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Aspects of topicality in the use of demonstratives expressions in German and Russian

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Demonstratives

□ Demonstrative Pronoun

- *der, dieser, jener* (German)
- *этот, тот* (Russian)
- cf. *this, that* (English)

□ Demonstrative NP

NP with a demonstrative determiner

- *dieser N, jener N* (German)
- *этот N, тот N* (Russian)
- cf. *this N, that N* (English)

Topicality

- **Topic** ~ reference point in discourse
(Portner & Yabushita 1998, Givón 2001)
- **Topicality** ~ likelihood for a referent to serve as reference point in discourse
- aspects of topicality (Lambrecht 1994, Givón 2001)
 - **activation**
 - reference to a previously established topic
 - **topic announcement**
 - potential to establish a referent as new topic
- quantitative measurements of topicality
 - frequency measures, distance measures

Demonstratives and topicality

- Low activation Himmelmann 1996; Diessel 1999
- Medium activation Gundel et al. 1993; Ariel 1990
- High activation
 Maes and Noordman 1995: demonstrative NPs
 Sgall et al. 1986: demonstrative pronouns
- Topic announcement/establishment
 implies medium/low activation Diessel 1999
- Topicality-independent factors

Structure

- Quantitative study
 - Corpora involved
 - Hypotheses and predictions on topicality measurements

- Qualitative study
 - Functional taxonomy of demonstratives
 - Application to German and Russian corpora

- Combining qualitative and quantitative criteria
 - Modification vs. Topicality
 - The end-chain preference
 - Discussion

Corpus annotation

- German: Potsdam Commentary Corpus (PCC)
 - 175 texts
 - 33075 tokens
 - 864 anaphoric chains (2158 referring expressions)

- Russian: RIAN [currently in preparation]
 - 14 texts
 - 45226 tokens
 - 106 anaphoric chains (641 referring expressions)

Extracted features

1) Chain position

- chain-initial (first mention)
- chain-medial (neither first nor last mention)
- chain-final (last mention)

2) Referential distance

- number of clauses between anaphor and antecedent (0, 1, ...)

3) Topic persistence

- frequency of mentions within the next 20 clauses

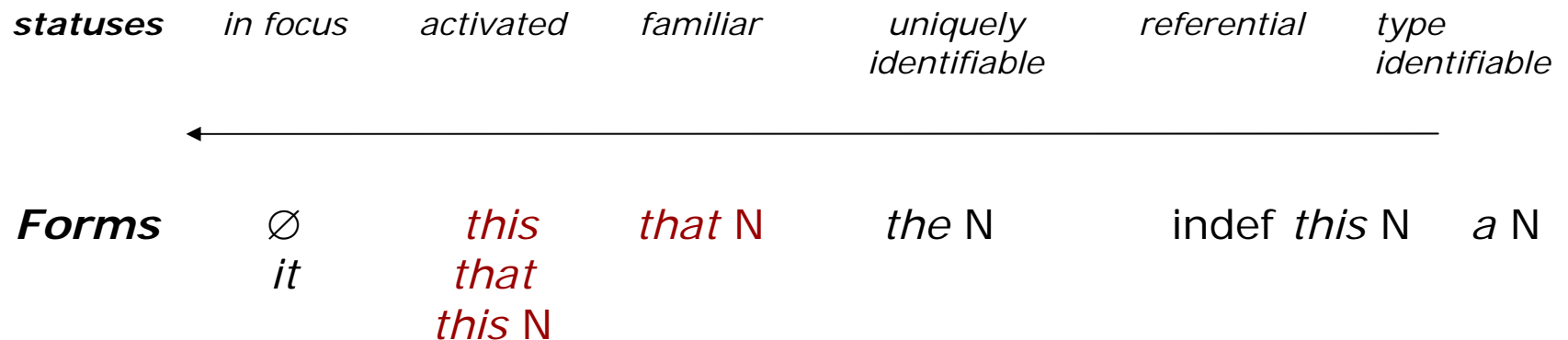
4) Centrality

- length of anaphoric chain relative to the number of clauses in the text

Mid-activation hypothesis

„each status on the hierarchy is a **necessary and sufficient condition** for appropriate use of a different form or forms“

(Gundel et al. 1993:275)



Predictions

- 1) Chain position [chain-medial = chain-final > chain-initial]
- 2) Distance [pronouns < demonstrative pronoun < demon. NP < definite NPs]
- 3,4) Topic persistence and centrality [=non-demonstratives]

Identification hypothesis

„Demonstrative pronouns ... supplement the minimalism of personal pronouns with **indications of proximity or distality**, a pointing-like function that may be spatial, temporal or discursal.“ (Chafe 1994:97)

*low potential
for identification*

*high potential
for identification*

Pronoun < demonstrative pronoun < definite NP < demon. NP

Predictions

- 1) Chain position [insensitive]
- 2) Distance [demonstrative pronoun > pronoun]
[demonstrative NP > definite NP]
- 3,4) Topic persistence and centrality [=non-demonstratives]

Topic establishment hypothesis

Topic ~ reference point in discourse (Portner & Yabushita 98, Givón 01)

„...very often they occur after the first mention of a thematically prominent **referent that persists in the subsequent discourse.**“

(Diessel 1999: 96)

Referent: prominent in the subsequent discourse
not yet established as topic

Predictions

- 1) Chain position [chain-medial > chain-initial > chain-final]
- 2) Distance [demonstratives > pronouns]
- 3,4) Topic persistence and centrality [> non-demonstratives]

Modification hypothesis

„The markedness of the demonstrative determiner is meant to **signal a predicating reading** (as opposed to identificational) of the NP involved, the effect being that the representation of the underlying DR is modified...“

(Maes and Noordman 1995:256)

Referent: highly activated (a necessary condition)

Predictions

- 1) Chain position [chain-medial = chain-final > chain-initial]
- 2) Distance [definite NPs > demonstrative NPs]
- 3) Topic persistence [~ non-demonstratives]
- 4) Centrality [\geq non-demonstratives]

Chain position

		INDEFNP	NAME	DEFNP	PRON	DEMNP	DEMPRON	total
German	chain-initial	99.40%	45.09%	38.11%	1.71%	23.21%	14.58%	35.04%
	chain-medial	0.60%	26.79%	28.83%	50.57%	12.50%	20.83%	29.93%
	chain-final	0.00%	28.13%	33.06%	47.71%	64.29%	64.58%	35.04%
		167	448	1089	150	56	48	2158
		FULLNP	NAME	PRON	DEMNP	DEMPRON	total	
Russian	chain-initial	40.88%	17.55%	2.55%	4.21%	0%	18.17%	
	chain-medial	53.04%	76.60%	84.71%	32.63%	50%	63.66%	
	chain-final	6.08%	5.85%	12.74%	63.16%	50%	18.17%	
		181	188	157	95	20	641	

Demonstratives are more likely to appear chain-final than any other form.

preferred
> 50 %
dispreferred
≤ 15 %

Chain position additional corpora

	INDEFNP	NAME	DEFNP	PRON	DEMNP	DEMPRON	total
chain-initial	71.05%	39.00%	28.18%	0.70%	20.20%	5.56%	28.73%
chain-medial	14.32%	45.37%	41.99%	50.13%	28.28%	33.33%	42.54%
chain-final	14.63%	15.64%	29.83%	49.17%	51.52%	61.11%	28.73%
	1292	3703	2179	2294	99	36	9603

Chain position per referring expression in English business articles
(RST Discourse Treebank, Carlson et al. 2003)

	FULLNP	NAME	PRON	DEMNP	DEMPRON	total
chain-initial	18,52%	5,26%	0,00%	0,00%	0,00%	7,19%
chain-medial	77,78%	84,21%	92,16%	80,00%	87,50%	85,62%
chain-final	3,70%	10,53%	7,84%	20,00%	12,50%	7,19%
	54	19	51	10	8	142

Chain position per referring expression in Russian literary texts
(Krasavina 2004)

Persistence and centrality

Referring expression	Average topic persistence			Average centrality		
	English	Russian	German	English	Russian	German
NAME	2.66864704	7.22743682	1.35697941	0.16957614	0.30071153	0.35041381
PRON	2.00610288	6.82758621	1.09798271	0.12544544	0.23944523	0.4071622
FULLNP	1.63772714	4.3745583	1.1209453	0.11222318	0.13491716	0.268126855
<i>the</i> -NP	1.76643678	n/a	0.9165894	0.13480104	n/a	0.30615891
<i>a</i> -NP	1.42105263	n/a	1.3253012	0.07440615	n/a	0.23003948
DEMPRON	1.02777778	3	0.35416667	0.07365302	0.13720902	0.23168959
DEMNP	0.81818182	0.78823529	0.4	0.08468673	0.01833478	0.25614014

Demonstratives tend to refer to peripheral referents

- less frequent (centrality)
- infrequent in subsequent discourse (persistence)

= > contradicts Topic Establishment Hypothesis

Referential distance

	English	German	Russian
NAME	5.23278689	2.9390243	2.69318182
FULLNP	4.56695536	3	1.47928994
DEMNP	2.29113924	2.06976744	2.25
DEMPRON	1.64705882	0.68292683	1.3
PRON	1.6115993	0.5726744	1.91111111

= prediction ?	Identification (DemPron/DemNP)	Mid- Activation	Topic Establishment (DemPron/DemNP)	Modification (only DemNP)
German	+ / -	+	+	+
English	+ / -	+	+	+
Russian	- / +	-	- / +	-

Conclusion

- ❑ No hypothesis predicts end-chain preference
- ❑ No hypothesis compatible with all languages
- ❑ No hypothesis predicts non-topicality (i.e. persistence/centrality)

- ⇒ neither activation status nor topic establishment explains the specific distribution of demonstratives found in our corpora
- ⇒ Demonstratives encode other aspects of meaning besides signalling an activation status or topic establishment !
 - ⇒ Modification ?

Qualitative study: method

- Taxonomy of discourse functions of demonstrative NPs
 - influenced by Maes and Noordman (1995), Krasavina (2004)
- Data-driven enrichment of taxonomy
 - Protégé (ontology development tool)*
 - performed on sub-corpora of PCC and RIAN
- Empirical assessment
 - frequency distribution of functional types of demonstrative NPs

* <http://protege.stanford.edu>

Taxonomy: Top Level

- MODIFICATION [+lexical]
 - new lexical material
- EXPLICITCONTRAST [-lexical, +contrastive]
 - no new lexical material
 - lexically expressed contrast between two referents or a referent and the rest of its class
- TOPICFLOW [-lexical, -contrastive, +pragmatic]
 - no new lexical material, no contrast
 - hypothetical discourse functions
 - topic establishment, anti-topical antecedent, ...

Frequency distribution

	freq. in German	freq. in Russian
total	44	116
MODIFICATION	32 (72.73%)	67 (57.76%)
ATTRIBUTION	5 (11.36%)	10 (8.62%)
CLASSIFICATION	26 (59.09%)	50 (43.10%)
TRIVIALCLASSIFICATION	14 (31.82%)	40 (34.48%)
TOPICFLOW	8 (18.18%)	43 (37.07%)
INDEFINITE THIS	2 (4.55%)	n/a
REFERENCE TO ANTITOPIC	1 (2.27%)	16 (13.79%)
ELABORATION OF LOCAL TOPIC	3 (6.82%)	16 (13.79%)
PROMOTE TO TOPIC STATE	2 (4.55%)	9 (7.76%)
DEGRADATION FROM TOPIC STATE	n/a	2 (1.72%)
EXPLICIT CONTRAST	7 (15.91%)	4 (3.45%)
BINARY OPPOSITION	5 (11.36%)	2 (1.72%)
ONE FROM A SET	2 (4.55%)	2 (1.72%)
ATYPICAL ANAPHOR	1 (1.89%)	2 (1.72%)
VAGUE ANTECEDENT	8 (18.18%)	2 (1.72%)
EXOPHORIC REFERENCE	6 (18.18%)	n/a
METALINGUISTIC ANAPHOR	1 (1.89%)	n/a

Interpretation: MODIFICATION

- MODIFICATION > 50 % in both languages
 - **but** in more than 40% are trivial classifications:
demonstrative + nominal, no modifier
head nominal is a lexical hypernym
⇒ **semantically empty**
- ⇒ proper MODIFICATION applies to at most 41 % (German) resp. 23 % (Russian)
- MODIFICATION is **not** a unitary explanation
 - division of labour between pragmatic function (topic flow) and semantic function (modification) ?
 - ⇒ combining quantitative and qualitative criteria

Combining quantitative and qualitative criteria

- predictions for referential distance
 - Modification hypothesis (Maes and Noordman 1995)
modification ~ low distance
 - Identification hypothesis (Chafe 1994)
rich semantics enhance access to less identifiable referents
modification ~ large distance
- qualitative assessment of end-chain preference
 - can the functional classification shed some light on the mysterious end-chain preference ?

Combining quant. & qual. MODIFICATION and distance

performed on a non-deterministically
chosen sub-corpus of RIAN and PCC

	average distance in German (39 samples)	average distance in Russian (65 samples)
MODIFICATION (with TRIVCLASSIFICATION)	2.26 (23)	3.12 (48)
TRIVIALCLASSIFICATION	2.75 (12)	2.23 (36)
EXPLICITCONTRAST	1 (7)	(none)
TOPICFLOW	0.4 (5)	0.88 (17)
EXOPHORICREFERENCE	5 (3)	(none)

Combining quant. & qual. MODIFICATION and distance

- MODIFICATION occurs with less accessible demNPs
 - including TRIVIALCLASSIFICATION
 - explainable by Identification hypothesis
- ⇒ a specialized function to mark modifications of highly accessible referents **not** confirmed
- ⇒ contradicts Modification hypothesis

(Maes & Noordman 1995)

Combining quant. & qual.

On the end-chain preference

- German: 25 instances, Russian: 36 instances
- MODIFICATION
 - indifferent with respect to end-chain
- EXPLICITCONTRAST
 - all instances of EXPLICITCONTRAST (German: 7) are chain-final*
- TOPICFLOW
 - most sub-types are indifferent
 - REFERENCEToANTITOPIC: 50% (Russian: 9/16, German: 1/1) are chain-final*

* In the Russian sub-corpus, no instances of ExplicitContrast were found.

Combining quant. & qual.

On the end-chain preference

□ end-chain preference ~ contrast ?

■ explicit contrast

auf dieser Seite ..., auf jener Seite ...

■ reference to antitopic

picking up a non-salient, but activated element
from a partially ordered set

*Als der Bundestag Anfang Juli den Beschluss
darüber fasste, wurde diese Entscheidung als Sieg
verkauft.*

⇒ discursively imposed contrast ?

cf. Bosch et al. (to appear)

Summary and conclusions

- topicality considerations cannot specify sufficient conditions for the use of demonstratives
 - quantitative topicality measurements fail to explain the distribution of demonstratives
 - also not in combination with Maes & Noordman's (1995) Modification hypothesis
- demonstratives tend to appear chain-finally
 - explainable by a generalized notion of contrast ?

Prospects

Alternative explanations

- demonstratives might establish *local* topics, but not global ones
 - local topic: reference point only in the **in the immediately preceding/following discourse**
 - global topic: reference point in **different parts of the discourse**
- distance measurements for DemNPs support the topic establishment hypothesis
- qualitative study of DemNPs: topic flow ~ low distance
- persistence and centrality: lower topicality than non-demonstratives

Prospects

Hypothetical functions

- identification aspect
 - support/disambiguate the access to less accessible referents
- pragmatic aspects (in local contexts)
 - topic establishment
 - topic demotion ?
- semantic aspects (in local contexts)
 - contrast ?
- partly overlapping

Prospects

Towards a Generalization

Demonstratives as generalized shift markers ?

- identification aspect / mid-activation
=> shift of attentional focus
- topic flow => shift of reference point
- contrast => shift of perspective/expectation
- cf. scenario shift (Sanford and Garrod 1981),
rhetorical shift (Fox 1987), episode shift (Tomlin
1987)

Literature

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