

# **Schemas, Models, and Constructions**

## **The Linguistic Representation of Event Image Structures in Grammar and Narration**

**Wolfgang Schulze**

**2018**

**- Draft -**

# Table of Contents

Foreword .....	3
Table of Contents .....	3
Abbreviations .....	3
1. Introduction .....	4
1.1 Basic questions .....	4
1.2 Cognitive Typology: Some notes on methodology.....	4
2. One or two? A preliminary approach to event images .....	4
3. Fully schematic constructions .....	18
3.1 Schemas and Archetypes .....	18
3.2 Approaching the signifié of fully schematic constructions .....	24
<b>3.3 Cognitive Transitivity</b> .....	28
3.3.1 The framework .....	29
3.3.2 Maintenance and contortion of Cognitive Transitivity in linguistic expressions .....	49
4. The linguistic representation of Cognitive Transitivity .....	54
5. Cognitive Transitivity and Grammatical Relations.....	86
<b>5.1 A Cognitive Typology of Grammatical Relations</b> .....	86
5.2. A Look at Diachrony: The Grammaticalization of Antipassives .....	86
5.2.1 Introduction.....	86
5.2.2. The 'Iranian model' .....	89
5.2.3 Transivity, Centrality and Diathesis .....	92
5.2.4 The grammaticalization of antipassives .....	119
5.2.5 Summary .....	164
6. The Schematic Organization of Folk Narratives .....	166
6.1 The semiotics of genres .....	166
6.2 Rhetorical Genres as Text World Models .....	170
6.3 The structure of text world models of folk narratives .....	175
6.3.1 The TWM of folk narratives.....	175
6.3.2 The structure of TWMs.....	176
6.4 The Udi version of the 'Grateful Dead' .....	179
6.4.1 Udi .....	180
6.4.2 'The Grateful Dead' .....	183
6.4.3 Basic statistic values of the Udi version of the "Grateful Dead" .....	185
6.5. Towards a description of the TWM of the tale 'The Grateful Dead' .....	190
6.5.1 Type 1: The Intrada.....	191
6.5.2 Type 2: Actors.....	195
6.5.2 Type 2: Narrative Space.....	197
6.5.3 Type 3: Lexical elaboration and conceptual density.....	201
6.5.4 Type 4: Actions schemas .....	208
6.5.5 Type 5: Information Flow and Pragmatic patterns.....	212
<b>6.5 Towards a comparative perspective</b> .....	227
6.5.1 Chechen.....	227
6.5.2 Lak .....	238
7. The Schematic Organization of Linguistic Practices - a Summary .....	238

<b>References</b> .....	239
<b>Indices</b> .....	257

## **Foreword**

## **Table of Contents**

## **Abbreviations**

# 1. Introduction <sup>1</sup>

## 1.1 Basic questions

## 1.2 Cognitive Typology: Some notes on methodology

# 2. One or two? A preliminary approach to event images

When introducing her understanding of ‘constructions’, Goldberg (1995: 2) stresses the relevance of “single-clause patterns” that “hold a special interest because these cases clearly lie at the heart of any theory of grammar”.<sup>2</sup> In addition, the author states that “constructions which correspond to basic sentence types encode as their central sense event types that are basic to human experience” (p. 39). Goldberg thus suggests that sentence patterns are embodied in corresponding constructions the meaning of which can be related to patterns of event types. Following Croft (2001) it is reasonable to assume that at least some properties of the formal expression of such constructions is motivated by their semantic structure, that is by the patterns of event types in terms of Goldberg. Langacker (2008: 355) emphasizes that the internal structure of clauses

is readily seen as being grounded in basic human experience. It is best described and understood with reference to certain archetypal conceptions representing fundamental aspects of such experience. Conceptual archetypes function as the prototypes for clausal elements and are a major factor in determining their structural arrangement.

There are basically two options for characterizing the overall-profile of ‘simple clauses’ in relation to schematic properties of corresponding event images<sup>3</sup>. Starting inductively from

---

<sup>1</sup> I am well aware of the fact the rhetoric of the present paper does not fully comply with the standards of Global English in academic writing. Nevertheless, I have tried to find a balance between the Saxonian intellectual style and its Gallic/Teutonic counterpart (see Galtung (1981)). Expectations grounded in the famous dictum *si fueris Romae, Romano vivito more* should nevertheless consider the point that a meticulous application of this dictum would “seriously constrain[...] the linguistic, conceptual and methodological richness afforded by the current diversity of linguacultures (...)” (Siepmann 2006: 144).

<sup>2</sup> Fried (2013), Hilpert, (2014), and others distinguish between ‘construction’ and ‘construct’. As Diessel 2015: 311 has put it: “Constructions are generalizations over concrete utterances, i.e. constructs, and categories are generalizations over recurrent parts of constructions.” In principle, constructs can be paralleled with utterances if these are instantiations of a particular construction (Diessel 2015: 301). For the purpose of this paper, dealing mainly with constructions as such, the terms ‘construct’ is less relevant. Also note that certain irritations concerning by the term ‘constructions’ may be given. Referring to Lehmann (1995[1982]: 406) Fried (2013: 421, fn.1) rightly states: “It bears stressing that Lehmann’s use of the word construction reflects the traditional, non- theoretical sense of “syntagmatic string”. It is not meant in the technical sense of „form-meaning pairing” as it is understood and defined in Construction Grammar.” In addition ‘construction’ is used in Constructivisms to denote models of construing mental images.

<sup>3</sup> Note that I replace the term ‘event’ (Langacker, Goldberg etc.) by ‘event image’ (EI) in order to refer to the assumption that linguistic units do not encode ‘events in the world’, but corresponding mental constructions or images (see below ...).

linguistic data and referring to the “Preferred Argument Structure”, Du Bois (2003: 44) for instance maintains that “there is just one valence or argument structure target that turns out to be fully unconstrained in both grammatical (morphological) and cognitive-pragmatic dimensions: the one-place predicate”. Hurford (2007: 125ff.; 2012: 612ff.) among many others, advocates for the primacy of two-word concatenations, consisting of a symbol that expresses “what is most urgent to convey” and a second one that relates to “what is uppermost in [the] mind” (Hurford 2012: 607). Hence, “[o]ne-place predicates taking individual variables as arguments, have (...) a neural basis”. He grounds this assumption (related to ideas of ‘Pivot grammar’, see below) among others in the widely accepted Two-Streams Hypothesis that describes two neural pathways in vision (and hearing), namely the ‘what pathway’ and the ‘where/how pathway’ (Ungerleider and Mishkin 1982, Mishkin, Ungerleider, and Macko 1983, Milner and Goodale 1992). Accordingly, the dorsal pathway (‘where/how’) is relevant for processing information regarding location and motion, whereas the ventral pathway (‘what’) is mainly for processing information regarding the form and identity of visual objects.<sup>4</sup> The two pathways are sometimes projected upon findings related to Pivot Grammar (Braine 1976). However, as argued e.g. by Golinkoff and Hirsh-Pasek (2000), two-word utterances of Stage I children may have a vast array of meanings, including “possessor-possessed”, “agent (acting on) an object”, “action on object”, “agent doing an action”, “object at location”, “object and property” etc. Some of these patterns are clearly related to conceptual structures that include more than just one referential entity. In fact, Stage I children producing two-word utterances do not seem to be grounded in semantically well-defined schemas (in terms of e.g. Pivot Grammar). Rather

the child expects always to be understood if he produces any appropriate words at all. And in fact we find that he would usually be right in this expectation as long as he speaks at home, in familiar surroundings, and to family members who know his history and inclinations. Stage I speech may then be said to be well adapted to its communicative purpose, well adapted but narrowly adapted. In new surroundings and with less familiar addresses it would often fail. (Brown 1973: 244-245)

In fact, it is a matter of debate whether we can describe an isomorphic relation at all between linguistic expressions as we process them in adult speech and cognitive schemas underlying the utterances of Stage I children. The same holds for the correlation of linguistic structures, e.g. arguments structures, and cognitive processes in general. Consider the following example (Jung 2008: 355):

- (1) ((1,5 s)) Ballack ((1s)) Lahm ((1s)) Ballack ((1s)) Ballaaack • • • Borowski •  
Kloseee ((2,2s)) Gol de Alemania (GER-ARG, 79:28)

This is a segment of the transcript of a Spanish television commentary covering a football match between Germany and Argentine. The individual units of this sequence of one-word utterances obviously do not serve to deictically identify the relevant personage, but represent

---

<sup>4</sup> Milner and Goodale (1992:20-21) propose that “it is (...) this distinction (‘what’ versus ‘how’) - rather than the distinction between object vision and spatial vision (‘what’ versus ‘where’) - captures more appropriately the functional dichotomy between the ventral and dorsal projections.”

full event images (e.g., in a very simplified version, <BALLACK> <CAUSE\_MOVE> <BALL> <TO X>, whereby X is represented by the following unit).<sup>5</sup> In addition the semantics of the event image is framed by various parameters (football match, TV commentary etc.) that support the processing of the corresponding sequence. In addition, the whole sequence is framed by a corresponding Text World Model, as described e.g. by Schwarz-Friesel and Consten (2011: 352):

[T]ext comprehension implies both decoding the linguistically encoded meaning of the text and at the same time constructing a mental text-world model which is a cognitive conceptualization of the world depicted in the text.

Such heavily reduced linguistic presentations of event images are given especially with utterances that comment upon events the perception of which is actually shared by the audience or speech act participant. The more the speaker refers to memorized or imagined event images that more elaborate the corresponding utterance becomes with respect to its argument structure, cf. the following example randomly taken from Wooffitt (2005: 105; “the speaker is reporting an apparition of her recently deceased husband, which occurred during his (military) funeral service”):

- (2) 1 S: an' I went in there (.) er:m w- with my mother in law  
 2 and uhm: (.4) friends that were with me  
 3 (1.3)  
 4 X ·hhh (.) and I was just looking at the coffin  
 5 Y and there was David standing there (.3)  
 6 he was in Blues  
 7 (1)  
 8 ·hh he wasn't wearing his hat  
 9 his hat was on the coffin  
 10 and he was there

Hence Du Bois' assumption of the Preferred Argument Structure quoted above may find strong support when looking just at the linguistic data, but it is far from being ascertained that the corresponding structure is isomorphic with the structure of event images encoded by the given 'simple clause'. The same holds for assumptions derived from observations related to language acquisition. First, we have to bear in mind that first language acquisition does not take place independently from the linguistic input stemming from the environment of the learning child (cf. Snow 1971).<sup>6</sup> In this sense, we have to add many more especially social factors to Diessel's formulation (2013: 351), according to which

<sup>5</sup> This comes close to Givón's notion of „monopositional”, that is single-unit utterances (cf. Givón 1979: 292ff.).

<sup>6</sup> In this respect, it is relevant to distinguish 'environmental language' from 'baby-talk' or 'motherese', cf. Elliot (1981: 150): “The differences lie principally in the nature of the speech which is specifically addressed to the child, often called 'motherese', to be distinguished on the one hand from 'baby-talk', which is one component of motherese, and on the other from 'environmental language', which refers to all speech which a child may hear or overhear.”

[b]oth individual constructions and the particular organization of the network are emergent phenomena that children acquire in a piecemeal bottom-up fashion based on general learning mechanisms that are also relevant for the acquisition of knowledge in other cognitive domains.

Second, utterances of Stage I children are framed in the same way as or even more than utterances of adults. For instance, an utterance like

(3) Daddy ball (de Villiers and de Villiers 1978: 74)

may have multiple readings such as ‘(this is / there is) daddy’s ball’, ‘Daddy! Give me the ball’, ‘Daddy has the ball’, to give the simplest interpretations (cf. Brown 1973, Bloom 1991). In this sense, it seems problematic to derive schematic structures present in the event images encoded by a linguistic expression from the overt structure of the linguistic expressions itself. For instance, Du Bois’ constraints “avoid more than one lexical core argument” and “avoid lexical A” may in fact have a linguistic reality, but when looking - for illustrative purpose - at the scenic structure of a brief oral report of a witness to an aeroplane hijacking (Wooffitt 2005: 104, taken from Sacks 1984: 419), it comes clear that these constraints do not apply on a conceptual level (ARG = ‘argument’):

CONJ	ARG1	V	ARG2	AGR3
	I	was walking up	towards the front of the airplane	
and	I	saw	by the cabin,	
	the stewardess	standing	[Ø] <ANAPH.LOC>	
	[Ø] <ANAPH>	facing	the cabin,	
and	a fellow	standing	with a gun	in her back.
And	my first thought	was	[Ø] <CATAPH.O>	
	he	’s showing	her	the gun,
and then	I	realized	[Ø] <CATAPH.O>	
	that	couldn’t be,		
and then	it	turned out	[Ø] <CATAPH.S>	
	he	was hi-jacking	the plane.	

Table 1: *The argument structure of an oral report*

Here, [Ø] is meant to symbolize a zero anaphor or cataphor. Hence, when including the information inferable from zero phoric elements, it comes clear that most of the scenes or event images described by the speaker entail two or even three arguments on the conceptual level.

Turning to other genres of rhetorical acts such as folk narratives, the tendency to process more than one cognitive unit corresponding linguistically to ‘arguments’ becomes even more visible. The following data are taken from an orally transmitted folk narrative from Udi, a South East Caucasian (Lezgian) language today spoken mainly in the village Nij in Northwestern Azerbaijan. The tale (dialect of Vartashen). The narrative ‘The Grateful Dead’<sup>7</sup>

<sup>7</sup> One cannot safely name the person who had written down the Udi version of the ‘Grateful Dead’, but it is rather likely that we have to deal with the Vartashen Udi school teacher and director of the local school in Vartashen, Mikhail Bezhanov. Together with his brother, the priest Semjon Bezhanov, he spent much of his time

includes 1.193 tokens (593 types) covering 299 ‘simple clauses’.<sup>8</sup> In sum, there are 299 verb phrases (VP) and 390 noun phrases (NP), to which we have to add 41 phrasal NPs (‘object clauses’). The mean hence is 1.44 (NPs per VP). Disregarding phoric elements and object clauses, the total of lexically marked NPs is 354, which gives us a mean of 1.18. This value comes close to what would be expected from Du Bois’ Preferred Argument Structure. However, the picture is rather different if we refer to the information structure of the text: The need to lexically express conceptual units related to the linguistic domain of NPs strongly depends on the given genre, on frame knowledge, and on the overall discourse traditions of a speech community (not to speak of the degree to which linguistic devices for referential tracking are available in the given language). Udi is a language marked for personal agreement, the units of which take up (among others) the task of marking clausal pivots (third person), cf. as an example:

(4)	[ <i>me</i>	<i>ğar</i> ] <sub>NP</sub>	<i>bai-ne-sa</i>	[ <i>mia</i> ] <sub>NP</sub> ,
	PROX	boy	into=go-3.SG-PRES	PROX.DAT
	<b>[Ø]</b> <sub>NP</sub>	[ <i>biitiin</i>	<i>döv-urğ-ox</i> ] <sub>NP</sub>	<i>k’ac’-ne-xa</i> ,
		all	dev-PL-DAT2	cut-3SG-LV.PRES
	<b>[Ø]</b> <sub>NP</sub>	[ <i>ič-uğ-o</i>	<i>imğ-ox</i> ] <sub>NP</sub>	<i>k’ac’-p-i</i>
		REFL-PL-GEN	ear-PL-DAT2	cut-LV-PAST
	<b>[Ø]</b> <sub>NP</sub>	<b>[Ø]</b> <sub>NP</sub>	[ <i>yalluğ-a</i> ] <sub>NP</sub> - <i>ne</i>	<i>bai-exa</i> .
			cloth-DAT-3SG	into-LV.PRES

‘This boy enters here, kills all the devs, [and] having cut their ears, [he] puts [them] into a cloth.’ (Udi, lit. translation; Dirr 1928)

In this sense, these elements function as anaphoric units representing an argument slot just as lexically expressed NPs do (marked by bold elements in (4)). In addition, the passage entails zero-anaphors that are given through inference only. The corresponding NPs can be regarded as zero-NPs in phoric function. If we include zero-NPs, the mean of the NP/VP rational rises up to 1.93 (578 NPs / 299 VPs), cf. Diagram 1:

---

collecting Udi folk songs, proverbs, and folk tales. Most probably, the supervisor of the ‘Caucasian Teaching District’, L. Lopatinskij, handed over a manuscript of the text ‘Grateful Dead’ to Adolf Dirr during his stay in Tbilisi in 1902 and who published it together with a translation into German (Dirr 1928). A slightly modernized version translated into the Nij dialect has been published by Dabakov (2007) under the name *P’urinaxun mandî borc* ‘The remaining debt of the Dead’.

<sup>8</sup> Note that I have counted subordinate clauses as simple clauses, too, because they cover individual event images just as it is true for matrix clauses.

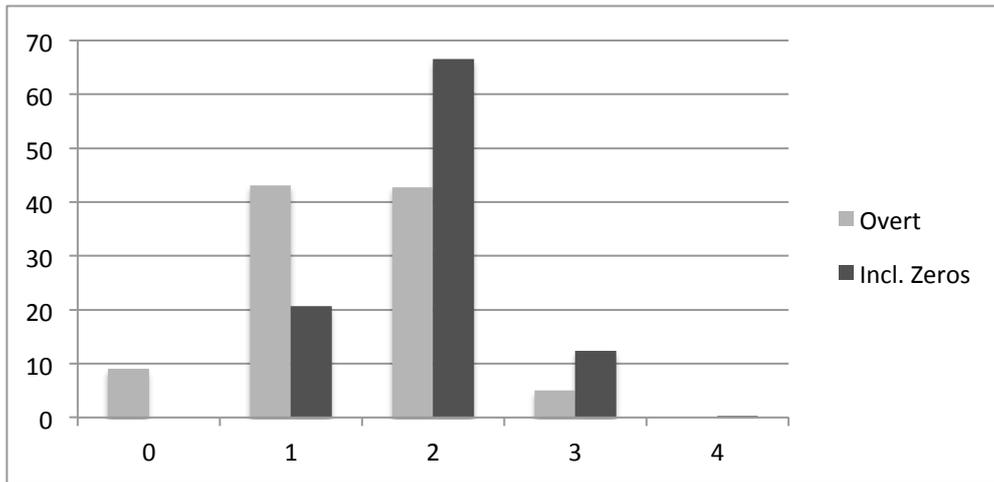


Diagram 1: *Number of arguments per clause (percentage, n=299) (Udi, 'Grateful Dead')*

Diagram 1 also illustrates that two-argument clauses (including zero-NPs) strongly dominate the text (66,55 %), as opposed to one-argument clauses (20,73%). Even when ignoring the zero-NPs, we arrive at a rather even distribution (one-argument clauses 43,14%, two-argument clauses 42,80%). Naturally, this patterns is also conditioned by the overall contents of the narrative: Quite typically for the genre of folk narratives, the story entails many passages of (inter)action and is devoid of longer descriptive sequences. This also shows up when looking at the distribution of grammatical relations, cf. Diagram 2:

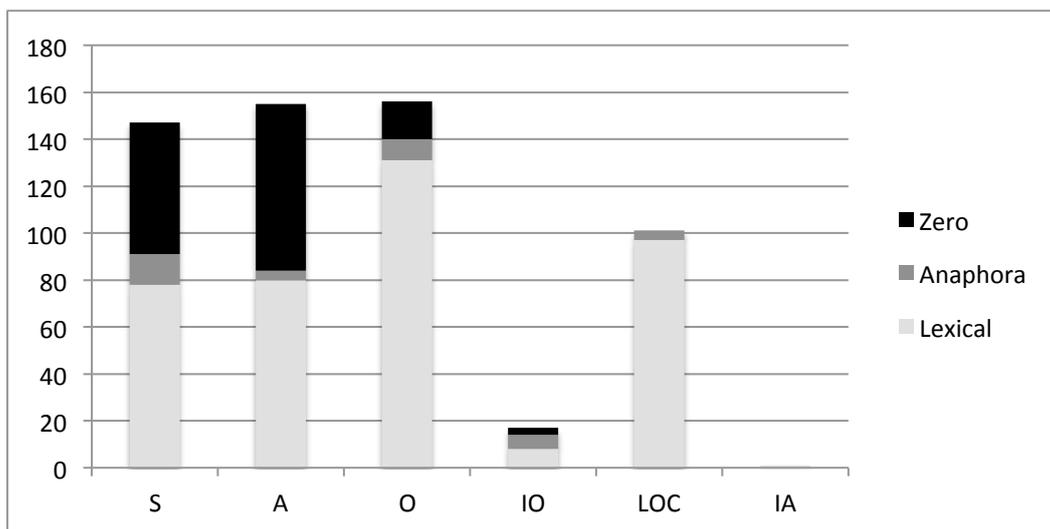


Diagram 2: *Grammatical Relations in the Udi text 'The Grateful Dead' (absolute figures)*

Including zero-NPs, the number of transitive relations (A -> O) is even higher than that of intransitive ones. Udi, having an S/A pivot, shows a strong preference for zero-NPs in S or A function, but the data hardly match Du Bois' constraint according to which "lexical A" should be avoided. Rather, they show the tendency to avoid a lexical repetition of an NP in S or A function, which is quite the standard for accusative clause chaining. When looking at a folktale from another East Caucasian language distantly related to Udi, namely Chechen (*staggiy lähiy* ('Man and Snake'), [Jakovlev 1940:308-313](#)) that entails 863 tokens (434 types) covering 193 simple clauses), we can easily see that the Udi patterns are not mere chance. Diagram 3 illustrates the frequency of simple clauses based on the number of arguments per clause. Again, I consider both patterns that reflect lexical units only and those that include zero-NPs:

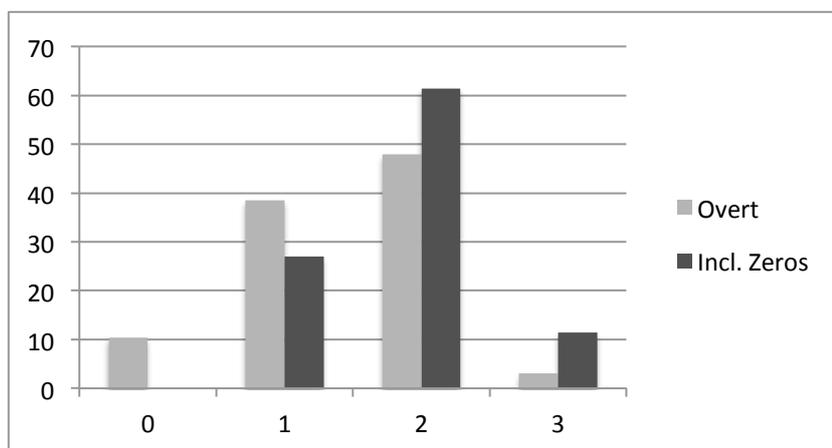
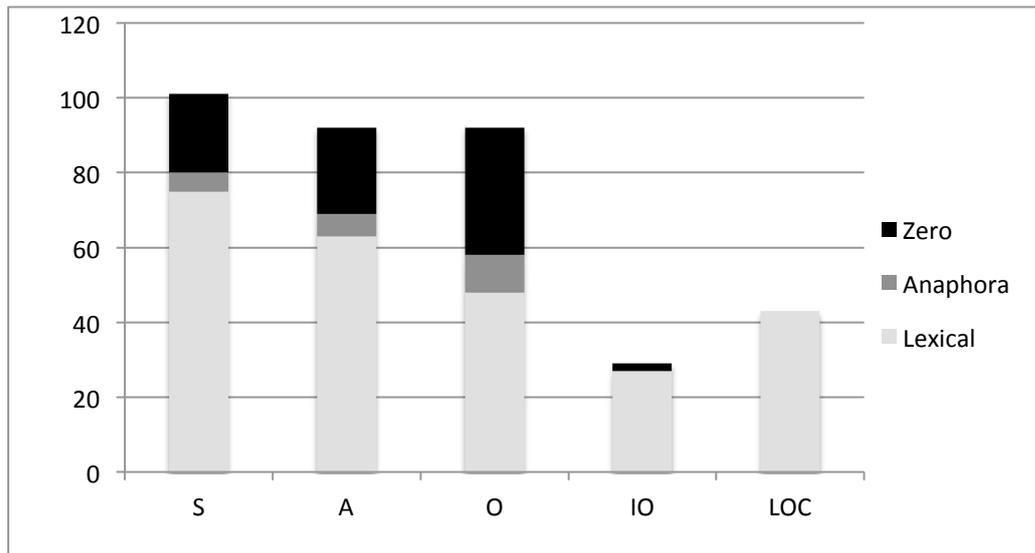


Diagram 3: *Number of arguments per clause (percentage, n=192) (Chechen, 'Man and Snake')*

Diagram 4: *Grammatical Relations in the Chechen text 'Man and Snake' (absolute figures)*

Again, two-argument clauses strongly dominate the text. In the Chechen text, even purely lexical two-argument structures are more frequent than one-argument structures. Contrary to

the Udi text, two-argument clauses in the Chechen text favor to a certain extent locative relations (S -> LOC), as can be seen from Diagram 4:

The number of zero-NPs is lower than that given for the Udi text. This is due to the fact that Chechen lacks verbal personal agreement that would relate to referential units in terms of phoric elements, cf. the example in (5):<sup>9</sup>

- (5) *čäna diy-n-aḥ i stag šien zuda a ec-na*  
 one.OBL day-SA-LOC DIST man REFL.POSS wife FOC take-INFER
- [Ø] *šien ozalla y-ala-n y-ollu gowr*  
 REFL.POSS hunger IV-die-INF IV-being.EMPH horse
- worda-n-na a y-öž-na*  
 charriot-SA-DAT FOC IV-bind-INFER

‘One day, that man took his wife [and] harnessed the horse that was dying of hunger.’  
 (Chechen, Jakovlev 1940)

Accordingly, it is more likely that referential tracking is done by resuming a given lexical item. This slightly raises the NP/VP ratio with respect to a calculus that considers lexical NPs only. Nevertheless, when including zero-NPs. Nearly the same value shows up for the Chechen text as for the Udi text, cf. (6):

- |     |                 |                |                |
|-----|-----------------|----------------|----------------|
| (6) |                 | Udi            | Chechen        |
|     | Lexical only    | 1.18 NP per VP | 1.33 NP per VP |
|     | Including Zeros | 1.93 NP per VP | 1.84 NP per VP |

Again, it becomes visible that considering the amount of lexically expressed arguments together with their grammatical relations may help to understand certain preferences for the linguistically encoding of event images. For instance, when looking at the genre of English legal texts, we observe an extreme amount lexically expressed NPs. An example is the following passage that is Section 20 of the Wills Act 2009 of the Government of Gibraltar:<sup>10</sup>

		NP	NP	VP	NP	NP
1		No obliteration, interlineations, or other alteration				
2	SUB	Ø		made	in any will	after the execution thereof

<sup>9</sup> Chechen knows a system of noun classification, represented by corresponding class markers. If licensed phonetically, these class markers show up mainly with attributes in NPs and ergatively with verbs (representing the noun class of S or O). It still is a matter of debate whether we can assign a phoric function to these elements.

<sup>10</sup> <https://www.gibraltarlaws.gov.gi/articles/2009-25o.pdf> (11.4.17).

1'			shall be valid	
3	or	Ø	have effect	
4	except so far as	the words or effect of the will	before such alteration	shall not be apparent,
5	unless	such alteration	shall be executed	in like manner
6	as hereinbefore	Ø	is required	for the execution of the will,
7	but	the will, with such alteration as part thereof,	shall be deemed	
8		Ø	to be duly executed	
9	if	the signature of the testator and the subscription of the witness	be made	in the margin or on some other part of the will opposite or near to such alteration or at the foot or end of or opposite to a memorandum
10		Ø	referring to	such alteration
11	and	Ø	written	of some other part of the will.

Table 2: *The basic NP/VP-schema of an English legal text passage*

Note that in Table 2, the NPs controlled by the corresponding VP are not analyzed in details, as long as the internal structure of a given NP is not determined by the VP. The passage represents a complex scenario that is characterized by patterns of subordination. Nevertheless, it entails eleven scenes including 13 more or less elaborate referential units. This gives us a ratio of 1.18 NPs per VPs, which would in fact argue in favor of Du Bois' assumption quoted above. Still, we have to note that the passage includes six zero-anaphors the inclusion of which would raise the ratio to 1.72. The figure rises even more, if we consider the individual referential units present in the complex NPs (e.g. [*in the margin [of X]*] or [*on some other part of the will*] [*opposite or near to such alteration*] or [*at the foot [of X]*] or [*end of [X]*] or [*opposite to a memorandum*])<sup>11</sup>. Pending on the degree of resolution, the number of nominal elements ranges from 23 to 31 units. Accordingly, the Noun/Verb ratio amounts to 2.09-2.81 nouns per lexical verb. In her analysis of a corpus of English legal texts<sup>12</sup>, Venturi (2010: 20) arrives at an even higher number. By cumulating her figures, we get an NP/VP ratio of 4.80 for the corpus of legal texts (as opposed to 3.64 for the reference corpus (Wall Street Journal)). This is in fact high above the 1.0 ratio (one NP on one VP) that can be derived from Du Bois' Preferred Argument Structure.

<sup>11</sup> Cf. Pavlíčková (2014) for a similar analysis.

<sup>12</sup> The data are based on a collection of 18 European Union Directives in consumer law. The reference corpus is made up of a sub-corpus of the Wall Street Journal (cf. Venturi 2010: 19). The author analyzes the corpora regarding chunks such as nominal, prepositional, finite verbal, non-finite verbal, adverbial, and adjectival chunks. In total, the corpus of legal texts includes 35.187 chunks as opposed to 629.396 chunks in the reference corpus.

Nevertheless, just calculating overt lexical units may cause problems when modeling the prototypical structure of cognitive event images.<sup>13</sup> In this section, I will argue that the linguistic symbolization of event images is not grounded in a 1:1-mapping of the structures of these event images.<sup>14</sup> Rather we have to consider a vast array of processes and contextual factors that intervene in the symbolization procedure, including routines of linguistic knowledge, grammatical patterns of individual languages, context, genre, knowledge frames, attention and information flow etc. (see below for Fauconnier's 'backstage cognition' metaphor). Admittedly, this hypothesis goes against assumptions according to which the ontology of language is intimately related to one of the basic genres or to the 'pre-genre' (Swales 1990) of language use (see Hopper 2003), namely conversation (Bakhtin 1968). In fact, conversation seems to be marked for a relatively low degree of referential explicitness, or, as Hopper (2003) has put it:

[T]he rarity of cardinal transitivity in conversation poses questions about the sources of transitive marking. Our recent findings seem to suggest (1) that grammatical marking is divorced from usage, and (2) that transitivity is relevant not for a language as a whole but only for certain genres.

However, Hopper's assumptions can be questioned for the following reason: The reduction of the ontology of language to conversation presupposes that conversation itself is the primary source for language evolution. Still, if we refer to e.g. Radical Constructivism, we may also argue that conversation reflects the construction of a collective hypothesis concerning the social experience of articulation-based, narrative 'expressions' of perception and experience (Schulze 1998, 2007). Hence, the evolution of language is not primarily grounded in face-to-face communication, but rather in 'narration' (see e.g. von Heiseler 2014), an assumption related to the so-called 'Narrative Intelligence Hypothesis' (Dautenhahn 1999). According to Dautenhahn (2002: 99),

[t]he evolution of communication in terms of narrative language (story-telling) was an important factor in human evolution that has shaped the evolution of human cognition, societies and human culture. The use of language in a narrative format provided an efficient means of 'social grooming' that maintains group coherence. (...)

Human cultures which are fundamentally 'narrative' in nature provide an environment that young human primates are immersed in and facilitate not only the development of a child into a skilled story-teller and communicator, but also the development of an autobiographical self.

Accordingly we may assume that the most primitive form of linguistic knowledge is grounded in its "role as a means of communicating about events displaced in space and time from the present" (Corballis 2014: 39). More precisely, Corballis (2014: 54) argues:

---

<sup>13</sup> Thompson and Hopper (2001), too, start from a corpus of spoken English calculating just the lexically overt arguments and consequently arrive at the conclusion that "the clauses in conversational English are low in Transitivity" (p. 32).

<sup>14</sup> In this sense, one can adopt Alfred Korzybski's famous dictum: "A map is *not* the territory it represents, but, if correct, it has a *similar structure* to the territory, which accounts for its usefulness." (Korzybski 1996 [1933]: 58; italics in the original).

Perhaps the most important feature of language, as distinct from other forms of animal communication, is that it permits communication about the non-present, such as past events, imagined future events, or hypothetical and even impossible events. The ability to mentally represent such events includes mental time travel, whereby we form internal scenarios. Although some have suggested that mental time travel is itself uniquely human, evidence from hippocampal recordings in the rat suggest that the ability to replay, pre-play, or even construct purely imaginary trajectories in spatial environments goes far back in evolution. The complexity of these imagined events no doubt increased through evolutionary time, perhaps gaining a narrative-like character in our hominin forebears after they split from the great apes.

Hence, the narration of “imagined events” (grounded in social grooming (cf. Dunbar 1996) and the transmission of individual experience) would importantly contributed to the evolution of linguistic structures. This type of narration would call for more structural features that just the predication of referential units. Although the structures of narrations are strongly controlled by given genres and conventionalized routines and deeply embedded in the situational and ‘environmental’ knowledge frames of a social group, they must nevertheless have emerged from pre-linguistic cognitive routines of processing imagined events. The social function of narrations probably was different from that of face-to-face communication. Most likely, primitive narratives addressed a group of individuals rather than single individuals. This function of narratives has survived in some way until today. Hence, communication was more like story-telling serving to disseminate experience and knowledge among a social group, to stabilize collective knowledge patterns related to the ‘interpretation’ and ‘manipulation’ of given ‘worlds’, and to safeguard group identity especially in terms of the tradition of genealogical and mythological knowledge. **This type of ‘social grooming...’ [ADD!]**

If we assume that from the point of view of language evolution, conversation has emerged mainly from narration, we have likewise to assume that linguistic patterns showing up in present-day types of (face-to-face) conversation are secondary, also cf. Corballis (2011: 113-114):

Language may have evolved (...) so that we can share our mental travels through time. (...) I think that grammatical language evolved primarily to enable us to share episodes, thus greatly enlarging the vocabulary of real-world happenings for the construction of personal futures. (...) Language is exquisitely designed to communicate “who did what to whom, where, when and why,” to quote Pinker (...).

Here, Corballis refers to Pinker (2003: 27) who alludes to the famous formula *quis, quid, cur, quomodo, ubi, quando, quibus auxiliis* by the philosopher Boethius (6th c. A.D.)<sup>15</sup> that “made the seven circumstances fundamental to the arts of prosecution and defense.” (Robertson 1946: 12). Following Corballis, we have to assume that narrative utterances have more to convey than what can be expressed in a “one-place predicate” in terms of Hurford (2007: 125). The reduction of more complex cognitive pattern to what may show up as the Preferred Argument Structure would then be related to the secondary evolution of face-to-face

---

<sup>15</sup> Cf. Boethius, *De differentiis topicis*, col. 1212D: “Reliquas uero circumstantias, quae sunt quid, cur, quomodo, ubi quando, quibus auxiliis, in attributis negotio ponit.”

communication, or conversation. Hence, linguistic utterances may differ considerably from the underlying ‘cognitive events’ that are encoded by the utterance: They may include a number of referential entities the processing of which is controlled by context and cotext and which are retrieved through inference. In other words: The strong tendency towards intransitive structures in conversation is probably based on specific strategies to reduce the amount of linguistic ‘material’ (which is quite in accordance with Zipf’s Law of least [mental] effort (Zipf 1949)).

Langacker (2008: 356) takes an intermediate position by saying that “[q]uite important linguistically, however, is a minimal action chain consisting of just one link: a single, two-participant interaction. Also important is a degenerate action chain in which the same participant is both the source of energy and the locus of its manifestation: a one-participant action.” Admittedly, Langacker does not maintain that two-participant relationships expressed in simple clauses represent the prototypical structure of these clauses. In fact he assumes that

one basis for categorizing relational expressions is whether they have just a single focal participant (by definition, the trajector) or two. There is nothing contradictory about a relationship having only one participant. The abstract characterization (...) merely specifies that a relationship consists of interconnections. Since it is not required that the interconnected entities be salient, explicit, or even individuated, the notion of a one-participant relationship is perfectly coherent. (Langacker 2008: 113)

Nevertheless, the quote suggests that Langacker, too, starts from the idea that cognitively, pre-linguistic event images are prototypically structured in terms of an  $X \rightarrow Y$ -relation with  $Y$  being possibly less (or not at all) “salient, explicit, or even individuated” in the process of linguistic symbolization. I will call the underlying structure  $X \rightarrow Y$  *Cognitive Transitivity* and will use the term *masking* in order to refer to the process described by Langacker.

The process of symbolizing the image (or: construction) of an perceived, memorized, or imagined event in term of a linguistic utterance conditions a particular way of interpreting this image. The event image itself is processed by many features that we can relate to what Gilles Fauconnier has termed ‘backstage cognition’. According to Fauconnier (1999: 96)

[l]anguage is only the tip of a spectacular cognitive iceberg, and when we engage in any language activity, be it mundane or artistically creative, we draw unconsciously on vast cognitive resources, call up innumerable models and frames, set up multiple connections, coordinate large arrays of information, and engage in creative mappings, transfers, and elaborations. (...). Backstage cognition includes viewpoints and reference points, figure-ground/profile/bases/landmark-trajector organization, metaphorical, analogical, and other mappings, idealized models, framing, construal, mental spaces, counterpart connections, roles, prototypes, metonymy, conceptual blending, fictive motion, [and] force dynamics.

The idea of backstage cognition (also cf. Graphics (14) and (15) below) goes back at least to Karl Mannheim’s term “conjunctive knowledge” (Mannheim (1980 [1922])), this is implicit, experiential, non-reflective, praxeological knowledge grounded in everyday practices. The catalogue of backstage cognition features given by Fauconnier in the quote above includes patterns that are very different in nature. Some are more conceptual or categorial (such idealized models, roles, fictive motion), others are highly procedural (such counterpart

connections or blending). For the purpose of the given section, we have to add another relevant factor of ‘conjunctive knowledge’ (in terms of Mannheim), namely large parts of linguistic knowledge. Linguistic practices are by large grounded in symbolization routines that are hardly accessible to conscious application and manipulation (which would be ‘communicative knowledge’ according to Karl Mannheim). Hence, a usage-based approach has also to respect the fact that people speak as they are used to speak and in accordance with the communicative norms and rules of a speech community. The intentional manipulation of this kind of tacit knowledge underlying linguistic practices is for instance part of corresponding poetic programs, as illustrated below by a quote from the “Supplement to the Technical Manifesto of Futurist Literature” by Filippo Marinetti (Marinetti 1913: 289):<sup>16</sup>

Die Zerstörung der traditionellen Periode, das Abschaffen des Adjektivs, des Adverbs und der Interpunktion werden notwendiger den Zusammenbruch der nur zu sehr gerühmten Harmonie des Stils mit sich bringen, so daß der futuristische Dichter endlich die onomatopoetischen Kakophonien wird benutzen können die die unzählbaren Geräusche der sich bewegenden Materie geben.

An example for this kind of intentional manipulation of syntactic (and lexical) norms is the following famous poem *Patrouille* (‘Patrol’) by the German Expressionist August Stramm (1874-1915):<sup>17</sup>

<i>Die Steine feinden</i>	The stones bristle
<i>Fenster grinst Verrat</i>	Window grins betrayal
<i>Äste würgen</i>	Branches choke
<i>Berge Sträucher blättern raschlig</i>	Mountains bushes leaf rustling
<i>Gellen</i>	Yell[ing]
<i>Tod.</i>	Death.

Table 3: August Stramm’s poem *Patrouille*

As has been shown by Regulyová (2016), many of Stramm’s poems conform to the Futurist program especially with respect to the manipulation of syntactic patterns.<sup>18</sup> As for the topics of this section, it is interesting to note that one of the propagandists of German Expressionist lyrics, Lothar Schreyer (1886-1966), emphasized the relevance of strategies to interpret and

<sup>16</sup> Compare Marinetti (1913/14: 137): “Egli comincerà col distruggere brutalmente la sintassi nel parlare. Non perderà tempo a costruire i periodi. S’infischierà della punteggiatura e dell’aggettivazione. Disprezzerà cesellature e sfumature di linguaggio, e in fretta vi getterà affannosamente nei nervi le sue sensazioni visive, auditive, olfattive, secondo la loro corrente incalzante. L’irruenza del vapore-emozione farà saltare il tubo del periodo, le valvole della punteggiatura e i bulloni regolari dell’aggettivazione. Manate di parole essenziali senza alcun ordine convenzionale. Unica preoccupazione del narratore rendere tutte le vibrazioni del suo io.”

<sup>17</sup> Published in *Der Sturm* 7/8, 1st and 2nd July volume 1915, p. 39 f. The English version is a rather literal translation, also cf. the translation by Alistar Noon (2009). *The Last Drop. Versions of August Stramm*. Kelvedon: Intercapillary Edition.

<sup>18</sup> Cf. Kuhns (1997: 78-79) saying “when Marinetti’s Technical Manifesto of Futurist Literature (of May 1912) appeared in *Sturm*, followed by an influential lecture which he gave in Berlin in early 1913, Stramm destroyed all his previous writings and started to work along the principles laid down there; that is, reducing sentences to nouns and verbs, eliminating articles, adjectives and conjunctions, keeping the verbs in the infinitive, doing away with punctuation and introducing an element of noise (...)”.

handle intransitive structures as transitive ones (Schreyer 1918). By applying such strategies, the Expressionists tried to free themselves from what the philosopher Fritz Mauthner (1849-1923) had called “Logocetry”. Thus he says (Mauthner 1921 [1901]: 1):

Mit dem Worte stehen die Menschen am Anfang der Welterkenntnis und sie bleiben stehen, wenn sie beim Worte bleiben. Wer weiter schreiten will, auch nur um den kleinwinzigen Schritt, um welchen die Denkarbeit eines ganzen Lebens weiter bringen kann, der muss sich vom Worte befreien und vom Wortaberglauben, der muss seine Welt von der Tyrranei der Sprache zu erlösen versuchen.

In this sense, one might say that the Expressionists aimed at bringing what is on the backstage of cognition (in terms of Fauconnier) to the front stage, or, referring to Karl Mannheim again, to turn conjunctive knowledge into communicative knowledge.

The main point is that grammar in its broadest sense had been the primary target of corresponding activists. Obviously, they started from the idea that grammatical structures as they show up in ordinary linguistic practices ultimately contort much more complex cognitive images. By “brutally destroying the syntax of speech” (in terms of Marinetti, [see fn.12](#)) they hoped to free the underlying cognitive patterns as much as possible.

Still, ‘ordinary’ speakers mainly encode those structures and properties of an event image for which means to symbolize them are readily available in the language at their disposal. Likewise, they will follow just those social communicative norms and expression rules (in the broadest sense of the term<sup>19</sup>) they have learned. In addition, they include genre knowledge, knowledge frames, and given patterns of communication. All this may contribute to the ‘distortion’ of the original structure of pre-linguistic event images. In addition, we have to include recursive effects of learned linguistic patterns on the structuring of event images the processing of which is preformatted by the ‘intention’ to report them. In this sense, we have to refer to the “Thinking for Speaking” hypothesis that “involves picking those characteristics that (a) fit some conceptualization of the event, and (b) are readily encodable in the language.” (Slobin 1996: 76). Still, I agree with Lobina (2013: 380) when saying in his review of Hurford (2012): “[T]he expressions that children produce are taken to be a faithful representation of the structures that children mentally represent — i.e., of their grammar — but that is entirely unwarranted.” I assume that this does not hold for Child Language only, but for linguistic utterances in general. The question would then be of how to model the pre-linguistic structure of event images and how to relate this model to the reality of linguistic expressions.

---

<sup>19</sup> I adopt this term from Emotion Research (cf. Hochschild 1979, 2003), cf. Hochschild (2003: 96): “Just as feelings are linked to rules in a normative context, so feelings are linked to expressions in a context of expressions. Just as we appraise our experience in a context of rules, so do we judge the emotional expressions of others in an expressive context.” (Also see Kappas 1991). In a broader sense, we can describe “expression rules” as a set of culturally and socially controlled norms related to the way of (here: linguistically) coding and pronouncing given mental states. Also cf. Dik (1997) for a different use of the term.



The question of what is meant by the formula in (5) will be discussed in some details in section 3.2. In the present section, I want to elaborate on terms that are crucial to the overall-characterization of “fully schematic constructions”, namely *schematization* and *archetypes*. The term ‘schematic’, first employed by Piaget (1948 [1923]: 43-44)<sup>22</sup> and taken up by Bartlett (1932) has later found a broad array of applications in terms of various versions of Schema Theory. For the purpose of the present section, it suffices to refer to DiMaggio (1997: 269), who describes schemata as “knowledge structures that represent objects or events and provide default assumptions about their characteristics, relationships, and entailments under conditions of incomplete information”. DiMaggio continues: “Schemata are both representations of knowledge and information-processing mechanisms. As representations, they entail images of objects and the relations among them”. The author rightly stresses the ambiguities related to the use of the term. Evans and Green (2006: 115) turn it into the perspective of cognitive linguistics by saying:

Schematisation is a special kind of abstraction, which results in representations that are much less detailed than the actual utterances that give rise to them. Instead, schematization results in schemas. These are achieved by setting aside points of difference between actual structures, leaving just the points they have in common.

Comparing this approach to the framework Generative Grammar, Evans and Green (2006: 116) maintain that “[w]hile schemas are derived from language use and thus incorporate a meaning element, rules are minimally specified structural representations that predict the greatest amount of information possible in the most economical way possible.” Accordingly (and quite in line with e.g. Bybee 2013) the conceptual ‘semantics’ of schemata gradually emerge from language learning and language use. However, there seems to be some circularity in this assumption: If highly ‘abstract’ schemas are gradually ‘loaded’ with semantics (to different degrees, pending on the categorical state of the units related to these schemas), some kind of pre-linguistic pattern must exist to be loaded at all. Else, we would arrive at a naïve version of the *tabula rasa* or Blank Slate principle that, however, will be difficult to defend. This does not mean that I advocate for some kind of innate schematic patterns. Rather, I assume that at least some of the schematic structures relevant to the topic of this section are emergent structures resulting from more general principles of cognition such as the processing of perception and memory (see below ...).

Coming back to Langacker’s assumption (2008: 355) according to which “the internal structure of clauses is (...) best described and understood with reference to certain archetypal conceptions representing fundamental aspects of such experience”, it makes sense to relate the terms ‘schema’ and ‘schematization’ to that of ‘archetypes’. Langacker (2008: 17) maintains: “By schematization, I mean the process of extracting the commonality inherent in multiple experiences to arrive at a conception representing a higher level of abstraction.” In this sense, schemas would be part of a learning process, resulting in some kind of “rules”, cf.: “In CG, rules take the form of schemas: they are abstract templates obtained by reinforcing the commonality inherent in a set of instances. Since grammatical rules are patterns in the

---

<sup>22</sup> “Les schémas visuels également jouent un grand rôle, tiennent même lieu de démonstration et de support à la deduction.” (Piaget 1948 [1923]: 44).

formation of symbolically complex expressions, they are themselves symbolically complex as well as schematic.” (Langacker 2008: 23). The semantics of schemas, as abstract as they might be, would then results from a gradual process of generalization leading to corresponding conceptual units or patterns (so to say from ‘construct’ to ‘construction’ in terms of Diessel (2013)). Still, this assumption faces the following problem: We have to explain why people tend to produce rather parallel or similar “wholly schematic symbolic assemblies” such as “V<sub>s</sub> X in the N<sub>b</sub>” (Langacker 2008: 21).<sup>23</sup> Obviously, this is not just due to the implied fact that people are exposed to more or less parallel inputs. On the one hand, we have to acknowledge that an input representing such schematic symbolic assemblies is already formatted according to certain schemas. In other words, we have to think of the possibility that people learn these schemas by themselves as long as these are somehow symbolized in language, be it in terms of substantive or in terms of fully schematic constructions. On the other hand, it is reasonable to assume that the learning of especially fully schematic constructions leans on universal properties and procedures of cognition that become active when processing these constructions. In this sense, we would have to link the process of schematization as defined by Langacker and others with pre-linguistic cognitive patterns that also contribute to the conceptual layer of fully schematic constructions.

In this respect, one might think of referring to Langacker’s “conceptual archetypes”. Nevertheless, it has to be noted that Langacker does not relate this term to the corresponding term in various versions of analytic psychology that camp in the tradition of C. G. Jung. Jung (1975a [1954]) has described archetypes as universal patterns of conceptualization and human activities that derive from the collective unconscious. They only show up as instantiations (tokens) controlled by both individual needs and collective norms and rules. Most importantly, Jung stresses that concrete archetypical expressions must not be mixed up with archetypes as such. An archetype is a rather variable pattern and a mainly tendency to generate concepts without loosing its basic structure (Jung 1968 [1961], Jung 1976b [1954]). The concept of archetypes as elaborated by Jung differs considerably from what Langacker (2008: 33) defines as “conceptual archetypes”: “These are experientially grounded concepts so frequent and fundamental in our everyday life that the label archetype does not seem inappropriate.” Here, Langacker lists as examples among others “a physical object, an object in a location, an object moving through space, the human body, the human face, a whole and its parts (...), seeing something, holding something, handing something to someone, exerting force to effect a desired change, a face-to-face social encounter (...).” The main difference is that Jung views archetypes as pre-conceptual patterns, whereas Langacker refers something like basic concepts. Obviously, Langacker addresses what is called “archetypische Vorstellungen” by Jung rather than archetypes as such. Nevertheless, when looking e.g. at Langacker’s characterization of “the archetype for nouns” (Langacker 2008: 104, saying that it includes the idea of a conceptually autonomous physical, time-stable object in its location “that we can conceptualize (...) independently of its participation in any event”), it comes clear that this has little to do with Jung’s “archetypical images”. Rather, what Langacker alludes to is a unit that represents the assumed common denominator of semantic properties

---

<sup>23</sup> Note that the pattern Langacker gives is not fully schematic because it entails one lexical element, namely *in*. We hence have to deal with an in parts lexically specified schematic construction.

showing up with units that are related to the linguistic category of ‘nouns’. He assumes that this factor is grounded in a “capacity to manipulate a group as a unitary entity for higher-order cognitive purposes (...) what I refer to as reification<sup>24</sup>.” (Langacker 2008: 105). Accordingly, Langacker’s notion of ‘conceptual archetype’ comes closer to that of ‘schematization’ than to what is meant by e.g. C. G. Jung. The crucial point is that in the above-given quote, Langacker refers to “[c]onceptual archetypes [that] function as the prototypes for clausal elements”. It is slightly misleading to assume that conceptual archetypes (something in-between Jung’s ‘archetypes’ and ‘archetypical images’) may function as prototypes. The only thing what might be said with respect to the dimension of ‘prototypes’ is that the best representation of a ‘conceptual archetypes’ would be its prototype.

C. G. Jung’s understanding of archetypes has the advantage that it allows associating archetypes with some kind of ‘meaning’ that does not emerge from archetypical images, but that is said to frame these images. Jung (1976b [1954]) assumes that these archetypes derive as such from the domain of instincts. Moreover, he speculates about possible relations of archetypes to what he calls ‘Materie’ (in the sense of matter or substance), which allows linking them to “homologous neural structures” or substrates (Katz 2011). In this sense, archetypes might be coupled with so-called “primary and secondary epigenetic rules”: “The *primary epigenetic rules* of mental development are based upon the more automatic processes that lead from sensory filtering to perception (...). The *secondary epigenetic rules* affect information displayed in the perceptual fields and include the channeling of memory, emotional response, decision making, and ultimately *the usage bias curves* (...).” (Lumdsen and Wilson 1981: 370-371, italics in the original; also cf. Lumdsen 1988).<sup>25</sup> As Wright (2007: 20) has put it:

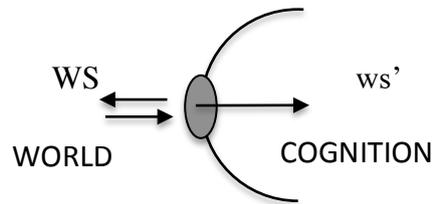
Epigenetic rules come in two flavors: primary epigenetic rules govern our immediate sense perceptions, such as our universal tendency to perceive the color spectrum in four basic color groups (...); secondary epigenetic rules operate at a higher level of abstraction such as the tendency for all human beings to classify objects into opposing pairs like black and white, life and death, heaven and earth — notions that have no physical component in the human brain, yet seem to recur across human cultures.

---

<sup>24</sup> It should be noted that the term *reification* is highly controversial. The problem is that reification (conventionally described as treating something that is not concrete as a concrete ‘thing’) is often seen as “more than a metaphysical sin, it is a logical one. It is the mistake of treating a notional device as though it were a substantive term, what I have called a construct as though it were observational, a theoretical term as though it were a construct or indirect observable.” (Kaplan 2009 [1964]: 61). Berger and Luckmann (1991 [1966]: 106) describe the underlying folk-philosophical perspective as follows: “Reification is the apprehension of human phenomena as if they were things, that is, in non-human or possibly supra-human terms. Another way of saying this is that reification is the apprehension of the products of human activity as if they were something other than human products - such as facts of nature, results of cosmic laws, or manifestations of divine will. Reification implies that man is capable of forgetting his own authorship of the human world, and, further, that the dialectic between man, the producer, and his products is lost to consciousness. The reified world is, by definition, a dehumanized world. It is experienced by man as a strange facticity, an *opus alienum* over which he has no control rather than as the *opus proprium* of his own productive activity.” (Italics in the original). In the context of the present paper, *reification* has a slightly different reading: Accordingly, reification describes the experience- and memory-based processing of *phenomena* by interpreting them as ‘object images’ (also cf. Schulze 2010).

<sup>25</sup> Compare the “basic psychological reaction patterns” as described by Landheer 1992 [1952]: 90ff. He distinguishes “natural or direct” from “rational or postponed” patterns (adding a third pattern called “spiritual or beyond the live-space of the individual”) (p. 91).

Archetypes would thus be grounded mainly in the paradigm of secondary epigenetic rules, although they result from primary rules. In this view, primary epigenetic rules emerge from the architecture of the sensory devices (vision, audition and so on) and from those neural pathways that are activated during perception. Below, I will claim that the most important pattern is that of Figure-Ground discrimination<sup>26</sup> (see ...). I will call ‘pre-conceptual schematization’ the contortion of the sensory input (see Schulze 2009), resulting in primary mental images of the corresponding input, cf. Graphic 1:



Graphic 1: *Pre-conceptual schematization*

WS denotes any kind of ‘world stimulus’, *ws'* is used to symbolize the image of a WS. The shaded oval indicates the sensory interface. Note that for sake of simplification, I here refer to actual world stimuli only. Other types of stimuli emerging from memory recall or imagination are marked for further patterns of processing that will be briefly addressed later in this section (see ...). The resulting primary image of a WS (that is *ws'*) is in parallel conceptually loaded through the activation of secondary epigenetic rules (archetypes) resulting in the conceptual enrichment of *ws'* (e.g. Trajector/Landmark, see below). It should be noted that although the secondary epigenetic rules (or: archetypes) are grounded in the primary rules (pre-conceptual schemas), both processes take place simultaneously. We have hence to deal with a recursive feedback pattern marked for the structural coupling (Maturana 2002) of pre-conceptual schematization and archetypes.<sup>27</sup> I assume that the cluster of primary and secondary epigenetic rules, that is the interaction of pre-conceptual schematization with archetypes leads to a ‘semantic interpretation’ of the schematic patterns. Primary epigenetic rules thus have some kind of meaning potential that is spelt out in the structural coupling with secondary rules (archetypes).

The modeling of the processes of schematization and activation of archetypes as described above differs to some extent from e.g. Langacker’s approach. The main point is that I take a top-down perspective claiming that language and its patterns are subordinate to cognition - or, to put it into simple terms, that they are part of a multimodal semiotic system that enables cognition to interact with the world and with itself (in terms of the concept of <ME> as proposed e.g. by Mead (1934)). This brings the question on stage, to which extent linguistic data help to understand the functional architecture of cognition. The corresponding

<sup>26</sup> The Figure-Ground schema can easily be related to the Two-Streams Hypothesis as alluded to in section 2 of this paper (also cf. section ...).

<sup>27</sup> Jahraus (2001: 38) illustrates the notion of ‘structural coupling’ with the help of two long case clocks standing side by side: Both clocks are equipped with a sensory device that registers the ticking of the other clock: Each clock ticks only if it ‘perceives’ the ticking of the other clock.

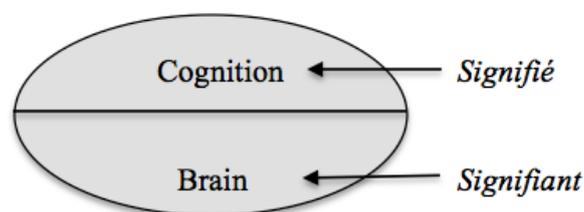
grammatical orientation is expressed for instance in the following quote from Evans and Green (2006: 5):

Language offers a window into cognitive function, providing insights into the nature, structure and organization of thoughts and ideas. The most important way in which cognitive linguistics differs from other approaches to the study of language, then, is that language is assumed to reflect certain fundamental properties and design features of the human mind.

In this sense, the object of studies related to Cognitive Linguistic is cognition itself, not language as such. Linguistic data are mainly taken as a medium to unveil individual cognitive processes as well as the organization of cognition. Superficially, this paradigm – perhaps better to be labeled *linguistic cognitivism* – is opposed to traditions that ask to which extent language is conditioned and motivated (in parts or in all its facets) by cognitive processes. This idea is alluded to for instance by Croft and Cruse (2004: 2):

(...) the cognitive process that govern language use, in particular the construction and communication of meaning by language, are in the principle the same as other cognitive abilities. That is, the organization and retrieval of linguistic knowledge is not significantly different from the organization and retrieval of other knowledge in the mind, and the cognitive abilities to speaking and understanding language are not significantly different from those applied to other cognitive tasks, such as visual perception, or motor activities.

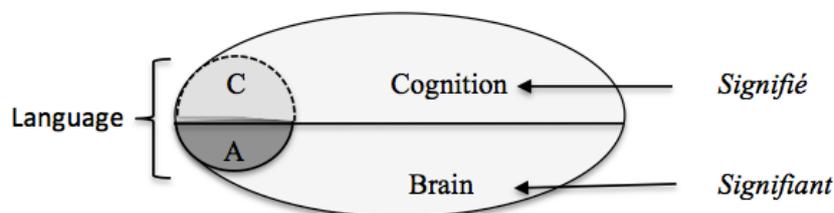
Geeraerts and Cuyckens (2007: 5) additionally emphasize the role of informational structures present in cognition “(...) by assuming that our interaction with the world is mediated through informational structures in the mind (...)” In this perspective, it is relevant to define more precisely what is meant by ‘cognition’ at all. Typically, cognition is described as the ensemble of functional processes embodied by corresponding neural processes and the overall architecture of the brain system. In other words: A cognitive unit represents the *signifié* of a corresponding neural process that can be seen as the corresponding *signifiant*, cf. Graphic 2:



Graphic 2: The relation of brain and cognition

I have deliberately used the two terms Saussurian *signifiant* and *signifié* in order to argue that the relation between ‘brain’ and ‘cognition’ in fact corresponds to that of symbolic units. In other words: The pairing of ‘brain’ and ‘(its) function’ has semiotic properties just as any other symbolic system. It makes sense to relate this pattern to the ontological essence of human beings in terms of a *homo symbolicus* (cf. Cassirer 1944, Deacon 1997, Henschilwood and Marean 2003, Henschilwood and d’Errico 2011, Dapschauskas 2015). Nevertheless, while - according to corresponding assumptions - human beings cannot process the ‘World’ but in terms of a symbolic interpretation (linking objects and processes of the World (*signifiant*) to

corresponding mental constructions or images (*signifié*), the coupling of brain (*signifiant*) and cognition (*signifié*) does not result in a concrete semiotic unit (in terms of a *signe*). Nevertheless, one can assume that the semiotic system ‘language’ is nested in the overall symbolic structure resulting from the pairing of brain and cognition, cf. Graphic 3:



Graphic 3: *Language and the brain/cognition pairing*

By ‘A’ I mean articulatory schemas, controlled by the sensorimotor domains of the brain (*signifiant*). ‘C’ stands for any type of conceptual/categorical function related to given sensorimotor patterns (*signifié*). Note that the C-domain is indicated by a dotted semicircle. It refers to the assumption that the meaning dimension of linguistic signs is both controlled by global cognitive processes and by processes emerging from the specific modality of language. Taking up the discussion of schemas and archetypes referred to above, it is reasonable to assume that there are not sharp boundaries between these two types of processes. Rather, we can hypothesize that the semiotic system of language profiles or ‘brands’ global cognitive processes: We can think of a sky (cognition) full of clouds (general cognitive processes), some of which cluster or become darker due to the coalescence of droplets (language-based conceptualization).

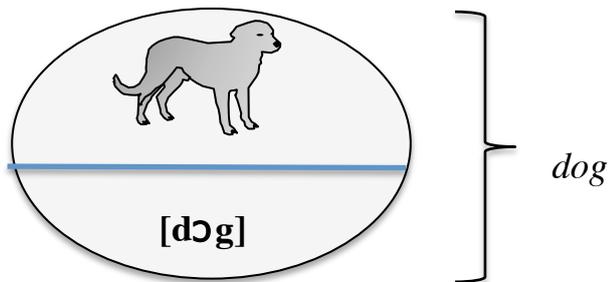
Global processes such as the ‘primary epigenetic rules’ (schematization) as well as their conceptually enriched versions (e.g. archetypes) thus may acquire a semantic value as soon as they are profiled because of their linguistic symbolization. However, at the same time, some of their properties may become ‘shaded’ just because they are not or only partially included in this symbolization process. Nevertheless, one cannot claim that these properties are not present all. They still account for the general structure of a given schema or archetype expressed linguistically. However, various aspects such as language systems, patterns of attention/information flow, explicitness of frames, pragmatic attitudes, expression rules and communicative norms, rhetoric genres, communicative situation, language and social biographies etc. have a strong impact on the degree to which and how such schemas and archetypes become materialized in a linguistic act.

### 3.2 Approaching the *signifié* of fully schematic constructions

Let us now come back to the formula given in (7) that is repeated for convenience in (8):

- (8) Ditransitive (double object)    Subj V Obj1 Obj2 (e.g. he gave her a fish taco,  
he bakes her a muffin (Goldberg 2006: 5))

The formula is marked for two segments: First we have some kind of label (“Ditransitive (double object)”) and second, there is the concrete formula “Subj V Obj1 Obj2”. It should be born in mind that there is a hidden third parameter, namely “English”. The latter point is essential because it alludes to the assumption that such constructions are language-specific (cf. Croft 2001). The label “Ditransitive” is obviously meant to name the construction itself, that is we have to understand it as a descriptive sign. However, this notational types differs from what we would have to describe for instance for purely lexical constructions (or linguistic signs), cf. Graphic 4:

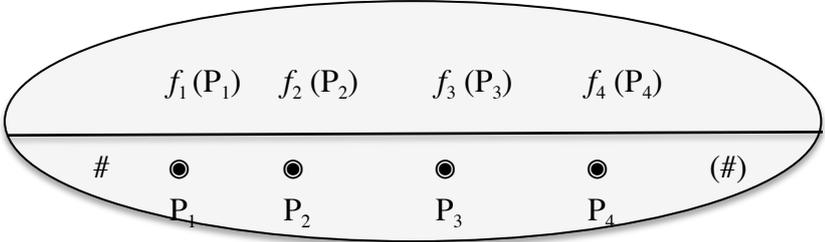


Graphic 4: *The linguistic sign dog*

Note that here I have used the sketchy picture of a dog in order to illustrate the *signifié*-dimension of the linguistic sign *dog*.<sup>28</sup> The sequence [dɔg] represents the corresponding articulation chain (*signifiant*), whereas the italic form *dog* is thought to symbolize the linguistic sign. Let us now apply try to apply this model to the formula in (8). In case we have to deal with a construction in the sense of Construction Grammar, we would expect a meaning layer (*signifié*) and a form layer (*signifiant*) the coupling of which results in a linguistic sign. The first problem we face is that fully schematic constructions lack an overtly articulated *signifiant*. So how is the corresponding construction ‘perceived’ at all if it lacks substance? Obviously, the answer is ‘by position of X’. However, how can a position be processed? ‘Position’ (P) always refers to the place of X in a chain, and consequently in relation to Y, Z etc. In addition, the functional value of a position is also determined by the onset and the coda of a chain that may be associated with particular functions. It seems appropriate to assume that in linear structures (such as articulated language) the initial segment lays the ground for processing further elements in the chain. In other words: The function of the first element also influences the functional values of subsequent elements. Starting from mere linguistic data, however, it is difficult to ascribe a general functional value to P<sub>1</sub>. Obviously, we have to deal with language-specific configurations. Still, from a cognitive point of view, it is reasonable to assume that processing of the first position is generally related to aspects of attention: As long as people do not perceive a chain in its totality (as it would be true for instance with respect to a rosary), but view its starting point (as it is normally true for linguistic utterances), they most

<sup>28</sup> There is a certain disagreement in the literature concerning the meaning of the term *sign*. For instance, Wittgenstein (1921: 208 (3.3.2)) relates *sign* to what it called *signifiant* in the Saussure’ian tradition, compare: “Das Zeichen ist das sinnlich Wahrnehmbare am Symbol”. Here, I use *sign* in the sense of a mental artifact, that is in the sense of a *symbol* in Wittgenstein’s terms.

likely start from developing an idea about the ‘meaning’ of the whole chain by processing the first chunk they perceive. Note that in non-linear structures or complexes, other factors may become relevant, such as salience, prominence, empathy, given knowledge, and so on. In addition, the processing of such chains is strongly related to the formal identification of the elements that constitute the chain. In the sense of Construction Grammar, elements of a chain are defined by their signifié value: An element (or chunk) is given, when its signifié represents a non-decomposable concept. As we will see later in this section (see ...), this does not hold just for conceptual signifiés, but also for schematic units. The functional value of the chunks of a linguistic chain hence emerges from its position in the chain and its categorization, cf. Bybee (2010: 37): “These crucial properties of constructions – the fact that they involve sequences of units and also have at least one schematic category – indicate that the source of constructions is chunking plus categorization, both domain-general cognitive mechanisms.” In order to understand the functional side of a position in a linguistic chain, we thus have to refer to cognitive processes such as attention flow, chunking, and categorization. The linguistic labels ‘Subj’, ‘Obj’ and so on hence mainly have a heuristic value for describing the underlying cognitive domains. Following the discussion in section 3.1, it is reasonable to assume that the linguistic symbolization of pre-linguistic cognitive units both contorts and - with respect to communication - manipulates the original patterns underlying these units. In this respect one might think of the terms ‘Subj’, ‘Obj’ etc. as labels that symbolize the linguistic ‘stamping’ of corresponding pre-linguistic units. However, they play down to a certain extent the role of pre-linguistic schematization invariantly present in their ‘linguistic versions’. In order to render the signifié-side of schematic constructions more closely to their pre-linguistic substrate, it seems hence appropriate to replace them by terms that have a strongly semantic reading (see section ...). In a preliminary version, I will use the symbol “ $f$ ” to indicate the signifié-layer of constructions. Accordingly, a construction will be represented by the pattern  $f(x)$ , with ‘x’ denoting the articulatory or (if fully schematic) positional side. If we translate the formula given in (8) accordingly, the following structure shows up:



Graphic 5: Model of a fully schematic construction

Superficially, the structure in Graphic (5) does not indicate that we have to deal with a construction, except for the fact that the individual units are encircled by the oval. One might likewise think of a compositional structure resulting in a more complex unit. Here, two points have to be added:

- (a) As has been alluded to above, the notion of ‘position’ makes only sense, in case more than just one unit is given. Hence  $P_1$  presupposes at least a  $P_2$ , which renders  $P_1$  in

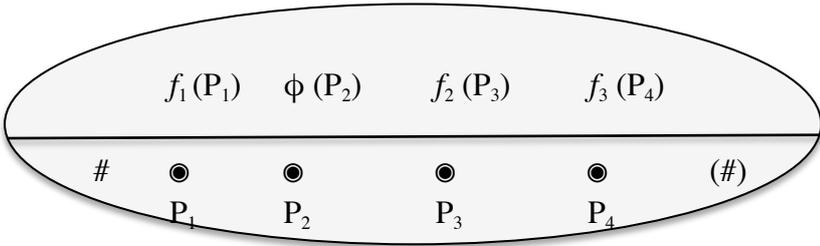
dependency of  $P_2$  and vice versa. In other words:  $f(P_1)$  emerges from the givenness of  $P_2$ , just as  $f(P_2)$  emerges from the givenness of  $P_1$ . Hence, the the structure in Graphic (5) comes close to what is normally considered as a gestalt in Gestalt Theory: Pairs of the type  $f(P_x)$  do not make sense except when being included in a corresponding gestalt. Moreover, the gestalt represented in Graphic (5) does not result from the summation of the individual  $f(x)$ . Rather, the gestalt shows up in gestalt elements the properties of which are given by the semiotic value of the gestalt as such.

(b) When looking at the original formula given in (8), two different types of functions are mentioned: “Subj/Obj” and “V”. One of the shortcomings of the formula in (6) surely is that starting from traditional linguistic terminology, “V” (that is *verb*) differs from “Subj” (*subject*) and “Obj” (*object*) with respect to its semantic or functional status: Subj and Obj refer to the functional dimension of given units, whereas V is traditionally related to the domain of word classes, hence it is the label for a category rather than for a function. Below, I will argue for a different interpretation of V or, more precisely, of the verb phrase (VP), describing it as a ‘relator’ from a cognitive point of view. For the moment it suffices to note that V and Subj/Obj signal two different types of functional value. The gestalt in Graphic (6) may help to illustrate this point:



Graphic 6: Gestalt model of a fully schematic three-argument construction

The three cones represent the units Subj, Obj1, and Obj2. Different shading reflects difference in position. The unit “V” is not marked overtly. Rather it emerges from the arrangement of the three cones proposing the gestalt of a circle. I do not mark the circle (= V) as such, because - as I will argue below - its cognitive correlate lacks one major feature, namely that of object permanence (see section ...). In order to capture the different cognition status of what shows up as V in the formula given in (8) it seem appropriate to introduce an notational variant of  $f$ , namely  $\phi$ . Hence, we can rewrite the pattern given in Graphic (5) as follows:



Graphic 7: The more explicit model of a fully schematic construction

As I have said before, the graphic does not tell much about the semantics of schematic constructions. Taking up the examples Goldberg (2006: 5) gives for an English Ditransitive construction (“he gave her a fish taco, he bakes her a muffin”) it comes clear that this question

is directly related to the semantic correlate of ‘simple clauses’. Typically, the notion of ‘stage models’ serves as a starting point to derive those conceptual segments that account for the semantic of constructions underlying such simple clauses. The corresponding metaphor (e.g. Langacker 1991: 284) goes back to at least to Goffman (1956).<sup>29</sup> As Harth (2006: 22) has put it:

[Goffman’s stage model] provides recourse to an elaborate poetics of action, which in practically systematic fashion takes account of a great number of those factors that—in a complex interplay of institution, space, time, actors, observers, texts, things (props), and symbolic media—produce a delimited practice that can be related to culturally preformed and at the same time institutionally linked genre rules of action.

Langacker (2008: 356) relates the term to the world of archetypes by saying that it “pertains to how we apprehend the outside world. The term is meant to suggest that the general process is analogous to the special case of watching a play.” Nevertheless, it seems appropriate to distinguish at least two levels: One level that is related to primary epigenetic rules or schemata as discussed in the preceding section, the other one that is related to the world of secondary epigenetic rules that may be paralleled with archetypes in the sense described in section 3.1.

### 3.3 Cognitive Transitivity

The term ‘stage model’ is somehow ambiguous. On the one hand, it can be seen as reflecting a segment of the world of (idealized) cognitive models (cf. Lakoff 1987b). In this sense, it can be described as an archetypical structure that is grounded in the assumption according to which people perceive processes in the outer world just as they perceive segments of a theater play. The assumption of such an analogy, however, is difficult to subscribe, especially if we view the ‘stage model’ as a part of the inventory of archetypes. Theater plays are a later human ‘invention’. They may have been ultimately grounded in ways of how humans tried to report on events or to symbolize imagining events etc. However, it would be too far-fetched to assume that the functional architecture of plays is just an instantiation of how people cognitively process events in the outer or fictive world. On the other hand ‘stage model’ may simply represent a heuristic label that refers to the dimension of ‘stage/play’ in terms of a metaphor to model cognitive processes. In this section, I take an intermediate position: the ‘stage model’ is firstly seen as a heuristic tool that is nevertheless grounded in the assumption that the structure of plays and the organization of the corresponding stage has something in common with cognitive structures activated when processing world or fictive events.

---

<sup>29</sup> Note that the German term *Vorstellung* (= Lat. *praepositio*) covers (among others) both meanings: (a) presentation of a play on stage etc. (from which is derived the notion of presenting oneself in public) (b) mental image, idea.

### 3.3.1 The framework

Before turning to this point in some more details, it seems relevant to elaborate on some more details of the framework underlying the present section. This framework ('Radical Experientialism' or simply RadEx' in my terms) is a model of linguistic knowledge and linguistic behavior that is grounded (among others) in Radical Constructivism, Gestalt Theory, non-Objectivistic approaches to Cognition (see Lakoff 1987), and Holistic Cognitive Linguistics. As to Radical Constructivism it suffices to quote the famous definition given by Ernst von Glasersfeld (1996: 1):

What is radical constructivism? It is an unconventional approach to the problem of knowledge and knowing. It starts from the assumption that knowledge, no matter how it is defined, is in the heads of persons, and that the thinking subject has no alternative but to construct what he or she knows on the basis of his or her own experience. What we make of experience constitutes the only world we consciously live in. It can be sorted into many kinds, such as things, self, others, and so on. But all kinds of experience are essentially subjective, and though I may find reasons to believe that my experience may not be unlike yours, I have no way of knowing that it is the same. The experience and interpretation of language are no exception.

Accordingly, it is assumed that linguistic knowledge and linguistic 'systems' are ultimately motivated by the complex interaction of perception, by mechanisms of establishing experience, and by very 'simple' (radical), self-mirroring procedures to process them (see e.g. Schulze 2010). By 'perception' is meant any kind of input ('world stimulus', WS) into the neural system processed in terms of cognitive functions, mediated and contorted by sensorimotor devices (see section 3.1). The contortion of the input properties is primarily controlled by the properties of the input device. This means that we see an 'object' differently from how we hear it (without having ever seen it or anything like it before). The same holds for the remaining senses (tactition, olfaction, gustation). In principle, all senses can theoretically account for language-oriented processing of word stimuli. However, the fact that language can be regarded as a strategy to link articulatory patterns to 'cognitive events'<sup>30</sup> determines that audition figures among the most prominent input devices. The second relevant input device is given by vision. RadEx starts from the hypothesis that with human beings, vision represents the most prominent tool to interact with the Outer World (compare Holšánová 2008). The centrality of vision is also documented by the many instances that refer to it in order to symbolize knowledge.<sup>31</sup> Here, it does not matter at what stage during the perception process a visual input becomes interpreted as being 'meaningful'. In RadEx, 'meaning' is seen as the result of secondary processes that link a *ws*' to a memory segment

---

<sup>30</sup> I use the term 'cognitive event' to denote any kind of cognitive activity related to the processing of a world stimulus. Note that in RadEx, a world stimulus can also be cognition-internal: In this case, a certain state of cognition serves as the stimulus for further cognitive activities, such as cogitation (intra-individual communication).

<sup>31</sup> Compare Indo-European \**uoidh-* 'to see' > Lat. *videre* 'to see', Greek εἶδομαι 'to be seen, appear', but οἶδα 'to know' (lit. 'having seen'), OHG *wizzan* 'to know'. See Evans & Wilkins (1998, 2000) for the correlation audition-knowledge and language.

and its symbolization (see below). It suffices to refer to the three-stage model described by Hollingworth & Henderson (1999: 380):<sup>32</sup>

Current computational theories of visual perception tend to break down the perception of meaningful stimuli into three functional stages. First, primitive visual features (e.g., surfaces and edges) are extracted from retinal information. Second, these features are used to construct a description of the structure of a stimulus. Third, the constructed description is matched against stored descriptions.

According to RadEx, a visual stimulus is contorted from the very beginnings of the processing stages, based on a limited number of schematic procedures (see below) and gradually loading the resulting *ws'* with a 'content'. Or, to put it into other words: A *ws'*, that is the state of cognition immediately 'after' its enervation by a (here) visual input, is processed (among other things) with the help of highly abstract schemas, gestalt models, and experience-based 'images', that is may primary and secondary epigenetic rules (see section 3.1).

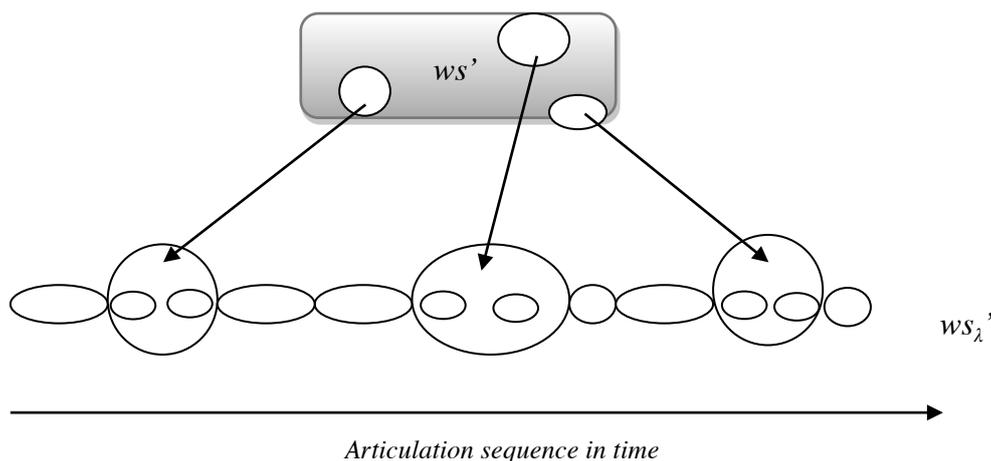
A further contortion is given if the primary input effect (*ws'*) is coupled with an expressive mechanism that is based on sensorimotor processes: As has been said above, RadEx subscribes to the assumption that language results from the conventionalized coupling of categorized and schematized cognitive events with articulatory models grounded in the sensorimotor patterns of respiratory perturbation.<sup>33</sup> If a *ws'* is processed in junction with a corresponding expression model, the properties of this model may immediately influence the gestalt of *ws'*. Note that here, RadEx does not refer to a Whorfian model of language and cognition: It is not a particular structural property of a language that contorts *ws'* but the basic properties of language as such. Among them, the most relevant one is the dimension of linearization: The fact that human beings can 'perturb' their respiration only in sequences requires that a linguistic expression of *ws'* becomes linearized too (one sequence *after* the other, be it on the phonetic, morphological, or syntactic level). Linearization may in parts be iconic with respect to the gestalt of the input, clustering those segments of the input image that are processed together.<sup>34</sup> However, the basic principle of linearization is preserved for two reasons: First, the clusters are arranged one after the other; and second, many such clusters show an inherent linear order especially if they are reflected by compounds in the broadest sense, cf. Graphic (8):

---

<sup>32</sup> The article is one of the many commentaries on Pylyshyn (1999) in the same journal (*Behavioral and Brain Sciences*).

<sup>33</sup> According to this definition, language is respiratory in nature. This does not mean this is the sole means to couple cognitive events with an expression model. Alternatively, human beings can make use of e.g. gesture motor functions (resulting in natural sign languages) or (less conventionalized) mimic (facial) motor functions etc. As for the articulatory domain, RadEx adopts the claim by Jürgens (2000: 1): "Neuroanatomically, the step from genetically determined controlled vocal patterns is associated with the emergence of a direct connection between the motor cortex and the laryngeal motorneurons, a connection lacking in subhuman primates." As Jürgens points out, this connection is strongly related to learning. Accordingly, we cannot claim that there is a primary, iconic relation between the mirroring of WS properties (e.g. actions), the processing of their virtual 'images' in terms of motor functions and the corresponding motorization types of articulation (except for sound symbolic features). In this sense, RadEx only partly adopts the 'neural exploitation hypothesis' (see Gallese & Lakoff 2005, Gallese 2007).

<sup>34</sup> Linearization is already present in visual perception (eye movement). Most likely, parameters of eye movement already pre-shape or influence linguistic linearization (see fn. 27).



Graphic 8: *The linearization of a  $ws'$  in articulation-based symbolization ( $> ws_\lambda'$ )*

The general attitude of cognition towards an incoming World Stimulus is often called *attention flow* (AF, cf. DeLancey 1981). DeLancey's definition of AF is somehow contradictory:

Attention flow determines the linear order of NP's. The NP's in a sentence are presented in the order in which the speaker wishes the hearer to attend to them (...). Events have an inherent natural AF, which recreates the flow of attention involved in actually witnessing the event. (DeLancey 1981: 632).

On the one hand, DeLancey describes some kind of natural iconicity, saying that events themselves have an inherent AF that is mapped onto the linguistic expression of a human witnessing this event. On the other hand, he claims that AF also reflects the cognitive and communicative attitude of a speaker regarding the witnessed event. The latter could not be the case, if the internal structure of an 'event' would force the witness into a corresponding attitude. In this sense, it is perhaps better to start from a definition as given e.g. by Deane (1992: 205) has put it: "Attention flow is the natural sequence by which one attends (prototypically) to an event". The question is, what is meant by 'natural sequence'. From a non-Objectivist point of view, it cannot be given in the event itself (as suggested by DeLancey), see below. Rather, the AF reflects a vast array of parameters in terms of grounded cognition that includes a "diverse collection of simulation mechanisms, sharing a common representational system [that] supports the spectrum of cognitive activities." In addition, "situated action, social interaction, and the environment" constitute relevant parameters (Barsalou 2008: 619). Graphic (8) suggests that the attention flow is also schematized according to a language-based expression model ( $\lambda$ )<sup>35</sup>, resulting in a contorted variant of  $ws'$ , namely  $ws_\lambda'$ . Another schematic effect becomes relevant if we include the attitude of cognition towards the effect the processing of  $ws_\lambda'$  may have on other cognitions, that is

<sup>35</sup> RadEx hypothesizes that the attention towards a WS ( $> ws'$ ) is linguistically indexed if it is loaded with a language-based expressive ( $>$  communicative) presetting.

human beings (*information flow*, IF). Here, cognition is attentive towards a *ws'* to the extent it is stimulated by communicative frames, roles, scripts, all of which are grounded again in experience (the resulting schema is called *attention information flow* (AIF) in RadEx).

The non-Objectivistic layout of RadEx means that properties of ‘real world’ events do not figure as primary descriptors for linguistic ‘products’. In other words, it is not the ‘real world’ that is reflected in or symbolized by linguistic expressions, but only their cognitive ‘images’ already contorted by the attention flow as well as by primary schemas etc. (*diairesis* in terms of RadEx).<sup>36</sup> In this sense, it does not matter, for instance, whether an ‘event’ in the real world is embedded into a causal chain or not: Causality is defined as a secondary constructional schema grounded in the conceptual enrichment of basic schemas such as *change*, *motion*, and *inference* (*reification* in gestalt theory).<sup>37</sup> In addition, we can incorporate the notion of Force Dynamics (Talmy 2000; see Schulze 1998 for a similar approach), however in a much broader sense than proposed by L. Talmy (also compare Cheng 1997). This point will be elaborated in section X. The non-Objectivistic approach thus suggests that in fact everything that is conceptually present in language is the result of *ws'* processing, not of the real world stimulus as such. This hypothesis also includes the assumption that the basic pattern of *ws'*-diairesis is marked for a *gestalt* that is interpreted as an ‘event’ (in the broadest sense). Accordingly, a WS is not mirrored in terms of individual ‘building blocks’ that combine to higher-level structures. Rather, gestalt properties are secondarily isolated in terms of generic indexes that highlight what one may call an ‘active zone’ of the gestalt (taking up a term coined by Langacker (2000)). Consider for instance Image (1):

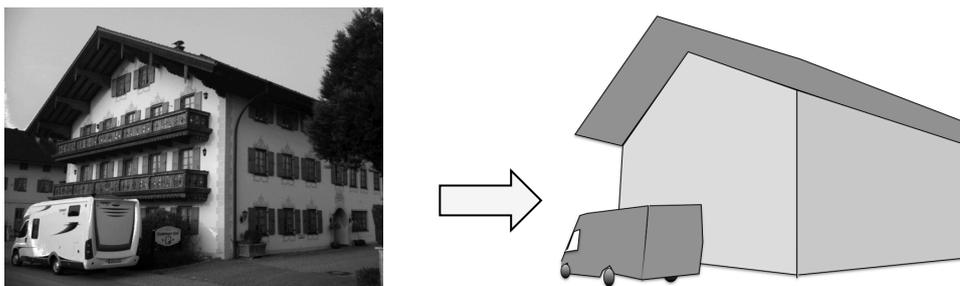


Image 1: *Sketchy illustration of primary active zones in processing an event*

When perceiving the ‘event’ given in the picture on the left, two units are normally singled out in terms of active zones. Most of the other units present in the picture are less salient and are usually not processed at first hand. A possible linguistic reaction on this event might be something like:

<sup>36</sup> This aspect is nicely expressed in Bertolt Brecht’s apophthegm: ““What do you do,” Mr. K. was asked, “if you love someone?” - “I make a sketch of the person,” said Mr. K., “and make sure that the one comes to resemble the other.” - “Which one? The sketch?” - “No,” said Mr. K., “the person.”” (German version: Bertolt Brecht 1971. Wenn Herr K. einen Menschen liebte. In: *Geschichten vom Herrn Keuner*. Frankfurt/Main: Suhrkamp, p.33).

<sup>37</sup> The present framework assumes that ‘causality’ is not a ‘basic’ human concept. This hypothesis is corroborated by the fact that lexical expressions of causality concepts are usually derived via metaphorization or represent more recent borrowings based on source terms such as Latin *causa*, Arabic *sabāb* etc. (see Schulze 2012).

- (9) There is a car in front of the house.  
 A car stands in front of the house.  
 There is a house and a car.  
 A house and a car in front of it.  
 A house behind a car.

The utterances in (9) obviously do not describe the event given in the left picture. Rather, they represent an image of this event<sup>38</sup> already contorted through the various aspects of grounded cognition mentioned above (Langacker’s “construal” in a mere cognitive sense). Looking a bit closer at the structure of the event image represented by these utterances, we see that the (fictive) speaker refers two to units that can be ‘seen’, resulting in corresponding object images (*car*, *house*). Object images are grounded in the human ability to establish ‘object permanence’ in terms of Piaget (1954). Object permanence can be understood as the typical way of appealing to a memory segment (experience) that has become ‘stable’ in time (or: that can be activated by imagination). The resulting conceptual segments thus acquire *referential* properties (also cf. Langacker 2008: 103).

The examples given in (9) illustrate another important point: Whereas the linguistic signs *car* and *house* can be seen as symbols the *signifié* of which relates to referential units or object images, elements such as *stand* or *behind* etc. do not reflect images related to units perceivable through the sensorimotor apparatus: ‘Standing’ for instance is nothing we can see, feel, or hear etc., Rather, we have to deal with an inferential unit: The idea of e.g. *stand\_in\_front\_of* results from the perception of the ‘car’ in its relation to the ‘house’. The same holds for locative expressions such as *in front* or *behind*. This point becomes even more obvious if we think of an utterance like:

- (10) The person is swimming (in the water).

The prototypical idea of ‘swimming’ emerges from at least three factors: The perception of (a) a ‘person’, (b) of ‘water’, and (c) continuous changes in the both the bearing of the person and its location related to segments of the ‘water’, cf. Image (2):

---

<sup>38</sup> The RadEx term ‘event image’ has nothing in common with Langacker’s “canonical event model” that is defined as follows: “[T]he canonical event model represents the normal observation of a prototypical action” (Langacker 1991:285). The non-Objectivistic perspective taken by RadEx suggests that ‘action’ is by itself a cognitive construction. It cannot be ‘observed’ but only construed and projected upon an event image. The event image itself is defined as the final output of the contortion processes related to a given *ws*. In this sense, ‘event’ is a cover term that refers to the construction of both states *and* dynamic processes.

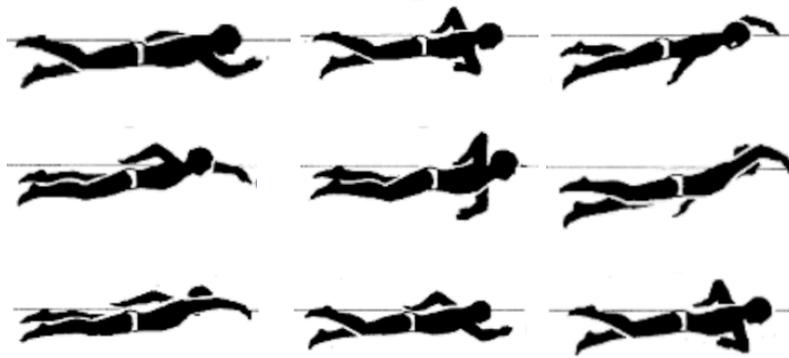


Image 2: A flipbook model of <SWIM>

The idea that we have to deal with some kind of flipbook principle: As Langacker (2008: 109) has put it: “Experientially, apprehending an event is similar to watching a motion picture, as opposed to examining a series of still photographs.” This idea already underlies ‘Zeno’s arrow’ paradox, which says (Aristotle *Physics* VI, 9, 239b5): “[I]f everything when it occupies an equal space is at rest, and if that which is in locomotion is always occupying such a space at any moment, the flying arrow is therefore motionless.” From the viewpoint of Cognitive Linguistics, it is irrelevant how to describe motion in terms of modern physics. The main point is that any kind of process can only be inferred from the perception of objects in relation to another entity, be it a point in space, be it a point in memory. Consider for instance the following utterance:

(11) This rose has grown.

Naturally, we cannot perceive the process of growing itself, also because there are no synchronically observable changes with respect to the location of the rose. However, We are able to say that the rose has grown because we refer to a segment of our memory that includes knowledge of the same rose in an earlier stage, cf. Image 3:

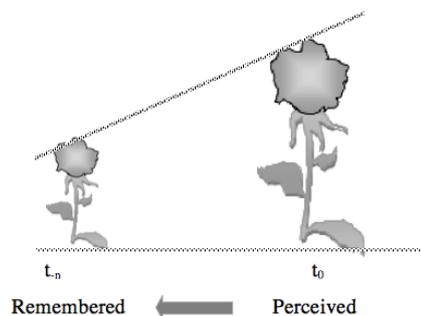


Image 3: A relational pattern of <GROW>

In this sense, the notion of ‘relation’ is a key element in understanding the organization of event images. A relation necessarily involves two units that stand in relation to each other, so that:

- (12) X (in its actual state) is given only if Y (in its actual state) is given.  
 & Y (in its actual state) is given only if X (in its actual state) is given.

This very general formula can have multiple semantic interpretations. In simple terms, we can say: Human beings construe an entity in its properties by simultaneously processes another entity with different properties. Cf. Image 4:

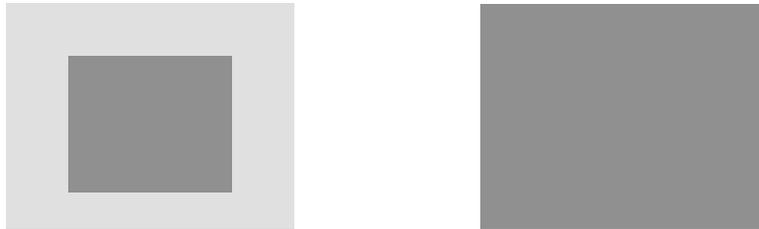


Image 4: *Object with and without F/G discrimination*

The darker rectangle can only be perceived because of the givenness of the brighter rectangle (left). In case both have the same shading grade, no such discrimination can be done. I assume that - as showing up in Image (4) - the most basic schema that contributes to the semantics of relations is the Figure-Ground schema.<sup>39</sup> It is a well-known observation that, with human beings, vision is dominated by binocular disparity (Qian 1997).<sup>40</sup> As one of the results, three-dimensional vision becomes organized with the help of the Figure-Ground schema (itself an emergent property that is also present e.g. in hearing, see Blauert 1996).<sup>41</sup> The overall relevance of this schema has been described by Kurt Goldstein as follows:

Any excitation in the nervous system has the character of a figure/ground process. Any performance invariably shows this figure/ground character (...). Figure and background can be discriminated as readily in speaking, thinking, feeling, etc. (Goldstein 1963:12-13)

The Figure-Ground schema (F/G) conditions that any *ws*' is processed with respect to a more central, salient, and confined structure the borders of which set it apart from its 'background'. In fact, we have to deal with a mutual relationship: No figure without ground and no ground without figure, cf. again (11). Or, as Rosalind Krauss has put it:

(...) a sense that painting's meaning was to be found in the simultaneous separation and intactness of figure and ground, in the gestalt's operation as the concordance between absolute difference (figure versus ground) and complete simultaneity (no figure without ground). (Krauss 1994: 216)

<sup>39</sup> Note that I use the term 'ground' in a very general sense. It is not meant semantically in the sense that it would entail a particular conceptual or categorial dimension. When talking about 'Ground' in the sense of a linguistic localization strategy, I will refer to Langacker's terms *landmark* for 'Ground' and *trajector* for 'figure'.

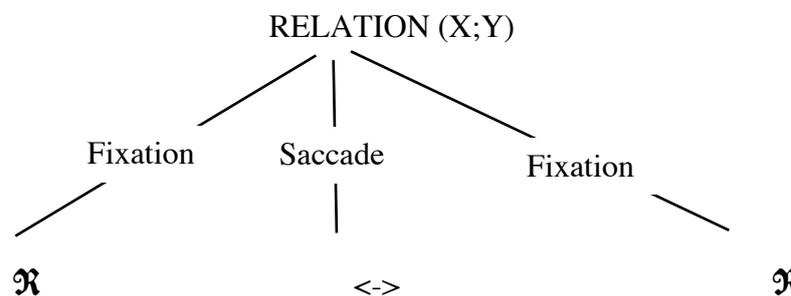
<sup>40</sup> Qiang defines binocular disparity as follows: "We perceive the world in three-dimensions even though the input to our visual system, the images projected our two retinas, has only two spatial dimensions. How is this accomplished? It is well known that the visual system can infer the third dimension, depth, from a variety of visual cues in the retinal images. One such cue is binocular disparity, the positional difference between the two retinal projections of a given point in space." (Qian 1997:359).

<sup>41</sup> The reader may recall the well-known dictum coined by the biophysicist Georg von Békésy: "The purpose of the ears is to point the eyes" (cf. Lehman 2017).

As has been argued above, a relation (and its ‘meaning’) is mainly embodied in objects that are associated in corresponding gestalts. Consequently, relations result from constructional cognitive operations (in the sense of Constructivism) primarily grounded in the overall-architecture of (a) the perceptual system and (b) in the architecture of memory. Here, two terms become relevant, namely *fixation* and *saccade*. Originally, these terms refer to processes of visual perception:

When viewing a still picture (or reading text), the eye picks up information in a series of fixations lasting on average about 220 msec and interspersed with rapid jumps called saccades lasting about 20-40 msec. During saccade, it appears that no useful information is acquired by the eye. (O’Sullivan and Reilly 1997: 166).

Fixation periods thus are highly informative, whereas no information is processed during periods of saccades (also cf. Fulton (2000)). I apply both terms in order to describe corresponding states of cognition, too. Accordingly, fixation lays the ground for object recognition and, once entrenched, for object permanence, whereas saccades set cognition into a state of ‘blindness’. Cognitive blindness (or: cognitive saccades) can be regarded as that state of cognition that allows it drawing inferences from given referents pinpointed during fixation. Cognitive saccades are thus filled with information by referring to knowledge resulting from periods of fixation. The ensemble of a fixation-saccade-fixation sequence (or: fixation-saccade cycle, also. cf. Rucci, McGraw, and Krauzlis (2016)) is construed in terms of a common gestalt that evolves into the matrix of event images. Sequences of the type ‘fixation saccade fixation’ come close to relational structures of the type  $X \leftrightarrow Y$ : The relational element (henceforth called *relator* (REL, or  $\leftrightarrow$ ) in this section) shows up as a cognitive saccade, whereas the units processed during fixation correspond to *referents* ( $\mathfrak{R}$ ) cf. Graphic (9):



Graphic 9: *The basic structure of a cognitive relation*

In perception, this basic schema is structurally coupled with the Figure-Ground schema mentioned above. Although the F/G schema primarily is a pre-conceptual schema, it is intimately related to rudimentary aspects of categorization, cf. Schacter, Gilbert, Wegner, and Hood 2016: 155:

Size provides one clue to what’s figure and what’s ground: smaller regions are likely to be figures (...). Movement also helps: your lecturer is (...) a dynamic lecturer, moving around in a static

environment. Another critical step towards object recognition is *edge assignment* (...). If the edge belongs to the figure, it helps to define the object's shape, and the background continues behind the edge. (Italics in the original).

The main point is that although the relation of Figure and Ground by itself is bi-directional establishing a mutual dependency (see above), it is turned into a more mono-directional schema because of the fact that Figure is more salient than Ground, cf. Image (5):

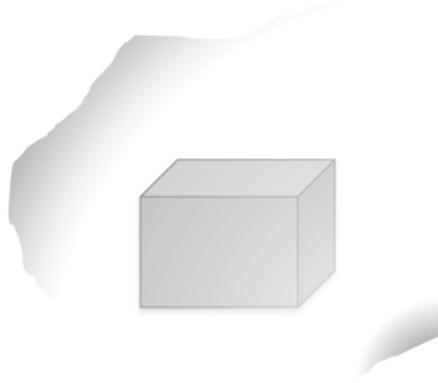
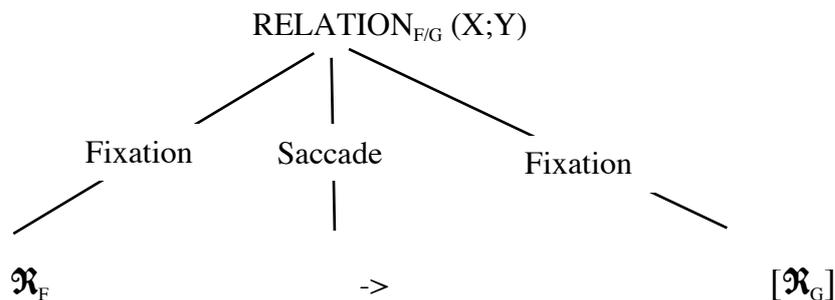


Image 5: *Figure with fuzzy Ground*

Accordingly, the schema given in Graphic (9) becomes conceptually enriched with respect to at least three basic factors: (a) The referents are profiled differently as for their properties; (b) one of the referents is more salient than the other thus acquiring the notion of Figure. As a matter of result, an asymmetrical structure emerges. (c) The fact that one referent is salient conditions that the other becomes less salient and less relevant with respect to the information structure of the whole. Hence, the following concretization of the schema given in Graphic (9) shows up:



Graphic 10: *The F/G structure of a cognitive relation*

Hence, an event image is primarily perceived by activating the Figure-Ground schema resulting in the discrimination of at least two referents. However, the more salient the referent in Figure function becomes the less the referent in Ground function is processed cognitively. From a prototypical point of view (disregarding any frames, factors of empathy and so on), the following features are usually attributed to Figure and Ground:

(13)	Figure	Ground
	<i>Smaller</i>	<i>Larger</i>
	<i>With boundaries</i>	<i>Without boundaries</i>
	<i>More accessible</i>	<i>Less accessible</i>
	<i>More salient</i>	<i>Less salient</i>
	<i>More mobile</i>	<i>Less mobile</i>

In principle the F/G schema shows up in terms of the corresponding values given to the referents resulting from fixation. That is quite in line with the general understanding of relations, according to which the function values of a relation are embodied in the units included in this relation. Hence, cognitive saccades (or: relators) only interpret the underlying relation without being substantial by themselves. Nevertheless, they gain a conceptual value through inference, cf. again Image (4): The two referents ‘person’ (obviously in Figure function) and ‘water’ (symbolized by the regions below the horizontal lines) are related in away that allows the inference of <SWIM>. The more this schema becomes entrenched (allowing different representations of Figure and Ground as long as they are compatible with a given categorization), the more some kind of *relational permanence* emerges. Relational permanence is less discrete than object permanence: Usually, the relation between two or more referential segments present in an event image becomes stabilized (‘permanent’) in combination with a hypothesis about the presence of typical referential entities. Thus, the concept <SWIM> includes knowledge about a ‘swimmer’ and some kind of liquid substance in which the act of swimming takes place. In this sense, relational permanence is much closer to the original event image than isolated gestalt properties construed as referential entities.

As has been said above, the isolation and reification of gestalt properties is a secondary process that links a *ws*’ to memory segments (both individual experience and convention). In other terms: Segments isolated from an event image are cognitive artifacts, *not* primary entities that would constitute an event image. In this sense, even isolated object images are derived from secondary processes of reification and de-contextualization: Normally, people do not think of objects (in terms of object images) ‘as such’, but rather co-activate prototypical event images associated with these object (images). This holds the more for concepts activated in terms of relators.

In sum, we can assume that event images are minimally two-place relational structures, controlled by the F/G schema. In this sense, the assumption of the cognitive basicness of one-place relations as advocated for by quite a number of researchers (see the discussion in section 2). The interpretation of the Two-Streams Hypothesis (‘what’ vs. ‘where/how’) in terms of THING + PROCESS (using Langacker’s terminology) obviously relies to much on the linguistic output (see section 3.1). It seems more adequate to link this hypothesis first to the F/G schema by saying that the two streams process the Figure-Ground schema (Figure = ‘what’, Ground = ‘where’). In order to account for the fact that the dorsal pathway (‘where/how’) is also relevant for processing information regarding motion (see section 2), we have to think of some kind of amalgamation process that couples the Ground unit (‘where’) with the inferred relator (‘motion’), cf. Table (4):

	WHAT	[HOW]	WHERE
	X <sub>F</sub>	[->/MOVE]	Y <sub>G</sub>
=>	X <sub>F</sub>		-> Y <sub>G</sub>
=>	X <sub>F</sub>		-> [Y <sub>G</sub> ]
=>	X <sub>F</sub>		->

Table 4: Amalgamation processes within the dorsal pathway.

The bracketed units symbolize either inferred segments (HOW) or masked segments ([Y<sub>G</sub>]). Table 82) illustrates that the dorsal pathway, originally processing a Ground unit (WHERE), incorporates the inferred relator (that cannot be part of vision) resulting in the cluster -> Y<sub>G</sub>, or, if the Ground becomes fully masked, in the locus of processing the inferred relator. Hence, the final output (X<sub>F</sub> ->) comes close to Langacker’s THING-PROCESS schema, but we cannot say that this schema is primary.

Coming back to the question of schematization and archetypes alluded to in section 3.2, it seems appropriate to relate the F/G-schema to the world of primary epigenetic rules, that is to the dimension of pre-conceptual schematization. From a bottom-up perspective, it is tempting to refer to what Grady (2005b: 47-48) has described as “the “superschematic” level of conceptual organization (...). It includes information like the following: *Ontological category (...), Scalarity and Dimensionality; Aspect (...), Boundedness, Arity (...), Trajectory-Landmark structure (...), Causal structure, Profile-base structure, simple vs. Complex (...).*” (Italics in the original). The concept of superschematic structures is mainly applied to Primary Metaphor Theory (Grady 1997, 2005a), cf. Evans (2007: 207) who defines superschemas as “[t]hose elements of conceptual structure that are shared both by the primary target concept and the primary source concept in a given primary metaphor.” Nevertheless, such ‘superschematic structures’ as the Trajectory-Landmark structure or the Causal structure are also relevant to the archetypical conceptualization of the F/G-schema, see below. Accordingly, such structures are related to the conceptual, not to the pre-conceptual domain of patterns relevant to the processing of event images. In this sense, superschematic structures come more close to archetypical images than to pre-conceptual schemas.

Given the fact that the Figure-Ground discrimination is coupled with basic gestalt principles such as shape and adjacency, it nevertheless entails some primitive conceptual aspects projected onto the referential domains. In addition, we can assume that a primitive categorization effect occurs with respect to the inferential unit, i.e. the relator: In case the F/G-schema is marked for the more or less same Ground region over some times, the relator acquires the notion of ‘state’. In case the Ground changes relative to the position of Figure, a motion event is likely to be construed, cf. Image 6:<sup>42</sup>

<sup>42</sup> It should be noted that when processing an event as illustrated in Image (6), the epigenetic rule of object permanence is activated, too: Theoretically, the ball in G<sub>1</sub> is different from the ball in G<sub>2</sub> and so. Infants that have not yet developed object permanence would process the event in terms of a variant of the so-called A-not B error: In case parts of the motion event were hidden (e.g. by an object placed between the observer and the Figure (ball)), the resulting pattern (something like „Ball(G<sub>1</sub>) [.....] Ball(G<sub>2</sub>)“) would be processed as if there were two different balls (Ball<sub>x</sub>(G<sub>x</sub>) - Ball<sub>y</sub>(G<sub>y</sub>)), cf. Piaget (1954). In addition, memory plays a crucial role in processing events as described in Image (6): The perception of e.g. Ball(G<sub>2</sub>) differs from that of Ball(G<sub>1</sub>), because when perceiving Ball(G<sub>2</sub>), the perceiver already knows about Ball(G<sub>1</sub>).



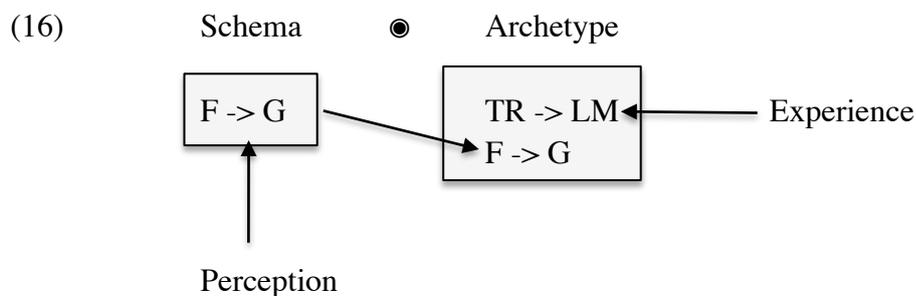
Cánovas (2014: 517) emphasize the fact that the path-goal pattern plays a crucial role in the perception of 5-month infants:

What matters for infants are direct paths that go to an object or location, or multiple paths that go around obstacles and end at an object or location. These are understood as goal paths even when no information is given about the source of the paths.

A path-goal pattern, however, only makes sense if we relate it to the trajectory/landmark schema. There must be something moving along the path - else the path itself would not be processable. This ‘something’ can be easily identified with a ‘trajector’ (TR), as opposed to the goal that corresponds to a landmark (LM). Mandler and Pagán Cánovas (2014: 521) also stress the fact that “[a]lthough [infants] can reach out to objects, they cannot move themselves around in the first few months and have limited ability to handle objects, which in any case must necessarily be small and light.” This observation illustrates that spatial primitives are primarily grounded in exteroception. Nevertheless, the TR/LM schema itself - represented by image schemas that derive from spatial primitives - cannot be regarded as a primary schema, cf. Gibbs and Colston (1995: 349): “Even though image schemas are derived from perceptual and motor processes, they are not themselves sensorimotor processes.” Hence, it is reasonable to assume that the TR/LM pattern comes more close to the notion of archetypes as discussed in [section 3.1](#) than to that of schemas:

(15) Schema           =>            Archetype  
       F -> G                        TR -> LM

The formula in (15) does not mean that the F/G-schema is replaced by the TR/LM-archetype. Rather, we have to deal with structural coupling as [defined in section 3.1](#). Starting from the hypothesis that archetypes are primitive relations that conceptually enrich (in the given case) the F/G-schema, it is reasonable to assume that the relational nature of the TR/LM-archetype is derived from the F/G-schema that is still present cognitively when the TR/LM-archetype is activated. In this sense, the structural coupling (symbolized by  $\odot$ ) entails hierarchical features, which necessitates a modification of the formula given in (15):

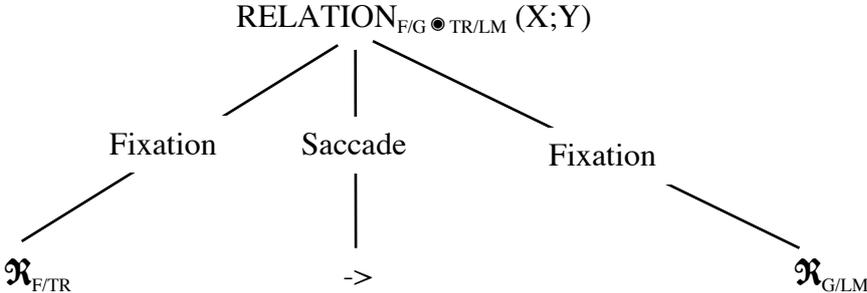


The global TR/LM-archetype coupled with the F/G-schema roughly corresponds to what Gibbs (2006: 91) calls “spatial patterns”, cf.: “Image schemas are more abstract than ordinary visual mental images and consist of dynamic spatial patterns that underlie the spatial relations and movement found in actual concrete images”. Still, there is one major difference with

respect to Gibbs' formulation: Here, the TR/LM-archetype is seen as the most primitive and most basic spatial pattern that is further elaborated in terms of archetypical images (see section 3.1). Most importantly, I do not distinguish (on the level of the TR/LM-archetype) between dynamic and static relations. Above, I have claimed that both mental categories are emergent from perceptual processes and corresponding schemas. Nevertheless, both are grounded in the two-place F/G-schema that only tells that two referential units (of which nature so ever) are construed as standing in a mutual, nevertheless asymmetric relation (by identifying a Figure in demarcation from its Ground). The inferred relator may then take different places on a scale of dynamicity, cf.:

(17) More Stative ○○○○○○○○○ More dynamic

Many of the image schemas described in the literature (e.g. Johnson 1987, Lakoff 1987) are ultimately grounded in the TR/LM archetype, cf. images schemas (or: archetypical images) such as 'center/periphery', 'over', 'contact' etc. These relations hence reflect instantiations of the F/G-schema coupled with the TR/LM-archetype, cf. Graphic (11):



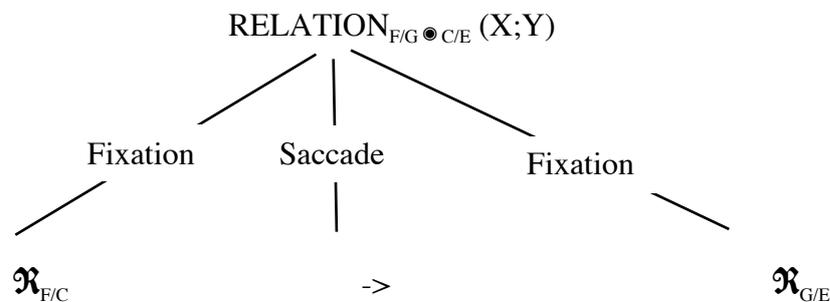
Graphic 11: The coupling of F/G and TR/LM in a cognitive relation (F=TR, G=LM)

Further processes of conceptual enrichment of the F/G schema are also related to the set of secondary epigenetic rules paralleled with archetypes in [section 3.1](#). Apart from the TR/LM archetype discussed above, the most prominent type is related to the dimension of causality. It is a matter of debate whether the causal schema itself, that is the ability to activate a causal hypothesis, is based on innate abilities, or whether it is emergent from learning. From a linguistic point of view, however, this question is of less relevance because there is sufficient evidence that the linguistic representation of causal schemas is ultimately derived from the F/G schema (see Schulze 2012). Obviously, causal schemas are part of social cognition. For the purpose of the present section, it is not relevant to address the question of why and how people attribute causes to the givenness of objects, states, and processes in the world and to the fact that they can perceive them. Nevertheless, it can be assumed that the coupling of a perceived unit with a particular type of sensorimotor 'event' that takes place during perception: When seeing a dog and hearing a barking, we usually infer that the dog is the cause for the perception of barking. Hence the feature 'cause of barking' is attributed to the dog. The resulting model is: If I perceive something, there must be a unit that causes what I

perceive.<sup>44</sup> It seems appropriate to relate this pattern to archetypes in the sense of C. G. Jung as discussed in section 3.1. In this sense, causal relations that also entail features of force dynamics (Talmy 2000) and of Langacker’s billiard model<sup>45</sup> are marked for two values attributed to the participants in an event image: Cause (C) and Effect (E). As can be inferred from Attribution Theory, the C/E schema is marked for an asymmetrical relation: Here, two perspectives have to be distinguished: From an experiential point of view, the Effect domain has primacy over the Cause domain: Only if something given of which I think that it is an effect, a cause should be given. On the other hand, the asymmetry may go the other way: I can assume that something is a cause only, if an effect is given. These two versions can be summarized as follows:

- (18) a. No effect without a cause.  
 b. No cause without an effect.

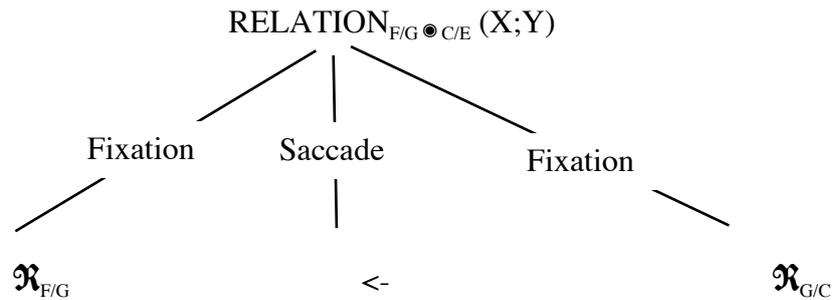
In (16a), the defined unit (or: *determinatum*) is the effect, and its attribute (or: *determinans*) the cause. In (18b), just the opposite is the case. In other words: In (16a), it is the effect that is Figure, whereas the cause is Ground. In (18b), it is the cause that is Figure, and the effect that is Ground. Accordingly, the relation C → E is structurally coupled with the F → G-schema, resulting in two basic variants, cf. Graphic (12) and (13):



Graphic 12: The coupling of F/G and C/E in a cognitive relation (F=C, G=E)

<sup>44</sup> See the different approaches to Attribution Theory, going back to Heider (1920, *non vidi*). Malle (2011: 73) summarizes Heider’s underlying ideas as follows: “Perceivers faced with sensory information thus experience perceptual objects as “out there” because they attribute the sensory data to their underlying cause in the world”.

<sup>45</sup> Compare: “[The billiard-model] is our conception of objects moving through space and impacting one another through forceful physical contact. Some objects supply the requisite energy through their own internal resources; others merely transmit or absorb it. Based on this cognitive model is an additional archetypal conception, that of an action chain.” (Langacker 2008: 355).



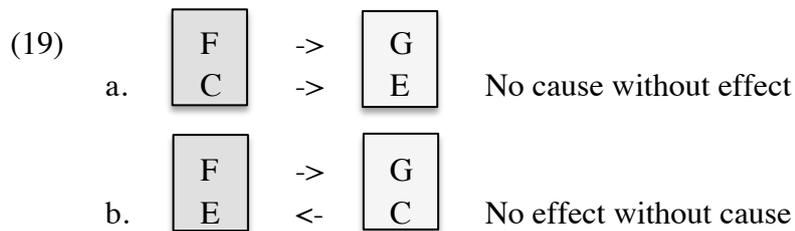
Graphic 13: *The coupling of F/G and C/E in a cognitive relation (F=E, G=C)*

The dot given in the label “F/G ● C/E” again denotes structural coupling. Note that in Graphic (13), the arrow has been turned around: this indicates that the causal stream (from cause to effect) is maintained (anything else would be contra-intuitive). The two graphics illustrate that the C → E-schema cannot be regarded as an extension of the F → G-schema. Rather, it results from the coupling of a secondary epigenetic rule (C/E, archetype) with a primary one (F/G, schema). Still, as has said been above, the two relational types originate from different cognitive layers: Whereas F/G is immediately related to the sensorimotor system, the C/E relation is experiential in nature. Note that I distinguish perception from experience: I use the term *perception* to denote any process relating to the sensorimotor way of processing a world stimulus, whereas experience results from the entrenchment of analogous images of such world stimuli. In this sense, C/E is strongly coupled with memory and knowledge.

Think of the following example: I see someone lying on the street with a wound on the person’s head (Figure). Some meters behind the person there is another person holding a baseball bat (Ground). By itself, the sensorimotor input does not tell me anything about the nature of a possible relation between these two persons. Nevertheless, I will probably establish a causal relation of the type <PERSON(baseball bat)><sub>C</sub> <HIT> <PERSON(wounded)><sub>E</sub>. I can do this because I have a corresponding cognitive model in memory that allows me attributing the value Cause to the person with the baseball bat (in terms of Attribution Theory). This model again is grounded in the general idea that if an entity is different from my prototypical image of this entity, there must be another entity to which the value Cause can be attributed that accounts for the difference. In other words: Although the individual instantiations of Causal event images are strongly controlled by social and cultural knowledge (based e.g. on Jung’s ‘archetypical images’, see [section 3.1](#)), there is an underlying knowledge segment (archetype) that schematically represents a cognitive model of Causality (also cf. Leslie (1982, 1994) for the question of whether young infants already know concepts of causality). As Leslie (1994: 130) has put it: “[I]mage schemas are said to underlie the infant’s notions of causation (launching), containment, and agency.” What ever is meant by “underly”<sup>46</sup>: The fact that this Causal archetype (C/E) can be

<sup>46</sup> Superficially, one might think of a metaphORIZATION process. However, metaphORIZATION normally presupposes symbolic structures (maintenance of the signifiant layer, but shifts within the signifié layer of symbolic units). It may be argued that metaphORIZATION is also given just conceptually, coming to close to the notion of ‘mapping’ (see Schulze 2009 for a discussion).

structurally coupled with the F/G-schema (embodied in image schemas) in two ways (cf. Graphics (12) and (13)) suggests that this coupling is part of cultural knowledge (as discussed in social psychology, cf. Karpiński 1990, Malle 2011). (19) summarizes this point in simple terms:



These two options ground in the same principle, namely to give relational value to two segments in a relation. As it is true with the relator in the F/G-schema, the causal relator itself cannot be processed as such. It again is an inferential unit that only shows up in the attributes of the referents related in a given event image. Just as it is true for the F/G-schema, the segment in a causal relation that is coupled with Ground may become blurred or may fuse with the inferential relator. Nevertheless, one has to admit that both masking of Ground and conceptual Ground incorporation are difficult to prove with respect to purely cognitive, that is pre-linguistic processes. Linguistically, such processes typically result in unaccusatives / unergatives (masking, see e.g. Susumo and Takami 2004) and O-incorporation, cf.:

(20) [The person]<sub>F/C</sub> eats [Ø]<sub>G/E</sub>                      Unergative  
 [The door]<sub>F/E</sub> closes [Ø]<sub>G/C</sub>                      Unaccusative

(21) a. [bezi xunči-n-en]<sub>F/C</sub> [me aš-n-ux]<sub>G/E</sub>                      b-i-ne  
 my sister-SA-ERG PROX work-SA-DAT2 do-PAST-3SG  
 ‘My sister did this work.’

b. [bezi xunči]<sub>F/C</sub> aš-ne-b-i  
 my sister.ABS work-3SG-LV-PAST  
 ‘My sister works.’    [Udi, Vartashen dialect]

(21b) illustrates a typical example of noun incorporation (cf., among many others, Mithun 1984, 1986). Whereas (18a) is marked for the standard pattern  $X_{F/C} \rightarrow Y_{G/E}$ , (18b) is marked for the incorporation of the G/E element into the relator domain, resulting in the seemingly intransitive structure  $X_{F/C} \rightarrow Y$ . Most likely, processes such as G-masking and G-incorporation are neither purely linguistic/ discursive nor purely pre-linguistic strategies (see below).

In sum, the structure of pre-linguistic cognitive event images is obviously dominated by the two-place relational schema F/G structurally coupled with the C/E archetype in case a causal model is co-activated during perception. It has to be emphasized that the resulting schemas do not fully account for the structure of individual event images in all their details. In fact I assume that such individual event images are elaborated on the basis of these schemas

by coupling them with further cognitive strategies such as categorization, metaphorization / metonymization, blending, attention and so on as well with aspects of memory and situational knowledge. All these factors, however, are essentially based on the givenness and activation of the above-mentioned schemas. As has been said above, the schematic relation F/G and the more archetypical relation C/E have one point in common that is crucial to the topic of this section: They both involve at least two referential units linked together in the basic structure of a given event image with the help of an inferential procedure (*relator*). Here, it does not matter to which extent one of the object images (usually the Ground) is blurred or fully masked. The cognitive processing of such an object image (or *referent*) presupposes that it is originally given. A primary one-place structure ( $X \rightarrow$ ) as discussed in section 2 of this chapter cannot exist, because one cannot discriminate and identify an entity in the world without referring to another entity that is different from this entity. In other words: As soon as I construe an object image in an everyday-situation, I also construe another one that stands in relation with or that I relate to this object image. This even holds for simple attributions. Consider for instance the following two ball in Image (7):



Image (7): *A black and a grey ball*

Obviously we do not perceive a ball without any color and add a value of *black* or *grey* to that abstract entity. Rather, we activate two gestalt segments at the same time (shape and color). In addition, we process the blackness of the ball only because we know that there might be other balls colored for instance in grey. If we had never experienced balls other than black balls, we would probably not process the blackness of the ball at all. Hence, the ball (figure) is placed in a (admittedly rather abstract) Ground <blackness> that delimits the object image from other possible color grounds. The primary schema would thus be something like (22):<sup>47</sup>

(22) BALL<sub>F</sub>             $\rightarrow$         BLACKNESS<sub>G</sub>

Even if we think of an event images such a person being dead (neglecting any situational settings and so on), we process this event image by referring to a Ground that entails our knowledge that a dead person must have been alive before becoming dead.<sup>48</sup>

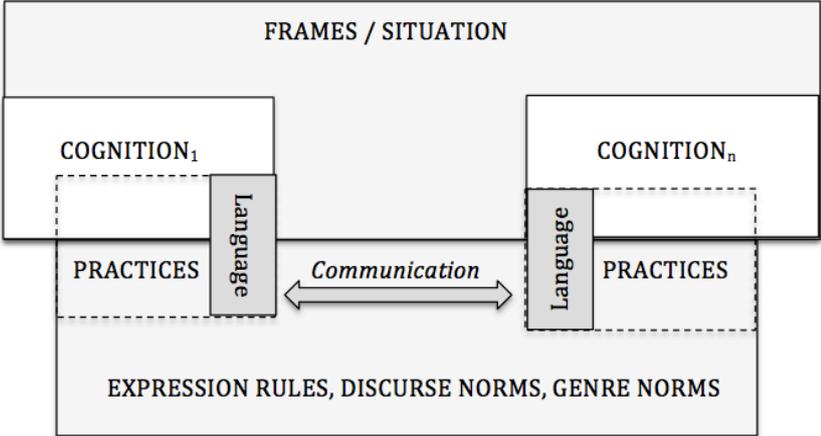
I will call the basic two-place relation as present with the F/G-schema or the C/E-archetype “Cognitive Transitivity”. I am well aware of the fact that the term might cause

---

<sup>47</sup> Compare construction like (English) *man in black*, *woman in red* that copy exactly the schema given in (19).

<sup>48</sup> Compare the following line from Harold Pinter’s poem ‘Death’: “How well did you know the dead body?” In a simple interpretation, the expression “dead person” can be parsed in this sentence only, if processed as “the person (when living) who has turned into the dead body”; also consider phrases like (German) *Kannten Sie den Toten? War er öfters bei Ihnen?* (lit.: ‘Did you know the dead? Was he with you frequently?’) typically occurring in detective stories.

irritations because *transitivity* is usually seen as a linguistic feature. More concretely, we have to start from a binary relation ( $A \times B$ ). I have taken the term *Transitivity* in order to account for the fact that in linguistics, such binary relations are usually labeled ‘transitive’. By ‘cognitive’ I mean that this binary relational schema is firstly grounded in cognition, as described above. In section 3.1, I have argued that the cognitive system controlling linguistic representations and linguistic practices forms a fuzzy subset of the overall-cognitive system. Accordingly, we cannot expect that features derived from Cognitive Transitivity are mapped 1:1 onto linguistic expressions. Nevertheless, is one of the basic claims of the present text that the way the schematic structure of event images is symbolized in linguistic utterances is ultimately derived from Cognitive Transitivity. This does not necessarily mean that transitivity would be the preferred argument structure in terms of Du Bois (2003). Multiple processes related to language learning, communication, entrenchment and conventionalization, sociocultural expression rules, patterns of categorization, frames, context and cotext (just to name a few parameters) and language diachrony may have a strong impact on the actual routines to linguistically encode the schematic structure of event images. In the following section, I want to illustrate this point with the help of illustrative examples. The section is meant neither as a comprehensive coverage of all relevant strategies nor as a corresponding typological overview. The main intention of the next section is to show some of the pathways from general cognition to ‘linguistic cognition’ with respect to dimension of Cognitive Transitivity. The underlying hypothesis is that the conceptual worlds symbolized in linguistic utterances are represented by more than just the overtly expressed linguistic units or constructions, cf. Graphic (14):

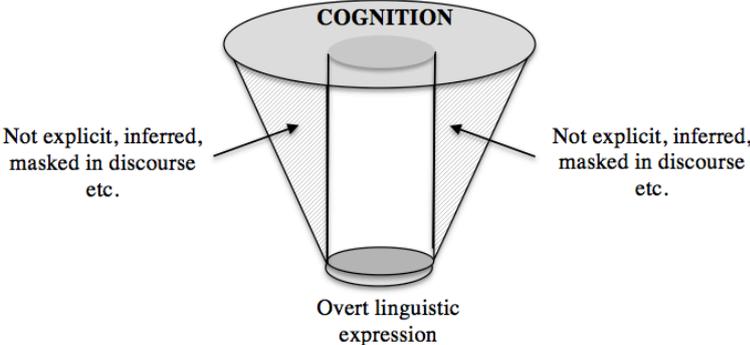


Graphic 14: A simplified model of grounded language

The graphic models the language-based communication interaction between 1-n cognitive systems (in fact, human beings) sharing a common linguistic knowledge system (‘language’). Linguistic practices (in fact the signifiant side of constructions, see section 3.1) are coupled with a fuzzy subset of the whole of cognitive functions, processes, and knowledge colored by given frames and situational knowledge shared by individual cognitions (backstage cognition in terms of Fauconnier (1999), see section ...). Linguistic practices again are socially and culturally controlled by a set of expression rules, discourse norms, and genre knowledge. For the purpose of the present text it has to be stressed that it is virtually impossible to separate

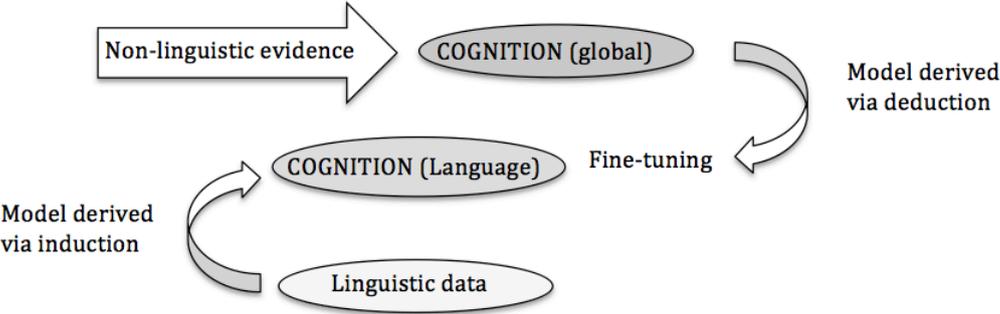
linguistically symbolized segments of cognition from the overall ‘state’ of a cognitive system by the time of given linguistic practices. Hence, linguistic practices may be grounded in a broader spectrum of cognitive processes and patterns of knowledge than symbolized by the linguistic structures of these practices.

This assumption conditions that for instance the reconstruction of the signifié dimension of schematic constructions cannot simply start from what is present and given in a linguistic utterance (see e.g. Croft 2001). In fact, we are faced with a hermeneutic problem: If the inductive procedures are at risk to reflect only parts of those cognitive factors that condition the meaning of a given utterance in its situational, communicative and knowledge frames, cf. Graphic (15):



Graphic 15: *Explicit and implicit linguistic representation*

Usually, such implicit domains are related to presuppositions, frames, genres, and situational knowledge. Still, I argue that schematic structures, too, are to be included here. In this sense, the F/G schema may only partially be represented in a linguistic utterance, although it is fully or at least to a greater extent processed in cognition. From a hermeneutic point of view, we thus have to access the reconstruction of schematic meaning as given in schematic constructions (instantiated as constructs) by deductive operations, too cf. Graphic (16):

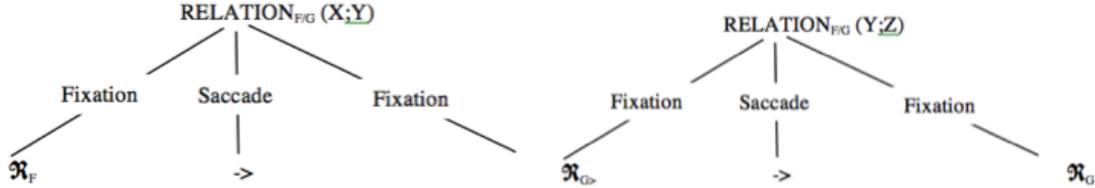


Graphic 16: *Inductive and deductive reasoning*

We can hence ask, to which extent and why the original two-place schema F/G resp. its archetypical causal variant C/E are contorted in linguistic utterances to an extent that the resulting schematic constructions show a strong preference for one-place relations in terms of the preferred argument structure.



In this sense, one might assume that multilayered Grounds ultimately derive from the amalgamation of two two-place relations,<sup>50</sup> e.g.

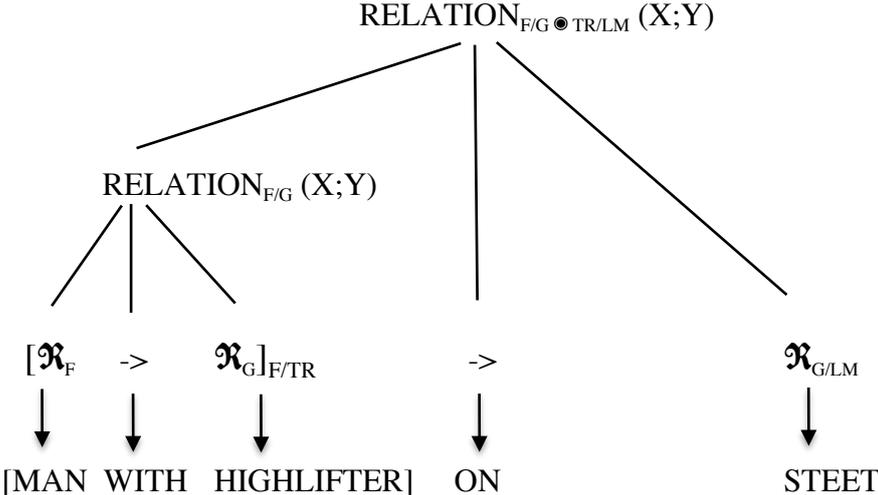


Graphic 17: The amalgamation of two two-place relations

The Ground that serves to identify a Figure can be called ‘primary ground’. It acquires features of Figure as soon as it is linked to another (secondary) Ground. The link between a primary and a secondary ground plays the same role (*relator*) as the link between Figure and Ground:

$$(27) \quad F \quad \rightarrow \quad G_1 \quad \rightarrow \quad G_2$$

It should be noted that the above-given analysis depends on the degree to which the Figure domain is resolved. As has been indicated in (23 and (24), one possible linguistic reaction would be something like [a man with a highlifter]. In this case, the two object images <MAN> and <HIGHLIFTE> are grouped together forming a more complex object image, whereby the internal structure of this unit is asymmetrical. In fact, we have to deal with another schematic structure that organizes units within a referential cluster cf. Graphic (18):

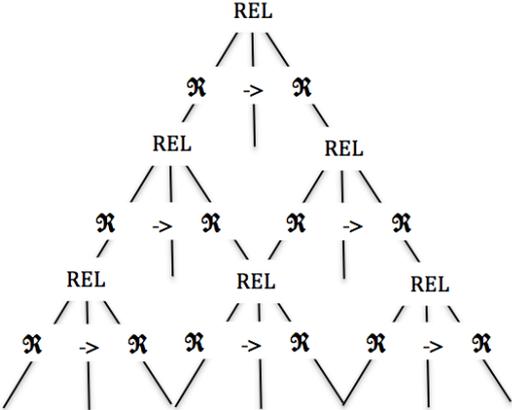


Graphic 18: Example of a relational cluster with the Figure domain

The main point is that according to this interpretation the Figure within the ON-relation is marked by itself again for a relational structure, represented by the WITH-relation. This way,

<sup>50</sup> The number of ground segments (or chunks) processable in short-term memory is limited. Recent research suggests a mean memory capacity in adults of 3 to 5 chunks (Cowan 2001), thus revising the famous ‘magical number 7 plus minus 2’ (Miller 1956). This assumption goes together with the linguistic observation that in non-technical, non-literary texts, the number of overt referential segments rarely exceeds three/four.

a copy of the relational structure  $X \rightarrow Y$  given on the macro-level ( $X$  on street) occurs on the micro-level represented by  $X$  (man with highlifter). This type of copying is well known from patterns characterized by self-similarity or scale invariance (see Schulze 2009). Accordingly, the macro-structure (the ‘whole’) has the same shape as one or more of the parts of this structure. Graphic (19) gives an example of such a pattern projected upon the two-place relation under discussion:



Graphic 19: Model of a self-similar complex of two-place relations

The degree to which a complex structure as illustrated by Image (8) is resolved depends from many factors, most of which can be related to the attention flow, to referential knowledge, actual properties of the objects processed as object images, degrees of empathy and so on. Hence, one cannot claim that all event images are ultimately processed exactly in accordance with the model given in Graphic (19). Different degrees of amalgamation, resolution, and referential masking may apply leading to distorted versions of this model. The model is grounded in the assumption that cognitive complexity emerges (among others) from magnification processes based on scale invariance. In this sense, only few basic structures (in Graphic (19) in fact only one) are needed to produce highly complex structures.

By itself, it is rather unlikely that we can find linguistic utterances that would fully match the pattern given in Graphic (19). Nevertheless, the invented example in (28) below may help to illustrate a more complex structure:

(28) The father of the woman’s friend drove to with the merchant’s wife to a house near the park when a man from London stopped him on the road.

Graphic (20) applies the model given above to this complex sentence:



*taulai ber šal ire-bei keme-gsen-diir*  
hare TOP splash come-PAST say-PART.PAST-LOC

*üinege basa dutaya-bai.*  
fox thus flee-PAST

‘Once, when some hares were/lived beside a lake, when the hares heard that a sound came up making splash, while fruit from a tree at the edge of the water fell into the lake, when having become afraid and fleeing, when meeting a fox, when the fox said ‘what is?’, when the hares said, that a splash has come out, the fox thus fled.’ (Near-literal translation).

This complex sentence entails ten subordinated clauses and one final matrix clause (disregarding the units given in the direct quotes). In the following table the embedded relational structures are separated:<sup>51</sup>

	$\mathfrak{R}1$	$\mathfrak{R}2$	->
1	[hares] <sub>NP,S</sub>	[at lake] <sub>NP,LOC</sub>	[be] <sub>VP,SUB</sub>
2	[fruit of tree at edge of lake] <sub>NP,S</sub>	[water] <sub>NP,LOC</sub>	[fall] <sub>VP,SUB</sub>
3	[splash] <sub>NP,O</sub>		[say] <sub>VP,SUB</sub>
4	[sound] <sub>NP,S</sub>		[come_out] <sub>VP,SUB</sub>
5	[hares] <sub>NP,A</sub>		[hear] <sub>VP,SUB</sub>
6			[fear] <sub>VP,SUB</sub>
7			[flee] <sub>VP,SUB</sub>
8	[fox] <sub>NP,LOC</sub>		[meet] <sub>VP,SUB</sub>
9	[what_is] <sub>NP,O</sub>		[say] <sub>VP,SUB</sub>
10	[hares] <sub>NP,A</sub>	[splash_has_come] <sub>NP,O</sub>	[say] <sub>VP,SUB</sub>
11	[fox] <sub>NP,S</sub>		[flee] <sub>VP</sub>

Table 5: A segmentation of example (29) according to event images (overt elements only)

Superficially, the data given in Table (3) suggest that the Mongolian passage comes close to the Preferred Argument Structure as described by Du Bois (2003), that is dominated by one-place relations. Still, it comes clear that structures for instance like *ayuǰu* ‘having become afraid’ or *dutayayad* ‘fleeing’ do not represent full event images. The same holds e.g. for *üinegene učiraysandur* ‘meeting a fox’. If we include referential units that can be inferred from the co-text and from context (see section 2 of this text), another picture emerges, cf. Table (6):

<sup>51</sup> As Middle Mongolian is dominated by verb-final patterns, the table is not arranged according to the model of the X/Y relation (X -> Y) used in the preceding sections of this paper. S, A, O refer to the corresponding grammatical relations.

	$\mathfrak{R}1$	$\mathfrak{R}2$	->
1	[hares] <sub>NP.S</sub>	[at lake] <sub>NP.LOC</sub>	[be] <sub>VP.SUB</sub>
2	[fruit of tree at edge of lake] <sub>NP.S</sub>	[water] <sub>NP.LOC</sub>	[fall] <sub>VP.SUB</sub>
3	[ $\emptyset$ ] <sub>NP.A</sub>	[splash] <sub>NP.O</sub>	[say] <sub>VP.SUB</sub>
4	[sound] <sub>NP.S</sub>	[ $\emptyset$ ] <sub>NP.LOC</sub>	[come_out] <sub>VP.SUB</sub>
5	[hares] <sub>NP.A</sub>	[ $\emptyset$ ] <sub>NP.O</sub>	[hear] <sub>VP.SUB</sub>
6	[ $\emptyset$ ] <sub>NP.S</sub>	[ $\emptyset_{INF}$ ] <sub>NP.LOC</sub>	[fear] <sub>VP.SUB</sub>
7	[ $\emptyset$ ] <sub>NP.S</sub>	[ $\emptyset_{INF}$ ] <sub>NP.LOC</sub>	[flee] <sub>VP.SUB</sub>
8	[ $\emptyset$ ] <sub>NP.A</sub>	[fox] <sub>NP.LOC</sub>	[meet] <sub>VP.SUB</sub>
9	[fox] <sub>NP.A</sub>	[what_is] <sub>NP.O</sub>	[say] <sub>VP.SUB</sub>
10	[hares] <sub>NP.A</sub>	[splash_has_come] <sub>NP.O</sub>	[say] <sub>VP.SUB</sub>
11	[fox] <sub>NP.S</sub>	[ $\emptyset_{INF}$ ] <sub>NP.LOC</sub>	[flee] <sub>VP</sub>

Table 6: A segmentation of example (29) according to event images (including Zeros)

The table distinguishes two types of zero-NPs: Phoric zeros the referents of which are given in the text, and inferential zeros ([ $\emptyset_{INF}$ ]). These zeros refer to knowledge units that are given by the semantics of the corresponding relation. For instance, the final relational unit *inege basa dutayabai* ‘thus the fox fled’ includes an inferential zero-NP because the speaker/hearer knows about the place (> locative) from where the fox fled (hence the passage reads: ‘Thus the fox fled [from where the event had taken place]’), see below). In sum, it becomes evident that the event images represented by the individual clauses are marked by two-place relations, which is quite in line with the discussion of the schematic structure of event images given above.

In the next section, I will briefly address some strategies of reducing the two-place relation when symbolizing event images by language. For the purpose of the text, it is relevant to stress again the underlying assumption that linguistic utterances do not fully match the structure of event images represented or invoked by the corresponding utterance. Cognitive Transitivity primarily refers to the structure of event images. Nevertheless, I hypothesize that possible processes of reducing the degree of Cognitive Transitivity in terms of corresponding schematic constructions (e.g. one-place argument structures) are mainly due to conventions of a language-based representation of event images.

#### 4. The linguistic representation of Cognitive Transitivity

As has been argued in the preceding sections, event images are primarily structured by a perception-based schematic relation (F/G) that is coupled with relational archetypical such as locational TR/LM or causal C/E. The relation is characterized by the inferential linkage of two referential units with the help of a relator. In order to describe in some more details options of representing this relation by language, let us consider a simple example, given in (30):

(30) The grey chased the/a little mouse.

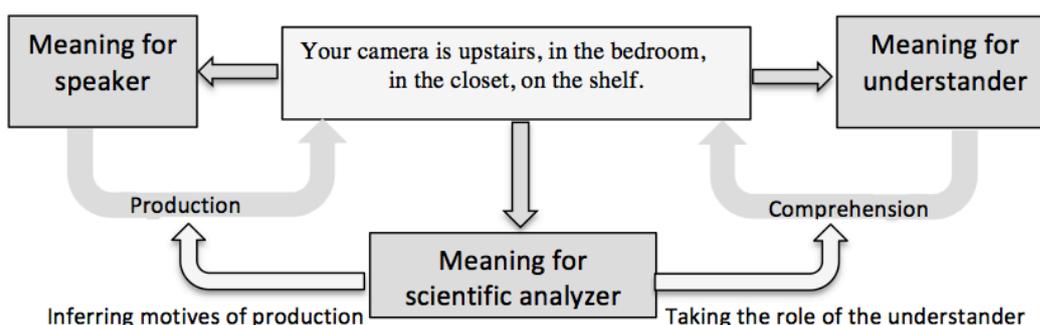
First we have to decide, from which side we look at this example. It is a basic tenet in usage-based theories of language that “that the units and structure of language emerge out of specific communicative events” (Bybee and Beckner 2009: 829). As communication always requires a speaker and a hearer, two seemingly different cognitive activities have to be distinguished. Before looking at this point in more details, it is relevant to stress that the discussion and analysis of linguistic utterances usually does not make sufficiently clear which perspective is taken by the scientific analyzer. Let us consider an example randomly taken from Langacker (2008: 195):

(31) Your camera is upstairs, in the bedroom, in the closet, on the shelf.

Langacker analyses this phrase (the degree of realism may be disputed) as follows:

[The s]entence (...) locates its trajector by successively “zooming in” to smaller and smaller areas. Each locative element places the trajector within a restricted location, which the next locative takes as the immediate scope for its interpretation. In this path of search, *upstairs* confines the trajector to the upper story of a house. The following locative, *in the bedroom*, is interpreted relative to this location—only upstairs bedrooms are relevant—and the definite article implies that there is only one. Only this bedroom is invoked for interpreting *in the closet*, and only the bedroom closet for *on the shelf*. (Italics in the original)

The problem with this analysis is that it does not make sufficiently clear which kind of interpretative knowledge Langacker refers to. The quote above gives us the impression as if the sentence would have a meaning on its own, independent from a possible communicative setting. However, what does actual happen with respect to the analysis? Langacker uses the term *interpret(ation)* three times in this passage. This term suggests that Langacker takes the position of an understander. On the other hand, he anthropomorphizes some processes, e.g. “[e]ach locative element places the trajector within a restricted location”, which in fact is common rhetoric in linguistic analysis. Langacker’s phrasing actually means that a speaker applies a localization strategy in a way that linguistic elements are coupled with the function ‘trajector’ (or something the like). Langacker hence refers to the speaker whose cognitive strategies are said to motivate the given linguistic structures. In other words: Langacker mixes up two perspectives, namely that of the understander and that of the speaker, cf. Graphic (21)



Graphic 21: The meaning of a linguistic utterance in its context

The question of which perspective is taken in the analysis of such linguistic data, however, is crucial to the assumptions derived therefrom with respect to underlying cognitive processes. Especially regarding language it is fictitious assuming that one can arrive at a neutral point of view. Whenever one looks at linguistic data from a scientific point of view, one always activates one's own linguistic knowledge in terms comprehension. So, from a mere inductive approach based on language data, the production side is inferred or reconstructed from the scientist's understanding of the data in terms of comprehension as long as one does not monitor in details the process of production itself. One way of getting out of this dilemma is to simulate the production side when comprehending linguistic data (see below). Nevertheless, one has to be aware of the fact that simulation is always grounded in the corresponding knowledge system of the understander simulating the production of linguistic data. Hence, the reconstruction of the original processes of producing linguistic data can only succeed to the extent the researcher shares corresponding knowledge routines and so on with the (frequently enough fictive) producer. Another way of escaping from this dilemma is to turn to deduction as frequently done in the present text (see the discussion of **Graphic (16)**.. Accordingly, the processes of reconstruction the cognitive motivation of linguistic utterances is derived from corresponding models of production mapped onto the linguistic data that again are understood via simulation.

The problem addressed in the preceding section becomes also apparent when turning to the analysis of example (30): It may be either viewed from the perspective of production or from that of comprehension. Starting from a naïve version of Reddy's conduit metaphor (Reddy 1979), one might argue that in principle there are no differences at all: Concepts are mere objects put into a container (words, sentences) by the sender that is sent to a receiver who simply unpacks them. The only difference is that the sender must have the appropriate skills to properly put concepts into a container (that fits to the concepts), whereas the receiver must have skill to unpack them. Naturally, this naïve view comes close to folk linguistics. In fact, it is a matter of debate whether the production and the comprehension of linguistic utterances are based on the same cognitive procedures. According to Pickering and Garrot (2013: 329); "[c]urrent accounts of language processing treat production and comprehension as quite distinct from each other." As an alternative the authors suggest that production and comprehension are massively interwoven, whereby prediction holds a central role in production, comprehension and dialogue" (Tourtouri 2013). Pickering and Garrot (2013: 346) summarize their findings as follows:

This account assumes a central role to prediction in language production, comprehension, and dialogue. By building on research in action and action perception, we propose that speakers use forward models to predict aspects of their upcoming utterances and listeners covertly imitate speakers and then use forward models based on their own potential utterances to predict what the speakers are likely to say.

Accordingly, "[l]anguage comprehension uses the production system" (Tourtouri 2013), coupled with aspects of prediction that are mainly derived from the understander's proper knowledge system. In addition, Bergen (2007: 279) maintains that "language understanding

is contingent upon the understander mentally simulating, or imagining, the content of utterances” (Bergen 2007: 279; also cf. Feldman 2006). Hence, there are two main components that are said to link production and understanding: Simulation and prediction. Nevertheless, one has to include the fact that “it is by no means evident whether and how experimentally obtained results on the involvement of mental simulation in comprehension extend to real-life situations, where communication is multimodal to varying degrees and embedded in an interactional setting.” (Kok and Cienki 2017: 18)

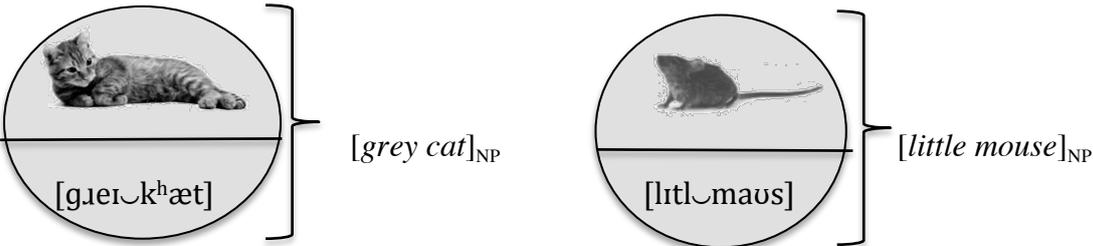
The sentence given in (30) has thus to be viewed from two nevertheless intimately related perspectives:

(a) On the one hand, it results from the perception of the speaker who comments upon a past event memorized in terms of a corresponding event image. Image (9) may serve to represent this event image in terms of a fictive snapshot:



Image 9: A snapshot of the even image <[GREY CAT] CHASE [LITTLE MOUSE]>

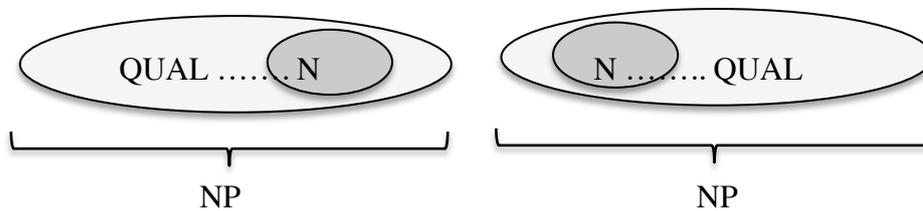
It has to be stressed that this snapshot of the pre-linguistic event image is already schematized deleting much of what was actually given in visual perception. The linguistic interpretation of this event image entails the inference of the relational segment ‘chase’ that becomes visible only through the properties of the two referents identified via fixation and the changes in the corresponding spatial relations (see section...). These changes are primarily categorized as representing a motion event image. The two fixations results in two object images (‘grey cat’ and ‘little mouse’) that are rather explicit for the speaker who knows about the actual ‘shape’ of the objects mirrored as the corresponding object images. Still, the linguistic resolution of these object images is relatively low. They are represented by two noun phrases, cf. Graphic (22):



Graphic 22: The linguistic symbolization of the two referents in ex. (30) / speaker’s side

Here, two aspects become relevant: First, the signifiés of the corresponding linguistic units are rather explicit referring to the actual knowledge of the speaker regarding the objects

represented in the corresponding object images. Second, the object images are linguistically represented by noun phrases (*grey cat, little mouse*), not by just the nouns. As has been claimed above (see the discussion of Image (7)), object images are processed as gestalts mirrored linguistically as NPs. Still, the way of how a finer resolution of an object image is represented by language obviously depends on the corresponding language system (see Rijkhoff 2002). Obviously, we have to deal with another kind of schematic structure that controls the linguistic interpretation of object images.



Graphic 23: Instantiations of the linguistic NP schema

Accordingly, the schematic structure of a NP is characterized by a central unit (usually representing (with non-figurative expressions) the time-stable gestalt elements of an object image, which profiles the object image as such. In the broadest sense, such profiling elements of NPs can be related to the linguistic category of nouns (and, partially, pronouns). In case the nominal profile is not processed as such, another element of the gestalt takes its place, often (but not necessarily) accompanied by a deictic unit that establishes reference, cf.:

- (32) The grey one  
The little one

In languages such as Arabic or Latin, we see a maximum of resolution, by which a gestalt element takes up the role of a secondary profile linked to the primary one in terms of an apposition, cf. (33) and (34):

- (33) *al-qitt-a*                      *'r-ramâdiy-a*  
DEF-cat-FEM                      DEF-grey.FEM  
'The grey cat' (lit.: 'The cat, the grey (one)')

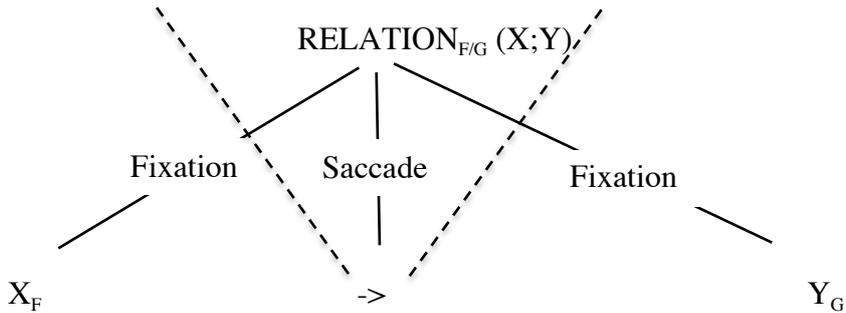
*al-fa'r-a*                      *ş-şagîr-a*  
DEF-mouse-FEM                      DEF-little-FEM  
'The little mouse' (lit.: 'The mouse, the little (one)')

- (34) *felis*                      *can-a*  
cat.FEM.SG.NOM                      grey-FEM.SG.NOM  
'(The) grey cat' (lit.: '(The) cat, (the) grey (one)')

*mus*                      *parv-us*  
mouse.MASC.SG.NOM                      little-MASC.SG.NOM  
'The little mouse.' (lit.: 'The mouse, the little (one)')

For the purpose of the section, it is not relevant to discuss in more details the internal structure of NP-schemas from a typological point of view (see e.g. Rijkoff 2002). The main point is that I claim that the linguistic representation of object images is given by NPs, not by nouns.

The relator (*chase* in example (30)) arises, as I have repeatedly maintained, from inferential processes. As has been said before, the construction of inferentially established knowledge units in term of ‘relational permanence’ results in the categorization of event images according to the type of relator involved. In this sense, relators can be seen as the meronymic expression of generalized event images. Disregarding the communicative or conventionalized manipulations, the underlying schematic structure can be described as follows:



Graphic 24: The relator in the F/G-schema as a meronymic expression of the event image

This model comes close to Tesnière’s assumption, according to which “le noeud verbal [...] exprime tout un petit drame. Comme un drame en effet, il comporte obligatoirement un procès et le plus souvent des acteurs et des circonstances” (Tesnière 1959:102). The meronymic value of relators is nicely illustrated by strategies of nominalization, cf.:

(35) *Flying is dying.*<sup>52</sup>

Here, the two event images  $X_F \rightarrow_{/FLY} [Y_G]$  and  $X_F \rightarrow_{/DIE} [\emptyset_G]$  are represented solely by the verbal segment in its nominalized form. The condensed expression of event images has strong referential properties. It can hence be used to identify appropriate segments of more complex gestalts such as (35). Again, a self-similar structure shows up (see discussion above), cf. Graphic (25):

EI					
EI> $\mathfrak{R}_F$		->/BE	EI> $\mathfrak{R}_G$		
$\mathfrak{R}_F$	->		$\mathfrak{R}_F$	->	$\mathfrak{R}_G$
X	fly		X	die	[ $\emptyset$ ]

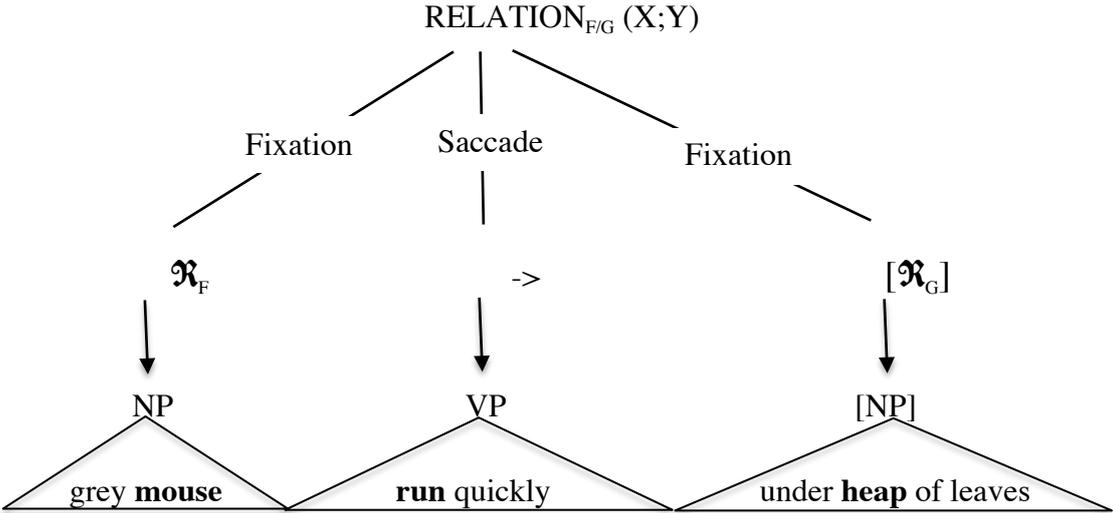
Graphic 25: The schematic structure of flying is dying.

<sup>52</sup> Retrieved from [http://www.treehugger.com/files/2006/03/george\\_monbiot.php](http://www.treehugger.com/files/2006/03/george_monbiot.php) (1.8.08).

Graphic (25) also illustrates that relators are linguistically schematized in terms of verb phrases. I use the term ‘schematized’ because I argue that quite in analogy with the representation of object images as schematic noun phrases, relators can encompass more than just a verb, cf.:

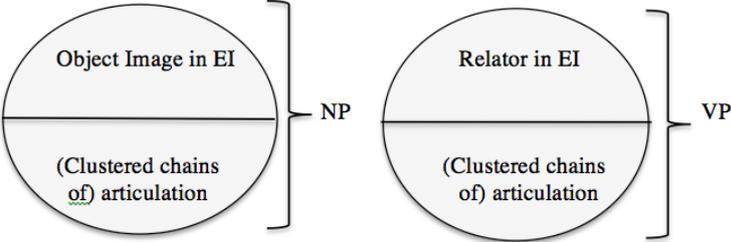
(36) The grey mouse ran quickly under a heap of leaves.

The event image includes the inferred relator <RUN QUICKLY UNDER>, whereby the idea of quickness elaborates the semantics of the relator. According to the present framework, adverbs are generally seen as part of a higher resolution of the relator-domain of an event image (as opposed to adnominal units that produce a higher resolution of object images, see above). Hence, the basic schematic structure of (36) can be described in the following way:



Graphic 26: The schematic structure of example (36)

In sum, it is claimed that the linguistic representation of the object images of an event image is given by NPs, whereas the relator-domain is represented by VPs, cf. Graphic (27).



Graphic 27: The symbolic value of NPs and VPs

Let us come back now to example (30). According to the analysis given above, the sentence suggests that the utterer has produced it order to communicate a memorized event image in which the two referential units GREY CAT and LITTLE MOUSE are related by activating the relational unit CHASE. The relational unit is coupled with the activation of the underlying

schematic structure  $F \rightarrow G$  indicated in the English example by placing  $NP_F$  in the initial position of the utterance (P1) and  $NP_G$  in the final position (P3). At the moment, it is not relevant to discuss in more details the coupling of the F/G-schema with the C/E-archetype that is obviously present in the given event image. By applying a simplified version of the stage model (see [section ...](#)), the following picture emerges (Image 10):

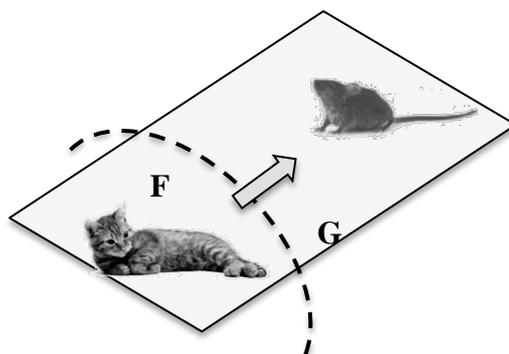


Image 10: A simple stage model of sentence (30) / speaker' side

The important thing is that the speaker has in mind a concrete instantiation of the two object images: She or he knows about which cat she or he talks. The same holds for the object image of the 'mouse'. In order not to complicate the matter, the stage model given in Image (10) does not elaborate the relator dimension in details (indicated by the arrow).

(b) The second perspective that is relevant for interpreting the example given in (30) above is related to comprehension. Starting from the model of simulation semantics alluded above, we have to assume that sentence (30) is processed by understanders basically the same way as if they had produced it themselves. In simple terms and assuming that the sentence in (30) would have been perceived acoustically, the understanding process would invoke a mental copy of the production process. This assumption derives from the idea that language-based communicative experience is based on the Action Perception Cycle (Swenson and Turvey 1991) and on the Imitation/Pantomime model as described for instance by Arbib (2001). In addition, communicative experience and practices are seen as the constant actualization process of memorized linguistic and non-linguistic experience (extension of the model of Action recognition; see Gallese 2007, Gallese et al. 1996, 2006, Rizzolatti and Arbib 1998).

The hypothesis that imitation processes largely control language comprehension does not mean, however, that understanders are able to fully retrieve the signifié-side of linguistic utterances. As they process the understanding of these utterances in their own terms and grounded in their own experiential knowledge, they would active signifiés that come closer to prototypes than to exact images of the signifiés present in a speaker's cognition. Still, the schematic and archetypal structure underlying the utterance in example (30) are processed in rather the same way as done by on the producer's side, cf. Image (11):

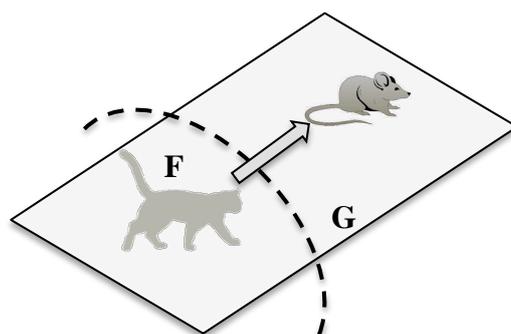
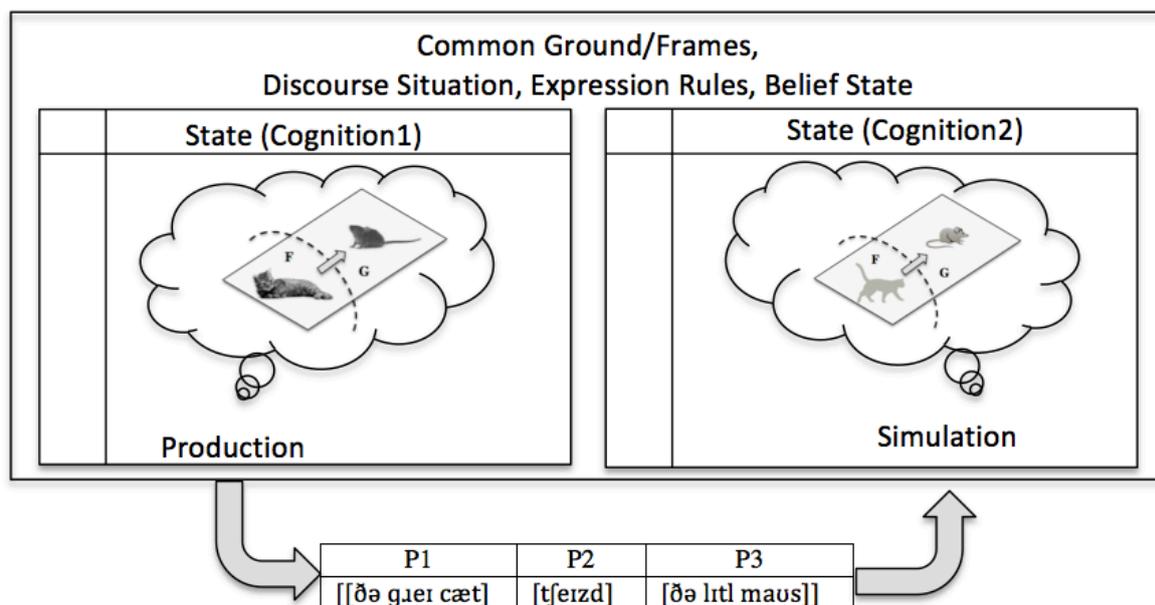


Image 11: A simple stage model of sentence (30) / understander's side

We can easily see that the structure of the stage model given in Image (11) corresponds to that given in Image (10). The main difference lies in the degree of conceptual elaboration: The understanders' processing of the two NPs 'grey cat' and 'little mouse' comes closer to their prototypical concept of the corresponding linguistic signs, colored by their 'private' experiences related to the objects that are represented by the object images.<sup>53</sup> The same holds for the conceptual representation of the relator. Still, the simulation of the utterance by the understander obviously starts from the same schematic structure as the producer of this utterance. In this sense, the F/G-schema and perhaps even the C/E-archetype importantly contribute to a successful simulation of an utterance by the understander, cf. Graphic (28)<sup>54</sup>:



Graphic 28: A simplified model of production and simulation (example 30)

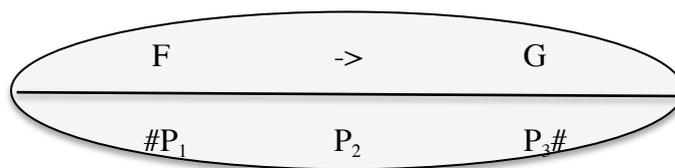
<sup>53</sup> I assume that although the semantics of prototypes are strongly controlled by collective knowledge conventionalized in a society (shared knowledge, shared mental model, and shared understanding, cf. e.g. Thompson and Fine 1999, Levine and Smith 2013), individuals usually 'color' these prototypes in terms of their episodic knowledge, private history, and experience (also cf. Hemmer and Persaud 2014).

<sup>54</sup> Cf. Feldman and Narayanan (2011, slide 5) for a similar presentation of the understander's side.

Accordingly, we may assume that the linguistic representation of the F/G-schema and of the C/E-archetype results in rather stable structures at least with respect to event images. Still, the stage model illustrated in Images (10) and (11) cannot fully account for the linguistic representation of the example given in (30). In an idealized version that neglects the problems of conceptualization on the producer's side and on the understander's side, we would arrive at a very rudimentary phrase, some thing like

(37) grey\_cat<sub>F</sub> chase little\_mouse<sub>G</sub>

In English, the underlying F/G-schema is represented by a fully schematic construction (cf. section ...), cf. Graphic (29):



Graphic 29: *The fully schematic construction encoding the F/G schema in English*

Naturally, this symbolization of the F/G-schema in terms of a fully schematic construction is not the only way the F/G-schema can be encoded in English. Nevertheless, starting from patterns of visual perception, it is reasonable to assume that an object image in F-function is placed at the front-stage of an event image, corresponding to a position relatively near to the beginning of an utterance (in case nothing is placed in the left periphery). It is unquestionable that numerous factors influence the linear processing of event images as it is given with the linguistic representation of such event images. Nevertheless, it is relevant to consider the fact that “that the majority of languages favour placing subjects initially” (Siewierska 1993: 835). Perhaps Siewierska’s formulation is a little too strong, because it seems to be based on the notion of basic (unmarked) sentence patterns relying on features such as frequency, unmarkedness, and pragmatic neutrality. However, in terms of linguistic Contextualism as advocated for in the present section<sup>55</sup>, such more or less context-free and pragmatically neutral sentences which would reflect a ‘basic word order’ do not exist in reality and hence should be regarded as scientific artifacts. This also means that all utterances (in terms of sentences and so on) are pragmatically marked. A ‘basic word order’ would then have to refer to functional and pragmatic commonalities in a broad corpus of both oral and (if given) written language. In this sense, for instance, German would not show up as a subject-first language, but rather as a topic-first language, cf.:

<sup>55</sup> Based on Frege’s assumption (1884: X) “[N]ach der Bedeutung der Wörter muss im Satzzusammenhange, nicht in ihrer Vereinzelung gefragt werden”, which is copied by Wittgenstein (1921: 207 (3.3)): “Nur der Satz hat Sinn; nur im Zusammenhang des Satzes hat ein Name Bedeutung”. Both assertions start from propositions. For the purpose of the given paper, it is relevant to extend this view by saying (in terms of Wittgenstein): Only discourse has meaning: Only in the context of discourse, a proposition has meaning.

(38)	TOP	VP	NP	NP	NP	
	Am Morgen	ging	ich	in die Stadt		(‘In the morning, I went to town’)
	In die Stadt	ging	ich	am Morgen		(‘I went to town in the morning’)
	Ich	ging	am Morgen	in die Stadt		(‘I went to town in the morning’)
	Ø	ging	ich	am Morgen	in die Stadt?	(‘Did I went to town in the morning?’)

From the examples given in (38) it would be difficult to maintain the hypothesis that German is a subject-first language. Jacobs (2001: 671) for instances assumes that in German “the requirement that topics be left-peripheral nonheads” would represent the main property of the underlying syntactic prototype”. Nevertheless, the fact that the third version in (38) (*ich ging am Morgen in die Stadt*) is usually seen as representing the most basic order also by naïve speakers of German, suggests that ‘subject’ and ‘topic’ coalesce to a certain extent (see the comprehensive discussion in Li and Thompson (1976)). Usually, the notion of ‘topic’ is related to information structure and pragmatic functions (often fusing with the notion of ‘focus’). Accordingly, “[t]opicality concerns the status of those entities “about” which information is to be provided or requested in the discourse. The topical dimension concerns the participants in the event structure of the discourse, the “players” in the play staged in the communicative interaction.” (Dik 1997: 312). In this sense, topicality makes only sense in the context of communication. It is rather likely that reference to the ‘known’, that is to given or old information, serves as an anchor allowing to interpret new information in a relevant context. Or, as Gundel (1988: 210) has put it:

An entity, E, is the topic of a sentence, S, iff in using S the speaker intends to increase the addressee’s knowledge about, request information about, or otherwise get the addressee to act with respect to E. A predication, P, is the comment of a sentence S, iff in using S the speaker intends P to be assessed relative to the topic of S.

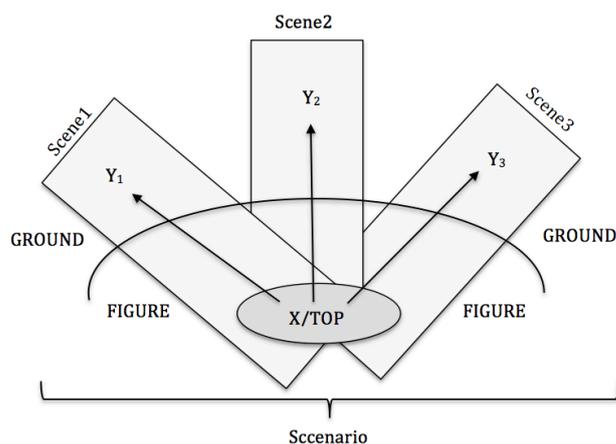
Applying the stage model, this would mean not necessarily mean that - in a pre-linguistic sense - the object image in topic function would to be placed on the front-stage. Obviously, strategies of attributing a specific position to object images are strongly related to the linearization of event images in terms of linguistic expressions, resulting in the well-known topic-comment order.

Accordingly, we have at least two functional aspects that are relevant to the positional aspects of the construction given in **Graphic (29)** above: (a) the position of an object image having F-function on the front-stage and (b) the preference for placing units in topic function at the beginning of an utterance. In this sense, the linguistic presentation of the Figure domain can easily be associated with what is traditionally called the ‘subject’. The F/G-schema is primarily related to the structure of individual event images, whereby F relates to the foreground of a stage (or: front-stage) in terms of the stage model and G to its background. Topic, on the other hand chains two or more scenes on the stage. As has been said by Taboada and Wiesemann (2010: 1817): “Subject, then, is defined within the clause or utterance, but the definition of topic relies on context.” Nevertheless, both functions often fuse, because once a

foreground has been established for a scene, it is rather likely that the next scene also refers to the object image in the foreground, cf. the following example that is the beginning of the English fairy tale “Fairy ointment”:

(39)	F	->	G
	Dame Goody	was	a nurse
	that	looked after	sick people,
and	∅	minded	babies.
One night	she	was woke up	at midnight,
and when	she	went	downstairs,
	she	saw	a strange squinny-eyed, little ugly old fellow

Both strategies often combine to what is known as the sentence pivot, or ‘subject’ in a linguistic sense. This does not mean that we are necessarily dealing with grammaticalized topics, as described e.g. by Givón (2001: 198): “(...) the subject and DO of clauses may be viewed as the grammaticalized primary and secondary topics of the discourse at the time when the clause in which they partake is being processed.” Rather, the coupling of scene-internal foreground (‘subject’) and scene-combining topic has to be viewed as a nevertheless strong tendency (also cf. Sasse (1995: 1006): “[T]here are languages in which the basic syntactic constructions manifest a topic-comment relation rather than a subject-predicate relation.”). The following graphic illustrates this point with the help of a set of three scenes combining to a rather simple scenario:



Graphic 30: Topic/Subject chaining in a simple scenario

An example for such a simple structure is given in (40):

(40)		FIGURE	->	GROUND	
	[Scene1]	The woman	came into	the restaurant	Scenario
	[Scene2]	∅	took off	her coat	
and	[Scene3]	∅	set down at	a table	

Krifka (2007, 2008) has convincingly argued that topic/comment patterns are not necessarily a universal of communication. Nevertheless, they are typical for the transfer of knowledge

related to the communication of event images packed into more complex scenarios. Obviously, we have to deal with another type of schema that emerges from the more or less linear expression of such scenarios. Thus Krifka (2007: 89) states: “Topic/comment structuring is a special case of sequencing, and so a general adaptation designed for the sequencing of manual actions might well have been adopted for this purpose.” In this sense, the T/C schema can also be traced in human actions different from linguistic utterances. Nevertheless, the T/C schema cannot be mapped directly onto the F/G-schema. As I have argued above (section...), the F/G-schema is a pre-conceptual schema grounded in perception and hence sensorimotor functions. The Topic-domain of the T/C-schema, however, processes an input structured by the F/G-schema with respect to the role the corresponding units play in a given attention and information flow. Hence, the T/C-schema grounds in knowledge states, context, and situation. The F/G-schema thus becomes enriched by features that are related to ‘givenness’ and ‘newness’, whereby the segment that includes the notion of ‘newness’ is conventionally described as a predication over of the element in Topic function. If the Topic is associated to the Figure segment in the F/G-schema, then the ‘rest’ of the structures shows up as the Comment, cf.:

(41)

F/G-schema	F	->	G
T/C-schema	T		C

This does not mean, however, that linguistic utterances are generally characterized by a pattern that includes one unit being predicated by another unit (or by a complex of units). Rather, we have to assume that the T/C-schema schema is blended with the F/G-schema without eliminating the underlying two-place relation. For instance, is a sentence like [ADD....]

(42)

Junction	Frame Setting	Event Image		
		F	->	G
		T	C	
	<i>Yesterday,</i>	<i>Mary</i>	<i>went to</i>	<i>the zoo.</i>

		F	->	G
		T	C	
		<i>She</i>	<i>watched</i>	<i>the penguins and apes</i>

		F	->	G
		T	C	
<i>and then</i>		∅	<i>left</i>	∅

Lambrecht (2000: 615) relates the Comment domain to what he terms “predicate focus structure”: “Sentence construction expressing a pragmatically structured proposition in which the subject is a topic (hence within the presupposition) and in which the predicate expresses new information about this topic. The focus domain is the predicate phrase (or part of it).” It



In this introductory sequence of the story, the topic of the first sentence (*Ifara*) is introduced in terms of a cleft construction. Malagasy informants told me that the ‘standard word order’, that is something like

- (44) *n-an-ihika*                      *t-èo*  
 PAST-TRANS-fish              PAST-PROX.CLOSE
- àmin’-ny*    *farihi-n’-Itrimobè*    *ity*    *Ifàra*  
 towards-DEF    lake-REL-Itrimobe    PROX    Ifara  
 ‘Ifara fished in the lake of Itrimobè.’

would be odd in the beginning of a tale. Only once a topic has been introduced, it may be continued in sentence-final position. It is hence appropriate to adopt the Topic typology as suggested by Dik (1997) who distinguishes New, Given, and Resumed Topics. In Malagasy, New Topics in scenic foreground/subject function are usually placed in the beginning of a paragraph, whereas Given Topics are placed in the right periphery of the sentence.

In this sense, the linear, sequential processing of the F/G-schema is not necessarily coupled with the T/C-schema. Rather, different types of topics elaborate on referents in Figure or Ground function. Confer the following example that is the beginning of an Arabic fable<sup>57</sup> (Classical Arabic), taken from Haywood and Nahmad (1998 [1965]: 463):<sup>58</sup>

Schema		F	->		G	
IF		nTOP <sub>1</sub>			nTOP <sub>2</sub>	
		<i>qitt-at-âni</i>	<i>'lhtaṭafa-tâ</i>		<i>ḵubn-at-a-n</i>	
		cat-F-DU.NOM	grab.PERF-3DU.F		cheese-F-ACC-INDEF	

Schema			->	F	G	
IF				gTOP <sub>1</sub>	nTOP <sub>3</sub>	
	<i>wa</i>		<i>ḍahaba-tâ</i>	∅	<i>'ilâ 'l-qird-i</i>	
	and		go.PERF-3DU.F		to DEF-ape-GEN	

Schema			->	F	G <sub>1</sub>	G <sub>2</sub>
IF				gTOP <sub>3</sub>	gTOP <sub>2</sub>	gTOP <sub>1</sub>
	<i>likai</i>		<i>ya-qsim-a-hâ</i>	∅	∅	<i>bayna-humâ</i>
	so_that		3SG.M.IMPERF-divide-SUBJ-3SG.F.OBL			between-3DU.OBL

<sup>57</sup> Probably, the fable origins from the Pali tradition (India). A first western version had been published by Jean Baptiste Perrin (1804 [1771]). *Fables amusantes*. Philadelphia: Mathew Carey [etc.], pp. 155-156 (fable CXXV).

<sup>58</sup> Note that in this section, the labels F, G, and -> refer to the underlying pre-linguistic schema. This does not mean that the corresponding units directly represent the elements of the F/G-schema, see below.

‘Two (female) cats grabbed a (piece of) cheese and went to the ape so that he may divide it between them two.’ (Literal translation).

Table 7: *Topic structure of the beginning of an Arabic fable*

This short passage is characterized by three referential units (the two cats, the cheese, and the ape). The most central protagonist (the two cats) is introduced in the very beginning of this paragraph, although Arabic is conventionally described as being a verb-front language. Obviously, the position of the indefinite NP *qiṭṭâni* ‘two cats’ not only marks a new topic but also the perspective taken by the narrator with respect to the ‘narrative center’. The two NPs *ḵubnatan* ‘cheese’ (indefinite, accusative) and *al-qirdi* ‘the ape’ (definite, genitive) are also introduced as new topics but show up in their conventional position (corresponding to their given grammatical relation). In this sense, it would be difficult to retrieve a T/C structure at least for the first sentence. The two following sentences start from new information presented in the two verbs *dahaba-* ‘go’ and *qasama* ‘divide’ that incorporate given topics in subject function (*dahaba-tâ*) as well as in object function (*ya-qsuma-hâ*). Accordingly, it is virtually impossible to describe a clear linear division between Topic and Comment in this paragraph.

The assumption that the T/C-schema by large mirrors a predication that elaborates the Comment domain to a different extent hence cannot serve as an argument that would relate to the hypothesis of Du Bois (2003: 44), according to which “there is just one valence or argument structure target that turns out to be fully unconstrained in both grammatical (morphological) and cognitive-pragmatic dimensions: the one-place predicate”. Rather, the T/C-schema has to be regarded as a specific way of organizing knowledge conveyed in discourse. It may result in the condensation of the underlying schematic structure of those utterances that constitute paragraphs in such discourses. The way this kind of information packaging is done linguistically strongly depends from the given language system and corresponding discursive traditions (cf. Vallduví and Engdahl 1996). In addition, we have to bear in mind that the modality of discourse plays a relevant role, too. A narrative discourse, for instance, differs for its T/C-structure importantly from genres such as mono-directional slogans, headlines, or weather reports, or bi-directional discourses such as oral communication and chats. Consider for instance the following slogans:<sup>59</sup>

	<b>Advertiser</b>	<b>Year</b>
<i>I'd walk a mile for a Camel.</i>	Camel	1921
<i>M'm! M'm! Good!</i>	Campbell's Soup	1935
<i>A little dab'll do ya.</i>	Brylcreem	1949
<i>You're in good hands with Allstate.</i>	Allstate	1950
<i>Plop, plop, fizz, fizz, oh what a relief it is.</i>	Alka Seltzer	1953
<i>The quick picker upper.</i>	Bounty	1960
<i>Please don't squeeze the Charmin.</i>	Charmin	1964
<i>When you got it, flaunt it.</i>	Braniff Airlines	1967
<i>And all because the lady loves Milk Tray.</i>	Cadbury's Milk Tray	1968

<sup>59</sup> This is an excerpt from a much larger list of famous slogans provided by <http://www.adslogans.co.uk/site/pages/home/hall-of-fame.php> (last visit 2.4.17).

<i>Have it your way.</i>	Burger King	1973
<i>Probably the best lager in the world.</i>	Carlsberg	1973
<i>Don't leave home without it.</i>	American Express	1975
<i>The ultimate driving machine.</i>	BMW	1975
<i>Reach out and touch someone.</i>	AT&T	1979
<i>The world's favourite airline.</i>	British Airways	1983
<i>I bet he drinks Carling Black Label.</i>	Carling Black Label	1986
<i>It's good to talk.</i>	British Telecom/BT	1994
<i>Think different.</i>	Apple Macintosh	1997
<i>Impossible is nothing</i>	Adidas	2004

Table 8: A list of slogans (USA)

The main point is that in such texts, an overt expression of the Topic is missing. It is usually represented visually by an image of the product (together with its name) or by a logo. Nevertheless, most of these slogans encode event images or fragments of such event images, cf.:

Intro	F	->	G <sub>1</sub>	G <sub>2</sub>
	I'd	walk	a mile	for a Camel.
M'm! M'm!	∅	Good!		
	A little dab	'll do	ya.	
	You'	re	in good hands	with Allstate.
	∅	∅	The quick picker upper.	
Please	∅	don't squeeze	the Charmin.	
When	you	got	it,	
	∅	flaunt	it.	
And all because	the lady	loves	Milk Tray.	
	∅	Have	it	your way.
Probably	∅	∅	the best lager	in the world.
	∅	Don't leave	home	without it.
	∅	∅	The ultimate driving machine.	
	∅	Reach out		
and	∅	touch	someone.	
	∅	∅	The world's favourite airline.	
	I bet	∅		
	he	drinks	Carling Black Label.	
	It	's good	to talk.	

Table 9: The F/G-schema of selected slogans (cf. table 6)

The assumption according to which the T/C-schema represents a basic schematic pattern accounting for the internal structure of the linguistic encoding of individual event images is also problematic out of the following reason: When describing Topic patterns, many authors start from models of face-to-face communication (conversation), cf. e.g. Recht (2015: 7), who relates the dimension of Topic to the Question Under Discussion (QUD) framework (cf. Roberts 2012) by saying:

[T]he structure of discourse is best understood as being shaped by a set of conversational goals shared by the interlocutors and by the “strategies of inquiry” that they employ to achieve these

goals. (...) Discourse thus consists of a set of such questions under discussion which participants attempt to answer.

Roberts (2012: 6:7) likewise maintains that “[d]iscourse is organized around a series of conversational goals and the plans or strategies which conversational participants develop to achieve them.” In this sense, Matic (2015: 96) defines ‘Topic’ as follows:

“Two major competing definitions [of Topics, W.S.] are those based on the notions of givenness and aboutness. Givenness-based definitions are hearer-centered: topic is that part of the utterance that is assumed to be already known to the hearer, present in the common ground of the interlocutors, and/or activated in the hearer’s short-term memory, by being mentioned previously, inferable, or given in the extralinguistic context. The alternative view is that topic is that part of the utterance about which this utterance is meant to give information. The focus is here more on the speaker’s intentions than on the hearer’s state of mind: the speaker determines what she intends to increase the hearer’s knowledge about and encodes this element as a topic.”

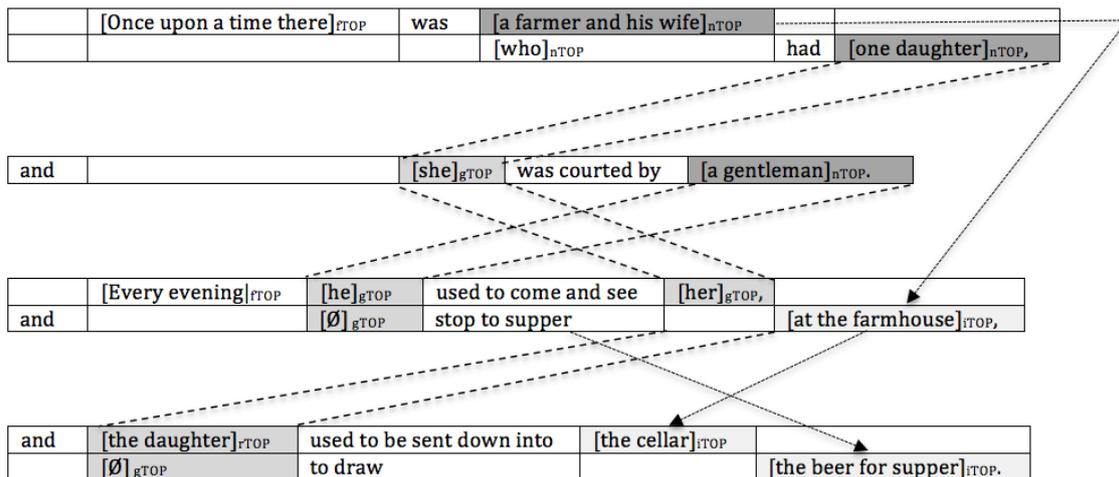
However starting from the idea that - from an evolutionary point of view - language is primarily grounded in narration (see section...), such strategies as described by Dejan Matic seem less relevant. Rather co-textual anchoring, highlighting of new Topics, focal ‘spotlights’, and reference to the collective knowledge of the audience would play a major role in construing narrative sequences. As a matter of fact, Topic structures can hardly be derived from the analysis of single sentences, as long as there are not explicit means grammaticalized in terms of specific Topic functions. Still, as Jacobs has argued, “a unitary theory of TC function seems to be impossible.” (Jacobs 2001: 673). The same holds for the question whether a typology of the linguistic expression of topicality makes sense at all. Jacobs (2001: 675) for instances claims that “with respect to the grammatical analysis of linguistic constructions my answer to the question whether we still need the notion of topic is “no.”” (Jacobs 2001: 675). Although there may be a strong tendency to relate pragmatic functions to elements placed in the left or right periphery of a sentence, it is problematic to identify these functions in a general sense as Topic (in the sense of “theme, link, [or] given information” (Matic 2015: 96)). On the one hand, Jacobs (2001) has convincingly shown that the dimension of Topic should better be understood as a bundle of interacting features such as separation, predication addressation, and frame-setting showing up as “values of (...) constructions in the dimensions of T[opic]/C[omment]” (Jacobs 2001: 671). On the other hand, the restriction of the notion ‘Topic’ to ‘given information’, hence ‘Given Topic’ obscures the relevance of other types of Topics, namely, New Topic and Resumed Topic, as alluded to above (see Dik 1997). In addition, frame topics may become relevant. Chen (1996: 399) defines a frame topic as “one that provides the spatial, temporal, and individual frame within which the proposition expressed by the remaining part of the topic construction, typically a predication made of another expression in the sentence, normally that of the subject, holds true.” (also cf. Huang 2000: 270). The important point here is that frame topics normally refer to the common ground shared by the speakers and their audience. They help the audience to imagine the event image encoded in the corresponding utterance in a real or fictive context. Another type of Topic also refers to this kind of common knowledge, cf. the example in (45):

(45) At home, she went into the bathroom. She took a shower and then returned to the kitchen. All of a sudden, the light went out and she started to cry....

Here, the NPs *bathroom* and *kitchen* add new information, which characterize them new Topics. However, both NPs also refer to given common knowledge: In the given cultural context, it is common ground that a home is equipped with a bathroom and a kitchen. In this sense, the mentioning of both locations addresses features of the world shared by the speakers and their audience. This kind of Topic is both ‘given’ and ‘new’ at the same time. In the above-given example, the givenness of the *bathroom* and the *kitchen* is indicated by a preceding referent (*home*) that overtly marks the domain into which both items are included. In order to distinguish this kind of Topic from other variants, I apply the label ‘inferred Topic’ (iTOP). The important thing is that the so-called Comment domain of the T/C-schema not necessary adds just ‘new’ information to the (given) Topic. In order to illustrate this point, let me refer to the first lines of the English folktale ‘The three sillies’:

(46) Once upon a time there was a farmer and his wife who had one daughter, and she was courted by a gentleman. Every evening he used to come and see her, and stop to supper at the farmhouse, and the daughter used to be sent down into the cellar to draw the beer for supper.

Graphic (31) interprets this passage with respect to the relevant topical structures. The dotted paths are meant to indicate coreference. The arrows refer to the source of a given iTOP:



Graphic 31: The topical structure of the first line of the English folktale “The three sillies”

The passage entails 13 more or less referential units, supplemented by two zero-NPs. It is divided into two frames that are characterized by corresponding frame makers (*once upon a time there, every evening*). Same subject sequences again subdivide these frames in terms of scenarios marked by same subject sequences, cf. Table (10):

Frame1	Scenario <sub>1</sub>	Scene <sub>1</sub>	fTOP <sub>1</sub>	nTOP <sub>i</sub>	->	
		Scene <sub>2</sub>		gTOP <sub>i</sub>	->	nTOP <sub>j</sub>
	Scenario <sub>2</sub>	Scene <sub>3</sub>		gTOP <sub>j</sub>	->	nTOP <sub>k</sub>
Frame2	Scenario <sub>3</sub>	Scene <sub>4</sub>	fTOP <sub>2</sub>	gTOP <sub>k</sub>	->	gTOP <sub>j</sub>
		Scene <sub>5</sub>		gTOP <sub>k</sub>	->	iTOP <sub>1</sub>
	Scenario <sub>4</sub>	Scene <sub>6</sub>		rTOP <sub>j</sub>	->	iTOP <sub>m</sub>
		Scene <sub>7</sub>		gTOP <sub>j</sub>	->	iTOP <sub>n</sub>

Table 10: *The scenic organization of the text in (46)*

Disregarding frame Topics, truly new Topics are only given in the beginning of this passage. Else, both given Topics and common Topics occur. The individual scenes are characterized by a relational structure that links two topical, more or less complex referential units. Admittedly, this analysis goes against the standard assumption according to which there is only one (given) Topic in a sentence, followed by a Comment sequence that includes the VP. Still, I hold that in a broader sense, ‘topic’ refers to states of knowledge regarding conceptual units that accumulate in the course of a narrative. In this sense, we can distinguish at least the following types:

- (a) Conceptual units introducing a new actors on the scene (nTOP);
- (b) Conceptual units referring to actors that are already given in previous scenes of the same scenario (gTOP);
- (c) Conceptual units referring to actors in earlier scenarios (rTOP);
- (d) Conceptual units referring to actors the givenness of which is inferred from the previous mentioning of other actors in the same domain (iTOP);
- (e) Conceptual units that mark the frame in which a scenario and its scene(s) are embedded (fTOP).

In communication, these different types of reference towards the degree of givenness of actors in a particular scene are potentially enriched by values regarding their informational relevance, resulting in the T/C-schema discussed above. Hence, we are dealing with two different versions of the notion of ‘topic’: (a) Topic as a function referring to the emergence of knowledge states in sequences of narrated scenarios; (b) Topic as a function of communicative interaction. In order to distinguish these two types, I will call the second type ‘Informational Topic’ (IT) as opposed to ‘Cognitive Topic’ (CT)<sup>60</sup> referring to the first type. Starting from the assumption, that discourse is grounded in narration, we can assume that every utterance must entail a number of CTs, whereas the dimension of ITs refers to the functional enrichment of CT-units in communication.

<sup>60</sup> Note this understanding of „Cognitive Topic“ differs e.g. from Maslova (1994) who maintains that the “cognitive representation of a sentence must contain at least two components: the cognitive topic (CT) and the cognitive structure (CS) of what is to be said about it. (...) Thus, in the cognitive representation of a sentence, there are minimally three features which can be selected as focus points of a cognitive strategy: the CS of the message, the CT, and the link between them.” (Maslova 1994: 134).

Most importantly, relational structures (linguistically speaking VPs and other types of relators) are usually excluded from the world of Cognitive Topics, whereas they may, under certain conditions, function in terms of ITs. This assumption is grounded in two hypotheses:

(a) As has been argued in more details in [section 3](#), relational units present in event images are basically inferential. The corresponding knowledge emerges (among others) from the generalization of the relational structure of event images and thus are ‘read into’ a scene. In principle, their semantics is embodied in the ‘behavior’ of the actors as well as in the perception of these actors ([see section 3](#)). In this sense, relators are not autonomous knowledge units. Following the arguments given in [section 3](#), they can be considered as meronymic condensations of event images that entail more or less unspecified actors. Accordingly, they represent the storybook of a scene but do not function as separate units within the scene.

(b) It is generally accepted that processes parallel to the topicalization of NPs (in terms of Informational Topic) rarely occur with VPs that include a finite verb. As Matić (2003: 613) has pointed out, verbal topics usually function as “exclusive contrast topics” (e.g. hedging, concession, recapitulation, enumerative chains). Ward (1990: 761) specifies that at least in English, “VP preposing (...) is associated with two distinct functions (...), proposition affirmation and proposition suspension.” (cf. Ward 1988, Dik 1995: 64-70; 207-221). This observation goes together with the hypothesis alluded to above according to which VPs represent meronymic expressions of event images. The characterization of verbal topics as “exclusive contrast topics” in the sense of Matić (2003), however, poses a problem in terms of terminology. “Contrast” is usually associated with the domain of focus rather than with the domain of topic. Strategies of contrastive focus can be regarded as a secondary elaboration of the Given Topic domain, rather than as distinct topical strategies. Confer the following example from German:

(47) *Gut, gehen wir in die Kirche.*  
 OK, go.PRES.1PL we in DEF.F.SG church

*Aber singen tue / werde ich da nicht!*  
 but sing.INF do.PRES.1SG / become.PRES.1SG I there NEG

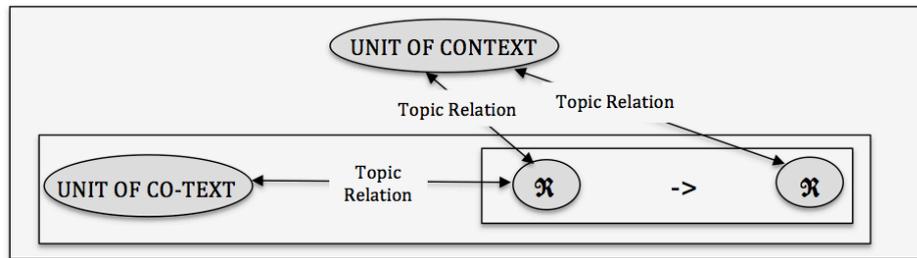
In the second sentence of this passage, contrastive focus is achieved by preposing the lexical segment of the verb phrase, not by the finite verb itself that remains in its usual place. In German, auxiliary constructions that allow extracting the lexical unit out of the finite verb are the only way of construing a syntactic pattern of verbal contrastive focus. In case the VP itself already entails an analytic finite verb, again only the lexical unit is prosed, cf. (48):

(48) *Maria kann schon sprechen.*  
 Maria can.PRES.3SG already speak.INF

*Aber laufen kann sie noch nicht.*  
 but walk.INF can.PRES.3SG she yet NEG  
 ‘Maria can already speak. But she cannot walk yet.’

In both sentences, the non-finite verbs (in fact verbal nouns) *singen* ‘singing’ and *laufen* ‘walking’ are embedded in ‘given domains’. However, whereas in (48) the domain is explicit in (48), it is implicit in (47) and just included in the knowledge frame concerning activities during church service.

In sum, Cognitive Topics as described above have to be considered as functional properties of referential units that link them to states of knowledge cumulating during the production and processing of narratives (and, as a matter of consequence, in conversation).<sup>61</sup> They thus are not features inherent to the structure of a particular event image,<sup>62</sup> but emerge from and relate to contexts such as narrations, discourse, or multimodal settings (e.g. advertisements), also cf. Büring (1999). In this sense, CTs represent units of another type of relational structure that can be described as an instance of ‘extra-clausal relation’, cf. Graphic (32):



Graphic 32: Co-textual and contextual Topic relations

It should be noted that the type of relation present with Topic relations differs from that of F/G relations. Whereas F/G relations are grounded in perception, Topic relations emerge from the coupling of a given knowledge state with conceptual units. In this context, Menon’s paradox becomes relevant: In Platon’s dialogue between Socrates and Menon, Socrates summarizes one of Menon’s arguments as follows:

You argue that a man cannot enquire either about that which he knows, or about that which he does not know; for if he knows, he has no need to enquire; and if not, he cannot; for he does not know the very subject about which he is to enquire.<sup>63</sup>

In simple terms this means that one cannot process new information without referring to units stored in memory that are activated when processing this information. Hence, the concept of

<sup>61</sup> Also cf. Schlobinski and Schütze-Coburn (1992: 91). “Topic, then, is equated with the sentential element (or elements) which refers to a fact or facts already known from the preceding context or to facts that may be taken for granted.”

<sup>62</sup> Lambrecht (1994: 120-122) tries to show “that even in a sentence like [*the children went to school*, W.S.] the topic-comment structure is to some extent formally (though) expressed” (p. 121), referring mainly to prosody. Still, his analysis, too, has to refer to adequate contexts (e.g. preceding WH-questions).

<sup>63</sup> Translation according to Benjamin Jowett 1871. *Meno* by Plato. New York: C. Scribner's Sons. The Greek version reads: *μανθάνω οἷον βούλει λέγειν, ὃ Μένων. ὄρας τοῦτον ὡς ἐριστικὸν λόγον κατάγεις, ὡς οὐκ ἄρα ἔστιν ζητεῖν ἄνθρωπον οὔτε ὃ οἶδε οὔτε ὃ μὴ οἶδε; οὔτε γὰρ ἂν ὃ γε οἶδεν ζητοῖ—οἶδεν γάρ, καὶ οὔδὲν δεῖ τῷ γε τοιοῦτῳ ζητήσεως—οὔτε ὃ μὴ οἶδεν—οὔδὲ γὰρ οἶδεν ὅτι ζητήσῃ* (Burnet, John (ed.) 1903. *Platonis Opera*. Oxford: Oxford University Press, 80e).

‘newness’ always entails a notion of givenness. In this sense, referents under topic (CT) can be regarded as units that explicitly function as memory appeals. Both the memory segment and a unit under topic would then be processed in parallel. To put it differently: The notion of Topic only makes sense if we likewise consider the ‘trigger’ of a unit under topic. In a contextual sense, this trigger would have been expressed overtly earlier in a narration or discourse, whereas in a contextual sense it would be given either by non-verbal overt triggers or by the knowledge state of a cognizing entity that is involved in the production or processing of a narrative or discourse.

Starting from the assumption that event images are never processed in isolation but always in context, we have to conclude that every referent in an event image is characterized by one of the topical functions (CT) mentioned above. The question whether or not these functions are interpreted linguistically is a matter of language typology.

If one accepts the proposal that Cognitive Topic (CT) has to be distinguished from Informational Topic (IT), it comes clear that instantiations of the first type are not necessarily linked to either F or G in the F/G-schema of an event image. One exception seems to be given by referential units in fTOP function that, however, are often placed in the left extra-clausal periphery, cf.:

(49) [Yesterday/at home/in London...] <sub>fTOP</sub> [she] <sub>gTOP</sub> met [her friend] <sub>i/gTOP</sub>.

The fact that units in fTOP function come close to (pseudo-)clefts suggest that we have to deal with the more or less condensed version of a separate event image that sets up the frame for the event images that are included in this frame. cf. Udi (East Caucasian):

- (50) a. *šüine-bə̌ğ tul-in-en bur-re-q-i bǎp-s-ax*  
 night-middle dog-SA-ERG start-3SG-\$-PAST bark-INF-DAT2  
 ‘At midnight, a/the dog started barking’
- b. *šüine-bə̌ğ bak-e-ne tul-in-en bur-re-q-i bǎp-s-ax*  
 night-middle be(come)-PERF-3SG dog-SA-ERG start-3SG-\$-PAST bark-INF-DAT2  
 ‘It was midnight. A/the dog started barking’
- c. *evaxt’e šüine-bə̌ğ ba-ne-k-e tul-in-en*  
 when night-middle BECOME 3SG-\$-PERF dog-SA-ERG
- bur-re-q-i bǎp-s-ax*  
 start-3SG-\$-PAST bark-INF-DAT2  
 ‘When it was midnight, a/the dog started barking’

Nevertheless, when starting from the stage model alluded to above, one can assume that there is a strong tendency to place those referents in the front stage (Figure) that are in given Topic function (CT), which would relate gTOP to the foreground domain. However, this does not necessarily mean that the foreground domain would be typically addressed first when encoding an event image linguistically. Consider the following example from Malagasy that

illustrates the sentence final position of the given Topic *izahày* ‘we (excl.)’ (Rasoloson 1997: 19):

- (51) *N-iàntso nàmana maromàro izahày*  
 PAST-invite friend some we(EXCL.)

*dìa n-ahàndro sakàfo matsìro Ø*  
 and PAST-cook meal delicious [we]  
 ‘We invited some friends and cooked a delicious meal’.

Likewise, it has been frequently observed that linguistically referential units that are characterized by a higher rank e.g. in hierarchies of animacy, empathy, or social role take a position prior to units that are lower in rank. A famous example comes from Navajo. Hale, Jelinek, and Willie (2003: 10) propose the following hierarchy for Navajo:

- (52) Supernatural > Adult Human > Child > Infant > Large Animal > Small Animal > Insect > Inanimate

The following, frequently quoted examples (e.g. Hale, Jelinek, Willie (2003: 11-12) illustrate the relevance of this hierarchy:<sup>64</sup>

- (53) a. *ashkii tìì’ yi-Ø-z-tat*  
 boy horse 3.O.NFOC/TOP-3.A-PERF-kick.PERF  
 ‘The boy kicked the horse.’

- b. *ashkii tìì’ bi-Ø-z-tat*  
 boy horse 3.O.FOC/TOP-3.A-PERF-kick.PERF  
 ‘The horse kicked the boy.’

- c. *\*tìì’ ashkii yi-Ø-z-tat*  
 horse boy 3.O.NFOC/TOP-3.A-PERF-kick.PERF  
 Intended meaning: ‘The horse kicked the boy.’

- d. *\*ashkii tìì’ bi-Ø-z-tat*  
 boy horse 3.O.FOC/TOP-3.A-PERF-kick.PERF  
 Intended meaning: ‘The boy kicked the horse.’

Here, I have added the ungrammatical version (d) that is nevertheless rarely referred to in the literature. The data show that the first position, generally described as having topic function in Navajo, is filled with the NP that is higher in rank than others, cf. Table (11):

<sup>64</sup> Glosses are slightly modified.

	A	O	
a. High>Low	P1	P2	(yi-)
b. Low>High	P2	P1	(bi-)
c. *Low>High	P1	P2	(yi-)
d. *High>Low	P2	P1	(bi-)

Table 11: Hierarchic features related to position (examples 53 (a-d))

Example (54) more clearly shows that a referent in background function (here: directional locative) is placed first even sufficiently high in rank (Hale, Jelinek, Williee 2003: 12):

- (54) *aszdáán ashkii t̥j̥j' b-e-i-Ø-ni-lóóz*  
 woman boy horse 3OBL.TOP-to-3SG.A-lead.PERF  
 'The boy led the horse to the woman.'

This sentence can be translated literally with the help of a cleft: '(As for) the woman, the boy led the horse to her (*be-*).' The corresponding stage model illustrates that the notion of Topic not necessarily corresponds to the scenic foreground:

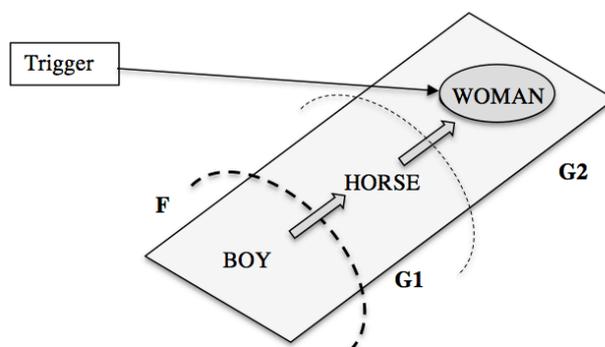


Image 12: A simplified stage model of sentence (54)

Summing up the assumptions presented in this section we may thus argue that CTs do not contribute to the architecture of scenes themselves. Rather, they serve to linguistically express a state of knowledge concerning the agonists present in a given scene. It may be matter of discussion whether CTs are pre-linguistic in nature. Nevertheless, it is reasonable to assume that human beings organize and/or perceive chains of non-verbal activities in a rather analogous way. Pulvermüller and Fadiga (2010) for instance mention the action chain "(open door {switch on light} close door)". As this action chain is fully decontextualized it is difficult to ascribe a CT to the first segment 'door'. Most likely we have to deal with a gTOP the trigger of which is embedded in the general frame underlying this action chain, for instance situatedness and intention. The label of the second action ('switch on light') is perhaps too interpretative: The actual action refers to the main light switch being the target of the corresponding action. Obviously, we are dealing with some kind of iTOP: People expect (out of the world knowledge) that a door typically leads to a room that is equipped with such switches. The third action ('close door') would then be marked for gTOP. Usually, such

topical knowledge is not directly expressed in the actions themselves. On the perceptual side, one might think of indirect evidence such as following a particular horse when watching a horse race, or a particular football player during a football match. In this sense, one might argue that the world of CTs is grounded in pre-linguistic patterns of action and perception, but more explicitly spelt out in the linguistic representation of event images. CTs thus add values of co- and contextual knowledge to the referents given in event images anchoring them in a corresponding narration or discourse. We can expect that CTs - being associated with the referents of even images - may merge those relational values of the referents that emerge from the underlying F/C-schema and/or C/E-archetype (e.g. by coupling F with gTOP). The Informational Topic (IT) that is grounded in the Attention/Information Flow (AIF, see [section...](#)) would then add another value to the whole linguistic representation of an event image in terms of ‘aboutness’. The IT would then have a stronger impact on the internal organization of the linguistic representation of an event image, because it tends to create larger chunks of information especially in the domain of ‘Comment’. Cf. Table (12) that interprets the event image in Image (10) above:

	$\mathfrak{R}$	->	$\mathfrak{R}$
	NP	VP	NP
CT	g/n/iTOP		g/n/iTOP
IT	TOP	Comment	
	grey_cat	chase	little_mouse

Table 12: Options of CT and IT in the event image CAT CHASE MOUSE (English)

The separation of the CT domain from the T/C-pattern allows relating the Informational Topic to what is generally called ‘subject’. I do not want to recapitulate the abundant literature concerning the question of ‘subject’. The approach presented here is related to (but not fully compatible with) two proposals concerning this topic. In Role and Reference Grammar, the notion of ‘subject’ is completely dismissed (as it holds for ‘object’ and so on), being replaced by “the notion of “privileged syntactic argument” [PSA], which is a construction-specific relation and is defined as a restricted neutralization of semantic roles and pragmatic functions for syntactic purposes.” (Van Valin 2000: 67). “[C]onstruction-specific means that a privileged argument may be identified for each construction” (Van Valin 2001: 212). Hence, the PSA is just that argument in a construction that conditions a purely syntactic phenomenon, which cannot be ascribed to semantic or pragmatic relations (paraphrasing Bellasto von Colbe 2004: 185). It is instantiated by corresponding “syntactic templates, the inventory of which in a language constitutes an important component of its grammar.” (Van Valin 2000: 54). The problem, however, is that from a cognitive perspective syntactic to be regarded as gestalt elements that function as complex linguistic signs (see above). In this sense, they are not just structural units, but entail ‘meaning’ just as other linguistic signs do. If we assume that the term ‘privileged’ in ‘privileged syntactic argument’ should not only be seen in relation to a given construction that calls for such an argument, but also in relation to the linguistic and maybe pre-linguistic strategies of construing event

images. Here, it seems useful to refer to the proposal by Langacker (2008: 365), who claims that

the subject and object relations are grammatical manifestations of trajector/landmark alignment: a subject is a nominal that codes the trajector of a profiled relationship; an object is one that codes the landmark. Trajector/landmark alignment was established independently as an aspect of linguistic meaning (...).

More specifically, Langacker argues that “[i]t is a matter of focal prominence: trajector and landmark are the primary and secondary focal participants in a profiled relationship.” He relates focal prominence to patterns of attention that are activated while an event is perceptually processed: “As a limited resource, attention has to be allocated, and for a given structure different allocations are possible” (Langacker 2008: 365). According to the author,

[t]rajector/landmark alignment is simply a linguistic manifestation of this fundamental aspect of cognition. Trajector and landmark can be thought of metaphorically as the onstage elements illuminated by “spotlights” of focal prominence.

In other words, both trajector and landmark are seen as labels for pre-linguistic segments of the attention flow:

The most prominent participant, called the trajector (tr), is the entity construed as being located, evaluated, or described. Impressionistically, it can be characterized as the primary focus within the profiled relationship. Often some other participant is made prominent as a secondary focus. If so, this is called a landmark (lm). (Langacker 2008: 70).

When looking at this definition more closely, it becomes evident that Langacker mixes up pre-linguistic strategies of experience-based perception and strategies to describe event images linguistically. Following the framework outlined above in **section ...**, it seems useful, however, to distinguish these two layers also with respect to terminology. What Langacker calls ‘focal prominence’ ultimately derives from the F/G-schema as elaborated in **section...**. As illustrated by the Rubin vase (Rubin 1915), the identification of Figure and Ground with decontextualized objects may cause problems, especially if the contrast is maximized deleting the internal structure of the corresponding fields, cf. Images (13a) and (13b):<sup>65</sup>



Image 13a and 13b: *The Rubin vase in its elaborate (a) and contour (b) version*

<sup>65</sup> [https://de.wikipedia.org/wiki/Edgar\\_Rubin#/media/File:Rubin2.jpg](https://de.wikipedia.org/wiki/Edgar_Rubin#/media/File:Rubin2.jpg).

Rubin (1915: 35) explains the effect as follows:

Naar to Felter grænser op til hinanden, og det ene opleves som Figur, det andet som Grund, kan det umiddelbart anskueligt oplevede betragtes som karakteriseret ved, at der fra Felternes fælles Kontur udgaar en formende Virken, der kun gør sig gældende ved det ene Felt eller i højere Grad gør sig gældende ved det ene end ved det andet Felt.<sup>66</sup>

Still, it comes clear that even the seemingly ambiguous perception of Image (13b) depends on the knowledge system of the perceiver: It would be more likely that a person that has never seen an object like a vase would identify the black region as the Figure domain, because it recalls the person of objects he/she knows (profile of a person). In addition, if we contextualize the Rubin vase as in Image (14), it is more likely that the perceiver identifies the vase (or beaker) because it is experientially more related to dishes than dishes to faces.



Image 14: *The Rubin vase in a possible context*

It follows that the concrete identification of Figure and Ground in an F/G-schema schema not only depends from gestalt properties and features as described in (13) above, but also from the knowledge state of a perceiver concerning the units included in this relation as well as on the context in which the setting occurs. Likewise patterns of empathy or hierarchic features may become relevant. All these parameters contribute to the semiotic specification of Figure (and consequently Ground) in a given event image. The linguistic representation of the F/C-schema is intimately coupled with the necessarily asymmetric nature of both the F/C-schema itself and its linearized expression in language. It should be emphasized again that the F/G-schema does not generate a relation between isolated entities. The schema has to be regarded as a part of the gestalt properties of an event image spelling out referential units within this event image. In this sense, asymmetry is an integral part of event images. As a matter of consequence, one can expect that this feature is always present with linguistic utterances. Nevertheless, it is problematic to relate this asymmetric pattern (mirroring Figure and Ground) direct to syntactic templates (in terms of Van Valin (2000: 54) or to “special grammatical behaviors of subject and object [that] can (...) be seen as symptoms of their referents being focused relational participants.” (Langacker 2008: 365). Consider for instance the following examples from Chechen and Udi (East Caucasian):

---

<sup>66</sup> “When two fields are adjacent to each other, and if one is experienced as Figure, and the second as Ground, they can be immediately perceived as being characterized in a way that a shaping effect emerges from the joint contour of the fields, which becomes active with just that field, or which becomes active to a higher degree with one [field] than with the other field.” (My translation).

- (55) a. [qun-na diħhal]<sub>G</sub> [ča läħa]<sub>F</sub> [b-äl-la]  
 PROX.OBL-DAT against one snake.ABS VI-go-INFER  
 ‘A snake moved behind him.’
- b. [y-illi-na] [miska-ču stag-a]<sub>F</sub> [baga]<sub>G</sub>.  
 IV-open-infer poor-OBL man-ERG mouth.ABS  
 ‘The poor man opened (his) mouth.’ [Chechen; Jakovlev 1940]
- (56) a. [märäkäi]<sub>F</sub> [tara-p-i ba-ne-k-i] [yas-n-a ga]<sub>G</sub>  
 company turn=to-LV-PART:PAST be-3SG- $\text{\$}$ -PAST mourning-SA-GEN place  
 ‘The company was moving to the mourning place.’  
 [Udi, Keçaari 2001: 121]
- b. [še-t'-a tul-urğ-ox]<sub>G</sub> [dizik'-en]<sub>F</sub>  
 DIST-REF.OBL-GEN young=animal-PL-DAT2 snake-ERG
- [hammaša u-ne-k-sa]  
 always eat-3SG- $\text{\$}$ -PRES  
 ‘All the time, a snake eats its (the bird’s) chickens.’  
 [Udi, Bezahnov 1888: 15]

Starting from the features that are typically consulted when looking for grammatical relations (word order (WO), case, and agreement (AGR)), we can easily see that the dimensions of Figure and Ground are not encoded in parallel, neither in Chechen nor in Udi, cf. Table (13):

	Chechen						Udi					
	F			G			F			G		
	WO	CASE	AGR	WO	CASE	AGR	WO	CASE	AGR	WO	CASE	AGR
a.	2	ABS	+	1	LOC	---	1	ABS	+	2	LOC	---
b.	1	ERG	---	2	ABS	+	2	ERG	+	1	DAT2	---

Table (13): The grammatical correlates of the F/G-schema in sentences (55) and (56)

Still, in both languages, an F-based pivot occurs for instance in simple coordination, cf.:

- (57) *čäna diy-n-aħ i stag šien zuda a ec-na*  
 one.OBL day-SA-LOC DIST man REFL.POSS wife FOC take-INFER
- ∅ *šien (...)* *gowr worda-n-na a y-öž-na*  
 [ANAPH] REFL.POSS (...) horse charriot-SA-DAT FOC IV-bind-INFER
- ∅ *dečg-an ge-n-aš y-a-n w-axa-na.*  
 [ANAPH] wood-GEN twig-SA-PL IV-bring-INF I-go-INFER  
 ‘One day, that man took his wife, harnessed the horse (...) [and] went to bring wooden twigs.’ [Chechen, Jakovlev 1940]

(58) *da-s-nana-s*                      *ca*                      *v-üš*                      *v-iti-na*                      *hara*                      *ši'*  
 father-ERG-mother-ERG    NEG                      I-kill.CV.PRES                      I-leave-INFER                      PROX.ABS                      two

∅                      ∅                      *dov*                      *a*                      *d-i-na*  
 [ANAPH]                      [ANAPH]                      scolding                      FOC                      IV-do-INFER  
 ‘The parents did not leave these two killed, but [they] scolded [them].’  
 [Chechen, cf. Jeschull 2004: 244]

(59) ∅                      *ta-q'un-sa*                      *bia-bak-ama*  
 [ANAPH]                      go\_thither-3PL                      evening-become-CV

∅                      *furu-q'un-exa*  
 [ANAPH]                      search-3PL-LV.PRES

∅                      *ek'a-l*                      *te-q'un-bo<sup>c</sup>ga<sup>c</sup>-b-sa*  
 [ANAPH]                      something-FOC                      NEG-3PL-find-LV.PRES  
 ‘They walk until dusk, they look around, they do not find anything.’  
 [Udi, field notes]

The data from Chechen and Udi illustrate that it is difficult to relate such patterns to a unified way of marking a “privileged syntactic argument” (Van Valin) or “a primary spotlight at the clausal level” (Langacker 2008: 365), cf. Tables (14) and (15) that summarize the basic constructional properties of those units that would correspond to Langacker’s primary focus (trajectory) and secondary focus (landmark):<sup>67</sup>

	Trajector/Primary focus (Langacker)	
	Chechen	Udi
Word Order	Modestly configured	Modestly configured
CASE	ABS [intrans.]	ABS [intrans./pass.]
	ERG [trans.]	ERG [trans.]
AGR	(+) [intrans.]	+
	- [trans.]	
Pivot	+	+

Table 14: *Basic (morpho-)syntactic of the ‘primary focus’ in Chechen and Udi*

<sup>67</sup> Note that the two tables do not mention further variants (such as experiencer constructions, split intransitivity, modal splits etc.). The presence of agreement in Chechen (prefixes referring to the noun class of the corresponding trigger) is conditioned by the phonetic onset of the given verb).

	Landmark/Secondary focus (Langacker)	
	Chechen	Udi
Word Order	Modestly configured	Modestly configured
CASE	ABS	ABS [indefinite]
		DAT [definite]
AGR	(+)	-
Pivot	-	-

Table 15: Basic (morpho-)syntactic of the 'secondary focus' in Chechen and Udi

Thus the primary focus cannot be related to case marking or agreement except if we assume that what is conventionally called the agent of an intransitive sentence and the patient of a transitive sentence would be under primary focus. This assumption, however, goes against the fact that the NP functioning as a patient cannot have primary pivotal properties in Chechen, as it would be true e.g. in Dyirbal or (less pronounced) in Tonga, cf. the standard examples from Dyirbal ((60-61), Dixon 1994: 162) and Tongan ((62-63), Otsuka 2001: 196-197):

(60) *ɲuma yabu-ɲgu bura-n Ø banaga-nyu*  
 father<sub>i</sub>-ABS mother<sub>j</sub>-ERG see-NFUT [ANAPH<sub>i</sub>] return-NFUT  
 'Mother saw father and (father) returned.'

(61) *ɲuma yabu-ɲgu bura-n Ø jaja-ɲgu ɲamba-n*  
 father<sub>i</sub>-ABS mother<sub>j</sub>-ERG see-NFUT [ANAPH<sub>i</sub>] child-ERG hear-NFUT  
 'Mother saw father and the child heard (father).'

(62) *na'e tangi 'a Hina pea ne taa'i 'a Mele.*  
 PAST cry ABS Hina<sub>i</sub> and ANAPH<sub>i</sub> hit ABS Mele  
 'Hina cried and she hit Mele.'

(63) *na'e taa'i 'e Hina 'a Mele pea ne tangi.*  
 PAST hit ERG Hina<sub>i</sub> ABS Mele<sub>j</sub> and ANAPH<sub>i/j</sub> cry  
 'Hina hit Mele and Mele/Hina cried.'

In other words: The primary focus is mainly defined by the co-text in Chechen. In introductory sequences, it shows up as the first NP that is does not function as a frame Topic, cf. (64) showing the primary focus in a verbal place, as opposed to (65) that has its primary focus in clause-final position:

(64) *yürt-ah žima stag qelxi-na tezet xil-la.*  
 village-LOC young man die-INFER funeral\_feast become-INFER  
 'In a village, a young man died (and) a funeral feast took place.'  
 [Dzhambekov 1990, no. 13]

(65) *čha-na y-okqa-ču yürt-ah*  
 one-OBL IV-large-OBL village-LOC

*w-ex-aš-<sup>c</sup>a-š xil-la čha molla.*  
 I-live-CV-I-rest-CV be-INFER one molla.

‘In a large village, a molla lived in tranquility.’ [Dzhambekov 1990, no. 27]

In Chechen, there are hardly any clause-internal means that would support the role of an NP as primary focus. In Udi, however, such a clause-internal marking of the primary focus is carried out with the help of agreement, cf. the following example that is the beginning of a short anecdote:

(66) *sa pasč’ag-en sa pasč’ag-ax č’ax-p-i*  
 one king-ERG one king-DAT2 catch-LV-AOR

*yesir-re-aq’-sa e-ne-sča ič ölki-n-a*  
 prisoner-3SG.-take-PRES carry-3SG-\$.PRES REFL land-SA-DAT1

*ič k’ua e-ne-f-sa*  
 REFL home.DAT keep-3SG-\$.PRES.

‘A king caught a(nother) king, takes (him) as a prisoner, brings (him) to his land, (and) keeps (him imprisoned) in his home.’ [Dirr 1928: 67]

Basically, phoric agreement can be viewed as a tool allowing the referential tracking of one or more focal elements (in terms of Langacker), which has grammaticalized as a clause-internal device of mirroring one or more NPs (or their categorial properties in terms of class or gender) into the VP. In this sense, agreement may have gained some properties independent from its original function, resulting in more complex patterns as illustrated by the following example from Mescalero Apache (cf. Hoijer 1938: 5):

(67) *Ísdzánádleeshé-ń bi-zhaa-ń it’a bi-zqá-yé-go*  
 Ísdzánádleeshé-DEF 3SG:POSS-child-DEF still 3SG.POSS-Little-REL-LOC

*ghéé’ye ho-Ø-ghé-ń ki-aa-yi-nì-Ø-t-ndé-ná’a*  
 giant PROGR-3SG.S-be\_named-REL 3SG.IO-before-3.O-PERF-3SG.A-CL-eat-QUOT

‘When the children of Ísdzánádleeshé still were young, that one who was called Giant, ate them up in front of her.’

According to the arguments presented in this section, it seems reasonable to assume that if ever the notion of ‘subject’ makes sense at all, it should be restricted to secondary processes of stabilizing patterns to express the view point of the perceiver that is entailed in the linguistic encoding of an event image. From a cognitive point of view, one might argue that clausal constructions that are formatted in rather the same way (such as word order, case, agreement, if given)

..... /TO BE CONTINUED /

## 5. Cognitive Transitivity and Grammatical Relations

### 5.1 A Cognitive Typology of Grammatical Relations

### 5.2. A Look at Diachrony: The Grammaticalization of Antipassives <sup>68</sup>

/ to be shortend/

#### 5.2.1 Introduction

Already the earliest assumptions concerning syntactic language change dealt with the emergence of ergative patterns.<sup>69</sup> One of the first authors who turned to the problem of what we usually call 'ergativity' was Wilhelm von Humboldt. Humboldt did not interpret ergativity as the result of syntactic change, but as a synchronic alternative to the standard (in modern terms) 'accusative' pattern, compare Humboldt 1817:316:

"Nun ergibt sich aus der Beziehung (...) der Ursache und Wirkung der Accusativ und in dem ersteren der beiden Begriffe der des handelnden Nominativs. Diesen aber übergehen, ausser der Vaskischen, die meisten andern Sprachen. Der Nominativ bei *Verbis neutris* ist eigentlich gar kein Casus, da er gar keine Beziehung auf einen andern Gegenstand anzeigt, und auch der des Leidens (oder bei *Verbis* ein Pass.) wird es erst, wenn man die Ursache des Leidens hinzunimmt." (Humboldt 1968:257).

Hugo Schuchardt, however, took up an older idea already proposed by Gabelentz (1861), Pott (1873), Winkler (1887), and Müller (1887) and related 'ergativity' to the passive diathesis (Schuchardt 1896). Later on, Alfredo Trombetti criticized Schuchardt by saying that if the ergative construction were a passive in nature, we would have to expect that the given language also knew an 'active' variant (Trombetti 1923:281). Others speculated about a 'culture-driven' motivation of ergativity, such as van Ginneken (1907) who related this pattern to some kind of women's language expressing their 'passive world view', or others who identified a 'mystic power' that would be entailed in the semantics of the ergative case. Erichsen (1944:69) put it the following way: "(...) l'homme, à un stade où son développement

---

<sup>68</sup> This section has profited much from lengthy discussions I had with Peter-Arnold Mumm (Munich) and Walther Sallaberger (Munich). Eugen Hill (Berlin) and Rémy Viredaz (Geneva) have critically commented upon the section on Indo-European and thus helped to correct at least some flaws. Naturally, all possible errors and argumentative shortcomings are in my responsibility only. The paper has not yet been revised by a native speaker of English.

<sup>69</sup> The term 'ergative' has become popular since Dirr (1912:9) who glossed the label *tvoritel'nyj* as "activus, ergativus". Dirr adopted the term 'ergative' from Trombetti (1903:173). Trombetti again borrowed it from Schmidt (1902), who probably knew it from Ray and Haddon (1896). Note that the last two authors use the term 'ergative' to denote some kind of 'instrumental' (here in the 'Saibai' language (Kalaw Kawaw)): "The ergative (...) is shown by the suffix *-ia* which is given Sharon's Vocabulary as the equivalent of 'with'" (Ray and Haddon 1896:130). See Manaster-Ramer 1994, Schulze 2000 for details.

est encore peu avancé, se sent un instrument docile, à la merci de la nature toute-puissante".<sup>70</sup> The 'syntactic turn' to Universal Grammar conditioned a newly formulated interest in the underlying motivation of ergativity (see among many others Johns 1992, 1996, 2000, Manning 1996, van de Visser 2006) as well as a marked over-stretching of the corresponding terminology. The growing interest in the topic of ergativity was also grounded in the many typological observations that have promoted our knowledge about ergative constructions since the early 1970ies. In fact, the debate concerning the 'nature' of ergativity also revived Schuchardt's speculations about its 'passive' origin.<sup>71</sup> In this context, the Indo-Iranian languages played a crucial role, because their diachrony clearly speaks in favor of such an assumption. It is interesting to see that many approaches trying to harmonize features of ergativity and accusativity start from the accusative model by interpreting the ergative pattern as some kind of grammaticalized diathesis. Both the typological literature and analyses advocating for universal patterns less often argue in favor of the other possibility, namely to derive accusativity from ergative models. Such a perspective occasionally shows up in historical-comparative linguistics, sometimes grounded in the hypothesis that earlier stages of a language must have been marked for ergative features because its speakers (in 'primitive' societies) had a less agent-centered model of the world. The Marrist School perhaps is the most pronounced voice of this perspective. Halliday (2003[1966]:64) summarizes the role of ergativity in this 'stadial theory' as follows:

"(...) such as the "stadial" theory advanced by Marr and his followers in the USSR, according to which language developed by stages corresponding to postulated stages of socioeconomic development, with, for example, parts of speech arising in conjunction with the social division of labour. The ergative construction, as it happens, played a prominent part in discussions of stadial theory, being associated, in one account, with a primitive level of technology in which man was powerless in the face of action by external, natural (including supernatural) forces; in which he saw himself as an agency rather than an actor, as an intermediary rather than an initiator of processes and changes."

I do not want to claim that *all* proposals to derive 'modern' accusative patterns from 'ancient' or even pre-historical patterns of ergativity start from such an untenable perspective. Nevertheless, the Marrist perspective has left its traces in quite a number of contemporary approaches to the history of especially Indo-European and Afro-Asiatic. Today, it seems quite 'stylish' to submit proposals related to alleged ergative stages of these proto-languages, sometimes supplemented or replaced by a likewise trendy 'active hypothesis'. For the time being, it seems wise to ignore hypotheses concerning the extremely problematic, mutual relation between the cultural 'stage' of a society and the syntax of the language spoken by its members (see Schulze 2010b, 2010c for a general discussion of this issue). Cumulating the many relevant observations in functional linguistics and language typology, we can instead start from a cyclic process of syntactic change that is driven by variations in language use together with their conventionalization. It can perhaps best be accounted for in terms of the

<sup>70</sup> Also compare Entwistle (1953:14): "Savage man apparently feels that most events are not due to his own volition".

<sup>71</sup> Compare van de Visser 2006:109: "[T]he syntax of every natural language has an accusative orientation, dictated by Universal Grammar"; "every language is basically nominative/ Accusative<sup>[sic!]</sup>" (p.186).

'Accusative Ergative Continuum' (AEC), see Schulze 2000. The AEC entails the assumption that ergativity *may* stem from the grammaticalization of the passive diathesis related to accusativity. Accusativity again *may* emerge from the antipassive diathesis of ergative strategies. Both accusativity and ergativity thus show up as more or less stable points on this cycle that is nested in a very general, nevertheless universal and cognition-based way of structuring human utterances (Schulze 2010a). The AEC does *not* claim that *all* patterns of accusativity and ergativity have to stem from the grammaticalization of corresponding diathetic strategies. Both patterns may be motivated and driven by other features, such as pragmatic or discourse functions, clause chaining, referential hierarchies etc. Hence, the cyclic moment of the AEC is an option in language change, not a 'must'.

In this section, I want to elaborate some aspects of the cyclic aspects of the AEC by concentrating on one segment, namely the development from ergativity to accusativity based on the grammaticalization of antipassive structures. The analysis refers to one documented language (Sumerian) and two proto-languages, Proto-Kartvelian and Proto-Indo-European. The selection of these languages resp. reconstructed languages is not mere chance. Rather, I will argue that the striking similarities between these languages as they show up in their basic syntactic organization is motivated by language contact, not necessarily between these languages as such, but perhaps in terms of an ancient areal feature. This feature can be associated (from a 'synchronic' point of view) with strategies of split ergativity/accusativity that take shape as splits in aspectual patterns. Quite remarkably, later languages in nearly the 'same' areal have echoed the same type of split, but - so to say - the other way round: Now it was the accusative pattern that served as the basis to form a new ergative model derived from the passive diathesis.

This section is organized as follows: In section 5.2.2, I will briefly consider the 'Iranian' model of split aspect systems that has started from the grammaticalization of passive strategies. This section is for illustrative purpose only: It aims at presenting that side of the AEC cycle that has found general acceptance in the literature (passive > ergative). In section 5.2.3, I will briefly elaborate some features of the AEC itself, claiming that ergativity and accusativity are in fact 'two sides of the same medal'. I will use the term 'centralization' to show that ergativity and accusativity differ mainly with respect to the question, which of the referents in a transitive clause is 'highlighted' in the same way as the primary intransitive referent. In this section, I will also propose a simplified model of diathesis that involves two additional patterns, namely pseudo-passive (with the ergative model) and pseudo-antipassives (with the accusative model). Section 5.2.4 is the main part of this section. Here, I argue that all three (reconstructed) languages are governed by analogous processes that are based on the grammaticalization of antipassives. Especially with respect to Proto-Indo-European, internal reconstruction seems to be the main tool to arrive at the corresponding patterns. It goes without saying that internal reconstruction may yield different results pending on the perspective taken by the researcher. In other words: It may well be the case that specialists in Indo-European linguistics will argue against this or that part of the hypothesis, especially with respect to the reconstruction of morphological units. However, I hold that every morphological reconstruction has to consider the fact that morphemes are constructions or form/meaning pairings the function of which can only be discerned if we consider their syntactic value. Isolating the (pre-)historical function of a morpheme means to start from a

compatible syntactic pattern that takes into account not only the morpheme at issue, but all those other morphological and morphosyntactic units that contribute to the syntactic 'meaning' of a given pattern.

### 5.2.2. The 'Iranian model'

It is a well-known fact that (for instance) in some Indo-Aryan languages (Masica 1991) as well as in most Northwest- and East Iranian languages (e.g. Pirejko 1979, Haig 2008) the passive construction or variants of it (dative or possessive constructions) have grammaticalized as a means to express the 'perfective' layer of the given tense/aspect system (e.g. Pray 1976, Klaiman 1978, Bubenik 1989, Peterson 1998, Siewierska 1998, Butt 2001). The resulting paradigm (contrasting a non-past/imperfective 'active' voice with a past/perfective 'passive' voice) is often said to bear notions of 'split ergativity' (e.g. Garrett 1990). Accordingly, the non-past domain is marked for the parallel coding of the subjective (S) and the agentive (A), whereas the objective (O) is treated differently ('accusative', S=A;O).<sup>72</sup> The past domain, on the other hand, shows an ergative pattern, treating S just as O, but A differently. (1-2) illustrate this feature with the help of data from Northern Tolyshi (Schulze 2000a): **Adjust numbering of examples !!!**

(1) a. S in non-past:

<i>ov</i>	<i>čə</i>	<i>čol-o</i>	<i>bo</i>	<i>čol</i>	<i>ome-da</i>
water:ABS	from	well-OBL	into	well:ABS	come-PRES:3SG:S

'The water runs from well to well.' [Miller 1953:251<sup>5</sup>]

b. A and O in non-past:

<i>ov-i</i>	<i>čə</i>	<i>zamin-i</i>	<i>ži-yo</i>	<i>be-var-da-mon.</i>
water-OBL	from	earth-OBL	below-ABL	out-direct:PRES-1PL:A

'We pipeline the water from under the earth.' [Miller 1953:251<sup>4-5</sup>].

(2) a. S in past

<i>palang</i>	<i>ogārd-e</i>	<i>ba</i>	<i>do</i>
leopard:ABS	turn=around:PAST-AUX:3SG:S	to	tree:ABS

'The leopard turned to the tree.' [Schulze 2000a, PA 32]

b. A and O in past:

<i>hamin</i>	<i>palang-əmon</i>	<i>no</i>	<i>asp-i-sa</i>
PROX:EMPH	leopard:ABS-1PL:A	onto	horse-OBL-SUPER

<sup>72</sup> I use the following labels to indicate grammatical relations (see Schulze 2000, Dixon & Aikhenvald 2000): A = agentive, S = subjective, O = objective, IO = indirect objective, IA = indirect agentive (instrumental). I have discussed the value of these labels in more details in Schulze (2000b). '=' signals parallel behavior, ';' marks different behavior, and '>' stands for the notion 'behaving as if'.

*epəšt-əmon-e*

wrap=around:PAST-1PL:A-AUX:3SG

‘We wrapped the leopard around the horse.’ [Schulze 2000a, PA 72]

These examples reflect the following agreement and case patterns for Northern Tolyshi:

(3)	nPAST	S	[LOC]	V
		N:ABS	[NP:LOC~OBL]	V-AGR:S
		A	O	V
		NP:ABS	NP:ABS/OBL <sup>73</sup>	V-AGR:A
	PAST	S	[LOC]	V
		NP:ABS	[NP:LOC~OBL]	V(:PPP)-AGR:S
		A	O	V
		NP:OBL	NP:ABS	V:PPP-AGR:A <sup>74</sup>

Note that in Northern Tolyshi, the Past domain is again marked for a split structure: Case is ergative, but agreement is accusative, as long as we consider the cross-referenced element (S=A) only. Historically, agreement also included the O-domain (see below). The set of morphemes (in fact: floating clitics) used to encode A-agreement in the Past domain ('Set II') differs in parts from those used to encode S-agreement ('Set I'):

(4)	Set I (< Copula)	Set II (< Possessive clitics)
1SG	- <i>m</i>	-(ə) <i>m(e)</i>
2SG	- <i>š</i>	-ə
3SG	-∅	-(ə) <i>š(e)</i>
1PL	- <i>mon</i>	-(ə) <i>mon(e)</i>
2PL	- <i>on</i>	-(ə) <i>on(e)</i>
3PL	- <i>n</i>	-(ə) <i>šon(e)</i>

Some Iranian languages such as Kurmancî Kurdish have generalized the agreement system in the past domain according to the ergative pattern, compare:

(5)	a.	<i>ez</i>	<i>ket-i-m</i>	<i>erdê</i>
		I:ABS	fall-PAST-1SG:S	earth:OBL
		'I fell onto the earth' [Bedir Khan & Lescot 1986:124]		

<sup>73</sup> Northern Tolyshi is marked for a Fluid-O split contrasting non-specific/indefinite referents (absolutive) with specific/definite referents (oblique case). Fluid-O is essentially present in the imperfective series, but also shows up (via analogy) in the perfective pattern (see Schulze 2000a).

<sup>74</sup> The bar (A) indicates that A-agreement is different from A-agreement in imperfective constructions.

- b. *keçkê ez dît-im*  
 little=girl:OBL:F I:ABS see:PAST-1SG:O  
 'The little girl saw me.' [Bedir Khan & Lescot 1986:153]

The agreement marker *-im* in (5b) encodes the objective (1sg), as opposed to e.g. the Northern Tolyshi form *vind-əm-e* 'I have seen (it)': Here, *-əm* marks the agentive. The Iranian 'split' has its origin in Old Persian, although the corresponding sources suggest that at that time, the ergative-like pattern (conventionally labeled the *manā krtam astiy*-type 'I have done it') was not yet fully grammaticalized (Benveniste 1952, Cardona 1970, Bauer 2000:218), compare:

- (6) *ima tya manā*  
 PROX:NOM:SG:N what:NOM:SG:N I:GEN  
  
*kar-t-am Parθavaiy*  
 make-PART:PAST-SG:N Parthia:LOC  
 'This [is] what I have done in Parthia' (~ 'what is done by me in Parthia')  
 [Kent 1953:125 = Darius, Bagistan III, 10]

At least as early as Parthian (roughly 300 BC - 300 AD), the output of this grammaticalization process has become stabilized:

- (7) *abāw-um harw-īn brādar-ān*  
 there-1SG:A all-OBL:PL brother-OBL:PL  
  
*ud wxār-īn pad kirbag windād ah-ēnd*  
 and sister-OBL:PL to piety:ABS find:PPP COP-3PL:O>S  
 'There, I found all brothers and sisters in piety'  
 [Rastorgueva & Molčanova 1981:223, Andreas & Henning 1934:858]

The underlying pattern is marked for the following features: a) A is marked by an oblique case (usually genitive, occasionally dative), whereas O is marked by the nominative case. The verb itself shows up as a past (passive) participle (PPP), originally followed by the copula that agrees with O (in Northern Tolyshi, this copula shows up as a petrified morpheme *-e*). Hence, the referents (□) of a transitive clause are manipulated in terms of an 'as if' relation (see Schulze 2000b): The corresponding referents (functioning as A and O) behave as if they were S (for O) and POSS/LOC (for A):

- (8) A -> O  
 => A>POSS~LOC ->/PPP O>S

The S-properties of O become apparent through the use of the 'intransitive' copula that agrees with O(>S) and the shift in case marking (roughly ACC □ NOM). However, another shift has taken place with respect to word order that marks the pattern again for features of accusativity (A>POSS/LOC fronting; see section 3.3 for the problem of 'accusative'/ergative' word order):

- (9) a. A -> O  
 b. O>S ->/PPP A>POSS~LOC  
 c. A>POSS~LOC ->/PPP O>S

In sum, the following scheme shows up (AGR = agreement, WO = word order):

(10)		CASE	AGR		WO
			a.	b.	
nPAST	S	x	+	+	First
	A	x	+	+	First
	O	y	-	-	Non-First
Type:		ACC	ACC	ACC	ACC
PAST	S	x	+	+	First
	A	y	-	+	First
	O	x	+	-	Non-First
Type:		ERG	ERG	ACC	ACC

In this table, I have mentioned two types of agreement: a. is the Kurmancî type (see (5)) and b. is the Tolyshi type (see (1-2)). 'x' and 'y' stand for specific types of case markers.

In this section, I have briefly considered some aspects of split aspect systems in Iranian. The scheme in (10) suggests that this split is based on a gradual shift with respect to centrality, as illustrated by Northern Tolyshi. In the next section, I want to elaborate the notion of transitivity and 'centrality' as embodied in the AEC and relate to the functional domain of diathesis.

### 5.2.3 Transitivity, Centrality and Diathesis<sup>75</sup>

#### 5.2.3.1 Transitivity /shorten!!!

Before turning to the notion of centrality, it is useful to briefly consider the relationship between transitive and intransitive structures. From a cognitive point of view, transitive cause-effect relations can be described as having emerged from a more or less pronounced metaphorization of structures that show up in 'motion or state' constructions (see Schulze 2010 for details). By this I mean that patterns of transitivity represent the target domain of processes that start from 'locational' source domains. Hence, event images are primarily construed as figure-ground relations that may be dynamic or non-dynamic (stative). Both Figure (F) and Ground (G) are conceptualized in terms of referents (□), whereby the referent associated with Figure is more salient than the referent associated with Ground. The F/G

<sup>75</sup> This section includes condensed parts of Schulze 2010a.

schema permits us to interpret the gestalt structure of event images, especially if they are loaded with a language-based expression model (linearization). Accordingly, the gestalt of any event image is processed by isolating a figure domain embedded into a corresponding ground. The mutual, vector-like relation between these two gestalt properties is construed as a 'relator', by itself an inferential property that only shows up in 'changes' (both positive and negative) with respect to the position of F and G or in changes of F or G properties. It should be noted that the F/G vector (in short: F□G) is not necessarily bound to spatial organization that isolates a ground as being 'behind' a figure. Rather, ground is defined as that gestalt segment of an event image that conceptually 'surrounds' Figure or that emerges from the isolation of Figure. In other words: Even though F□G is grounded in spatial vision and audition, it has highly 'abstract' (or: radical) properties that are blended with spatial segments. This includes (among others):

(11)	<i>Figure</i>		<i>Ground</i>
	Smaller		Larger
	With boundaries		Without boundaries
	More accessible		Less accessible
	More salient		Less salient
	More mobile		Less mobile

Cognition is thus more attentive towards fixing the figure portion of an event image. The ground domain can often be obscured or inferred resulting in less transitive structures, e.g.

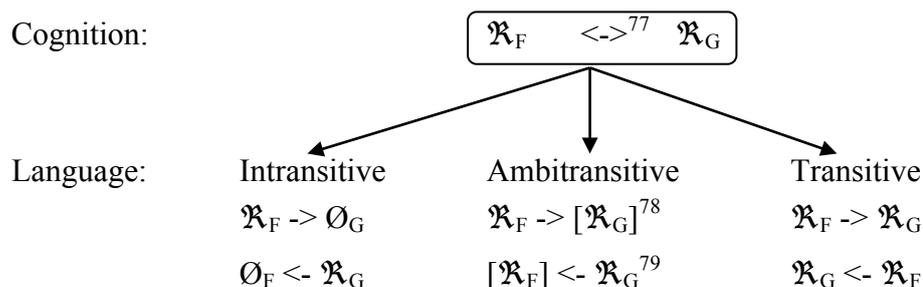
(12)	Figure	->	Ground
	I	go	[to the market]

The question to which degree grounds become typically masked is a matter of conventionalization. In this sense, linguistic intransitivity does not reflect a primary cognitive strategy, but rather the generalized and conventionalized way of talking about 'locational' event images or of event images that are construed as processual or stative events. These schemas prototypically relate two referents, one of them (Ground) being more liable for inferential deletion than the other (Figure). Linguistic intransitivity is thus grounded in 'cognitive transitivity' just as it is true for linguistic transitivity or 'ambitransitivity' (that is structures that may show up both as transitive and intransitive constructions<sup>76</sup>):

---

<sup>76</sup> See Dixon & Aikhenvald 2000:4.

(13) Cognition:



In (13), I have indicated Figure and Ground with the help of the corresponding indices. Note that the scheme also entails constructions that are marked for the masking of the figure domain ( $\emptyset_F \rightarrow \mathfrak{R}_G$ ). In addition, I describe the variants  $\mathfrak{R}_F \rightarrow \mathfrak{R}_G$  and  $\mathfrak{R}_G \leftarrow \mathfrak{R}_F$  for transitive structures in order to reflect the accusative ergative continuum, see below. According to (13), any event image is processed according to a model that links (at least) two referential segments with the help of a relator. Hence, 'transitivity' is not just a subclass of event images that would be determined by the 'semantics' of the verbal expression at issue. In fact, 'cognitive transitivity' does not depend from the presence of specific semantic features associated with the referents such as 'Proto-Agent' or 'Proto-Patient' (Dowty 1991), role archetypes as proposed by Langacker (1991),<sup>80</sup> or agency and causation (Turner 1996). According to the approach given in this section, such semantic or conceptual features are neither archetypes nor prototypical, but emergent properties that stem (among others) from the interaction of the  $\mathfrak{R} \rightarrow \mathfrak{R}$  model with the F->G schema and its dynamics. As has been said above, linguistically transitive structures represent a special type of coupling the two schemas  $\mathfrak{R} \rightarrow \mathfrak{R}$  and F->G. An 'intermediate' stage is present for instance in Arabic and (partially) in Latin, where the referent typically called the 'object' is encoded in just the way a spatial referent is encoded in intransitive clauses:

<sup>77</sup> I use the symbol  $\leftrightarrow$  to denote bidirectional transitivity. As soon as asymmetric properties become relevant, the symbol is turned into  $\rightarrow$  or  $\leftarrow$ .

<sup>78</sup> Typically 'unergative' structures.

<sup>79</sup> Typically 'unaccusative' structures.

<sup>80</sup> "The archetype agent is a person who volitionally initiates physical activity resulting, through physical contact, in the transfer of energy to an external object. Its polar opposite is an archetypal patient, an inanimate object that absorbs the energy transmitted via externally initiated physical contact and thereby undergoes an internal change of state" (Langacker 1991:285). Note the infelicitous use of Outer World terms (such as 'person', 'object') in the context of cognitive event images. The same holds for Croft's definition of transitivity: "[T]he initiator is an agent exercising his/her volition, and the endpoint undergoes a complete, even irreversible, change of state. The conceptual explanation for the prototypical character of this situation type is that this is the most clearly individuated situation type (...). An agent acting from his/her own volition has no salient antecedent cause, and a patient that ends in a state, especially an irreversible state, has the least likelihood of bringing about subsequent events" (Croft 2000:60). Taylor (2002:415-428) at least recognizes considerable degrees of syntactic variation within transitivity (but note Taylor 1998:187: "The transitive prototype involves an agent (encoded by the subject nominal), which intentionally acts on a patient (the direct object nominal) so as to effect a change-of-state in the patient.").

(14) Classical Arabic:

- a. *ḡahaba*                      *s-sūq-a*  
 go:PERF:3SG:M              DEF-market-ACC  
 'He went to the market.' (Haywood & Nahmad 1965:392)
- b. *kāna*                      *l-bustān-u*                      *kabīr-a-n*  
 be:PERF:3SG:M              DEF-garden-NOM              large-ACC-INDEF  
 'The garden was large.' (Haywood & Nahmad 1965:105)<sup>81</sup>
- c. *fataḡa*                      *l-walad-u*              *l-bāb-a*  
 open:PERF:3SG:M              DEF-boy-NOM              DEF-door-ACC  
 'The boy opened the door.' (Haywood & Nahmad 1965:99)

(14) Latin:

- cum*    *autem*    *ven-iss-et*              *domu-m*  
 when    thus    come-PLU-3SG    house-ACC  
 'When he had thus come into the house' (Matthew 9:28)

One might argue that - as for the Latin example - the spatial expression is encoded just like a referent in O-behavior ('object'). However, this hypothesis goes against the assumption that the semantics of 'functional' case forms are metaphorically derived from spatial semantics (see Schulze 2009 among many others). In this sense, the term *domum* has retained the invariant component of the semantics of the accusative. Analogically, we can reinterpret case-marked prepositional clauses as cognitively transitive, compare (German):<sup>82</sup>

- (15) a. *Ich*    *ging=in*                      *d-en*                      *Garten*  
 I:NOM    go=into:PAST:1SG              DEF-SG:M:ACC              garden  
 'I went into the garden.'
- b. *Ich*    *sah*                      *d-en*                      *Hund.*  
 I:NOM    see:PAST:1SG              DEF-SG:M:ACC              dog  
 'I saw the dog.'
- (16) a. *Ich*    *stand=auf*                      *d-er*                      *Wiese*  
 I:NOM    stand=on:PAST:1SG              DEF-SG:F:DAT              meadow  
 'I stood on the meadow.'

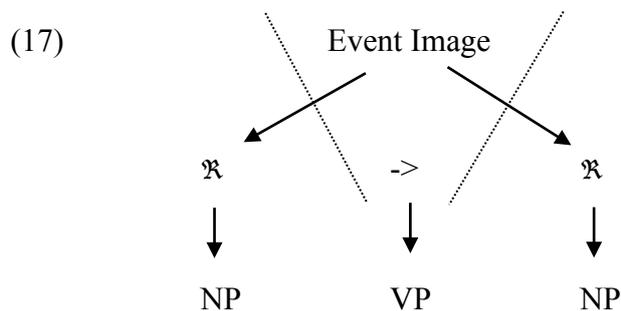
<sup>81</sup> The fact that Classical Arabic does not clearly distinguish between nouns and adjectives allows to read the sentences as follows: 'the garden was (< \*became towards) a large one.'

<sup>82</sup> Note that in the so-called Kanak variety of German (language of youngsters of the second and third immigration generation), the intransitive pattern of motion verbs is even closer to that of transitives, compare *isch geh bahnhof* 'I go [to the] station', *isch mach dich messer wenn du nicht kino kommst* 'I tie you into knots if you do not go (with me) to the cinema' (note the Turkish-based use of *machen* 'to do' (= Turkish *etmek*) as a light verb incorporating the concept *messer* 'knife').

- b. *Ich half d-er Frau*  
 I:NOM help:PAST:1SG DEF-SG:F:DAT woman  
 'I helped the woman.'

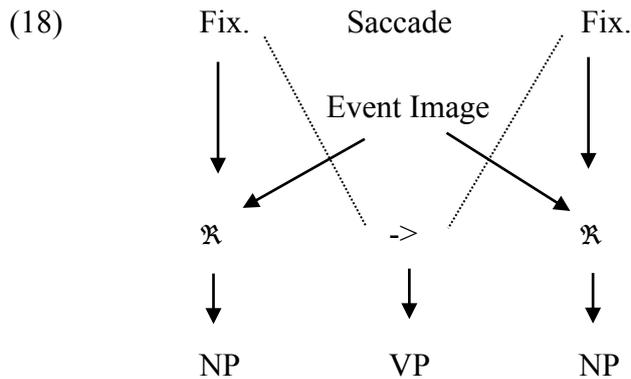
It goes without saying that the intransitive clauses given above have a different behavioral potential than their transitive counterparts (they are less liable to morphosyntactic passivization, for instance). In addition, they lack the metaphorical dimension typically present with referents in A-function (see below). However, this does not argue against the assumption that linguistically intransitive clauses are transitive from a cognitive point of view.

Before turning to this point, it is important to recall that the relator that links a figure and a ground is inferential in nature: The process of e.g. *reading* or *hitting* cannot be imagined without invoking at least rudimentary referential concepts. The fact that such relators are nevertheless lexically present (e.g. in terms of *verbs*) leads to the assumption that they do not reflect the relator as such, but the whole event image. Accordingly, verbs (better: verb phrases) are the meronymic expression of (linguistic) clauses:



I assume that there is an iconic relation between the sequencing of fixation and saccades in visual perception and cognitive transitivity<sup>83</sup>: Fixation periods are highly informative, whereas no information is processed during periods of saccades (eye movement), see Fulton 2000. Fixation lays the ground for object recognition and, once entrenched, for object permanence, whereas saccades set cognition into a state of 'blindness' (while shifting from one fixation to the other). Cognitive blindness (or (metaphorically speaking) cognitive saccades) can be regarded as that state of cognition that allows it to draw inferences from given referents pinpointed during fixation. The ensemble of a fixation-saccade-fixation sequence is construed in terms of a common gestalt that evolves into the matrix of event images. In this sense, cognitive verbs are cognitive saccades, and referents are cognitive fixations. The scheme in (17) can be thus extended as follows:

<sup>83</sup> Note that I use the term 'cognitive transitivity' in a more or less metaphorical sense. It should not imply that conceptual structures are grounded in linguistic structures (rather: *vice versa*).



As has been said above, the gestalt of the event image (schematized according to the  $\mathfrak{R} \rightarrow \mathfrak{R}$  vector) is always construed with the help of the figure ground schema. In fact, both vectors, namely  $\mathfrak{R} \rightarrow \mathfrak{R}$  and  $F \rightarrow G$  depend from each other. But whereas  $F \rightarrow G$  is grounded in the architecture of the perceptual system,  $\mathfrak{R} \rightarrow \mathfrak{R}$  is strongly related to memory. To put it differently:  $F \rightarrow G$  is grounded in perception,  $\mathfrak{R} \rightarrow \mathfrak{R}$  is grounded in knowledge. The interaction of the two schemas gives rise to a number of emergent properties the quality of which result from the 'linguistic layer': An event image is normally loaded with a language-based expression model that provokes the linearization of  $F \rightarrow G$  (and thus  $\mathfrak{R} \rightarrow \mathfrak{R}$ ) expressions. Linearization, however, has an important effect on the individual segments: The degree of attention varies in such linear structures: The first chunk in a linear sequence (that may be preceded by a field that takes up a topic chunk) gains rather high attention followed by a chunk of lower attention.<sup>84</sup> The third chunk usually is slightly higher in attention than the second one, but often lower than the initial chunk. If we apply this scheme to the  $F \rightarrow G$  vector we can assume that it is marked for a basic asymmetry that results from the degree of attention correlated with each chunk. In a standard interpretation,  $F$  would be marked for a high value, whereas  $\mathfrak{R}$  and  $G$  are marked for lower values. Note that the correlation of  $F \rightarrow G$  with this type of attention flow is highly conventionalized and language-dependent. In addition, it may be manipulated with the help of diathetic processes such as foregrounding (passivization, antipassivization) etc. (see below). Nevertheless, we can assume that the  $F \rightarrow G$  vector entails a syntactic value that tends to highlight the figure domain and to shadow the ground domain.

On the other hand, the  $\mathfrak{R} \rightarrow \mathfrak{R}$  vector tends to be marked for conceptual, memory-based values that are ultimately derived from actional patterns of human behavior. These patterns are grounded in what has been termed the Perception Action Cycle (PAC):<sup>85</sup>

[...] directed behaviors of animals comprise continuous cyclic relations between the detection of information and the performatory and exploratory activities that serve, in significant part, to

<sup>84</sup> I assume that there is an iconic relation between the attention flow and the sequencing of fixation and saccades in visual perception, see Fulton 2000.

<sup>85</sup> There are numerous ways of defining and describing the Perception Action Cycle. Here, I take the viewpoint of ecological psychology.

facilitate that detection and which, in turn, are guided and shaped by it (Swenson & Turvey 1991:319)

This cyclic pattern can be paraphrased as follows: The environment is perceived in accordance with the motion (> behavior) of an active organism *in* it. Individuals move in the world in order to perceive and perceive in order to move (see Vernadsky 1929). The 'object' in the Outer World that helps to *inform* (or, phylogenetically speaking: to *feed*) the individual is judged upon via perception according to the 'question' whether the effect compensates for the effort to 'reach' it. This vital behavioral pattern results in another schema that is based on 'force': The individual interprets its energetic (or: informational) state as 'force', whereas an 'object' in the Outer World is related to this feature in accordance with the individual's experience with former representatives of this 'object'. The default is a high force value for the individual and an  $\alpha$ -value<sup>86</sup> for the other 'object'. The resulting vector is Fo-> $\alpha$ Fo. In case the 'object' is thought to have antagonistic force<sup>87</sup> (*counterforce* (cFo)) the individual may be stimulated to apply more force or to respect the cFo feature of the object. The grading of Fo (actor/agonist) and  $\alpha$ Fo (perceived object/antagonist) leads to important types of pragmatic and semantic variation, especially if expressed linguistically. One prominent type is the splitting of O (e.g. honorific *pars pro toto* (e.g. the emergence of the Slavic O-split based on the use of the genitive-partitive), differences in directional marking (e.g. the Spanish opposition accusative vs. dative/lative). Another one is entailed in the splitting of A (actional vs. potential vs. conative vs. affected, etc.). In addition, modal features like 'limited control' (*finally managed to*) may emerge (as in Salish languages). Further examples are discussed in Schulze 1998. In sum, we can start from four schemas or vectors that cause the merger of grammatical relations.

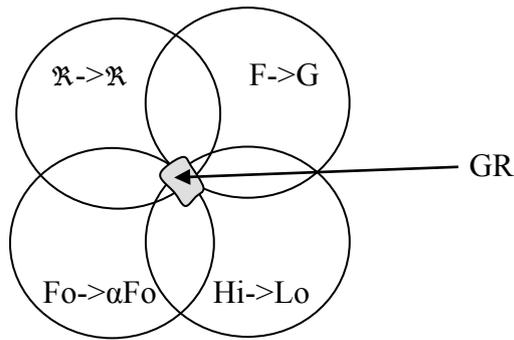
(19)	Experience	⌘	->	⌘	Semantic
	Perception	F	->	G	Syntactic
	PAC	Fo	->	$\alpha$ Fo ~ cFo	Semantic/Pragmatic
	Attention Flow	Higher	....	Lower	Pragmatic

As a result, grammatical relations emerge (see chapter 5.1) that combine pragmatic, semantic, and syntactic features:

<sup>86</sup> An  $\alpha$ -value is given, if the value is irrelevant in the context of a physical or mental action.

<sup>87</sup> See Talmy 2000 for his use of the terms agonist and antagonist in Force Dynamics. The underlying terminology stems from the structural analysis of narratives, starting with Propp 1928, also compare Beaugrande & Colby 1979 and Wildgen 1990.

(20)



The relational primitives (S, LOC, A, O, IO, IA, AO) emerge at the 'intersection' of the four relevant schemes that again copy their basic properties onto the primitives. The most unmarked type of processing an event image is characterized by the following transitive relation:

$$(21) \quad \mathfrak{R}_{F/Fo} \quad \rightarrow \quad \mathfrak{R}_{G/\alpha Fo}$$

The type of grammatical relation emerging from this interaction depends on various factors. It can be assumed that the  $F \square G$  vector is loaded with the correlation  $S \rightarrow LOC$ , which reads:  $S \rightarrow LOC$  is a linguistic schema of event images that relates an F-referent (F) to a G-referent (both stative and dynamic). The metaphorization of this schema starts from the overall hypothesis that what is perceptually salient is *before* the non-salient segment. The well-known metaphorization path space > time > cause determines that F is loaded with Fo-properties resulting in the relational primitive A (or IA). The LOC-domain is analogically metaphorized to O (or IO).

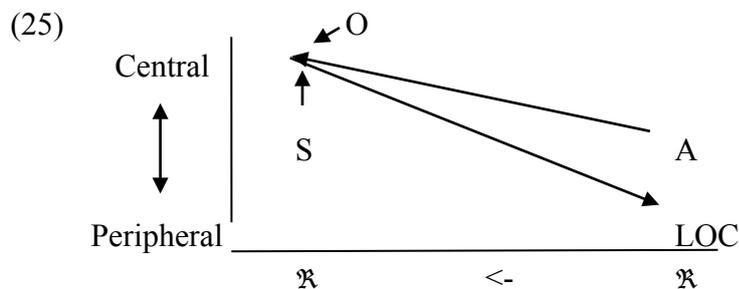
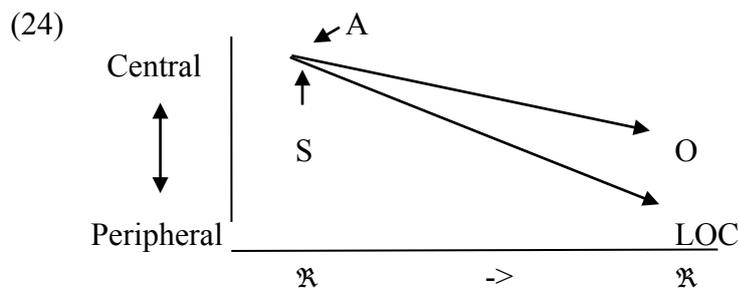
$$(22) \quad \Rightarrow \quad \begin{array}{ccc} \mathfrak{R} & \langle - \rangle & \mathfrak{R} \\ \downarrow S & \rightarrow & \downarrow LOC \\ \downarrow A & \rightarrow & \downarrow O \end{array}$$

This pattern is marked for a perspective that interprets the causal vector  $A \square O$  according to the linear sequence 'no cause (*central*) without effect (*peripheral*)' (see below). Therefore, A becomes associated with S, leading to the standard accusative pattern  $S=A;O$  (A-centered). The revised perspective is taken in an ergative behavioral pattern:

$$(23) \quad \Rightarrow \quad \begin{array}{ccc} \mathfrak{R} & \langle - \rangle & \mathfrak{R} \\ \downarrow S & \rightarrow & \downarrow LOC \\ \downarrow O & \leftarrow & \downarrow A \end{array}$$

Here, the effect domain is more central. The scheme thus reads: 'no effect (*central*) without cause (*peripheral*)'. As a result, O becomes associated with S ( $S=O;A$  or 'O-centered'). It is

clear that the two endpoints of the scale of the accusative ergative continuum (S=A;O and S=O;A) are structurally coupled<sup>88</sup> with the source domain S->LOC. This pattern differs from A->O especially with respect to the degree to which the ground domain is expressed. In F->LOC, ground (LOC) is schematically associated with the periphery. By 'periphery' is meant that a referent gains less cognitive attention than the central one. In A->O, the secondary domain (O in S=A;O and A in S=O;A) is less peripheral due to the fact that the agonist/antagonist 'role' becomes apparent especially if its counterpart is overtly marked, too. (24) illustrates the O/LOC gradient for an accusative pattern, (25) the A/LOC gradient for an ergative pattern.



As a result, linguistically intransitive structures emerge that are characterized by the masking of the peripheral domain (LOC). The reasons for the intransitivization of the language-based expression of an event image can be related to the above-mentioned fact that S->LOC schemas are more close to the functional domain of the F->G vector (source domain): It tends to exclude a ground from being further processed by the attention flow. Such masking strategies also underlie ambitransitives and structures that show up as incorporation. In the latter case, the O domain is no longer isolated from the relator domain. It loses its referential profile and becomes an adverb-like segment of the relator:

(26) A -> O => A(>S) -><sub>O</sub>

<sup>88</sup> Structural coupling was first described comprehensively by Humberto Maturana: "I have called the dynamics of congruent structural changes that take place spontaneously between systems in recurrent (in fact recursive) interactions, as well as the coherent structural dynamics that result, *structural coupling*" (Maturana 2002:16-17).

Conversely, standard intransitive patterns can be profiled as transitive structures by reifying the event as an entity. Here, the relator is expressed in terms of a rather general, nearly generic concept (*decorporation*), e.g.:<sup>89</sup>

(27)	F	->	G		F	->	G <sub>1</sub>	->	G <sub>2</sub>
	S	->	LOC		A	->	O	->	LOC
	<i>I</i>	<i>swim</i>	∅	=>	<i>I</i>	<i>do</i>	<i>swim</i>		∅

### 5.2.3.2 Centrality

Polinsky (2005:439) has argued that "[t]he use of a prototypical transitive verb entails that the event denoted by that verb causes a change of state in the object participant". This pronounced 'semantic' view of transitivity can be generalized, if we refer to the notion of 'centrality'. Above it has been argued that the basic syntax of linguistic utterances is marked for an asymmetric alignment of actants (see Schulze 1998, 2010). Accordingly, one of the actants is placed in the 'center of attention', whereas the other one (if present) is placed in the periphery. 'Center' and 'periphery' automatically result from processing a perceived or mentally construed element in terms of its parts. The most basic cognitive 'hypothesis' related to this procedure is that something that 'follows' (i.e., that is processed second) 'elaborates' what has been processed first, or vice versa. Usually, the center of attention is associated with some kind of (visual -> cognitive) foreground, whereas the periphery constitutes the 'background' domain (Schulze 2010a). On the language-based expressive level, the resulting asymmetry corresponds to the functional highlighting of one of the actants in transitive constructions matching the central actant in intransitive structures:

(28)		Central	Peripheral
	ACC	S=A	O
	ERG	S=O	A

'Centrality' thus refers to the necessary condition for utterances to be processed: A central actant functions as the 'point of reference' (or: foreground) for construing an event image whereby the semantic properties of the verbal relation are primarily attributed to this actant. In languages with binary (diptotic) case systems such as Northern Tolyshi, this aspect may show up iconically in the case system itself: Northern Tolyshi has basically two case forms, one of them being zero (to encode the center) and the other being *-i* (used to encode the periphery):

---

<sup>89</sup> Note that this is a structural analysis only. Naturally, the construction has strongly grammaticalized resulting in an emphatic variant of the underlying form.

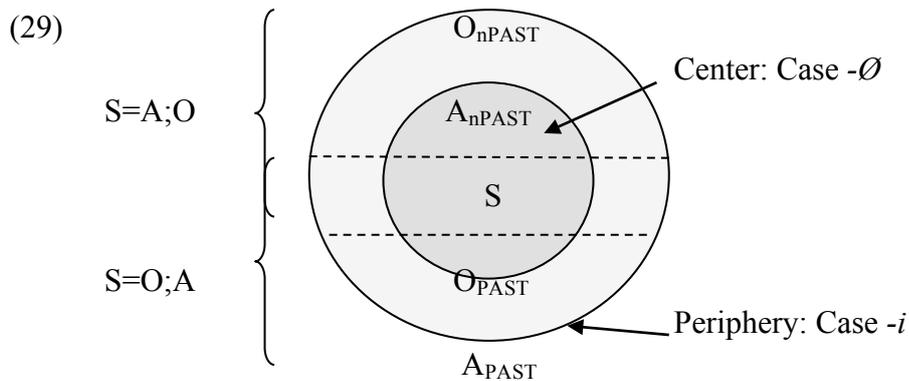
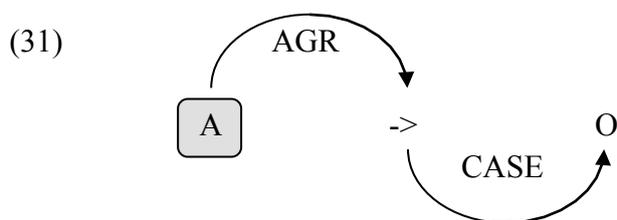


Figure 1: Center and periphery with Northern Tolyshi case forms.

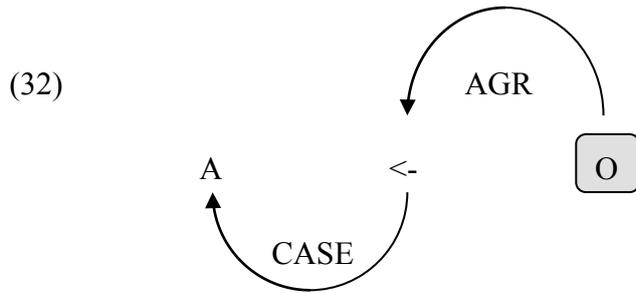
The coding of the center-periphery continuum (CPC) naturally depends from whether a given language is head-marking, depend-marking, or neutral. With 'neutral' strategies, only word order is relevant ('isolating type').<sup>90</sup> In this case, 'center-first' seems to be the standard option (e.g. Vietnamese, Pirahã, Ju'hoan), although there are well-known exceptions such as *Tukang Besi*, *Nicobarese*, *Krongo*, or *Malagasy* (Rasoloson 1997:19):

- (30) a. *n-òdy*                      *ny*      *ankizy*  
 PAST-go=home                  DEF      others  
 'The others went home.'
- b. *n-iàntso*      *nàmana*      *maromàro*      *izahày*  
 PAST:invite      friend                  some                  we:EXCL  
 'We have invited some friends.'

In *Malagasy*, 'center final' strategies prevail, perhaps grounded in the grammaticalization of older cataphoric patterns. With respect to head- and dependent-marking, we can describe a strong tendency to relate CASE to the periphery and AGR to the center: For systems with 'single constituent agreement' (often called *monopersonal agreement*), we often see patterns like (31) or (32)



<sup>90</sup> Accordingly, the 'neuter' type *must* always be a subtype of either ergative or accusative strategies. A and O must *somehow* be differentiated, be it lexically, morphologically, or syntactically. Word order seems to be the most basic device since it is intimately related to the effects that sequencing or serialization of event images has on the structure of linear linguistic expressions.



The scheme in (31) has an A-based agreement pattern, supplemented by case marking (if given) of peripheral O. This pattern corresponds to an 'accusative' model. (32) is 'ergative', because it has O-based agreement, supplemented by case marking of peripheral A (also see Modini 1989). Obviously, both patterns are highly idealized. Nevertheless, they are present in some languages of the world. For instance, (31) is present in most Turkic languages and in Southwest Iranian (Persian), although a Fluid-O split further complicates the system of these languages, compare (33). The pattern in (32) is nicely documented for instance in many East Caucasian languages such as Chechen, Avar, or Tsez, compare (34).

(33) Persian:  
*mo'allem*      *nāme-rā*      *mi-nevis-ad*  
 teacher      letter-O:SPEC      IND:DUR-write:PRES-3SG:A  
 'The teacher writes the letter.' [Alavi & Lorenz 188:58]

(34) Chechen:  
*oyla*      *y-i-na*      *q'ien-ču*      *stag-a*  
 thought(IV):ABS      IV:O-do-INFER      poor-OBL      man-ERG  
 'The poor man thought (lit.: made a thought).' [Jakovlev 1940:308]

Prototypically, a 'mixed system' (head- and dependent marking) is marked for a balanced distribution of case and agreement:

(35)

	Center	Periphery
CASE	-Ø	yes
AGR	yes	-Ø

Accordingly, agreement reinforces the center, and case reinforces the periphery. However, both schemes can show up in reduced, expanded or subcategorized versions. The following table lists several options (the table ignores specific splits based for instance on person or animacy hierarchies):

(36)

	A		O		<i>Example</i>
	CASE	AGR	CASE	AGR	
1a	+	-	-	-	Lezgi
1b	-	+	-	-	French
1c	-	-	+	-	Khalkha (Fluid-O)
1d	-	-	-	+	Kilmeri
2a	-	+	+	-	Turkish (Fluid-O)
2b	+	-	-	+	Chechen
2c	+	+	-	-	Oromo
2d	-	-	+	+	Khoekhoe
2e	+	-	+	-	Japanese
2f	-	+	-	+	Abkhaz
3a	+	+	+	-	Latin
3b	+	+	-	+	Lak
3c	+	-	+	+	?
3d	-	+	+	+	West Greenlandic
4	+	+	+	+	Adyghej

*Patterns of Case/Agreement correlations in basic transitive clauses*<sup>91</sup>

As has been said, this scale also depends from the weight of the given actant. The actant may typically qualify for one of the relevant grammatical relations (see Silverstein 1976, Schulze 1998:457-491), resulting in what is sometimes called 'hierarchical alignment systems' (Nichols 1992, Mithun 1999, Zúñiga 2006). The center-periphery continuum (CPC) can undergo further modifications that are based on a number of split procedures. Here, we have to distinguish for instance two basic types: a) the functional role of an actant is modified in terms of an *as-if*-relation, pending on either the verbal semantics or the semantic category of the actant (Split-X) or on the pragmatic and/or cognitive assessment made by the speaker with respect to a given actant (Fluid-X, see Dixon 1994, Schulze 2000b); b) The linguistic symbolization of event images is subcategorized according to the correlation of causality, time, and centrality. In section 3.1, I have alluded to common (folk-)knowledge that defines a causal relation in reference to either the cause or the effect domain. Accordingly, two definitional options show up:

- (37)
- |    |                    |                  |
|----|--------------------|------------------|
|    | <i>Definiendum</i> | <i>Definiens</i> |
| a. | No cause           | without effect.  |
| b. | No effect          | without cause.   |

In (a), it is the cause domain that figures as the 'center' of the definition, whereas the effect domain takes up this position in (b). From a linguistic point of view, (a) is thus centered on

<sup>91</sup> This table also ignores constraints on case and agreement that emerge from TAM patterns (as in Lak), variants of case patterns as present.e.g. in French (*je/me, tu/te, il-elle/le-la* etc.), or peculiarities arising from gender assignment (as in Latin).

the agentive domain (A) and (b) is centered on the objective domain (O). In (38), the definitions given in (37) are rendered in terms of grammatical relations. Here, I indicate centrality with the help of capital letters:

- (38) a. A -> o  
 b. a -> O

These two patterns can show considerable degrees of variation. For instance, the two 'indirect' grammatical relations 'indirect objective' (IO, semantically related to experiencers, beneficiaries, goal etc.) and 'indirect agentive' (IA, semantically related to instrumentals etc.) may replace O or A, or they may be added to the given pattern. Likewise, referents marked for other grammatical relations such as Locative (LOC) can occur. Such referents may be subjected to manipulations regarding the CPC just as it is true for A and O (e.g. IO-passives, LOC-passives etc.). However, for the purpose of the given section, I restrict myself to the A□O pattern.

### 5.2.3.3 Diathesis

(38a) can be called A-centered and (38b) O-centered. A-centered constructions typically refer to the presence and givenness of an actant in agentive function that exerts an action. In this case, the construction focuses on the interaction between the verbal relation and the A-actant (the 'cause'-domain), often resulting in more process-like, 'imperfective' conceptualizations of event images (see among many others Tchekhoff 1987, Cooreman 1994). Here, the O-domain is less salient and thus more peripheral. On the other hand, an O-centered construction (38b) focuses on the interaction of the verbal relation and the O-actant (the 'effect' domain), resulting in more resultative, 'perfective' conceptualizations. In this case, the A-actant is less salient and thus more peripheral:

- (39) a.  Imperfective/Progressive/Durative  
 b.  Perfective/Resultative/Stative

The resulting patterns match the (in)transitivity scale first described by Hopper and Thompson (1980) (see section 3.1). Hence, we can argue that (39a) is more intransitive, whereas (39b) is more transitive. However, this correlation is problematic for the following reason: The O-centered pattern in (39b) can easily develop into passive-like constructions that are marked for 'facultativeness' with respect to the agentive actant ({a}). As a result, the actant in objective function acquires S-properties (see above), turning the whole construction into a (more) intransitive one. Likewise, the O-actant in (39a) can be 'bleached' and/or

become facultative ( $\{o\}$ ), resulting again in a more intransitive pattern that relates S-properties to the agentive.

- (40) a.    A     ->   o  
           A>S  ->   {o}
- b.    a     ->   O  
           {a}  ->   O>S

Hence, both patterns may turn into more 'intransitive' structures that stress the peripheral properties of one of the actants. A typical way is to relate such peripheral actants to the functional domain of the Locative. For instance, the process  $A \square o \Rightarrow A>S \square o>loc$  is given in the following German pair (also see Scheibl 2006):

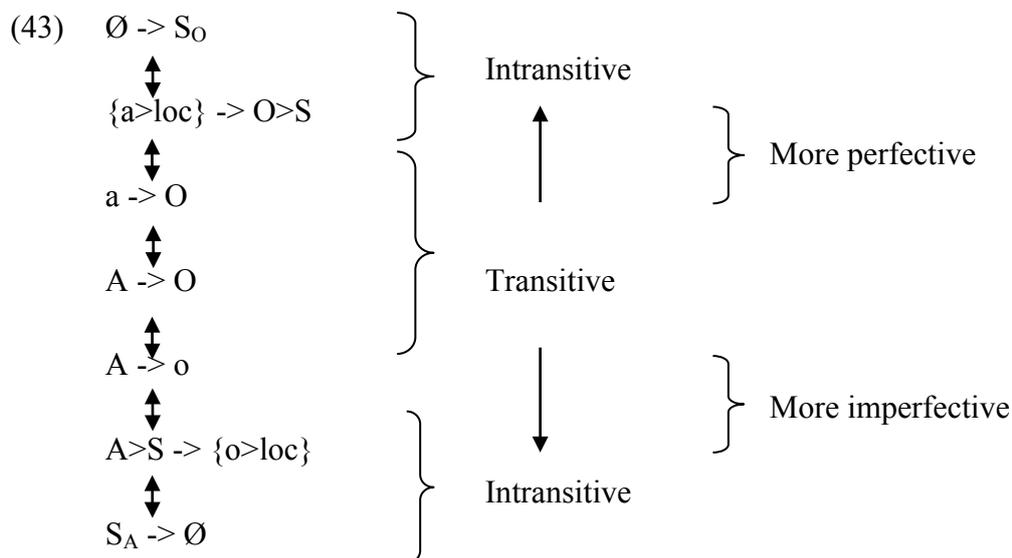
- (41) a.    *ich*            *lese*                            *das*                    *Buch*  
           I:NOM            read:PRES-1SG:PRES:A            DEF:N:SG:NOM/ACC   book  
           'I read the book'
- b.    *ich*            *lese*                            *im*                    *Buch*  
           I:NOM            read:PRES-1SG:PRES:A>S            in:DEF:N:SG:DAT    book  
           'I am reading the book.'

(42) illustrates the O-centered variant ( $a \rightarrow O \Rightarrow a>loc \rightarrow O>S$ ) with the help of an example taken from Archi (East Caucasian, Alekseev 1979:87; '\$' indicates the second part of a discontinuous lexeme):

- (42) a.    *q'u<sup>s</sup>t'i-li*                    *lo*                    *e<sup>s</sup>-w-q'-ni*  
           thunder-ERG                    child(I):ABS            frighten-I:O-\$-PRET  
           'The thunder frightened the boy.'
- b.    *q'u<sup>s</sup>t'i-li-t'iš*                *lo*                    *e<sup>s</sup>-w-q'-ni*  
           thunder-OBL-SUB:ABL   child(I):ABS            frighten-I:O>S-\$-PRET  
           'The boy was startled by the thunder.'

Note that O-peripherization (as in (41)) is not necessarily restricted to the so-called conative alternation as in English *shoot ~ shoot at* (see Levin 1993:5-11). The semantic effects of both O- and A-peripherization mainly depend from the semantics of the verbal concept.

The two patterns illustrated in (41) and (42) represent instantiations of the CPC that can be summarized as follows:



Accordingly, the CPC ends in two versions of (derived) intransitivity that can easily be associated with unaccusative-like patterns ( $\emptyset \rightarrow S_O$ ) and unergative-like patterns ( $S_A \rightarrow \emptyset$ ). For the given purpose, it is not relevant to discuss in all details the possible semantic, syntactic, and pragmatic effects that can be described for the incremental process of intransitivization. The main point is that certain languages can take the CPC as a starting point to encode aspectual and/or temporal distinctions. As we have seen above, the Northwest and East Iranian languages, for example, start from an  $A \rightarrow o$  scheme in order to develop a secondary perfective construction ( $\{a>loc\} \rightarrow O>S$ ). The fact that the underlying, original pattern was A-centered necessitated applying a special O-centering technique, conventionally called 'passive'. A 'passive' can be defined as one of the techniques to rearrange the center-periphery distribution, be it terms of foregrounding O or in terms of backgrounding A (with all its semantic, syntactic, and pragmatic consequences). A primary consequence is that a passive achieves the highlighting or centralization of O. The overall scheme is:

(44)  $A \rightarrow o \quad \Rightarrow \quad \{A>loc\} \quad \xrightarrow{/PASS} \quad o>S$

The fact that the foreground (center) is prototypically associated with S=A-typical properties in accusative patterns often calls for a special 'marker' to inverse the causal chain that runs from cause to effect. This 'passive' marker is usually part of the verbal relation, that is, the verb phrase (VP). It allows 'turning around' the perspective ('to effect from cause'), here symbolized with the help of the arrow '<-' (corresponding to  $\xrightarrow{/PASS}$ ):

(45)  $O>S \leftarrow \{a>loc\}$

Naturally, such a centralization procedure does not necessarily call for a passive morphology of the verb although, in most instances, such unmarked constructions show up as some sort of 'unaccusatives' rather than as full passives, compare the French example in (46):

(46) a.

<i>Elle</i>	<i>a</i>	<i>cuit</i>	<i>le</i>	<i>poulet</i>
She	have:PRES:3SG	cook:PART:PAST	DEF:M:SG	chicken

'She has cooked the chicken.'

b. *Le poulet a cuit*  
 DEF:M:SG chicken have:PRES:3SG cook:PART:PAST  
 'The chicken has been cooked.'

c. *Le poulet était cuit par elle*  
 DEF:M:SG chicken be:PAST:3SG cook:PART:PAST by she  
 'The chicken was cooked by her.'

The passive diathesis is marked for a bundle of processual parameters that can be summarized as follows (the concrete instantiation naturally depends from the general typology of the given language and/or specific aspects of verbal semantics):

- (47) a. Changes in word order: O is put in a slot that would be typical for S=A.  
 b. Changes in case marking: O is case marked in a way that would be typical for S=A; A, on the other hand, may occur in a case form that would be typical for peripheral functions.  
 c. Reduction of agreement: Double agreement (A and O) is reduced to single agreement with O that corresponds to that of S.<sup>92</sup>  
 d. The 'passive' diathesis may be marked by specific verbal morphology, analytic structures based on light verbs, or by suppletion.  
 e. Strategies related to the functional domain of passives are extended or changed to passivization strategies (e.g. reflexivity).

Again, I have to add another *caveat*: There are well-known examples showing that these parameters are not necessarily present in all observable passive constructions. For instance, in Imbabura Quechua, the following morphological pattern applies (Siewierska 1984:43):

(48)            A:NOM        O:ACC        VERB-AGR:A  
 =>            O:NOM        A:NOM        VERB-AGR:O>S

An example is:

(49) Imbabura Quechua:  
 a. *alcu-cuna-Ø-ca ñunca-nchi-ta cani-rca-Ø-mi*  
 dog-PL-NOM-TOP 1-PL-ACC bite-PAST-3:A-VAL  
 'The dog bit us.'  
 b. *ñuca-nchi-Ø-ca alcu-cuna-Ø cani-scha-mi ca-rca-nchi*  
 1-PL-NOM-TOP dog-PL-NOM bite-PASS-VAL be-PAST-1PL  
 'we were bitten by the dog.' [Jake 1985:57, also see Ura 2000:84]

<sup>92</sup> Alternatively, multiple agreement may be preserved but changed to an S+LOC or S+IO pattern.



- b. *pśāša-r*            *gjana-ha-m*            *Ø-q'ə-y-ha-a-də-a*  
 girl-ABS            shirt-PL-OBL            3:SG:A>S-S:AFF-3-PL-IO-sew-ITR  
 'The girl is trying to sew the shirts.' [Colarusso 1992:177, glosses modified]

However, (52b) cannot be derived from an 'ergative' pattern that would read something like (54):

- (54) \**ich-ERG liest das Buch*

I will term such structures as in (52b) 'pseudo-antipassive' (PsAP), because they share much of their properties with true antipassives, but lack the 'ergative background', at least from a synchronic point of view (alternative terms are 'deaccusative' (Geniusiene 1987:94) or 'deapplicative' (Haspelmath & Müller-Bardey 2004)). The same holds for passive-like patterns that may occur as variants of ergative patterns (see Siewierska 1984:42-44). Such 'pseudo-passives' (PsPASS) are documented for instance in Inuktitut:

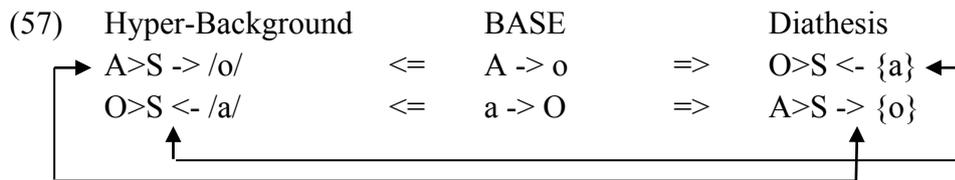
- (55) Inuktitut [Gugele 1999]:

- a. *Miki-up*            *arnaq*            *kunik-p-anga*  
 Miki-ERG            woman:ABS            kiss-TR-3SG:A+3SG:O  
 'Miki kisses the woman.' [Ergative]
- b. *arnaq*            *Miki-mut*            *kunik-tau-ju-q*  
 woman:ABS            Miki-TERM            kiss-PASS-ITR-3SG:O>S  
 'The woman is kissed by Miki.' [Passive]
- c. *Miki*            *arna-mik*            *kunik-si-ju-q*  
 Miki:ABS            woman-INSTR            kiss-AP-ITR-3SG:A>S  
 'Miki kisses a woman.' [Antipassive]

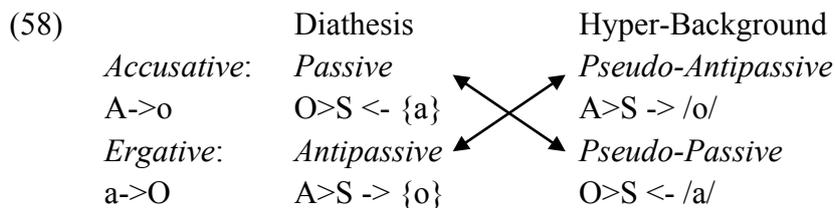
If we start from (55b) and try to retrieve the underlying form, we get something like:

- (56) \**Miki arna-ACC kuni[k]juq*

We can hypothesize that pseudo-antipassives and pseudo-passives do something different from passives and antipassives: Passive and antipassives are operational procedures to indicate shifts in the distribution of referents according to foreground and/or background properties (diathesis). Pseudo-passives and pseudo-antipassives, however, share the effect that the background properties of a given referent are emphasized. Its distance from the foregrounded element is 'overexpanded' and hence, the referent is placed in some kind of 'hyper-background' (/x/). Most importantly, both procedures, namely diathesis and 'overexpansion', are based on analogous strategies. However, they are distributed in a complementary way:



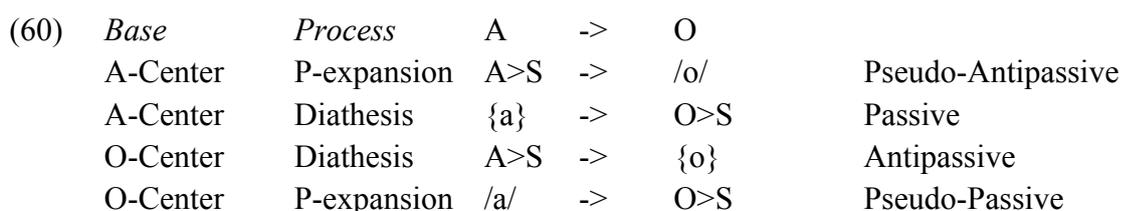
This scheme illustrates that the constructional pattern A>S -> {/o/} is both: the output of the antipassive diathesis with ergative bases and a tool to indicate a hyper-background with accusative patterns. O>S -> {/a/}, on the other hand, is the output of the passive diathesis related to accusative patterns as well as the indicator of background 'overexpansion' with ergative patterns:



Technically speaking, all four patterns emerge from one single cognitive strategy, namely from options to manipulate the peripheral domain of event images. Either, a peripheral referent becomes centralized (with the corresponding effect of placing the original, 'centered' in the periphery (59a)) or the distance between the center and the periphery is elongated (whereby the 'value' of 'central referent' is additionally emphasized, (59b)):



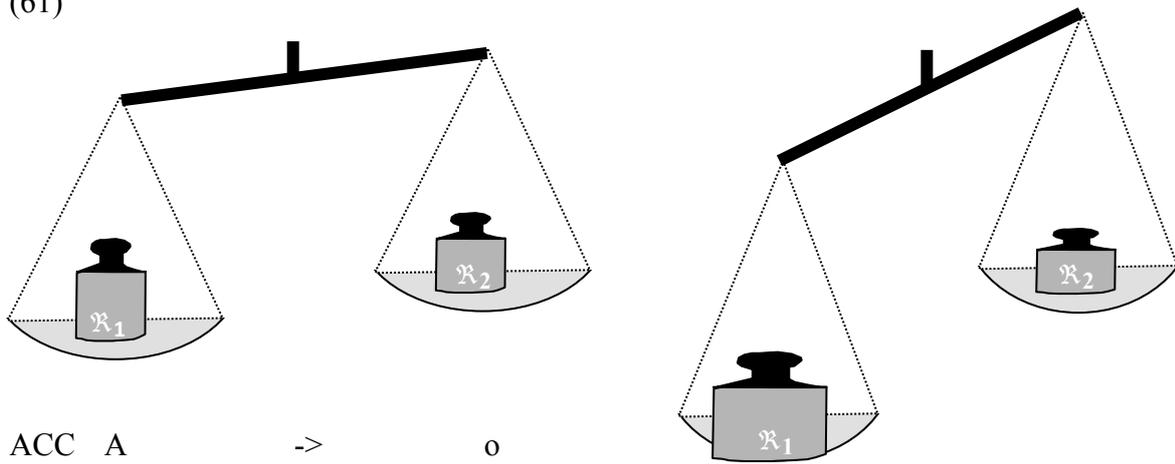
There is an important effect these manipulations have with respect to the center: With pseudo-antipassives and antipassives, the centrality of the A-domain is emphasized, whereas the same holds for the O-domain with pseudo-passives and passives. Accordingly, the distribution of the different patterns is conditioned by strategies that decide upon which grammatical relation is canonically construed as being 'central' (P-expansion = expansion of the periphery):



All four procedures result in a higher weight of one of the referents. However, whereas diathetic processes conditions changes in the foreground/background distribution, the pseudo-

diathetic processes simply the weight of one of the referents by lowering the weight of the other:

(61)



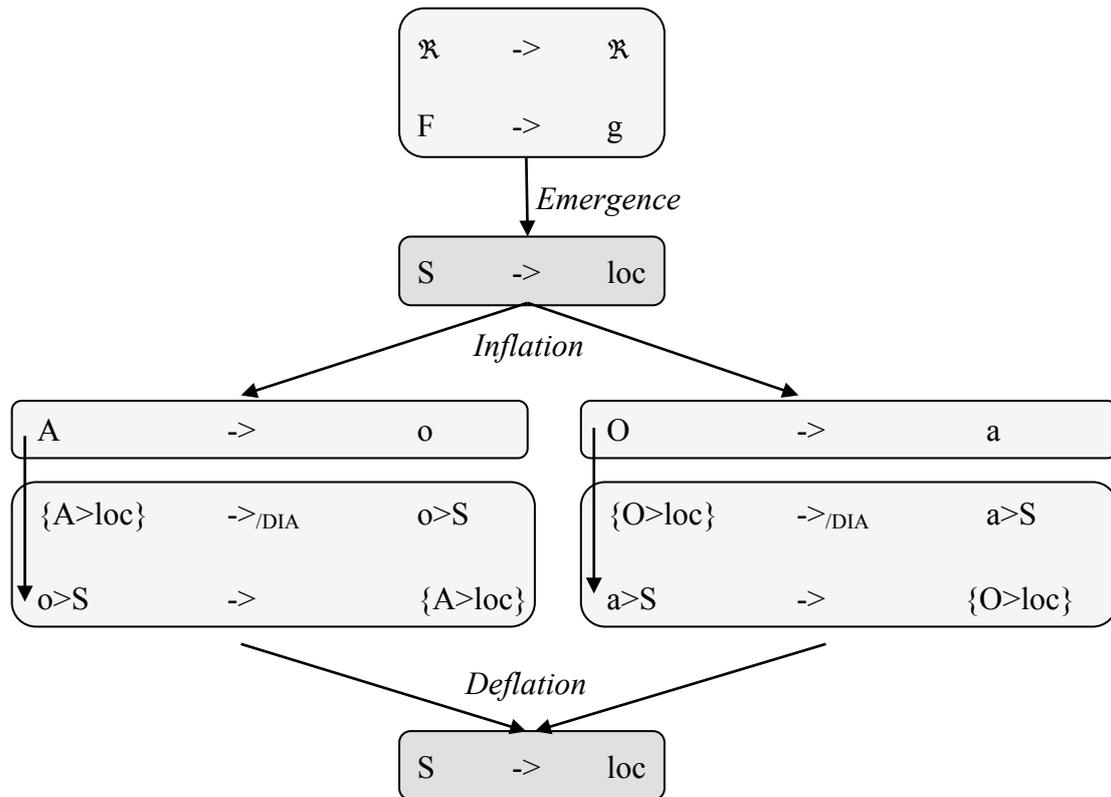
ACC A           ->       o  
 ERG O           ->       a

PsAP    A>S       ->     /o/  
 AP       A>S       -><sup>D</sup>   {o}<sup>93</sup>  
 PsPASS  O>S       ->     /a/  
 PASS    O>S       -><sup>D</sup>   {a}

Given the preceding discussion, we can now easily relate the different patterns in terms of grammaticalization processes: The Iranian data illustrated in section (1) show that the output of the passive diathesis with A-centered bases, that is O>S -><sub>PASS</sub> {a} or O>S <- {a}, shares much of its structural properties with basic O-centralization (a -> O or O <- a), conventionally called 'ergative'. On the other hand, antipassives are by large homstructural with 'active' (or: 'accusative') patterns: Both are marked for A-centralization, whereas O (or: {o}) occupies the periphery. Passives and antipassives may reduce the 'causal value' of the original pattern. As has been said above, this value emerges from the metaphorization of the processual F□G schema. The process of extending a functional domain in terms of metaphorization can be called 'inflation' (see Schulze 2009 for details). Diathetic procedures may result in patterns that are more closely associated with the original source domain, namely the F□G schema. Hence, diathetic patterns appeal to the invariant component of the metaphor to a greater extend than the target domain. This process can be called 'deflation'. From an overall perspective, diathetic patterns are thus closer to the underlying F□G-schema than their non-diathetic variants. The following diagram illustrates the recursive nature of diathesis:

<sup>93</sup> The superscript <sup>D</sup> indicates that the verbal relator may be marked for diathesis.

(62)



Before turning to this aspect in more details, it is necessary to comment upon the interaction of word order and centrality as expressed both in the basic patterns and in their diathetic variants.

#### 5.2.3.4 Word Order

Changes in word order can occur with passives in order to mark centrality, compare English:

- (63)
- |                 |                         |                  |
|-----------------|-------------------------|------------------|
| Center          |                         | Periphery        |
| <i>I</i>        | <i>have written</i>     | <i>the book.</i> |
| <i>The book</i> | <i>has been written</i> | <i>by me.</i>    |

Accordingly, the centralized O-referent is placed in the same position that would be typical for S, and, by consequence for A with accusative patterns. In ergative constructions emerging from passive structures, word order may again be rearranged according to the primary pattern. (64a) illustrates this aspect with the help of an example from Northern Tolyshi, the underlying passive form of which is (synchronously) reconstructed in (64b):

- (64) a. *palang-i vind-aš-e odam*  
leopard-OBL see:PPP-3SG:A-COP man:ABS  
'The leopard saw a man.' [Schulze 2000:12]

- b.     \**odam*           *vind-əš*                   *e*                   *palang-i*<sup>94</sup>  
           man:ABS           see:PPP-3SG:POSS       COP:3SG:S       leopard-OBL/POSS  
           Lit.: 'a man is seen by him, by the leopard.'

This problem is directly related to the question which position is defined as 'central' in a given language. To give another example: In Malagasy the center shows up at the very end of the clause, yielding an analogous position of foregrounded O>S in passives, compare:

- (65) a.     *n-an-didy*     *an-'ilay*     *mofo*           *i*            *Jeanne*  
           PAST-TR-cut   O-DEF:gTOP   bread           DEF           Jeanne  
           'Jeanne was cutting the bread.'
- b.     *no-did-n'*           *i*     *Jeanne*     *ilay*     *mofo*  
           PAST:PASS-cut-REL   DEF   Jeanne     DEF:gTOP   bread  
           'The bread was cut by Jeanne.' [Randriamasimanana 2001:2, glosses modified]

Whether or not a 'passive word order' is construed in accordance with its 'active' counter-part depends from the functional role that is associated with specific word order patterns. When passives grammaticalize into ergative structures, the originally backgrounded agentive may regain features of centrality by placing it into just that position that is typical for S. This shift may be motivated by several factors, among them a certain persistence concerning S=A patterning or - as it is the case with the above-mentioned Iranian languages - the co-occurrence of an accusative word order (here in the non-past domain).

The same holds for antipassives. However, certain peculiarities apply for this diathesis: Most importantly, ergative word order seems to be rare among the languages of the world. In principle, ergative word order means that S and O occupy the same place in the clause, whereas A has a different location. In case the point of reference is the verb and in case not all the referents are placed before or after the verb, the ascription of accusativity and ergativity is without problems:

(66)	Accusative		Ergative	
	a.	b.	a.	b.
	S	SV	VS	SV
	A	AV	VA	AV
	O	VO	OV	VO

'Accusative (a)' is the standard pattern for many 'verb-middle' languages such as English or French. I have no assured attestation of 'Accusative (b)'. An example for 'Ergative (a)' would be the topically unmarked pair in (67):

<sup>94</sup> Or: *odam palangi vindaše*.

- (67) Pāri (Northern Lwoo, West Nilotic)
- a.     *ùbúr*                 *á-tíuk'*  
           Ubur                 COMP-play  
           'Ubur played.'
- b.     *jòobi*                 *à-kèel*                 *ùbúrr-i*  
           buffalo             COMP-shoot         Ubur-ERG  
           'Ubur shot the buffalo.' [König 2008:98]

Again, 'Ergative (b)' seems to be extremely rare, Nadëb being one of the languages that may take this option (see Martins & Martins 1999:263). Given that all referents bearing one of the basic grammatical relations S, A, and O occur either in front of the verb or after it, the ascription of accusativity and ergativity depends from which point of reference is chosen: the verb or the sentence boundary. (68) lists the corresponding options (the allocation of Warao is based on Romero-Figeroa 1997, see Osborn 1967 for a different view; note that this table does not consider the syntax of agreement with verbal structures that can, nevertheless be classified in roughly the same way):

(68)	Verb-oriented	<i>Ergative</i>	<i>Accusative</i>	<i>Accusative</i>	<i>Ergative</i>
		SV	SV	VS	VS
		AOV	OAV	VAO	VOA
	Boundary-oriented	<i>Accusative</i>	<i>Ergative</i>	<i>Ergative</i>	<i>Accusative</i>
	Example:	Turkish	Warao	Arabic	Malagasy

Studies in word order typology usually refer to boundary-orientation when dealing with verb final languages (traditionally classified as 'SOV' and 'OSV'), but to verb-orientation when describing verb initial languages ('VSO' and 'VOS')). The reason for this 'mixed approach' is not a systematic one. Rather it is often grounded in the extrapolation of case and agreement patterns, or - more oddly - on the mapping of the 'European' model onto other languages. A possible way of accounting for this approach it to claim that centrality is strongly correlated with pivotal features. In addition, one might describe the syntactic point of reference for ascribing word order accusativity and ergativity as follows:

- (69) The syntactic point of reference for ascribing word order accusativity and word order ergativity is given by the 'left' boundary of a clause in case this place is not occupied by the verb. In the latter case, the verb itself functions as the point of reference.

Note that this characterization of the 'syntactic center' does not consider possible modifications resulting from hierarchical features that may be present especially in the syntax of polypersonal agreement and with overt noun phrases. For instance, Norman und Campbell (1978:146) suggest a word order pattern for Proto-Maya that has SV for intransitive structures and VAO ('accusative') or VOA ('ergative') for transitive structures. Here, the second position is said to have been occupied by referents that are higher in rank than the preceding one. Nevertheless, VAO would have been the basic, unmarked version because A-referents

prototypically outrank O-referents. Another example is Bella Coola (Nuxalk, Salishan): Here, the general order of agreement clitics is 'accusative' (point of reference would be the end domain of the verb), that is VS and VOA, as illustrated in (70a-c):

- (70) a. *'apswa-ts*  
 blow-1SG:S  
 'I blow'
- b. *'apswa-nu*  
 blow-2SG:S  
 'You (sg.) blow.'
- c. *'al'awl-ts-ḡ<sup>w</sup>*  
 follow-1SG:O-2SG:A  
 'You (sg.) follow me.' [Nater 1984:36;38]

But with second person referents in objective function, the transitive order becomes 'ergative' (VS and VAO):<sup>95</sup>

- (71) *'al'awl-tsi-nu*  
 follow-1SG:A-2SG:O  
 'I follow you (sg.).'

As it is true for other Salishan languages, too, there is a constraint on second person objectives: A passive diathesis must be applied in order to keep the second person (sometimes also first person) marker in the center of the structure (Jelinek and Demers 1983).

Starting from (69), we have to describe word order accusativity for many so-called 'ergative languages', compare:

- (72) Khinalug (East Caucasian):
- |                    |           |                       |
|--------------------|-----------|-----------------------|
| <i>halam-xer-i</i> | <i>al</i> | <i>mət'ər-ə-škili</i> |
| sheep-keeper-ERG   | milk:ABS  | dung-SA-COM           |
- 
- |               |                  |
|---------------|------------------|
| <i>qar-u</i>  | <i>lä-k'wi.</i>  |
| old=woman-DAT | DIR:HOR-give:RES |
- 'The shepherd gave the milk with the dung to the old woman.'  
 [Kibrik et al. 1972:245<sup>9</sup>; glosses added]

---

<sup>95</sup> Bella Coola is marked for the following basic agreement paradigm:

	S	A	O
1sg	-ts	-ts(i)	-ts
2sg	-nu	-ḡ <sup>w</sup>	-nu
3sg	(-s)	-s	-i
1pl	-(i)t	-(tu)t	-tu-
2pl	-(n)ap	-(a)p	-ap
3pl	-(n)aw	-t	-ti

(73) Coast Tsimshian:  
*yagwa-t*                      *niits-da*                      *ts'uuts'-a*                      *laalt*  
 PRES:DYN-DIR                      see-DIR                      bird-ERG                      worm:ABS  
 'The bird sees the worm.'  
 [Dunn 1979:60, glosses added; also compare Mulder 1994]:

(72) is marked for an AOV pattern, (73) for a VAO pattern. With antipassives, word order changes hence less often occur than with passives, compare:

(73) Dargi (East Caucasian):  
 a.     *nu-ni*                      *q'ac'*                      *b-ukule-ra*  
          I(I)-ERG                      bread(III):ABS                      III:O-eat:PRES-1SG:A  
          'I (a man) eat bread.'  
 b.     *nu*                      *q'ac'-li*                      *'-ukule-ra*  
          I(I):ABS                      bread-ERG                      I:S-eat:PRES-1SG:A>S  
          'I (a man) am eating (parts of the) bread.' [Abdullaev 1986:228]

Dargi is marked for an SV/AOV word order pattern. The centralization of 'I' in the antipassive version (73b) is just an additional process based on the 'partial' centralization of this referent already given in the ergative structure. Note that this property is emphasized by one type of agreement in Dargi: The language has both personal agreement (S=A) and class agreement (S=O), see Schulze 2007:170-179). Obviously, de-centralization is more relevant: The objective *q'ac'* 'bread' occupies the periphery by losing its two 'centrality' markers, namely the corresponding class agreement in the verb and the absolutive case marker:

(74)		ERG		AP	
		A	O	A>S	O>LOC
	Case	ERG	ABS	ABS	ERG/INSTR
	Agr	+	+	+	-
	WO	1	2	1	2

Whether or not the word order of diathetic patterns is re-arranged in accordance with the word order of the underlying underived pattern seems to be an important clue for describing possible grammaticalization processes. We can expect that, prototypically, diathesis is characterized by the 'exchange' of positional properties that are related to the given referents:

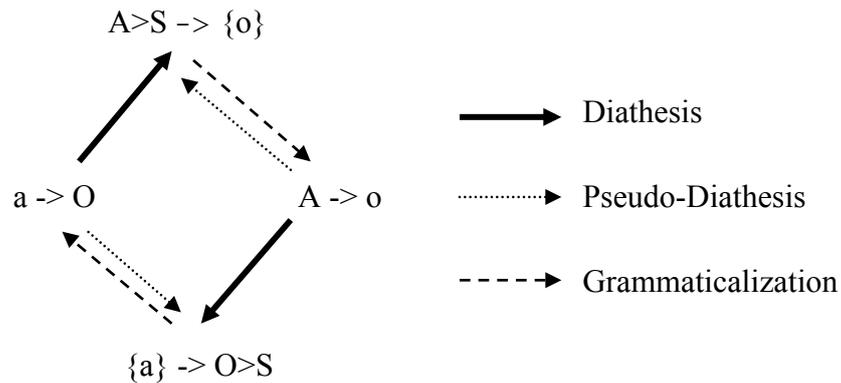
(75)		Type I			Type II	
		First:	Second:		First:	Second:
		Center	Periphery		Periphery	Center
	Active	A	O		O	A
	Passive	O	A	English	A	O
	Ergative	O	A		A	O
	Antipassive	A	O	Dyirbal	O	A
						???

The 'type II ergative' word order pattern is difficult to fix. On the one hand, the corresponding underived word order pattern (A<sub>1</sub>O<sub>2</sub>) frequently shows a reverse, that is, 'accusative' ordering of center and periphery. Second, the antipassives of ergative A<sub>1</sub>O<sub>2</sub> patterns usually maintain this order, see above. In this sense, we may claim that passives are driven by word order more than antipassives. Accordingly, we can expect that the grammaticalization of passives has a stronger impact on word order than that of antipassives.

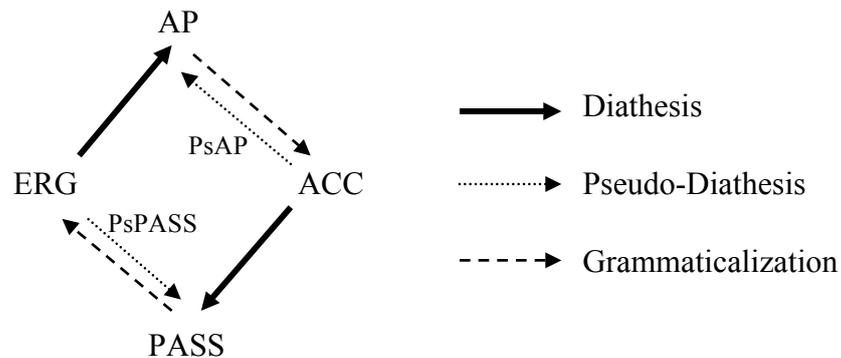
### 5.2.3.5 Summary

In this section I have argued that passives and antipassives are based on a common conceptual pattern, namely to centralize the functional role of a peripheral referent and thus to decentralize ('peripherize') the former central referent. The 'peripherization effect' relates both constructions to pseudo-passives and pseudo-antipassives that manipulate the peripheral element. A-centrality is thus coupled with passives and pseudo-antipassives, whereas O-centrality goes together with antipassives and pseudo-passives. The semantic effects that bear on these diathetic and pseudo-diathetic processes may include (among many others) specifications within tense/aspect models. Accordingly, a passive may condition a stronger 'perfective' notion, concentrating on the 'effect domain' of a causal construction, whereas antipassives that highlight A condition a stronger 'imperfective' notion (including other functional effects that can be derived from this cover terms). The conventionalization of such effects or of the pragmatic shift related to centrality itself furnish the basis for those well-known grammaticalization processes that end in ergative-like patterns with passives, and accusative-like patterns with antipassives, see section 4. It should be noted, however, that I do not claim that all ergative patterns emerge from passives (also see Bossong 1984), nor that all accusative patterns emerge from antipassives. As has been said in the introductory section, this view constantly repeated especially for ergative structures since it had been first proposed by Hugo Schuchardt (1896). It found its supporters both with respect to individual languages (e.g. Pray 1976, Pirejko 1979, Bubenik 1989 for Indo-Iranian) and with respect to ergative patterns as such (e.g. Dixon 1994, Harris and Campbell 1995). For the purpose of the given paper, it suffices to note that both passive and antipassive patterns *can* end up in ergative resp. accusative patterns. This does not mean that there are no other factors that may condition preferences for highlighting either the A or the O domain (such as pragmatic features of discourse organization, the deictic 'patina' of sentence structures, support to mark referents that are less profiled for one of the roles (see Schulze 1998) and many others). In addition, it has to be stressed that proponents of the 'passive theory' with respect to ergativity ignore the fact that antipassives may likewise grammaticalize as accusatives. To put it into simple terms: Just as the diathetic variant of accusativity (passive) can grammaticalize into an ergative structure, the diathetic variant of ergativity (antipassive) can grammaticalize into an accusative structure. This is why I have called this cycle the Accusative Ergative Continuum (AEC) in Schulze 2000. The graphics in (76) and (77) are simplified version of this cycle ((76) uses structural markers, (77) shows the corresponding labels):

(76)



(77)



## 5.2.4 The grammaticalization of antipassives

### 5.2.4.1 General remarks

Kalmár (1979) has argued that the Eskimo (Inuit) antipassive is not the diathetic derivation of an underlying ergative model, but a variant of accusativity. This hypothesis that relates an 'independent' nature to antipassives has found a number of supporters (e.g. Heath 1976, Postal 1977, Davies 1984). Still, it has also met its opponents, such as Dixon (1994:197, also see Bench 1982):

"The most interesting feature of this sequence of changes is that it began with an S/O pivot, the indicator of ergative syntax, and an antipassive operation to feed this. By eventual reinterpretation of what was originally an antipassive construction as the unmarked construction type for transitive verbs, we would arrive at a language which is firmly accusative, both in morphological marking and also in its syntax - the S/O pivot would naturally have been replaced by an S/A pivot."

If we start from what I have described in section 3, we can easily relate both positions: True antipassives always show up as diathetic variants of ergative patterns, but they are in structural analogy with pseudo-antipassives that are variants of accusative patterns. The difference is hence given by the point of reference, not by the structure itself. This does not

necessarily mean that antipassives and pseudo-antipassives have to share all relevant properties. For instance, verbal antipassive morphology is usually missing with pseudo-antipassives. However, this feature is also given with some antipassive types operating on labile verbs (also see Hewitt 1982), as illustrated for Dargi in example (73) above. (78) summarizes the two types of processes invoked by the pattern  $A>S \rightarrow \{o\}$ :

(78)	Basis:	A $\rightarrow$ o (ACC)	a $\rightarrow$ O (ERG)
	A>S $\rightarrow$ {/o/}	Pseudo-Antipassive	Antipassive
	Process	Hyper-Backgrounding	Diathesis

As has been said in section 3, 'true' antipassives are in structural analogy with passives. We can hence translate the mechanisms of passivization as described in (47) into a formula that considers antipassivization (also see Polinsky 2005):

- (79)
- a. Changes in word order: A is put in a slot that would be typical for  $S=O$ .
  - b. Changes in case marking: A is case marked in a way that would be typical for  $S=O$ ; O, on the other hand, may occur in a case form that would be typical for peripheral functions.
  - c. Reduction of agreement: Double agreement (A and O) is reduced to single agreement with A that corresponds to that of S.<sup>96</sup>
  - d. The 'antipassive' diathesis may be marked by specific verbal morphology, analytic structures based on light verbs, or by suppletion.
  - e. Strategies related to the functional domain of antipassives are extended or changed to antipassivization strategies (e.g. reflexivity).

Naturally, not all these factors must be present. A special problem, namely word order (79a) has already been addressed above: As many systems with ergativity based on case and/or agreement tend to have an accusative pattern with respect to word order, (79a) can also be stated in terms of a pseudo-antipassive: No changes in word order take place, because A already is in the position of S.

Just as it is true with passive-to-ergative grammaticalization, grammaticalization effects that are related to antipassives can best be traced in so-called split systems. The presence of an ergative pattern elsewhere in the system of a given language allows relating divergent patterns to this ergative structure or vice versa. Naturally, a main point is to decide, which pattern is more basic and which one is assumed to represent a diathesis. Consider the following formulae (M = case morpheme):

(80)	Type I:	A:Ø	O:M	VERB:AGR:A
	Type II:	O:Ø	A:M	VERB:AGR:O

Imagine a language with a split pattern that involves the two types in (80): Type I is clearly accusative, type II is clearly 'ergative'. The verb itself is labile and hence carries no

<sup>96</sup> Again, multiple agreement may be preserved but changed to an S+LOC or S+IO pattern.

information about derivational processes. We can now relate type I to type II by saying that type I is the antipassive of type II. But if we derive type II from type I, we get a passive diathesis. The decision which option to take depends from many factors stemming from the functional and semantic domains occupied by each of the two types. In addition, the internal architecture may help. For instance, in case type II verbs are more complex than type I verbs, we may hypothesize that type II includes a diathetic marker. The same holds for the second option: If type I verbs are more complex than type II verbs, the presence of an antipassive is rather likely. Things get worse in case the verbs of both types show the same degree of complexity. The same holds if both patterns represent a dependent marking subtype that has case morphemes on both A and O, or if both are of the head marking type having some kind of double agreement on the verb:

(81)	Type I:	A:M <sub>1</sub>	O:M <sub>2</sub>	VERB
	Type II:	O:M <sub>1</sub>	A:M <sub>2</sub>	VERB
	Type I:	A	O	A-O-VERB
	Type II:	O	A	O-A-VERB

The situation is different, if the split is not synchronic, but diachronic. A 'diachronic split' means that one type is documented for stage A of a language, and the other type for stage B. Logically, the type of stage A precedes the type of stage B, which then represents a grammaticalized diathesis of the general pattern in stage A. The same holds, if one type given in a synchronic split continues the general pattern given in an earlier stage of the language. Then the second type would be the innovative one. (82) summarizes these two aspects (the arrows indicate grammaticalized diathesis):

(82)	a.	Stage A	Stage B	b.	Stage A	Stage B
		Type I	→ Type II		Type I	→ Type I
						→ Type II

An additional problem is given, if the two types show secondary interferences. Once a diathetic structure has become grammaticalized, it may be partially or fully accommodated to the other type (or vice versa). Consequently, the very nature of the original diathetic structure becomes more and more obscured and retains only residues of this diathesis. In the following example of split ergativity taken from Southern Balochi, the referent in O-function is marked for definiteness (taking this option from the accusative pattern of imperfectives):

(83)	Southern Balochi:			
	<i>kučik-ā</i>	<i>hamā</i>	<i>jinik-ārā</i>	<i>dīst</i>
	dog-OBL	that	girl-ACC:DEF	see:PPP
	'The dog saw that girl' [Korn 2003:50]			

The same holds for Classical Armenian, a language that had developed the option of an 'ergative split', but that had abandoned this option later on (Stempel 1983:62-87 with further references):

(84) Classical Armenian:

- a.     *es*                 *gorce-m*                 *z-gorc*  
           I:NOM             make:PRES-1Sg             ACC:DEF-work  
           'I do the work'
- b.     *im*                 *gorce-al*                 *ê*                 *z-gorc*  
           I:POSS             make-PPP                 be:PRES:3Sg     ACC:DEF-work  
           'I did the work.'

In Northern Tolyshi, agreement in past tense based ergativity has been re-aligned according to the non-past accusative pattern:

(85) Northern Tolyshi:

- mə*                 *čavon*                 *lübüt*                 *bəria-me*  
   I:OBL             their                 lip:PL                 cut=off:PAST-1SG:A:PAST  
   'I cut off their lips.' [Miller 1953:207]

For Basque, Aldai (2000) has convincingly shown that the imperfective past tense paradigm has emerged from an antipassive structure. However, this diathesis is visible only in the verb reducing the transitive polypersonal agreement pattern to an intransitive-like monopersonal pattern, compare (86):

(86) Basque:

- a.     *ni-k*                 *txakurr-a*                 *d-auka-t*  
           I-ERG             dog-ABS                 3SG:O-have:PRES-1SG:A  
           'I have/hold the/a dog.'
- b.     *ni-k*                 *txakurr-a*                 *n-euka-n*  
           I-ERG             dog-ABS                 1SG:A>S-have:PAST-PAST  
           'I had/held the/a dog.' [Aldai 2000:35, 36; glosses modified]

The noun phrases are marked in accordance with the standard ergative pattern in both examples. Obviously, the original antipassive (that would read as something like \**ni txakurr-OBL neukan*) has been accommodated to the case pattern of the standard transitive (ergative) version. Superficially, the pair mentioned (86) behaves like Basque pseudo-passives, compare:

(87) Basque:

- a.     *Piarres-ek*     *egin*                 *d-u*                 *etche-a*  
           Peter-ERG     make:ST                 3SG:O-have:3SG:A     house-ABS  
           'Peter made the house.'
- b.     *Piarres-ek*     *egina*                 *d-a*                 *etche-a*  
           Peter-ERG     make:PART:PAST             3SG:O>S-be     house-ABS  
           'The house was made by Peter.' [Siewierska 1984:43]

However, Trask comments upon this structure as follows: "But such sentences are not common; they cannot be used with anything like the same freedom as their apparent English counterparts" (Trask 1980:301). In fact, Brettschneider (1979) and Wilbur (1979) suggest that such structures are not 'passives', but complex structures that consist of two verb frames: The absolutive is triggered by the copula (*da*), whereas the ergative is motivated by the labile participle *egina*.<sup>97</sup> Still, we cannot apply the same type of explanation to the imperfective form in (86b). Contrary to (87b), the clause is not based on a participle followed by the copula. Hence, we have only one valence constituting verb that controls both the central reference (*ni-k*) and the peripheral referent (*txakurr-a*).

Examples (83) - (86) illustrate that we do not have to restrict ourselves to fully elaborated diathetic structures in order to discuss possible grammaticalization effects. Still, what has to be done is to show that structures that are secondarily accommodated to other patterns can be derived from the corresponding diathetic model. In the next section, I want to illustrate this aspect with respect to three languages: Georgian, Sumerian, and reconstructed Proto-Indo-European.

#### 5.2.4.2 Kartvelian, Sumerian, and Proto-Indo-European

As has been said above, the emergence of passive-based split systems resulting in partial ergativity is a well-known phenomenon among the languages of the world. It is nevertheless a remarkable fact that many of the languages at issue cluster in and around the Indo-Iranian area. This area runs from Eastern Anatolia along the southern shores of the Caspian Sea to Afghanistan, Pakistan, and India (see Lazard 2001:293). It is probably too far-fetched to relate the whole area to the same process. Still, one might hypothesize that at least the northwestern regions of the area are marked for some kind of convergence, based on a development that had perhaps started in Late Median or in Early Parthian. Most of the modern Northwest Iranian languages (all of them stemming from Parthian or its lost 'sisters') share the feature of 'split ergativity' that can be tentatively reconstructed for Late Median. The 'areal notion' becomes apparent if we consider adjacent non-Iranian languages that are also marked for this type of split. Here, two languages have to be mentioned: Classical Armenian and Modern East Aramaic (Semitic). Classical Armenian has been addressed already above in example (84). The fact that Classical Armenian did not fully grammaticalize the corresponding pattern still lacks a sufficient explanation. Most likely, the process of 're-accusativization' started as early as in Middle (Cilician) Armenian (*mijin hayerên*, 12th - 18th century). In this stage of Armenian, the genitive is replaced by the nominative, as illustrated in (88):

- (88) *ork`                    teseal                    z-mimians*  
       who-PL:NOM    see.PPP                    ACC-each=other  
       '... who saw each other.' [Saxokija 2005:293]

<sup>97</sup> Such a pattern is typical for bi-absolutive constructions, see the Lak example in (183).

In Modern East Armenian, the participle has become fully oriented towards the agentive. In addition, the *nota accusativi* is lost:

- (89) a. Old Armenian:  
*nora*                      *greal*                      *ê*                      *z-girk`*  
 ANAPH:DIST-GEN:SG write-PPP                      be:PRES:3SG                      ACC-book  
 '(S)he has written the book'
- b. Modern East Armenian:  
*na*                      *grel*                      *e*                      *girk`*  
 (s)he:NOM                      write:PAST                      be:PRES:3SG                      book  
 '(S)he has written a/the book.' [Saxokija 2005:293]β

Nevertheless, Classical Armenian illustrates that the technique of highlighting the O-domain in the perfective aspect with the help of a passive strategy can become conventionalized in terms of a borrowing process. The same holds for Eastern Aramaic although there is no full agreement concerning the nature and origin of the corresponding split pattern (see Hemmauer and Waltisberg 2006 for a comprehensive discussion). An example is:

- (90) Modern East Aramaic (Ṭuroyo):  
*ú-čawiš-áwo*                      *măfle-le*                      *qol-e*  
 DEF:SG:M-sergeant-DIST:SG:M raise:PAST(:PART)-3SG:A                      voice-3SG:POSS:M  
 'That sergeant raised his voice.'  
 [Jastrow 1992:150, Hemmauer & Waltisberg 2006:35]

A diachronic translation would yield something like 'that sergeant, to/for him (-le) [was] his voice raised (*măfle*)'. Obviously, Ṭuroyo follows the model of a 'possessive passive' that is typical for the Iranian layer of split ergativity, compare again Northern Tolysi:

- (91) a. *žen*                      *oš*                      *e-kard-əše*  
 woman:OBL                      soup                      out-do:PAST-3SG:A  
 'The woman poured out the soup.' [Miller 1953:170]
- b. *\*žen*                      *oš*                      *e-kard-əš-e*  
 woman(:POSS)                      soup:NOM                      out-do:PART:PASS:PAST-3SG:POSS-COP:3SG:S  
 Lit.: 'Of/to/for the woman, of/to/for her the soup was poured out'.

The 'possessive passive' is a well-known pattern that is probably based on the ablative < separative < partitive source domain present with many possessive concepts (also see Noonan and Mihas 2007)<sup>98</sup>, compare German:

<sup>98</sup> Noonan and Mihas (2007:3) state that "ablatives and genitives are really not very good companions for each other. Our data find them entering into syncretistic relationships regularly only within Europe, and provide yet more evidence that European languages are, in some sense, rather exotic" (cf. Heine 1994, Heine & Kuteva 2002:34-35). Perhaps, this formulation is too strong, especially if we start from a general Partitive as the source

- (92) a. *Das Buch von Paul*  
 DEF:SG:N book of Paul  
 'Paul's book' [Possessive]
- b. *Das Kind komm-t vom Spielen*  
 DEF:N:SG child come:PRES-3SG of:DEF:N:DAT playing  
 'The child returns from playing.' [Ablative]
- c. *Das Buch wurde von Paul ge-schrieben*  
 DEF:N:SG book COP:PASS:PAST:3SG of Paul PERF-write:PPP  
 'The book has been written by Paul.' [Passive]

For the area at issue, we can set up the following formula:

- (93)            A:NOM            O:ACC            V:AGR:A  
 =>            O:NOM            A:GEN/POSS            V:PPP:AGR:O            COP:AGR:O

Note that the 'possessive passive' is not necessarily related to the genitive case used to mark the backgrounded agentive. In case a dative-based possessive construction prevails ('re-integrating partitive', see fn.31), the agentive may likewise show up in the dative (as it is the case for Turoyo) or both patterns are present to indicate a different degree of affectedness and/or control (also see Butt 2006). Nevertheless, the Northwest Iranian data as well as those stemming from Classical Armenian suggest that the genitive-based 'possessive passive' served as the starting point to grammaticalize ergative structures. The corresponding pattern given in (93) can be imitated with the help of Old Persian:

- (94) *ima manā kr-t-am astiy*  
 PROX:NOM:SG:N I:GEN/POSS make-PPP-NOM:N be:PRES:3Sg  
 'I have done it' < 'mine ~ of me this is done.'

Compare the standard possessive:

- (95) *manā vašnā*  
 I:GEN wish:ABL  
 'according to my wish'  
 [Darius, Bagistan, IV:52, see Brandenstein and Mayrhofer 1964:86]

It is a tempting hypothesis to relate tense/aspect-based split ergativity in Northwest Iranian, Classical Armenian, and Modern East Aramaic to features of ergativity in the autochthonous languages of the Caucasus. However, the Kartvelian languages (Georgian, Mingrelian, Laz

---

domain for both ablatives and one type of possessives/genitives. AblatIVES (and one subtype of possessives) would emerge from one kind of 'dynamic partitive' (separative), whereas other possessives are grounded either in 'stative partitives' (X is part of (> belongs to' Y) > genitive) or in 're-integrating partitives' ('X becomes part of Y') > dative, allative etc.).

(in parts<sup>99</sup>), and Svan) are the only 'Caucasian' languages that are marked for a superficially analogous pattern. Especially, the Southeast Caucasian (Lezgian) languages that have been in closer contact with Northwest Iranian since the early times of Old Median do not show any recognizable trace of split ergativity. One exception is Caucasian Albanian, the forerunner of Modern Udi (Lezgian). The texts available for this language (roughly 300 - 700 AD) cover parts of the Gospel of John and of a lectionary that had been translated into Caucasian Albanian at about 500 to 600 AD (see Gippert et al. 2009 for these texts and their grammar). One of the sources must have been Classical Armenian. Occasionally, Armenian phrases marked for the pattern *nora gorceal ê zgorc* (see (84)) are mapped literally onto the corresponding Caucasian Albanian phrases. However, we cannot claim that the resulting pattern has been conventionalized in Caucasian Albanian. In regions adjacent to the Caucasus, split ergativity has been proposed for instance for Hurrian, see Campbell (2008) who interprets a specific type of Hurrian modal constructions in terms of split ergativity (cf. Wilhelm 2008):

- (96) a.     *irdi-b*                             *urġ(i)-a*             *tī(e)- a*             *kad-i-l-ēž*  
           tongue:ABS-2SG:POSS   true-ESS             word-ESS             speak-AP<sup>7</sup> -OPT-OPT  
           'Let your tongue speak (only) true word(s)!'  
           [ChS I/1 9 iii 35, Campbell 2008:286; glosses modified]
- b.     *anam-i-tta*                     *hāž-i-mma*             *Tado-Heba-tta*  
           thus-you:SG:ABS           hear-AP<sup>7</sup>-I:ABS             Tado-Heba-you:SG:ABS  
           'So hear me, Tado-Heba!'  
           [ChS I/1 41 iii 63, Campbell 2008:289; glosses modified]

(96b) suggests that we have to deal with some kind of 'split modal-imperative' that favors an accusative pattern (Aikhenvald 2010). (96a) would then add a pseudo-antipassive strategy. Hurrian seems to apply antipassives, too, as documented in the following example (also cf. Wisiosek 2018 for a more detailed discussion):

- (97)   *el (i)-a*             *faġr-o-ž(i)-a*             *tān-d-i-b*             *negri*  
           feast-ESS             beauty-TV-ADJ -ESS             make-DIR-AP<sup>7</sup>-3SG:A>S             bolt:ABS
- ež-ne-ve*                             <sup>d</sup>*Allāni*  
           earth-OBL-GEN             Allani:ABS  
           'Allani, the bolt of the earth, made a beautiful banquet' (lit.: 'that should be bountiful?')  
           [KBo 32, 13 i 12–13; Campbell 2008:285-6, Wilhelm 2008:93; glosses modified]

<sup>99</sup> For instance, the Mut'afi dialect of Laz has fully abandoned the pattern of split ergativity, see Kutscher et al. 1995.

Nevertheless, despite the presence of an antipassive (Girbal 1992), Hurrian does not show any systematic split in the sense of a tense/aspect split.<sup>100</sup> The same holds for its descendent, Urartian, see Wilhelm 2008b.

Hittite has been cited as another candidate by referring to the special case form *-anza* (*/-ant-s/*) that often occurs with neuter (non-animate) nouns in A function (Garrett 1990), compare (C = *genus commune*, non-animate):

- (98) *[nu]- smas mahhan kas*  
 and-you:PL:ACC when this:C:NOM
- [tuppi]-yanza (= -ant-s) anda wemizzi*  
 tablet-C>ANIM-NOM into find/reach:PRES:3SG:A  
 'And when this tablet will reach you' [Alp 1980:46; glosses added]

If ever we have to deal with split ergativity in Hittite, this pattern is different from the diathesis-based patterns discussed in this paper (in fact, a derivational process seems more likely, turning non-animate nouns into animate nouns with the help of the element *-ant-*).<sup>101</sup>

Among the languages of ancient Mesopotamia and Anatolia, only Sumerian seems to exhibit some kind of split ergativity (or: split accusativity) that can be related to the 'Iranian model'. However, as will be shown in the following section, the split is motivated 'the other way round', that is, it is the perfective aspect encoding ergative that furnished the base to develop an imperfective pattern with the help of the antipassive. In section 4.2.1-2, I want to briefly recapitulate the case of Kartvelian and Sumerian before turning to the question of Proto-Indoeuropean syntax in section 4.2.3.

#### 5.2.4.2.1 Kartvelian

With the exception of some Laz dialects, all Kartvelian languages are marked for a pattern of 'split ergativity' that starts from the opposition imperfective (so-called series I) vs. perfective (so-called series II). This pattern is best preserved in Old Georgian and in Svan, whereas it has undergone significant changes in both Mingrelian and Laz (see Boeder 1979, 2005, Aronson 1979, Harris 1985, 1991a, Saxokija 1985, King 1994, Hewitt 1994). All four languages are both head- and dependent-marking, with Laz showing a drift towards head-marking. From a

<sup>100</sup> Hazenbos 2010 discusses aspects of syntactic ergativity in Hurrian that would be marked for the use of antipassives to construe an S=O pivot in coordination. However, the data suggest that antipassives have a semantic and pragmatic value in Hurrian rather than a syntactic one. In many instances, antipassives simply eliminate the referent in objective function to produce a cataphoric construction, as in the following example (Hazenbos 2010:933 = MittLett. II 107–108):

<i>undo-man</i>	<i>šen(a)-i[ff]e-n(na)</i>	<i>pašš-[oš-i</i>
now-TOP	brother-1SG:POSS:ASBV-3SG	send-TRANS:PAST-AP
<i>Ma]ne-nna-an</i>	<i>š[e]n(a)-i[ffu]-š</i>	<i>pašš-oš-a</i>
ManeABS-3SG-TOP	brother-1SG:POSS-ERG	send-TRANS:PAST-3SG:A

'Now, my brother has sent (someone, namely), my brother has sent Mane.'

<sup>101</sup> Also see Neu 1989, Oettinger 2001. Here, I neglect a detailed discussion of the homonymous (?) Anatolian participle *-ant-* that has an ergative orientation at least in Hittite. In the other IE languages, *\*-nt-* forms an active participle or *nomina agentis* derived there from.

synchronic point of view, agreement is dominated by features of accusativity, even though we can find traces of an older S=O-agreement. Word order is fully 'accusative'. The same holds for other aspects of syntactic alignment such as pivoting.

Technically speaking, the individual patterns are marked for a double split (elaborated to different degrees in the individual languages). Starting from case assignment, we can describe the following prototypical paradigm:<sup>102</sup>

(99)

	IMPERFECTIVE	PERFECTIVE
S <sub>O</sub>	a	a
S <sub>A</sub>		c
A		
O	b	a

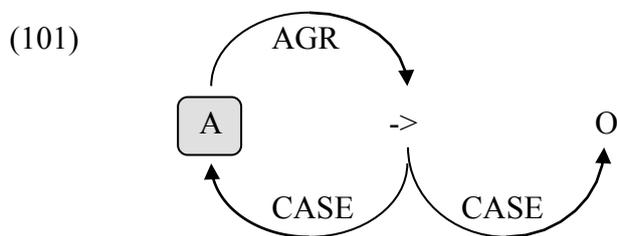
This case pattern holds for non-personal referents only. Personal pronouns generally lack case forms for S, A, and O (see below). The two domains 'imperfective' and 'perfective' are based on different stem formation patterns of verbs (see below) and surface as separate sets of tense/mood forms.<sup>103</sup> In the imperfective (series I), S and A are case-marked by what is conventionally called a 'nominative' (\*-i or \*-∅), whereas O is marked by a suffix \*-s ('dative') that is also used to encode IO. Except for the fact that O goes together with IO, we can easily compare this pattern to e.g. Arabic or Latin (the word order in the Arabic example has been harmonized):

(100)

	A: 'friend'	3SG:A 'give'	IO: 'son'	O: 'money'
Georgian:	<i>megobar-i</i>	<i>aʒlev-s</i>	<i>švil-s</i>	<i>pul-s</i>
Latin:	<i>amicu-s</i>	<i>da-t</i>	<i>fili-o</i>	<i>argentu-m</i>
Arabic:	<i>al-ḥabīb-u</i>	<i>y-u<sup>c</sup>ṭiy</i>	<i>li-l-ibn-i</i>	<i>l-fulūs-a</i>

'The friend gives the money to the son.'

This pattern deviates from the balanced model described in (31) by adding a case marker to the agentive:



Hence, the centrality of the agentive domain is indicated twice as opposed to the objective domain. (102) illustrates this unbalanced pattern with the help of Old Georgian:

<sup>102</sup> The symbols 'a', 'b', and 'c' indicate different case morphemes.

<sup>103</sup> As for Kartvelian, I generally refer to the tense paradigm based (historically) on the imperfective (series I) with the help of the label 'imperfective', whereas series II tense/mood forms are labeled 'perfective'. This does not mean that the corresponding forms (by themselves) share an aspectual notion in present-day Kartvelian. Aspect is in fact marked by the presence or absence of preverbs, in strong analogy with e.g. Slavic.

(102) Old Georgian:

*k'ac-i*                      *mšier-sa*                      *mi-s-c-em-s*                      *p'ur-s*  
 Mann-NOM/ABS    hungry-DAT                      PV-3SG:IO-give-PRES-3SG:A                      bread-DAT  
 'The man gives bread to the hungry one.' [Fährnich 1991:190]

In Mingrelian, there is a strong tendency to re-balance the pattern by reducing case marking for A:

(103) Mingrelian:

a.    *k'oč-i*                      *γuru*  
 man-ABS/NOM                      die:PRES:3SG:S  
 'The man dies.'

b.    *muma*                      *a-ržen-s*                      *cχen-s*                      *skua-s*  
 father:ABS/NOM    PV-give:PRES-3SG:A    horse-DAT                      child-DAT  
 'Father gives the child a horse.' [Schulze 2002, also see Harris 1991b]

On the other hand, some dialects of Laz have reinforced the unbalanced pattern by introducing the case maker *-k* for imperfective A, originally the ergative marker of the 'perfective' series. In addition, O conforms to the case marking pattern of the perfective series, too:

(104) Laz:

*bozo-k*    *hent-epe-s*                      *k'ahve*                      *d-u-gub-um-s*  
 girl-ERG    ANAPH-PL-DAT    coffee:ABS/NOM                      PV-3PL:IO-boil-PRES-3SG:A  
 'The girl makes coffee for them.' [Lacroix 2007, also see Holisky 1991]

Laz shows that the imperfective pattern can be affected by the constructional type present in the perfective pattern. The intransitive version of this pattern is sometimes said to belong to the 'active' type (see among many others Harris 1982a, 1982b, Hewitt 1987a, 1987b, Lazard 1995). As I have argued in Schulze 2000, S-splits, however, do not represent an independent type of alignment. They are always grounded in either an A- or an O-centering pattern (also see (145) below). This means that they are always derivations of a basic ergative or accusative strategy. It is hence reasonable to assume that the split patterns in Kartvelian and especially in Georgian result from processes of mapping the semantic value of the ergative case marker onto compatible ('active') intransitive constructions. For the purpose of the present paper, we can thus neglect a more detailed discussion of this issue. Accordingly, the perfective pattern of case marking as illustrated in (99) can be reduced as follows:

(105)

	IMPERFECTIVE	PERFECTIVE
S	NOM/ABS	NOM/ABS
A	NOM/ABS	ERG
O	DAT	NOM/ABS

Here, I have added the standard case labels. It should be noted, however, that the term 'nominative' seems to be inadequate: A 'nominative' can be defined as that case form that encodes centrality in an A-centering pattern, whereas the 'absolutive' takes up the function to mark centrality in an O-centering pattern. (105) shows that the case form at issue also occurs with O (in the perfective pattern). As I will argue that the Kartvelian imperfective pattern is derived from the perfective pattern, I will retain the label 'ABS' even though the output of this derivational process is heavily 'accusative' in nature (see the illuminating discussion on these relevant terminological issues in Creissels 2009). The following examples illustrate the perfective pattern:

(106) Old Georgian:

*k'ac-man*                      *mšier-sa*                      *mi-s-c-Ø-a*                      *p'ur-i*  
 Mann-ERG                      hungry-DAT                      PV-3SG:IO-give-PAST-3SG:A                      bread:NOM/ABS  
 'The man gave bread to the hungry one.' [Fähnrich 1991:190]

(107) Mingrelian:

a. *k'oč-k*                      *do-γur-u*  
 man-ERG                      PV-die-3SG:S  
 'The man died.'

b. *muma-k*                      *cχen-i*                      *kimeč-u*                      *skua-s*  
 father-ERG                      horse:ABS                      give:PAST-3SG:A                      child-DAT  
 'Father gave the child a horse.' [Schulze 2002, also see Harris 1991b]

(108) Laz:

*badi-k*                      *bere-s*                      *ar k'ai*                      *dolokun*                      *d-u-xen-u*  
 old=man-ERG                      boy-DAT                      one good                      garment                      PV-3:IO-make:PAST-3SG:A  
 'The old man made a nice garment for the boy.' [Lacroix 2007, also see Holisky 1991]

The Kartvelian case pattern competes with a rather complex agreement pattern that has a pronounced character of 'accusativity'. (109) gives the corresponding forms as I suggest them for Proto-Kartvelian (see Harris 1991a for comprehensive discussion).

(109)

	IMPERF / S=A	PERF / S=A	O ~ IO
1sg	*χw-	*χw-	*m-
2sg	*χ-	*χ-	*g-
3sg	*-s	*Ø-...-a	*Ø- (IO: *h-/s-)
1pl(i) <sup>104</sup>	*l/n-...-t (?)	*l/n-...-t (?)	*gw-
1pL(e)	*χw-...-t	*χw-...-t	*m-...-t
2pl	*χ-...-t	*χ-...-t	*g-...-t
3pl <sup>105</sup>	-en	*-es	*-(e)n- (IO: *h-/s-...-t)

<sup>104</sup> The assumption of an S=A inclusive is mainly based on the Svan inclusive *l(ə)-...-d*.

<sup>105</sup> Svan -χ probably is an innovation.

We can reduce the complexity of this paradigm if we assume that Kartvelian knew another split, based on the person hierarchy (Silverstein 1976). In case subjective and agentive are represented by a personal referent, the pattern is accusative (or, with respect to case marking, neutral). Ergativity thus only shows up with third person referents<sup>106</sup>:

(110)	S	O~IO	A
1sg	* $\chi$ w-	*m-	* $\chi$ w-
2sg	* $\chi$ -	*g-	* $\chi$ -
3sg	*-s	*h-	*-a
4pl(i)	---	*gw-	---
3pl	*-en	*-en-	*-es

With SAP referents, 'ergativity' thus shows up only with respect to O, compare the Modern Georgian pair:

- (111) a.            (me)    c'eril-s            da-v-c'er  
                          I            letter-DAT            PV-1SG:A-write:PRES  
                          'I will write the letter.'
- b.            (me)    c'eril-i            da-v-c'er-e  
                          I            letter-ABS            PV-1SG:A-write-SAP:PERF  
                          'I wrote the letter.'

If we neglect the perfective marker *-e* (see below), we can also describe this pattern in terms of 'differential object marking' (DOM, that is 'Split-O'): O marked by the dative indicates a series I construction (< 'imperfective'), whereas O marked by the absolutive indicates a series II construction (< 'perfective'). In case no stem variation applies, the verbal segment *-e* in (78b) is the only additional means to mark the series II constructional pattern. It is not fully clear to which functional paradigm this segment belongs from a historical perspective. Today, it forms a common paradigm with the corresponding third person elements used to indicate peculiarities of tense, mood, and diathesis. With the exception of the optatives, the domain of speech act participants (SAP) is opposed to that of non-speech act participants (nSAP) that again are subcategorized according to number. (112) sums up some of the relevant patterns given in Modern Georgian:

(112)	S=A:	SAP	3SG	3PL
Strong Aorist		-i	-a	-es
Weak Aorist		-e	-a	-es
Aorist of <i>-ob</i> -verbs		-e	-o	-os
Weak Optative		-o	-os	-on
Strong Optative		-a	-as	-an

<sup>106</sup> Here, I neglect the 1pl(e) and 2pl because they are derived from the corresponding singular forms.

Passive (basic paradigm)	-i	-a	-ian / -nen
Middle verbs (parts of paradigm)	-i	-a	-ian / -nen

The perfective-based optatives are hybrid forms because they apply the 'imperfective' third person markers to the perfective-based, 'ergative' pattern, compare:

- (113) *šesažlebeli-a rom man da-c'er-o-s es c'eril-i*  
possible-COP:3SG SUB (s)he:ERG PV-write-OPT-3SG:A PROX letter-ABS  
'It is possible that he will write this letter.' [Tschenkéli 1958:179]

This drift towards accusativity is quite in accordance with general observations concerning the tendency to center A in modal constructions. Conversely, the Old Georgian imperfect, based on the imperfective stem, takes the third person endings typical for the aorist (that is, perfective) series, compare:

- (114) a. *gan-a-t'p-ob-d-a*  
PV-SUPER-warm-PRES-IMPERF-3SG:A  
'I was warming up s.th.'
- b. *gan-a-t'p-ob-d-es*  
PV-SUPER-warm.PRES-IMPERF-3PL:A  
'They were warming up s.th.' [Fähnrich 1991:165]

As the SAP variants lack this final element (compare *ganvat'pobd* 'I was warming up s.th. '), we can assume that the two morphemes *-a* (3sg) and *-es* (3pl) had been processed as agreement markers for the nSAP domain. The question is which functional role had been associated with these elements in the proto-language. In present-day Georgian, both morphemes are clearly oriented towards the coding of S=A, as illustrated in the transitive pair in (115):

- (115) a. *(is) c'eril-s da-c'er-s*  
(s)he:ABS letter-DAT PV-write -3SG:PRES:A  
'(S)he will write a/the letter.'
- b. *(man) c'eril-i da-c'er-a*  
(s)he:ERG letter-ABS PV-write-3SG:PAST:A  
'(S)he wrote a/the letter.'

It is more likely, however, that the correlation of *-a* / *-es* with the S=A domain is of secondary origin. A clue is the element *-(e)n-* that is used with Old Georgian aorist verbs in terms of an agreement marker for plural referents in objective function (see Harris 1985; some exceptions apply):



Originally, the absolutive was a zero-marked case that was later augmented by a congruent 'article' ( $-i < *i-g^2$  'that one', see Schanidze 1982:174). The article clearly had absolutive function as preserved in the paradigm of Old Georgian (and Modern Georgian) demonstratives:

(120)	PROX	MED	DIST	
ABS	<i>ese</i>	<i>ege</i>	<i>ig-i</i>	
ERG	<i>ama-n</i>	<i>maga-n</i>	<i>(i)ma-n</i>	
DAT	<i>ama-s</i>	<i>maga-s</i>	<i>(i)ma-s</i>	
GEN	<i>am-is</i>	<i>mag-is</i>	<i>(i)m-is</i>	<i>etc.</i>

The zero-marked case form has survived in the Old Georgian 'stem case' the use of which, however, is confined to specific contexts (see Schanidze 1982:174). Nevertheless, is it reasonable to assume that the zero-marked absolutive once had been the default case form to mark centrality. Summing up the two domains of case and agreement, the following basic pattern can thus be proposed for Kartvelian:

(121)	S		A		O	
	Case	Agr	Case	Agr	Case	Agr
'Imperfective'	*- $\emptyset$ > *-i	*-s (SG) *-en (PL)	- $\emptyset$ > - i	*-s (SG) *-en (PL)	*-s	* $\emptyset$ - ~ *h-
'Perfective'	*- $\emptyset$ > *-i	*-s (SG) *-en (PL)	*-n ~ *-d <sup>108</sup>	*-a (SG) *-es (PL)	*- $\emptyset$ > *-i	*-s (SG) *-en (PL)

In order to interpret this pattern, it is important to include the relevant patterns of verbal stem formation. Disregarding certain peculiarities, we can start from two basic paradigms:

(122)	Type I	Example	Type II	Example
'Imperfective'	$\emptyset$	-c'er-	Augmented	- $\chi$ ur-av-
'Perfective'	$\emptyset$ ~ Ablaut	-c'er- 'write'	$\emptyset$ ~ Ablaut <sup>109</sup>	- $\chi$ ur- 'close'

The main point is that there is no evidence that the perfective pattern (series II) has been derived from the imperfective one (series I). Obviously, the opposite holds. The number of series I stem markers varies from language to language (see Harris 1991a:49 for an overview), but most of them can be regarded as having emerged from allomorphs of a proto-Kartvelian stem augment  $*(w)ew-$ . Although the origins of this element has not yet been

<sup>108</sup> See Harris 1991a: 24.

<sup>109</sup> See Gamq'relidze and Mač'avariani 1965 for details.

safely established, we can assume that it once served as a marker of diathesis. It is widely accepted that this diathesis was an antipassive (see Aronson 1979, Harris 1981, 1985, Tuite 1987). The stem formation element *\*(w)ew-* would have served as an antipassive marker, competing with labile verbs (Type I in (122)) that did not mark diathesis at all (also compare Kulikov 2003, Letučij 2006). Hence, the Kartvelian aspectual (> tense) system was based on a diathetic model that started from O-centering ergativity with the perfective aspect, changing it to A>S-centering in the imperfective aspect. The following table relates the proto-Kartvelian case forms and agreement morphemes to these patterns (third person referents only):

(123)

		S		A		O	
		Case	Agr	Case	Agr	Case	Agr
Perfective	Intran s.	*-Ø	*-s / *-en				
	Trans.			*-n~ -d	*-a / *-es	*-Ø	*-s / *-en
Imperfective	Intran s.	*-Ø	*-s / *-en				
	Trans.			*-Ø	*-s / *-en	*-s	---

Using the standard labels, we get:

(124)

		S		A		O	
		Case	Agr	Case	Agr	Case	Agr
Perfective:	Intran s.	ABS	> ABS				
	Trans.			ERG	> ERG	ABS	> ABS
Imperfective	Intran s.	ABS	> ABS				
	Trans.			ABS	> ABS	DAT	---

The imperfective series (series I) thus qualifies for a standard antipassive with respect to most of its features (word order problems are neglected): A behaves as if it were S whereas O is placed in the periphery:

(125)

Perfective:	A:ERG	O:ABS	VERB:AGR:O&AGR:A
Imperfective:	A>S:ABS	O>LOC:DAT	VERB[:AP]:AGR:A>S

The reorganization of these patterns was an expression of the ongoing grammaticalization process. The aspectual opposition became more and more obscured by introducing tense markers especially in series I. As a result, the original 'intransitive' character of the antipassive was adjusted to the transitive pattern of the 'perfective' series. On the other hand, the perfective series lost much of its ergative properties (e.g. loss of O-agreement), laying more emphasis on the ergative case as a 'semantic' case (and yielding the above-mentioned 'active' (that is, S-Split) typology of e.g. Georgian).

#### 5.2.4.2.2 Sumerian

As has been said above, Sumerian is also marked for a pronounced aspectual split. The corresponding split pattern has found much attention in the history of Sumerology, see among many others Foxvog 1975, Michalowski 1980, Thomsen 1984, Wilcke 1990, Attinger 1993, Hayes 2000, Coghill, and Deutscher 2002, Edzard 2003, Zólyomi 2005). For the purpose of the present paper, it is not necessary to recapitulate in details the discussion concerning the nature of this split. The reader should also note that we cannot speak of a homogenous Sumerian syntax. The corpora we are normally dealing with cover a larger span of time than it is true for instance for the history of English. Hence, observations concerning Sumerian grammatical facts have to take into account the possibility that a given structure is valid especially in one period of Sumerian, or - even worse - that it is only given for a specific types of sources. In other words: Generalizing claims concerning *the* grammar of Sumerian have always to be taken with caution. In addition, the writing system often obscures the morphological and/or lexical form of words. Nevertheless, certain basic properties of Sumerian can be safely described as rather stable structures from a diachronic point of view. One of these properties is given by Sumerian split ergativity. In order to illustrate the problem, I will start from four construed sentences (cf. Thomsen 1984:49-50):

(126) a. Perfective Intransitive:

*lú-Ø im-ku<sub>4</sub>.r-Ø*  
man-ABS ITIV-enter:PERF-3SG:S  
'the man entered.'

b. Perfective Transitive:

*lú-e saĝ-Ø mu-n-zìg-Ø*  
man-ERG head-ABS VENT-3SG:A[anim]-raise:PERF-3SG:O  
'The man raised the head.'

c. Imperfective Intransitive:

*lú im-ku<sub>4</sub>ku<sub>4</sub>-Ø*  
man-ABS ITIV-enter:IMPERF-3SG:S  
'The man is entering...'

d. Imperfective Transitive:

*lú-e saĝ-Ø mu-b-zizi-e*  
man-ERG head:ABS VENT-raise-3SG:O[-anim]-raise:IMPERF-3SG:A  
'The man is raising the head.'

Sumerian is both head and dependent marking. Note that Sumerian seems to be governed by a secondary split that operates according to the person hierarchy: Personal pronouns (including the third person!) do not distinguish between S and A, neither in the perfective nor in the imperfective (see Attinger 1993:151). Thomsen (1984:69) and Zólyomi (2005:24) argue in

favor of an accusative pattern. Michalowski (2004:35-36) argues: "Unlike nouns, which show ergative case marking, independent personal pronouns can only be used as transitive and intransitive subjects, and thus have to be interpreted as nominative, albeit without any corresponding accusative form." Edzard (2003:56), however, is more cautious by referring to orthographical problems: "There is just one form, at least judging by orthography, for absolute and ergative" (see Klein 2000 for a recent discussion of the shape of personal pronouns in Sumerian). In fact, it is not a trivial question to judge whether the given forms of the pronouns (1sg *ġe* ~ *ġae*, 2sg *ze* ~ *zae*, 3sg *ene*, 3pl *enene*) entail a marker of ergativity (Sumerian *-e*) or not. Nevertheless, there are no traces of a systematic distinction between overt personal pronouns in S and A function, contrary to the paradigm of personal agreement, see below. There is sufficient evidence to assume that these pronouns that are generally used to indicate contrast and emphasis (Thomsen 1984:69) have a focal value that excludes them from clause internal case assignment (Schulze and Sallaberger 2007). Within the pattern of verbal agreement itself, the Silverstein hierarchy does not seem to be at work in Sumerian.

The four sentences above are marked for the following properties: (a) As for case marking, the subjective is opposed to the agentive in both aspectual constructions: Absolute  $-\emptyset$ , ergative *-e*. The absolute is also the case form of the objective. (b) The verbal stem forms distinguish a perfective form (conventionally called the *ġamtu* base) from an imperfective one (the *maru* base). The *ġamtu* base is generally considered as the underived form, whereas the *maru* base is derived with the help of either reduplication (Steiner 1981, Kienast 1981, Edzard 1971/72, 1972/73, 1976) or with the help of the detransitivizing morpheme *-e(d)*-. Some verbs show suppletion, others are labile. (c) The Sumerian verb is marked for polypersonal agreement that uses both specific forms and positional features to copy the grammatical relation of a given referent onto the verb. (127) lists the corresponding agreement morphemes (see Schulze and Sallaberger 2007 for details):

(127)

		S	A		O	
			PERF. <i>ġamtu</i>	IMPERF. <i>maru</i>	PERF. <i>ġamtu</i>	IMPERF. <i>maru</i>
Position		Postverbal	Preverbal	Postverbal	Postverbal	Preverbal
SERIES		I	II	I'	I	II'
Sg	1	<i>-en</i>	'-/V-	<i>-en</i>	<i>-en</i>	'-/V-/( <i>en</i> -) (?)
	2		y-/e-			y-/e-/( <i>en</i> -) (?)
	3anim	$-\emptyset$	<i>n-</i>	$-\emptyset \sim -e^?$	$-\emptyset$	<i>n-</i>
	3-anim		<i>b-</i>			<i>b-</i>
Pl	1	<i>-enden</i>	'-/V-...-enden	<i>-enden</i>	<i>-enden</i>	<i>me</i> - (?)
	2	<i>-enzen</i>	y-/e-...-enzen	<i>-enzen</i>	<i>-enzen</i>	?
	3anim	<i>-eš</i>	<i>n</i> -...-eš	<i>-ene</i>	<i>-eš</i>	<i>ne</i> -

If we start from the perfective (*ġamtu*), we can retrieve a typical ergative pattern: S=O as given by the morpheme set of series I (always postverbal) is opposed to A (series II, preverbal). The following examples illustrate this pattern<sup>110</sup>:

<sup>110</sup> The Sumerian examples are taken from the Electronic Text Corpus of Sumerian Literature (ETCSL).

(128) Intransitive:

a. <dusu kug mu-íl ù.šub-e im-ma-gub>

*dusu kug mu-n-íl*  
basket holy VENT-3SG:A[anim]-lift:PERF:3SG:O

*ùšub-e im-b-a-gub*  
brick=form-LOC/IO ITIV-3SG[-anim]-DAT/LOC-stand:PERF:3SG:S  
'He lifted the holy basket and stand at the brick form'  
[Gudea, cyl. A XVIII 23<sup>111</sup>]

b. <e<sub>2</sub>-e im-ma-ĝen>

*e<sub>2</sub>-e im-b-a-ĝen*  
house-TERM ITIV-3SG[-anim]-DAT/LOC-go:PERF:3SG:S  
[Gudea, cyl. A XVIII,8]

(129) Transitive:

a. <<sup>d</sup>En.líl-e en <sup>d</sup>Nin.ĝír.su-šè igi zid mu-ši-bar>

*<sup>d</sup>Enlil-e en <sup>d</sup>Ninĝirsu-še igi zid*  
Enlil-ERG lord Ninĝirsu-TERM eye faithful

*mu-n-ši-n-bar*  
VENT-3SG-TERM-3SG:A-open:PERF:3SG:O  
'Enlil looked faithfully at (lit.: opened a faithful eye to) the lord Ninĝirsu.'  
[Gudea, cyl. A I,3, also see Thomsen 1984:178]

b. <mu-e-ši-in-gi<sub>4</sub>-n-am>

*mu-e-ši-n-gi<sub>4</sub>-en-am*  
VENT-2SG-TERM-3SG:A-send-1SG:O-COP  
'It is (my king) who has sent you to me.'  
[Enmerkar and the Lord of Aratta 176, Thomsen 1984:147]

The intransitive imperfective behaves like its perfective variant, compare (129a) with (130):

(130) Intransitive:

<iri-šè ì-du-e>

*iri-šè im-du-en*  
city-TERM ITIV-go:IMPERF-1SG:S

'I will go to the city.'

(Gudea, cyl. A III 18; cf. Thomsen 1984:164)

The pattern that has provoked the assumption of split ergativity in Sumerian is given by the transitive imperfective (*marû*). For A, the typical S-agreement morphemes are used

<sup>111</sup> *-gub* according to the Electronic Text Corpus of Sumerian Literature (c.2.1.7): 'and put it next to the brick mould', see <http://etcsl.orinst.ox.ac.uk/cgi-bin/etcsl.cgi?text=t.2.1.7#>. Thomsen (1984:180) reads *-ĝen* 'go'.

(postverbal), whereas O is encoded with help of the perfective A-agreement morphemes (preverbal):

(131)	PERFECTIVE	IMPERFECTIVE
A	Preverbal = O:IMPERFECTIVE [+/-anim]	Postverbal = S [no subcategorization]
O	Postverbal = S [no subcategorization]	Preverbal = A:PERFECTIVE [+/-anim]

Note that the imperfective agreement morphemes are marked for certain peculiarities: The third person A may have a postverbal marker *-e* that does not occur with S-agreement. However, this interpretation is disputed. It may well be that *-e* is nothing but the shortened version of the *-ed* formative used to derive a *marû*-base for non-reduplicating stems (see Schulze and Sallaberger 2007:185, fn. 15). The third person plural is *-ene* instead of expected *-eš*. With O-agreement, the first person plural seems to be *me-* instead of *-enden*, and the third person plural is lacking (= animate third person singular). In order to simplify the matter, I will neglect these peculiarities in the discussion to follow (see Schulze and Sallaberger 2007 for details). (132) illustrates the use of the transitive imperfective:

(132) Transitive imperfective:

- a. <ad<sub>6</sub> šeš-me sig<sub>4</sub> Kul.aba<sub>4</sub><sup>ki</sup>-šè ga-ba-ni-ib-ku<sub>4</sub>-re-dè-en>  
*ad<sub>6</sub>      šeš-me                      sig<sub>4</sub>                      Kul.aba<sub>4</sub><sup>ki</sup>-šè*  
 body      brother-1PL:POSS   brickwork              Kulaba:GEN-TERM

*ga-ba-ni-b-ku<sub>4</sub>.r-enden*

ADH-3SG[-anim]:LOC-LOC-3SG:O>LOC-bring-1PL:A>S

'We will/shall bring the body of our brother to the brickwork of Kulaba.'

[Lugalbanda in Hurrumkura 128, see Wilcke 1969:56]

- b. <Lugal.bàn-da ... mušen-e mí iri-im-me>

*Lugalbanda ... mušen-e*

Lugalbanda:ERG   bird-TERM

*mí              iri-i-b-e-e*

praise      PV-ITIV-3SG:O>LOC-say:IMPERF-3SG:A>S

'Lugalbanda praises the bird.'

[Lugalbanda and Enmerkar 111-113, Thomsen 1984:211]

- c. <ku<sub>6</sub>-ĝu<sub>10</sub> ku<sub>6</sub> ħe-a ħé-en<sup>a</sup>-ga-me-da-an-ku<sub>4</sub>-ku<sub>4</sub>>

*ku<sub>6</sub>-ĝu<sub>10</sub>              ku<sub>6</sub>              ħea*

fish-1SG:POSS      fish              various

*ħa-im-ga-mu-e-da-n- ku<sub>4</sub>ku<sub>4</sub>*

HORT-PV-also-VENT-2SG-COM-3SG:A>S-enter:IMPERF

'My fish, may various (kinds of) fish enter with you.'  
 [Home of this fish; Civil 1961, line 68]

- d. <é-zu ma-ra-dù-e>  
*é-zu mu-ra-b-dù-en*  
 house-2SG:POSS VENT-2SG:IO-3SG:O>LOC[-anim]-build:IMPERF-1SG:A>S  
 'I will build your house for you.'  
 [Gudea, cyl. A VIII 18; Thomsen 1984:176.]

It comes clear that the agreement patterns do not specialize for specific grammatical roles. Rather, we have a complementary distribution that shows up as follows (simplified version):

(133)	Perfective	Imperfective
A	Series II	Series I (=S)
O	Series I (=S)	Series II

This binary opposition reminds us of the distinction between center and periphery as discussed in section 3 of this paper. If we start from the hypothesis that in intransitive clauses the core actant is always in the center of the information flow, we can infer that is it the set of series I morphemes that plays this role. Accordingly, series II morphemes are associated with the periphery:

(134)	Perfective	Imperfective
A	Periphery	Center
O	Center	Periphery

This hypothesis goes together with the fact that preverbal agreement also involves other types of peripheral roles such as indirect objectives, locatives, and instrumentals etc., compare:

- (135) a. <mu-un-da-gu<sub>7</sub>-e>  
*mu-n-da-b-gu<sub>7</sub>-en*  
 VENT-3SG-COM-3SG[-anim]:O-eat-2SG:A  
 'You will eat it together with him'  
 [Dumuzi and Ankimdu 18, also see Thomsen 1984:224]
- b. <ama dumu-ni(-ir) igi nu-mu-un-ši-bar-re>  
*ama dumu-ni-ra*  
 mother:ERG child-3SG:POSS[anim]-DAT
- igi nu-mu-n-ši-b-bar-e*  
 eye NEG-VENT-3SG[anim]-TERM-3SG:O[-anim]-open-3SG:A  
 'The mother does not look at her child' [Nisaba Hymn 41]

Hence, the placement rule reads:

(136) AGR<sub>P</sub>-VERB-AGR<sub>C</sub>

This pattern goes together with the assumption that ergative structures tend to center on O as opposed to accusative structures that center on A (see section 3). In this sense, the perfective structure nicely fits to the distribution suggested in (136), compare:

(137)		Periphery		Center	
		Series II		Series I (=S)	
	Perfective	A	VERB	O	a □ O
	Imperfective	O	VERB <sub>x</sub>	A	o □ A

The fact that A is central in the imperfective necessitates the assumption that either the perfective is a derivation from the imperfective, or vice versa.<sup>112</sup> In order to answer this question we have again to turn to the shape of the verbal bases: As has been said above, the perfective verb is unmarked, whereas many imperfective verbs are marked for derivational processes (reduplication and/or *-ed*-suffixing, symbolized by VERB<sub>x</sub> in (137)). Accordingly, there must be a functional feature that is added to the perfective verb in order to derive the imperfective version. Obviously, we have to deal with diathesis - more concretely, with an antipassive strategy. To my knowledge it was Michalowski (1980), who first suggested that the verb internal structure of the *marû*-construction entails antipassive features (also see Geller 1998):

"One way of interpreting this phenomenon is to assume that the identification of transitive and intransitive subject is in fact a way of indicating the superficially intransitive nature of the imperfect aspect. In other words, in the imperfect the verbal agreement markers behave in a manner *similar to* the anti-passive (...). This rule affects only the affixes of the verb and the nominal chain continues to bear ergative marking" (Michalowski 1980:101).

From a 'synchronic' point of view, Michalowski's description seems to be adequate. As for third person referents in A function, there is no clear evidence that its case form is accommodated to the antipassive pattern, which would yield an absolutive. Likewise, the objective is not backgrounded but remains in the absolutive. This pattern is reminiscent of the Basque (anti-)passive, see examples (86) and (87) above. Nevertheless, the so-called *mes-ane-pada*-construction (e.g. Thomsen 1984:262-263), Krebernik 2002:9-10) illustrates that case marking *can* have a diathetic value, compare:

- (138) a. Intransitive:  
 <igi-zu-šè dusu kug gub-ba>  
 igi-zu-šè                      dusu                      kug                      gub-a  
 eye-2SG:POSS-TERM    basket:ABS                      holy                      stand-PART  
 'The holy basket which stands before you (lit. your eye).'

<sup>112</sup> The problematic (in fact untenable) assumption according to which the Sumerian ergative construction is based on the *marû*-construction in terms of a passive (that is, in terms of the 'Iranian model') has been pronounced e.g. Jacobsen (1988:213-216) and by Coghill and Deutscher (2002).

[Gudea, cyl. A VI 6]

b. Transitive:

<E<sub>2</sub>-ninnu An-né ki ġar-ra>

*Eninnu An-e ki-ġar-a*

Eninnu:ABS An-ERG ground-place-PART

'Eninnu founded by An'

[Gudea, cyl. A IX 11]

Here, the passive-like diathesis (138b) that is based on the labile verbal participle *-a* links S and O with the help of the absolutive, whereas peripheral A is marked by the ergative. The verb itself does not include any indication of grammatical functions. We may thus assume that the case pattern of the *marû*-construction once had been in accordance with the alignment pattern present in the verb:

- (139) A>S:ABS            O:OBL            AGR:O-VERB<sub>x</sub>-AGR:A>S  
*\*lú*                    *saġ-e*            *...-b-zizi-Ø*  
 man:ABS            head-TERM        ...3SG:O[-anim]-raise.IMPERF-3SG:A>S  
 'The man is raising the head.'

There is no clear evidence for reconstructing the original case marker of the backgrounded referent in O-function. In this context, it is important to note that contrary to referents in e.g. locative or instrumental function, the case markers of the ergative and of the backgrounded O-referent are not copied onto the verb. This can be seen from (140) that is a simplified list of case forms and case-based agreement morphemes in Sumerian:

(140)

	CASE	AGREEMENT
ABS	-Ø	VERB-AGR
ERG	-e	AGR-Verb
DAT	-ra	AGR-a-VERB [+anim]
LOC	-e	-ni-...-VERB [-anim] <sup>113</sup>
TERM	-še	AGR-ši-...-VERB
INSTR	-ta	AGR-ta/ra-...-VERB
COM	-da	AGR-da-..-VERB

Obviously, the agreement morphemes used to copy S, A, and O properties are by themselves cased marked (see Schulze and Sallaberger 2007 for a more comprehensive discussion). The table in (141) shows that the agreement morphemes mapping the center onto the verb are not fully subcategorized according to 'person'. If we disregard the obviously secondary plural forms *-enden* (1pl) and *-enzen* (2pl), only speech act participants are distinguished from non-speech act participants that again may be marked for plurality:

<sup>113</sup> A petrified morpheme that probably includes the terminative *-e* > *-i* and the agreement marker *\*b-* [-anim] that has changed to *\*n-* under unclear conditions, see Thomsen 1984:236 with references.

(141)

	Center	Periphery	Pronoun (S=A)	POSS
1sg	-en	'- / V-	ġe	-ġu
2sg	-en	y-/ e- < *rV- ?	ze	-zu
3sg [anim]	-Ø	n-	ane, ene	-ani
3sg [-anim]	-Ø	b-	?	-bi
1pl	-enden	me-, '-/V...-enden	[menden]	-me
2pl	-enzen	(y-e/-)...enzen	[menzen]	-zune(ne)
3pl [-anim]	-eš ~ -ene	n...(-eš)	anene, enene	-anene

The peripheral 'case' as embodied in the corresponding agreement markers may be tentatively related to the possessive clitics (2sg \*rV- vs. -zu can be interpreted as the result of rhotatism) except for the first person singular that exhibits a specialized form. The relation 'periphery case' ~ 'possessive' goes together with what has been described for instance for Iranian (see above). Nevertheless, it should be noted that the apparent possessive layer does not show up in the corresponding case morphology. The ergative case -e may be related to either the so-called locative-terminative (-e) or to the deictic element e- (Thomsen 1984:81). In the latter case, we would have a perfect match with the Georgian model of marking the ergative (see above). It comes clear that -e stands in opposition to the possessive marker -ak and hence cannot be regarded as being part of a possessive construction. Obviously, the 'peripheral case' as present in the agreement morphemes had a much broader function than just to indicate possession.

We can thus confidently state that the antipassive pattern described in (142) below once co-occurred with the ergative construction and that was used to encode an A-centered perspective resulting in various functional subtypes. Both subtypes were related to aspect, but gradually changed to a more time-oriented function that opposed a non-past perspective to the (ergative-based) past perspective. At this stage, the 'transitive' value of the ergative construction more and more influenced the originally intransitive value of the antipassive, re-establishing the transitive dimension. This process is expressed by copying of the ergative morpheme onto the antipassive structure and by deleting the case form that once signaled the peripherization of the objective. As a result we get the standard *marû*-pattern of Sumerian:

(142)

A>S:ABS	O:OBL	AGR:O-VERB <sub>x</sub> -AGR:A>S
*lú	saġ-e	...-b-zizi-Ø
man:ABS	head-TERM	...3SG:O[-anim]-raise.IMPERF-3SG:A>S
=>		
A:ERG	O:ABS	AGR:O-VERB <sub>x</sub> -AGR:A
lú-e	saġ	...-b-zizi-Ø
man-ERG	head:ABS	...3SG:O[-anim]-raise.IMPERF-3SG:A>S

The re-inforcement of transitivity with antipassives seems also to be controlled by word order features. Although Sumerian word features are strongly governed by the given textual types, we can assume that in non-ritualized texts the 'basic word order' was SV / AOV. The accusative pattern (see section 3.3 above) helped to associate the foregrounded agentive of

antipassives with the ergative-marked agentive of the perfective pattern. As a result the behavior of the A-referent became fully harmonized with respect to both imperfective *marû*-constructions and perfective *hamtu*-constructions, just as it was true for referents in O-function. The agreement pattern, however, remained antipassive:

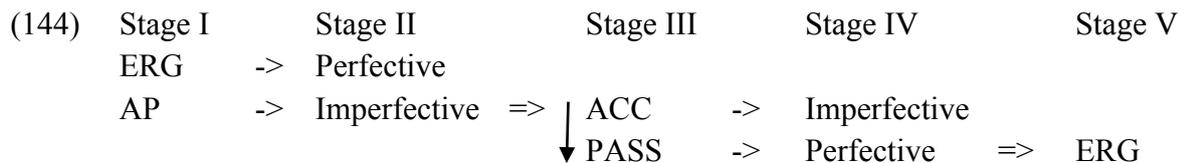
(143)

	A			O		
	CASE	WO	AGR	CASE	WO	AGR
Ḥamtu	ABS	↑ 2	Series I	OBL	↑ 1	Series II
Marû	ERG	1	Series II	ABS	2	Series I
=>						
Ḥamtu	ERG	1	Series I	ABS	2	Series II
Marû	ERG	1	Series II	ABS	2	Series I

#### 5.2.4.2.3 Proto-Indo-European (PIE)

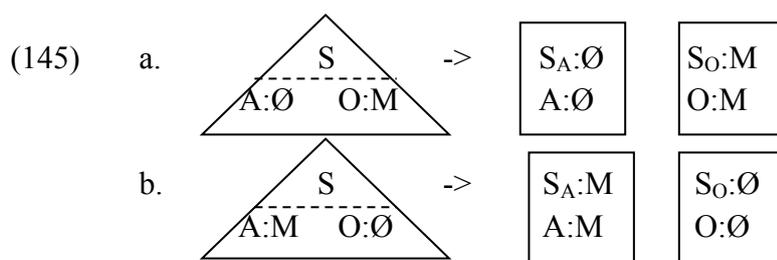
It is part of the general agenda in Indo-European linguistics to discuss the basic properties of Proto-Indo-European (PIE) syntax. In the last decades, this discussion has been continuously influenced by parameters and observations stemming from language typology and even cognitive syntax. In this paper, I do not want recapitulate the many and often contradictory positions that have been taken with respect to this problem. Rather, I will occasionally allude to some of these positions in order to contrast them with a new proposal that relates the PIE patterns of 'basic syntax' to the phenomena discussed in the preceding sections. In other words: I want to show that the PIE syntax had once been controlled by patterns that come close to those of what can be reconstructed for Kartvelian and for a pre-historical stage of Sumerian. I want to stress from the very beginning that I do *not* aim at describing a genetic relationship between these languages. Nevertheless, the structural parallels especially between PIE and Kartvelian seem to be more than just coincidence. The hypotheses put forward in this paper nicely fit into the picture of PIE-Kartvelian language contact that has been described since long (see e.g. Gamkrelidze and Ivanov 1984, Klimov 1991, Klimov 1994, Gippert 1994). The assumption that PIE shares with both Kartvelian *and* Sumerian the process of grammaticalizing a former antipassive still lacks a satisfying explanation. As we have seen in section 2 of this paper, aspectual split systems can be borrowed (obviously by copying a given pragmatic style). Whereas the necessary language contact was surely given with respect to PIE and Kartvelian, language contact between (Proto-)Sumerian and the two other proto-languages is difficult to describe. Gordon Whittaker (1998, 2008) has proposed the existence of a substratum in Sumerian that was Indo-European in nature. It is a well-known fact that the Sumerians once had migrated to their Mesopotamian homeland and it is thus reasonable to assume that they had met an indigenous population with which they gradually merged. In case this population spoke a variant of PIE it may well have been the case that the Sumerians adopted a certain communicative style reshaping their basic syntax. According to this (rather

doubtful) scenario, the PIE layer (conventionally called Euphratic) must have stretched along the Tigris River up to the Zagros Mountains reaching areas where Proto-Kartvelian had been spoken. Euphratic would have then been the donor language (with respect to the aspectual split pattern) for both Kartvelian and Sumerian. However, we can likewise assume that despite of the local, so-called Dilmun (= Baḫrāin?) tradition the Sumerians once had dwelt in the north where they had been in contact with Kartvelian (and PIE?). A third assumption would simply state that we have to deal with parallel, independent processes of grammaticalization not induced by language contact. Given the fact that passive-based aspectual split patterns later on emerged in nearly the same region (that is in what today is Easternmost Anatolia, Northern Iraq, Northwest Iran, and Transcaucasia), leads to the assumption that such a pattern was a standard way of linguistically construing event images. However, we have to bear in mind that (as far as we know) the antipassive-based split pattern was not borrowed *from* one of the three languages at issue into another language in the region. This suggests that the grammaticalization process quickly obscured the original pragmatic value of this split, a process that would have hindered the speakers of other languages to retrieve this value and to copy it into their own language. The missing of this split for instance in Akkadian is an illuminating example. Nevertheless, we can conclude that aspect-based split patterns had been a common stylistic paradigm in the region over times. But once the corresponding grammaticalization process had taken place, it took a certain span of time before the same process could start again now based on the 'new' pattern. (144) schematically summarizes these processes ('□' indicates functional specification, '=>' indicates grammaticalization; also see the graphics in (76) and (77) above):



Contrary to Kartvelian and Sumerian, any attempt to describe the motivation of the PIE basic syntactic patterns has to start from reconstructed forms. Even though certain features of the underlying patterns have survived in the individual languages (see below), we cannot claim that whatever is described as a model of PIE basic syntax has its immediate reflex in one of its daughter languages. It follows that we have to refer largely to formulaic patterns. The ancient Indo-European languages are generally patterned in terms of accusativity, even though some hypotheses relate e.g. ergative features to some of these languages (especially to those of the Anatolian branch, see above). As a result, accusativity would be the logical output of reconstructing Indo-European basic syntax, too. Nevertheless, certain inconsistencies in both case and agreement patterns motivated many researchers to look for different patterns. The discussion started with Uhlenbeck 1901, followed by Pedersen 1907, 1933, 1938, Vaillant 1936 and many others. All these authors take up the hypothesis (pronounced more or less explicitly) that PIE had been shaped by features of ergativity. This view has been adopted more or less explicitly by e.g. Schmidt 1979, Kortlandt 1983, Luraghi 1988, and many others - but it also met critical comments e.g. by Villar (1984), Rumsey (1987) and Bavant (2008). Most of the later contributions to this problem concentrated on the assumption that PIE had

been marked for a hierarchical split that opposed a less animate or inanimate set of referents ('neuters') to an animate one, whereby the second set was characterized by an ergative case marker (\*-s) in case the given referent has A-function. Accordingly, the set of 'neuter' referents did not qualify for this function by being restricted to S and O. The PIE ergative hypothesis is opposed to (or, sometimes augmented by) the idea that the basic syntax of PIE was governed by an 'active typology' (see Gamkrelidze and Ivanov 1984, Lehmann 1993, Bauer 2000). Here, I do not want to go into all the details of both hypotheses. It suffices to note that the traditional version of the ergative hypothesis usually starts from case patterns only, that is from morphology turning it into some kind of morphosemantics. It frequently neglects syntactic patterns as such that would interpret semantic based splits (such as the animacy hierarchy) as secondary devices to manipulate these patterns. The typical morphological orientation as present in many versions of the PIE ergative hypothesis also conditions that the interaction of case, agreement, and word order in terms of syntax patterns is rarely taken into consideration. The 'active hypothesis' as elaborated e.g. by Lehmann (1993) starts from the lexicon and tries to retrieve the corresponding reflexes of 'active' and 'inactive' verbs in the case and agreement paradigms. Even though Lehmann addresses a wider range of morphosyntactic and morphosemantic features that are said to be typical for (*horribile dictu*) 'active languages', his hypothesis again neglects an overall syntactic perspective. In addition, there is good reason to assume that the 'active typology' is not a third 'type' that is opposed to ergativity and accusativity (Sapir 1917), but just a semantic elaboration of either accusativity or ergativity (Schulze 2000). In this sense, we get two basic models of 'active typology' (M = any kind of marker, be it case, agreement, word order or other means such as aspectual markers):



Type (145a) represents an accusative-based Split-S pattern, whereas (145b) is grounded in an ergative syntactic pattern. We can conclude from (145) that if ever PIE had been marked for features of 'active typology', these features must be relatable to either A- or O-centering procedures. In other words: The ergative (or accusative!) hypothesis outranks the 'active hypothesis'.

As far I know, hypotheses concerning the nature of PIE basic syntax have rarely considered the relation between the two temporal-aspectual oppositions 'past' vs. 'non-past' resp. 'perfective' vs. 'imperfective'. More frequently, the so-called 'stative' nature of the third 'temporal' paradigm (as expressed in the inflection of the perfect series) has been addressed to account for e.g. 'inactive' (stative) features (e.g. Lehmann 1993:218). The difference between these patterns shows up in agreement patterns as well in verb stem formation. Cumulating the

many proposals to reconstruct the PIE agreement paradigm, we can start from the following paradigm<sup>114</sup>:

(146)	Dynamic						Stative		
	Active				Middle		Active	Middle	
	Athematic		Thematic <sup>115</sup>						
	Non-present	Present	Non-Present	Present		Non-present	Present		
Model1				Model2					
1sg	*-m	*-m-i	*-o-m	*-ō < *-o-h <sub>1</sub> ?	*-ō(-m-i)	*-m-ā/o	*-m-ā/o-i	*-h <sub>2</sub> e	*-h <sub>2</sub> -o <sup>?</sup>
2sg	*-s	*-s-i	*-e-s	*-eh <sub>1</sub> (i)	*-e-s-i	*-s-o	*-s-o-i	*-th <sub>2</sub> e	*-th <sub>2</sub> -o <sup>?</sup>
3sg	*-t	*-t-i	*-e-t	*-e < *-e-h <sub>1</sub> ?	*-e-t-i	*-t-o	*-t-o-i	*-e	*-o
3pl	*-nt	*-nt-i	*-o-nt	*-o	*-e <sub>o</sub> -nt-i	*-nt-o	*-nt-o-i	*-r	*-r-o
	Series Ia		Series Ib		Series Ic		Series IIa	Series IIb	

I use the labels 'series I' and 'series II' in order to apply a terminology compatible with what has been described for Kartvelian and Sumerian above. (147) relates these labels to the traditional terms:

- (147) Series Ia                    Secondary and primary endings (active, dynamic), athematic  
Series Ib                        Secondary and primary endings (active, dynamic), thematic  
Series Ic                        Secondary and primary endings (middle, dynamic)  
Series IIa                        Stative (active)  
Series IIb                        Stative > Dynamic (middle)

The table in (146) illustrates that we have to start from two paradigms: The set of Series I (sometimes called the MST series) is related to dynamic verbal concepts, series II (the ATHAE series) shows up with stative verbal concepts (also see Schulze 1990). The unmarked version of both series is related to a 'neutral version' of event images, whereas the 'middle version' adds the notion of subjectification: The event image is seen as being 'in the interest' of the centered actant thus giving an additional pragmatic value to this center. This prototypical notion of the 'middle version' lays the ground for further functional specifications

<sup>114</sup> I do not refer to the 1pl and 2pl, because of the many problems that concern the reconstruction of these forms. The reconstructions given in (146) can be questioned with respect to details and functional values, pending on the model favored by the researcher.

<sup>115</sup> The assumption that PIE knew a special set of (primary) thematic agreement markers ('Model1') is based mainly on Beekes 1995. Other authors prefer to posit a specific form for the 1sg only (\*-ō < \*-o-h<sub>1</sub>?). It remains doubtful whether the construction of the 2sg agreement marker \*-eh<sub>1</sub>(i) finds further support. Evidence is said to stem from Lithuanian, Greek and Irish. Eugen Hill (Berlin) drew my attention to the fact that the data from both Greek (-εις < \*-esi (metathesis)) and Old Irish (-i < \*-esi) can likewise be subsumed under 'Model1'. As for Lithuanian -i < \*-ei may also stem from \*-esi. If ever 'Model1' finds further support, we may likewise interpret the series as consisting of the thematic vowel plus an element \*-h<sub>1</sub> that would encode speech act participants (note that some authors reconstruct 1sg \*-o-h<sub>2</sub> in order to relate the ending to the 'stative' ending \*-h<sub>2</sub>e. The phonetic output (\*-ō) would be the same for both \*-oh<sub>1</sub> and \*-oh<sub>2</sub>). In case one dismisses the series as such, the problem is simply transferred to the thematic vowel itself (also see fn. 50).

such as reflexivity, passivization, or intransitivization. From a functional point of view, the 'middle version' is rather similar to the so-called 'i-version' (*sataviso*) of Kartvelian (see Harris 1991a), that places the 'version vowel' (\*-i-) in front of the verbal stem to mark such a functional complex (Holisky 1981; see Tuite 2007 for the functional and categorial dimension of -i-based deponents in Georgian). In PIE, the marker of this 'middle version' seems to have been a suffix \*-o added to the agreement marker.<sup>116</sup> Finally, the dynamic paradigm is subcategorized according to temporal features, whereby it is the 'present tense' that takes an additional marker (\*-i 'hic et nunc', H&N). This element comes last in the agreement chain and probably once had clitic properties (in the so-called injunctive, this marker is lacking even though the tense form is marked for the present tense). Disregarding the problem of thematic verbs and their inflectional specifics (see below), we can describe the following pattern of morpheme chaining (later mergers and changes are neglected):

(148)

		Series I	VERSION	H&N	Series II	VERSION	
ACTIVE	1sg 2sg 3sg 3pl	*-ō			*-i	*-h <sub>2</sub> (e) *-th <sub>2</sub> (e) *-e *-r	*-∅
		*-m	*-∅-				
		*-s					
		*-t					
*-nt							
MIDDLE	1sg 2sg 3sg 3pl	*-o-			*-i	*-h <sub>2</sub> (e) *-th <sub>2</sub> (e) *-e *-r	*-o
		*-m					
		*-s					
		*-t					
*-nt							

The agreement paradigms listed in (146) go together with specific stem formation features that distinguish a perfective stem (> aorist etc.) from an imperfective stem (> present etc.) and from the stative (> perfect etc.). (149) summarizes those stem formation elements that can be regarded as having been part of the IE paradigm (RED = reduplication):

(149)

	Dynamic	Stative
	Perfective	Imperfective
	-∅	-∅
	RED	RED
	[-s]	*-n <sup>(a/e-)</sup>
		*-s <sup>ǰ</sup> -
		*-y- <sup>117</sup>

The imperfective (> 'present') stem thus shows up in terms of three basic types: (a) labile (no morphological distinction from the perfective stem), (b) reduplication, and (c) stem augmenting elements. All stem augmenting patterns are virtually thematic, compare:

<sup>116</sup> Note that the position of this 'middle version' marker argues against a derivative morpheme. Rather we have to think of a clitic element that entailed the notion of subjectification, resembling (with respect to position) the Slavic reflexives marker, e.g. Russian *nadeju-s'* 'I hope', also compare Rix 1988.

<sup>117</sup> See Kölligan 2002 for details on (in his terms) \*-éǰ/ǰ- (thematic variant).

(150)

Root/Stress	Present stem	TV	Example	Present stem (3sg Pres)	Meaning
Amphidynamic	-Ø-	-Ø-	*g <sup>wh</sup> en-	*g <sup>wh</sup> én-t-i	strike down
Acrodynamic	-Ø-	-Ø-	*steu-	*stéu-t-i	make/be manifest
Full grade	-Ø-	-e-	*bher-	*bhér-e-t-i	carry, bring
Zero grade	-Ø-	-é-	*g <sup>w</sup> erh <sub>3</sub> -	*g <sup>w</sup> rh <sub>3</sub> -é-t-i	devour
Reduplication	RED /-é-/	-Ø-	*d <sup>h</sup> eh <sub>1</sub> -	*d <sup>h</sup> é-d <sup>h</sup> oh <sub>1</sub> -t-i	place, lie
Reduplication	RED /-i-/	-Ø-	*ġenh <sub>1</sub>	*ġi-ġnéh <sub>1</sub> -t-i	produce
Zero grade	-n-	-é-	*leik <sup>w</sup> -	*lí-né-k <sup>w</sup> -t-i < *lik <sup>w</sup> -n-é-t-i <sup>?</sup>	leave behind
Zero grade	-sk̄-	-é-	*g <sup>w</sup> em-	*g <sup>w</sup> m-sk̄-é-t-i	come, go
Zero grade	-y-	-é-	*ġenh <sub>1</sub> -	*ġnh <sub>1</sub> -y-é-t-o-i (middle)	produce
Full grade	-y-	-e-	*(s)pék-	*spék-y-e-t-i	look at

All patterns marked for a stem augment are thematic and call for series Ib agreement morphemes (if the corresponding reconstruction is correct, see fn. 47). The thematic vowel (that can show ablaut) also occurs with root imperfectives (type (a) above) as well as in the perfective stem (thematic asigmatic aorist), although the latter type seems to be a Late PIE innovation (see Szemerényi 1970:262). The second type of aorist (marked by an element \*-s) always is athematic. It has been suggested that the *s*-aorist originally belonged to the paradigm of imperfective verbs, producing a past tense variant ('imperfect', compare Kuryłowicz 1956:33, 1964:104). Taking up this hypothesis, we can say that all stem augmenting variants are based on the imperfective and always call for a thematic vowel. The general distribution of the thematic vowel thus shows up as follows:

(151)	Thematic vowel
Imperfective	
Labile	+/-
Reduplication	+/-
Stem augment	+
Perfective	
Labile	[+]/-
Reduplication	+/[ - ]

If we disregard the reduplicated forms, it comes clear that the thematic vowel is closely associated with the imperfective aspect. The fact that root (or: stem) internal ablaut patterns had originally been restricted to the perfective, to the stative, and - perhaps in analogy with the 'root' perfective - to the athematic imperfective suggests that root internal ablaut once had been a morphophonological features typical for the perfective domain (just as it is true for Kartvelian, see above).

As indicated in (149), reduplication is present with all three stem types. Obviously, the functional value of reduplication was rather broad and did not specialize for one of the aspectual domains. Nevertheless, (149) suggests that the imperfective had been the morphologically marked version, whereas both the Perfective and the Stative can be regarded as the basic (underived) forms. Except for the divergent ablaut patterns, perfective and stative are mainly distinguished with respect to the use of different agreement patterns:

(152)

Imperfective	Perfective	Stative
Series I		Series II
Derived stem	Underived stem	

Kortlandt (1983) has taken up an idea once proposed by Holger Pedersen to relate the series II (ATHAE) to intransitive structures and series I (MST) to transitive structures, more precisely to a referent in the ergative case (hence in A-function). In addition, he revives a suggestion once made by Johann Knobloch (Knobloch 1953) that concerns the nature of the thematic vowel added to verbal stems (and conditioning the 1sg morpheme *\*-ō* instead of *\*-mi*<sup>118</sup>): "In the thematic flexion, which always had two arguments, the thematic vowel referred to an object in the absolutive case" (Kortlandt 1983:321). If ever this view finds further support: It should be noted that such an interpretation does not fit into the general scheme of ergative agreement. Given that Kortlandt's analysis is correct, we should expect that the thematic vowel also occurs with intransitive (dynamic) verbs, as S behaves like O in an ergative pattern. In other words: we should find the thematic vowel in all dynamic verb forms. The presence of athematic verbs would thus be excluded. The fact that we can describe a larger set of athematic verbs goes against Kortlandt's hypothesis. The only solution would be to posit an accusative stage of (in)transitivity for that period of PIE in which the thematization of verbs came into use. It seems more likely to relate the thematic vowel to the domain of imperfectivity. As we will see below, Kortlandt's analysis can be modified by saying that the thematic vowel is related to the S=O domain, and not to the O domain alone.

Summing up the features mentioned so far, the following picture emerges: PIE verbs were characterized by the fundamental opposition dynamic/stative marked with the help of two sets of agreement morphemes; MST (series I) and ATHAE (series II). The MST-series can be further subcategorized according the presence or absence of a thematic vowel. Both series could include the above mentioned marker of subjectification ('middle version', morpheme perhaps *\*-o*). In addition, the dynamic domain distinguished an unmarked perfective stem from a derived imperfective one which again received the clitic *\*-i* to indicate a 'hic et nunc' value. A central question naturally is which grammatical roles had been encoded by the two series. Neglecting for a moment the highly problematic issue of thematization, all we can state is that the MST series copied S and A properties onto the verb.

<sup>118</sup> *\*-ō* shows up as a 'primary ending' (present tense); in the set of secondary endings (e.g. imperfect), the thematic vowel is followed by *\*-m*, perhaps taken from the perfective stem once this stem has acquired a temporal reading). Dunkel (2002) interprets *\*-ō < \*-oh<sub>1</sub>* not in terms of an agreement marker, but analyses it as an emphatic marker (*\*-óh<sub>1</sub>*) that also shows up in *\*eǵ(H)-óh<sub>1</sub>* 'I'. According to Dunkel, *\*-óh<sub>1</sub>* stems from the emphatic variant of the first person singular pronoun *\*eǵH* 'I' added to verbs in order to form first person 'imperatives' (voluntatives): *\*h<sub>1</sub>éǵ-ō* 'I want to go' that was reinforced with the help of standard *\*-mi* form, as in *\*eǵH-óh<sub>1</sub> h<sub>1</sub>éǵ-mi* 'I (emph.) want to go' > *\*eǵH-óh<sub>1</sub> h<sub>1</sub>éǵ-óh<sub>1</sub> (h<sub>1</sub>éǵ-mi)*.

As far as I can see there is no direct evidence that would suggest confining the MST series to the A-function, see below. On the other hand, the ATHAE series probably had a 'dative' value (Schulze 1990). Unfortunately, it is virtually impossible to relate all elements of these series to the corresponding paradigm of personal pronouns, compare<sup>119</sup>:

(153)

	Pronoun			GEN	Series I		Series II
	NOM	ACC	DAT		Athematic	Thematic	
1sg	*eġ(H)om *eġ(H)ō	*(e)me	*mei / *moi	*mene, *-mei / *-moi	*-m	*-ō	*-h <sub>2</sub> (e)
2sg	*tū / *tu	*t(w)e / *t(w)ē	*t(w)ei / *t(w)oi	*tewe / *tewo, *-t(w)ei, *-t(w)oi	*-s	*-eh <sub>1</sub> (i)	*-th <sub>2</sub> (e)
3sg	*so	*tom	*tosmei	*tos(y)o	*-t	*-e	*-e
3pl	*toi	*tōms	*toibh(y)os	*toisōm	*-nt	*-o	*-r

With respect nominal forms, there is a strong affinity between the genitive and the nominative (see below). If we assume that the genitive had been the primary function, we might likewise try to relate the MST series to the genitives of the corresponding pronouns. As has been said above, the stative seems to have been dative-based in terms of the so-called 'inverse construction' (compare German *mir* (DAT) *ist kalt* 'I'm cold') typical for the conceptualization of stative event images (also see Kortlandt 1983:307-324). Hence (153) can perhaps be reduced to the following correlation:

(154)

	Series I		Series II	
	GEN		DAT	
1sg	*-mei / *-moi (clitics)	*-m / [*-ō]	*mei / *moi	*-h <sub>2</sub> (e)
2sg	-*t(w)ei, -*t(w)oi (clitics)	*-s	*t(w)ei / *t(w)oi	*-th <sub>2</sub> (e)
3sg	*tos(y)o	*-t	*tosmei	*-e
3pl	*toisōm	*-nt	*toibh(y)os	*-r

This hypothetical correlation means that the MST series has emerged from a shortened version of the clitic personal pronouns in genitive function: \*-m < \*m<sup>e</sup>/<sub>oi</sub>, \*-s < \*t<sup>w</sup>/<sub>oi</sub> (?), \*-t < \*tos(y)o). The plural variant \*-nt probably had a different origin (see Szemerényi 1970:304). Such a model would nevertheless come close to what has been described in section 2 for Northwest Iranian.<sup>120</sup> But contrary to the Iranian model, proposals to derive the PIE MST agreement markers from personal pronouns face the problem that we cannot safely describe

<sup>119</sup> PIE perhaps did not know a separate set of anaphoric third person pronouns (but see Szemerényi 1970:189-191, who argues in favor of an anaphoric pronoun \*-i). In (153), I have listed the forms of the \*so-pronoun (masculine) for illustrative purpose only.

<sup>120</sup> It should be noted, however, that some authors (e.g. Shields 1997) suggest that the athematic agreement markers reflect deictic particles or combinations of deictic particles and non-singular markers, also see Schulze 1998:575-601 and Liebert 1957 who derives the set of PIE personal pronouns from deictic structures, too.

the functional role of the unmarked verbal stem: In Iranian, the prevailing pattern is to add the possessive agreement markers to a participle or verbal adjective (the PIE *\*-to/\*-no* participle, see Drinka 2009):

- (155) a. Northern Tolyshi:  
*kəš-ta-š-e*  
 \*kill-PPP-3SG:POSS:A-COP:3SG:O  
 '(S)he killed [him/her/it].' [Miller 1953:172]
- b. PIE:  
*\*ktn-t*  
 kill:PERF-3SG:POSS:A?  
 '(S)he killed [him/her/it].'

(155b) illustrates that according to the 'possessive' hypothesis, the possessive clitic is directly added to the verbal stem (in case stem augment and thematization do not apply). One way to explain this construction is to assume that the verbal stem reflects the *status constructus* of a (former) participle or gerund. Vaillant (1936) has suggested to start from a nominalized form derived with the help of the morpheme *\*-t* (nomina agentis, as in Latin *sacer-dō-t-* 'one who makes sacrifices') that had been generalized in terms of a verbal noun. To this stem (*\*ktn-t* 'killing' etc.) the series Ia morphemes would have been added, yielding *\*ktn-t-m(-i)* 'my killing' etc. A residue of the morpheme *\*-t* would then be given in the third person singular that by itself was unmarked for person as in *\*ktn-t-(i)* 'killing (by someone)'.

It should be stressed that because there are no recognizable differences between the PIE intransitive and the transitive agreement markers, we could likewise start from a model that corresponds to the Late Kartvelian type of verbal agreement in the perfective (with speech act participants, see above). It may well have been the case that PIE had been marked for traces of the Silverstein Hierarchy by A-centering clauses with speech act participants in A-function. In this case, at least the elements *\*-m* (1sg) and *\*-s* (2sg) would have mapped a centered referent in S- and A-function onto the verb. This hypothesis would relate these agreement markers to some kind of absolutive case, and not to the genitive/ergative. Nevertheless, if we accept a correlation between the personal ending of at least the first singular and the corresponding pronoun, we have to propose some kind of case variance entailed in the opposition between thematic based *\*-ō < \*-o-h<sub>1</sub>?* and athematic *\*-m*:

(156)	Pronoun	Agreement
Rectus	<i>*eĝ(H)ō</i>	<i>*-ō</i>
Obliquus	<i>*me-</i>	<i>*-m</i>

Accordingly, *\*-m* would have referred to a referent in a non-central case, whereas *\*-ō* copied the central case role. Alternatively, we may think of an explanation that would have its match in Modern French:

- (157) *Moi, je porte...*  
 I:TOP I:NOM carry:PRES:1SG  
 'As for me, I come.....!'

For PIE, we would get:

- (158) PIE:      *\*eĝ(H)ō*      *me*      *g<sup>w</sup>ṛ-sk'-ō*  
 I:TOP            I:NOM<sup>?</sup>            go-IMPERF-1SG:A  
 As for me, I am going...!'

- But:            *\*eĝ(H)ō*      *me*      *g<sup>w</sup>em-ṛ*  
 I:TOP            I:NOM<sup>?</sup>            go:PERF-1SG:A  
 'As for me, I went...!'

In this sense *\*eĝ(H)ō* would have once played the role of a extra-clausal, topical first person singular referent, being cross-referenced within the imperfective-based clause with the help of the non-topical version *\*me-*. This form then became the oblique base after *\*eĝō* was integrated into the paradigm:

- (159)            *\*eĝ(H)ō*      *\*me-*  
                   Topical            Non-topical  
 =>            Rectus            Obliquus

If ever (156) has any plausibility at all, we should assume that the PIE mechanism of agreement came up at a time, when *\*eĝ(H)ō* had already been integrated into the case paradigm. Alternatively, we would have to describe the mapping of an extra-clausal actant onto the thematic verb stem, an assumption that however is difficult to support from a functional point of view.<sup>121</sup>

If we accept e.g. Beekes proposal to reconstruct a distinct series of agreement markers for all persons (Beekes 1995), we can even conclude that the whole set of elements in the 'thematic' series Ib functioned in terms of a *casus rectus*:

- |       |                                     |             |
|-------|-------------------------------------|-------------|
| (160) | Rectus                              | Obliquus    |
| 1sg   | <i>*-ō &lt; * -o-h<sub>1</sub>?</i> | <i>*-m</i>  |
| 2sg   | <i>*-o(-)h<sub>1</sub>?</i>         | <i>*-s</i>  |
| 3sg   | <i>*-e</i>                          | <i>*-t</i>  |
| 3pl   | <i>*-o</i>                          | <i>*-nt</i> |

(160) relates the system of agreement markers to grammatical relations and case. We thus have to turn briefly to the paradigm of nominal case forms. (161) gives a rather sketchy list of PIE case forms that also acknowledges the many syncretisms (note that I adopt the standard

<sup>121</sup> Note that Dunkel's hypothesis (*\*-ō < \*-óh<sub>1</sub>* being an emphatic marker, see fn.50) may help to explain the thematic ending *\*-oh<sub>1</sub>*. However, it does not explain the underlying opposition *\*eĝ(H)* vs. *\*me-* (some authors prefer to reconstruct *\*eme-* or even *\*h<sub>1</sub>me-*).

assumption according to which PIE distinguished an 'animate' inflection from an 'inanimate' one):

(161)

	SG		PL	
	[+anim]	[-anim]	[+anim]	[-anim]
NOM	*-s	*-∅	*-es	-h <sub>2</sub>
ACC	*-m		*-ms > *-ns	
GEN	* <sup>e</sup> /o <sub>s</sub> -, *-s		*-om, -ōm	
ABL	* <sup>e</sup> /o <sub>d</sub>		*-bh(y)os, -mos	
DAT	*-ei			
LOC	*-i, *-∅		*-su	
INSTR	* <sup>e</sup> /o (~ *-h <sub>1</sub> ) / *-bhi, *-mi		*-ōis / -bhis, -mis	

The most striking feature of this paradigm is given by the marked nominative (\*-s) of animate referents that is opposed to a zero-marked or *m*-marked nominate with inanimate referents. In addition, the 'neuter' does not distinguish between nominative and accusative. The *m*-variant is again matched by the accusative of animate referents. This pattern holds in parts for both singular and plural (here, I neglect the dual which would have \*-e ~ \*-ī ~ \*-i for both the nominative and the accusative). Functionally speaking, \*-s encodes S and A, whereas \*-∅ (neuters ending in sonant or consonant) is given mainly for inanimate referents in S=O function, less often in A function. \*-m has O-function with animate referents, but S, A, and O function with inanimate referents. A decisive difference, however, is given by the fact that, with neuters, the morpheme \*-m depends from the presence of a thematic stem, whereas it is present with both thematic and athematic stems in the set of animate referents: (TV = thematic vowel):

(162)

*-m:	Animate	Inanimate
S	---	+
A	---	[+]
O	+	+
TV	+/-	+

The restriction of the 'neuter' version of \*-m to thematic stems suggests an intimate relation between the function of the thematic vowel and the element \*-m (inanimate). In this paper, I cannot discuss in details the question which function can be attributed to the nominal thematic vowel and whether its formal parallelism with the verbal thematic vowel is more than just coincidental. Nevertheless, it should be born in mind that the PIE \*-o-stems have much in common with the pronominal inflection of demonstratives, compare<sup>122</sup>:

<sup>122</sup> This affinity also shows up in the later accommodation of the nominative plural (animates) to the corresponding pronominal plural \*-i in Greek, Latin, Baltic, and Slavic.

(163)	Athematic	Thematic	Demonstrative
GEN	*- <sup>e</sup> / <sub>o</sub> s, -s	*- <sup>e</sup> / <sub>o</sub> s-(y)o	* <i>tosyo</i> ~ * <i>esyō</i>
ABL	* <sup>e</sup> / <sub>o</sub> s, -s	*- <sup>e</sup> / <sub>o</sub> d	* <i>to-sm-ōd</i> ~ * <i>e-sm-ōd</i> <sup>123</sup>

These affinities hint at a pronominal origin of the thematic vowel. Accordingly, the thematic nominal stem would have marked for an additional deictic feature, whatever its concrete function may have been. However, the nominative-accusative singular of thematic neuter nouns differs from that of the demonstratives:

(164) Neuter:	Athematic	Thematic	Demonstrative
NOM/ACC:SG	*-∅	*- <i>o-m</i>	* <i>to-d</i> ~ * <i>i-d</i>
NOM/ACC:PL	*- <i>ā</i>	*- <i>ā</i>	* <i>tā</i> ~ * <i>ī</i>

Here, the nominal marker \*-*m* is opposed to the pronominal marker \*-*d*. Szemerényi (1970:189) has proposed to interpret \**tod* as a reduplicated form \**to-to* thus relating the neuter to the zero-marked nominal neuters. However, this analysis raises doubts because of the presence of \*-*d* in the (seemingly) anaphoric element \**id* (nominative/accusative singular neuter), which can only be explained by proposing a process of analogy. Alternatively, one might hypothesize that the neuter thematic nouns had once been marked by \*-*d*, before it was substituted by \*-*m* perhaps stemming from the accusative singular of the animate class:

(165) Accusative SG:	Animate	Inanimate		
	Athematic	Thematic	Athematic	Thematic
	*- <i>m</i>	*-TV <sub>PRO</sub> - <i>m</i>	*-∅	*-TV <sub>PRO</sub> - <i>d</i>
=>	*- <i>m</i>	*-TV <sub>PRO</sub> - <i>m</i>	*-∅	*-TV <sub>PRO</sub> - <i>m</i>

The fact that the pronominal neuter \*-*d* resembles the pronominal ablative singular morpheme \*-<sup>e</sup>/<sub>o</sub>d is perhaps not just coincidental. If we assume that \*-<sup>e</sup>/<sub>o</sub>d once also had a partitive function (as it is typical for the ablative function), we might argue that the neuter originally represented some kind of partitive (> collective, compare French *le pain* 'the bread' vs. *du pain* (collective/partitive)).

As has been said above, the use of the neuter in agentive function is blocked in Hittite: In order to attribute this function to a neuter noun, it must be 'anthropomorphized' by using the derivational element *-ant-* (see (98)). Nevertheless, it is far from being ascertained that this constraint already applied in PIE.<sup>124</sup> In case the neuter marker \*-*m* is the same as the animate accusative singular morpheme, the use of \*-*m* with thematic neuters must have been extended to the S and (perhaps) A functions that originally had been marked by \*-*d*:

<sup>123</sup> The segment *-sm-* is sometimes regarded as an emphatic marker (Szemerényi 1970:189). See the detailed discussion in Gippert (2004).

<sup>124</sup> In case the 'ergative hypothesis' holds (see below), the question of 'inanimate' (or: neuter) agentives is less relevant for this stage of PIE: All neuters in fact know a genitive case that would have been the source for the ergative. The constraint must have become relevant only after the whole paradigm had changed to accusativity (see below).

(166) Thematic Neuter SG

S	*-TV <sub>PRO-d</sub>	=>	*-TV <sub>PRO-m</sub>
A	*-TV <sub>PRO-d</sub>	=>	*-TV <sub>PRO-m</sub>
O	*-TV <sub>PRO-m</sub>		*-TV <sub>PRO-m</sub>

This analysis suggests that the thematic vowel still had a functional or semantic value by the time the \*-m-accusative was introduced. The thematic paradigm would then have constituted a 'mixed class' including both animate and inanimate referents the semantics of which was conditioned by the thematic vowel in interaction with the given referent. (167) lists the three classes in terms of an animate hierarchy:

(167)

	Animate	Animate (PRO)	Inanimate (PRO)	Inanimate
S (NOM)	*-s	*-TV <sub>PRO-s</sub>	*-TV <sub>PRO-m</sub> < *- <i>dʰ</i>	*-∅
A (NOM)	*-s	*-TV <sub>PRO-s</sub>	*-TV <sub>PRO-m</sub> < *- <i>dʰ</i>	*-∅
O (ACC)	*-m	*-TV <sub>PRO-m</sub>	*-TV <sub>PRO-m</sub> < *- <i>dʰ</i>	*-∅
	Athemati c	Thematic		Athemati c
	[+anim]		[-anim]	

Hence, we have both 'heavy actants' the semantics of which decides upon class membership (animate or inanimate) and 'weak actants' that are controlled by the semantics of the thematic vowel. The Vartashen dialect of Modern Udi (Southeast Caucasian) offers a typological parallel to the 'pronominal orientation' of 'weak nouns', compare:

(168)

	'man'	'light'	'(s)he/it (proximal)'
ABS	<i>adamar</i>	<i>xaš</i>	<i>me-no</i>
ERG	<i>adamar-en</i>	<i>xaš-n-en</i>	<i>me-t'-in</i>
GEN	<i>adamar-un/-i</i>	<i>xaš-n-ay</i>	<i>me-t'-ay</i>
DAT	<i>adamar-a</i>	<i>xaš-n-u</i>	<i>me-t'-u</i>

Here, the genitive and dative of a class of nouns marked for the thematic stem augment -n- (*xaš* 'light' in (168)) take case forms (genitive, dative, in parts also ergative) that are different from the 'standard' case pattern (as given for *adamar* 'man'). The case forms of these weak nouns are clearly related to the corresponding forms of the demonstratives (*meno* 'this one' etc.). Elsewhere, I have shown that this pronominal inflection is due to the stem augment itself that continues a pronominal marker added to 'weak nouns' (Schulze 2005). Most likely, an analogous pattern had once applied in PIE with thematized nouns.

The plural forms differ from the singular in that there is no match between the neuter forms and the accusative of animate referents:

(169)

	SG		PL	
	[+anim]	[-anim]	[+anim]	[-anim]
S	* <sup>e</sup> / <sub>o</sub> s	*-∅	* <sup>e</sup> -es	* <sup>e</sup> -h <sub>2</sub>
A				
O	* <sup>e</sup> -m		* <sup>e</sup> -ns < * <sup>e</sup> -ms	

The animate plural seems to be derived from the singular with the help of a plural suffix \*<sup>e</sup>-s, yielding *-(e)s-s* > \*<sup>e</sup>-s in the nominative and \*<sup>e</sup>-ns < \*<sup>e</sup>-m-s in the accusative (but see below).<sup>125</sup> The fact that the neuter plural lacks a parallel in the animate accusative plural again suggests that the *m*-morpheme has a later origin. Accordingly, neuters were not case-marked at all, \*<sup>e</sup>-h<sub>2</sub> being a derivational suffix rather than a case suffix:

(170)

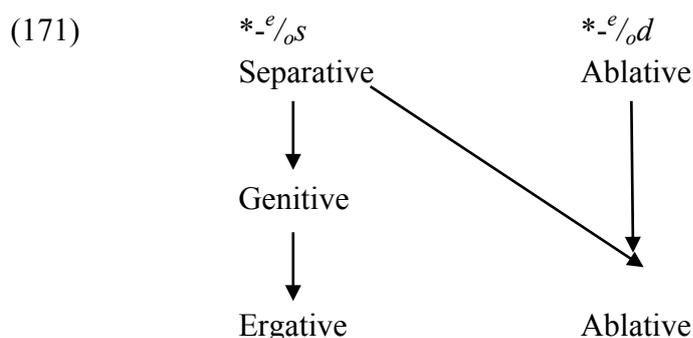
	Animate			Inanimate	
	Case form	SG	PL	Non-collective	Collective
S	* <sup>e</sup> / <sub>o</sub> s-	-∅	* <sup>e</sup> -s	*-∅	* <sup>e</sup> -h <sub>2</sub>
A					
O	* <sup>e</sup> -m-				

The table in (161) also illustrates the major argument for developing an ergative scenario. The hypothesis according to which the nominative is paralleled by the genitive goes back to Pedersen (1907), whereas Uhlenbeck (1901) identified the nominative \*<sup>e</sup>-s with the demonstrative pronoun \**so* (animate nominative singular). In principle, both positions can account for the assumption that the nominative once had ergative function. Georgian (see above) nicely shows that an ergative morpheme can in fact stem from the paradigm of demonstratives. However, contrary to Georgian, we cannot show that \**so* once had specialized for the ergative, except that we turn around its inflectional paradigm claiming that \**so* once was the oblique variant of \**to*-. As the other oblique cases are built upon \**to*- and not upon \**so*-, it is more likely, however, that \**so*- represents a marked variant of the later nominative. The 'genitive hypothesis' is based on the formal similarities between the animate singular nominative \*<sup>e</sup>-s and the genitive singular \*<sup>e</sup>/<sub>o</sub>s.<sup>126</sup> The idea is that double case marking for transitive clauses as well as a marked nominative are the result of secondary processes. As has been said above, marked nominative systems (with the accusative showing

<sup>125</sup> It should be noted, however, that the sequence case+number is rather unusual in suffixing languages. Normally, the derivative nature of number markers calls for a position nearer to the noun stem followed by inflectional elements such as case markers. Perhaps, PIE once had the corresponding pattern, transformed through metathesis (e.g. accusative plural (animate) \*<sup>e</sup>-s-m > \*<sup>e</sup>-ms. Otherwise, considerable problems may arise concerning relative chronology: Plural marking (by \*<sup>e</sup>-s) would then have been a younger feature, presupposing the antipassive strategy.

<sup>126</sup> Here, I neglect a detailed discussion of the question, why the nominative ending lacks a vowel that is usually given with the genitive (compare Latin *rēx* ~ *rēgis* 'king'). Most likely, the genitive-ergative morpheme carried stress (\*<sup>e</sup>/<sub>o</sub>s) that was later on transferred to the lexical stem once the accusativization had taken place. The new stress pattern corresponded to the new 'designative' function of the case form ('nominative') and conditioned the reduction of the suffix vowel, e.g. \**h<sub>1</sub>dont* (\*'absolute'), \**h<sub>1</sub>dnt-ós* (genitive) > \**h<sub>1</sub>dónt-os* (nominative) > \**h<sub>1</sub>dónt-s* > \**h<sub>1</sub>dōns* 'tooth' (this paradigm is for illustrative purpose only. Whether or not \**h<sub>1</sub>dont*- can be reconstructed for PIE is a matter of debate. \**h<sub>1</sub>dont* may perhaps include the participle \**-nt*- added to a verb stem \**h<sub>1</sub>led*- 'eat, masticate' (Rémy Viredaz, p.c.)). The general pattern is full grade and stem accent (NOM/ACC/LOC:SG) vs. zero grade and suffix accent (GEN~ABL/DAT/INSTR/LOC:PL).

zero) are extremely rare and 'double alignment systems' are known for instance from Semitic, (in parts) Berber, and Kartvelian (see (68)). Such systems are usually regarded as being the output of processes related to language change.<sup>127</sup> Hence, if we accept the nominative-genitive parallelism, it would be the genitive (being the more 'semantic' case) that would have served as the source domain for developing the functional domain of the later nominative (see section 4.2).<sup>128</sup> Quite in accordance with general observations, the PIE genitive had ablative functions too, competing with the 'pronominal' ablative that is based on the morpheme  $*-e/o/d$  and used with thematic stems (see (163)). Starting from what I have described in section 4.2, we can assume that the morpheme  $*-e/o/s$  once encoded a partitive (or: separative), extending its function to that of a genitive (> ergative) and to that of an ablative. The ablative itself was specifically marked with thematic stems only:



We might even argue that  $*-e/o/s$  once had been derived from a more general case form that is preserved in the instrumental  $*-e/o$ .<sup>129</sup> This 'oblique' case would have been augmented by  $*-s$  to produce a genitive-ablative with athematic stems that also had an ergative function. However, this proposal does not explain the fact that the  $*-e/o/s$ -genitive also occurs with thematic nouns as opposed to the thematic ablative  $*-e/o/d$ .<sup>130</sup>

There is, however, another problem that is rarely addressed in the relevant literature: If the genitive case had been the source of the nominative (via the ergative, see below), then we should ask why the same did not apply in the plural: Here, we have a nominative  $*-es$  that is opposed to the genitive  $*-om \sim *-\bar{o}m$ . In order to eliminate the problem we have to assume that the nominative plural once also had genitive (> ergative) function. The morpheme  $*-om \sim *-\bar{o}m$  would then have been a derivational morpheme perhaps used to encode a plural partitive (or relational adjectives, see Szemerényi 1970:149) that replaced the earlier genitive function of the morpheme cluster  $*-es-s$ .

The case-based ergative hypothesis presupposes the existence of a case form that would have once encoded both S and O. Usually, both variants of the neuter nominative/accusative are taken into consideration. Given the fact that double marking

<sup>127</sup> Another illustrative case is given by Afro-Asiatic, see for instance the discussion in Waltisberg 2002.

<sup>128</sup> I do not see convincing evidence that would support Lehmann's claim that  $*-s$  grammaticalized the other way round, namely from a marker for animate nouns in actor function to a marker of possession (Lehmann 1983:224-225).

<sup>129</sup> Also compare Patri (2007:34-49) who discusses the use of the ablative-instrumental with inanimate noun in agentive function. Fortson 2010:116 gives  $*-h_1$  for the instrumental. Hackstein (2007) has proposed to relate the pronominal (this is: thematic) ablative  $*-e/o/d$  to an unbound postposition  $*(\bar{e}/_a)ti$  meaning 'from'.

<sup>130</sup> Rémy Viredaz (p.c.) "tend[s] to see  $*-s$  as an old postposition meaning "from" or "out of" or the like".

systems (A:M □ O:M) seem always to be of secondary origin, it is reasonable to start from the zero-marked case. In this sense, the neuter nominative would have been an innovation replacing a perhaps given neuter ergative. There is no need to assume that the zero-marked case had once been confined to neuter referents, even though they represent the preferred type of referents in O-function. As there are no visible traces that would hint at the use of neuter  $*-e/o_s$  in A-function (nevertheless note forms like Hittite *wastul* 'sin' > *wastulas* 'sinner' (Lehmann 1983:225)), we cannot fully reconstruct the neuter paradigm. Nevertheless, we cannot exclude that the neuter originally had the same paradigmatic make-up as its animate partner. The neuter plural suggests that zero marking was primary with neuters. By the time  $*-h_2$  had been added to mark a collective semantics, the zero form, however, no longer functioned as a morpheme to indicate the O-function with animate referents. Else we would have to expect that  $*-h_2$  would have left its traces in the animate accusative plural, too. To my knowledge, it is impossible to show which form the corresponding case marker had prior to the intrusion of the  $*m$ -marker. (172) summarizes the underlying scenario:

(172)

	Animate SG	Animate PL	Inanimate SG	Inanimate PL
S (ABS)	$*-\emptyset$	$*-\emptyset-es$	$*-\emptyset$	$*-h_2$
A (NOM)	$*-s$	$*-es-(e)s$		
O (ABS)	$*-\emptyset \sim *-m$	$*-\emptyset-es \sim *-m-s$		

We can now try to put together the different pieces of evidence presented for PIE: At an earlier stage of this language, the overall architecture must have been ergative, using a polyfunctional case form (ABL~GEN) to encode the A-function as opposed to the zero-marked S=O domain. The verb itself was morphologically neuter with respect to aspect marking<sup>131</sup>: The perfective function emerged from the O-centering pattern (see section 3) of ergativity. This means that an ergative structure automatically produced the notion of perfectivity. Imperfectivity emerged from the corresponding antipassive diathesis, see below. The functional domain of the agreement pattern is difficult to restore. Above, I have argued that the series I (MST) may stem from the cliticization of possessive pronominal elements. This would relate these agreement morphemes to the A-function. The O-function would not have indicated at all (coming close to the weak representation of the 'center' in the Sumerian verb, see above). Alternatively, a possible reflex of S=O-agreement can be seen in the thematic vowel itself or in the series Ib that is intimately related to the thematic vowel (if ever the corresponding hypothesis has any probability at all). (174) illustrates the 'ergative' pattern (third person referents, N = noun):

(173) a. Intransitive:

S:ABS	VERB(:AGR:S)
N- $\emptyset$	V( $-e/o_s$ ?)

<sup>131</sup> This claim does not exclude the possibility that the two aspect stems had also been differentiated with the help of divergent ablaut and stress patterns, a model that is well known from Semitic, e.g. Arabic *qatal*- 'kill:PERF' vs. *-qtul*- 'kill:IMPERF'.

b. Transitive:

A:GEN/ERG      O:ABS      VERB(:AGR:O)-AGR:A  
 N-s              N-Ø      V(-<sup>o</sup>/<sub>e</sub>?)<sup>-t</sup>(os[yo])

Here, I relate the agreement marker *\*-t* to the genitive (or oblique) case form of the *\*so/\*to*-demonstrative pronoun (*\*tos(yo)*). The corresponding agreement pattern would show up as follows:

(174)

	Case	AGR			
		1sg	2sg	3sg	3pl
S	ABS	*-ō < *-o-h <sub>1</sub> ?	*-e-h <sub>1</sub> ?	*-e	*-o
A <sub>PERF</sub>	ERG	*-m	*-s	*-t	*-nt
O <sub>PERF</sub>	ABS	*-ō < *-o-h <sub>1</sub> ?	*-e-h <sub>1</sub> ?	*-e	*-o

Taking up the idea that the PIE perfective verb was (modestly?) bipersonal by encoding both O and A with transitive verbs (and by sequencing them in terms of V-O-A), we may even propose the following (extremely hypothetical) chart:

(175)

		O			
		1sg	2sg	3sg	3pl
A	1sg	---	*-eh <sub>1</sub> -m	*-e/o-m	*-o-m
	2sg	*-ō-s	---	*-e/o-s	*-o-s
	3sg	*-ō-t	*-eh <sub>1</sub> -t	*-e/o-t	*-o-t
	3pl	*-ō-nt	*-eh <sub>1</sub> -nt	*-e/o-nt	*-o-nt

Accordingly, athematic verbs would have been marked for monoperpersonal agreement, indexing only the agentive and later on (via analogy) the subjective of certain intransitive verbs. For the time being, however, it seems difficult to formulate a semantic motivation for this class of verbs.

I have shown that the 'ergative hypothesis' is mainly built upon the PIE case pattern. The reconstruction of the agreement pattern is a consequence of analyzing the case pattern and does not by itself have clear evidence for an ergative organization. Nevertheless, the ergative hypothesis is further corroborated by two observations that are related to the verbal domain, too. First, it is a noteworthy fact that we cannot reconstruct a distinct passive paradigm for PIE. Most authors suggest some kind of 'medio-passive', that is, a 'middle version' (see above) that later grammaticalized as a passive once the PIE basic syntax had become accusativized. The lack of a passive strategy, however, is typical for ergative patterns, in case no pseudo-passives apply (see section 3). Second, an ergative hypothesis for PIE can best account for the opposition between the perfective (aorist-based) pattern and the imperfective pattern. As I have said above (cf. (149)), the imperfective stem is (by large) derived from the perfective stem, whereas the perfective stem does not show any derivational

means (except for reduplication<sup>132</sup>). Hence, the imperfective stem includes additional semantics that surfaces as iterativity, inchoativity etc. This derivational process reminds us of what has been described for Kartvelian and Sumerian. In both languages, it is the imperfective that shows derivational features, as opposed to the unmarked perfective:

(176)	Sumerian	Kartvelian	PIE
Perfective	-Ø ( <i>ḥamṭu</i> -base)	-Ø ~ Ablaut	-Ø ~ Ablaut
Imperfective	RED, <i>-ed-</i>	*-(w)ew-	RED, <i>-n<sup>(e/a)</sup>-</i> , <i>-sk-</i> , <i>y(o)-</i>

Note that in all three languages; 'root imperfectives' may occur reflecting an older layer of 'labile' verbs. It is reasonable to assume that PIE had once been marked for the same derivational process that has been reconstructed for Sumerian and Kartvelian (see above). Accordingly, the set of imperfective derivational morphemes reflects a common strategy that can best be described in terms of an antipassive. Again, this pattern perfectly matches the functional correlation of antipassives with the imperfective aspect (see section 3). IN PIE, it served to construe the imperfective alternative to the ergative-based perfective just as it has been proposed for Sumerian and Kartvelian. The PIE imperfective (> present stem-based tense forms) thus shows up as the antipassive of the unmarked ergative construction used to construe perfective aspect patterns. (177b) gives the corresponding formula contrasted with the transitive perfective (PsT = Present (imperfective) stem formative):

(177)	a. Transitive/Perfective (ergative):		
	A:GEN/ERG	O:ABS	VERB(:AGR:O)-AGR:A
	N- <i>s</i>	N-Ø	V(- <sup>o/e</sup> ?) <i>-t(os[yo])</i>
	b. Transitive/Imperfective (antipassive):		
	A:ABS	O:OBL	VERB-AP(:AGR:A>S)
	N-Ø	N- <i>m</i>	V-PsT(- <sup>o/e</sup> ?)

At this stage, the distinction [+/-animate] did not yet play a central role. Nevertheless, it is rather probable that non-animate referents were preferably associated with the S- and O-function. The de-centralization of the objective must have been carried out with the help of a morpheme *\*-m* (plural *\*-m-s* > *\*-ns*) that is usually related to an underlying allative function (Schmalstieg's proposal to relate the accusative to an underlying instrumental-dative function (Schmalstieg 2004, 2006,:7-8, fn.1) is less convincing). As has been said in section 4.1, the use of such a locative is a typical means for backgrounding O, be it in terms of an antipassive, be it in terms of a pseudo-antipassive:

---

<sup>132</sup> See Beeler 1978 for some general observations on reduplication in Indo-European. Note that even though reduplication is typical for the imperfective *marû*-base of Sumerian, it is nevertheless documented with the perfective *ḥamṭu*-base, too (Thomsen 1984:125). In this case, reduplication is an option to mark the plurality of the S=O domain ergatively.

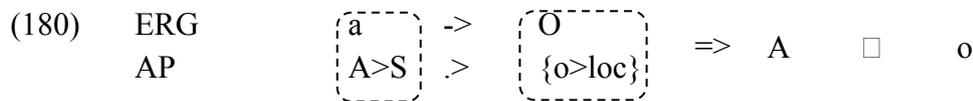
(178)		ERG		AP	
	S	*-Ø	Center	*-Ø	Center
	A	*-s	Periphery/POSS	*-Ø	Center
	O	*-Ø	Center	*-m	Periphery/ALL

Above I have argued that it is not necessary to relate the \*-m-case directly to the neuter nominative/accusative singular of thematic stems that is also marked by an element \*-m (see e.g. Álvarez-Pedrosa 1998 for a more detailed discussion of \*-m-neuters). It is more likely that the \*-m-neuter emerged at a later stage in connection with the development of thematic nouns stems. Grundt (1978) has suggested that the thematic vowel of noun stems is related to the function of definiteness. As I have illustrated already, the \*-m-neuter is conditioned by the presence of this thematic vowel that probably had semantic (or even syntactic) properties at an earlier stage of PIE. We should thus assume that once the \*-m-morpheme had grammaticalized as an accusative (see below), the preference for neuters to be used in the objective function conditioned the reanalysis of this morpheme as a 'neuter' marker of pronominally marked nouns. This process is related to the gradual grammaticalization of both the ergative and the antipassive construction. Most likely, agreement features and word order patterns influenced the shift with respect to centrality, which must have taken place at a later stage of PIE. As far as I can see, the reconstruction of PIE word order does not give evidence for an ergative patterning. The standard pattern seems to have been SV ~ AOV yielding a central S=A cluster (see Krisch 2002 for methodological issues), just as it was the case with Sumerian and Kartvelian. The parallelization of S and A with respect to word order is an accusative feature (see section 3.3) that is opposed to ergative/antipassive case alignment. As for agreement, the reader should refer to what has been said above: At a certain stage, the series Ia paradigm probably had a pronounced 'oblique' function that was related to the possessive. Accordingly, it mapped the A-referent only that again stood in a 'possessive' relation with the verb phrase. In the antipassive, the referent acquired S-properties conditioning the use of the 'absolute' series Ib (if ever this set is reconstructable at all), whereas the de-centralized O-referent is no longer copied onto the verb, compare (179) that is an extension of (174):

(179)		Case	AGR			
			1sg	2sg	3sg	3pl
	S	ABS	*-ō < *-o-h <sub>1</sub> ?	*-eh <sub>1</sub> < *-e-h <sub>1</sub> ?	*-e	*-o
ERG	A <sub>PERF</sub>	ERG	*-m	*-s	*-t	*-nt
	O <sub>PERF</sub>	ABS	*-ō < *-o-h <sub>1</sub> ?	*-eh <sub>1</sub> < *-e-h <sub>1</sub> ?	*-e	*-o
AP	A <sub>IMPERF</sub>	ABS	*-ō < *-o-h <sub>1</sub> ?	*-eh <sub>1</sub> < *-e-h <sub>1</sub> ?	*-e	*-o
	O <sub>IMPERF</sub>	ALL	---	---	---	---

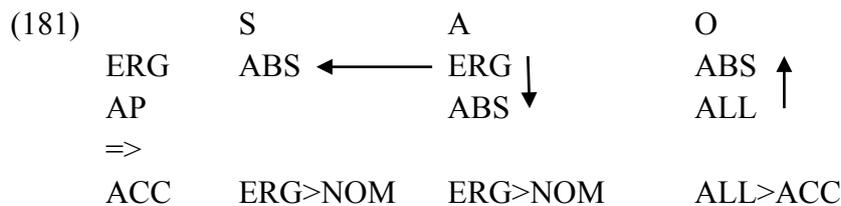
The gradual shift towards accusativity was perhaps related to a shift in the conceptualization of aspect: The symbolization of imperfectivity and perfectivity that was hitherto based on syntactic patterns and on the existence of a set of antipassive markers (> present stem formatives) acquired more and more morphological features including (later on) the augment,

the *s*-aorist etc. Likewise, the parallel position of S, A, and (antipassive) A>S may have triggered the accusativization of the paradigm in junction with heavy (phonetic?) reductions that took place in the agreement pattern. The accusativization of the two patterns (ergative and antipassive) was further supported by the structural resemblance of the antipassive and the intransitive pattern (see section 3). As word order already had pronounced accusative properties, the process of reanalyzing the underlying patterns affected mainly case and agreement. The general process can be described as follows:



Morphologically speaking, the following changes took place: Perfective A (ergative) became centralized but retained its case (a process that is the same as it has been described for Sumerian above). Most likely, the case form has been retained because it stood in formal opposition to the neuter (\*-Ø or (later) \*-*m*) more than the absolutive case. From a semantic point of view, we can state that the ergative case (< possessive(~ablative)) acquired a notion of agentivity, disregarding the degree of transitivity. Perhaps, this process has been mediated by features related to the 'active hypothesis' (Lehmann 1993).

Once the agentive was on its way towards centralization, the original center of the ergative construction, namely the objective became more and more peripheral. This functional property was typically encoded (in the antipassive) with the help of the allative (\*-*m*) and thus qualified to be used for the objective (> accusative) in the (former) perfective, too. As for case marking, we thus have to deal with the fusion of two patterns based on 'mutual exchange':



The transfer of the ergative from the peripheral agentive domain to that of a centralized agentive is a well-documented process; see above for Sumerian (ex. (142)) and Laz (ex. (104)). Lak (East Caucasian) is another illustrating example: Lak shows a genitive-based pattern of ergative case marking, reinforced by O-agreement with the help of class markers. With many tense forms, an additional pattern of agreement occurs based on floating (and focusing) clitics that distinguish speech act participants from non-speech act participants (-*ra* 1/2SG, -*r* < \*-*ri* 3SG/PL, -*ru* 1/2PL). Pending on the position that is taken by the two referents of transitive clauses in the person hierarchy, this agreement clitic may encode S, A, or O. With two third person referents, they always agree with S or A (accusative). An example is (182) that shows an analytic construction (lexical verb plus copula). Here, the lexical verb shows O-agreement, whereas the copula has both O-agreement (*b*-) and A-agreement (-*r*):

- (182) *bu-t:a-l*                      *b-a-w-ġ:u-nu*                      *b-u-r*                      *č<sup>w</sup>u*  
 father-SA-ERG/GEN III:O-buy<sub>1</sub>-III:O-buy<sub>2</sub>-AOR III:O-COP:PRES-3SG:A horse:ABS  
 'Father has bought a horse.' [Žirkov 1955:138]

In the so-called bi-absolutive construction that functions in terms of a semi-antipassive<sup>133</sup> the copula shows full agreement with the agentive that itself is (over-)centralized with the help of the absolutive case:

- (183) *p:u*                      *b-a-w-ġ:u-nu*                      *Ø-u-r*                      *č<sup>w</sup>u*  
 father:ABS III:O-buy<sub>1</sub>-III:O-buy<sub>2</sub>-AOR I:A>S-COP:PRES-3SG:A>S horse:ABS  
 'Father was buying a horse.' [Žirkov 1955:138]

However, many speakers of Lak tend to re-establish the ergative case in the semi-antipassive, just as it has been proposed for Sumerian and PIE:

- (184) *bu-t:a-l*                      *b-a-w-ġ:u-nu*                      *Ø-u-r*                      *č<sup>w</sup>u*  
 father-SA-ERG/GEN III:O-buy<sub>1</sub>-III:O-buy<sub>2</sub>-AOR I:A>S-COP:PRES-3SG:A horse:ABS  
 'Father was buying a horse.' [Žirkov 1955:138]

In PIE, this shift towards accusativity also affected the agreement pattern. Most importantly, the monopersonal pattern of the antipassive was copied onto the ergative paradigm (quite in accordance with what took place in Kartvelian). Here, two options showed up: Both the series Ia (ergative) and the series Ib (absolutive) qualified to be used to encode S=A reference. As monopersonality was part of the antipassive, we may assume that it was this pattern that affected the ergative agreement pattern. Still, the reconstructable output of this process as given for Late PIE (the standard MST series coupled with the 1sg \*-ō) hints at a hybrid pattern that showed the merger A- and S-based agreement:

(185)

	S(*=O)	A
1sg	*-ō	*-m
2sg	* <sub>-s</sub>	
3sg	* <sub>-t</sub>	
3pl	* <sub>-nt</sub>	

## 5.2.5 Summary

The main objective of this paper was to examine the basic patterns of causal organization in three languages (or: proto-languages), namely Kartvelian, Sumerian, and Proto-Indo-

<sup>133</sup> In semi-antipassives, A is foregrounded (A>S), but O retains its centralizing case and agreement pattern: A:ERG -> O:ABS VERB:AGR:O(:AGR:A) => A:ABS □ O:ABS VERB:AGR:O COP:AGR:A>S. The function of the semi-antipassive comes close to that of a standard antipassive. Bi-absolutive construction (sometimes oddly called 'binominative constructions') "represent an essentially transitive situation not as an action of the agent on the patient but rather an agent's activity where patient is deindividuated" (Kibrik 1996:136).

European. The selection of these languages was not chance: Rather, I have started from the hypothesis that all three (proto-)languages are marked for analogous processes that are based on the grammaticalization of a former antipassive pattern. Structurally speaking, these languages show an amazing parallelism: An unmarked perfective verb stem is opposed to a (more or less) marked imperfective stem that calls for a divergent pattern of case and agreement in Kartvelian and of agreement in Sumerian. The analysis suggested in this paper allows reconstructing a parallel pattern even for PIE. Hence, the three languages behave both parallel to and different from the 'Iranian model' described in section 2:

(186)		Perfective	Imperfective
	'Iranian model'	Marked	Unmarked
	Sum./Kartv./PIE	Unmarked	Marked

The parallel is given by the over-all presence of a split pattern in the aspectual system. However, whereas the Iranian model is grounded in accusativity by grammaticalizing the passive diathesis, the earlier model starts from an ergative pattern marked for the grammaticalization of antipassive strategies. The data of the three languages at issue illustrate that the grammaticalization process related to antipassives may end up in different patterns that reflect different stages or steps of this grammaticalization path. This comes true for both case and agreement. For the dimension of case, the following patterns show up:

(187)		Prototypical	Kartvelian	Sumerian	PIE
	S	-Ø	*-i < *-Ø	*-Ø	*-s
	A <sub>PERF</sub>	-ERG	*-n <sup>?</sup>	*-e	*-s
	O <sub>PERF</sub>	-Ø	*-i < *-Ø	*-Ø	*-m
	A <sub>IMPERF</sub>	-Ø	*-i < *-Ø	*-e	*-s
	O <sub>IMPERF</sub>	-OBL/LOC	*-s	*-Ø	*-m

This table shows that with respect to case, Kartvelian is marked for the lowest degree of harmonizing the perfective and imperfective pattern. Sumerian has extended the ergative to the imperfective agentive, a process that has also applied in PIE. PIE, however, has additionally generalized the case morpheme originally used to encode peripheral O in the antipassive. In this sense, PIE represents the 'youngest' type and Kartvelian the oldest. As for agreement, Sumerian is more conservative than both Kartvelian and PIE:

(188)		Prototypical	Kartvelian	Sumerian	PIE
	S	Set I	Set I	Set I	Set II (/Set I)
	A <sub>PERF</sub>	Set II	Set I/II	Set II	Set II
	O <sub>PERF</sub>	Set I	--- / set III	Set I	Set I <sup>?</sup>
	A <sub>IMPERF</sub>	Set I	Set I	Set I'	Set II (/ Set I)
	O <sub>IMPERF</sub>	----	--- / Set III	Set II'	--- <sup>?</sup>

Both Kartvelian and PIE have strongly accusativized their agreement pattern. However, whereas this process has started from the imperfective/intransitive in Kartvelian, PIE tended

to generalize the perfective, agentive-related agreement pattern. In this respect, the PIE agreement pattern copies much of the processes that are also relevant for the case system. The final point is word order. As has been argued above, all three languages are marked for an 'accusative word order', placing S and A at the very beginning of a clause. We can thus assume that the grammaticalization of the antipassive in terms of a mere tense/aspect variant of the perfective/past construction has been by large induced by the accusative word order in all three languages.

## 6. The Schematic Organization of Folk Narratives

### 6.1 The semiotics of genres

The Italian playwright Carlo Gozzi (1720-1806) is said to have proposed thirty-six 'situations' that constitute the structure of dramatic narrations and theater plays. These 'situations' (or: 'emotions') had been reconstructed by Georges Polti (1895) who referred to a number of Classical Greek texts as well as to (by that time) contemporary texts stemming from French and other authors in order to substantiate and refine corresponding assumptions. Étienne Souriau (1950) specified these 'situations' as "types of events" or "dramatic subjects" reducing them to just six "dramatic functions" (also see Hahn 1951). Before, Vladimir Propp (1928), probably unknown to Souriau, had started from Russian folk narratives in order to derive a general "morphology" present in most of these texts and structuring the sequence of event patterns together with their relevant actant roles. His thirty-one "functions" are taken up by Greimas (1966) who reduced them to six basic "actants" said to represent typical 'action roles' (and hence representing corresponding types of events). In fact, Greimas reconstructs some kind of macro-roles (*actants*) that can be associated with different actors (*acteurs*). Accordingly, he refers to conceptual dimensions that are present in all such narratives, but that may be instantiated differently from story to story. As Ducrot (1966: 123) has put it:

En revanche, si l'on décrit non plus les rapports entre acteurs, mais les rapports entre actants, on s'aperçoit d'une remarquable convergence de tous les contes, qui laisse entrevoir la possibilité d'une définition structurelle du genre « conte populaire ».

The notion of "genre" offers the possibility to interpret structural commonalities of certain types of texts in a semantic sense. In a broader sense, Propp's "functions" or Greimas' "actants" can be seen representing "types" in the sense of Alfred Schütz (Schütz & Luckmann 2003). Accordingly, "types" are social construal, more precisely social roles that show up as a bundle of typical patterns of action (including the corresponding participants).

Typified situations, actions, and actants form clusters that again are construed in terms of a typification process. Such clusters represent units of socially shared knowledge that shows up as 'genres'. The French psychologist Yves Clot has pointed out that „[l]es attendus

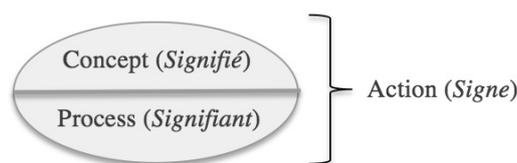
sociaux d'un genre – souvent sous-entendus – concernent autant les activités techniques et corporelles que les activités langagières“(Clot 2008: 77). Starting from the assumption that linguistic practices are by large organized, controlled, and motivated by conventionalized praxeological knowledge (I. Schulze 2014), we can describe genres of such linguistic practices as representing a specific type of “social action”:

Schutz's<sup>[sic!]</sup> account of types is useful to a theory of rhetorical genres because it shows the importance of classification to human action. It is through the process of typification that we create recurrence, analogies, similarities. What recurs is not a material situation (a real, objective, factual event) but our construal of a type. The typified situation, including typifications of participants, underlies typification in rhetoric. Successful communication would require that the participants share common types; this is possible insofar as types are socially created (or biologically innate). (Miller 1984: 157)

Referring to Berkenkotter and Huckin (1993), Bawarshi and Reiff (2010: 78) state that “genres dynamically embody a community’s ways of knowing, being, and acting”. This assumption relates genres not only to specific formal properties, but also to the conceptual domain:

1. Genre refers to a conventional category of discourse based in large-scale typification of rhetorical action; as action, it acquires meaning from situation and from the social context in which that situation arose.
2. As meaningful action, genre is interpretable by means of rules; genre rules occur at a relatively high level on a hierarchy of rules for symbolic interaction. (Miller 1984: 163)

In other words: The typification of rhetorical action in terms of ‘genres’ is part of the overall symbolic knowledge system conventionalized in a community. ‘Action’ can be regarded as a *signe* that emerges from the structural coupling of ‘perceivable’ processes (*signifiant*) with a cognitive unit (*signifié*):

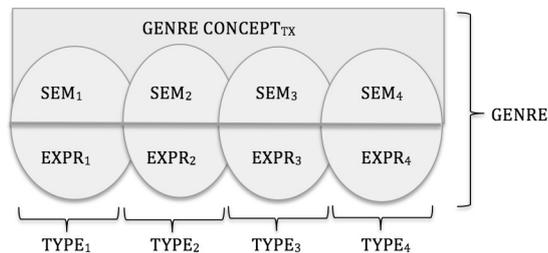


**Graphic 1:** *The semiotic structure of ‘action’* **ADJUST!**

A genre can thus be described as a complex semiotic unit that becomes instantiated in terms of a network of both conventionalized types and more or less individually motivated tokens (“styles” in terms of Yves Clot (2008)), cf. Berkenkotter and Huckin (1993: 477) who relate this individuation process to situated cognition:

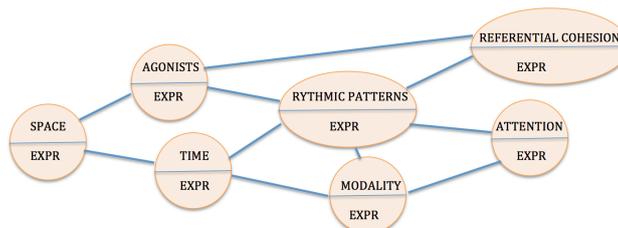
(...) genres are inherently dynamic rhetorical structures that can be manipulated according to the conditions of use and that genre knowledge is therefore best conceptualized as a form of situated cognition (...)

Most importantly, we cannot describe a genre as an unstructured unit. Rather, we have to assume that it shows up in terms of a set of ‘types’ that constitute the ‘skeleton’ of a ‘practiced genre’, cf. graphic 2:



Graphic 2: *The basic structure of genre as a semiotic unit*

Accordingly, genre is seen as a semiotic unit that combines a set of ‘expression types’ (in its broadest sense) with a conceptual layer (SEM<sub>1</sub>, SEM<sub>2</sub>, SEM<sub>3</sub>, SEM<sub>4</sub> etc.). As human beings cannot act (in which way so ever) but ‘in time’, the types of a genre action become naturally linearized at least to a minimal extent. Linearization results in the emergence of more or less integrated sequences that are loaded with corresponding conceptual values (such as sequencing according to time, causality, referential (or actant) contiguity etc.). In addition, a genre is usually structured by patterns that are related to the overall semiotic value of the genre itself. For instance, a rhetorical genre like ‘salvation tale’ may structurally differ from other types of non-literary texts such as ‘magic tales’ or ‘myths’. The total of these structural elements can be called the ‘texture’ of a genre, mapping the topological structure (or: syntax) of a genre. Being part of the typification process just as other elements of a specific genre, it differs from other units by having the property of a ‘structural’ or ‘fully schematic sign’ (as opposed to ‘substantial signs’). Graphic 3 illustrates this point with the help of a rather simplified network, mentioning possibly relevant types for illustrative purpose only:



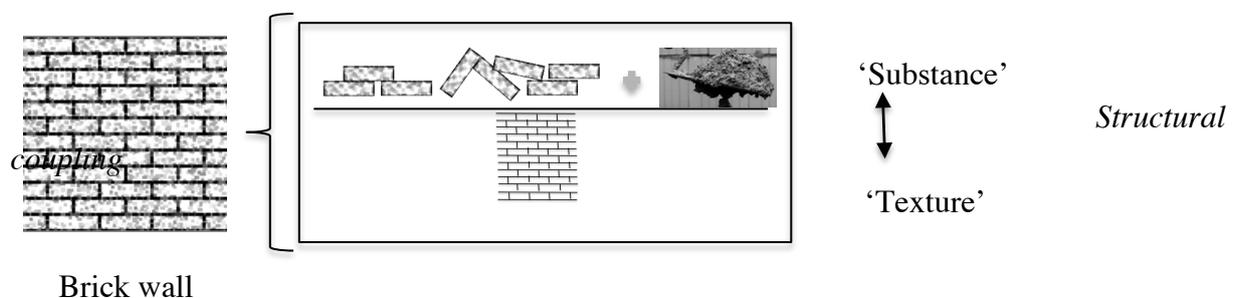
Graphic 3: *A simplified network (texture) of a genre token*

The term ‘schematic’, first employed by Piaget (1948 [1923]: 43-44) and taken up by Bartlett (1932), has later found a broad array of applications in terms of various versions of Schema Theory. For the purpose of the present paper, it suffices to refer to DiMaggio (1997: 269),

who describes schemata as “knowledge structures that represent objects or events and provide default assumptions about their characteristics, relationships, and entailments under conditions of incomplete information”. DiMaggio continues: “Schemata are both representations of knowledge and information-processing mechanisms. As representations, they entail images of objects and the relations among them”. The author rightly stresses the ambiguities related to the use of the term. Evans and Green (2006: 115) define ‘schematization’ as follows:

Schematisation is a special kind of abstraction, which results in representations that are much less detailed than the actual utterances that give rise to them. Instead, schematization results in schemas. These are achieved by setting aside points of difference between actual structures, leaving just the points they have in common.

The *signifiant* of structural/fully schematic signs is not by itself perceivable, but shows up only in terms of the selection and ‘behavior’ of substantial signs. Structural and substantial signs thus form two semiotic patterns that are blended in the process of an action. The interaction of both semiotic types can be illustrated for instance with the help of the ‘brick wall model’, cf. graphic 4:



Graphic 4: *The structural coupling of substance and texture*

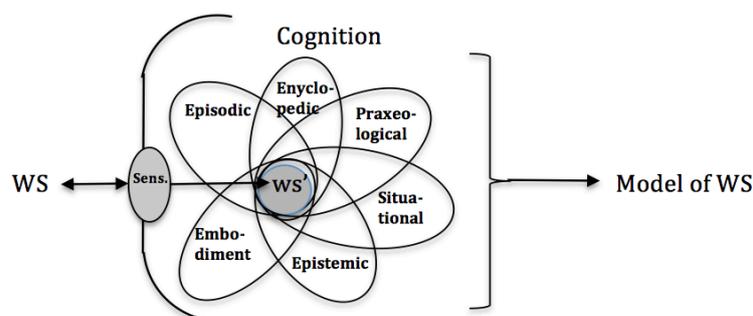
Accordingly, the bricks symbolize types with in a genre action (substance). I have added the notion of ‘grout’ in order to refer to a specific type of ‘semiotic substance’ that does not directly refer to types of action, but shows up as means to stick together individual types of action. They are not necessarily present (cf. dry walls), but are dependent on the type of conventionalized ‘grammar’ used to structure genre actions. The design of the brick wall (or its layout) symbolizes the texture of a genre action. The three dimensions ‘brick’, ‘grout’, and ‘design’ can be seen as being fundamental for the symbolic structure of genre actions. One can easily retrieve them in the structure of linguistics acts: Roughly speaking, ‘bricks’ correspond to lexical units, ‘grout’ to morphology, and ‘design’ to syntax/pragmatics. It is essential to note that none of these dimensions is processed independently. In other words: One cannot think of (or process) individual types of action without co-processing at least rudimentarily other such types included in a particular genre action. This includes automatic reference towards basic assumptions on the design of this action. Likewise, one cannot process a design by itself, but only in terms of usually prototypical representatives of relevant types of action. By the term ‘prototypical’ I refer to knowledge units established by cognitive

universals, individual experience, or learning of sociocultural patterns.

Summing up what has been said so far we can define a genre as a semiotic unit established by convention that shows up in terms of structured sequences of perceivable actions and (if given) perceivable ‘linkers’ that again activate corresponding conceptual knowledge. We cannot say that a particular genre has a ‘meaning’ by itself. It acquires its semiotic value out of its texture, the types of action (including their actants), and the situational frame to which the performance of the genre action is linked. On a meta-level, a genre may be associated with certain global concepts (such as ‘narration’, ‘football’, ‘working on the assembly line’, ‘gardening’ etc.). The following sections will concentrate on one type of rhetorical genres, namely folk narratives. Folk narratives differ from other kinds of rhetorical genres because they do not by large depend on the situation in which a ‘narration act’ takes place. In this sense, Miller’s claim according to which “a rhetorically sound definition of genre must be centered not on the substance or the form of discourse but on the action it is used to accomplish” (Miller 1984: 151) seems to be too strong. True, folk narratives serve their various purposes and professional storytellers often include aspects of actualization and interaction with the audience (see below). Nevertheless, the degree of situated cognition is rather low (cf. Propp (1928) and Greimas (1966)). (...)

## 6.2 Rhetorical Genres as Text World Models

It is a tenant in cognitive sciences that the human neural system - together with its functional domain, namely cognition - is by itself cut off from the outer world allowing interaction only with the help of the sensoric interface. Accordingly, human beings do not process states and events in the ‘Outer World’ as such, but only in terms of ‘images’ or ‘constructions’ that are shaped (among others) by both aspects of embodiment and by (gradually) stabilizing corresponding cognitive processes of perception into experience. This mapping involves complex procedures adjusting the perceptual input to the knowledge state of cognition by reducing and contorting the input (see e.g. Johnson-Laird 1983). In addition, the ‘image’ is conceptually enriched through impact from different types of by large socially acquired knowledge activated during the perceptual process, cf. graphic (5):

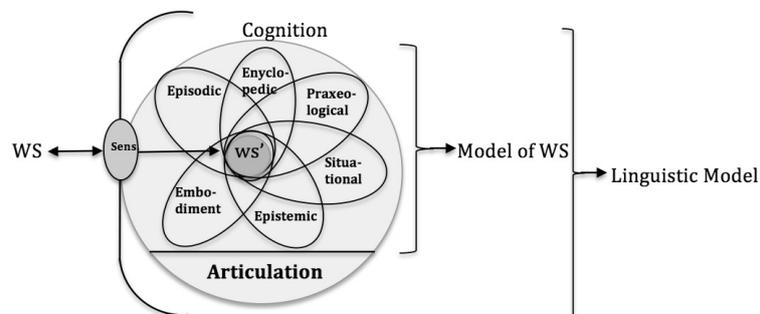


Graphic 5: From a World Stimulus (WS) to its cognitive ‘image’ (ws’)

Note that in order not to overload this graphic, I do not indicate the dimension of emotive knowledge, also because it is obviously co-activated to a certain extent when processing a

stimulus on the basis of the other dimensions of knowledge. The sum of all knowledge components prototypically or conventionally activated during the processing of a World Stimulus in terms of its ‘image’ can be termed the ‘model of the WS image’ (or: ‘mental model’ of a WS). Most importantly, I do not assume that individual units (‘objects’ in the broader sense) of the ‘Outer World’ can be processed independently, except on a meta-level (see e.g. Vossen 1995: 109ff.). Rather, I claim that human beings construe world stimuli only in terms of ‘event images’ profiled according to the state of cognition during perception. Basic event images are schematized in terms of figure-ground discrimination resulting in the isolation of object images in conjunction with inferential processes that concern the construed relation between these object images (see Schulze 2011a, 2014). The ‘model’ of such event images can be regarded as a complex categorical unit referred to when processing a world stimulus via its event image. Note, however, that such models go beyond the processing of just world stimuli: They are likewise active when human beings interact with their environment, resulting in what can be termed ‘praxeological genres’.

So far, I have talked about (mental) models in a very general way. Turning to rhetorical genres, the above-given graphic (4) has to be refined with respect to at least one feature, namely the role of language. The producer of an utterance activates another dimension of knowledge, namely how to relate the cognitive processes schematically illustrated in graphic (5) to sequences of motoric activities resulting in articulation, cf. graphic (6):



Graphic 6: *The linguistic expression of ws'*

Given the fact that most routines to structurally couple cognitive processes with articulatory sequences is learnt and hence is part of the collective knowledge system of a language community, we have to assume that linguistic signs profile these cognitive processes for communicative adequacy within this community. As a matter of consequence, another model shows up, namely a model that speakers refer to when intending to talk about their cognitive states. The result, that is the utterance, is thus marked for a socially acquired ‘brand’ that accommodates the structure and the profile of a given cognitive state to conventionally established semantic values by turning it into the *signifié* of a linguistic sign. Hence, the *signifié* of an utterance can be regarded as resulting from the blending of a pre-linguistic cognitive state with the semantics of linguistic signs used to express this state. This blend results in what can be called a ‘linguistic (world) model’ of an event image. Consequently, when processing a linguistic world stimulus, the perceiver is already confronted with the linguistic symbolization of those cognitive processes that underlie the linguistic act produced

by another person. The perceiver thus learns about the speaker's cognitive state in its 'linguistic disguise'. However, the stimulus likewise activates cognitive processes within the perceiver that dwell upon the state of the perceiver's proper knowledge system marked for corresponding world models. In other words: When processing a linguistic stimulus, world models of the perceiver become activated to the extent they are embodied in the utterance *and* to the extent they appeal to the perceiver's own models. Given the fact that both the semiotics of world models and the semantics of linguistic signs are by large socially acquired and hence conventionalized they can be described as being part of the collective knowledge system of a society. From this we can conclude that - disregarding episodic knowledge and biographical peculiarities etc. - human beings embedded into a linguistically more or less homogenous society will tend to activate rather parallel world models when processing the same linguistic stimulus.

Summing up we can state that genres in the sense discussed above and world models differ with respect to mainly one point: Genres represent an semiotic knowledge unit, whereas world models are mere cognitive constructions. Genres are marked for the coupling of a *signifiant*-layer with regulated and stabilized states of cognition (*signifié*), but world models lack this layer. In order to become 'materialized' and hence in order to become perceivable they must be supplemented by an adequate *signifiant*-layer. As has been illustrated in graphic (5), one way of representation is articulation, resulting in linguistic signs. In this sense, 'linguistic world models' denotes a set of linguistic signs the *signifiants* of which encode (among others) corresponding world models (rhetorical genres). It is obvious that the type of linguistic signs selected in an utterance as well as the type of 'discourse' or 'text' in which these signs show up may symbolize the given type of world model. For instance, we can assume that dialogues activate a type of world model that is (more or less) different from e.g. advertisements (see e.g. Hidalgo Downing 2000), political speeches, prayers, songs, or literary text. Nevertheless, because all such genres have in common that they are by large represented linguistically, we can also expect that the linguistic products include layers that may evoke more than just one model.

In the remainder of this paper, I will focus on one type of linguistic world models, namely on so-called Text World Models (TWM). Here, I cannot elaborate in details the tradition of TWM related research (see among others Werth 1999, Gavins 2007, Schwarz-Friesel and Consten 2011). Most of the approaches to Text World Models start from a definition like that proposed by Schwarz-Friesel and Consten (2011:352):

The text-world model represents a referential constellation of states-of-affairs in working and in episodic memory which is (in most cases) more complex and elaborated than the semantic text basis, i.e. a propositional level derivable from the text surface. Accordingly, we have to distinguish three levels: the text surface comprising grammatical structure and cohesive means, the semantic level, which is a level of lexical meaning and compositionally derivable from the text, and the text-world model, which is not a text level but a mental level of referential structures (...).

This definition starts from the idea that we can separate propositional meaning of linguistic utterances (as showing up in a text) from non-linguistic knowledge representations co-activated when processing the text:

(...) text comprehension implies both decoding the linguistically encoded meaning of the text and at the same time constructing a mental text-world model which is a cognitive conceptualization of the world depicted in the text.  
(Schwarz-Friesel 2011: 352)

Referring to the side of text production, the authors describe processes of “text-world building” said to take place during the construction of a text. Following the assumptions made so far in this paper, however, this kind of approaching TWMs does not seem fully adequate. First, if one agrees that world models being the *signifiés* of corresponding genres are part of the entrenched and conventionalized knowledge system of human beings, we cannot claim that they are built up during the production of corresponding acts. Rather, we have to assume that speakers start from given world models trying to maintain them as long as the situation is compatible (in its broadest sense). Accordingly, the structure and sequencing of acts (linguistic or non-linguistic) are preformatted by the corresponding world model, not the source of the model. Second, the definition suggests a propositional approach related to the “text surface”. However, if we start from the idea that linguistic actions are always tokens of rhetorical genres, we have to eliminate the notion of ‘proposition’ as denoting more or less objective ‘states of affair’. Following the idea of strong contextualism (Price 2008), we have to assume that the notion of ‘proposition’ is the result of an artificial isolation of linguistic units on a meta-level, claiming that identity in (linguistic) form indicates identity in meaning. In real world, however, utterances are never alike, because they always occur in different situations and contexts. Hence, we have to assume that linguistic structures (utterances, texts etc.) may resemble each other (with respect to the presence of linguistic signs). However, their concrete semantics cannot be described without reference towards the world models active during their use.

If we deny the presence of a layered structure of texts in the sense of Schwarz-Friesel and Consten (2011), we also have to rethink the idea of “world builders” (Gavins 2007) such as enactors, location, time, or objects. I assume that such units are not “builders”, but simply part of the embodiment of a world model. The perceiver does not use them to *build* a world, but expects them to be given because (s)he has been situationally oriented towards the activation of an individual world model. In this sense, Werth (1999: 17) rightly states that “all of semantics and pragmatics operates *within* a set of stacked cognitive spaces, termed “mental worlds” (my emphasis).

Accordingly, it seems appropriate to propose an alternative definition of ‘text world models’: In this paper, I use the term ‘world model’ to describe the conceptual basis of an inventory of action patterns (*genre*) that are framed (among others) by experience and social learning. A specific world model becomes active as soon as a human being gets involved in a situation, in which way so ever. This can be both real and fictitious. Accordingly, when perceiving such actions, the human being is already integrated into this situation, which then activates expectations derived from the corresponding world model. The same holds *mutatis*

*mutandis* for the enactor: The enactor will usually act in coherence with the world model activated by the situation in which (s)he intends to act. Given the fact that most world models finally are social constructs, we can expect that both enactors and perceivers activate world models in accordance with social norms and conventions.

Basically, linguistic (or: text) world models operate the same way. Still, texts (in the original sense of the term) differ from interactive communication with respect to the fact that they are usually marked for linguistically genre identifiers that are quite often non-linguistic in communication. In addition, literary and non-literary texts only modestly refer to or mirror the situated cognition of individuals processing a sequence of utterances. The fact that the readership of texts can be regarded as a more or less anonymous collective conditions that texts address more readily types of world models than individually established tokens of world models. As texts can normally be subsumed under specific rhetorical genres (however defined), we can expect that texts of a specific genre entail specific structural properties that encode the world model represented by this genre. Accordingly TWMs are marked for an internal structure that is related to the types within a genre as described above (section 1).

As trivial as it may be: It's nevertheless relevant to note that world models cannot be described as such. Just as it is true for any cognitive process, we have to refer to corresponding *signifiants* that represent the 'material' side of semiotic units. By themselves, world models can only be modeled based on appropriate theoretical assumptions. As for TWMs, this means that we have to refer to an array of *signifiant* types, pending on the general type of the given rhetorical genre. Together with a particular component of a given TWM they encode (*signifié*), these *signifiant* (or: expression) types form a specific set of linguistic signs. They are gestalt properties of the given text world model that by itself again is a semiotic unit (see above). In other words: A TWM is rarely encoded by a single semiotic element, although we can assume that terms used to classify TWMs (such as advertising, fairy tales, political speeches etc.) somehow refer to given TWMs as such. Nevertheless, one should be aware of the fact that the labels used to classify TWMs firstly are meta-terms that do not necessarily encompass the *signifié* of a TWM in its totality. In this sense, we can parallel a TWM to some kind of 'melody' given as such, but constituted mainly by musical tones and their texture, and situated (among others) by the instruments the melody is typically associated with.

It is important to note, however, that a TWM activated by a fictitious or real audience is not only given by units that encode it, but also by the situation (in its broadest sense) of the individuals constituting this audience. Accordingly, we may try describing the structure of a TWM as showing up in a text, but its relevance for the perceiver strongly depends on the degree to which the TWM matches a given conventionalized world model of the audience. For instance, the TWM of juridical texts will probably meet a corresponding world model of people trained in law, but will not necessarily active an appropriate world model of a layman. It follows that TWMs normally try to mirror the world models of a social group (defined in which way so ever). Turning around this argument, we can say that social groups are among other characterized by a set of common world models.

## 6.3 The structure of text world models of folk narratives

### 6.3.1 The TWM of folk narratives

In section 1, I have briefly alluded to some proposals of referring to structural features in order to characterize or even define rhetorical genres related to the domain of folktales or folk narratives. As Tangherlini (2015 [1994]:10) has pointed out, “a general structural theory is needed to broadly characterize the entire genre [of legends, W.S.]”. In fact, many proposals to delimit the rhetorical genre of folk narratives refer to the content type rather than to structure, cf. Tangherlini (2015 [1994]: 5):

In folktale, magic and supernatural beings are commonplace, and not a reason for greater concern on the part of the folktale characters, narrator or audience. They are merely features of the internal landscape. As such, folktale takes place in a fully self-contained world that bears little resemblance to the outside world of the tradition participants. The folktale world, with its repeated exaggerations and polarizations, can be seen as an ironizing of the real world.

Tangherlini (2015 [1994]: 8) opens a window towards arguing for a more structural approach by saying:

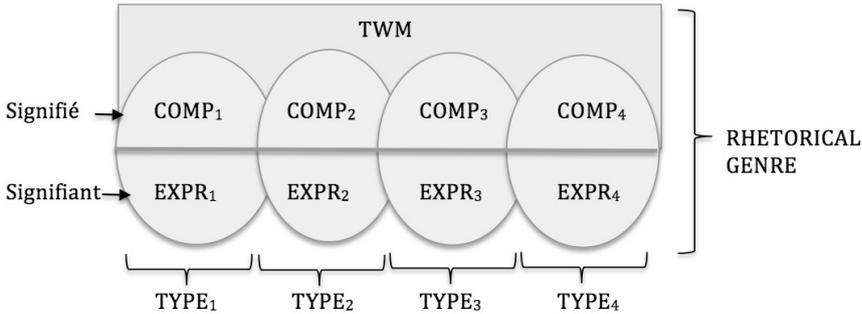
In the folktale, the hero is often placed in numerous, albeit repetitive, situations that function independently as a syntactic whole, but to not tell a complete story. The folktale is made up of numerous episodes with a discrete beginning, middle and end put together to make a larger whole.

Nevertheless, these observations, as true as they may be, still do not allow describing a method of how to relate these features to the structure of a TWM present in the corresponding text. Here, it seems useful to refer to the observation that, contrary to typical legends, folk narratives show up a much more degree of elasticity. Von Sydow (1934) introduced the term ‘ecotypes’ (*oikotypes*) in order to refer to the accommodation of folk narratives to individual regions and traditions. Both factors, elasticity and accommodation (resulting in ecotypes) can easily be linked to world models: The notion of elasticity starts from the idea that an entity can change in form, but not in substance (as opposed to plasticity that may be subject to changes in substances, too). Accordingly, we may assume that a folk narrative may change in the sense of a token, but not in its type. In more general terms, we can expect that folk narratives would no longer entail the original TWM once their structural ‘back bone’ has been changed. It would simply shift towards the representation of another TWM. On the other hand, the notion of *ecotype* allows us referring those world model tokens that are present in the ‘audience’ of a particular society in which a narration is handed over from generation to generation. A crucial point is that those storytellers who have changed elements of a narration probably did this by accommodating elements (or: types) of it to their own TWM activated by the narration. As these storytellers can be regarded as being part of that society in which they tell their stories, these TWM elements thus reflect the instantiation of the relevant collective

TWM in the given society. Accordingly, we are allowed to infer peculiarities of the TWM activated by the listeners of a folk narrative from structural differences within the encoding of a narrative text world model.

**6.3.2 The structure of TWMs**

If we parallel TWM with the *signifié* of a genre (see again section 1), we can assume that the *signifié* of semiotic types constituting a genre represent components (COMP) of the corresponding TWM, cf. graphic 7:



Graphic 7: *The semiotic structure of a rhetorical genre*

As has been said above, we cannot but start from the expression side of this semiotic structure (*signifiant*) in order to describe the components of a TWM and hence the TWM itself. Given the fact that folk narratives are less sensitive to being coupled with accompanying non-linguistic actions, we can assume that most of the signs used to encode a TMW and its components are expressed linguistically. From what has been said above concerning the nature of TWMs follows that the expression of individual TWMs and hence the TWMs themselves are marked for a structure that is more or less typical for them. Referring again to ‘melody’ for illustration, I use the German term *Partitur* in order to label this structure. Contrary to its English equivalent *score*, *Partitur* can be used in a more general sense indicating the internal structure of a set of common and situated actions. In this sense, a *Partitur* represents the texture of a semiotic system (see graphic 3) encoding an individual type of the TWM. Hence, a *Partitur* is a semiotic unit that has meaning just as all other semiotic elements given in a text. Still, we have to bear in mind that it is the texture represented by the individual *Partitur* that encodes the given semantics. In other words: We have to deal with a structural sign, embodied in the sequence of linguistic signs present in the text. In this sense, a *Partitur* resembles syntactic patterns in their broadest sense. Diagram 1 illustrates the basic pattern:

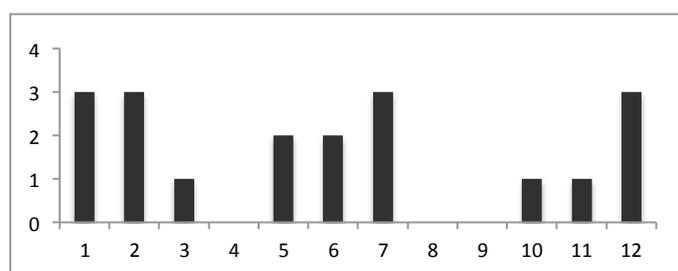


Diagram 1: *The general layout of a Partitur*

The x-axis indicates the sequence of units within a text. Below, I will argue that these units are constituted by simple clauses reflecting basic event images. The y-axis refers to the givenness of a certain type. In case more than just a binary opposition ('yes/no') is given (e.g. number of actants in a unit) the y-axis is scaled accordingly.

In order to illustrate this design, I will briefly refer to the first twenty-two units of a short English fairy tale (*The Rose Tree*). Table 1 gives this text passage segmented into simple clause units (note that here, subordinated clauses are treated as simple clauses, too).

No.	Linker	Simple Clause	Anaphoric element (0 = no, 1 = given)
1		There was once upon a time a good man	0
2		who had two children:	1
3		(He had) a girl by a first wife,	1
4	and	(He had) a boy by the second.	1
5		The girl was as white as milk,	0
6	and	her lips were like cherries.	1
7		Her hair was like golden silk,	1
8	and	it hung to the ground.	1
9		Her brother loved her dearly,	1
10	but	her wicked stepmother hated her.	1
11		['Child,] said the stepmother one day,	0
12		'(Child), go to the grocer's shop	0
13	and	buy me a pound of candles.'	0
14		She gave her the money;	1
15	and	the little girl went,	0
16		bought the candles,	1
17	and	started on her return.	1
18		There was a stile to cross.	0

19		She put down the candles	1
20	whilst	she got over the stile.	1
21		Up came a dog	0
22	and	ran off with the candles.	1

Table 1: *Presence of anaphora (incl. zero) in 'The Rose Tree (1-22)*

The corresponding Partitur is given in diagram 2:

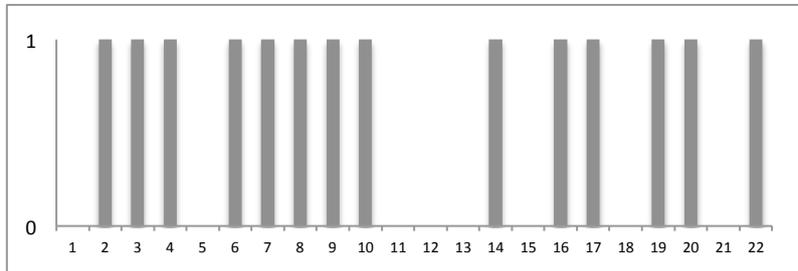


Diagram 2: *Excerpt of the anaphora-Partitur in 'The Rose Tree'*

Diagram 3 illustrated the Partitur for the type '(in)transitivity' in correlation with the number of NPs (including zero) present in each unit:

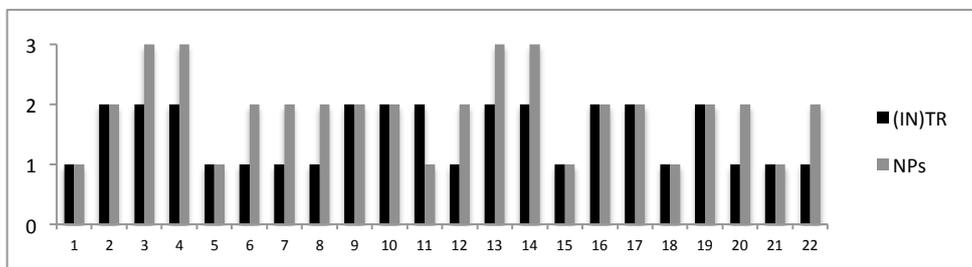
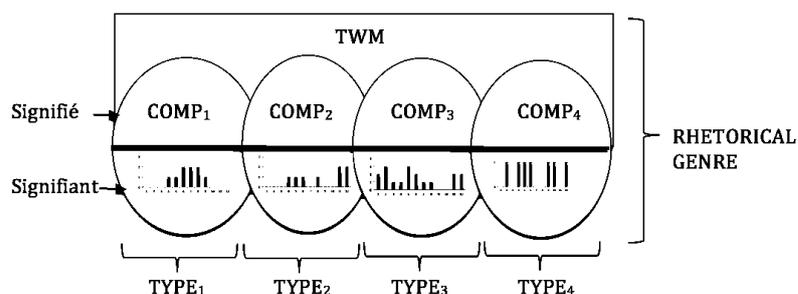


Diagram 3: *Excerpt of the Transitivity/NP-Partitur in 'The Rose Tree'*

Naturally, such an excerpt cannot tell much about the texture and hence the TWM underlying the 'Rose Tree' tale. Accepting the idea that a TWM underlies the totality of a text, we have to describe relevant Partiturs for whole texts only, thus enabling us to access the structure of an activated TWM.

The totality of Partiturs describable for a text reflect the way a TWM is encoded in this text (TWM token). Accordingly, they give us an idea about how a TWM might be structured, but not about the relevant TWM itself. In order to characterize a TWM as such, a number of texts preliminarily classified in terms of the same rhetorical genre has to be analyzed analogically. This would give us types of Partiturs that are significant to the semantics of a TWM. Naturally, we have to accept that the Partiturs of texts representing a specific rhetorical genre will hardly ever show up the 'same' Partiturs. Still, it is rather likely that the individual Partiturs will be marked for prototypical patterns that represent the given type of Partitur. In this sense, we describe the prototypical dimension of Partiturs as the expression side of those types that constitute a TWM, cf. graphic (8):



Graphic 8: *Partiturs as the expression of types constituting a rhetorical genre*

A crucial is to decide which linguistic units should be under inspection when aiming at the description of the Partiturs of a text. In other words: Are there linguistic units, categories, or strategies that are typically relevant for the encoding of TWMs? It is reasonable to assume that ‘re-occurrence’ gives us an important clue: The linguistic units etc. referred to in order to describe the Partiturs of a text must be present in all texts said to be included in a rhetorical genre. However, this type of extensional delimitation would call for massive corpora and corresponding complex calculi. In addition, even an extensional approach would have to start from preliminary categorial and functional assumptions, because linguistic signs rarely tell by themselves whether they encode tokens of a genre type or not. In fact, linguistic units may show up as “world builders” (Gavins 2007) in some texts, but not in others of the same genre. One exception might be constructions that function in this sense only, such as genre identifiers (e.g. stock phrases in rhetorical genres, ‘intradas’ (*once upon a time* etc.) in folk narratives (see below)).

Accordingly, we cannot escape from an intensional delimitation of Partitur expressions. In this paper, I will confine myself to some basic units derived from a rather general understanding of text linguistics and referring to typologies as those proposed by Propp (1928) and Greimas (1966). In order not to be repetitive, I will discuss the assumed relevance of the units under inspection separately.

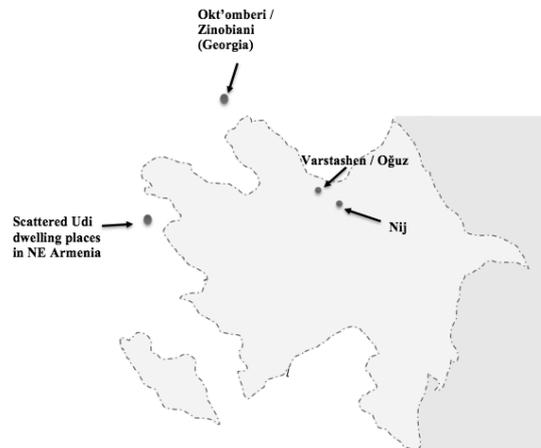
The scope of this paper does not allow starting from a contrastive perspective based on the analysis of a bulk of folk narratives. The objectives are more modest: By referring mainly to one narrative text, I simply want to illustrate whether the set of Partiturs arising from the analysis of this text show characteristics that may be associated with the rhetorical genre of folk narratives and hence with the TWM activated by this text.

#### 6.4 The Udi version of the ‘Grateful Dead’

The following ‘exercise’ concerns an Udi folk tale written down before 1902 in the Vartashen dialect. The tale has been termed *Šükürbakala p’urio* or *Dürüstbakala p’urio* by some of my informants (both meaning ‘grateful dead’). A slightly modernized version translated into the Nij dialect has been published by Dabakov (2007) under the name *P’urinaxun mandi borc* ‘The remaining debt of the Dead’.

### 6.4.1 Udi

Udi is the language of basically two smaller communities in the Transcaucasus, one located in Northwestern Azerbaijan (Nij, roughly 3.000 active speakers), the other located in Eastern Georgia (Okt'omberi or Zinobiani, roughly 100 speakers). Okt'omberi has been founded in 1922 by a group of migrants, who had left Vartashen (now Oğuz), another formally Udi community some 50 km northwest of Nij, see the following sketchy map:



Map 1: *The location of Udi communities*

Due to the Armenian-Azerbaijani conflict, most of the remaining Udi inhabitants of Vartashen have moved to places outside Azerbaijan in 1990. Today, Nij is the only settlement that is marked for a compact Udi speaking community. Before 1990, Vartashen was marked for a pronounced multiethnic pattern (see e.g. Bezhanov 1892) that comprised at least Udi, Lezgi, Armenian, Christian Tati, and Azerbaijani elements.

Although being Christians by belief, the Udi ethnic group is strongly embedded into the neo-Oriental cultural traditions (more precisely 'Northern Oriental' in its Transcaucasian version). Most of its cultural practices and traditions are affine to corresponding patterns also given in e.g. the Azerbaijani and Armenian milieu. Nevertheless, the Christian traditions of Udi that is relatable to the times of the early medieval Christian kingdom of Caucasian Albania (see Bais 2001 for Caucasian Albania) condition some peculiarities that separate them from the surrounding Muslim world (see e.g. Volkova 1994, Çabanov and Hüseyinov 1999, Guvasary 2001).

Udi belongs to the world of autochthonous East Caucasian languages, more precisely to its Southern (Lezgian) branch. The exact place of Udi within this branch is controversial: Either Udi, is seen as a marginal language having separated from Proto-Lezgian quite early, or it is regarded as an early offspring from the Eastern branch of Lezgian (East Samur). Udi is the only East Caucasian language, for which an older stage is documented (Caucasian Albanian), present in the region until the 9<sup>th</sup> or 10<sup>th</sup> century AD (see Gippert et al. 2009). Still, this early tradition of literacy and text production is no longer known among Udis. As Guvasary (2001: 18) has put it:

“Between 1909 and 1910, foreign power destroyed all the old Albanian Church books and archives (...). We have no written sources which tell our story. We do not have one saga which can take us back in time. This is very sad.”

The fact that the early traditions in literacy have fallen into oblivion as well as the lack of orally transmitted sagas and legends do not allow speaking of autochthonous Udi traditions in structuring oral narratives. Rather, we have to assume that the general make-up of Udi oral text structures (text grammar) has emerged from later stages of Udi that were marked for strong impact from corresponding traditions showing up in both local versions of Armenian and Azerbaijani (to which we have probably to add an Iranian element nearly extinct in the region except for local varieties of Tati).

Udi is a modest agglutinating language with marked tendencies toward the fusional type. The following features are especially relevant to the interpretation of textual Udi data:

- (3)
- Case-based ergativity
  - O-Split (Differential Object Marking) (givenness of discursive knowledge about a unit in objective function (‘Object’) or givenness of correspond a world knowledge)
  - Verbal (in parts focusing) agreement based on accusativity
  - Basic phrase order: NP (foreground) - NP (background) - VP
  - Clausal subordination
  - Tripartite tense system (PAST/PRESENT/FUTURE)
  - Modest grammaticalization of locative relations (case, postpositions)
  - Very weak elaboration of diathesis
  - Use of particles to mark additive or contrastive focus

In order to illustrate the general architecture of Udi, I refer to the first lines of the tale ‘Grateful Dead’ (see below) given with interlinear glosses:

- (4)
- |                         |                |                     |                  |             |                      |
|-------------------------|----------------|---------------------|------------------|-------------|----------------------|
| <i>ba-ne-k-e</i>        | <i>sa</i>      | <i>pasč'ax</i>      | <i>me-t'-ay</i>  |             |                      |
| become-3SG-\$-PERF      | one            | king                | PROX-SA.OBL-GEN  |             |                      |
|                         |                |                     |                  |             |                      |
| <i>ba-ne-k-e-y</i>      |                | <i>xib</i>          | <i>ğar.</i>      |             |                      |
| become-3SG-\$-PERF-PAST |                | three               | boy              |             |                      |
|                         |                |                     |                  |             |                      |
| <i>sa</i>               | <i>vaxt'-a</i> | <i>fikir-re-b-i</i> | <i>te</i>        | <i>ek'e</i> | <i>sinamiš-b-a-z</i> |
| one                     | time-DAT       | thought-3SG-do-PAST | SUB              | how         | examine-do-MOD-1SG   |
|                         |                |                     |                  |             |                      |
| <i>mano-a</i>           | <i>me</i>      | <i>ğar-muğ-oxo</i>  | <i>haq'ullu.</i> |             |                      |
| who-3SG.Q               | PROX           | son-PL-ABL          | clever           |             |                      |
|                         |                |                     |                  |             |                      |
| <i>ta-ne-st'a</i>       |                | <i>har-t'-u</i>     |                  |             |                      |
| give-3SG-\$-PRES        |                | each-SA.OBL-DAT     |                  |             |                      |

*qo u<sup>ʃ</sup>q bać manat ex-ne*  
 five six hundred manat say.PRES-3SG

*take-nan kef-b-a-nan!*  
 go.IMP-2PL relaxing-do-MOD-2PL

*mo-nor aiz-er-i ta-q'un-sa*  
 PROX-PL.ABS rise-LV.PAST-PAST go-3PL-\$.PRES

*har-o sa ga-n-u.*  
 each-REF.ABS one place-SA.OBL-DAT

‘(There) was a king who had three sons. One time, he thought: “How can I find out, which of these sons is the cleverest one?” He gives each one five-six hundred manat (and) says: “Relax out there!” They start going, each one to one place.’

Udi shows up in two dialects: Nij and Vartashen, differing especially in phonology and morphosyntax, but also in the lexicon. Today, efforts are undertaken to introduce a written standard for Nij Udi based on an adopted version of the Azerbaijani Latin alphabet, but we cannot speak yet of a well-established written language. Many texts documented for Nij are translations (e.g. parts of the Holy Script), but the corpus also includes some probably autochthonous narratives (e.g. Keçaari 1995, 2001, 2002, 2003, Dabakov 2007; see Schulze 2015b for a fuller account). Most of these narratives are either recent products or translations from older texts documented in the Vartashen dialect (e.g. Dabakov 2007). In fact, the Nij dialect has been the target of efforts to document local narratives since recent times only. Before 1990, it was mostly the oral tradition in Vartashen that local documentarians had started from (see Schulze 2015b). Today, no more recent texts are known from the Vartashen dialect. Even though the language of Vartashen still is used among some emigrants as well as among some inhabitants of Ok'tomberi, it is rather likely that the oral tradition of Vartashen will be lost within one or two generations.

Little is known about the particular situations in which story telling formerly has shown up in Vartashen. In 1986, I still had heard about the profession of a *nağəlçi* (Az. *hekayətçi*) ‘storyteller’, but I was unable to meet a *nağəlçi* in person. In Nij, the latest known storyteller seems to have been Yuri Artašesovič, the grandson of the last Nij Udi pope Sergej Karapetovič Gukasov (\*1862, † 1957) and father of the school teacher Venera A. Guvasary who is nowadays active in documenting Nij Udi cultural traditions (also see Guvasary 2001).

The structure of traditional Udi narratives does not allow relating them to the Oriental *meddah* tradition, that is a way of storytelling that is strongly supported by mimic and gestural actions and often referring to the actual social and economic living conditions of the audience (see Boratav 2015). Nevertheless, informants told me that they have listened to folk narratives in public and that such narratives would not have been particularly designed for being told in privacy or to children, only. From this, we can conclude that the basic function of Udi storytelling in Vartashen was entertainment. However, the topic of the tale under

discussion below (“salvation tale”) most likely is also meant to transport some kind of moral instruction, based on Christian traditions.

#### 6.4.2 ‘The Grateful Dead’

One cannot safely name the person who had written down the Udi version of the ‘Grateful Dead’ (see Schulze 2015b), but it is rather likely that we have to deal with the Vartashen Udi school teacher and director of the local school in Vartashen, Mikhail Bezhanov. Together with his brother, the priest Semjon Bezhanov, he spent much of his time collecting Udi folk songs, proverbs, and folk tales. Only one of these tales has been published, however, by Mikhail Bezhanov himself (Bezhanov 1888). Most probably, the supervisor of the ‘Caucasian Teaching District’, L. Lopatinskij, handed over a manuscript of the text ‘Grateful Dead’ to Adolf Dirr, the Grand Seigneur of Studies in Caucasian languages during his stay in Tbilisi in 1902 and who published it together with a translation into German (Dirr 1928). It goes without saying that who ever has written down this text has normalized it to a certain extent. Still, I made the experience that when retelling narratives, my Udi informants rarely turned into an explicit type of orality. Obviously, they reproduced them as memorized ‘wholes’. This becomes obvious from the fact that the text is completely devoid of cue phrases (see e.g. Hirschberg and Litman (1994) for the relevance of cue phrases).

The basic motifs of this tale resulting in quite many variants of it are well known especially in Christian traditions. It is classified as “AaTh 505” in the Arne-Thompson-Uther-Index (Uther 2011). It belongs to the sub-genre of “tales of salvation” (Lüthi 2008: 206) or „transcendental debtor’s arrest“ (*Transzendente Schuldhaft*) (Zöller 1997: 67). Lüthi (2008: 206) has characterized the basic ‘script’ of this tale as follows:

Die vielen Märchen vom dankbaren Toten erzählen, wie ein junger Wanderer seine ganze Barschaft ausgibt, um einen Leichnam, der ausgepeitscht oder bespion oder sonstwie entehrt wird, loszukaufen und ihn begraben zu lassen. Später darf der selbstlose Wandersmann seinerseits die Hilfe des dankbaren Toten erfahren.

The underlying motifs can be traced back to the book of scripture ‘Tobit’ that is part of the Catholic and Orthodox biblical canon and written down probably around 100 BC (apocryphal in the Jewish and Protestant traditions). Contrary to most of the Western versions of the underlying motifs (see e.g. Liljeblad 1927, Meier-Branecke 1969), the Udi version includes some elements that can be directly related to the book Tobit. This fact suggests that the Udi version may have developed independently from western versions. The Udi version of the plot goes as follows:

A king gives his three boys some money in order to see how they would spend it and then to decide who should be king after him. Contrary to his elder brethren, the youngest boy (‘prince’ in the story) does not spend the money for leisure, but (in vein) seeks opportunities for trading. On his way back he crosses a graveyard and realizes a man who hits a grave because the buried person still owes him 60 rubles. The prince gives him the money in order to prevent him from hitting the grave. Having come back, the king praises the prince and decides

that he should become his successor. He tells the prince to hire a particular servant, which is then done by the prince. Together with his servant, the prince sets out for a trading tour. Two ways lead to another city: The short one is said to be extremely dangerous - no one has ever arrived in this city. The servant convinces to take the short road. One evening, when taking a rest, the boy hears someone saying to the prince's dog from behind a bush that his lord would kill him. The dog should help robbing all goods. The servant does not say anything to the prince about this. They safely arrive in the other city and then return the same way. Again, when staying over night, the servant hears someone saying the same to the dog. Now, he wakes up the prince and together they hurry behind the man. The man jumps into a hole and the servant informs the prince that he would follow him into the hole. The prince should use a rope to pull up everything the servant would tie. In the hole, the servant sees three girls who inform him that they have been robbed by seven devs staying in a room aside. The servant kills all devs, cuts off their ears and has the prince pull up the girls and everything he has found in the hole. After return they realize that the king has become blind and his sister has become insane because of deploring the assumed loss of the prince. After having set out for hunting, the servant kills the dog and dips a piece of cloth into its blood. He gives the cloth and the ears of the devs to the prince telling him how use them in order to heal his father and sister. The king and the prince's sister get cured and the king's three sons marry the three girls. Some time later, the servant takes the prince out for a walk. Crossing a graveyard they realize an open grave. The servant lies down in the grave then asking the prince to help him out. When the prince tries to do so, the servant hands over 60 rubles, and the grave closes. The prince goes home and becomes king.

The text is modestly accommodated regional traditions. Quite expectably, text text does not exhibit concrete no allusions to the situation the story in the closer context of the Udi society. Basically, it follows the standard plot of comparable East Caucasian tales, cf. (5):

- (5) An elder person has children.  
 One of the children acts specifically (> hero).  
 While acting the hero encounters a helper.  
 They travel to distant regions.  
 They have to fulfill certain tasks.  
 An antagonist shows up (usually a dev).  
 The dev has robbed a girl.  
 The girl is rescued by the hero and/or his helper.  
 The tasks are completed.  
 The hero and the girl become married.

Only very few terms suggest that the tale reflects some kind of regionally defined ecotype, e.g.

- (6) - Caravan (*karvan*)  
 - Horse (*e<sup>ʿ</sup>k*)  
 - Graveyard (*gärämzaluğ*)  
 - Devs (*döv*)  
 - Hunting dog (*tul*)  
 - Bazaar (*bazar*)  
 - Trading (*ališveriš*)  
 - Particular term for money (*manat*)

Nevertheless, the overall topic of the tale ("salvation tale") clearly relates it to Christian traditions. As far as data go, the plot seems unknown in adjacent Muslim communities. In this

sense, we can say that it includes a world model that calls for an audience of the same tradition. Still, some allusions to standard topics of Oriental folk narratives are discernable, too, such as the fight against devils or traveling taking place in the context of trading.

### 6.4.3 Basic statistic values of the Udi version of the “Grateful Dead”

In this section, I will briefly present some relevant data concerning quantitative aspects of the text ‘The Grateful Dead’ (“GD”). For comparative reasons, I have added corresponding data from four other Udi texts: (a) the Vartashen Udi tale *Rust’am* (Bezhanov 1888), (v) the Vartashen Udi tale *King and Shepherd* (Dirr 1904, recorded in 1902 by a certain Solomonianc, an Udi from Vartashen); (c) The Nij Udi anecdote *The Sieve* (a short text perhaps produced by its publisher Georgi Keçaari (Keçaari 2001)); (d) the Vartashen Udi translation of the Gospels (Bezhanov 1902). For comparative reasons, I have included the corresponding values of a Chechen folk tale (*staggij lähij* ‘Man and Snake’), documented by Jakovlev (1940: 308-313), of the Lak folk tale *č:itul ärx:i* (‘The cat’s travel’), documented by Žirkov (1955), and of the above-mentioned German tale “The Frog King”.

Parameters	<b>Grateful Dead (1902, V.)</b>	Rust’am (1888, V.)	King and Shepherd (1902, V.)	The Sieve (2000, N.)	Gospels (1900, V.) (names not included)	<b>Lak (The Cat’s Travel) (1955)</b>	<b>Man and Snake (Chechen) (1940)</b>	Frog King (German)
Tokens	1193	2056	271	275	52.976	825	863	2528
Types	593	939	169	230	28.092	507	434	592
Tokens per Type	2.01	2.18	1.65	1.19	1.88	1.62	1.92	4.27
Lexical bases (LB)	270	357	96	133	1820	304	197	334
Tokens per LB	4.41	5.79	3.82	2.06	29.10	2.71	4.38	3.44
Guiraud Index (LB/√token)	7.81	7.87	5.83	8.02	7.90	10.58	6.70	9.86
Morphol. variants (types per LB)	2.01	2.63	1.76	1.72	15.43	1.66	2.20	1.77
‘Simple clauses’ (SC)	298	502	70	79	12.198	161	193	214
Tokens per SC (TpSC)	4.00	4.09	3.87	3.48	4.34	5.12	4.32	11.81
SC elaboration (LB per √SC)	15.64	15.93	11.48	14.97	16.47	23.97	14.18	30.18

Table 2: Basic quantitative aspects of selected Udi texts

Let me briefly comment upon the parameters referred to in table (2):

**(a) Tokens:** The number of tokens informs about the length of a text. Udi narratives waver between some 200 and 2200 tokens.

**(b) Types:** The number of types represented by the given tokens.

**(c) Tokens per Type:** Contrary to other calculi of this kind (Type-Token Ratio, TTR etc.), I start from tokens being related to types. This ratio can be paraphrased more easily than the standard TTR: It simply reads as follows: In how many tokens does a type occur in a text? By itself, this ratio does not necessarily tell about lexical richness (and hence conceptual elaboration): For instance, highly agglutinating languages will show a rather modest TTR (token/type) even if a corresponding text is marked for few lexical units, because the lexical unit may show up in various morphologically marked types represented by few tokens only. In fact the TTR informs more about the degree of morphological elaboration given for the corresponding language than on lexical richness. The following claim can be made: The higher the Token-Type-Ratio, that is the more tokens are given for a type, the more the language is marked for an isolating architecture (and vice versa). In order to illustrate this point, table (3) presents a simple calculus of the TTR for chapters 1-5 in the Gospel of Mark for fifteen randomly chosen languages:

Language	Tokens	Types	Token/Type	Tendency
Xhosa	2440	1391	1.03	
Mi'kmaq	2648	1541	1.71	
Udi	2060	1114	1.84	
Turkish	2526	1314	1.92	
Swahili	2931	1280	2.28	
Latin	2842	1189	2.39	
Italian	3773	1089	3.46	
German	3870	972	3.98	
Zuñi	4852	1171	4.14	
Malagasy	3857	916	4.21	
Norsk	3903	830	4.70	
Mam	5900	1227	4.80	
Vietnamese	4487	733	5.80	
Haitian Creole	4805	601	7.99	
Maori	5115	593	8.62	

Table 3: A simple Token-Type Ratio in Mark 1-5 in fifteen languages

When looking at the corresponding patterns in languages of Europe, we can clearly observe a tendency towards more fusional models in the East to more analytic models in the West/Northwest, cf. map 2:



TWM tokens is strongly related to re-occurrences of genre builders typical for the corresponding TWM.

**(h) Simple clauses (SC):** Starting from the assumption that basic event images are linguistically represented by ‘simple clauses’ (see Schulze (2011a) and 5.4 below), the corresponding figures result from breaking down complex syntactic constructions into a set of subsequent SCs. In order to illustrate this point, I again refer to the short extract from GD given in (4):

LINKER		Simple Clause	Translation
	(1)	<i>baneke sa pasč'ax</i>	(There) was a king.
	(2)	<i>met'ay banekey xib ġar</i>	He had three boys.
	(3)	<i>sa vaxt'a fikirrebi</i>	Once he thought:
<i>te</i>	(4)	<i>ek'e sinamišbaz</i>	[namely] How can I find out:
	(5)	<i>manoa me ġarmuġoxo haq'ullu.</i>	Who of these boys is the cleverest?
	(6)	<i>tanest'a hart'u qo u <sup>ʿ</sup>q bać manat</i>	He gives each one five/six hundred manat.
	(7)	<i>exne</i>	He says:
	(8)	<i>takenan kefbanan!</i>	Relax out there!
	(9)	<i>monor aizeri taq'unsa haro sa ganu.</i>	They set out going each one to one place.

Table 4: *The sequence of SCs in the beginning of GD*

Note that this procedure is not applied to lexically complex constructional units that represent a single concept or constructions including highly grammaticalized units (such as ‘go+verb’ > ‘do something away from here’, ‘rise+verb’ > ‘start doing something’). The absolute SC values thus inform us about the number of event images processed in the given text.

**(i) Tokens per SC (TpSC):** This ratio reflects the average length of simple clauses. Again, this value strongly depends on the basic linguistic type to which the given language belongs. Assuming that prototypically, ECs with overtly (lexically) marked actants consist of one to three NPs and one VP (disregarding clause linker etc., see Schulze 2001 for details), we would expect a mean of three tokens per SC in case the language is hardly marked for analytic features and in case the individual phrases are not elaborated by adnominal or adverbial forms (this would be given for instance for the type *child see dog*). The more tokens are statistically given for the SCs of a text, the more the language is characterized by analytic features and/or the type of elaborations mentioned above. For instance, the first 40 SCs of a modernized version of the French narrative *Le Petit Poucet* (documented by Charles Perrault 1697 in the volume *Les Contes de ma mère l'Oye*) consist of 280 tokens, which gives us a TpSC value of 7.00.

**(k) SC elaboration:** I use the ratio “LB per  $\sqrt{\text{SC}}$ ” in order to calculate the average of the amount of lexical units (lemmas) processed in the SCs of a text. The higher the value the

more elaborated the individual clauses are on a lexical level. For instance, the German tale *Der Froschkönig oder der Eiserne Heinrich* (*The Frog prince*; 2528 tokens) is marked for a value 30.18, which is rather high compared to the data for the Udi texts mentioned in table (2). Still, we have to take into account that this ratio again depends on the general morphosyntactic typology of the given language (German being more analytic as for instance Udi).

When looking at the data stemming from the Udi texts mentioned in table (2), it becomes obvious that Udi narratives are rather homogenous as for their text statistical values. Table (5) summarizes the corresponding data:

	GD	Rustam	King and Shepherd	Sieve	Gospels
Tokens per Type	2.01	2.18	1.65	1.19	1.88
Tokens per LB	4.41	5.79	3.82	2.06	29.10
Guiraud Index (LB/ $\sqrt{\text{token}}$ )	7.81	7.87	5.83	8.02	7.90
Morphol. variants (types per LB)	2.01	2.63	1.76	1.72	15.43
Tokens per SC (TpSC)	4.00	4.09	3.87	3.48	4.34
SC elaboration (LB per $\sqrt{\text{SC}}$ )	15.64	15.93	11.48	14.97	16.47

Table 5: A summary of text statistical value of selected Udi texts

Those values that are clearly relatable to text length are given in shadowed cells. The data sufficiently illustrate that the four narratives are marked for rather analogous strategies of lexical explicitness. It is interesting to see that the two tales Rustam and Grateful Dead show nearly the same values. Most likely, we can relate this to the assumption that both texts stem from the same ‘hand’, namely Mikhail Bezhanov (see above). Obviously, the texts thus also include features that reflect idiosyncratic storytelling techniques and strategies. When comparing e.g. the basic data of GD with those showing up in the Chechen tale ‘Man and Snake’ (863 tokens), however, it becomes apparent that both tales are marked for rather parallel basic values, cf.:

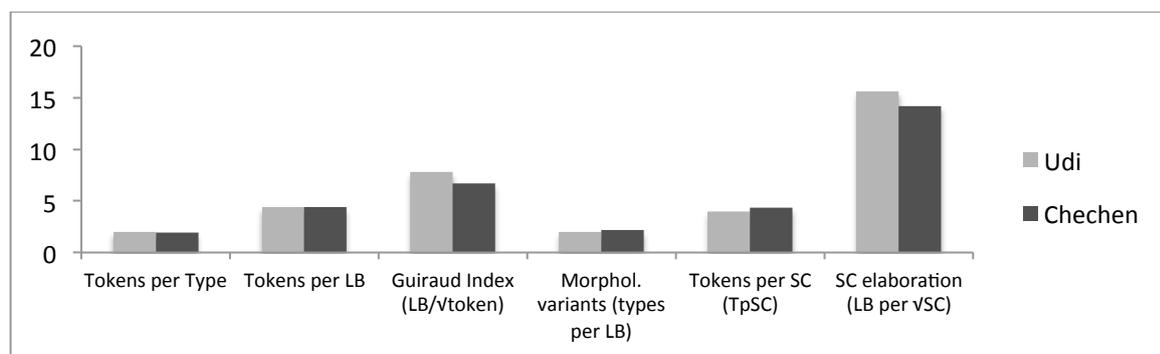


Diagram 3: Basic values for ‘Grateful Dead’ (Udi) and ‘Man and Snake’ (Chechen)

Naturally, these two examples are too few in order to draw the conclusion that the values showing up in diagram (3) represent a more general pattern that would be relatable to typical features of an East Caucasian narrative style. Nevertheless, we can assume that the overall textual structure of GD is not just motivated by preferences of the original storyteller, but also by features of narrative techniques that are grounded in at least East Caucasian traditions (compare again the highly deviant values for the German tale “The Frog King” given in table (2)).

## 6.5. Towards a description of the TWM of the tale ‘The Grateful Dead’

Preliminares: (.....)

Domain	Knowledge Frame/Function	Linguistically represented by
Global	Closed referential knowledge	Relatively strong lexical redundancy
Intrada	Overt TWM builder/marker	Formulaic constructions
Agonists	Actors presenting stereotyped social roles (protagonist, antagonist etc.)	Lexical representation of basic property of the agonist; High frequency, marginally elaborated attribution
Space	Cognitive map	Emblematic lexical semantics of locative expressions
Time	Model of anteriority	Emblematic or fictitious expressions of time
Modality	Hypothesis building	Low presence of modal markers
Requisites	Socioeconomic and sociocultural frames	Culture-driven lexical expressions
Event images (EI)	Motion and Action	Massive presence of motion and action verbs, few adverbial constructions
Sequencing of EIs	Motion -> Action -> Motion etc.	Clustering of motion SCs / clustering of action SCs
Rhetorical interaction	Grounded in frames of interactional typicality in a sociocultural milieu	Presence of dialogues
Reiteration	Copying of cyclic sequencing of event experiences	Strong tendency towards textual iterations
Information flow	New topics mainly as thrilling effect	In text progression, increase of lexical redundancy, decrease of new topics
Perspective/empathy	Establishing	Modest presence of switch reference

	solidarity with an agonist	
Attention flow	Enactor/recipient interaction	Strong correlation of focal patterns with specific event images and agonists

### 6.5.1 Type 1: The Intrada

Following the assumption that genres are complex semiotic units (section 1) representing corresponding world models, we may ask how the perceiver of a set of actions is motivated to activate relevant genre knowledge when processing the perception of these actions. In order to model this aspect, it is reasonable to assume that genre knowledge is organized in terms of an overlapping taxonomy that includes a wide range of basic knowledge types, such as (experience-based or learned) encyclopedic knowledge, episodic knowledge, praxeological knowledge, emotive knowledge, situational knowledge, social knowledge and so on. The association of a set of action with a particular genre knowledge is normally activated with the help of genre identifiers ground in the above-mentioned dimensions of knowledge. These genre identifiers are usually present within the first sequences of an action chain, or with the situation (in its broadest sense) into which this chain is embedded. In other words: genre identifiers may be part of the action chain itself (endocentric genre identifiers) or part of the stimuli that activate e.g. situational, encyclopedic, praxeological, emotive knowledge related to the given action chain (exocentric genre identifiers).

Rhetorical genres, more precisely narratives, are marked for the fact that the activation of the above-mentioned knowledge types is motivated mainly by the presence of certain linguistic expressions more or less specialized in terms of genre token signs (endocentric genre identifiers). In addition, exocentric genre identifiers are given by the kind of medium that represents a given text (when written, e.g. journals, books etc., when spoken usually the situation in which the production of an oral text occurs). To these factors, we always have to add non-rhetorical genre markers that are present with accompanying non-linguistic semiotic units (e.g. visual in terms of pictures or film sequences etc., auditive in terms of music etc., cf. e.g. Doudpota and Guha 2010).

Oriental-styled folk narratives such as the Udi tale ‘The Grateful Dead’ normally do not include exocentric genre identifiers. Given their nature as retold ‘multi-purpose texts’, they are not embedded in another non-rhetorical semiotic system (as it would be true for instance for the above-mentioned *meddah* tradition, see section 4.1). From this we can expect that relevant genre identifiers occur in the beginning of the text itself.

It should be born in mind that genre identifiers are different from those expressions that reflect the overall texture of a genre token, for instance of a particular folk narrative. The genre identifier serves to activate the listener’s corresponding text world model that then is maintained by the subsequent perception of both the texture and the expressions that represent the types of the corresponding TWM.

I will use the term *intrada* in order to specify that type of genre identifiers that is typical for narrative texts (see Roshianu 1974: 18-35 for a structural analysis of intrada phrases, also compare Gerasimova 1978). Intradas are more or less elaborated. They range

from zero-phrases up to highly complex sequences of text. For instance the Chechen tale *staggij lāhij* ('Man and Snake') referred to above does not use any formulaic intrada at all:

- (3) *šera-čū ara-xula čha stag xil-la*  
broad-OBL field-TRSLT one man be-INFER

*nowq'a w-ödu-š*  
**by=foot** I-go:PRES-CV.PA  
'Over a broad field, a man was going by foot.'

On the other hand, for instance Turkish storytelling is famous for the occasional use of extremely elaborated intradas, cf.:

- (4) *Bir varmış, bir yokmuş. Evvel zaman içinde, kalbur saman içinde, cinler cirit oynar iken eski hamam içinde, pireler berber [iken], develer tellal [iken], ben ninemin beşiğini tıngır mungır sallar iken, uzak diyarların birinde...*

,One [thing] was, one [thing] wasn't. In the first time, when the sieve (was) in the haystack, when dzhins played with spears in the old bathhouse, [when] fleas were barbers, [when] camels were town criers, [and when] I rocked the creaking cradle of my grandmother, in one of the countries far away...'

The standard formula of Udi intradas belongs to the Oriental type that starts from the structure 'was, was not .... [was] X', compare table (6):

Classical Arabic	<i>kâna yâ mâ kâna fî qadîmi z-zamâni....</i>	'It was, oh, it was not in old times' (or: ,it was, oh, what was, in old times?')
Armenian	<i>Linum e, č<sup>e</sup>i linum</i>	'It was, it was not'
Azeri	<i>Biri var idi, biri yox idi...</i>	'Something was, something wasn't'
Georgian	<i>iq'o da ara iq'o ra, iq'o...</i>	'It was and what wasn't, it was'
Persian	<i>yeki bud, yeki nabud, ğeyr az xoda hiç kas nabud</i>	'Someone was, someone wasn't, nobody was except for God'
Lak (East Cauc.)	<i>at:it:i biwk'un bur q:abiwk'un bur q:abiwk'ungu ciwans:iya</i>	'It was, it wasn't, what can one do, if it wasn't'
Udi	<i>baneke tene bake</i>	'It was, it wasn't'

Table 6: Typical intradas in some Oriental languages

This formula is typical with most documented Udi narratives, although some different formula may show up in individual tales. The general function of the ‘was - was not’-formula is to signal epistemic uncertainty or irrelevance, which is a typical feature of folk narratives. In Udi, the formula is usually followed by the introduction of one of the protagonists of the tale, who, however, is not necessarily the hero of the tale. The formula is often followed by a second part (usually formulaic, too) that refers to persons or objects related to the protagonist. If persons are related to that protagonist, they normally figure as a part of the protagonist’s family (usually wife and/or children). Typically, the actors introduced in the intrada remain anonymous and are referred to generic terms (*adamar/išq’ar* ‘man’, *čoban* ‘shepherd’, *čubux* ‘wife’, *xinär* ‘daughter’, *ğar* ‘son’, *pasč’ax/padčəğ* ‘king’ and so on). Qualifying versions of these terms (such as *q’o ʒa* ‘old man’, *kasib* ‘poor one’ etc.) usually invite the audience to adjust their preliminary TWM accordingly. Names are extremely rare. The function of these names is not fully clear: Names like *Rost’om* ~ *Rust’am*, *Teymur*, or *Arzuman* are standard names among Udis and cannot be regarded as emblematic or as reflecting known historical persons in the Udi communities. Only in more recent tales from Nij, the intrada alludes to localization features. Normally, the corresponding terms are unspecific, too, except for the term *ayz* that means both ‘world and village’ (cf. Georgian *sopeli* ‘village, country, world’) and that is frequently used to denote ‘Nij’ (by speakers from Nij). Accordingly, it is difficult to say what is meant by *ayz* in an intrada like *buney tenebuy ayizin cilin šaq’q’ina p’a k’ožebuy* ‘It was, it wasn’t, in the lower part of a/the<sup>2</sup> village (or: of Nij<sup>3</sup>) were two houses’ (Keçaari 2001). We may assume that tales with intradas of this type are rather young or that they refer to a TWM different from that of standard Udi narratives relating them more to the genre of legends (see Tangherlini (2015 [1994]) for distinctive features of the legend genre).

Quite typically, Udi intradas do not relate the plot of the tale to a specific time. Nevertheless, all intradas I was able to collect are marked for past tense morphology (usually a perfect tense). As will be illustrated below, past tenses do not belong to the standard way of framing the tale with respect to time. Rather, the present tense is preferred. The use of past tenses in the intrada obviously serves to create a distance between the audience and the plot. Together with the formula ‘was - was not’ this technique prevents the listeners from testing the story against their autobiographical memory which would result in some kind of “remember experience” as described by Heaps and Nash (2001: 920; emphasis in the original):

Remember experiences constitute episodic retrieval and are characterized by *recollective experience*, the awareness of aspects of the encoding event such as images, thoughts, feelings, and knowledge specific to the event (...).

In order to illustrate what has been said above, table (7) lists the intradas of a set of Udi narratives:

<b>Intrada</b>	<b>Translation</b>	<b>Tale</b>	<b>Comment</b>
<i><b>baneke tene bake</b> sa q'o ža išq'are bake. šot'ay vu ġ ğar sa binebuy.</i>	It was, it wasn't an old man. He had seven sons and one daughter.	Biney čuresun (The Wish of the Bride).	Nij (1985)
<i>sa ġi azreil hare sa ayizlun k'o ža.</i>	One day, Azreil came to the house of an old man.	Ayizluq'a buš (The villager and the Camel)	Nij (1985) (anecdote)
<i><b>baneke tene bake</b> sa ayize Hävzärxo c'ila sa azuk'e bake.</i>	It was, it wasn't in a village a family named Hävzär.	Ači äyel (The Lost Child)	Nij (2001)
<i><b>baneke tene bake</b> sa išq'are bake. šot'ay baxčina kala sa e'snaxod buy.</i>	It was, it wasn't a man. In his garden, there was a large apple tree.	Baxčin e's (The Garden Apple))	Nij (2001)
<i><b>buney tenebuy</b> ayizin cilin šaq'q'ina p'a k'ožebuy.</i>	It was, it wasn't, in the lower part of a village there were two houses.	Bat'ki k'ožurux (The Destroyed Houses)	Nij (2001)
<i>diinyane zuzu- buzu uk'ala sa tavade buy. šot'oy c'i Teymurey.</i>	In the world, there was a certain king. His name was Teymur.	Dadali ele legenda (The Legend of the Cock Crow)	Nij (2001)
<i><b>samal äfčiney</b> <b>samal seriney,</b> ama next'uniy t'evaxt' metär sa äše bakey.</i>	It was a bit false, it was a bit true, but they said that at that time, there ways the following thing.	Oxlaq'uši legenda (The Legend of the Hoopoe)	Nij (2001)
<i><b>baneke, tene</b> <b>bake</b> sa padčağ. šot'ayal buney sa čuhux.</i>	It was, it wasn't a king. He had a wife.	Taral (The Lazy One)	Okt'omberi (1971)
<i><b>baneke tene bake</b> sa čoban. šot'ay buney sa čuhux sa ġar izi c'i Rost'om.</i>	It was, it wasn't a shepherd. He had a wife (and) a son, his name (was) Rustam.	Rost'om (Rustam)	Vartashen (1888)
<i><b>baneke tene bake</b> sa čoval. šot'ay ture sa cace</i>	It was, it wasn't a sparrow. A thorn was sticking in its foot.	Čoval (The sparrow)	Vartashen (1928)

<i>t'äq'eci.</i>			
<i>baneke tene bake sa padčag. šot'ay xib ğarebuy.</i>	It was, it wasn't a king. He had three sons.	Šükürbakala p'urio (The grateful Dead)	Vartashen (1928)
<i>baneke tene bake sa padčag. šot'ayal buney sa bili ži.</i>	It was, it wasn't a king. He had an advisor.	Padčagq'an naxərči (King and Shepherd)	Vartashen (1904)
<i>sa käsibi xib xiivärebuy.</i>	A poor man had three girls.	Šaxzadäq'a šaxvalad (The Prince and the Princess)	Vartashen (1904)

Table 7: *The intradas of 13 Udi narratives*

Summarizing this section, we can state that Udi intradas, safely embedded into the model of Oriental intradas, mainly serve just to activate the TWM related to the genre of folk narratives. The audience is furnished with some basic information about some of the protagonists, occasionally supplemented by rudimentary information about the world they live in. The anonymity of time and location does not necessarily create a distance between the milieu the audience lives in and the milieu of the tale. It is rather likely to assume that this feature positively supports the reconstruction of the milieu of the tale by the audience: When I once asked one informant where she thinks the tale “The Grateful Dead” has been set in, she answered: “Well, around here, I think!”.

Normally, Udi intradas do not entail action schemas or event images. This can be seen from the intrada of “The Grateful Dead”: *baneke sa pasč'ağ met'ay banekey xib ğar* ‘It was, it was not a king. He had three sons’ (see (4) for glosses). Nevertheless, naming two different (set of) protagonists allows the audience starting from a model that is grounded in some kind of (usually problematic) interaction between (here:) father and sons. Nevertheless, the intrada (in the sense of a genre identifier) activates a preliminary TWM that also includes models about “what will happen”. The audience thus starts from corresponding expectations to be by large satisfied by the genre token they listen hardly ready to accept pronounced deviations from the TWM activated by the intrada.

### 6.5.2 Type 2: Actors

As for GD, it is difficult to determine who is the main protagonist of the story. Starting from the notion of ‘salvation tale’, we can relate this role to the dead person who is temporarily transfigured into the servant of the prince. This gives him the chance to earn money in order to pay his debts and likewise to reward the prince for having saved him (by fighting with devils, presenting valuable goods, and arranging a marriage). Still, if we compare the Partiturs for ‘servant’ and ‘prince’, we arrive at a different picture, cf. diagrams (4) and (5):

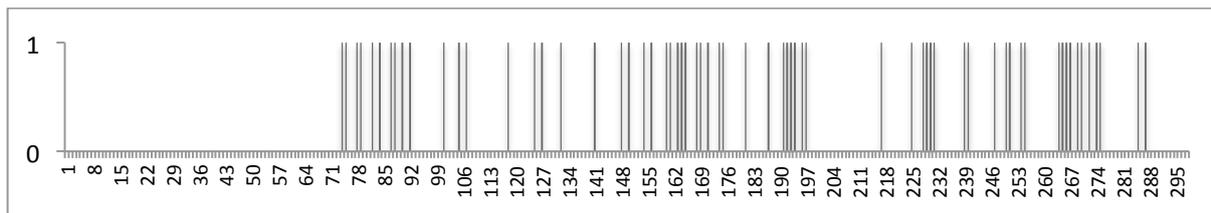


Diagram 4: *Lexical and anaphoric reference expression of the protagonist 'servant'*

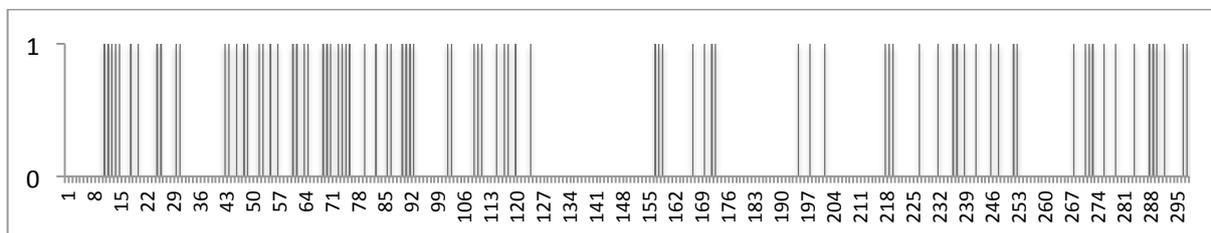


Diagram 5: *Lexical and anaphoric reference expression of the protagonist 'prince'*

The two Partiturs illustrate that it is the 'prince' who is referred more frequently (85 times) and more evenly in the text than the 'servant' (64 times). These data suggest that the 'prince' is seen as the main protagonist even though he does not represent the original hero of the salvation tale as such. Obviously, the higher ranking of the 'prince' as opposed to the 'servant' reflects a social world model that would not allow a subordinate individual to be more central than the superior in rank. In this sense, the 'servant' can be seen as occupying the typical 'helper' role in the sense of Propp (1928).

The tales includes some other actors (or: agonists) who, however, play a marginal role only. Most importantly, the tale is devoid of a pronounced antagonist. The only concept that can be tentatively associated with this role are the seven devs (one of whom is talking clandestinely to the prince's dog). However, they occur more indirectly than directly in of scene only and do not act on the main protagonist. Nevertheless, they are relevant to the plot because their goods as well as parts of their bodies (their ears) enable the servant to help the prince. The prince's father, that is the king, plays a more crucial role. He serves as some kind of secondary helper giving his son appropriate advise. Likewise, his domain represents the locational center of the tale: His 'home' (most likely conceptualized as an Oriental form of a castle) is starting point and endpoint of all motion activities, see the corresponding Partitur in diagram (6):

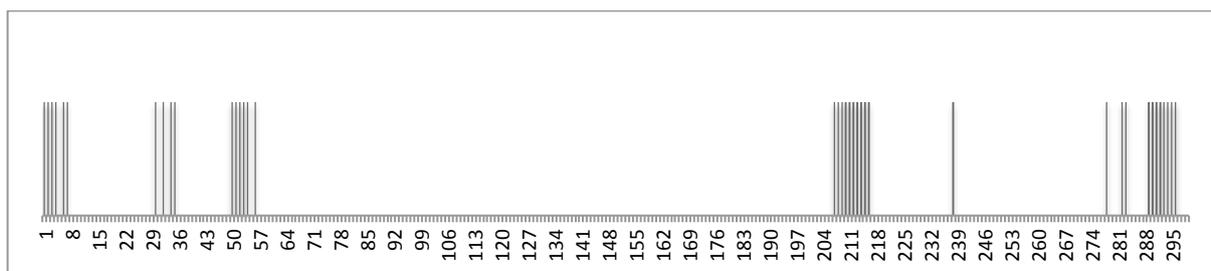
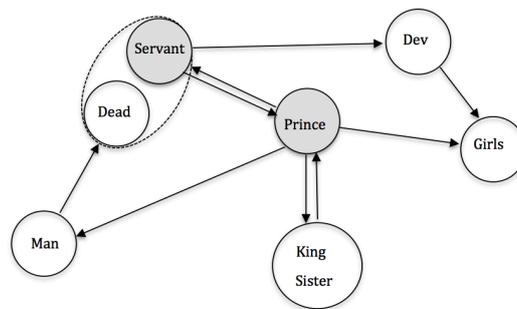


Diagram 6: *Reference towards king an his home (castle) in GD*

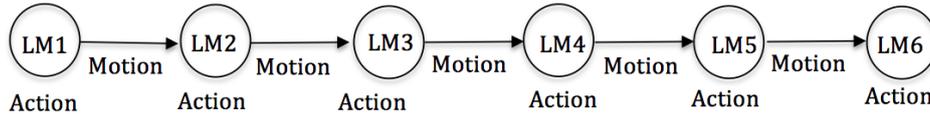
In addition to the king (*pasč'ağ*), the 'home' (Udi *k'oʒ*) is populated by the prince's two elder brothers and by a sister (*xunči*) who, however, play the role of just background actors. Else, the tale refers to a group of merchants (*sövdäkär*), to the prince's hound (*tul*), and to the man (*adamar*) hitting the grave of the debtor. The role of these units can be termed 'background actors', too. The dog (being killed by the servant in order to get its blood) plays the role of a magical instrument rather than that of an actor. In addition to these agonists, the tale mentions three girls (robbed by the devs) who will be married to the king's three sons. These girls cannot be referred to in terms of an actor role. Rather, they serve as some kind of décor, typical for many (not only) Oriental folk narratives. Graphic (8) illustrates the basic interactional schema of the relevant agonists:



Graphic 8: An interactional schema of the main agonists in GD

### 6.5.2 Type 2: Narrative Space

Herman (2001: 534) has pointed out that “telling a story necessitates modelling, and enabling others to model, an emergent constellation of spatially related entities”. More precisely, we can expect narratives to be grounded in “a process of cognitive mapping that assigns referents not merely a temporal but a *spatiotemporal* position in the storyworld” (Herman 2001: 535, emphasis in the original). In this sense, a cognitive map can be seen as “a mental model of *spatial* relations” (Ryan 2003: 215, emphasis in the original). Typically, the space construed in a folk narrative such as “The Grateful Dead” is grounded in a set of rather generic landmarks that are devoid of being named and hence concretized. The audience can relate these landmarks to their own experience only in the sense that they know of the *possible* existence of such landmarks. The dimension of such *possible spaces* is normally confined to the experiential world of the audience, which makes narrative spaces a part of the ecotype of a folk narrative (see section 3.1). We cannot expect such tales to refer to exotic spaces the landmarks of which would be inexistent in the world models of the listeners. In other terms: Landmarks in folk narratives reflect highly conventionalized, i.e. socially anchored models of space. Nevertheless, the presence of landmarks is crucial to the plot of especially Oriental folk narratives. Quite typically, the hero has to leave his home for which reason so ever (often because of a conflict ‘at home’) and thus starts traveling around or to another place. Normally, it is this phase of absence from home, in which the original action takes place. Having accomplished his task (and sometimes being transfigured into another gestalt) he then returns home solving e.g. the conflict. Hence, we can expect that folk narratives usually entail sequences of landmarks, being related by motion acts of the hero. A basic model would be:



Graphic 9: Landmarks in correlation with motion and action in folk narratives

Accordingly, action takes place within the region of the landmarks, whereas the relation between the landmarks is marked mainly for telling the traveling event itself. More rarely, the motion event is referred to in terms of a landmark itself, in which certain actions take place.

In sum, the tale “The Grateful Dead” entails the following seven landmarks (numbers indicate frequencies):

(5)	Home	6	(one occurrence inferred)
	Graveyard	2	
	Resting place	2	
	Others towns	1	
	Bazaar	1	
	Town far away	1	
	Surroundings of home	1	
	Hole	1	

In sum, the tale includes fifteen landmarks which are referred to by rather generic terms, such as *ga* ‘place’, *kur* ‘hole’, *šähär* ‘town’, *bazar* ‘bazaar’, *gärämzäluğ* ‘graveyard’, *k'ož* ‘house’ (> ‘palace, castle’). Two terms are used to specify a landmark within a landmark, namely *otağ* ‘room’ (in the ‘hole’), and *kol* ‘bush’ (at the resting place (*ga*)). The text does not concrete topological or geographical features. Hence, the terms quoted above allude to the prototypical knowledge of the audience allowing them to construe the corresponding landmarks according to their encyclopedic and episodic knowledge. Diagram (7) illustrates that markers of location are distributed quite evenly:

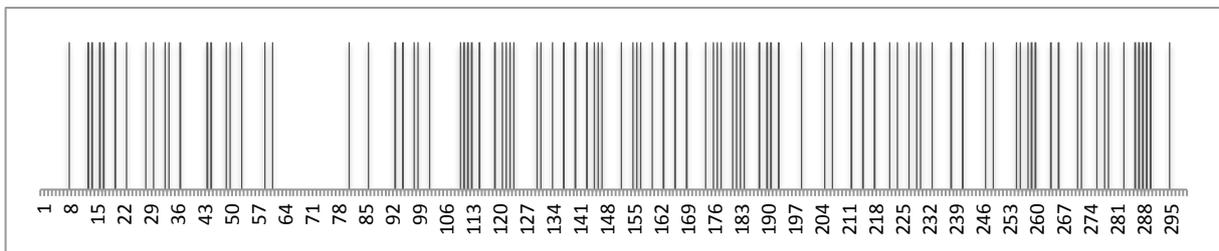


Diagram 7: The distribution of localizing elements in DG

Except for one crucial point, the tale does not mention concrete distances between the landmarks. The exception is given by mentioning two ways (*yaq'*) leading to another town where the merchants want to travel to (by horse, as indicated indirectly in the text):

- (6) *me šähärä p'a<sup>ʃ</sup> yaq'ne taysa: so vu<sup>ʃ</sup> ġ geneyne, so xib xašney. amma šute me vu<sup>ʃ</sup> ġ gene yaq'axo tanesa, hame yaq'algär batt'ek'sa; teq'o ababaksa or baksa, or te.*  
 ‘Two roads lead to this town. One is of seven days, the other (is) of three months. But whoever goes on (lit. from) the seven-days roads, however, perishes on the road. They don’t know whether he is or not.’ (Literal translation).

Berman (2009: 96-99) has presented some speculations about the number ‘three’ and ‘seven’ mentioned in this text. It goes without saying that they refer to the world of symbolic numbers, but it is probably too far-fetched to assume that they have been deliberately introduced in this text. Rather, we can assume that they simply reflect standard constructions to denote ‘nearness’ and ‘farness’. They are grounded in the marked values of ‘three’ and ‘seven’ in Oriental societies and frequently serve as emblematic numbers. In GD, ‘three’ and ‘seven’ occur e.g. in the following contexts:

- (8) The king has three sons.  
 After three days, the king interrogates his sons.  
 Three times (three days) the prince looks for a suitable servant.  
 There are seven devs.  
 The devs have robbed three girls.

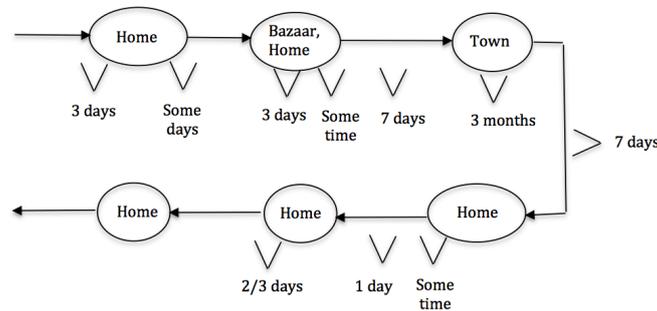
Other formula to indicate a span of time do not serve to measure the distance between two landmarks, but are used to indicate the time distance between sequences of action that take place within the same landmark, cf.:

- (9) *xib ġenaxo oša* ‘after three days’  
*saema ġenaxo oša* ‘after some days’ (3)  
*ošun ġi* ‘the next day’  
*xibumži ġena* ‘on the third day’  
*p'a<sup>ʃ</sup> xib ġenaxo oša* ‘after two-three days’

It is a typical feature of folk narratives that they rarely inform about the concrete localization of the given plot in history. In addition, they usually indicate the time spans between individual events within the tale very vaguely only, except from rather emblematic patterns (*seven days, three months* etc.) that represent aspects crucial to the plot itself (see Heindrichs and Heindrichs 1989 for a more general discussion). These observations also hold for GD. Today, the audience will locate the plot in a time prior to their own experience, because certain concepts are no longer relevant to their actual experience (*king, caravan, traveling by horse, servant, devs* etc.). Still, the tale takes up models of ‘earlier times’ and thus allows the audience to relate the events reported in the tale to these models. This feature, however, mainly concerns the setting of the tale itself (as expressed by its general configuration), not the individual events, which usually include mysterious or magic elements (usually transfigurations, magic charms or remedies etc.). Actually, such magic elements dwell upon

models of the past that include hypotheses about the possible givenness of such events in the past.

As expected, the internal temporal structure of the tale is not elaborated in details. Graphic (10) summarizes the time-related information given in the text (both explicit and inferred):



Graphic 10: *Time spans in GD*

The linguistic expression of points in time and time spans is not evenly distributed in the text, as shown in diagram (8) below. Most of these elements can be regarded as “pause” markers that are, however, not used to introduce descriptive sections (on the function of pauses in narrations see e.g. Genette 1980: 93-94). Rather, they are used as limiting signals and markers of new scenarios.

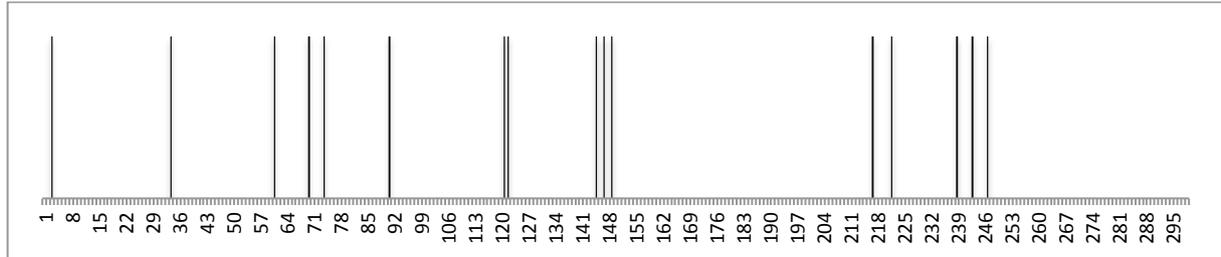
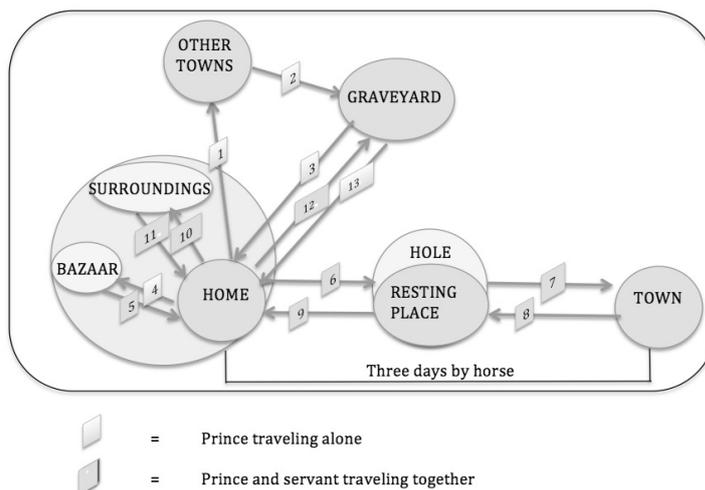


Diagram 8: *Explicit markers for TIME in GD*

Both the vague indication of locations and the vague use of time-related markers have the effect that the audience will construe the corresponding cognitive map in terms of a thumbsketch, only, cf. graphic (11):



Graphic 11: A schematic cognitive map of GD

### 6.5.3 Type 3: Lexical elaboration and conceptual density

An important point that helps the audience to relate a given text to the TWM preliminarily activated by the intrada is the expectation that the lexical elements of a given text mainly represent conceptual units typical for this TWM. This also means that the tale has to operate through a set of high frequent elements supplemented by lexical units that mirror the TWM token encoded by the individual text. In order to discuss this point, it seems useful first to consider the word classes and their corresponding frequencies, as they show up in GD, cf. table (8):

Word Class		Tokens	Lexical bases	Tokens p. LB
Open	Adjectives/Adverbs	101	25	4.04
Open	Nouns	349	76	4.59
Open	Verbs	392	98	4.00
Closed	Conjunctions, deictic adverbs, pragmatic markers etc.	74	15	4.93
Closed	Numerals (incl. indefinite use of <i>sa</i> 'one')	53	11	4.81
Closed	Postpositions	30	12	2.50
Closed	Pronominal elements	194	33	5.87
	Total	1193	270	

Table 8: Word classes in GD

Accordingly, 872 tokens (199 lexical bases) represent open word classes (nouns, verbs, and adjectives/adverbs), as opposed to 321 tokens (71 lexical bases) taken from the set of closed word classes. We can assume that lexical elaboration mainly dwells upon open word classes

because they offer a much larger repertoire than closed word classes. From a narrative as well as cognitive point of view, we can describe the relevant word classes as follows:

	Cognitive	Narrative
Nouns (embedded in Noun Phrases)	Object Images	Actors/Agonists/Objects/Location etc.
Verbs (embedded in Verb Phrases)	Relators	Actions, States, Processes
Adjectives/Adverbs (qualitative)	Specification	Profiling/coloring

Table 9: *The cognitive and narrative correlates of open word classes*

Classifying nouns (329 tokens) according to the role their referents play in the context of folk narratives, we can calculate the degree of elaboration of the individual domains by relating tokens to the corresponding types, cf. table 10:

	Types	Tokens	Tokens p. LB (Elaboration)	
Objects etc.	42	117	2,78	Strong  Weak
Time	6	24	4,00	
Localization	10	41	4,10	
Background actors	4	27	6,75	
Secondary actors	4	33	8,25	
Protagonists	2	87	43,5	

Table 10: *Degree of elaboration of semantic domains (nouns) in GD*

Domains marked for of a low  $TT_{LB}R$  (token-lexical base) are more elaborated than these with a higher TTR value. The table illustrates that the tales heavily relies on the two main protagonists (prince and servant). This is matched by the frequency list given in table (11) that includes all nouns that occur more than twice:

<i>ğar</i> 'son, boy'	47
<i>gädä</i> 'boy'	40
<i>yaq</i> 'way'	15
<i>gärämzä</i> 'grave'	11
<i>xinär</i> 'girl, daughter'	11
<i>baba</i> 'father'	10
<i>ği</i> 'day'	10
<i>mal</i> 'goods'	8
<i>pasčäğ</i> ~ <i>pasčax</i> 'king'	8
<i>pul</i> 'eye'	8
<i>šum</i> 'bread, meal'	8
<i>k'ua</i> 'at home' (< * <i>k'u-a</i> 'home-DAT')	7
<i>manat</i> 'ruble, manat'	7
<i>tängä</i> 'money'	7
<i>tula</i> 'dog'	7

<i>döv</i> 'dev'	6
<i>bias</i> 'evening'	5
<i>p'i</i> 'blood'	5
<i>sövdäkär</i> 'merchant'	5
<i>viči</i> 'brother'	5
<i>yalluğ</i> 'cloth'	5
<i>adamar</i> 'person, man'	4
<i>xat'ir</i> 'sake, remembrance, relevance'	4
<i>xunči</i> 'sister'	4
<i>ait</i> 'word'	3
<i>bə( ʳ)ğ</i> ~ <i>bi( ʳ)ğ</i> 'middle'	3
<i>ga</i> 'place'	3
<i>imux</i> 'ear'	3
<i>kur</i> 'hole'	3
<i>šähär</i> 'town'	3

säs 'voice'	3
vädä 'time'	3

vaxt' 'time'	3
xe 'water'	3

Table 11: Frequency of nouns ( $n > 2$ ) in GD

We can see that the text is highly repetitive with respect to nominal referents. The ten most frequent nouns (164 tokens) cover 49.8 % of all nouns. This figure nicely agrees with the assumption that TWMs of folk tales strongly rely on foreseeable units, which corresponds to a pronounced conceptual density.

When looking at verbs, we arrive at rather the same picture. In sum, the tale covers 362 verb tokens. The most frequent verb is *pesun* 'to say' (43 tokens). This is related to the fact that the tale is marked for a relative high degree of dialogic sections, cf. diagram (9):

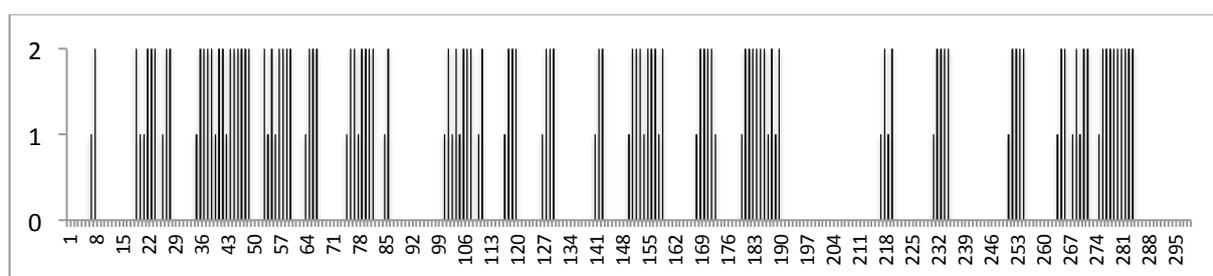


Diagram 9: Sequences of (in)direct speech (1 = speech act verb) in GD

Dialogic sequences are a typical feature of folk tales. They do not contribute to the general dynamic segments in a text, but report about the verbal interaction of agonists within a given situation. In this sense, they are typically related to events that take place within a landmark. The outcome of the dialogic event lays the ground for the presentation of the action events in the subsequent section.

Referring to the motion/action pattern illustrated in graphic (9), we can assume that the major part of the set of verbs is constituted by motion verbs (covering motion from one landmark to the other) and action/process/posture verbs (being related to events that take place within a landmark). This assumption is corroborated by the data, cf. diagram (10) that gives the percentage of semantic domains present in the text (again, I add the corresponding data from the Chechen tale “Man and Snake”):

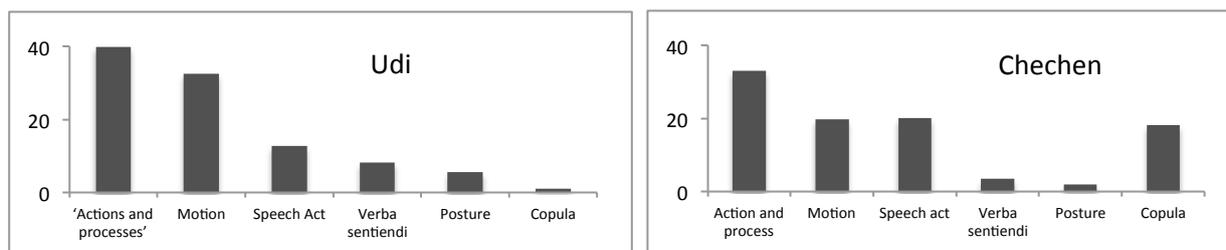


Diagram 10: Percentage of basic verb classes in “The Grateful Dead” (Udi) and “Man and Snake” (Chechen)

As shown in table (12), the degree of conceptual variation (TT<sub>LB</sub>R value) in the Udi tale is rather strong with action and process verbs, whereas motion verbs dwell upon just a small set of motion verbs:

	TOKENS	Tokens p. (Elaboration)	LB
Actions and processes	144	2.25	Strong  Weak
Verba sentiendi	30	3.33	
Copula	4	4.00	
Posture	20	6.66	
Motion	118	7.88	
Speech Act	46	23.00	

Table 12: Degree of elaboration of semantic domains (verbs) in GD

In fact, Udi can be by large classified as a ‘path conflating’ language, including information on directional aspects in the body of the lexical verb (*taysun* ‘move thither’ *e(y)sun* ‘move hither’, *baysun* ‘move in’, *laysun* ‘move up’, *ci(y)sun* ‘move down’, *qaysun* ‘move back’ etc.) whereas aspects of manner are indicated outside the verb (adverbs, converbs etc.). This typology limits the set of available motion verbs. Starting from table (13) that lists the verbs in GD that have a token frequency higher than 4, we can see that only four motion verbs are included (*ta(y)sun* ‘go, move thither’, *e(y)sun* ‘come, move hither’, *baysun* ‘enter, move in’, and *bap'esun* ‘arrive’). Note, however, that the tokens mentioned in table (13) also included participle version of *ta(y)sun* (> *taci*) and *e(y)sun* (*ari*) that tend to become grammaticalized units indicating the onset of an action (*taci*) and the ‘coda’ of an action (*ari*) respectively.

<i>pesun</i> ‘say’	43
<i>ta(y)sun</i> ‘go’	38
<i>e(y)sun</i> ‘come’	27
<i>baksun</i> ‘be(come)’	14
<i>be 'ğsun</i> ‘see’	12
<i>tast'un</i> ‘give’	12

<i>arcesun</i> ‘sit’	9
<i>biq'sun</i> ‘take, seize’	9
<i>mandesun</i> ‘stay’	8
<i>uksun</i> ‘eat’	8
<i>aq'sun</i> ‘take’	7
<i>bai(y)sun</i> ‘enter’	7

<i>zap'pesun</i> ‘pull’	6
<i>bap'esun</i> ‘arrive’	5
<i>besun</i> ‘do, make’	5
<i>ğac'pesun</i> ‘tie’	5
<i>t'ap'pesun</i> ‘hit’	5

Table 13: Frequency of verbs ( $n > 4$ ) in GD

The Partitur of motions verbs (diagram (10)) gives us the expected picture: Motion verbs may show up throughout the text, but they tend to cluster when the tale elaborates on motion events taking place in-between two landmark scenes:

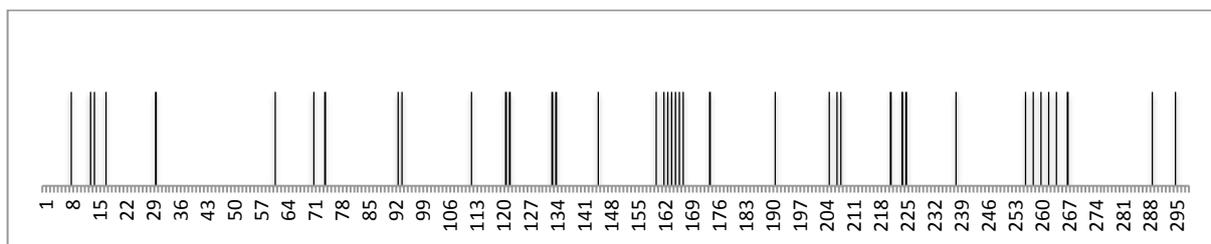


Diagram 10: *Motion verbs in GD (disregarding motion verbs in direct speech)*

Quite often, such clusters of motion events are preceded by dialogic sequences that anticipate the corresponding motion events (Type: He says: “Let’s go!” - They go.”), cf. diagram (11):

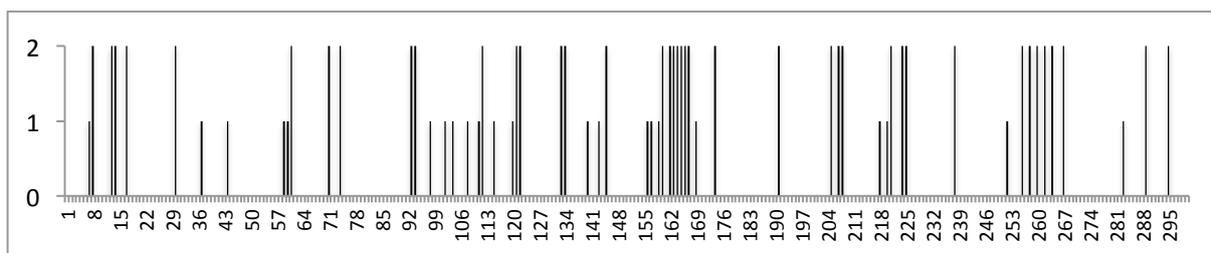


Diagram 11: *Motion verbs in GD (1 = motion verb in direct speech, 2 = other motion verbs)*

As has been said above, the domain of action/process concepts is more elaborated than that of motion concepts. In sum, the text entails 64 lexical bases of this type. Roughly 50 % (i.e. 34 tokens) are documented only once and 14 bases occur twice, which shows that the bulk of lexical entries (73.7 %) is selected according to the given action event. When relating the tokens of these text-idiosyncratic bases (62) to the number of tokens representing the domain under consideration in the text (144), the corresponding bases make up just 43 % of all relevant verbs. On the other side of the scale, we have six verbs that have more than six tokens each (*be ṡḡsun* ‘see’ (12), *tast’un* ‘give’ (12) *biq’sun* ‘take, seize’ (9), *uksun* ‘eat’ (8), *aq’sun* ‘take’ (7), and *zap’pesun* ‘pull’ (6)). Altogether, 56 tokens belong to this type (38.8 %). As expected, these verbs have a rather general meaning or result from the overall topic of the story. Note that the two verbs *biq’sun* and *aq’sun* (being etymologically related) both start from the concept of ‘taking’. When we interpret them as variant expressions of a single underlying concept (21 tokens), we can say that the story talks frequently talks about ‘taking events’ (14.5 %), ‘giving events’, and ‘seeing events’ (both 8.3 %).

Adjectives and adverbs can hardly be distinguished in Udi. From a conceptual perspective, they both are used to ‘color’ object images (linguistically expressed by nouns in their NPs) and event images (linguistically expressed by verbs in their VP). Starting from the assumption that both nominal referents and verbal concepts are strongly emblematic in folk narratives, we can expect that the domain of adjectives and adverbs is not strongly elaborated. In fact, only 17.19 % of all nominal referents (tokens) and 10.45 % of all verbal concepts (tokens) are marked for adjectival resp. adverbial ‘coloring’. The most frequent terms used in adjective function are *k’ic’k’e* ‘small, little, young’ (8), *bütün* ‘all’ (8), *kala* ‘old, great’ (5). As for the adverbial domain, significant units are *gölö* ‘much’ (17) and *ísa* ‘near’ (9). It is obvious that these terms do hardly qualify in details their heads. The terms *k’ic’k’e* ‘small, little,

young’ and *kala* ‘old, great’ are mainly used in the context of *ǵar* ‘son’, *viči* ‘brother’, and *xinär* ‘girl’ and hence can be seen as part of the original referential expression. The form *gölö* is mainly used as some kind of intensifier, lacking a particular semantics.

Quite in accordance with what has been said about the adjectival domain, nouns are rarely used with adnominal deictic elements. In sum, 33 such elements are given, cf. table (14):

	Nominal		Adnominal		Adverbial	
	Basic form	Tokens	Basic form	Tokens	Basic form	Tokens
PROX	<i>meno</i>	20	<i>me</i>	27	<i>mia</i>	10
MED	<i>kano</i>	1	<i>ka</i>	2	---	---
DIST	<i>šeno</i>	15	<i>t’e</i>	4	<i>t’ia</i>	0

Table 14: *The frequency of basic deictic elements in GD*

Hence, just 10.90 % of all nouns (tokens) are marked for a deictic element. The preferred target of the proximal (*me*) is *gädä* ‘servant’ with which *me* occurs nine times (out of 40 occurrences of *gädä*; 22.5 %). The second protagonist *ǵar* ‘son’ (here in the sense of ‘prince’, 39 tokens), however, is marked for three instances of use with an adnominal deictic element only (7.63 %). From this, we can infer that the use of the proximal has a pronounced function to symbolize solidarity and empathy with the ‘hidden hero’ (see Schulze 2008). As shown by diagram (12), the use of adnominal deictic forms is more massive in the second quarter of the text (sentences 85-115), which talks mainly about the onset of the original plot (preparation to travel to other town). accordingly, we may assume that the use of adnominal deictic forms is also motivated by intended emphatic effects supporting the suspense set up in this passage

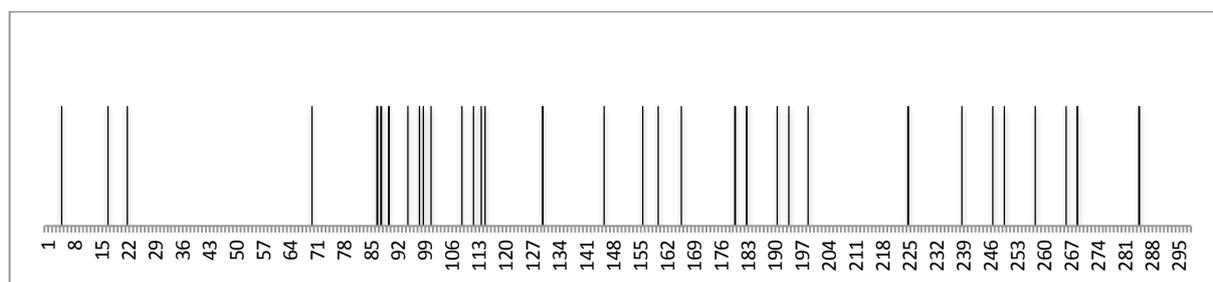


Diagram 12: *The distribution of adnominal deictic forms in GD*

The nominal deixis generally has anaphoric function in GD. Disregarding sentence-oriented anaphoric usage (proximal: 5, medial: 1, distal: 4), 36 nominal concepts (tokens, 6.29 %) are referred to anaphorically (proximal: 16, distal: 10). Quite in accordance with the assumption that the proximal is strongly related to aspects of sympathy and solidarity, the two heroes are exclusively referred to with the help of the proximal (six times), whereas a concept like *döv* ‘dev’ is coupled with the distal (three times). The fact that overt anaphors are rarely used in the text can be related to two features: (a) Udi tends to use the set of personal agreement clitics in terms of anaphors (see below 5.5.2) when in S/A function (subject) and occasionally when in IO function. Accordingly, the text is marked for a high frequency of zero anaphors

(155 occurrences). From this we can infer that overt anaphors are mainly related to grammatical relations that cannot be marked by agreement clitics, cf. table (15):

		PROX		MED		DIST	
S	ABS.SG	<i>mono</i>	5	<i>kano</i>	1	<i>šono</i>	0
	ABS.PL	<i>monor</i>	6	<i>kanor</i>	0	<i>šonor</i>	1
A	ERG.SG	<i>met'in</i>	1	<i>kat'in</i>	0	<i>šet'in</i>	3
	ERG.PL	<i>mot'ğon</i>	0	<i>kat'ğon</i>	0	<i>šet'ğon</i>	0
O, IO, IA, POSS, LOC			8				11
ALL			20		1		15

Table 15: *Nominal deictic forms and grammatical relations*

Obviously, this assumption holds especially for the distal. The proximal, however, is even more frequent with grammatical functions that are also encoded by agreement (S/A). Accordingly, the proximal seems to be motivated by pragmatic features, too, namely topic shift or topic specification (see below). In addition, we can observe that anaphoric elements are not distributed evenly within the text. As illustrated by diagram (13), they occur more frequently in the beginning, becoming rather marginal in the second half of the tale. This is mainly due to the fact that in the first part of the tale, the different actors are subsequently introduced together with certain actions associated with them. This feature conditions a relatively high degree of switch referent constructions (see below section 5.5.):

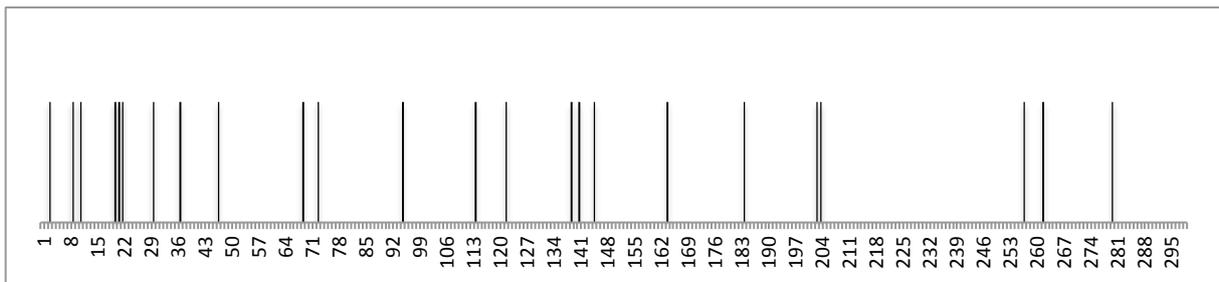


Diagram 13: *The distribution of nominal deictic forms in GD*

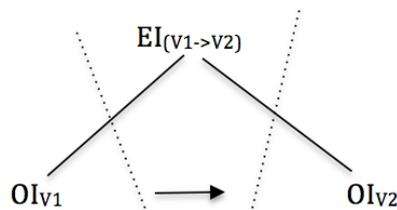
(b) When looking at the Chechen tale ‘Man and Snake’ (see above), we can observe nearly the same percentage of nominal referents being referred to anaphorically (7.45 %). This observation suggests that the relatively weak elaboration of explicit anaphoric strategies is a typical feature of some East Caucasian folk narratives. Actor concepts in given topic or resumed topic function are thus repeated rather than referred by an overt anaphora (see below 5.5.2, however, for the anaphoric value of agreement clitics). An example is given in (10):

- (10) *me gädinax enefesa. me gädinen gölö šel q'ulluğne besa, gölöal haq'ulluney. pasč'ağun ğara gölö me gädinax but'uqi. saema vädinaxo oša pasč'ağun ğaren kärvan ğaçpi, gädinaxal aq'i, tanesa q'eiri šähära ališveriš.*

'He keeps this **boy**. This **boy** serves very well, was very clever. The prince loved this **boy** very much. Some times later, the prince set up a caravan, took the **boy**, too, (and) goes to another town.' (Literal translation)

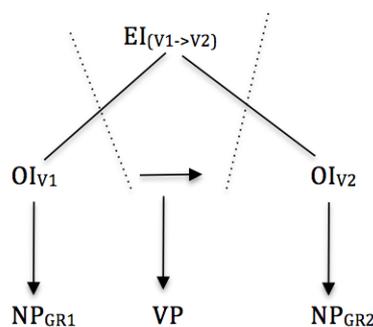
#### 6.5.4 Type 4: Actions schemas

As has been said above (5.2), the tale is marked for a rather rhythmic pattern concerning action schemas (confer again graphic (9)). In order to elaborate this point in more details, it is relevant to summarize those quantitative data that are related to grammatical relations. The corresponding calculi start from the assumption that cognitively, event images are processed according to a basic schema that relates two object images. The relator of these object images (OI) is inferred from the (changing) properties of the object images and shows up as a conceptual unit that can be seen as the meronymic expression of the underlying event image (EI), cf. graphic (12):



Graphic 12: *The basic structure of an Event Image*

The graphic includes symbols ( $V1 \rightarrow V2$ ) that indicate the conceptual values of the schema activated when processing an event image (see Schulze 2011a, 2014 for details). The values of such schemas (such as figure  $\rightarrow$  ground, actor  $\rightarrow$  undergoer etc.) are structurally coupled with the corresponding object image thus marking its conceptual role in the event image.



Graphic 13: *The linguistic representation of the Event Image structure*

Linguistically speaking, nouns phrases (NP) are the standard expression of object images, whereas relators are represented by verb phrases (VP). The schematic values show up as grammatical relations (GR; see Schulze 2000).

In the context of the framework referred to here, I start from the following grammatical relations:

- (11) S Subjective: The central actant (*figure*) in non-causal relations.  
 A Agentive: The actant instigating or controlling a causal relation.  
 (Semantic role: Agent).  
 O Objective: The being directly affected by the agentive of a clausal relation  
 (Semantic role: Patiens).  
 IA Indirect Agentive: The actant ‘executing’ a causal relation without  
 instigating or controlling it.  
 (Semantic role: Instrumental).  
 IO Indirect Objective: The actant towards whom a causal relation is oriented.  
 (Semantic role: Recipient/Experiencer).  
 LOC Locative: The peripheral actant (*ground*) in non-causal relations.  
 (Semantic role: Locative)

**ADD GR-overview**

	OVERT	%	ANAPH	ALL	%
S	87	20,6%	59	146	25,3%
A	82	19,4%	74	156	27,0%
IA	1	0,23	0	1	0,1%
O	137	32,4%	19	156	27,0%
IO	14	3,3%	3	17	2,9%
LOC	101	23,9%	0	101	17,5%
	422		155	577	

Disregarding secondary processes (such as split patterns etc., see Schulze 2000), the following basic patterns can be described:

(12)

Non-causal	S -> [LOC]	Standard non-causal, intransitive patterns
	S -> IO	Experiential patterns ( <i>verba sentiendi</i> )
Causal	A -> O [LOC]	Standard causal, transitive patterns
	A -> O IO [LOC]	Di-transitive patterns
	A IA -> O [LOC]	Di-agentive patterns

Grammatical relations marked by square brackets are facultative. In Udi, grammatical relations are expressed with the help of case, agreement (S, A, IO), and - less obvious - word order. Table (16) lists the frequency of basic patterns, marked by case with overt NPs case and/or by agreement:

S ->	59	19,79 %	47.65 %
S -> LOC	83	27.85 %	
A -> O	120	40.26 %	52.35 %
A -> O LOC	18	6.04 %	
A -> O IO	17	5.70 %	
A IA -> O	1	0.33 %	
	298		

Table 16: *The frequency of basic GR patterns in GD*

ADD Details:

	Overt		Mit Anaphern	
S ->	33	21,5%	59	19,7%
S-> LOC	51	33,3%	81	27,1%
S -> S	0	0,0%	1	0,3%
A -> O	56	36,6%	121	40,6%
A -> O IO	5	3,2%	17	5,7%
A -> O LOC	8	5,2%	18	6,0%
A -> O IA	0	0,0%	1	0,3%
	153		298	

Accordingly, causal (transitive) patterns are slightly more frequent than non-causal (intransitive) ones. The assumption according to which event images are processed prototypically by a schema that relates two NPs with the help of one VP is corroborated by the corresponding statistical values for GD. In sum, the text includes 384 NPs to which we have to add zero-anaphors in S/A function (133 tokens). Hence, 517 NPs are used with 298 VPs. This gives us a mean of 1.73 NPs per VP. The text does not fully meet the ideal value of 2.0 NP per VP, because 60 causal or non-causal phrases are marked for the masking of the peripheral element (basically O or LOC). However, we can assume that most of these patterns allow the audience inferring the corresponding domain, cf. as an example:

- (13) *eq'q'ara-te*                      *pasč'ağ-un*      *ğar-en*                      *k'al-le-xa*  
how=much-SUB                      king-GEN                      son-ERG                      call-3SG-LV.PRES

*[me-t'-ux]*                      *te-ne*                      *arc-esa.*  
[PROX-SA-DAT2]                      NEG-3SG                      sit-PRES

'As often as the prince<sub>A</sub> calls [him<sub>O</sub> = the boy], he<sub>S</sub> [= the boy] does not sit down.'

If we add the figures for those clauses that are marked for such masked actants, we get a total of 577 NPs and a NPpVP value of 1.93, which comes rather close to the ideal value of 2.0.

Diagram (14) illustrates that both non-causal and causal event images tend to cluster. This goes together with the assumption that the model of narrative space consists of sequences of action events interrupted by motion/state events (see 5.2).

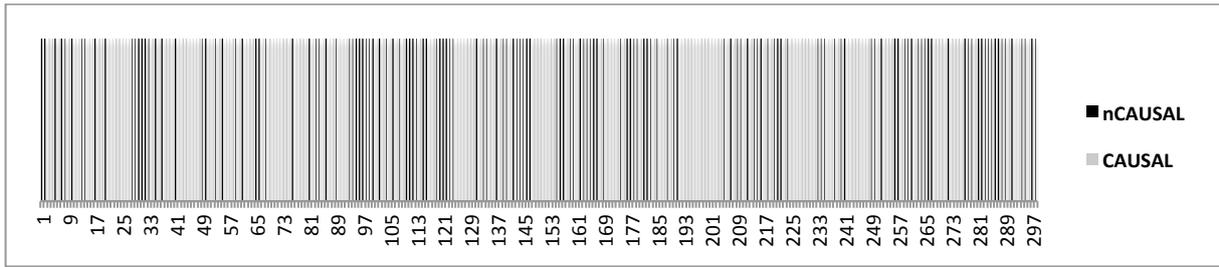
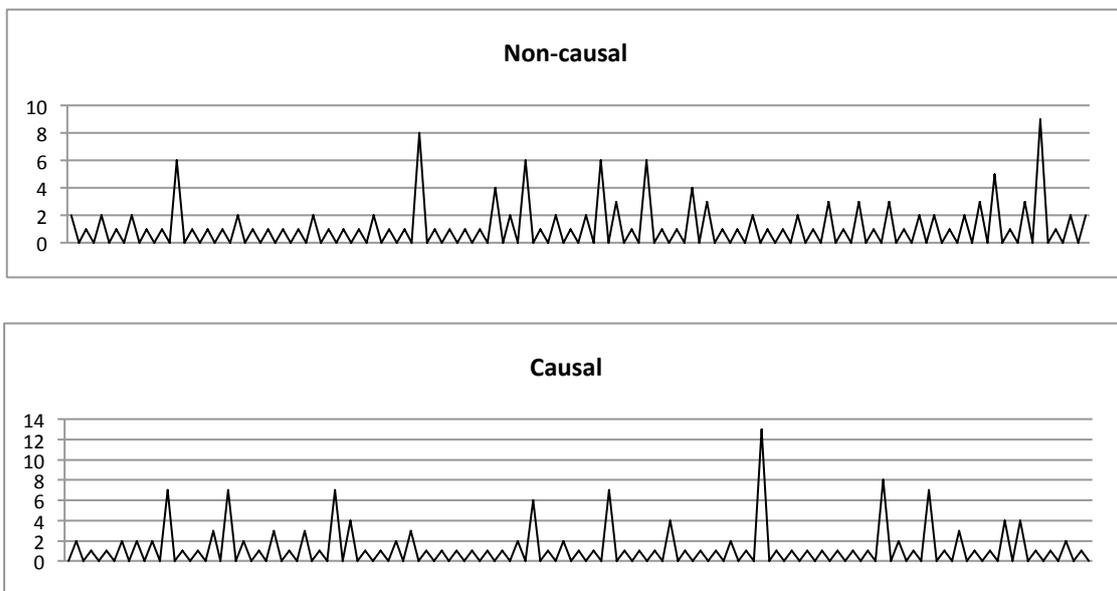


Diagram 14: *Non-causal and causal event images in GD*  
*(1 = S -> [LOC]; 2 = A -> O [LOC, IO])*

Diagrams (15a) and (15b) give the length of the individual non-causal and causal intervals, as they show up in the text:



Diagrams 15a and 15b: *Intervals and length of non-causal (15a) and causal (15b) sequences in GD*

In sum, there are 68 non-causal sequences and 67 causal sequences. The mean length of non-causal sequences is 2.10, that of causal sequences is 2.29. On a micro-level, we can thus describe a preference for sequences of the type nCAUSAL (- nCAUSAL) - CAUSAL (- CAUSAL), that is for sequences like “X moved (and moved). [Then] X/Y did A (and did B)”, confer table (17):

Interval	Frequency	
	Non Causal	Causal
1	36	39
2	16	11
3	7	5
4	2	4
5	1	0

6	4	1
7	0	5
8	1	1
9	1	0
13	0	1

Table 17: *Frequency of non-causal and causal intervals in GD*

Nevertheless, the text is also marked for larger sequences, the maximum being 9 for non-causal patterns and 13 for causal patterns. These larger sequences can be easily related to the above-mentioned tendency to cluster non-causal and causal event images.

It should be born in mind, however, that the analyses presented so far include passages that reflect direct or indirect speech. Strictly speaking, these passages contribute only little to the action chain itself, both rather anticipates certain actions or comment upon them. In this respect, 93 simple clauses (31.2 % of all clauses) are concerned, cf. diagram (16) that indicates the sequences of direct or indirect speech (also compare diagram 9):

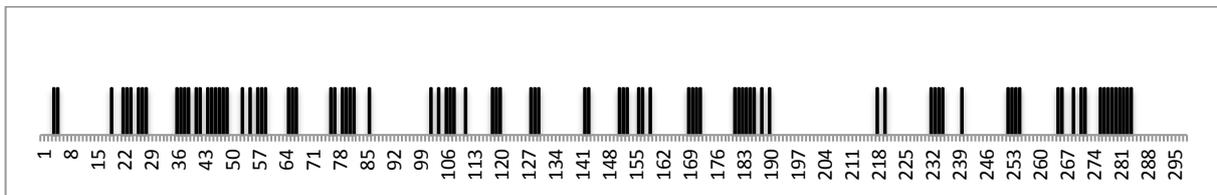


Diagram 16: *Sequences of (in)direct speech in GD*

The 205 simple clauses that do not include (in)direct speech include 94 non-causal patterns (45.85 %) and 111 causal patterns (54.15 %). These values, however, do not differ markedly from the corresponding values that include (in)direct speech (see again table 16):

	Including (in)direct speech	Excluding (in)direct speech
Non-causal	47.65 %	45.85 %
Causal	52.35 %	54.15 %

Table 18: *Non-causal and causal patterns and the givenness of (in)direct speech*

From this we can infer that the overall patterns related to the distribution and sequencing of non-causal and causal event images as described above are grounded in the overall patterns of sequencing the actions of the tale themselves.

### 6.5.5 Type 5: Information Flow and Pragmatic patterns

As has been said in the introductory sections, the audience of a linguistic action that represents a given rhetorical genre activate type expectations related to the corresponding text world model. Apart from the types discussed in the previous sections, patterns of information flow and pragmatic strategies play an important role in this respect. East Caucasian folk narratives are usually devoid of explicit procedures to produce suspense factors or some kinds of coup de theatre. Likewise, they often lack “pause[s] that halt(s) the action to provide

description” (Emmott 1997: 242). In the following section, I will discuss some data in GD that are related to this topic.

### 6.5.5.1 Foreground/Background

There are multiple proposals available to refer to the “Foreground/Background” distinction in narratives (see e.g. Emmott 1997: 244 for a summary). In this essay, I will take up the proposal by Erbaugh (1987: 109) to interpret “foreground” as “pivotal points” that are “the most important events in the story, which would not make sense without them”. Erbaugh has argued that “[f]raming a description of the pivotal events in a narrative requires the greatest amount of planning and effort”. Moreover, “[a]ll speakers share a common monitor which rations their linguistic energy: they only add background and editorial comments if they have an energy surplus” (Erbaugh 1987:109). The appropriate sequencing of pivotal events in terms of foreground information thus mirrors the audience’s expectation that these events are ordered in accordance with their proper world knowledge. In this sense, corresponding tales should be structured in a way that frees the audience from putting additional cognitive efforts to process the sequences of pivotal foreground information. Normally, the sequences of foreground information are thus constantly related to the plot of the tale being formatted according to the underlying text world model. Background information is often devoid of this dependency. It can be seen as a ‘local’ pattern being related mainly to the pivotal event it is linked with. Whether or not background information patterns are given in folk narratives often depends on the type of rhetorical sub-genre. We may assume that the function of background patterns is (among others) to convey additional information related to specific units of the audience’s world knowledge or to activate knowledge segments established by preceding pivotal segments of the text. Hence, background information has a strong interactive component that is typically given e.g. with narratives in the *meddah* tradition (see section 4.1). Hence, the givenness of massive background information patterns suggests a sub-genre different from that in GD. Highly formalized folk narratives (such as GD) lacking an explicit interactive component tend to concentrate on the elaboration und sequencing of pivotal foreground information as expressed by main clauses. Background information is often related to descriptions and descriptive pauses in the sense of Genette (1980: 93-94). In GD, two such descriptive pauses occur: One pause explains the problems related to the two roads leading to the town far away, the second talks about the provenience of the goods, and the third one reports about what has happened to the king while the son was away. However, there are no specific linguistic markers that would signal the beginning of the given descriptive pause, compare (14), (15) and (16) that illustrate the two pause sequence (bracketed by ‘#’):

- (14) *tanesa q'eiri šähära ališveriš. met'uğoxol taq'unsa q'eiri sövdäkäruxal. #me šähärä p'a ʿ yaq'ne taysa: so vu ʿğ ğeneyne, so xib xašney. amma šute me vu ʿğ ğene yaq'axo tanesa, hame yaq'algär batt'ek'sa; teq'o ababaksa or baksa, or te#. me ğädinen pasč'ağun ğarax exne te (...)*  
 ‘He goes to another town for trading. The other merchants go with them. #TWO ROADS LEAD TO THIS TOWN: ONE IS OF SEVEN DAYS, THE OTHER (IS) OF THREE MONTHS. BUT

WHOEVER GOES ON (LIT. FROM) THE SEVEN-DAYS ROAD, HOWEVER, [THIS ONE] WILL PERISH ON THE ROAD. THEY DO NOT KNOW WHETHER HE IS OR NOT#. This boy says to the prince (...)’ (Literal translation).

- (15) *pasč'ağun ġaren zap'nexa ala. #me malurux bütiin dövurğon yaq'č'ebakalğoxoq'un fuq'p'e ičuğoxal besbe#.*

‘The prince pulls up (all goods etc.). #ALL THE DEVS HAVE ROBBED THESE GOODS FROM THOSE WHO PASSED THE WAY (AND) KILL THEM [THE TRAVELERS]#.’

- (16) *k'ua ari be ʿġsaq'un te ičuğ baba k'aćine bake, xunči dange bake. #evaxt'e iq'obaksa ičuğ ġar isa yaq'enne tace, babanq'an xinären šet'ux p'uriq'un hesabbi, gölö o ʿnepsaxo, fikirbesaxo baba pul k'aćine baki, xinär däng#.*

‘Having come home they see that their father has become blind, (and that) the sister (has become) insane. #WHEN THEY HEAR THAT THEIR SON HAS GONE THE NEAR WAY, THE FATHER AND THE GIRL THOUGHT HIM DEAD; BECAUSE OF MUCH WEEPING AND THINKING, THE FATHER’S EYE BECAME BLIND, (AND) THE SISTER (BECAME) INSANE#.’ (Literal translation).

In fact, all three descriptive pauses are strongly embedded into the pivotal event sequences. Else, background information is typical for subordination strategies in Udi. Udi allows both clausal subordination and subordination marked for participle and converbial constructions. In GD, subordination is rather marginal, cf. diagram (17):

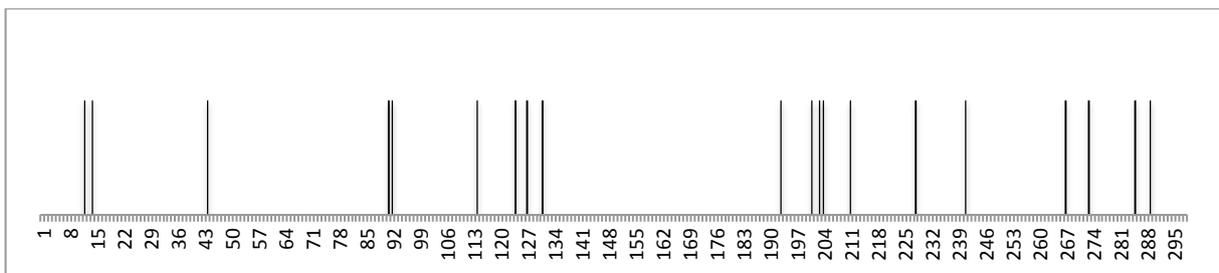


Diagram 17: *Background information (subordination, without complement clauses).*

This diagram ignores some particle constructions that can be seen as constituting a single event image together with the given finite verb, as in the following example:

- (17) *ič-uğ-o imğ-ox k'ac'-p-i*  
REFL-PL-GEN ear-PL.DAT2 cut-LV-PART.PAST

*yalluğ-a-ne bay-exa.*  
cloth-DAT-3SG into-LV.PRES

‘He cut off the ears of the devs and put (them) into a cloth.’

Diagram (17) shows that clausal subordination rarely occurs in GD. Out of 298 simple clauses, only 20 (6.71 %) are subordinated structures. Obviously, the tale concentrates on the

chaining of main events rather than adding background information. This observation goes together with the assumption given above according to which GD belongs to the non-interaction sub-genre of folk narratives.

### 6.5.5.2 Pragmatic strategies

Additionally, a restricted set of pragmatic marking techniques is applied in Udi in order to elaborate the overall pattern of information structuring alluded to so far. Apart from minor patterns of word order variation, the following techniques are available to Udi speakers (Vartashen dialect):

(18) (a) Pivot and event chaining

(b) Definiteness/Indefiniteness:

Use of adnominal deictic units to highlight the definiteness of nominals.

Use of the numeral *sa* ‘one’ to mark indefinite nominals.

Use of O-split techniques to mark (un)specific or (a)typical referents in the Objective domain of causal patterns.

(c) Focal strategies:

Emphatic/Additive focus clitic *-al*.

Contrastive focus clitic *-gena*.

Floating agreement clitics focusing their non-verbal host.

Most of the corresponding techniques and strategies entail language-specific features. This holds especially for pivot assignment. Nevertheless, the dimensions enumerated in (18) are flexible enough in order to allowing relating at least some of the respective patterns of the text to the rhetorical sub-genre of Udi folk narratives.

#### 6.5.5.2.1 Pivot and event chaining

Except for the occasional use of passive constructions (see Schulze 2014), Udi does not apply pronounced strategies to center or foreground NPs marked for grammatical relations other than Subjective or Agentive (and Indirect Objective with *verba sentiendi* in the Vartashen dialect). Still, we cannot fully include Udi in the typology of role-dominated languages in the sense of **Foley and VanValin** (1984). The functional value of case strongly depends on the nature of grammatical relation encoded by the corresponding case, cf. the following correlations (relevant case forms only):

	GR	Semantic role	Syntactic role	Pragmatic role
Absolutive	S	Non-causal actant in figure domain	Foreground	---
	O	‘Effect’ domain in causal relations	---	Non specific; new topic

Ergative	A	‘Cause’ domain in causal relations	Foreground	---
	IA	Indirect actor in causal relations	---	---
Dative	IO	Actor indirectly effected by causal relation	---	---
		Experiencer	Foreground	---
	LOC	Peripheral domain (ground), location	---	---
Dative2	O	‘Effect’ domain in causal relations	---	Specific, typical; given topic
	LOC	Peripheral domain (ground), location	---	---

Table 19: *The functional domains of basic case forms in Vartashen Udi*

Hence, the absolutive in non-causal and the ergative in causal clause patterns are used to encode the centered object image. Normally both case forms also have pivot function: In case of co-referential sequences in S/A function, an overt NP is followed by zero anaphors, cf. table (20):

Linker	Pivot (A)	O, IO	LOC	Verb	
	<i>gädinen</i>	<i>ič yalluğax</i>	---	<i>čičeri,</i>	‘The boy pulls out his cloth’
	∅	∅	<i>tulin p’ine boš</i>	<i>čapnexa</i>	[He] dips [it] into the blood of the dog.’
<i>oša</i>	∅	∅	<i>ič žubnune</i>	<i>laxsa</i>	Then he puts [it] into [his] pocket.’
<i>šet’uxo oša</i>	∅	<i>pasč’ağun ğara</i>	---	<i>exne (...)</i>	After that, [he] says to the prince (...)

Table 20: *Example of co-referential chains in GD*

Normally, the encoding of the S/A function is supported by floating agreement clitics (*-ne* (3sg) marked by bold letters in table (20)). The clitic is missing especially in the first unit of a co-referential clausal sequence, in case the verb is marked for anteriority. In this sense, the function of Udi agreement clitics also covers that of anaphora. In addition to the S/A-pivot, Udi also allows zero anaphors with the Objective domain (cf. the NP *ič yalluğ-ax* (dative2) ‘his cloth’ in the example above). Contrary to the S/A-pivot, however, this secondary pivot is not taken up by agreement elements. Still, the overwhelming majority of zero anaphors is related to the main pivotal domain (S/A), cf. table (21)):

S	59	133
A	74	
O	19	
IO	3	
	155	

Table 21: *Zero anaphors in GD*

As can be seen from the Partitur in diagram (18) zero anaphors in S/A function tend to cluster:

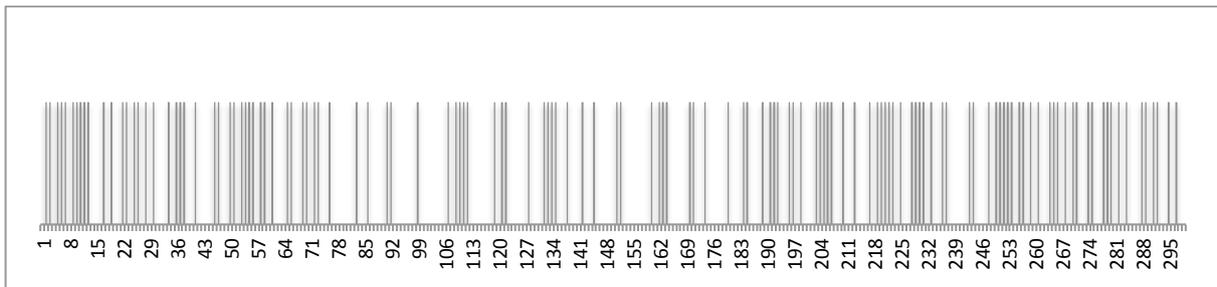


Diagram 18: *The distribution of zero anaphors in S/A function in GD*

Obviously, zero anaphors are a relevant tool to construe larger chunks of events marked for a relatively high degree of amalgamation. This observation is in accordance with the assumption that the text world model underlying a sub-genre like that one represented by GD includes a structural pattern as illustrated in (19):

(19)  $ES_{PIV} \rightarrow \text{switch} / ES_{PIV} \rightarrow \text{switch} / ES_{PIV}$

Accordingly, event sequences (ES) marked for a common topical pivot (PIV) are interrupted by switch reference procedures introducing a new event sequence. Diagram (19) gives the corresponding Partitur for the first 55 simple clauses of GD:

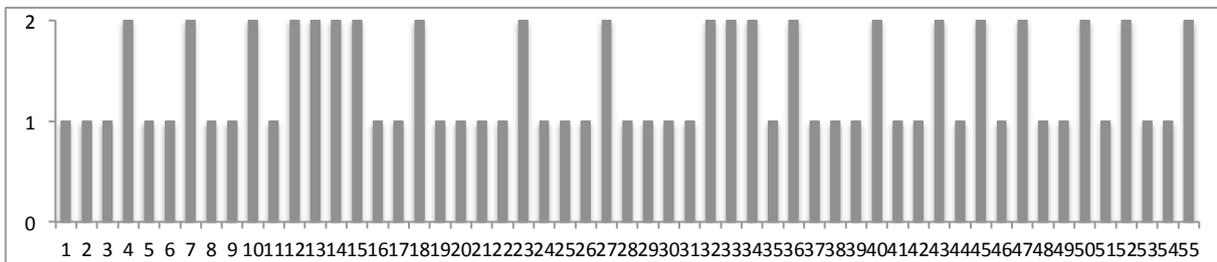


Diagram 19: *Co- (1) and switch reference (2) in SC 1-55 in GD*

The text entails 164 event sequences, which gives us a mean of 1.81 events per sequence. Table (22) gives the corresponding figures:

Number of events in ES	Frequency
1	93
2	34
3	23
4	6
5	5
6	2
7	1

Table 22: *Length of event sequences in correlation with frequency*

The maximal length of pivot-controlled event sequences thus is seven. Diagram (20) illustrates that larger sequences occur especially toward the end of the tale:

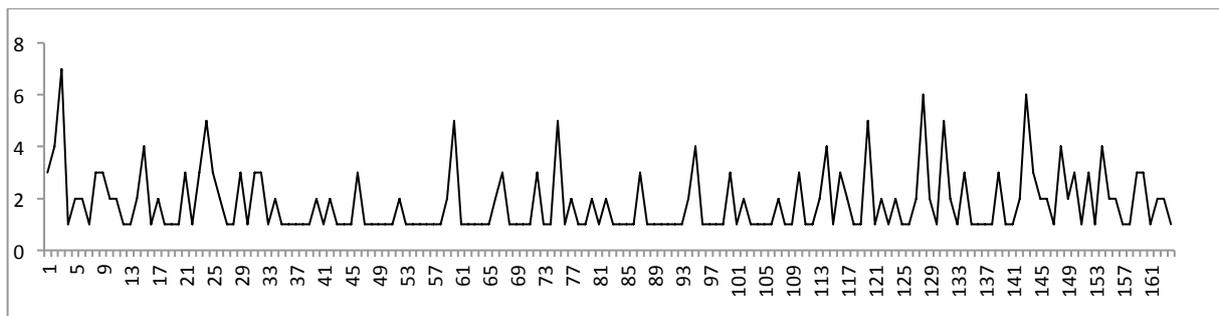


Diagram 20: *The textual sequencing of ES in correlation with length of ES*

The pattern showing up in diagram (20) suggests that the second and third quarters of the narrative are marked for relatively short event sequences controlled by the given pivotal referent. This pattern seems to mirror the corresponding TWM that includes models of how a folk narrative is structured as for its ‘tempos’, cf. (19):

- (20)    Layout/Framing    →    Longer event sequences (‘lento’)  
           Action                →    Shorter event sequences (‘vivace’)  
           Consequences      →    Longer event sequences (‘grave’)

The basic tempo markings are given here for illustrative purpose only and serve to symbolize the ‘action pace’ of the tale.

#### 6.5.5.2.2 Definiteness/Indefiniteness

Patterns related to (18b) allow judging upon the degree to which the text refers either to textually established referential knowledge (definiteness and indefiniteness) or to culturally grounded knowledge about typicality (in its broadest sense). Except for the domain of the Objective, nominal expressions are normally unmarked for (in)definiteness. Definiteness is generally inferred from the preceding co-text, such as (21):

- (21) *k'ic'k'e ġar saema ġenaxo oša tanesa bazarax ġädü biq'san; sunt'ux biq'i enesča. biasun evaxte ġädinen šumax tanest'a...*  
 ‘Some days later, [the] young boy goes to the bazaar in order to hire (lit.: take) **a boy**. Having hired one he brings [him home]. When **the boy** gives bread in the evening...’

Given the fact that the number of referential units is rather limited in GD (see 5.3), we can assume that the more the tale progresses, the more the text is marked for an increasing density of definite expressions. Definiteness is further established by specifying attributes, cf.:

- (22) *šünebiġ pasč'aġun ġari tulinen burreqsa ġölö ba'p'sax.*  
 ‘At midnight, **the prince's dog** begins to bark loudly.’  
 [The dog hasn't been mentioned before.]

Above, I have shown that 10.90 % of all nominal are marked for a deictic adnominal unit (see table (14) and diagram (12)). Such structures emphasize the definite value of the nominal, but are not markers of definiteness as such. In adnominal function, the distal is extremely rare (the medial is confined to direct speech, also cf. Schulze 2008). When looking the grammatical relation associated with the corresponding noun, it becomes apparent that the use of the adnominal deixis is more frequent with non-central actants (18) than with central ones (9), cf. table (23):

	PROX	MED	DIST
S	4	0	1
A	5	0	0
O	7	2	1
LOC	11	0	2
	27	2	4

Table 23: *Grammatical relation of NPs marked for deictic adnominal units.*

The fact that the locative seems to be the preferred target of deictic attribution can probably be related to strategies to ascertain the maintenance of the audience's narrative space invoked by the tale. Diagram (21) illustrates that the deictic marking of locatives is not distributed evenly throughout the text.

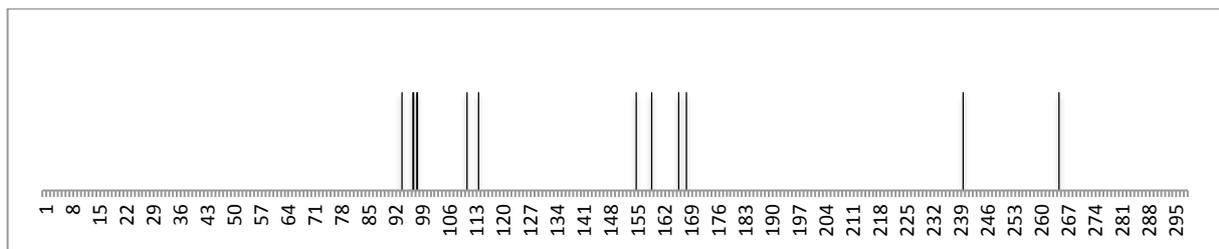


Diagram 21: *Deictically marked locatives in GD*

Rather, they occur especially in two event clusters, the first of which concerns the choice of the right road, whereas the second one entails one of the clues of the tale. Functionally, the deictic attribution of locative nouns thus seems also to be related to stress the relevance of the corresponding event sequences for the plot and hence can be seen as strategies to guide the audience's attention towards the essentials of the plot.

The domain of the Objective differs from the pivotal S/A domain because Udi has explicit means available to mark corresponding referents for definiteness (in the broadest sense). In this respect, Udi is part of a larger area sharing this feature with e.g. neighbored Armenian, Azerbaijani, and North Iranian (see Schulze 2015a). Typologically speaking, this O-Split belongs to the Fluid-O type: In most instances, the speaker's 'choice' of either option to mark the Objective is driven by pragmatic aspects: The basic distinction (indefinite vs. definite) is related to aspects of topicality (new topic vs. given/resumed topic), to individuation (set vs. set token), to common ground (degrees of cultural typicality), and situational knowledge (degree of expectability in reported event). Only in case a lexical unit is definite out of its proper semantics, the definite marking technique is compulsory (e.g. personal pronouns, anaphors etc.).

The O-Split is realized with the help of case marking. Indefinite NPs are marked by the absolutive (zero), just as NPs in Subjective function (recall that the Udi case system is basically ergative (S=O (absolutive); A (ergative))). Definite NPs in O-function are usually marked by the so-called dative2 (-*V*x) in the Vartashen dialect, although the simple dative (-*V*) may be used, too (which has become generalized in the Nij dialect). Two examples are given in (22):

- (22) *ič-uğ-o*            ***mal-l-ux***                    *töv-q'un-d-esa*,  
REFL-PL-GEN    goods-SA-DTA2            selling-3PL-LV-PRES

*melan*            *ič-uğ-enk'*    ***mal-q'un***    *aq'-sa*.  
from=here    REFL-PL-BEN    goods-3PL    take-PRES

Literal: 'They sell their goods (definite). From here, they take goods (indefinite).

Read: 'They sell their goods (mentioned before) (in the town). From here (the town) they take (new) goods (not mentioned before).

The following example illustrates that the dative2 may also be selected although the corresponding noun has new topic function (marked by *sa* 'one', see below):

- (23) *eğ-axun*                    *č'e-ne-bak-sa*                    *sa*    *garamzaluğ-un*                    *bošt'an*,  
come.FUT-CV.PAR    pass-3SG-LV-PRES    INDEF    graveyard-GEN                    inside

*beğ-sa-ne*    *te*    *mia*    *sa*    *iś-en*                    *sa*    ***garamzi-n-ax***  
see-PRES-3SG    SUB    here    INDEF    man-ERG                    INDEF    grave-SA-DAT2

*gölö*    *t'ap'-ne-xa*.  
much    hit-3SG-LV.PRES

‘When passing by a graveyard, he sees that here, a man hits a (specific) grave very much.’ (Literal translation).

The distribution of NPs in O-function marked by the absolutive (53 occurrences) and by the dative(2) (51 occurrences) is amazingly even. The corresponding Partitur, however, shows that both indefinite and definite O-NPs tend to cluster:

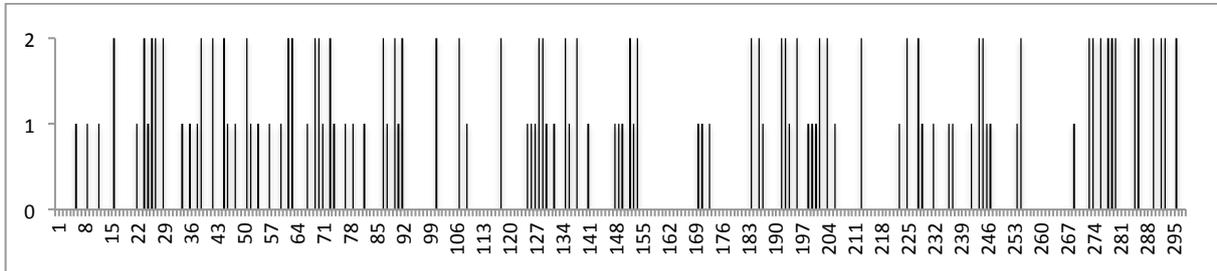


Diagram 22: *The distribution of split variants of O: 1 = unspecific, 2 = specific*

This pattern is directly related to the event sequencing Partitur discussed above (diagram (20)). Prototypically, such event sequences (if causal) are introduced by a clause that is marked for a new topic in O-function (e.g. *the boy see a man*). In subsequent causal clauses, the relevant NP (in O-function) turns into a given topic and keeps this property until the end of the sequence. When all topics (in O-function) have been introduced, that is towards the end of the tale, the definite version of NPs in O-function becomes the sole means to mark these NPs.

Udi has grammaticalized the numeral *sa* ‘one’ in terms of a marker of indefiniteness that, however, has not yet developed as a full-fledged paradigm. In GD, there are just 18 occurrences of *sa* used as an indefinite marker, cf. diagram (23):

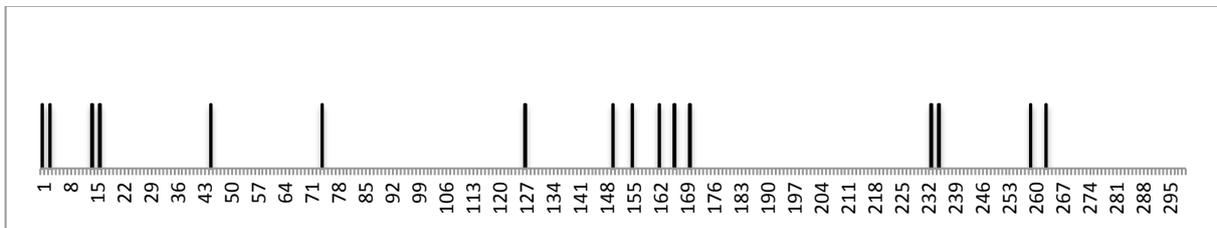


Diagram 23: *The use of sa as an indefinite marker in GD*

The pattern can be clearly related to the introduction of new topics that are relevant for the plot of the tale. In this sense, *sa* is used as some kind of ‘sticky note’ onto which a given NP is ‘written’ and thus making it available for further processing. In fact all concepts marked by *sa* are relevant to the plot (*bush, danger, fate, grave* (4), *graveyard, hole, king, man<sub>1</sub>* (2), *man<sub>2</sub>, rope, voice, young boy*). It can be assumed that such strategies to indicate a ‘keep it in mind!’ function constitute a relevant technique in structuring the information flow in accordance with the underlying text world model.

### 6.5.5.2.3 Focal strategies

Basically, Udi speakers have at their disposal three ways of marking focal units, namely the clitic *-al* (additive, emphatic), the clitic *-gena* (contrastive), and mechanisms of hosting personal agreement clitics. A fourth option, namely variation in word order, is less pronounced in the given text and is hence neglected in the present analysis.

Assuming that explicit focal strategies are more relevant for an interactively oriented type of storytelling, we can expect that GD applies the corresponding techniques modestly only. In fact, this holds especially for the units *-al* and *-gena* mentioned above. The contrastive focal element *-gena* occurs only once and thus cannot be taken into account at all. The additive/emphatic marker *-al* is given 25 times, cf. table (24), which relates the *-al*-marked constituents to grammatical relations:

	GR	Translation and function	Frequency
<i>gölö-al</i>	---	‘much’ (emph.)	1
<i>oš-al</i>	---	‘just then after that’ (emph.)	1
<i>gädinen-al</i>	A	‘boy’ (emph.)	1
<i>pasč'ağun ğaren-al</i>	A	‘prince’ (emph.)	1
<i>va ʿn xibalen-al</i>	A	‘you three’ (emph.)	1
<i>k'ic'k'e ğaren-al</i>	A	‘young boy’ (emph.)	1
<i>k'ua-l</i>	LOC	‘at home’ (emph.)	1
<i>ič boš-al</i>	LOC	‘in them’ (emph.)	1
<i>gädinax-al</i>	O	‘boy’ (add.)	1
<i>xinärmuğox-al</i>	O	‘girls’ (add.)	1
<i>so-al</i>	O	‘someone specific’ (emph.)	1
<i>šet'ux-al</i>	O	‘that one’ (add.)	1
<i>ičuğox-al</i>	O	‘them’ (emph.)	1
<i>met'ux-al</i>	O	‘this one’ (add.)	1
<i>yax-al</i>	O	‘we’ (emph.)	1
<i>zu-al</i>	S	‘I’ (add.)	1
<i>zu-al</i>	S	‘I’ (emph.)	2
<i>pasč'ağun ğar-al</i>	S	‘prince’ (add.)	1
<i>vičimux-al</i>	S	‘the brothers’ (add.)	1
<i>xunči-al</i>	S	‘this sister’ (add.)	1
<i>mono-al</i>	S	‘this one’ (add.)	1
<i>un-al</i>	S	‘you’ (add.)	1
<i>un-al</i>	S	‘you’ (emph.)	2

Table 24: *The target of focal marking (-al)*

Except for the locative and adverbial forms, the clitic *-al* is hence used mainly with protagonists relevant for the plot. The additive focal function of *-al* allows integrating another protagonist into the preceding event sequence, e.g.:

- (24) *saema vädi-n-axo oša pasč'ağ-un ğar-en kārvan*  
 some time-SA-ABL after king-GEN son-ERG caravan
- ğaç-p-i ğādi-n-ax-al aq'-i ta-ne-sa*  
 bind-LV-PAST boy-SA-DA2-FOC take-PAST go-3SG-\$.PRES

*q'eiri šähär-a ališveriš.*  
 other town-DAT trading

'Some times later, the prince put together a caravan, took the boy, too, (and) goes to another town (for) trading.'

- (25) *zu tağ-al-zu me säs-n-a laxo*  
 I go=thither.FUT-FUT-1SG PROX voice-SA-GEN on
- un-al eke bez qošt'an!*  
 you.SG-FOC come.IMP.2SG I.GEN behind
- 'I will go toward this voice, you, too - come behind me.' (Literal translation)

Hence, the additive function of *-al* is a relevant device to integrate different protagonists in a single event sequence. This type of protagonist clustering becomes also visible from the corresponding Partitur:

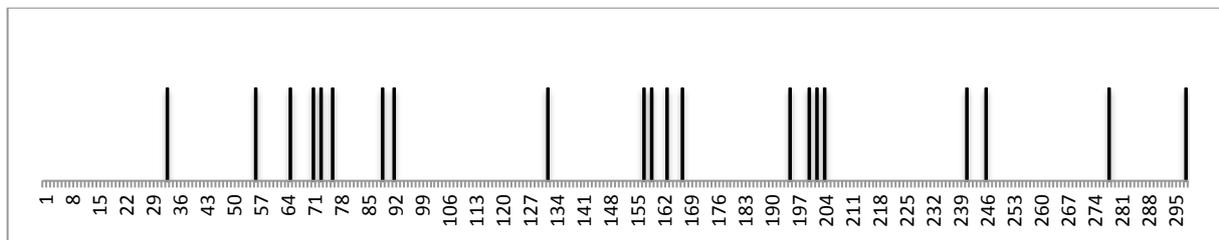


Diagram 24: Occurrences of the focal marker *-al* in GD

As can be seen from diagram (25), the additive function of *-al* is closely related to the grammatical roles S and O (definite).

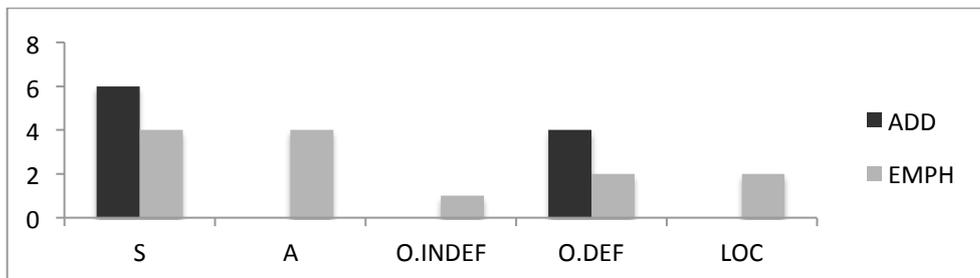


Diagram 25: The preferred target (GR) of additive and emphatic focus (*-al*)

Its non-additive, emphatic function, however, shows another pattern: In this case, it is the S/A domain that represents the preferred target for *-al*. Except for emphatically marking locatives and once an adverbial element, this focal function is related to the main protagonist (son(s),

boy, servant) and to the corresponding pronominal representations. From this we can conclude that emphatic focus (*-al*) serves to highlight the central role of these protagonists in given event chains.

In Udi, another rather prominent way to focus constituents of a clause is given by floating agreement clitics. As has been said above, Udi agreement clitics (covering the standard domains 1/2/3 SG/PL) are the central markers of clausal foreground: Except for the experiencer role (in the Vartashen dialect), these clitics are always triggered by NPs in S or A function, cf.:

(26) Subjective:

*me-t'-uğ-oxol*                      *ta-q'un-sa*                      *q'eiri sövdäkär-ux-al*  
 PROX-SA.REF-PL-COM go=thither-3PL-\$.PRES                      other merchant-PL-FOC  
 ‚Other merchants go with them.‘

(27) Agentive:

*pasč'ağ-un*    *ğar-en*                      *t'esahat*                      *čič-er-i*  
 king-GEN                      son-ERG                      immediately                      pull=out-LV.PAST-PAST

*xibq'o*                      *manat-ax*                      *ta-ne-st'a*  
 sixty                      manat-DAT2                      give-3SG-\$.PRES

‚The prince immediately gives the sixty manat (he has) pulled out.‘

If the agreement clitics are hosted by the verb itself, we usually have to deal with a pattern unmarked for agreement-based constituent focus. Some tense/mood forms (such as the future1 (*-al*), the deontic modal (*-a*), and the epistemic modal (*-ay*) have always to be accompanied by agreement clitics. The other tense/mood forms, however, allow the agreement clitic to float, that is, to be hosted by other constituents (usually, but not necessarily the unit preceding the verb, see Harris (2002), Schulze (2011b) for details). Constituents in ‘natural’ focus (such as interrogative pronouns, negators, modal particles etc.) automatically host the corresponding agreement clitics. (28) and (29) illustrate this ‘floating’ type:

(28) *yax-al*                      *har-t'-ux*                      *dünya-n-un*                      *sa*                      *č'ot'-exo-q'un eč-er-e*  
 we.DAT2-FOC                      each-SA-DAT2                      world-SA-GEN                      one                      side-ABL-3PL                      bring-LV.PAST-PERF  
 ‚They have brought each (of) us from one side of the world.‘

(29) *uk'-a-n-te*    *ka*                      *ğärämzi-n-ax*  
 say.FUT-MOD-3SG-SUB    MED                      grave-SA-DAT2

*venk'-q'un*    *ser-b-e*  
 you.SG.BEN-3PL    build-LV-PERF

‚One should say that they have made that grave for you.‘

Most likely, these floating techniques have emerged in later medieval Udi through impact from Northwest Iranian languages (see Schulze 2015). The overall function of preverbal clitics is to focus the given host. In the dialects of Udi, this type of pragmatic marking is elaborated to a different degree, cf. diagram (26) that gives the corresponding figures based on two corpora of narratives (1.201 agreement tokens for Vartashen and 1.279 agreement tokens for Nij, see Schulze (2008) for details):

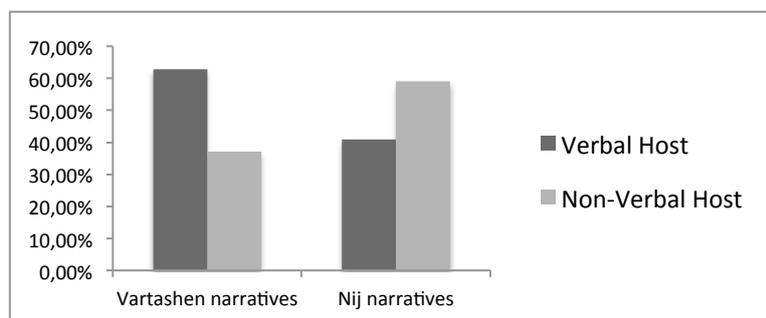


Diagram 26: *The distribution of verbal and non-verbal hosts in Vartashen and Nij narratives*

It comes clear that in Vartashen narratives, agreement clitics are less frequently used to focus verb external constituents than in Nizh narratives. Obviously, Nizh narrative strategies are marked for a more pronounced tendency to pragmatically manipulate the information structure of an utterance (see Schulze 2004). In GD, 307 agreement clitics occur. 72 of them (23.45%) precede their verbal kernel. This percentage is lower than that of the average of Udi narratives as indicated in diagram (26) above (37.41%). The relevance of preverbal hosting strategies become even less significant, if we ignore those units in which the clitic is placed between an incorporated element and the verbal such as *xabar-re-q'-sa* (question-3SG-take-PRES) 'he asks' or *kef-yan-be* (relaxing-1PL-do-PERF) 'we relaxed' (26 instances). The remaining 46 records (14.98 %) again include 13 constructions that result from the clitization of agreement markers to hosts in natural focus, cf. the example in (30) and (31):

(30) *mano-a me ġar-muġ-oxo haq'ullu*  
 which-SA-ABS-3SG.Q PROX son-PL-ABL clever  
 'Which one is (the) clever(est) among (lit.: of) these boys?'

(31) *et'e-a me-t'-in t'ap'-exa*  
 why-3SG.Q PROX-SA.REF-ERG hit-LV.PRES  
 'Why does he hit (the grave)?'

Hence, just the following 33 non-verbal hosts are marked for clitization:

Concept	Function	
‘girl’	S	1
‘light’	S	1
‘room’	S	1
‘voice’	S	1
‘boy’	O	2
‘good’	O	1
‘marriage’	O	1
‘himself’ (REFL)	O	1
‘watch’	O	3
‘work, thing’	O	1
‘you’ (SG)	IO	1
‘cloth’	LOC	1
‘place’	LOC	1
‘side’	LOC	1
‘way’	LOC	4
‘traveler’	LOC	1
‘blind’	ADJ/ADV	2
‘little, few’	ADJ/ADV	1
‘much’	ADJ/ADV	3
‘insane’	ADJ/ADV	1
‘well’	ADJ/ADV	3
‘dead’	ADJ/ADV	1
‘thus’	ADJ/ADV	1

Table 25: *Non-verbal hosts of agreement clitics in GD*

This list includes 12 adjectives/adverbs, 4 NPs in Subjective function, 9 NPs in Objective function, 8 NPs in Locative function, and one NP in the function of the Indirect Objective. The bulk of records (17) thus concerns either NPs situated in the clausal periphery (O, LOC, IO) or elements integrated in the verb phrase (predicative adjectives, adverbs). Units functionally associated with the center of a clause (Subjective, Agentive) are marked much less frequent, because they already have topic function. In this sense, verb external agreement mainly serves to highlight units in contrast to the topic (NP hosts) or to emphasize specific qualitative or quantitative features of the event expressed by the verb. example (32) illustrates this type of pragmatically ‘raising’ the relevance of the periphery (*hametär* ‘in the same way’) in contrast to *šet'in* ‘he (ergative)’ in topic function and marked for additive focus:

- (32) *še-t'-in-al*                      *ha-me-tär-re*                      *b-esa*  
DIST-SA-ERG-FOC                  EMPH-PROX-so-3SG                  do-PRES  
‘That one does (it) the same way.’

Diagram (27) gives the corresponding Partitur:

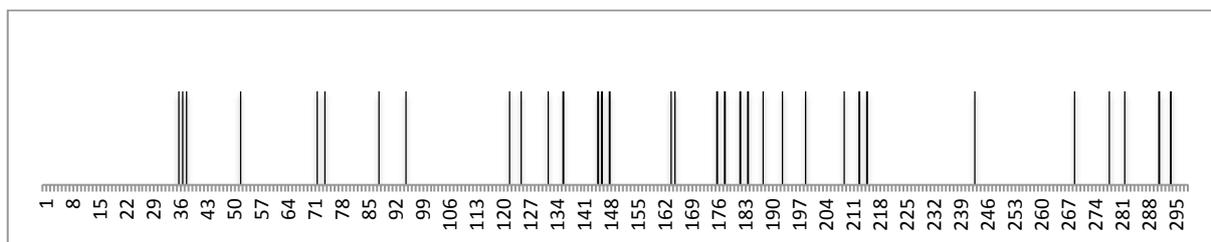


Diagram 26: *Non-verbal hosts of agreement clitics (S/A)*

The diagram illustrates that non-verbal agreement hosts are more frequent in the middle of the text. This pattern goes together with the observation that this section is marked for a greater amount of actional event sequences introducing new items relevant to the plot of the tale.

Nevertheless, the fact that only 10.74 % of all verb tokens are marked for verb-external hosts illustrates that the tale is modestly marked for this type of ‘pragmatic intervention’ (see Schulze 2004). This picture hardly changes even if we include the focal element *-al* (see above): In sum, just 5.97 % units (58 units out of a total of 1.040 non-verbal units liable to pragmatic marking) are subject to such audience-oriented pragmatic strategies. Again it becomes obvious that the Udi folk narrative “The Grateful Dead” represents a sub-genre that is far away from the above-mentioned, highly interactive *meddah* tradition (see 4.1). The storyteller rather reports on the plot than elaborating it pragmatically in order to ‘manipulate’ the audience’s corresponding text world model.

## 6.5 Towards a comparative perspective

### (ELABORATE!)

#### 6.5.1 Chechen

The tale is grounded in a version included in the Thousand and One Nights, often called the „Animal Language“ (AT 670; Thompson 83), cf. Jones 2002 [1995]: 36:

In it a man learns the language of animals after rescuing a snake, but he may tell no one about his gift upon pain of death. When his wife badgers him to agreeing to relate his secret, he makes preparations for his death, but before he can tell, he overhears his barnyard animals criticizing him for not being able to maintain discipline in the house comparable to the discipline enforced in the barnyard. He decides not to tell his wife.

Jones, Steven Swann 2002 [1995]. *The Fairy Tale. The Magic Mirror of the Imagination*. New York: Routledge.

As Chraibi (2005) has argued, ...

Basis also: “When they approached the valley of the ants, one ant said, "O you ants, go into your homes, lest you get crushed by Solomon and his soldiers, without perceiving." He smiled

and laughed at her statement, and said, "My Lord, direct me to be appreciative of the blessings You have bestowed upon me and my parents, and to do the righteous works that please You. Admit me by Your mercy into the company of Your righteous servants" (Sura 27: 18-19).

Also see

Abu Rahmeh, Imad Mahd Ali and Mohammad Mahd Mohammad Harb 2015. Fables in Classical Arabic Literature. *International Journal of Humanities and Social Science* 5,2: 92-102.

Chraibi, Aboubakr 2005. Texts of the Arabian Nights and Ideological Variations. In: Wen-Chin Ouyang and Geert Jan Van Gelder, *New Perspectives on Arabian Nights*, 17-25. New York: Routledge.



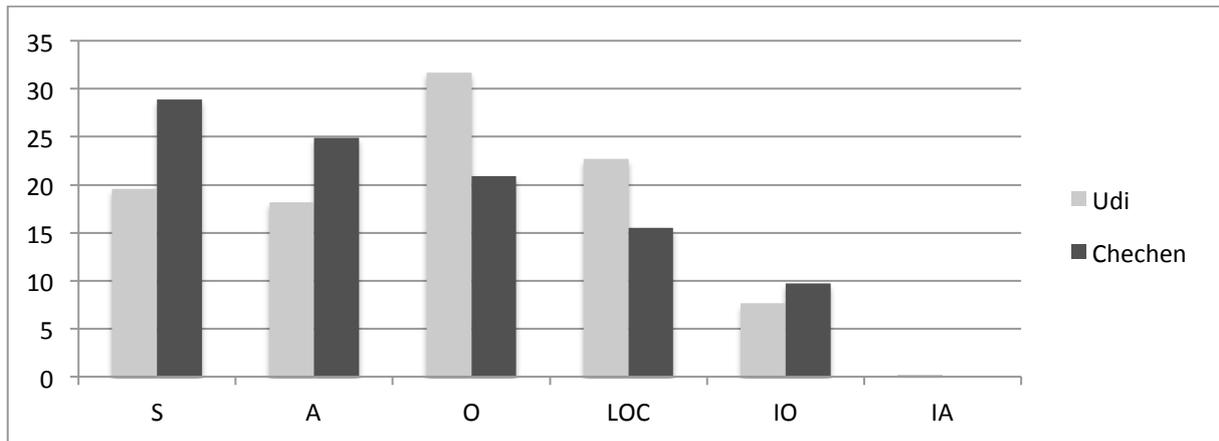
Transitive Patterns in Stagij...



Intransitive (1) and transitive (2) clauses in Stagij without speech act sequences

	Udi	Of all NPs	Chechen	Of all NPs
S	87	19.55	80	28.88
A	81	18.20	69	24.90
O	141	31.68	58	20.93
LOC	101	22.69	43	15.52
IO	34	7.64	27	9.74
IA	1	0.22	0	0
	445		277	

Frequency of GR in Udi and Chechen (including zero)



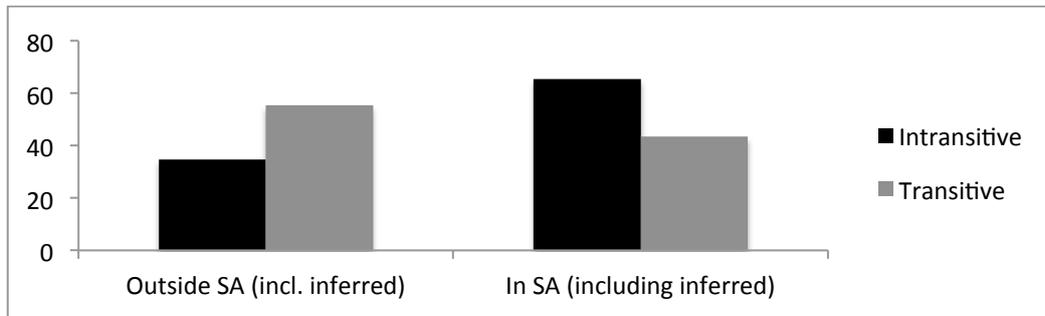
Percentage of individual GRs in GD (Udi) and MS (Chechen)

EXPLAIN!

	All simple clauses				SC without speech act clauses		
	ALL	Overt	Inferred	Clausal	ALL	Overt	Inferred
S	101	80	21	0	35	31	4
A	92	69	23	0	51	42	9
O	92	58	14	20	51	24	27
LOC	43	43	0	0	20	20	0
IO	29	27	2	0	4	4	0
	357	277			161		

	All simple clauses			SC without speech act clauses		
	Of all SC	Overt	Inferred	Of all SC without SA	Overt	Inferred
S	52.33	79.20	21.80	40.69	88.57	11.42
A	47.66	75.00	25.00	59.31	82.35	17.65

	Outside SA (incl. inferred)	In SA (including inferred)
Intransitive	34.65	65.35
Transitive	55.43	43.47

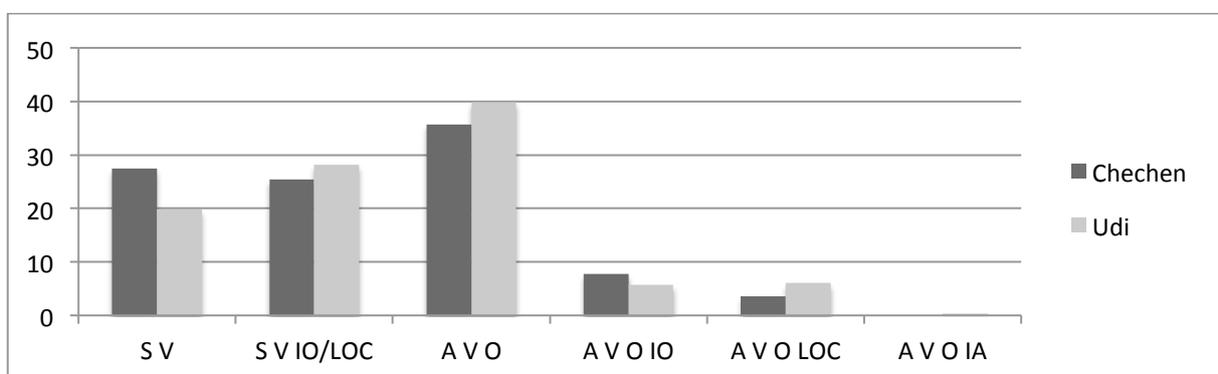


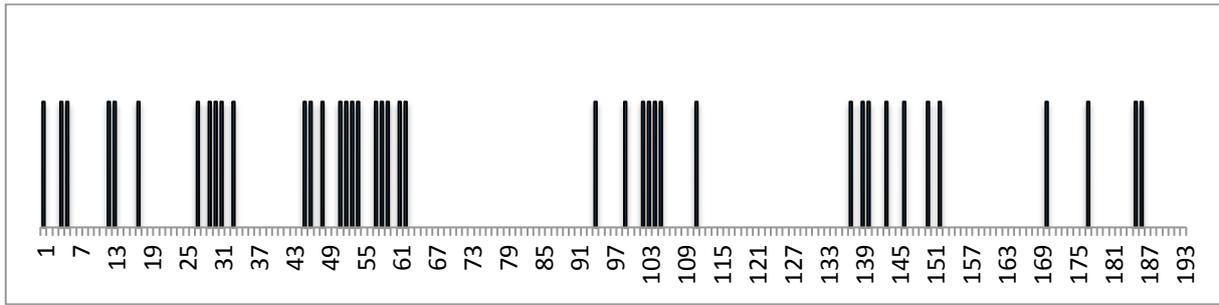
Chechen patterns with zero / AGR

S V	53	27.46	52.84
S V IO/LOC	49	25.38	
A V O	69	35.75	47.16
A V O IO	15	7.77	
A V O LOC	7	3.62	
A V O IA	0	0.00	
	193		

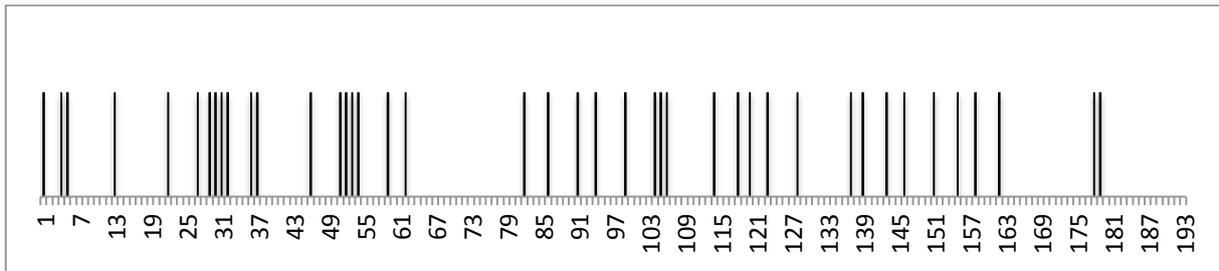
Udi Werte in Udi Text anpassen!

S V	59	19.79	47.98
S V IO/LOC	84	28.18	
A V O	119	39.93	52.02
A V O IO	17	5.70	
A V O LOC	18	6.04	
A V O IA	1	0.33	
	298		

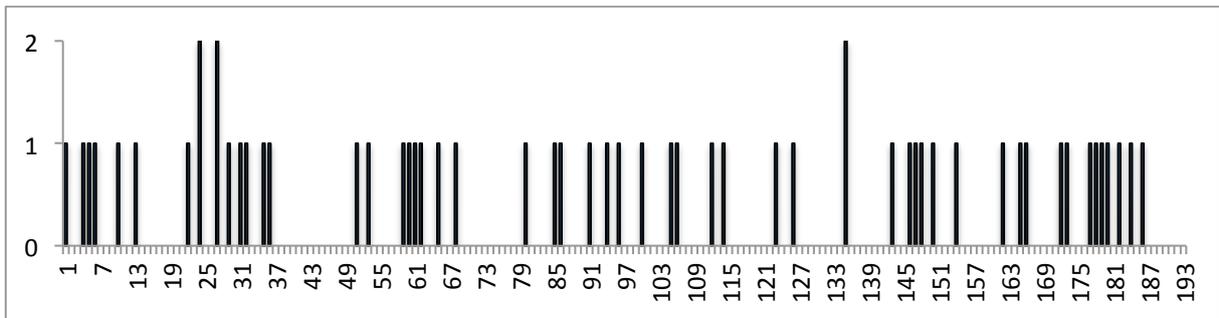




Motion sequences in Stagij



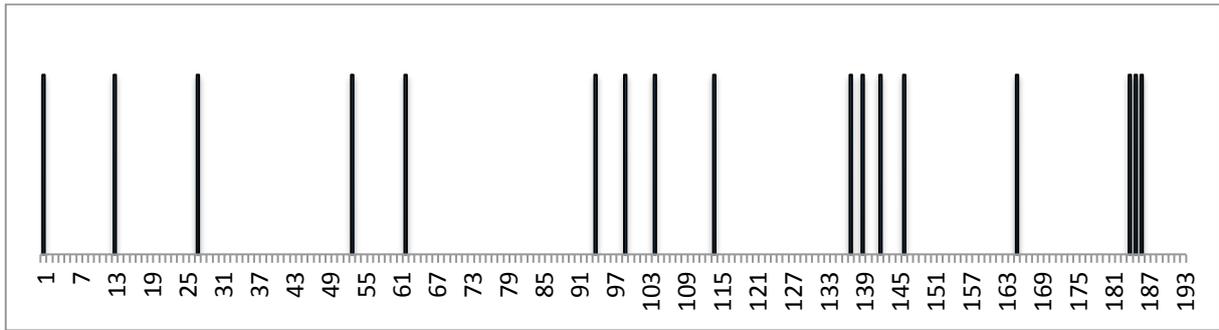
Locatives in Stagij



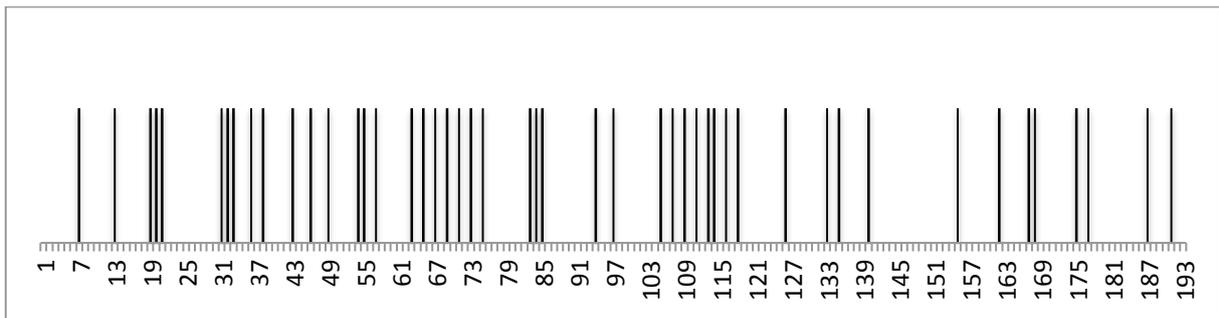
Number of locatives with postpositions in stagij

localization

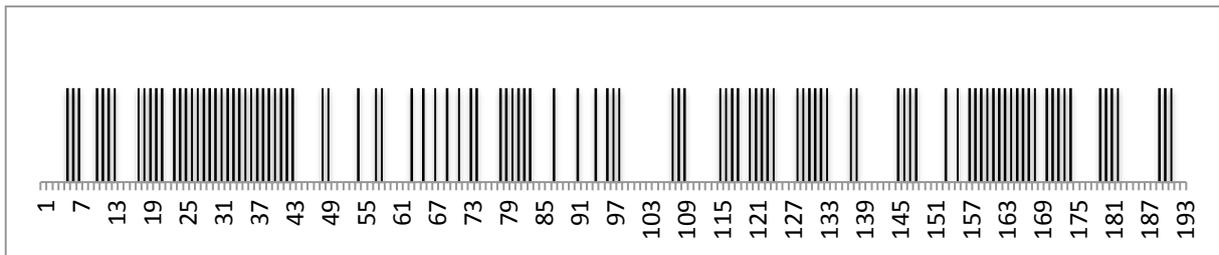
7	home
4	mountain
3	place
2	kilba
2	way
1	castle
1	field
1	rock



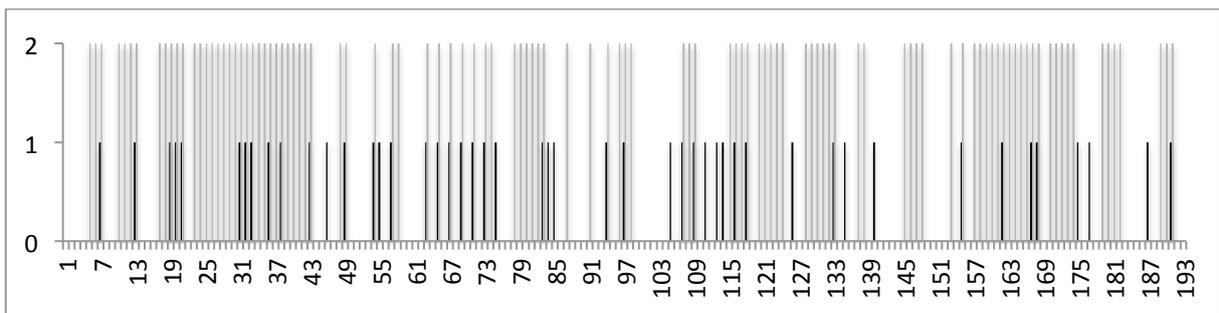
Lexical localization in stagij



Speech act verbs in stagij



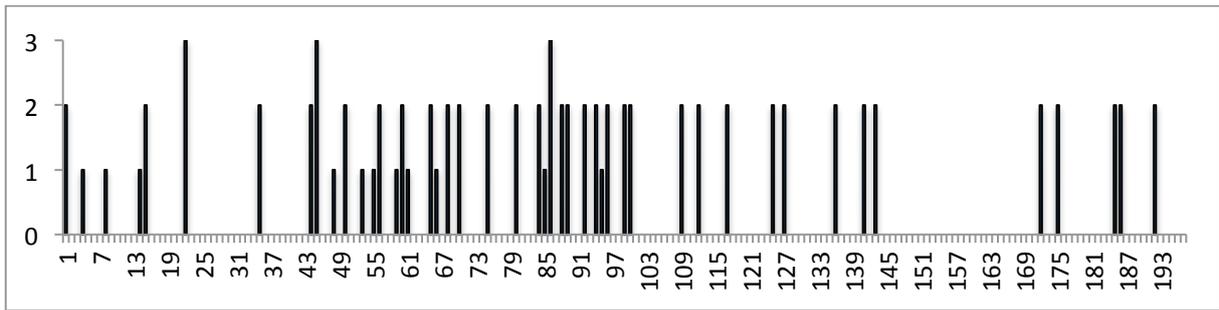
Direct speech in stagij



Speech acts (2) and speech act verbs (1) in stagij

107 speech act clauses (= 55.44 % of all clauses)

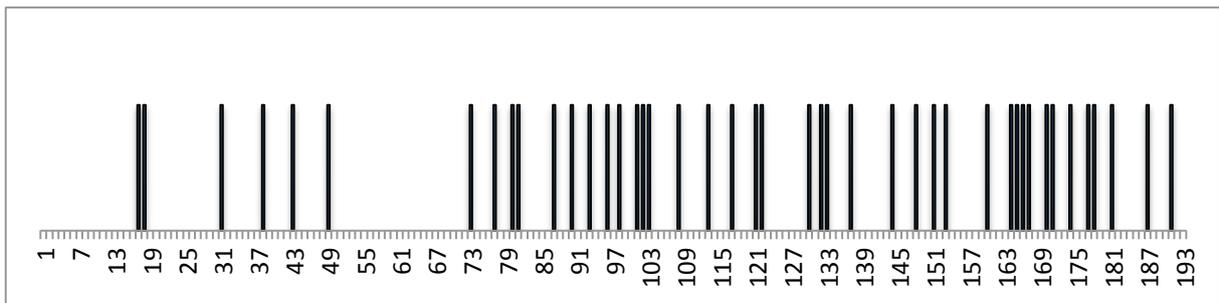
48 speech act verbs (= of verbs????)



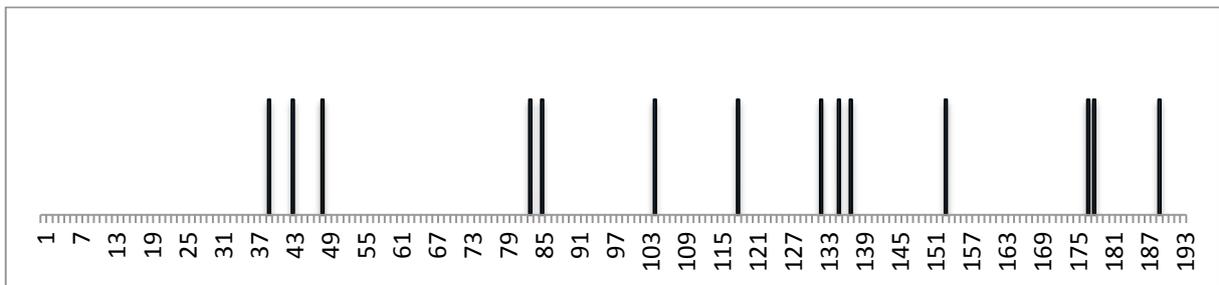
Main protagonists: Snake/Man cluster (3 = both, 2 = man, 1 = snake)



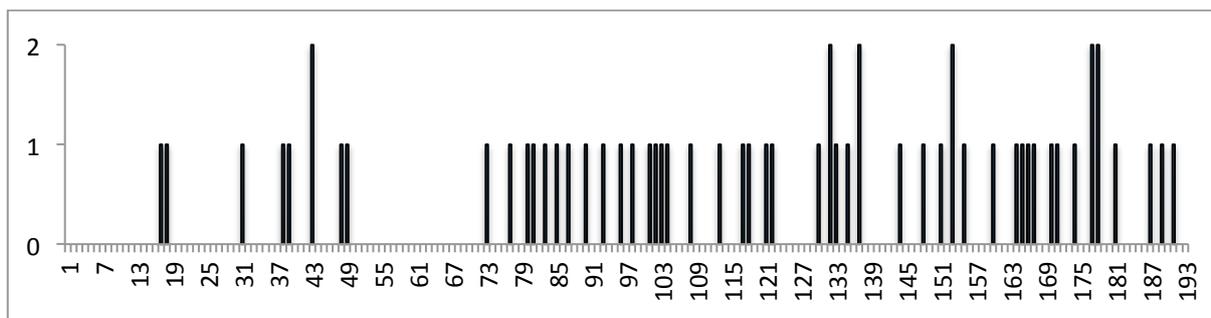
Main protagonists: Man/Woman cluster (3 = both, 2 = man, 1 = woman)



Zero anaphora (S/A) in Stagij



Zero anaphora (O), clausal O (speech act verbs) not included

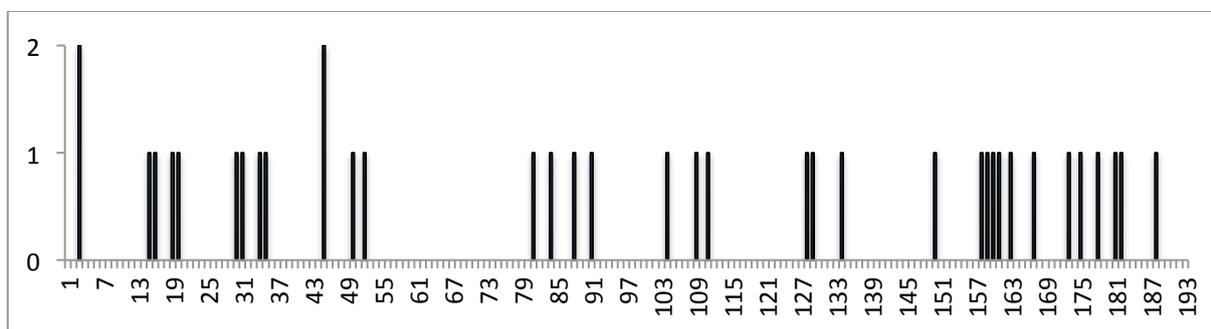


Zero-anaphora (S,A,O) in stagij (without clausal O)

### Deixis and anaphora

	NOMINAL	ADNOMINAL
ANAPHORA	15	---
PROX	8	12
DIST	10	9

	ANAPH	PROX	DIST
S	2	3	0
A	3	3	0
O	0	0	10
IO	6	1	0
LOC	3	0	0
POSS	1	1	0

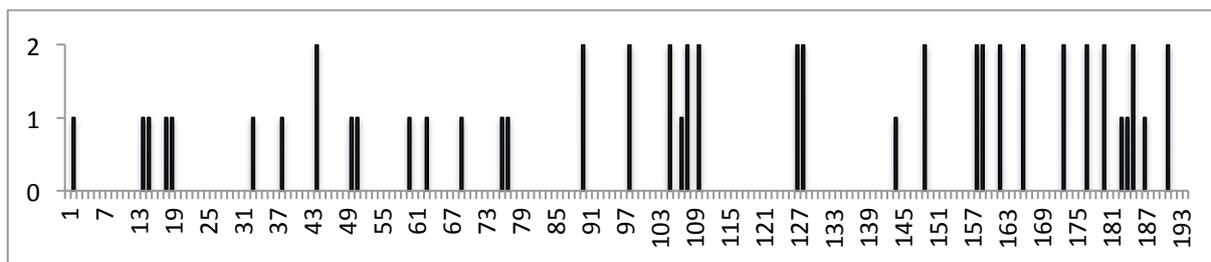


Density of anaphoric and deictic nominals in stagij

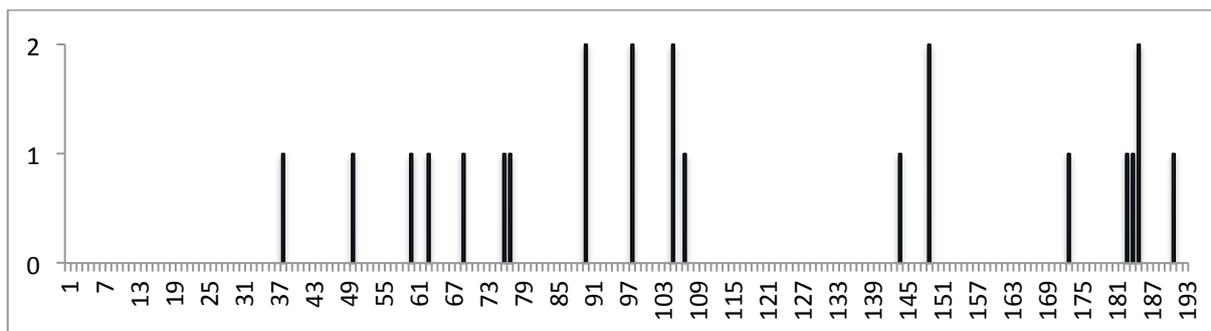
### Anaphors and deixis vs. Nominals?

357 NPs, davon 43 ANAPH/DX = 12.04 % (so? / ???)

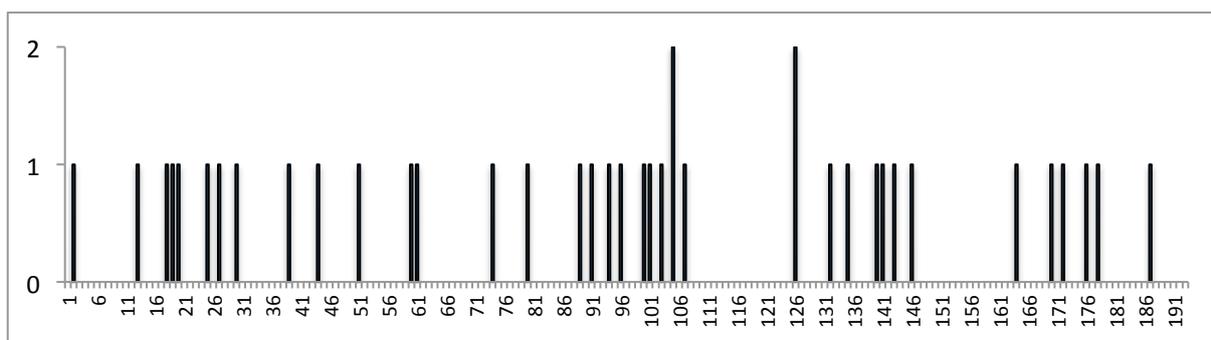
besser: 212 nouns, = 9.90 % marked by dx.adn



Deictic highlighting in Stagij (Adn and nom): (1) Prox, (2) Dist



Deictic adnominals (1) prox, (2) dist in Stagij



Focal -a in Stagij (39 occurrences)

A	4
ADJ	2
ADV	1
CONJ	1
LOC	9
O	4
S	4
V	5

Expression of time

- 1 day = some days later
- 1 hour = just in this moment
- 1 minute = in this moment
- 1 time = while
- 1 year = after one year

Seven landmarks:

FIELD Man/snake/hedgehog

Mountain/Wood/Castle of Birds' king Man/Snake

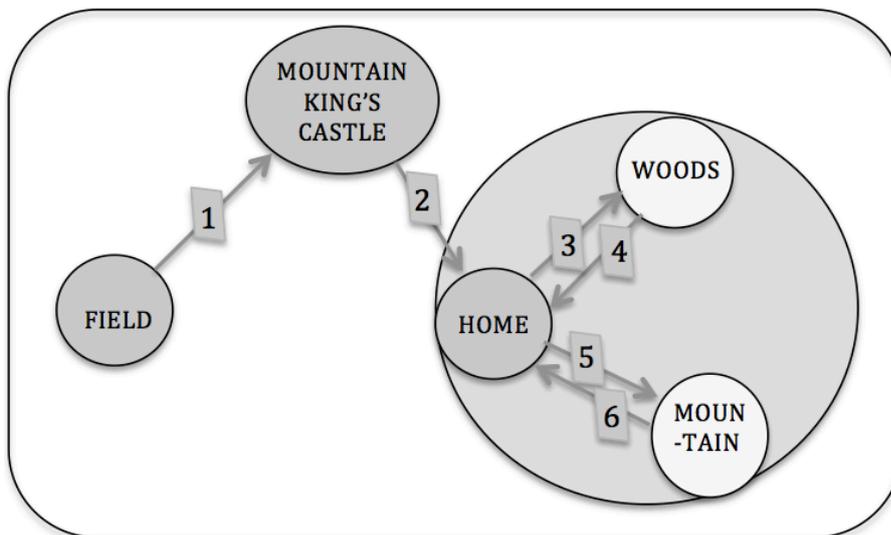
Home of man Man

Woods Man/Woman/Crows

Home Man/woman/dog/rooster

Mountain Man/Hawk

Home Man/Woman



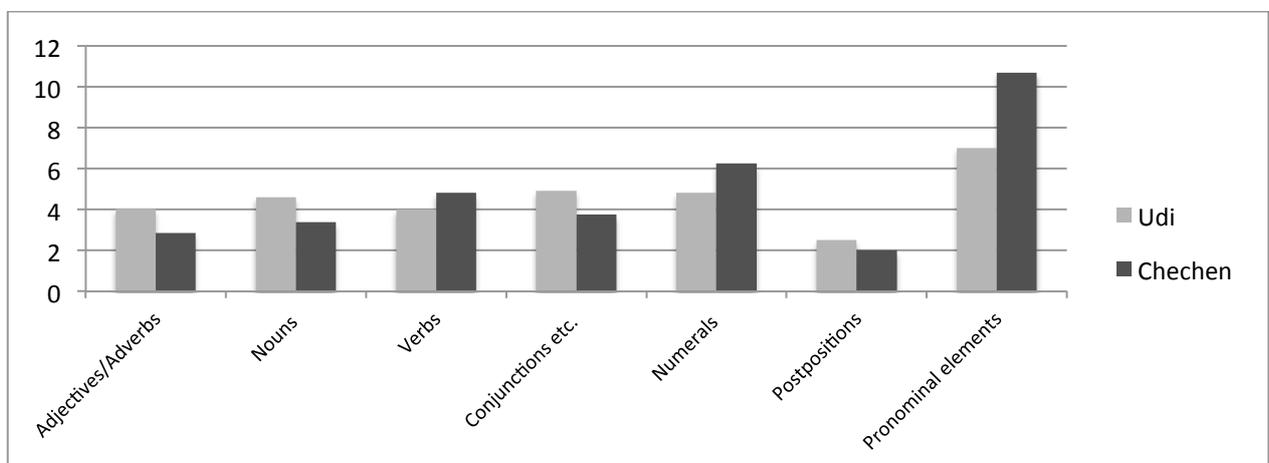
Cognitive map of Stagij: 1: man and snake, 2: man, 3-4: man and woman, 5-6: man

Word Class		Grateful Dead (Udi)			Man and Snake (Chechen)		
		Tokens	Lexical bases	Tokens p. LB	Tokens	Lexical bases	Tokens p. LB
Open	Adjectives/Adverbs	101	25	4.04	89	31	2.87
Open	Nouns	349	76	4.59	211	62	3.40
Open	Verbs	392	98	4.00	308	64	4.81
Closed	Conjunctions, deictic adverbs, pragmatic	74	15	4.93	15	4	3.75

	markers etc.						
Closed	Numerals (incl. indefinite use of 'one')	53	11	4.81	25	4	6.25
Closed	Postpositions	30	12	2.50	33	15	2.00
Closed	Pronominal elements	260	37	7.02	182	17	10.70
	Total	1259	274		863	197	

The stronger elaboration of pronominal forms in “Man and Snake” is related to the fact that, contrary to Udi, Chechen does not index the category of person on the verb (personal agreement clitics in Udi, see above). In the above given list, the clitic variants of the personal pronouns to the set of Udi pronominal elements (66 in 4 LBs).

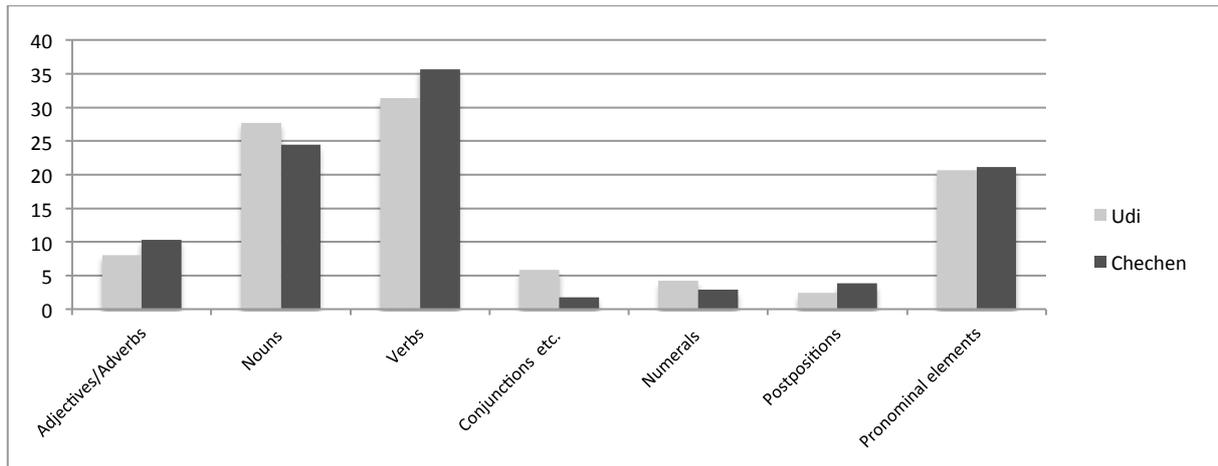
	Udi	Chechen
Adjectives/Adverbs	8,02	10.31
Nouns	27,72	24.44
Verbs	31,35	35.68
Conjunctions, deictic adverbs, pragmatic markers etc.	5,87	1.73
Numerals (incl. indefinite use of 'one')	4,20	2.89
Postpositions	2,38	3.82
Pronominal elements	20,65	21.08
Total		



Tokens per lexical base in GD and MS (in correlation with word classes)

The lower the figure is the more the word class is elaborated lexically. Except for the value given for the class ‘pronominal elements’ the relevant figures come relatively close in both

tales. When we relate the tokens given for the individual classes to the total of tokens in each tale, however, the presence of pronominal elements is even, cf.....



Percentage of word class units related to the total of tokens in GD and MS

Relevant differences show up mainly with the categories of nouns and verbs. The stronger presence of verbs in the Chechen tale can be explained by the fact that the text is marked for quite a number of analytic verb forms involving copula constructions. On the other hand, the Udi tale is marked for more nouns than the Chechen tale. Obviously, this pattern is related to that fact that the Chechen text is slightly more pronounced with respect to the use of nominal deictic forms and anaphors (4.98 % of all tokens as opposed to 3.01 % in the Udi tale, or 15.52 % of all NPs in Chechen as opposed to 8.08 % of all NPs in Udi).

### 6.5.2 Lak

## 7. The Schematic Organization of Linguistic Practices - a Summary

## References

- Abduallev, Zapir G. 1986. *Problemy érgativnosti darginskogo jazyka. Aspekty tipologičeskogo issledovanija*. Moskva: Nauka.
- Aikhenvald, Alexandra Y. 2010 [in press]. *Imperatives and Commands*. Oxford: Oxford University Press.
- Alavi, Bozorg & Manfred Lorenz 1988. *Lehrbuch der persischen Sprache*, 5. Auflage. Leipzig: VEB Enzyklopädie.
- Aldai, Gontzal 2000. Split ergativity in Basque: the pre-Basque antipassive-imperfective hypothesis. *Folia Linguistica Historica* 21:31-98.
- Alekseev, Mixail E. 1979. Funkcii érgativnogo padeža v arčinskom jazyke. In: U.A. Mejlanova (otv. red.), *Imennoe sklonenie v dagestanskix jazykax*, 82-95. Maxačkala: Dagest. Filial AN.
- Alp, Sedat 1980. Die hethitischen Tontafelentdeckungen auf dem Masat-Höyük. *Belleten* 44, No. 173:25-59.
- Álvarez-Pedrosa Núñez, Juan Antonio 1998. The reconstruction of Indo-European thematic nom.-acc. sg. neuter. *Indogermanische Forschungen* 103:93-111.
- Anagnostopoulou, Elena 2003. *The Syntax of Ditransitives*. Berlin etc.: Mouton de Gruyter.
- Anagnostopoulou, Elena 2003. *The Syntax of Ditransitives*. Berlin etc.: Mouton de Gruyter.
- Andreas, Friedrich C. and Walter B. Henning 1934. Mitteliranische Manichaica aus Chinesisch-Turkestan III. In: *Sitzungsberichte der preußischen Akademie der Wissenschaften*, 846–912. Berlin: Verlag der Akademie.
- Arbib, Michael A. 2001. The mirror system hypothesis. Online at: <http://www.cs.usc.edu/cs597/arbib>.
- Arbib, Michael A., James Bonaiuto, and Edina Rost 2006. The Mirror System Hypothesis: From a macaque-like mirror system to imitation. In A. Cangelosi, A. D. M. Smith, and K. Smith (eds.), *The Evolution of Language*, 3-11. Singapore: World Scientific Publishing.
- Arbib, Michael A. 1998. *The Handbook of Brain Theory and Neural Networks*. Cambridge, MA: MIT Press.
- Aronson, Howard I. 1979. Grammatical Subject in Old Georgian. *Bedi Kartlisa* 34: 220-31.
- Attinger, Pascal 1993. *Éléments de linguistique sumérienne. La construction de du<sub>1</sub>/e/di 'dire'*. Freiburg, Sw. / Göttingen: Vandenhoeck und Ruprecht (Orbis biblicus et orientalis, Sonderband).
- Bachtin, Michail M. (1953-54/2004). Das Problem der sprachlichen Gattungen. In: Konrad Ehlich and Katharina Meng (Hrsg.), *Die Aktualität des Verdrängten. Studien zur Geschichte der Sprachwissenschaft im 20. Jahrhundert*, 447–484. Heidelberg: Synchron.
- Baddeley, Alan D. & Graham J. Hitch 1974. Working memory. In: Gordon H. Bower (ed.), *The psychology of learning and motivation: Advances in research and theory*, Vol. 8, 47-89. New York: Academic Press.
- Baddeley, Alan D. 2000. The episodic buffer: a new component of working memory? *Trends in Cognitive Science*, 4: 417-423.
- Baddeley, Alan D. 2000. The episodic buffer: a new component of working memory? *Trends in Cognitive Science*, 4: 417-423.
- Baddeley, Alan D. and Graham J. Hitch 1974. Working memory. In: Gordon H. Bower (ed.), *The psychology of learning and motivation: Advances in research and theory*, Vol. 8, 47-89. New York: Academic Press.
- Bais, Marco 2001. *Albania Caucasica, Ethnos, Storia, Territorio Attraverso Le Fonti Greche, Latine E Armene*. Milano: Mimesis.
- Bakhtin, Mikhail M. 1986. *Speech Genres and Other Late Essays*. University of Texas Press.
- Barsalou, Lawrence W. 2008. Grounded Cognition. *Annual Review of Psychology* 59: 617-645.
- Bartlett, Frederic Charles 1932. *Remembering: A Study in Experimental and Social Psychology*. Cambridge, England: Cambridge University Press.
- Bauer, Brigitte 2000. *Archaic syntax in Indo-European: the spread of transitivity in Latin and French*. Berlin/New York: Mouton de Gruyter.
- Bavant, Marc 2008. Proto-Indo-European ergativity... still to be discussed. *Poznań Studies in Contemporary Linguistics* 44(4):433–447.
- Bawarshi, Anis S. and Mary Jo Reiff 2010. *Genre. An Introduction to History, Theory, Research, and Pedagogy*. West Lafayette, Indiana: Parlor Press.
- Beaugrande, Robert de & Benjamin N. Colby 1979. Narrative Models of Action and Interaction. *Cognitive Science: A Multidisciplinary Journal* 3,1:43-66.

- Beaugrande, Robert de and Benjamin N. Colby 1979. Narrative Models of Action and Interaction. *Cognitive Science: A Multidisciplinary Journal* 3,1:43 - 66.
- Bedir Khan, Emir Djeladet and Roger Lescot 1986. *Kurdische Grammatik. Kurmancî-Dialekt*. Bonn: Verlag für Kultur und Wissenschaft.
- Beekes, Robert S. P. 1995. *Comparative Indo-European Linguistics: An Introduction*. Amsterdam / Philadelphia: Benjamins.
- Beeler, Madison S. 1978. Verbal Reduplication in Germanic and Indo-European. *Pacific Coast Philology* 13:5-10.
- Bellasto von Clobe, Valeriano 2004. Das Indirekte Objekt als syntaktisches Argument ohne Makrorolle. in: Rolf Kailuweit und Martin Hummel (eds.), *Semantische Rollen*, 184-205. Tübingen: Narr.
- Benveniste, Émile 1952. La construction passive du verbe transitif. *Bulletin de la Société Linguistique* 48:52-62.
- Bergen, Benjamin 2007. Experimental methods for simulation semantics. In: Monica Gonzalez-Marquez, Irene Mittelberg, Seana Coulson, and Michael J. Spivey (eds.), *Methods in Cognitive Linguistics*, 277-301. Amsterdam and Philadelphia: Benjamins.
- Berger, Peter L. and Thomas Luckmann 1991 [1966]. *The Social Construction of Reality*. London etc.: Penguin Books.
- Bergs, A. and G. Diewald, G. 2009. *Contexts and Constructions*. Amsterdam: John Benjamins Publishing.
- Berkenkotter, Carol and Thomas N. Huckin 1993. Rethinking Genre from a Sociocognitive Perspective. *Written Communication* 10: 475-509.
- Berman, Michael 2009. *Shamanic Journeys Through the Caucasus*. Ropley: John Hunt Publishing.
- Bezhanov, Mikhail 1888. Rustam. Annex to *Sbornik materialov dlja opisanija mestnostej i plemen Kavkaza IV*.
- Bezhanov, Mikhail 1888. Rustam. *Sbornik materialov dlja opisanija plemen' i mestnostej Kavkaza IV* (annex).
- Bezhanov, Mikhail 1892. Kratkie svedenie o s. Vartašene i ego žiteljax. *Sbornik materialov dlja opisanija mestnostej i plemen Kavkaza XIV*: 1-32.
- Blauert, Jens 1996 [1983]. *Spatial Hearing. The Psychophysics of Human Sound Localization*. Revised edition. Cambridge, Mass.: MIT Press.
- Bloom, Lois 1991. *Language development from two to three*. New York: Cambridge University Press.
- Boeder, Winfried 1979. Ergative syntax in language change: the South Caucasian languages. In: Frans Plank (ed.), *Ergativity. Towards a Theory of Grammatical Relations*, 435–480. Academic Press, London.
- Boeder, Winfried 2005. The South Caucasian languages. *Lingua* 115:5-89.
- Boratav, Perteve Naili 2015. Maddāh. In: P. Bearman, Th. Bianquis, C.E. Bosworth, E. van Donzel, W.P. Heinrichs (eds.), *Encyclopaedia of Islam, Second Edition*. Leiden: Brill Online. [[http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/maddah-SIM\\_4728](http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/maddah-SIM_4728)] [30.7.2015]
- Bossong, Georg 1984. Ergativity in Basque. *Linguistics* 22:341-392.
- Braine, Martin D.S. 1976. *Children's First Word Combinations*. Monographs of the Society for Research in Child Development No. 164, No.1. London: Blackwell.
- Brandenstein, Wilhelm and Manfred Mayrhofer 1964. *Handbuch des Altpersischen*. Wiesbaden: Harrassowitz.
- Brassett, Ceclia & Philip Brassett & Meiyang Lu 2006. *The Tujia Language*. Munich: Lincom.
- Brassett, Ceclia, Philip Brassett and Meiyang Lu 2006. *The Tujia Language*. Munich: Lincom.
- Brettschneider, Gunther 1979. Typological Characteristics of Basque. In: Frans Plank (ed.), *Ergativity. Towards a Theory of Grammatical Relations*, 371-384. London: Academic Press.
- Brown, Roger 1973. *A first language: the early stages*. Cambridge, MA: Harvard University Press.
- Bubenik, Vit 1989. On the Origins and Elimination of Ergativity in Indo-Aryan Languages. *Canadian Journal of Linguistics* 34:377–398.
- Büring, Daniel 1999. Topic. In: P. Bosch and R. van der Sandt (eds.), *Focus: Linguistic, cognitive, and computational perspectives*, 142–165. Cambridge: Cambridge University Press.
- Butler, Christopher S. 2007. Towards a cognitive-functional model of text comprehension. In: Christopher S. Butler, Raquel Hidalgo Downing and Julia Lavid (eds.), *Functional Perspectives on Grammar and Discourse: In honour of Angela Downing*, 41-80. Amsterdam/Philadelphia: Benjamins [Studies in Language Companion Series 85]
- Butt, Miriam 2001. A Reexamination of the Accusative to Ergative shift in Indo-Aryan. In: Miriam Butt and Tracy Holloway King (eds.), *Time over Matter: Diachronic Perspectives on Morphosyntax*, 105-141. Stanford, California: CSLI Publications.

- Butt, Miriam 2006. The Dative-Ergative Connection. In: Olivier Bonami and Patricia Cabredo Hofherr (eds.), *Empirical issues in Syntax and Semantics* 6:69-92. Electronic publication available at <http://www.cssp.cnrs.fr/eiss6/>.
- Bybee Joan L. and Clay Beckner 2009. Usage-Based Theory. In: Bernd Heine and Heiko Narrog (eds.), *The Oxford Handbook of Linguistic Analysis*, 828-856. Oxford: Oxford University Press.
- Bybee, Joan 2013. Usage-based Theory and Exemplar Representations of Constructions. In: Thomas Hoffman and Graeme Trousdale (eds.), *The Oxford Handbook of Construction Grammar*, 49-69. Oxford: Oxford University Press.
- Bybee, Joan. 2010. *Language, Usage, and Cognition*. Cambridge: Cambridge University Press.
- Çabanov, Gəmərsəh and Rauf Hüseynov 1999. *Udilər*. 2nd edition. Baku: Elm
- Campbell, Dennis R. M. 2008. Split Ergativity in Hurrian. *Zeitschrift für Assyriologie und vorderasiatische Archäologie* 98,2:262-294.
- Cardona, George 1970. The Indo-Iranian Construction *mana* (mama) *kṛtam*. *Language* 46,1:1-12.
- Cassirer, Ernst 1994. *An Essay on Man. An Introduction to a Philosophy of Human Culture*. Garden City, NY: Doubleday.
- Chen, Ping 1996. Pragmatic interpretations of structural topics and relativization in Chinese. *Journal of Pragmatics* 26: 389-406.
- Cheng, Patricia W. 1997. From Covariation to Causation: A Causal Power Theory. *Psychological Review* 104: 367-405.
- Civil, Miguel 1961. The Home of the Fish. A New Sumerian Literary Composition. *Iraq* 23:154-175.
- Clackson, James 2007. *Indo-European Linguistics. An introduction*. Cambridge: Cambridge University Press.
- Clot, Yves 2008. *Travail et pouvoir d'agir*. Paris: Presses Universitaires de France.
- Coghill, Eleanor and Guy Deutscher 2002. The origin of ergativity in Sumerian, and the 'inversion' in pronominal agreement: a historical explanation based on Neo-Aramaic parallels. *Orientalia* 71:267-290.
- Colarusso, John 1992. *A grammar of the Kabardian language*. Calgary: University of Calgary Press.
- Cooreman, Ann 1994. A functional typology of antipassives. In: Barbara Fox and Paul Hopper (eds.), *Voice: Form and Function*, 49-88. Amsterdam: Benjamins.
- Corballis, Michael C. 2011. *The Recursive Mind: The Origins of Human Language, Thought, and Civilization*. Princeton: Princeton University Press.
- Corballis, Michael C. 2014. The Gradual Evolution of Language. *Humana.Mente Journal of Philosophical Studies* 27: 39-60
- Cowan, Nelson 2001. The Magical Number 4 in Short-term Memory: A Reconsideration of Mental Storage Capacity. *Behavioral and Brain Sciences* 24,1:87-185.
- Creissels, Denis 2009. Uncommon patterns of core term marking and case terminology. *Lingua* 119, 3:445-459.
- Croft, William 2000. *Verbs: aspect and argument structure*. Partial Draft, August 2000.
- Croft, William 2001. *Radical Construction Grammar*. Oxford: Oxford University Press.
- Croft, William and D. Allan Cruse 2004. *Cognitive Linguistics*. Cambridge: Cambridge University Press.
- Dabakov, Vladislav 2007. *Udiğoy folklor: Nağilxo. Legendoox. Astrakhan*.
- Daller, [Michael] Helmut, Roeland van Hout, and Jeanine Treffers-Daller 2003. Lexical richness in spontaneous speech of bilinguals. *Applied Linguistics* 24,2: 197-222.
- Daller, Michael [Helmut] 2010. Guiraud's index of lexical richness. PP presentation. Bristol: University of West England. E-print available at <http://eprints.uwe.ac.uk/11902/>.
- Dapschaskas, Rimtautas 2015. Der älteste Schmuck der Menschheit – Implikationen für die kognitive Evolution von Homo sapiens. *Mitteilungen der Gesellschaft für Urgeschichte* 24: 29-96.
- Dautenhahn, Kerstin 1999. The lemur's tale — Story-telling in primates and other socially intelligent agents. In: M. Mateas and P. Sengers, (eds.), *Proceedings of the AAAI Symposium on Narrative Intelligence*, 59-66. Menlo Park, California: AAAI Press.
- Dautenhahn, Kerstin 2002. The origins of narrative. In search of the transactional format of narratives in humans and other social animals. *International Journal of Cognition and Technology* 1,1: 97-123.
- Davies, William 1984. Antipassive: Choctaw Evidence for a Universal Characterization. In: David Perlmutter and Carol Rosen (eds.), *Studies in Relational Grammar* 2, 331-376. Chicago: University of Chicago Press pages.

- de Villiers, Jill G. and Peter A. de Villiers 1978. *Language Acquisition*. Cambridge, MA: Harvard University Press.
- Deacon, Terrence W. 1997. *The Symbolic species. The co-evolution of language and the human brain*. New York: W. W. Norton.
- Dean, Paul D. 1992. *Grammar in Mind and Brain, Explorations in Cognitive Syntax*. Berlin and New York: Mouton de Gruyter.
- DeLancey, Scott 1981. An interpretation of split ergativity and related patterns. *Language* 57: 626-657.
- Dench, Alan 1982. The development of an accusative case marking pattern in the Ngayarda languages of Western Australia. *Australian Journal of Linguistics* 2:43-59.
- Deppermann, Arnulf 2006. Construction Grammar – Eine Grammatik für die Interaktion? In: Arnulf Deppermann, Reinhard Fiehler, Thomas Spranz-Fogasy, Thomas (Hrsg.), *Grammatik und Interaktion. Untersuchungen zum Zusammenhang von grammatischen Strukturen und Gesprächsprozessen*, 43-65. Radolfzell: Verlag für Gesprächsforschung.
- Diessel, Holger 2013. Construction grammar and first language acquisition. In: Thomas Hoffmann and Graeme Trousdale (eds.), *The Oxford Handbook of Construction Grammar*, 347-364. Oxford: Oxford University Press.
- Diessel, Holger 2015. Usage-based construction grammar. In E. Dąbrowska and D. Divjak (eds.), *Handbook of Cognitive Linguistics*, 295-321. Berlin: Mouton de Gruyter.
- Dik, Helma 1995. *Word order in Ancient Greek*. Amsterdam: Brill.
- Dik, Simon C. 1997. *The Theory of Functional Grammar. Part 1: The Structure of the Clause* (second, rev. edition by Kees Hengeveld). Berlin and New York: Mouton de Gruyter.
- DiMaggio, Paul 1997. Culture and cognition. *Annual Review of Sociology* 23: 263–287.
- Dirr, Adolf 1904.**
- Dirr, Adolf 1912. *Rutulskij jazyk. Grammatičeskij očerk, teksty, sbornik rutulskix slov s russkim k nemu ukazatelem*. Tiflis: Tipografija Glavnogo Upravlenija Namestinika Kavkazsko (Sbornik materialov dlja opisanija mestonostej i plemen Kavkaza 42,3).
- Dirr, Adolf 1928. Udische Texte. *Caucasica* 5: 60-72.
- Dirr, Adolf 1928. Udische Texte. *Caucasica* 5:60-72.
- Dixon, Robert M.W. & Aleksandra Y. Aikhenvald 2000. Introduction. In R.M.W. Dixon and Aleksandra Y. Aikhenvald (eds.), *Changing valence. Case studies in transitivity*, 1-29. Cambridge: Cambridge University Press.
- Dixon, Robert M.W. 1972. *The Dyirbal Language of North Queensland*. Cambridge: Cambridge University Press.
- Dixon, Robert M.W. 1994. *Ergativity*. Cambridge: Cambridge University Press.
- Doudpota, Sher Muhammad and Sumanta Guha 2010. Automatic Analysis of Movies for Content Characterization. *Networking and Information Technology (ICNIT)*, 465 - 469. Manila [DOI: 10.1109/ICNIT.2010.5508472; 1.8.15].
- Dowty, David 1991. Thematic proto-roles and argument selection. *Language* 67,3:547-619.
- Drinka, Bridget 2009. The *\*to-/no-*construction of Indo-European. In: Vit Bubenik, John Hewson, and Sarah Rose (eds.), *Grammatical Change in Indo-European Languages*, 141-158. Amsterdam / Philadelphia: Benjamins.
- Du Bois, John W. 2003. Argument structure. Grammar in use. In: John W. Du Bois, Lorraine E. Kumpf and William J. Ashby (eds.), *Preferred Argument Structure. Grammar as architecture for function*, 11-60. Amsterdam and Philadelphia: John Benjamins.
- Ducrot, Oswald 1966, Compte rendu [Greimas, A. J. 1966]. *L'Homme* 6, 4: 121-123.
- Dunbar, Robin I. M. 1996. *Grooming, gossip and the evolution of language*. London: Faber and Faber.
- Dunkel, George E. 2002. *\*eġō* and *áġō*, *\*eġH-oh<sub>1</sub>* and *h<sub>2</sub>eġ-oh<sub>1</sub>*: Perseveration and the primary thematic ending *\*-ō*. In: Heinrich Hettrich (Hrsg.), *Indogermanische Syntax. Fragen und Perspektiven*, 89-103. Wiesbaden: Ludwig Reichert.
- Dunn, John Asher 1979. *A Reference Grammar for the Coast Tsimshian Language*. Ottawa: National Museum of Man (Canadian Ethnology Service, Mercury Series Paper No. 55).
- Dzhambekov, Sh. A. (ed.) 1990. *Nokhchiyn fol'klor*. Groznyj: Kniga.
- Edzard, Dietz Otto 1971/2: hamtu, maru und freie Reduplikation beim sumerischen Verbum I. *Zeitschrift für Assyriologie* 61: 208-232.

- Edzard, Dietz Otto 1972/3: hamtu, maru und freie Reduplikation beim sumerischen Verbum II. *Zeitschrift für Assyriologie* 62: 1-34
- Edzard, Dietz Otto 1976. hamtu, maru und freie Reduplikation beim sumerischen Verbum III. *Zeitschrift für Assyriologie* 66: 45-61.
- Edzard, Dietz Otto 2003. *Sumerian Grammar* (Handbuch der Orientalistik I/71), Leiden / Boston: Brill, 2003.
- Elliot, Alison J. 1981. *Child Language*. Cambridge: Cambridge University Press.
- Emmott, Catherine 1997. *Narrative Comprehension*. Oxford: Clarendon Press.
- Engels, David 2007. Geometrie und Philosophie. Zur Visualisierung metaphysischer Konzepte durch räumliche Darstellungen in der Pythagoreischen Philosophie. In: Dominik Groß & Stefanie Westermann (Hrsgg.), *Vom Bild zur Erkenntnis? Visualisierungskonzepte in den Wissenschaften*, 113-129. Kassel: kassel university press.
- Entwistle, William J. 1953. *Aspects of Language*. London: Faber.
- Erbaugh, Mary S. 1987. A uniform pause and error strategy for native and non-native speakers. In: Russel S. Tomlin (ed.), *Coherence and Grounding in Discourse*, 109-130. Amsterdam: Benjamins.
- Erichsen, Michaela 1944. Désinences casuelles et personnelles en eskimo. *Acta Linguistica Hafniensia* 4,2:67-88.
- Evans, Nicholas and David Wilkins 2000. In the mind's ear: the semantic extensions of perception verbs in Australian languages. *Language* 76,3: 546-592.
- Evans, Nicholas and David Wilkins. 1998. *The knowing ear: an Australian test of universal claims about the semantic structure of sensory verbs and their extension into the domain of cognition*. Institut für Sprachwissenschaft, Universität zu Köln. Arbeitspapier No. 32 (Neue Folge).
- Evans, Vyvyan 2007. *A Glossary of Cognitive Linguistics*. Edinburgh: Edinburgh University Press.
- Evans, Vyvyan and Melanie Green 2006. *Cognitive Linguistics. An Introduction*. Edinburgh: Edinburgh University Press.
- Fährnich, Heinz 1991. Old Georgian. In: Alice Harris (ed.), *The Indigenous Languages of the Caucasus, vol. 1: The Kartvelian Languages*, 131-217. Delmar, New York: Caravan.
- Fauconnier, Gilles 1999. Methods and Generalizations. In: T. Janssen and G. Redeker (eds.), *Scope and Foundations of Cognitive Linguistics*, 95-127. The Hague: Mouton De Gruyter.
- Feldman Jerome A. 2006. *From Molecule to Metaphor. A Neural Theory of Language*. Cambridge, Mass. MIT Press.
- Feldman, Jerome and Srinu Narayanan 2011. Simulation Semantics, Embodied Construction Grammar, and the Language of Actions and Events. *Proceedings of the International Workshop on Language - Action Tools for Cognitive Artificial Agents: Integrating Vision, Action and Language at the 25th Conference on Artificial Intelligence (AAAI-2011)*, San Francisco, California. <http://www.icsi.berkeley.edu/pubs/ai/feldman-aaai2011.pdf> (27.3.17)
- Fernandez-Vest, M.M. Jocelyne 2015. *Detachments for Cohesion. Towards an Information Grammar of Oral Languages*. Berlin, Munich, Boston. De Gruyter Mouton.
- Foley, William 1991. *The Yimas language of New Guinea*. Stanford: Stanford UP.
- Foley, William and Robert VanValin 1984...
- Fortson IV, Benjamin W. 2010. *Indo-European Language and Culture: An Introduction*. 2nd edition. Oxford, Chichester, Malden, MA: Blackwell.
- Foxvog, Daniel A. 1975. The Sumerian Ergative Construction. *Orientalia New Series* 44:395-425.
- Frege, Gottlob 1884. *Grundlagen der Arithmetik. Eine logisch mathematische Untersuchung über den Begriff der Zahl*. Breslau: Wilhelm Koebner.
- Fried, Miriam 2013. *Principles of constructional change*. In: Thomas Hoffmann & Graeme Trousdale (eds.), *The Oxford Handbook of Construction Grammar*, 419-437. Oxford and New York: Oxford University Press.
- Fulton, James T. 2000. *Processes in Animal Vision* {online} {Corona Del Mar, CA. USA} Vision Concepts, Available on the Internet: URL:<http://www.4colorvision.com>.
- Fulton, James T. 2000. *Processes in Animal Vision* {online} {Corona Del Mar, CA. USA} Vision Concepts, Available on the Internet: URL:<http://www.4colorvision.com>.
- Gabelentz, Hans Conon von der 1861. *Über das Passivum: Eine sprachvergleichende Abhandlung*. Leipzig: Hirzel.
- Gallese, Vittorio 2007. Mirror neurons and the social nature of language: The neural exploitation hypothesis. *Social Neuroscience* 2007: 1-17.

- Gallese, Vittorio and George Lakoff 2005. The brain's concepts: The role of the sensorimotor system in reason and language. *Cognitive Neuropsychology* 22: 455-479.
- Gallese, Vittorio, Luciano Fadiga, Leonardo Fogassi, and Giacomo Rizzolatti. 1996. Action recognition in the premotor cortex. *Brain* 119: 593-609.
- Galtung, Johan 1981. Structure, Culture and Intellectual Style. An essay comparing saxon, teutonic, gallic and nipponic approaches. *Social Science Formation* 20: 817-856.
- Gamkrelidze, Tamaz V. and Vjačeslav Vs. Ivanov 1984. *Indoeuropejskij jazyk i indoeuropejcy*. 2 volumes. Tbilisi: Izd. Tbilisskogo Universiteta.
- Gamq'relidze, Tamaz, and G. Mač'avariani 1965. *Sonant' ta sist'ema da ablaut'i kartvelur enebši: saerto-kartveluri st'rukt'uris t'ip'ologija*. Tbilisi: Saɣelmc'ipo universit'et'is gamomcemloba.
- Garrett, Andrew 1990. The Origin of NP Split Ergativity. *Language* 66:261-296.
- Gavins, Joanna 2007. *Text World Theory: An Introduction*. Edinburgh: Edinburgh University Press.
- Geeraerts, Dirk and Hubert Cuyckens (eds.) 2007. *The Oxford Handbook of Cognitive Linguistics*. Oxford: Oxford University Press.
- Geller, Mark J. 1998. Reflexives and Antipassives in Sumerian Verbs. *Orientalia* 67:85-106
- Genette, Gérard 1980. *Narrative Discourse. An Essay in Method*. Translated by Jane E. Lewin. Ithaca, N: Cornell University Press.
- Geniušienė, Emma 1987. *The Typology of Reflexives*. Berlin, New York: Mouton de Gruyter (Empirical Approaches to Language Typology 2).
- Gerasimova, H. M. 1978. Formuly russkoj volšebnoj skazki. *Sovetskaja étnografija* 5: 18-28.
- Gibbs Jr., Raymond W. 2006. *Embodiment and cognitive science*. Cambridge: Cambridge University Press.
- Gibbs Jr., Raymond W. and Herbert Colston 1995. The cognitive psychological reality of image schemas and their transformations. *Cognitive Linguistics* 6: 347-378.
- Gippert, Jost 1994. Die Glottaltheorie und die Frage urindogermanisch-kaukasischer Sprachkontakte. In: Elmegård Rasmussen (Hrsg.), *In honorem Holger Pedersen. Kolloquium der Indogermanischen Gesellschaft vom 26. bis 28. März 1993 in Kopenhagen*, 107-123. Wiesbaden: Reichert.
- Gippert, Jost 2004. Ein Problem der idg. Pronominalflexion. In: Adam Hyllested, Anders Richardt Jørgensen, Jenny Helena Larsson, Thomas Olander (Hrsg.), *Per aspera ad asteriscos. Studia Indogermanica in honorem Jens Elmegård Rasmussen*, 155-165. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.
- Gippert, Jost, Wolfgang Schulze, Zaza Aleksidze, and Jean-Pierre Mahé (eds.) 2009. *The Caucasian Albanian Palimpsests of Mt. Sinai*. Two volumes. Turnhout: Brépols.
- Girbal, Christian 1992. Das hurritische Antipassiv. *Studi Micenei ed Egeo-Anatolici* 29, 171-182.
- Givón, Talmy 1979. *On Understanding Grammar*. New York: Academic Press.
- Givón, Talmy 2001. *Syntax. An Introduction, Volume 1*. Amsterdam and Philadelphia: Benjamins.
- Glaserfeld, Ernst von 1996. *Radical Constructivism: A Way of Knowing and Learning*. London: Falmer Press.
- Goffman, Erwin 1956. *The Presentation of Self in Everyday Life*. Edinburgh: University of Edinburgh Social Sciences Research Centre.
- Goldberg, Adele E. 1995. *Constructions, A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.
- Goldberg, Adele E. 2006. *Constructions at Work. The nature of generalization in language*. Oxford: Oxford University Press.
- Goldstein, Kurt 1963. *Human nature in the light of psychopathology*. New York: Schocken. (First edition 1940, Cambridge, Mass.: Harvard UP).
- Golinkoff, Roberta M. and Kathy Hirsh-Pasek 2000. *How babies talk: the magic and mystery of language in the first three years of life*. New York: Plume.
- Goodale Malvyn A. and A. David Milner 1992. Separate visual pathways for perception and action. *Trends Neurosci.* 15 ,1: 20-25.
- Grady, Joseph E. 1997. *Foundations of meaning: Primary metaphors and primary scenes*. Berkeley: University of California PhD dissertation (<http://escholarship.org/uc/item/3g9427m2>).
- Grady, Joseph E. 2005a. Primary metaphors as inputs to conceptual integration. *Journal of Pragmatics* 37: 1595-1614.

- Grady, Joseph E. 2005b. Image schemas and perception: Refining a definition. In: Beate Hampe in cooperation with Joseph E. Grady (ed.), *From Perception to Meaning. Images Schemas in Cognitive Linguistics*, 35-56. Berlin: De Gruyter.
- Greimas, Algirdas Julien 1966. *Sémantique structurale*. Paris: Larousse.
- Grønbech, Kaare and John R. Krueger 1955. *An Introduction to Classical (Literary) Mongolian*. Wiesbaden: Harrassowitz.
- Grundt, Alice Wyland 1978. The Functional Role of the Indo-European Theme Vowel. *Pacific Coast Philology* 13:29-35.
- Gugeler, Traude 1999. Ergativität im Inuktitut. *Papers from of the Bremen Linguistic Workshop on Ergativity*. University of Bremen [http://www.fb10.uni-bremen.de/iaas/workshop/ergativ/gugeler.pdf].
- Guiraud, Pierre 1954. *Les Caractères Statistiques du Vocabulaire. Essai de méthodologie*. Paris: Presses Universitaires de France
- Gundel, Jeanette K. 1988. Universals of topic-comment structure In: M. Hammond, E. Moravcsik and J. Wirth (eds.), *Studies in Syntactic Typology*, 209-239, Amsterdam: Benjamins.
- Guvasary, Venera Antonova 2001. *Udiland*. Oslo: Bergersen.
- Hackstein, Olav 2007. Ablative Formations. In: Alan J. Nussbaum (ed.), *Verba Docenti. Studies in historical and Indo-European linguistics presented to Jay H. Jasanoff by students, colleagues, and friends*, 131-153. Ann Arbor: Beechstave Press.
- Hahn, Paul 1951. Reviewed Work: Les Deux Cent Mille Situations Dramatiques by Etienne Souriau. *Educational Theatre Journal* Vol. 3, 3: 266-268.
- Haig, Geoffrey L. J. 2008. *Alignment Change in Iranian Languages: A Construction Grammar Approach*. Berlin/New York: de Gruyter (Empirical Approaches to Language Typology 37).
- Hale, Kenneth, Eloise Jelinek, MaryAnn Willie 2003. Topic and Focus Scope Positions in Navajo. In: Simin Karimi (ed.), *Word Order and Scrambling*, 1-21. Oxford etc.: Blackwell.
- Halliday, Michael Alexander Kirkwood 2003 [1966]. *On Language and Linguistics. Edited by Jonathan Webster* (Collected works of M.A.K. Halliday, vol. 3.). London: Continuum.
- Harris, Alice 2002.**
- Harris, Alice C. 1981. *Georgian Syntax*. Cambridge: Cambridge University Press.
- Harris, Alice C. 1982a . Georgian and the Unaccusative Hypothesis. *Language* 58: 290-306.
- Harris, Alice C. 1982b. From Ergative to Active in Georgian. In: Howard I. Aronson and Bill J. Darden (eds.), *Folia Slavica 5, Papers from the Second Conference on the Non-Slavic Languages of the USSR*, 191-205. Columbus, Ohio: Slavica.
- Harris, Alice C. 1985. *Diachronic syntax: the Kartvelian case*. New York: Academic (Syntax & Semantics 18).
- Harris, Alice C. 1991a. Overview on the History of the Kartvelian Languages. In: Alice Harris (ed.), *The Indigenous Languages of the Caucasus, vol. 1: The Kartvelian Languages*, 7-83. Delmar, New York: Caravan.
- Harris, Alice C. 1991b. Mingrelian. In: Alice Harris (ed.), *The Indigenous Languages of the Caucasus, vol. 1: The Kartvelian Languages*, 313-394. Delmar, New York: Caravan.
- Harris, Alice C., and Lyle Campbell 1995. *Historical Syntax in Cross-Linguistic Perspective*. Cambridge: Cambridge University Press.
- Harth, Dietrich 2006. Ritual and Other Forms of Social Action. In: Jens Kreinath, Jan M.A. Snoek and Michael Stausberg (eds.), *Theorizing Rituals. Vol. I: Issues, Topics, Approaches, Concepts*, 15-36. Leiden and Boston: Brill.
- Haspelmath Martin & Thomas Müller-Bardey 2004. Valency change. In: Geert E. Booij, Christian Lehmann, Joachim Mugdan, Stavros Skopeteas (Hrsgg.), *Morphologie / Morphology. Ein internationales Handbuch zur Flexion und Wortbildung / An International Handbook on Inflection and Word-Formation*, 2. Halbband, 1130-1145. Berlin: de Gruyter.
- Hayes, John L. 2000. *A Manual of Sumerian Grammar and Texts*. Second revised and expanded edition (Aids and Research Tools in Ancient Near Eastern Studies 5), Malibu: Undena Publications.
- Haywood, John A. & H. M. Nahmad 1965. *A new Arabic grammar of the written language*. London: Lund Humphries.
- Haywood, John A. and H. M. Nahmad 1998 [1965]. *A new Arabic grammar of the written language*. 2<sup>nd</sup> edition. London: Lund Humphries.

- Hazenbos, Joost 2010. Hurritisch und syntaktische Ergativität. In: L. Kogan, N. Koslova, S. Loesov, and S. Tishchenko (eds.). *Babel and Bibel 4. Proceedings of the 53e Rencontre Assyriologique Internationale* Volume I, Part 2, Language in the Ancient Near East, Papers outside the Main Subjects, 989-997. Winona Lake, Indiana: Eisenbrauns.
- Heaps, Christopher M. and Michael Nash 2001. Comparing Recollective Experience in True and False Autobiographical Memories. *Journal of Experimental Psychology: Learning, Memory, and Cognition*. Vol. 27,4: 920-930.
- Heath, Jeffrey 1976. Antipassivization: A Functional Typology. *Berkeley Linguistics Society* 2: 202-211.
- Heider, Fritz 1920. *Zur Subjektivität der Sinnesqualitäten*. Unpublished dissertation University Graz.
- Heindrichs, Ursula and Heinz-Albert Heindrichs (Hrsg.) 1989. *Die Zeit im Märchen*. Kassel: Erich Roth Verlag.
- Heine, Bernd and Tania Kuteva 2002. *World Lexicon of Grammaticalization*. Cambridge: Cambridge University Press.
- Heine, Bernd. 1994. Areal influence on grammaticalization. In Marin Pütz (ed.), *Language Contact and Language Conflict*, 55-68. Amsterdam and Philadelphia: John Benjamins.
- Hemmer, Pernille and Kimele Persaud 2014. Interaction between categorical knowledge and episodic memory across domains. *Frontiers in Psychology* 2014, 5: 584. doi:10.3389/fpsyg.2014.00584.
- Henshilwood, Christopher S. and Francesco d'Errico (eds.) 2011. *Homo Symbolicus. The dawn of language, imagination and spirituality*. Amsterdam/Philadelphia: Benjamins.
- Henshilwood, Christopher S. und Marean, Curtis W. 2003. The Origin of Modern Human Behavior. Critique of the Models and Their Test Implications. *Current Anthropology* 44: 627-651.
- Herman, David 2001. Spatial Reference in Narrative Domains. *Text & Talk* 21,4: 515-541.
- Hewitt, George 1982. 'Anti-passive' and 'Labile' Constructions in North Caucasian. *General Linguistics* 22, 3:158-171.
- Hewitt, George 1987a. Georgian: ergative or active? *Lingua* 71:319-340.
- Hewitt, George 1987b. Unerwartete Subjektmarkierung im Kartwelischen. *Georgica* 10:13-17.
- Hewitt, George 1994. Georgian - ergative, active, or what? In: David C. Bennett, Theodora Bynon, B. George Hewitt (eds.), *Subject, Voice and Ergativity. Selected Essays. School of Oriental and African Studies*, 202-217. London: University of London.
- Hildago Downing, Laura 2000. Text World Creation in Advertising Discourse. *Revista Alicantina de Estudios Ingleses* 13: 67-88.
- Hilpert, Martin 2013. *Constructional change in English: Developments in allomorphy, word formation, and syntax*. Cambridge and New York: Cambridge University Press.
- Hirschberg, J. and D. Litman 1994. Empirical studies on the disambiguation of cue phrases. *Computational Linguistics*, 19,3: 501-530.
- Hochschild, Arlie Russel 1979. Emotion Work, Feeling Rules, and Social Structure. *American Journal of Sociology*, 85, 3: 551-575.
- Hochschild, Arlie Russell 2003. *The Commercialization of Intimate Life*. Berkeley: University of California Press.
- Hoijer, Harry 1938. *Chiricahua and Mescalero Apache Texts with Ethnological Notes by Morris Opler*. Chicago: Chicago University Press.
- Holisky, Dee Ann 1981. *Aspect and Georgian medial verbs*. Delmar, N.Y.: Caravan Books.
- Holisky, Dee Ann 1991. Laz. In: Alice Harris (ed.), *The Indigenous Languages of the Caucasus, vol. 1: The Kartvelian Languages*, 395-472. Delmar, New York: Caravan.
- Hollingworth Andrew and John M. Henderson 1999. Vision and cognition: Drawing the line. *Behavioral and Brain Sciences* 22,3: 380-381.
- Holšánová, Jana 2008. *Discourse, Vision, and Cognition*. Amsterdam/Philadelphia: Benjamins.
- Hopper, Paul & Sandra Thompson (eds.) 1983. *Studies in Transitivity*. New York: Academic Press. (*Syntax and Semantics* vol. 15).
- Hopper, Paul & Sandra Thompson 1980. Transitivity in grammar and discourse. *Language* 56: 251-299.
- Hopper, Paul 2003. Transitivity: What a Difference Two Decades Make! PIONIER Workshop on Case, Valency and Transitivity, Nijmegen 2003. Panel paper abstract.

- Hopper, Paul J. and Sandra A. Thompson (eds.) 1983. *Studies in Transitivity*. New York: Academic Press. (*Syntax and Semantics* vol. 15).
- Huang, Yan 2000. *Anaphora. A Cross-linguistic Approach*. Oxford: Oxford University Press.
- Humboldt, Wilhelm von 1817. *Berichtigungen und Zusätze zum ersten Abschnitte des zweyten Bandes des Mithridates über die cantabrische oder baskische Sprache*. Berlin: Voss.
- Humboldt, Wilhelm von 1968 [1904]. *Wilhelm von Humboldts Werke herausgegeben von Albert Leitzmann, dritter Band 1799-1818*. Berlin: de Gruyter [pp. 222-287 = Humboldt 1817].
- Hurford, James R. 2012. *The Origins of Grammar. Language in the Light of Evolution II*. Oxford: Oxford University Press.
- Hurford, James R. 2007. *The Origins of Meaning. Language in the Light of Evolution*. Oxford: Oxford University Press.
- Jacobs, Joachim 2001. The dimensions of topic-comment. *Language* 39,4: 641-681.
- Jacobsen, Thorkild 1988. The Sumerian verbal core. *Zeitschrift für Assyriologie* 78:161-220.
- Jahraus, Oliver 2001. Bewusstsein und Kommunikation. Zur Konzeption der strukturellen Kopplung. In: Oliver Jahraus et al. (eds.), *Bewusstsein – Kommunikation – Zeichen*, 23-48. Berlin: de Gruyter.
- Jake, Janice Lynn 1985. *Grammatical relations in Imbambura Quechua*. New York: Garland.
- Jakovlev
- Jakovlev 1940.
- Jakovlev, Nikolaj F. 1940. *Sintaksis čečenskogo literaturnogo jazyka*. Moscow-Leningrad: AN SSSR.
- Jastrow, Otto 1992. *Lehrbuch der Turoyo-Sprache*. Wiesbaden: Harrassowitz (Semitica Viva, Series Didactica 2).
- Jelinek, Eloise and Richard A. Demers 1983. The Agent Hierarchy and Voice in Some Coast Salish Languages. *International Journal of American Linguistics* 49,2:167-185.
- Jeschull, Liane 2004. Coordination in Chechen. In: Martin Haspelmath (ed.), *Coordination Constructions*, 241-268. Amsterdam and Philadelphia: Benjamins.
- Johns, Alana 1992. Deriving ergativity. *Linguistic Inquiry*, 23,1:57-88.
- Johns, Alana 1996. Ergativity: Working through some recent analyses. *GLOT* 2,6:3-7.
- Johns, Alana 2000. Ergativity: A Perspective on recent work. In: Lisa Cheng and Rint Sybesma (eds), *The First GLOT International State of the Article book; The Latest in Linguistics*, 47-73. Berlin / New York: Mouton de Gruyter.
- Johnson-Laird, Philip N. 1983. *Mental Models: Towards a Cognitive Science of Language, Inference, and Consciousness*. Cambridge: Cambridge University Press.
- Johnson, Mark 1987. *The body in the mind: The bodily basis of meaning, imagination, and reason*. Chicago, IL: University of Chicago Press.
- Jung, Carl Gustav 1968 [1961]. Symbole und Traumdeutung. *Carl Gustav Jung, Gesammelte Werke* 18/1, 199-285. Düsseldorf: Patmos-Walter-Verlag.
- Jung, Carl Gustav 1976a [1954]. Über die Archetypen des kollektiven Unbewußten. *Carl Gustav Jung, Gesammelte Werke* 9,1, 11-51. Düsseldorf: Patmos-Walter-Verlag.
- Jung, Carl Gustav 1976b [1954]. Theoretische Überlegungen zum Wesen des Psychischen. *Carl Gustav Jung, Gesammelte Werke* 8, 183-261. Düsseldorf: Patmos-Walter-Verlag.
- Jung, Kerstin 2008. World Cup football live on Spanish and Argentine television. The spectacle of language. In: Eva Lavric, Gerhard Pisek, Andrew Skinner, and Wolfgang Stadler (eds.), *The Linguistics of Football*, 343-358. Tübingen: Narr.
- Jürgens, Uwe 2000. A comparison of the neural systems underlying speech and non-speech vocal utterances. In: Bernhard H. Bichakjian, Tatiana Chernigovskaya, and Kendon and Anke Möller, (eds.), *Becoming Loquens. More Studies in Language Origins*, 1-13. Frankfurt am Main: Lang.
- Kalmár, Ivan 1979. The Antipassive and Grammatical Relations in Eskimo. In: Frans Plank (ed.), *Ergativity: Towards a Theory of Grammatical Relations*, 117-143. London: Academic Press.
- Kaplan, Abraham 2009 [1964]. *The Conduct of Inquiry. Methodology for Behavioral Science. With a new introduction by Charles Wolf, Jr.* New Brunswick and London: Transaction Publishers.
- Kappas, Arvid 1991. The illusion of the neutral observer: On the communication of emotion. *Cahiers de Linguistique Française* 12: 153-168.
- Karpiński, Jakub 1990. *Causality in Sociological Research*. Dordrecht, Boston, and London: Kluwer Academic Publishers.

- Keçaari, Georgi 1995. *Nana oçal*. Bakı: Azərb. Dövl. nəşr.
- Keçaari, Georgi 2001. *Orayin*. Bakı: Azərb. Dövl. nəşr.
- Keçaari, Georgi 2003. *Buruxmux*. Gəncə: Ağah.
- Keçaari, Georgi 2001. *Orayin*. Bakı: Azərbaycan Dövlət Nəşriyyatı.
- Keçaari, Georgi 2002. *Ocaq başında rəqs. Udi folkloru nümunələri* [The dance at the fire. Examples from Udi folklore]. Gəncə: Ağah.
- Kent, Roland G. 1953. *Old Persian. Grammar, texts, lexicon*. Second revised edition. New Haven, Conn.: American Oriental Society.
- Kibrik, Aleksandr E., Sandro V. Kodzasov, Irina P. Olovjannikova 1972. *Fragmenty grammatiki xinalugskogo jazyka*. Moskva: Izd. Moskovskogo universiteta.
- Kibrik, Alexandr E. (ed.) 1996. *Godoberi*. Munich: Lincom.
- Kienast, B. 1981. Probleme der Sumerischen Grammatik: 4. Bemerkungen zu hamtu und marû im Sumerischen; 5. Zur sogenannten "marû-Basis e 'sprechen"; 6. Zu den Klassen des sumerischen Verbuns, *Zeitschrift für Assyriologie* 70:1-35.
- King, Tracy Holloway 1994. Agentivity and the Georgian ergative. *Proceedings of the Berkeley Linguistics Society* 20:327–339.
- Kintsch, Walter 1988. The Role of Knowledge in Discourse Comprehension: A Construction-Integration Model. *Psychological Review*, 95(2), 163-182.
- Klaiman, Miriam H. 1978. Arguments Against a Passive Origin of the IA Ergative. *The Proceedings of the 14th Meeting of the Chicago Linguistic Society*, 204-216. Chicago: University of Chicago, Department of Linguistics.
- Klein, Jacob 2000. The independent pronouns in the Šulgi hymns. *Acta Sumerologica* 22:135–152.
- Klimov, Georgij, A. 1994. *Einführung in die kaukasische Sprachwissenschaft. Aus dem Russischen übersetzt und bearbeitet von Jost Gippert*. Hamburg: Buske.
- Klimov, Georij A. 1991. Some thoughts on Indo-European-Kartvelian relation. *Journal of Indo-European Studies* XIX/3-4:323-340.
- Knobloch, Johann 1953. La voyelle thématique *-e/o-* serait-elle un indice d'objet indoeuropeen? *Lingua* 3:407-420.
- Kok, Kasper and Alan Cienki 2017. Taking simulation semantics out of the laboratory: towards an interactive and multimodal reappraisal of embodied language comprehension. *Language and Cognition* 9: 1-23.
- Kölligan, Daniel 2002. Zur Funktion schwundstufiger *-é/ē/o-*Präsentia im Indogermanischen. In: Heinrich Hettrich (Hrsg.), *Indogermanische Syntax. Fragen und Perspektiven*, 249-261. Wiesbaden: Ludwig Reichert.
- König, Christa 2008. *Case in Africa*. Oxford: Oxford University Press.
- Korn, Agnes 2004. The Ergative System in Balochi from a Typological Perspective. Technical report. In: Behrooz Mahmoodi Bakhtiari (ed.), *Studies on the Typology of the Iranian Languages*. Fremont, CA: Jain Publishing [http://www.iranianlinguistics.org/papers/ergativ.pdf].
- Kortlandt, Frederik 1983. Proto-Indo-European verbal syntax. *Journal of Indo-European Studies* 11:307–324.
- Korzybski, Alfred 1996 [1933]. *Science and Sanity. An Introduction to Non-Aristotelian Systems and General Semantics*, 5<sup>th</sup> edition. New York: Institute of General Semantics.
- Krauss, Rosalind E. 1994. *The Optical Unconscious*. Cambridge, Mass.: MIT Press.
- Krauzlis, Richard J. 2005. The Control of Voluntary Eye Movements: New Perspectives. *Neuroscientist* 11,2:124–137.
- Krebernik, Manfred 2002. Zur Struktur und Geschichte des älteren sumerischen Onomastikon. In: Michael P. Streck and Stefan Weninger (Hrsgg.), *Altorientalische und Semitische Onomastik*, 1-74. Münster: Ugarit.
- Krifka, Manfred 2007. Functional Similarities between Bimanual Coordination and Topic/Comment Structure: In: Shin Ishihara, Stefanie Jannedy, and Anne Schwarz (eds.), Working Papers of the SFB632. *Interdisciplinary Studies on Information Structure* 8: 61-96. Potsdam: Universitätsverlag Potsdam.
- Krifka, Manfred 2008. Functional similarities between bimanual coordination and topic/comment structure. In: Regine Eckardt, Gerhard Jäger, and Tonjes Veenstra (eds.), *Variation, Selection, Development. Probing the Evolutionary Model of Language Change*, 307-336. Berlin: Mouton de Gruyter.
- Krisch, Thmoas 2002. Indogermanische Wortstellung. In: : Heinrich Hettrich (Hrsg.), *Indogermanische Syntax. Fragen und Perspektiven*, 137-156. Wiesbaden: Ludwig Reichert.

- Kuhns, David F. 1997. *German Expressionist Theatre: The Actor and the Stage*. Cambridge: Cambridge University Press.
- Kulikov, Leonid & Andrej L. Malchukov & Peter de Swart (eds.) 2006. *Case, Valency and Transitivity*. Amsterdam/Philadelphia: Benjamins.
- Kulikov, Leonid & Andrej L. Malchukov & Peter de Swart (eds.) 2006. *Case, Valency and Transitivity*. Amsterdam/Philadelphia: Benjamins.
- Kulikov, Leonid 2003. The labile syntactic type in a diachronic perspective: the case of Vedic. *SKY Journal of Linguistics* 16:93-112.
- Kuno, Susumo & Ken-ichi Takami 2004. *Functional Constraints in Grammar*. Amsterdam/Philadelphia: Benjamins.
- Kuno, Susumo & Ken-ichi Takami 2004. *Functional Constraints in Grammar*. Amsterdam/Philadelphia: Benjamins.
- Kuryłowicz, Jerzy 1956. *L'apophonie en indo-européen*. Wrocław: Zakład Imienia Ossolińskich, Wydawnictwo Polskiej Akademii Nauk.
- Kuryłowicz, Jerzy 1964. *The Inflectional Categories of Indo-European*. Heidelberg: Winter.
- Kutscher, Silvia, Johanna Mattisen, Anke Wodarg (Hrsg.) 1995. *Das Muʾaʿfi-Lazische* (Arbeitspapier 24, Neue Folge). Köln: Institut für Sprachwissenschaft, Universität zu Köln.
- Lacroix, René 2007 [ms.]. Ditransitive Constructions in Laz [[http://www.eva.mpg.de/lingua/conference/07\\_DitransitiveConstructions/pdf/handouts/Handout\\_Lacroix.pdf](http://www.eva.mpg.de/lingua/conference/07_DitransitiveConstructions/pdf/handouts/Handout_Lacroix.pdf)].
- Lakoff, George 1987a. *Women, Fire, and Dangerous Things*. Chicago, IL: University of Chicago Press.
- Lakoff, George 1987b. Cognitive models and prototype theory. In: Ulrich Neisser (ed.), *Concepts and Conceptual Development: Ecological and Intellectual Factors in Categorization*, 63-100. Cambridge etc.: Cambridge University Press.
- Lambrecht, Knud 1994. *Information Structure and Sentence Form: Topic, Focus, and the Mental Representations of Discourse Referents*. Cambridge: Cambridge University Press.
- Lambrecht, Knud 2000. When subjects behave like objects: a markedness analysis of sentence focus constructions across languages. *Studies in Language* 24: 611-82.
- Landheer, Bart 1992 [1952]. *Mind and Society. Epistemological Essay on Sociology*. Dordrecht: Springer.
- Langacker, Ronald 1987. *Foundations of Cognitive Grammar V. I: Theoretical Prerequisites*. Stanford: Stanford University Press.
- Langacker, Ronald 1991. *Foundations of Cognitive Grammar V. II: Descriptive Application*. Stanford: Stanford University Press.
- Langacker, Ronald 2000. *Grammar and Conceptualization*. Berlin: Mouton de Gruyter.
- Langacker, Ronald 2008.**
- Lauwerier, Hans 1991. *Fractals: Endlessly Repeated Geometric Figures*. Princeton, NJ: Princeton University Press.
- Lazard, Gilbert 1998. Esquisse de typologie actancielle des langues du Caucase, In: J. Feuillet (éd.), *Actances et Valence dans les Langues de l'Europe*, 939-960. Berlin / New York: de Gruyter.
- Lazard, Gilbert 2001. *Études de linguistique générale: typologie grammaticale*. Leuven etc.: Peeters.
- Lazard, Gilbert 2002. Transitivity revisited as an example of a more strict approach in typological research. *Folia linguistica* 36,3-4: 141-190.
- Lehman, Mia Lorena 2017. *Adaptive sensory environments. An introduction*. Routledge: New York.
- Lehmann, Christian 1995[1982]. *Thoughts on grammaticalization*. Munich: Lincom Europa.
- Lehmann, Winfried P. 1993. *Theoretical Bases of Indo-European Linguistics*. London / New York: Routledge.
- Leslie, Alan M. 1982. The perception of causality in infants. *Perception* 11: 173-186.
- Leslie, Alan M. 1994. ToMM, ToBY, and Agency: core architecture and domain specificity. In: L. A. Hirshfeld and S. A. Gelman (eds.), *Mapping the mind: domain specificity in cognition and culture*, 119-148. New York: Cambridge University Press.
- Letučij, Alexandr B. 2006. *Tipologija labil'nyx glagolov: Semantičeskie i morfosintaksičeskie aspekty*. Moskva: PhD Dissertation, Rossijskij Gosudarstvennyj Gumanitarnyj Universitet.
- Levin, Beth 1993. *English Verb Classes and Alternations: A Preliminary Investigation*. Chicago: University of Chicago Press.

- Levine John M. and Eliot R. Smith 2013. Group Cognition: Collective Information Search and Distribution. In: Donal Carlston (ed.), *The Oxford Handbook of Social Cognition*, 616-633. Oxford: Oxford University Press.
- Li, Charles N. and Sandra A. Thompson 1976. Subject and topic: a new typology of language. In: Charles Li (ed.), *Subject and Topic*, 457-489. New York: Academic Press.
- Liebert, Gösta 1957. *Die indoeuropäischen Personalpronomina und die Laryngaltheorie*. Lund: Gleerup.
- Liljebblad, Sven 1927. *Die Tobiasgeschichte und andere Märchen mit toten Helfern*. Lund: P. Lindstedts Univ.-Bokhandel.
- Lobina, David 2013. Review of James Hurford. The Origins of Grammar. *Disputatio* V, No.37: 375-381. [http://www.disputatio.com/wp-content/uploads/2013/11/Lobina-David\\_The-Origins-of-Grammar-by-James-R-Hurford.pdf](http://www.disputatio.com/wp-content/uploads/2013/11/Lobina-David_The-Origins-of-Grammar-by-James-R-Hurford.pdf). [15.3.17].
- Lumsden, Charles J. and Edward O. Wilson 1981. *Genes, Mind, and Culture. The coevolutionary process*. Cambridge, M.A.: Harvard University Press.
- Lumsden, Charles, J. 1988. Psychological Development: Epigenetic Rules and Gene-Culture Coevolution. In: Kevin B. MacDonald (ed.), *Sociobiological Perspectives on Human Development*, 234-267. New York: Springer.
- Luraghi, Sylvania 1988. Proto-IE as an Ergative Language. *Journal of Indo-European Studies* 15:359-379.
- Lüthi, Max 2008. *Es war einmal. Vom Wesen des Volksmärchens*. Göttingen: Vandenhoeck.
- Malle, Bertram F. 2001. Attribution theories: How people make sense of behavior. In: D. Chadee (ed.), *Theories in social psychology*, 72-95. Oxford: Wiley-Blackwell.
- Manaster-Ramer, Alexis 1994. The origin of the term "ergative". *Sprachtypologie und Universalienforschung* 47,3: 211-214.
- Mandler, Jean M. and Cristóbal Pagán Cánovas 2014. On defining image schemas. *Language and Cognition* 6, 4: 510-532.
- Mannheim, Karl 1980 [1922]. *Eine soziologische Theorie der Kultur und ihrer Erkennbarkeit - konjunktives und kommunikatives Denken*. Frankfurt a.M.: Suhrkamp.
- Manning, Christopher 1996. *Ergativity: Argument Structure and Grammatical Relations*. Stanford: CSLI Publications.
- Marinetti, Filippo Tommaso 1913/4. Distruzione della sintassi - Immaginazione senza fili - Parole in libertà. In: Filippo T. Marinetti (dir.), *Movimento Futurista*, 133-146. Firenze: Lacerba.
- Marinetti, Filippo Tommaso 1913. Supplement zum Technischen Manifest der Futuristischen Literatur. *Der Sturm*, 3, 150-151: 279-280.
- Martins, Silvana & Valteir Martins 1999. Makú. In: Robert M.W. Dixon and Alexandra Y. Aikhenvald (eds.), *The Amazonian Languages*, 251-267. Cambridge: Cambridge University Press.
- Masica, Colin P. 1991. *The Indo-Aryan Languages*. Cambridge: Cambridge University Press.
- Maslova, Elena S. 1994. Cognitive Strategies in the Formation of Topic Constructions. *Nordic Journal of Linguistics* 17: 127-139.
- Matić, Dejan 2003. Topic, focus, and discourse structure: Ancient Greek word order. *Studies in Language* 27,3: 573-633.
- Matić, Dejan 2015. Information Structure in Linguistics. In: J. D. Wright (ed.), *The International Encyclopedia of Social and Behavioral Sciences* (2nd ed.), vol. 12, 95-99. Amsterdam: Elsevier.
- Maturana, Humberto 2002. Autopoiesis, Structural Coupling and Cognition: A history of these and other notions in the biology of cognition. *Cybernetics & Human Knowing* 9,3-4:5-34.
- Mauthner, Fritz 1921 [1901]. *Beiträge zu einer Kritik der Sprache*. Erster Band: Zur Sprache und Psychologie. 3. Aufl. Stuttgart and Berlin: J.G. Cotta'sche Buchhandlung Nachfolger.
- Mead, George Herbert 1934. *Mind, Self, and Society*. Ed. by Charles W. Morris. Chicago: University of Chicago Press.
- Meier-Branecke, Marlis 1969. *Die Rittertreue. Kritische Ausgabe und Untersuchungen*. Hamburg: Buske.
- Metzinger, Thomas 2004 [1993]. *Subjekt und Selbstmodell. Die Perspektivität phänomenalen Bewußtseins vor dem Hintergrund einer naturalistischen Theorie mentaler Repräsentation*. Paderborn: mentis.
- Michalowski, Piotr 1980. Sumerian as an Ergative Language, I. *Journal of Cuneiform Studies*, Vol. 32, 2:86-103.
- Miller, Boris V. 1953. *Talyšskij jazyk*. Moskva: Izd. Akademii Nauk SSSR.
- Miller, Carolyn R. 1984. Genre as Social Action. *Quarterly Journal of Speech* 70,2: 151-167.

- Miller, George A. 1956. The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review* 63: 81-89.
- Mishkin, Mortimer, Leslie G. Ungerleider, and Kathleen A. Macko 1983. Object vision and spatial vision: two cortical pathways. *Trends in Neurosciences* 8: 414-417.
- Mithun, Marianne 1984. The evolution of noun incorporation. *Language* 60,4: 847-894.
- Mithun, Marianne 1986. On the nature of noun incorporation. *Language* 62,1: 32-37.
- Mithun, Marianne 1999. *The languages of native North America*. Cambridge: Cambridge University Press.
- Modini, Paul 1989. Ergative, passive and the other devices of functional perspective. *Folia Linguistica Historica* 8:351-364.
- Mulder, Jean Gail 1994. *Ergativity in Coast Tsimshian (Sm'algax)*. Berkeley etc.: University of California Press. (University of California Publications: Linguistics Volume 124).
- Müller, Friedrich 1887. *Grundriß der Sprachwissenschaft* III,2. Die Sprachen der mittelländischen Rasse. Wien: Holder.
- Næss, Åshild 2007. *Prototypical Transitivity*. Amsterdam/Philadelphia: Benjamins.
- Næss, Åshild 2007. *Prototypical Transitivity*. Amsterdam/Philadelphia: Benjamins.
- Neu, Erich 1989. Zum Alter der personifizierenden *-ant*-Bildungen des Hethitischen. Ein Beitrag zur Geschichte der indogermanischen Genuskategorie. *Historische Sprachforschung* 102:1-15.
- Nichols, Johanna 1992. *Linguistic Diversity in Space and Time*. Chicago: University of Chicago Press.
- Noon, Alistar 2009. *The Last Drop. Versions of August Stramm*. Kelvedon: Intercapillary Edition.
- Noonan, Michael and Elena Mihas 2007. *Areal Dimensions in Case Syncretism: Ablatives and Genitives*. Michael Noonan Electronic publications. [<http://archiv.ub.uni-heidelberg.de/savifadok/volltexte/2008/209/>].
- Norman, William and Lyle Campbell 1978. Toward a proto-Mayan syntax: a comparative perspective on grammar. In: Nora C. England (ed.), *Papers in Mayan linguistics*, 25-54. Columbia: Museum of Anthropology, University of Missouri.
- O'Sullivan, Carol A. and Roman G. Reilley 1997. Real-time Adaptive Collision Testing. An Interactive Vision Approach. In: D. Thalmann and M. van de Panne (eds.), *Computer Animation and Simulation '97*, 163-176. Wien and New York: Springer.
- Oberschelp, Walter 2007. Bild und Wirklichkeit. In: Dominik Groß and Stefanie Westermann (Hrsgg.), *Vom Bild zur Erkenntnis? Visualisierungskonzepte in den Wissenschaften*, 29-46. Kassel: kassel university press.
- Oettinger, Norbert 2001. Neue Gedanken über das *-nt-* Suffix. In: Onofrio Carruba und Wolfgang Meid (Hrsgg.), *Anatolisch und Indogermanisch. Anatolico e indoeuropeo. Akten des Kolloquiums der Indogermanischen Gesellschaft, Pavia 22-25. September 1998*, 301-315. Innsbruck: Institut für Sprachen und Literaturen der Universität Innsbruck (Innsbrucker Beiträge zur Sprachwissenschaft 100).
- Osborn, Jr., Henry A. 1967. Warao III: Verbs and Suffixes. *International Journal of American Linguistics* 33, 1: 46-65.
- Otsuka, Yuko 2001. Syntactic Ergativity in Tongan. In: Maria Liakata, Britta Jensen, and Didier Maillat (eds.), *Oxford University Working Papers, in Linguistics, Philology & Phonetics* 6: 189-214. [<http://www.ling-phil.ox.ac.uk/files/uploads/OWP2001.pdf>]
- Palmer, Gary B. 2007. Cognitive Linguistics and Anthropological Linguistics. In: Dirk Geeraerts and Hubert Cuyckens (eds.), *The Oxford Handbook of Cognitive Linguistics*, 1045-1073. Oxford: Oxford University Press.
- Patri, Sylvain 2007. *Les structures d'alignement dans les langues indo-européennes d'Anatolie*. Wiesbaden: Harrassowitz.
- Paul S. Katz, Paul S. 2011. Neural mechanisms underlying the evolvability of behavior. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences* 366(1574): 2086-2099.
- Pavličková, Eva 2014. The role of nominalization in English legal texts. <http://www.pulib.sk/web/kniznica/elpub/dokument/Kacmarova3/subor/pavlickova.pdf>
- Pedersen, Holger 1907. Neues und nachträgliches. *Zeitschrift für vergleichende Sprachforschung* 40:129-217.
- Pedersen, Holger 1933 Zur Frage nach der Urverwandtschaft des Indoeuropäischen mit dem Ugrofinnischen, *Memoires de la Societe Finnoougrienne* 67:308-325.
- Pedersen, Holger 1938. *Hittitisch und die anderen indoeuropäischen Sprachen*. København: Levin & Munksgaard.
- Peterson, John M. 1998. *Grammatical relations in Pāli and the Emergence of Ergativity in Indo-Aryan*. Munich: Lincom Europa.

- Piaget, Jean 1948 [1923]. *Langage et pensée chez l'enfant*. 3<sup>e</sup> éd. 1948 Neuchâtel: Delachaux et Niestlé.
- Piaget, Jean 1954. *The Construction of Reality in the Child*, translated by Margaret Cook. New York: Basic Books.
- Pickering, Martin J. and Simon Garrod 2013. *An integrated theory of language production and comprehension*. *Behavioral and Brain Sciences* 36, 4: 329-347.
- Pinker, Steven 2003. Language as an Adaptation to the Cognitive Niche. In: M.H. Christiansen and S. Kirby (eds.), *Language Evolution: The States of the Art*, 16-37. Oxford: Oxford University Press.
- Pirejko, Lija 1979. On the Genesis of the Ergative Construction in Indo-Iranian. In: Frans Plank (ed.), *Ergativity. Towards a Theory of Grammatical Relations*, 481-488. London: Academic Press.
- Polinsky, Maria 2005. Antipassive Constructions. In: Martin Haspelmath, Matthew S. Dryer, Davil Gil, Bernard Comrie (eds.), *The World Atlas of Language Structures. With the collaboration of Hans-Jörg Bibiko, Hagen Jung, and Claudia Schmidt*, 438-441. Oxford 2005: Oxford University Press.
- Polti, Georges 1895. *Les trente-six situations dramatiques*. Paris: Édition du Mercure de France.
- Postal, Paul 1977. Antipassive in French. *Linguisticae Investigationes* 1:333-374.
- Pott, August F. 1873. Unterschied eines transitiven und intransitiven Nominativs. *Beiträge zur vergleichenden Sprachforschung* 7:71-94.
- Pray, Bruce 1976. From Passive to Ergative in Indo-Aryan. In *The Notion of Subject in South Asian Languages*, 195–211. Madison, WI.: University of Wisconsin (South Asian Studies Publication Series 2).
- Price, A. W. 2008. *Contextuality in Practical Reason*. Oxford: Oxford University Press
- Primus, Beatrice. 1993. Word order and information structure: A performance-based account of topic positions and focus positions. In: Joachim Jacobs, Arnim von Stechow, W. Sternefeld and Theo Vennemann (eds.), *Syntax. Ein internationales Handbuch zeitgenössischer Forschung*, 880- 896. Berlin and New York: Walter de Gruyter.
- Propp, Vladimir 1928. *Morfologija skazki*. Leningrad: Academia.
- Propp, Vladimir J. 1928. *Morfologija skazki*. Leningrad: Academia (Voprosy poetiki XII).
- Pulvermüller, Friedemann and Luciano Fadiga 2010. Active perception: sensorimotor circuits as a cortical basis for language. *Nature Reviews Neuroscience* 11: 351-360.
- Pylyshyn, Zenon 1999. Is vision continuous with cognition? The case for cognitive impenetrability of visual perception. *Behavioral and Brain Sciences* 22,3: 341-365.
- Qian, Ning 1997. Binocular Disparity Review and the Perception of Depth. *Neuron*, 18: 359–368.
- Randriamasimanana, Charles 2001. *Malagasy Verbal Voice System, Part 1*. Academia Sinica. Institute of Linguistics. Nankang, Taiwan. [<http://www.ratsimandresy.org/Hardcopy/Ch4.pdf>].
- Rasololon, Janie Noelle 1997. *Lehrbuch der madagassischen Sprache*. Hamburg: Buske.
- Rasololon, Janie Noëlle 1997. *Lehrbuch der madagassischen Sprache*. Hamburg: Buske.
- Rastorgueva, Vera S. & E. K. Molčanova 1981. Parfjanskij jazyk. In: *Osnovy iranskogo jazykoznanija* 2, 1347-232. Moskau: Nauka.
- Ray, Sidney H. and Alfred C. Haddon 1896. A study of the languages of Torres Straits with vocabularies and grammatical notes. Part II. *Royal Irish Academy – Proceedings series* 3,4:119-373.
- Reddy, Michael J. 1979. The conduit metaphor: A case of frame conflict in our language about language. In A. Ortony (ed.), *Metaphor and Thought*, 284-310. Cambridge: Cambridge University Press.
- Regulyová, Jana 2016. *Die Linguistik expressionistischer Lyrik*. Banská Bystrica (UMB PhD dissertation, Chair of German Language).
- Rijkhoff, Jan 2002. *The Noun Phrase*. Oxford: Oxford University Press.
- Rix, Helmut 1988. The Proto-Indo-European Middle. Content, Form, Origins. *Münchener Studien zur Sprachwissenschaft* 49:101-119.
- Rizzolatti, Giacomo and Michael Arbib 1998. Language within our grasp. *Trends in Neuroscience* 21: 188–194.
- Roberts, Craig 2012. Information structure in discourse: Towards an integrated formaltheory of pragmatics. *Semantics and Pragmatics* 5, Article 6:1-69. [<http://dx.doi.org/10.3765/sp.5.6>]
- Robertson, Jr., D.W. 1946. A Note on the Classical Origin of “Circumstances” in the Medieval Confessional. *Studies in Philology* 43, 1: 6-14.
- Romero-Figeroa, Andrés 1997. *A Reference Grammar of Warao*. München/Newcastle: Lincom.
- Roshiyanu, Nikolae 1974. *Tradicionnye formuly skazki*. Moskva: Nauka.
- Rubin, Edgar 1915. *Synsoplevede Figurer: Studier i psykologisk Analyse. Første Del*. Copenhagen and Christiania: Gyldendalske Boghandel, Nordisk Forlag.

- Rucci, Michele, Paul V. McGraw, and Richard J. Krauzlis 2016. Editorial: Fixational eye movements and perception. *Vision Research* 118: 1–4.
- Rumsey, Alan 1987. The chimera of Proto-Indo-European ergativity. *Lingua* 71:297–318.
- Ryan, Marie-Laure 2003. Cognitive Maps and the Construction of Narrative Space. In: David herman (ed.), *Narrative Theory and the Cognitive Sciences*, 214–242. Stanford, Ca.: CSLI Publications.
- Sacks, H. 1984b. On doing “Being Ordinary”. In: J.M. Atkinson and J. Heritage (eds.), *Structures of Social Action: Studies in Conversation Analysis*, 413–329. Cambridge: Cambridge University Press.
- Sacks, H., E.A. Schegloff and G. Jefferson 1974. A simplest systematics for the organization of turn-taking for conversation. *Language* 50: 696–735.
- Sallaberger, Walter and Wolfgang Schulze 2007. Grammatische Relationen im Sumerischen. In: *Zeitschrift für Assyriologie* 2007,2: 163–214.
- Sapir, Edward 1917. Review of C.C. Uhlenbeck ‘Het passieve karakter van het verbum transitivum of van het verbum actionis in talen van Noord-America’. *International Journal of American Linguistics* 1: 82–86.
- Sasse, Hans-Jürgen 1995. Prominence Typology. In: Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld, and Theo Vennemann (eds.), *Syntax. An International Handbook of Contemporary Research*, 1065–1075. Berlin: de Gruyter.
- Saxokija, Maia M. 1985. *Possessivnost’, perexodnost’ i érgativnost’*. *Tipologičeskoe sopostavlenie drevnepersidskix, drevnearmjanskix i drevnegruzinskix konstrukcij*. Tbilisi: Mecniereba,
- Saxokija, Maia M. 2005. Tipologija v morfosintaksise armjanskogo jazyka.: tekst i diskurs v dinamike. In: V. I. Podlesskaja (ed.), *Četvertaja tipologičeskaja škola. Meždunarodnaja škola po lingvističkoj tipologii i antropologii*, 292–294. Moskva: Rossijskij gosudartsvennyj gumanitarnyj universitet.
- Schacter, Daniel L., Daniel T. Gilbert, Daniel M. Wegener, and Bruce Hood 2016. *Psychology. Second European Edition*. New York and London: Palgrave.
- Schanidse, Akaki 1982. *Grammatik der altgeorgischen Sprache*. Tbilisi: Tbilisis universit’et’is gamomcemloba.
- Scheibl, György 2006. Aktiv, Passiv und Antipassiv. Argumentale Reorganisation im Deutschen. *Deutsche Sprache Zeitschrift für Theorie, Praxis, Dokumentation* 04/2006: 354 - 382.
- Schlobinski, Peter and Stephan Schütze-Coburn, S. 1992. On the Topic of Topic and Topic Continuity. *Linguistics* 30, 89–121.
- Schmalstieg William 2004, The common origin of the \*-o stem dative, accusative and instrumental cases. *Baltistica* XXXIX:5–11.
- Schmalstieg, William 1997. The origin of the neuter nominative-accusative singular in \*-om. *Journal of Indo-European Studies* XXV,3/4:401–407.
- Schmalstieg, William 2006. In defense of an old idea The \*-o stem origin of the Indoeuropean ablative case. *Baltistica* XLI,1:7–13.
- Schmidt, Karl-Horst 1979. Active and Ergative Stages of Pre-IE. In: Frans Plank (ed.), *Ergativity. Towards a Theory of Grammatical Relations*, 333–345. Academic Press, London.:
- Schmidt, Pater Wilhelm 1902. Die sprachlichen Verhältnisse von Deutsch-Neuguinea. In: *Zeitschrift für afrikanische, ozeanische und ostasiatische Sprachen* 6:1–99.
- Schreyer, Lothar 1918. Expressionistische Dichtung. In: *Sturm-Bühne: Jahrbuch des Theaters der Expressionisten* 5: 19–20.
- Schuchardt, Hugo 1896. Über den passiven Charakter des Transitivs in den kaukasischen Sprachen. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften (Wien), Philosophisch-historische Classe* 133,1:1–91.
- Schulze, Ilona 2014. *Sprache als fait culturel. Studien zur Emergenz, Motiviertheit und Systematizität des Lexikon des Minderico*. Hamburg: Kovač.
- Schulze, Wolfgang (in preparation). *Aspects of Cognitive Typology*.
- Schulze, Wolfgang (in press). Sprache als kommunizierte Wahrnehmung. Ein Essay in sieben Teilen. In: Christine Jaquet-Pfau et al. (éd.), *Au mémoire de Jean-Marie Zemb*. Paris.
- Schulze, Wolfgang [forthcoming]. *A functional Grammar of Udi*.
- Schulze, Wolfgang & Walter Sallaberger 2007. Grammatische Relationen im Sumerischen. In: *Zeitschrift für Assyriologie* 97,2:163–214.
- Schulze, Wolfgang 1990. Prototypik in der Diachronie. Zur Frage der indogermanischen Diathesen. *Folia Linguistica Historica* X,1:1–19.

- Schulze, Wolfgang 1998. *Person Klasse, Kongruenz*, vol. 1,1-2. Munich: Lincom.
- Schulze, Wolfgang 2000. Towards a typology of the Accusative Ergative Continuum. *General Linguistic* 37:71-155.
- Schulze, Wolfgang 2000a. *Northern Talysh*. Munich: Lincom Europa.
- Schulze, Wolfgang 2000b. Towards a Typology of the Accusative Ergative Continuum - The Case of East Caucasian. *General Linguistics* 37:71-155.
- Schulze, Wolfgang 2001. *Selbstlernen und Selbstreflexion: Grundlagen einer Emergenz-Theorie der sprachlichen Interaktion auf der Basis der 'Grammatik von Szenen und Szenarien'*. Munich Working Papers in Cognitive Typology 1.
- Schulze, Wolfgang 2002. Mingrelisch. In: Miloš Okuka & Gerald Krenn (Hrsg.), *Wieser Enzyklopädie des Europäischen Ostens, Band 10. Lexikon der Sprachen des europäischen Ostens*, 869-873. Klagenfurt: Wieser Verlag.
- Schulze, Wolfgang 2004. Pragmasyntax: Towards a cognitive typology of the Attention Information Flow in Udi narratives. In: Augusto Soares da Silva, Amadeu Torres, Miguel Gonçalves (eds.) *Linguagem, Cultura e Cognição: Estudos de Linguística Cognitiva*, 2 vols, 545-574. Coimbra: Almedina 2004.
- Schulze, Wolfgang 2005. From Case to Case in Udi. In: Dag Haug and Eirik Welo (eds.), *Haptachaptaitish, Festschrift for Fridrik Thordarson*, 251-266. Oslo: Novus.
- Schulze, Wolfgang 2007. Communication or Memory Mismatch? Towards a Cognitive Typology of Questions. In: Günter Radden, & Klaus-Michael Köpcke, & Thomas Berg & Peter Siemund (eds.), *Aspects of Meaning Construction*, 247-264. Amsterdam/ Philadelphia: Benjamins.
- Schulze, Wolfgang 2007. *Personalität in den ostkaukasischen Sprachen*. Munich Working Papers in Cognitive Typology, Bd. 4. München: ePub UB Munich [<http://epub.ub.uni-muenchen.de/10612/1/mwpet4.pdf>].
- Schulze, Wolfgang 2008. Deictic Strategies in Udi. In: M.E. Alekseev, T. A. Majsak, D.S. Ganenko, Ju. A. Lander (red.koll.). *Udinskij sbornik: Grammatika, leksika, istorija jazyka*, 241-310. Moskva: Academia,
- Schulze, Wolfgang 2009. A new model of metaphorization: Case systems in East Caucasian. In: Antonio Barcelona, Klaus Uwe Panther, Günter Radden. Linda L. Thorburg (eds.), *Metonymy and Metaphor in Grammar*, 147-175. Amsterdam & Philadelphia: Benjamins.
- Schulze, Wolfgang 2010. Einfalt (in) der Vielfalt: Reduktionismus in den Sprachwissenschaften und die Fraktale der Sprache. *Slowakische Zeitschrift für Germanistik* 2:11-41.
- Schulze, Wolfgang 2010b. Sprache – Kultur – Ethnie: eine kritische Reflexion. In: Matthias Theodor Vogt, Jan Sokol, Dieter Bingen, Jürgen Neyer, Albert Löhr (Hrsg.). *Minderheiten als Mehrwert. Schriften des Collegium Pontes, Band VI*, 27-43. Bern, Berlin, Bruxelles, Frankfurt am Main, New York, Oxford, Wien: Verlag Peter Lang.
- Schulze, Wolfgang 2010c. Kognitive Linguistik und Sprachdokumentation: Zwei Seiten einer Medaille? In: Annette Endruschat und Vera Ferreira (Hrsg.). *Akten der 8. Tagung des Deutschen Lusitanistenverbandes*, München 2009 [in print].
- Schulze, Wolfgang 2011b. The Origins of Personal Agreement Clitics in Caucasian Albanian and Udi. Manana Tandaschwili & Zakaria Pourtskhvanidze (eds.), *Folia Caucasica, FS für Jost Gippert zum 55. Geburtstag*, 119-168. Frankfurt a.M. / Tbilisi: Univ. Frankfurt/Staatl. Univ. Tbilisi.
- Schulze, Wolfgang 2012. Prolegomenon zu einer Kognitiven Typologie der sprachlichen Symbolisierung von Ursache/Wirkung-Konzeptualisierungen. *Slowakische Zeitschrift für Germanistik* 3,2: 7-23.
- Schulze, Wolfgang 2014. The emergence of diathesis markers from MOTION concepts. In: Díaz-Vera, Javier E. (ed.), *Metaphor and Metonymy across Time and Culture*, 171-223. Berlin: de Gruyter.
- Schulze, Wolfgang 2015a. Aspects of Udi-Iranian Language Contact. In: Uwe Bläsing, Victoria Arakelova, and Matthias Weinreich (eds.). *Studies on Iran and the Caucasus. In Honour of Garnik Asatrian*, 373-401. Leiden: Brill.
- Schulze, Wolfgang 2015b (in press). Textual Resources for Udi. In: Natia Reineck and Ute Rieger (eds.), *Kaukasiologie heute - Festschrift für Heinz Fähnrich*. Greiz / Kurtschau: Buchverlag König.
- Schütz, Alfred und Thomas Luckmann 2003. *Strukturen der Lebenswelt*. Konstanz: UKV.
- Schwarz-Friesel, Monika and Manfred Consten 2011. Reference and anaphora. In: Wolfram Bublitz and Neal R. Norrik (eds.), *Foundations of Pragmatics*, 346-372. Berlin/Boston: de Gruyter.
- Schwarz-Friesel, Monika and Manfred Consten 2011. Reference and anaphora. In: Wolfram Bublitz and Neal R. Norrik (eds.), *Foundations of Pragmatics*, 346-372. Berlin/Boston: de Gruyter.

- Scott, Alwyn 2004. Reductionism Revisited. *Journal of Consciousness Studies* 11, 2:51–68.
- Shields, Kenneth 2002. Speculations about the origin of the Indo-European o-stems. *Folia Linguistica Historica*. 23, Heft 1-2: 23-30.
- Shields, Kenneth 1997. On the Pronominal Origin of the Indo-European Athematic Verbal Suffixes. *Sprachwissenschaft* 25:105-117.
- Siepmann, Dirk 2006. Academic Writing and Culture: An Overview of Differences between English, French and German. *Meta* 51,1: 131-150.
- Siewierska, Anna 1984. *The Passive: A Comparative Linguistic Analysis*. London etc.: Routledge. (Croom Helm Linguistics Series).
- Siewierska, Anna 1993. On the interplay of Factors in the Determination of Word Order. In: Hugo Steger and Herbert Ernst Wiegand (eds.), *Syntax I. Handbooks of Linguistics and Communication Science* 9,1, 826-645. Berlin: de Gruyter.
- Siewierska, Anna 1998. Passive-to-ergative versus inverse-to-ergative. In: Anna Siewierska and Jae Jung Song (eds.), *Case, Typology and Grammar*, 229-246. Amsterdam/Philadelphia: Benjamins.
- Silverstein, Michael 1972. Chinook Jargon: Language Contact and the Problem of Multi-level Generative Systems. *Language* 48:596-625.
- Silverstein, Michael 1976. Hierarchy of features and ergativity. In: Robert M.W. Dixon (ed.), *Grammatical Categories in Australian Languages*, 112-171. Canberra: Australian Institute of Aboriginal Studies.
- Slobin, Daniel Isaac 1996. From 'Thought and Language' to 'Thinking for Speaking'. In: John Joseph Gumperz and Stephen C. Levinson (eds.), *Rethinking linguistic relativity*, 70-96. Cambridge, MA: Cambridge University Press.
- Snow, Catherine E. 1972. Mothers' Speech to Children Learning Language. *Child Development* 43: 549-565.
- Souriau, Étienne 1950. *Les deux cent mille situations dramatiques*. Paris: Fallmarion.
- Steiner, G. 1981: Hamtu and marû als verbale Kategorien im Sumerischen und im Akkadischen, *Revue d'Assyriologie et d'Archéologie Orientale Paris* 75:1-14.
- Stempel, Reinhard 1983. *Die infiniten Verbalformen des Armenischen*. Frankfurt a.M. etc.: Lang.
- Swales, John 1990. *Genre Analysis: English in Academic and Research Settings*. Cambridge University Press.
- Swenson, Rod & Michael Turvey 1991. Thermodynamic Reasons for Perception-Action Cycles. *Ecological Psychology* 3(4):317-348.
- Szemerényi Oswald 1970. *Einführung in die vergleichende Sprachwissenschaft*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Taboada, Maite and Loreley Wiesemann 2010. Subjects and topics in conversation. *Journal of Pragmatics* 42, 7: 1816-1828.
- Talmy, Leonard 2000. *Toward a cognitive semantics*, vol. I: *Concept structuring systems*. Cambridge: MIT Press
- Tangherlini, Timothy R. 2015 [1994]. *Interpreting Legend. Danish Storytellers and Their Repertoire*. Oxon/New York: Routledge.
- Taylor, John 1998. Syntactic Constructions as Prototype Categories. In: Michael Tomasello (ed.), *The New Psychology of Language: Cognitive and Functional Approaches to Language Structure*, 177-202. Mahwah, NJ: Lawrence Erlbaum.
- Taylor, John 2002. *Cognitive Grammar*. Oxford: Oxford University Press.
- Tchekhoff, Claude 1987. 'Antipassif': Aspect imperfectif et autonomie du sujet. *Bulletin de la Société de Linguistique de Paris* 82:43-67.
- Tesnière, Lucien 1959. *Elements de syntaxe structurale*. Paris: Klincksieck.
- Thompson, L. and G.A. Fine 1999. Socially shared cognition, affect, and behavior: A review and integration. *Personality and Social Psychology Review* 3: 278-302.
- Thompson, Sandra and Paul Hopper 2001. Transitivity and Frequency in Conversation. In: Joan Bybee and Paul Hopper (eds.), *Frequency Effects and Emergent Grammar*, 27-60. Amsterdam/Philadelphia: John Benjamins.
- Tourtour, Elli 2013. Integrating Language Production and Comprehension (slides). *Language Prediction and Integration Seminar Universität des Saarlandes*. [<http://www.coli.uni-saarland.de/~crocker/documents/Presentations/Tourtouri.pdf>, last visit 25.3.17]
- Trask, Robert Larry 1980. Basque Verbal Morphology. *Euskalari nazioarteko jardunaldiak [Encuentros Internacionales de Vascólogos]* 1:285-304. Bilbao: Euskaltzainda / Pamplona: Aranzadi.

- Traugott, Elizabeth Closs and Graeme Trousdale 2013. *Constructionalization and Constructional Changes*. Oxford: Oxford University Press.
- Trombetti, Alfredo 1903. Delle relazioni delle lingue caucasiche. Part II. *Giornale della Società asiatica italiana* 16:145-175.
- Trombetti, Alfredo 1923. *Elementi di glottologia*. Bologna: Zanichelli.
- Tschenkéli, Kita 1958. *Einführung in die georgische Sprache, Band I: Theoretischer Teil*. Zürich: Amirani.
- Tuite, Kevin 1987. Indirect transitives in Georgian. *Proceedings of the Berkeley Linguistic Society* 13:296-309.
- Tuite, Kevin 1998. *Number Agreement and Morphosyntactic Orientation in the South Caucasian Languages*. Munich: Lincom.
- Tuite, Kevin 2007. Liminal morphosyntax: Georgian deponents and their kin. *Chicago Linguistics Society* 39,1:774-788.
- Turner, Mark. 1996. *The Literary Mind: The Origins of Thought and Language*. Oxford: Oxford University Press.
- Tweedie, F.J., and R. H. Baayen 1998. How variable may a constant be? Measures in lexical richness in perspective. *Computers and the Humanities* 32: 323-352.
- Uhlenbeck, Christian C. 1901. Agens und Patiens im Kasussystem der indogermanischen Sprachen. *Indogermanische Forschungen* 12:170-171.
- Ungerleider, Lesley G. and Mortimer Mishkin 1982. Two cortical visual systems. In: D.J. Ingle, D.J., M.A. Goodale, R.J.W. Mansfield (eds.), *Analysis of Visual Behavior*, 549-586. Cambridge, MA: The MIT Press.
- Ura, Hiroyuki 2000. *Checking Theory and Grammatical Functions in Universal Grammar*. Oxford: Oxford University Press.
- Uther, Hans-Jörg 2011. *The types of international folktales. A classification and bibliography. Based on the system of Antti Aarne and Stith Thompson*, vol. 1. Animal tales, tales of magic, religious tales, and realistic tales, with an introduction. Helsinki: Finnish Academy of Science and Letters.
- Vaillant, André. 1936. L'ergatif indo-européen. *Bulletin de la Société Linguistique de Paris* 3:93-108.
- Vallduví, Enric and Elisabeth Engdahl 1996. The linguistic realisation of information packaging. *Linguistics* 34, 3: 459-519.
- Van de Visser, Mario 2006. *The marked status of ergativity*. Utrecht: Netherlands Graduate School of Linguistics (LOT 141).
- Van Ginneken, Jacobus 1907. *Principes de Linguistique psychologique*. Amsterdam / Paris E. Van der Vecht.
- Van Valin Jr, Robert D. 2001. *An Introduction to Syntax*. Cambridge: Cambridge University Press.
- Van Valin Jr., Robert D. 2000. A Concise Introduction to Role and Reference Grammar. *Fiuminensia* 12, 1-2: 47-78.
- Van Valin Jr., Robert D. 2005. *Exploring the Syntax-Semantics Interface*. Cambridge: Cambridge University Press.
- Venturi, Giulia 2010. Legal Language and Legal Knowledge Management Applications. In: Enrico Francesconi, Simonetta Montemagni, Wim Peters, and Daniela Tiscornia (eds.), *Semantic Processing of Legal Texts. Where the Language of Law Meets the Law of Language*, 3-26. Berlin, Heidelberg, New York: Springer.
- Vernadsky, Vladimir I. 1929. *La biosphère*. Paris: Alcan.
- Villar, Francisco 1984. Ergativity and animate/inanimate gender in Indo-European. *Zeitschrift für vergleichende Sprachforschung* 97:167-196.
- Volkova, N. 1994. The Udis. in: Paul Friedrich and Norma Diamond (eds.). *The Encyclopedia of World Cultures*, Vol. 6. Russia and Eurasia/China, 375-378. Boston: Hall and Co.
- Von Heiseler, Till Nikolaus 2014. Language evolved for storytelling in a super-fast evolution. In: Thomas C. Scott-Phillips, Monica Tamariz, Erica A. Cartmill, James R. Hurford (eds.), *The Evolution of Language: Proceedings of the 9th International Conference on the Evolution of Language*, 114-121. London: World Scientific Publishing.
- von Sydow, Carl Wilhelm 1934. Kategorien der Prosa-Volksdichtung. In: Erich Seemann and Harry Schewe (Hrsg.), *Volkskundliche Gaben: John Meier zum siebzigsten Geburtstage dargebracht*, 253-268. Berlin/Lepzig: de Gruyter.
- Vossen, Piet 1995. *Grammatical and conceptual individuation in the lexicon*. (Studies in language and language use, 15). PhD thesis. Amsterdam: IFOTT.

- Waltisberg, Michael 2002. Zur Ergativitätshypothese im Semitischen. *Zeitschrift der Deutsch-Morgenländischen Gesellschaft (ZDMG)* 152:11-62.
- Ward, Gregory L. 1988. *The semantics and pragmatics of preposing*. New York and London: Garland.
- Ward, Gregory L. 1990. The discourse functions of VP preposing. *Language* 66,4: 742-766.
- Werth, Paul 1999. *Text Worlds: Representing Conceptual Space in Discourse*. London: Longman.
- Whittaker, Gordon 1998. Traces of an early Indo-European language in Southern Mesopotamia: *Göttinger Beiträge zur Sprachwissenschaft* 1:111-147.
- Whittaker, Gordon 2008. The Case for Euphratic Bulletin of the Georgian National Academy of Sciences, *Humanities & Social Sciences, Linguistics & Grammatology* 2,2:156-168.
- Wilbur, Terence H. 1979. *Prolegomena to a Grammar of Basque*. Amsterdam: Benjamins.
- Wilcke, Claus 1969. ku-li. *Zeitschrift für Assyriologie* 59:65-99.
- Wilcke, Claus 1990. Orthographie, Grammatik und literarische Form. Beobachtungen zu der Vaseninschrift Lugalzaggesis (SAKI 152-156). In: Tzvi Abusch, John Huehnergard, Piotr Steinkeller (eds.), *Lingering over Words: Studies in Ancient Near Eastern Literature in Honor of William L. Moran (Harvard Semitic Studies)*, 455-504. Atlanta: Scholars Pr.
- Wildgen, Wolfgang 1990. Sketch of an Imaginistic Grammar for Oral Narratives. In: Karl Heinz Wagner & Wolfgang Wildgen (Hrsgg.), *Studien zur Grammatik und Sprachtheorie*, Vol. 2, 85-121. Bremen: Institut für Allgemeine und Angewandte Sprachwissenschaft, Universität Bremen.
- Wildgen, Wolfgang 1990. Sketch of an Imaginistic Grammar for Oral Narratives. In: Karl Heinz Wagner & Wolfgang Wildgen (Hrsgg.), *Studien zur Grammatik und Sprachtheorie*, Vol. 2, 85-121. Bremen: Institut für Allgemeine und Angewandte Sprachwissenschaft, Universität Bremen.
- Wilhelm, Gernot 2008a. Hurrian. In: Roger D. Woodward (ed.), *The Ancient Languages of Asia Minor*, 81-104. Cambridge: Cambridge University Press.
- Wilhelm, Gernot 2008b. Uartian. In: Roger D. Woodward (ed.), *The Ancient Languages of Asia Minor*, 105-123. Cambridge: Cambridge University Press.
- Wilks, Yorik 1978. Semantic primitives in language and vision. *Theoretical Issues In Natural Language Processing*. Proceedings of the 1978 workshop on Theoretical issues in natural language processing, 180-183. Urbana-Champaign, Illinois: The Association for Computational Linguistics.
- Winkler, Heinrich 1887. *Zur Sprachgeschichte: Nomen, Verb und Satz. Antikritik*. Berlin: Dümmler.
- Wisorek, Axel 2018 (in press). Zur Diskussion um das hurritische Antipassiv. *International Journal of Diachronic Linguistics and Linguistic Reconstruction* 15.
- Wittgenstein, Ludwig 1921. Logisch-philosophische Abhandlung. In: Helmut Ostwald (ed.), *Annalen der Naturphilosophie*, Band XIV, 185-262. Leipzig: Verlag Unesma.
- Woods, Christopher 2008. *The Grammar of Perspective. The Sumerian Conjugation Prefixes as a System of Voice*. Leinde / Boston: Brill.
- Wooffitt, Robin 2005. *Conversation Analysis and Discourse Analysis. A Comparative and Critical Introduction*. London: SAGE.
- Wright, Alex 2007. *Glut: Mastering Information Through the Ages*. Washington, D.C.: Joseph Henry Press
- Zipf, George K. 1949. *Human Behavior and the Principle of Least Effort. An Introduction to Human Ecology*. Cambridge, Mass.: Addison-Wesley Press.
- Žirkov, Lev I. 1995. *Lakskij jayzk. Fonetika i morfologija*. Moskva: Izd. Akademii Nauk SSSR.
- Zöllner, Sonja 1997. *Triuwe* gegen Kredit. Überlegungen zur mittelhochdeutschen Verserzählung *Rittertreue*. In: Silvia Bovenschen et al. (Hrsg.) *Der fremdgewordene Text. Festschrift für Helmut Brackert zum 65. Geburtstag*, 58-73. Berlin/New York: De Gruyter.
- Zólyomi, G. 2005. *Sumerisch*. In: M. P. Streck (ed.), *Sprachen des Alten Orients*, 11-43. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Zúñiga, Fernando 2006. *Deixis and alignment. Inverse systems in indigenous languages of the Americas*. Amsterdam/Philadelphia: Benjamins.

## Indices