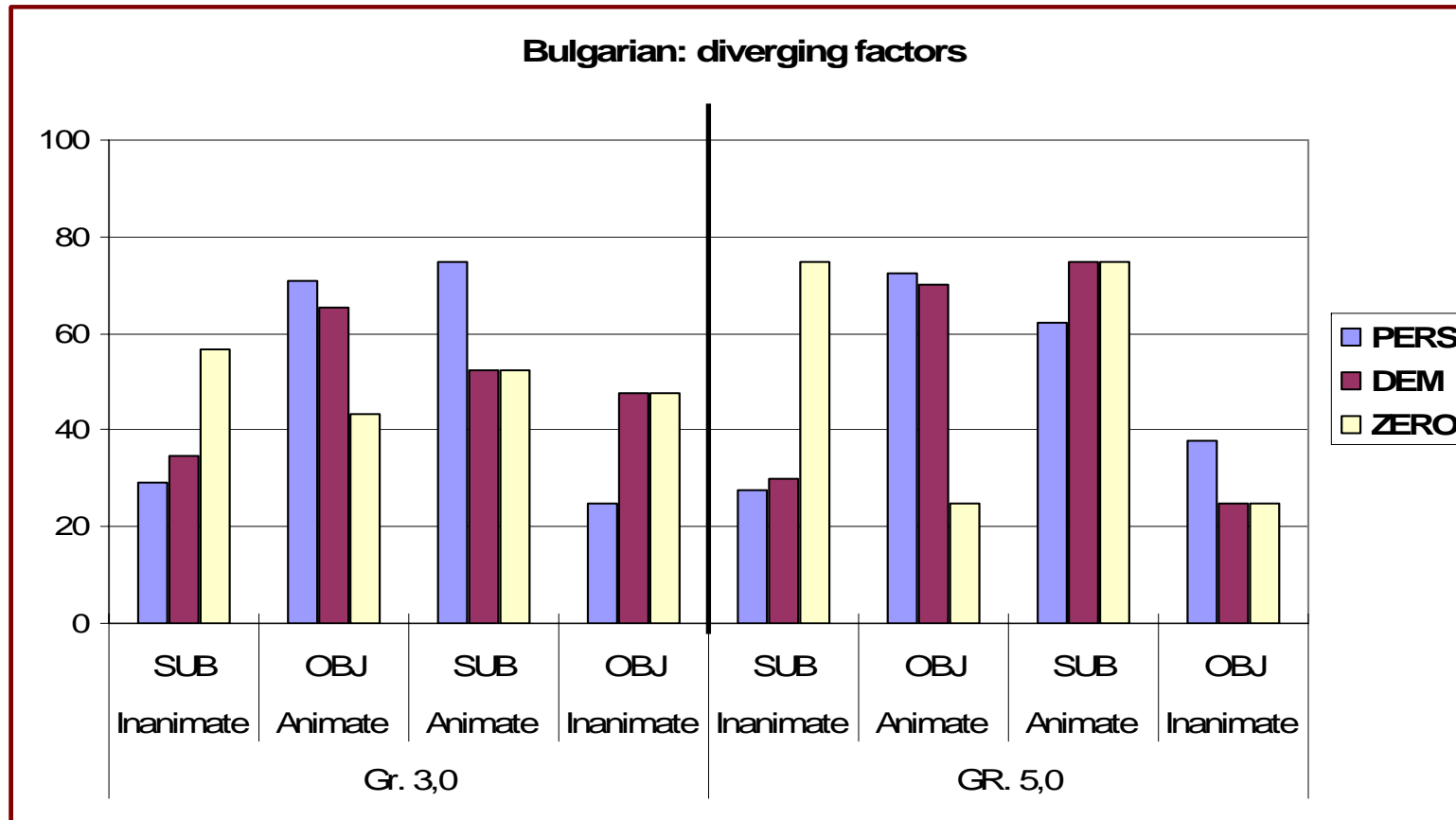
- Predominant production of zero pronouns, decreasing with age
- Demonstratives: best performance in non-prototypical contexts with inanimate referents only in the younger group

## Summary: production patterns

- The production pattern of the younger children is dominated by zero pronouns / pronoun omissions
- The prototypical setting containing an animate subject and an inanimate object triggers the use of zero pronouns and suppresses the use of demonstratives in both age groups
- Settings with inanimate subjects enhance the production of demonstratives
- The older children exhibit higher task compliance and their repetition patterns seem not to be affected by the settings

**The factor animacy affects the production of demonstratives as opposed to production of zero/personal pronouns only at the initial stage of anaphora acquisition**

## Bulgarian - referent choice in settings with diverging factors



## Bulgarian - summary

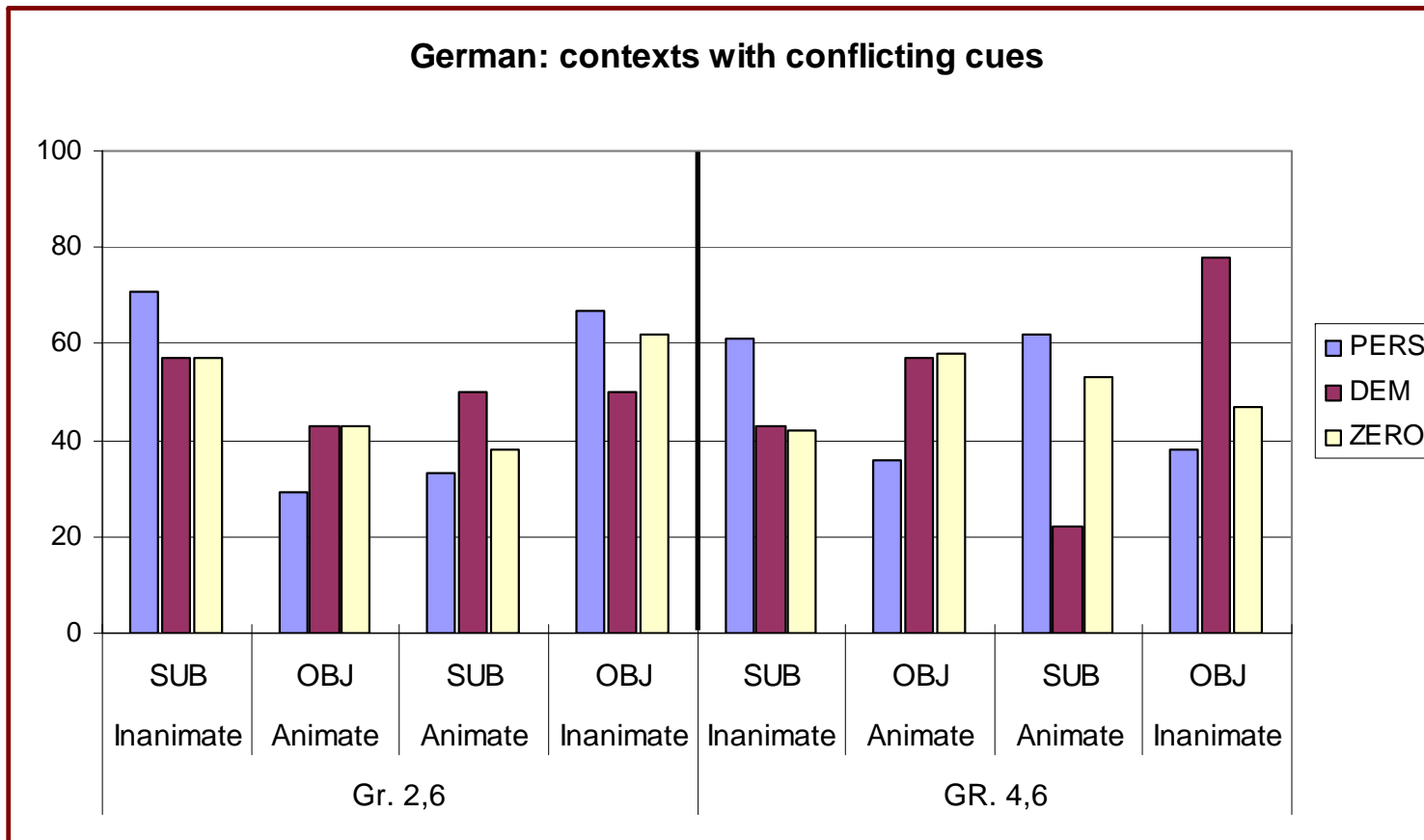
### Younger children

- Zero pronouns is a default form with a slight preference for subjects
- Demonstratives are associated with (animate) objects as referents

### Older children

- Zero pronouns are understood as referents to subjects
- Demonstratives receive a deictic interpretation and being associated with animate referents
- Opposition Personal pronoun - Zero pronoun

## German - pronouns in settings with conflicting factors



## German - summary

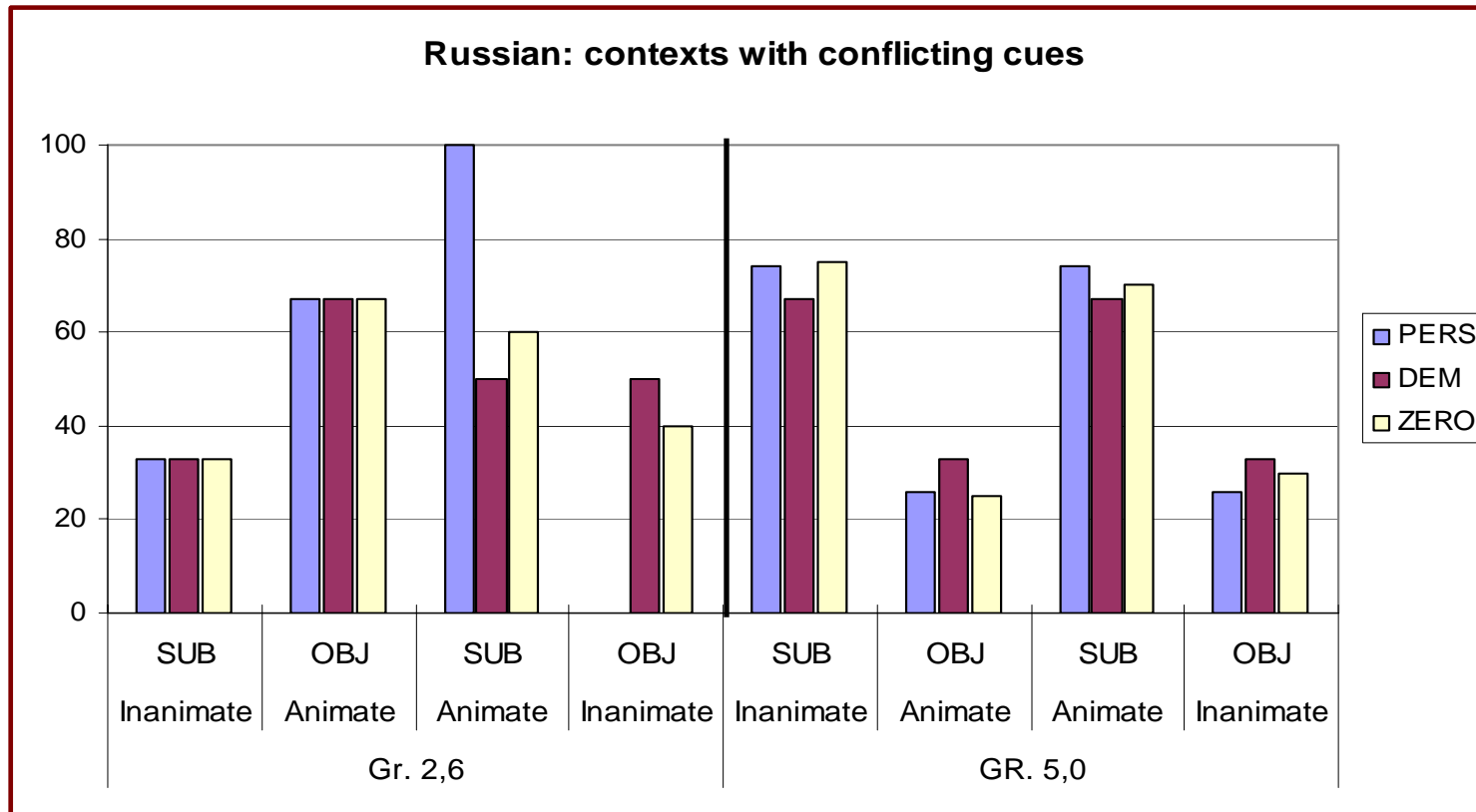
### Younger children

- Zero pronouns as default; no clear preferences
- Personal pronouns show a Subject preference
- Demonstratives receive deictic interpretation

### Older children

- Personal pronouns pattern with Subjects taking over zero forms
- Demonstratives show a clear affinity for the disfavoured referent

# Russian - pronouns in settings with conflicting factors



## Russian - summary

### Younger children

- The referential choice is determined through the factor animacy
- Demonstratives are not comprehended as anaphoric means

### Older children

- The referential choice is determined through the factor grammatical role
- Zero and personal pronouns are understood as referring to subjects
- Demonstratives are slightly preferred for reference to objects as disfavoured referents

## Conclusion

**For all studied languages we find around the age of 5 the expected correlation between markedness of pronominal anaphora and the salience of potential referents**

- highly accessible referents ⇔ shortest possible pronominal type
- less salient referents ⇔ complex pronominal types

### **Typological differences between the languages induce**

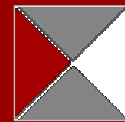
- differences in the ranking of Animacy and Grammatical role in the salience hierarchy of referents
- differences in the structural oppositions children build in order to discriminate reference to highly and less prominent candidates in a given context

## Conclusion

**With growing age children converge towards the pronominal oppositions relevant in the system of anaphoric reference in the target language:**

- in Bulgarian: Zero pronouns ↔ Personal pronouns
- in German: Personal pronouns ↔ Demonstrative pronouns
- in Russian: Personal/Zero pronouns ↔ Demonstrative pronouns

**Thank you very much for your attention!**



Milena Kuehnast  
kuehnast@zas.gwz-berlin.de  
ZAS Berlin, Germany