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Introduction

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Layers of Aspect

Patricia Cabredo Hofherr and Brenda Laca (eds.)

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Introduction

PATRICIA CABREDO HOFHERR & BRENDA LACA

This volume contains a thematic selection of papers presented at a series of annual workshops organised by the editors at the University Paris 8 around the topics of tense, aspect, and verbal plurality from 2003 to 2007. They give a partial overview of the results of two research projects, the first one devoted to the architecture and semantics of the functional layers above verbal projections, the second one devoted to the parallels and interactions between nominal and verbal plurality.¹ The projects focused on cross-linguistic variation, but instead of adopting the by now traditional sampling methods of typological research, they aimed to provide detailed formal analyses of phenomena in a reasonably varied set of languages that can then be exploited comparatively. The domain of aspect and its multilayered structure rapidly emerged as a core domain. The analysis of aspectual phenomena is frayed with considerable difficulties both at the conceptual and at the descriptive level and before introducing the individual contributions in this volume, we would like to lay out these difficulties as we understand them.

After constituting a relatively neglected field of inquiry, research on aspect has flourished in the past thirty years among linguists working in a formal paradigm. However, the extremely complex nature of aspect-related phenomena – which, we assume, is determined by the existence of multiple layers

¹We gratefully acknowledge the support of the Fédération Typologie et Universaux Linguistiques (CNRS FRE 2559) for the programs *Architecture grammaticale* and *Dépendances distributives*. We would like to thank the Groupe de Recherche *Sémantique et modélisation* (GdR 2521), the Ecole doctorale *Langage – Cognition – Interaction* of the University of Paris 8 and the Laboratoire *Structures formelles du langage* (UMR 7023, CNRS – Paris 8) for their support towards the workshops.

of aspect – has led to a situation where the label is apt to acquire quite different, though certainly related contents, depending on the sort of aspectual phenomenon the individual researcher is concentrating on.

The distinction between situation aspect (temporal structure of the situation described by a verb and its arguments or satellites, as captured by Vendler-type classifications) and viewpoint aspect (relation mapping the time of the described situation onto a designated "interval of visibility" or "interval of evaluation") formulated by the late Carlota Smith (1991) was decisive for a first clarification of the domain. However – and despite the enormous impact of Smith's work – this distinction has been subject to varying interpretations in subsequent research. We would like to discuss three factors that have contributed to this state of affairs. First, the dichotomy proposed by Smith does not coincide with other dichotomies familiar from work on aspect such as lexical vs. functional aspect or inner vs. outer aspect. Secondly, a binary distinction between situation type (= *Aktionsart*) and viewpoint aspect does not do justice to the complexity of aspectual phenomena. And finally, while event-based analyses of situation aspect are in principle distinct from time-relational analyses, in many cases both types of approaches are largely translatable into one another.

In what follows we will discuss each of these factors in turn.

Situation aspect vs. viewpoint aspect and other dichotomies

It is important to keep in mind that Smith's dichotomy in the aspectual domain does not coincide with other prominent contrasts such as lexical vs. functional/ grammatical aspect or inner vs. outer aspect. In particular, not everything that is expressed by functional means qualifies automatically as viewpoint aspect. Butt and Rizvi (this volume) propose that light verbs in Urdu contribute to the specification of telic situation aspect, whereas the apparently similar aspectual verbs contribute – at a higher level – to aspect shift. Whereas the former both specify telicity and are apt to modify argument structure, the latter focus on the final or initial transitions of events of any temporal structure, and have no bearing on argument structure (see also Butt and Geuder 2001, Butt and Ramchand 2005). Thus, neither the wealth of functional means – auxiliary-like, light or aspectual verb constructions – displayed by Urdu (Butt and Rizvi, this volume), nor the Aspect projection which, according to Alexiadou et al. (this volume) heads verbal argument supporting nominalisations, seem to have a clear bearing on temporal relations, and neither can therefore be analysed as time-relational viewpoint aspect.

The term OUTER ASPECT, which seems to have been originally used as an alternative for VIEWPOINT ASPECT (cf. Verkuyl 1993), is also a source of confusion since the term has been extended to comprise everything that goes

beyond the lexically specified properties of basic eventuality descriptions. Ramchand (2007), for instance, considers examples with distributively interpreted plural arguments as outer aspect, since the complex temporal traces involved go beyond the lexically specified first-phase syntax. In our view, the term “outer aspect” could be profitably exploited along the lines proposed by Ramchand and adopted by Alexiadou et al. (this volume) in order to capture derived situation types (discussed in more detail below). Outer aspect would thus contrast with “inner aspect” as the temporal structure of basic situations, which is lexically determined and may be subject to modification or specification by various morphosyntactic means.

It is “inner aspect” in this sense of “basic eventuality description” that has been the focus of the predominantly syntactic approaches to aspect. These analyses have been dominated by two rival approaches to “event-structure” – a label subsuming the interrelation between the temporal and argument structures of predicates. The lexicalist approach takes the lexical semantics of verbs to non-compositionally determine basic templates of event structure, which can then be compositionally modified, while the constructivist approach assumes that an articulated functional structure combining with minimally specified content words is responsible for event structure. In the second type of approach either vP- or VP-internal aspectual functional heads or primitive predicates and relations are held to specify the relevant properties of temporal structure in connection with argument structure (see e.g. Kratzer 2000, Ramchand 2008).

Additional layers of aspect

A second factor for the fluctuation in the use of the aspectual dichotomy proposed by Smith is the fact that a binary distinction between situation type (= *Aktionsart*) and viewpoint aspect does not do justice to the complexity of aspectual phenomena.² In fact, Smith herself, by acknowledging the existence of SHIFTED and DERIVED SITUATION TYPES (1991, 85-87), suggested an extension of the dichotomy to include an intermediate layer at which compositional mechanisms or coercion processes modify the temporal structure of the basic situation type. As we will see below, situation type shift, which roughly corresponds to phasal aspect, is not always clearly distinguishable from viewpoint aspect, neither conceptually nor empirically. Derived situation types as discussed by Smith involve pluralities of events distributed in time. Smith intended this notion to cover cases as the frequentative and habitual readings illustrated in (1a/b), but it also extends to sentences with dis-

²For a recent discussion of the level at which *Aktionsart* classifications apply – V-level or VP-level – see the contributions Rappaport-Hovav (2008) and Rothstein (2008a) in Rothstein (2008b).

tributively interpreted plural arguments and adjuncts, as in (2a-c):

- (1) a. Algernon found his son's bike on the driveway all this week. (frequentative)
 b. Marcia went to school by bus this term. (habitual)
- (2) a. John set up **many tents**.
 b. John has set up his tent **in many places**.
 c. **A lot of people** have been dying in Iraq.

Smith views derived situation types as an extension of basic situation types: the event pluralities involved in the above examples are understood as global events made up of sub-events of the basic type. If we understand viewpoint aspect as a relation on intervals, and situation aspect as the lexically specified properties of the temporal trace of events of the type denoted by the verb, then temporally distributed event pluralities can be viewed as an extended form of situation aspect. In fact, event pluralities are associated with complex temporal traces whose structure differs from those of the basic events, in as far as they are always durative and, at least in the case of frequentatives and habituals, clearly homogeneous. At the same time, however, these complex temporal traces determine relations between the temporal traces of the basic events and that of the global event:

- (3) a. Marcia went to school by bus yesterday. (basic event)
 b. Marcia went to school by bus this term. (habitual: event plurality)
- (4) a. John set up his tent.
 $\tau(e)$ = temporal trace of the single event of setting up a tent
 (simplex temporal trace)
- b. John set up many tents / his tent in many places.
 [... $\tau(e_i)$... $\tau(e_j)$... $\tau(e_k)$] (complex temporal trace)
 with each $\tau(e)$ = temporal trace of an event of setting up a tent

Several papers in this volume suggest that the contrast between basic and derived situation types is highly relevant for the distribution and interpretation of some aspectual markers which seem to function at different levels of structure. Thus, Kagan (this volume) argues forcefully that perfective marking in Russian is specialised for singular telic events, i.e. that it signals a single instantiation of a predicate of basic eventualities with natural atoms. By contrast, imperfective marking – the default aspect – is mandatory for derived situation types, but may also be used for basic situation types. Cabredo, Laca and de Carvalho (this volume) show that felicitous use of the Present Perfect in a Brazilian Portuguese variety presupposes a temporally distributed

plurality of events, i.e. a derived situation type, and clearly excludes single instantiations of basic atomic predicates.

Perfective marking in both Russian and the Brazilian Present Perfect entertains specific relations with viewpoint aspect. The fact that the former rules out “incomplete events”, i.e. progressive-like interpretations, indicates that the temporal trace of the event must be included in the interval of visibility. This may be captured by assuming either that perfective morphology in Russian conflates conditions on temporal structure and the expression of viewpoint aspect, or that determination of viewpoint aspect, being unspecified in this language, follows the general principle according to which a telic event is not instantiated at an interval if its temporal trace is not included in this interval (Demirdache and Uribe-Extebarria 2000, Iatridou et al. 2001). As for the Brazilian Present Perfect, the fact that the presupposed series of events is seen as continuing up to, or possibly after Utterance Time, indicates that the complex temporal trace of the derived situation must include the interval of visibility – whose right bound is in this case set by Utterance Time. This amounts to an imperfective-like component in the interpretation of this form, and raises the general question as to the relation of perfects with viewpoint aspects, which will be taken up below.

Whereas in the above cases the contrast between basic and derived situation types clearly interacts with temporal relations, the Romanian supine examined in the paper by Alexiadou et al. (this volume) necessarily induces derived situation types as an input to syntactic nominalisation. These authors show that argument-supporting nominalisations can denote derived situation types in two different, mutually exclusive ways, namely pluractional aspect and plural number, depending on the verbal or nominal categorial status of the nominalisation, respectively. The paper by Butt and Rizvi (this volume) mentions a number of intriguing phenomena concerning the role of imperfective participial forms in the expression of derived situation types in Urdu. In this language, imperfective participial forms in connection with present or past auxiliaries express habituais, whereas they express iteration in connection with the progressive. Over and above this, Urdu resorts to auxiliary-like uses of motion verbs like ‘go’ and ‘walk’, which embed the imperfective participial form of the main verb and may be embedded under the progressive, in order to specify different patterns of frequency and duration. If, as assumed by the authors, iteration is contributed in all these combinations by the imperfective participial form, Urdu illustrates a case in which derived situation types are marked at a very low level of structure, possibly without interaction with other temporal relations than the one linking simple and complex temporal traces.

Derived situation types as discussed here constitute a layer of aspect between basic situation type aspect and viewpoint aspect. An additional layer

of aspect has been proposed by researchers working on the interactions of aspect with temporal location and with modality. This domain of research is restricted to future orientation and it is pervaded by the idea that semantic differences among expressions with a future orientation can be explained by the presence of an aspectual layer above the operator determining future orientation proper (Copley this volume, Butt and Rizvi this volume). Since aspect is universally assumed to be lower than tense, this idea goes hand in hand with the idea that future orientation is not associated with operators expressing temporal location with regard to an anchor, but should be conceived as an expression of modality, expressing quantification over open possibilities in a branching time-model (see Copley this volume).

The phenomena analysed in terms of derived situation types and aspectual modification of modal operators strongly suggest that aspectual information cannot be limited to two layers of aspect operating over the VP. Below we will discuss the difficulties posed by the task of distinguishing situation aspect and viewpoint aspect.

Distinguishing situation aspect and viewpoint aspect

While syntactic approaches to aspect have concentrated on the representation of Aktionsart-properties of the lexical verb and its dependents, semantic approaches have been more concerned with higher levels of aspect, as associated with aspectual morphology, light-verb and auxiliary constructions, and coercion phenomena.

The generalised adoption of an event-based semantics for verbs, departing from the traditional uniformly interval-based semantics for all temporal properties, has contributed to a convergence with approaches that model subevental decomposition as part of the syntax (see Kratzer 2000, Pykkänen 2002, Ramchand 2008). The distinction between events and intervals also provides, at least in principle, a way of distinguishing between the time-relational aspectual phenomena associated with viewpoint aspect and the various modifications of temporal structure which, in Smith's (1991) seminal proposal, corresponded to shifted situation types (aspect-shift). Both viewpoint aspect and aspect shift can be analysed in terms of aspectual operators. Crucially, however, the aspectual operators operating on the two domains differ in their output, thus accounting for differences in order of composition. Time-relational aspectual operators establish a relationship between the temporal trace of an event and an interval of visibility;³ ultimately, these operators define mappings of predicates of events onto predicates of intervals, mediated

³This interval of visibility is variously called ASSERTION TIME, TOPIC TIME, or TIME OF EVALUATION, but roughly corresponds to the Reichenbachian reference point conceived of as an interval.

by the temporal trace function. Since the output of a time-relational is a predicate of intervals, it can only be an argument for further operators expressing relationships between intervals (e.g. tense operators expressing the location of an interval with regard to an anchor). By contrast, operators modifying the temporal structure of an event map predicates of events onto other predicates of events with a different temporal structure. The output of such an operator is still a predicate of events and therefore in principle accessible to any operator taking predicates of events as arguments. Since the two-component approach thus predicts immediate effects in the possible order of composition of expressions associated to each type of aspect, the study of languages with a rich array of transparent morphosyntactic means for specifying event structure and aspectual viewpoints provides a rich empirical testing ground. This is undoubtedly the case of the verbal complex in Urdu, of which Butt and Rizvi (this volume) give a first overview.

So, in principle the distinction between events and intervals allows us to distinguish between aspect shift (modification of temporal structure) and time-relational aspect. This distinction is not clear-cut, however, since event-based and interval-based analyses are widely translatable into each other. Any change in the temporal structure of an event description ultimately operates on intervals; this is particularly clear in the case of phasal modification, but also extends to pluralising event-modification. Inceptive or inchoative modification for instance can be taken to produce an event description that selects the initial "sub-event" of its input, but this initial "sub-event" can also be defined in terms of the initial boundary of the temporal trace of events of the input-type. It remains an empirical question whether a characterisation of inchoatives in terms of internal phases of the event (i.e. an inchoative as the initiating event followed by a process phase) captures the observable meaning of inchoatives more accurately.

Similarly, as discussed above, the construction of temporally non-overlapping plural event-types also imposes clear conditions on the internal structure of the interval of instantiation of such event-types. It is striking how often relations between the temporal trace of an event and an interval of visibility can be easily modelled as relations between an event and its phases ("sub-events"). The fact that the "focusing" metaphor is widely used for the informal description of most cases of temporal structure modification and for time-relational aspect is revealing in this respect. So while the two-component approach to aspect has proven fruitful, still much more work is needed towards a theory that can trace the dividing line between the two types of aspect in an insightful and principled fashion.

A particularly illustrative example of the duality between event- and interval-based analyses is provided by the analyses proposed for the best studied "higher" aspectual operators – the English progressive and the per-

fect. The analyses proposed have oscillated between temporal structure or "phasal" modification approaches (with progressives as statives and perfects as post-states) and time-relational approaches (with progressives as an expression of proper inclusion and perfects as an expression of strict precedence) for the best part of the past three decades. The core analytic problem in distinguishing viewpoint aspect and situation aspect is posed by the complex interaction between different aspectual phenomena and between aspect and temporal location. It is likely that categories across languages whose morphological expression and/or semantic similarity above a certain threshold suggest a common analysis may in fact function at different layers of aspectual structure, or even at several levels simultaneously. A case in point is the perfect, which is taken up by four papers in this collection.

As we have seen above, the perfect has variously been analysed as a modification of temporal structure whose output is the subsequent state of the event described by the input predicate, or as a relation between intervals. Both approaches admit of a number of variants. Thus, the very notion of subsequent state can be interpreted literally, as the result state whose existence is entailed by the assertion of a change-of-state predicate (a result state that characterises exclusively achievement and accomplishment predicates), or in a much more general way, as a state that is in some way causally or even only temporally related to the previous occurrence of an event. The active participle in Syrian Arabic main clauses analysed by Boneh (this volume) signals that a consequent state which is causally related to the described event holds of the subject at the time of utterance. This may, but need not coincide with the result state entailed by a change-of-state predicate. In the case of stative predicates, it is the state itself that holds at the time of utterance, but it is conceived of as the result state of its initial transition. In Boneh's analysis, the Syrian Arabic construction is a perfect that combines a shift in phasal structure with a time-relational contribution: the interval of visibility is properly included in a particular phase which follows the core event as a result or as a consequence. Thus, the Syrian Arabic perfect constitutes both a special viewpoint aspect and a stativiser.

A similar dual nature of the perfect is postulated in Rothstein's analysis of the German perfect (this volume). For Rothstein, the German perfect is a stativiser, and it furthermore introduces a temporal relation between the temporal trace of an event and a designated interval. In his analysis, this interval corresponds to the Perfect Time Span of Extended-Now theories. The Perfect Time Span, by contrast with Smith's interval of visibility, has a fixed position with regard to the time set by the tense of the auxiliary, at least in as far as it cannot follow it. On the other hand, its relation to the temporal trace of the event is not determined, since it can properly include the temporal trace or be at least coextensive with it. Rothstein formulates an interesting correlation

between the stative-like behaviour of the German perfect and the position of the right bound of the Perfect Time Span: perfect sentences in German only exhibit the hallmarks of stativity if the right bound of the Perfect Time Span coincides with the reference time set by the auxiliary, and not with the final moment of the described event. The position of the right bound of the Perfect Time Span is determined by discourse: it constitutes the antecedent linking the following tense. If this tense is a present, the right bound of the Perfect Time Span coincides with the time of utterance; if it is a past tense, it must necessarily precede the time of utterance in order to function as a discourse anchor for this past tense. Note, however, that a mobile Perfect Time Span that loses its essential property, that of containing the time set by the auxiliary as its right bound, looks suspiciously like a past interval of visibility. Rothstein's analysis constitutes an attempt to capture in a principled way the ambiguity of German perfects between resultative and universal readings, on the one hand, and mere anteriority readings, on the other, and shows that stativity only characterises the former.

The Present Perfect in a Northeastern Brazilian Portuguese variety, as described by Cabredo Hofherr, Laca & de Carvalho (this volume), also exhibits a dual nature, which however does not involve stativity in any relevant sense. In fact, this form entirely lacks the resultative and experiential readings from which the intuition of a subsequent state holding at utterance time derives its support. In the analysis proposed by the authors, this very peculiar Present Perfect introduces a relation between the temporal trace of an event and a Perfect Time Span, such that the temporal trace must properly include the Perfect Time Span. But, as discussed above, it also requires that the event in question be a derived situation type, i.e. an event plurality. Whereas the perfects described by Boneh and Rothstein interact with phasal structure, and thus with aspect shift, the Brazilian Present Perfect interacts with outer aspect in the sense characterised above.

What these three analyses have in common is the fact that the temporal trace of the event is in a direct relation with the interval introduced by the perfect – which is included in the selected subsequent state for Boneh, or in the time of the derived situation for Cabredo Hofherr, Laca & de Carvalho, and includes or is temporally coextensive with the event time for Rothstein. By contrast, in the treatment of the German perfect proposed by Schaden (this volume) the perfect does not combine directly with the event description, but with the temporal property resulting from applying viewpoint aspect to the event description. This analysis is more along the lines of the original treatment advanced by Smith (1991), in as far as it analyses the perfect as a relative tense, and not as an aspect. In Schaden's analysis, the perfect operator is higher in the structure than viewpoint aspects, and it takes as its argument not the temporal trace of the event, but the temporal trace as "fil-

tered” by viewpoint aspect, i.e. an interval that has the property of including the temporal trace, in the case of perfective aspect, or of being included in it, in the case of imperfective aspect. Schaden’s proposal of a perfect-above-viewpoint aspect shares this feature with the analysis developed by Iatridou et al. (2001), and Pancheva (2003). However, it differs from it in a crucial point. While for the latter authors the perfect contributes a Perfect Time Span with which the “filtered” temporal trace overlaps (following a general principle for the instantiation of temporal properties according to which bounded temporal properties are only instantiated at intervals that include them), for Schaden the perfect introduces an interval which strictly follows the “filtered” temporal trace.

As we see, the competing solutions for a time-relational interpretation of perfects differ both in the relata involved (temporal trace of a the event or of a phase of the event, vs. temporal trace “filtered” by viewpoint aspect) and in the type of relation expressed by the perfect (overlap with a Perfect Time Span or strict precedence with regard to the interval located by tense). It is very likely that such competing approaches prove more or less adequate according to the profile of the perfect under analysis. Perfects are known to vary, not only cross-linguistically, but also in one and the same language. An enhanced awareness of the extent of cross-linguistic variation and of the diachronic processes involved in this variation might help determine the point at which it is advisable to give up the search for uniform meanings.

The papers in this volume

The paper by **Alexiadou, Iordachioaia and Soare** examines plural marking on Argument Supporting Nominalisations. Drawing on a comparison of the supine and the infinitive nominalisation patterns in Romanian, these authors show that pluralisation of Argument Supporting Nominalisations is correlated with aspectual properties of the nominalisation pattern: atelic inner aspect blocks the realisation of morphological plural on the nominalisation. In the proposed analysis Alexiadou, Iordachioaia and Soare correlate the possibility of pluralisation with a syntactic property: telic nominalisations project Classifier Phrase and Number Phrase, allowing the realisation of the plural morpheme, while atelic nominalisations are argued to only project a Classifier Phrase – the absence of pluralisation for a nominalisation is interpreted as the absence of the Number Phrase in the projection of the nominalisation in question.

Boneh’s paper shows that in Syrian Arabic active non-past participles give rise to perfect readings comparable to the English resultative and experiential perfects. She proposes to analyse these readings as instances of a third viewpoint aspect alongside perfective and imperfective viewpoint aspect. While

perfective and imperfective viewpoint relate Assertion Time and Event Time, the third viewpoint aspect is argued to relate Assertion Time to a proper subpart of the Event Time, namely the Post-State following the culmination of the event. Using evidence from negation and adverbial modification, Boneh shows that the culmination point of the eventuality is not included in the interval of the Event Time targeted by the participle. This analysis takes up an idea by Klein (1994) and Kamp and Reyle (1993) that languages differ in their aspectual systems as to which of the subparts of a complex Eventuality Time is relevant for viewpoint aspect.

The paper by **Butt and Rizvi** explores the morphological expression of tense and aspect in Urdu, and proposes a classification based on the morphosyntactic structure of the expressions involved. Butt and Rizvi show that Urdu uses a very small inventory of morphemes in conjunction with just a handful of auxiliaries and aspectual verbs in order to express a wide range of fine-grained temporal and aspectual distinctions, including different futurities and various expressions of continuing action such as continuative, iterative and habitual expressions.

Cabredo Hofherr, Laca and de Carvalho examine the Present Perfect (present indicative of *ter+* non-agreeing past participle) in Northeastern Brazilian Portuguese. They show that the Present Perfect in this variety of Portuguese is particularly restricted in that it only allows universal readings and moreover requires temporal gaps between instances of the iterated event. This instance of the Present Perfect thus combines elements of Time-relational grammatical aspect and modification of the lexical aspect of the predicate. The Present Perfect considered in this paper provides evidence that on-off states (*on the shelf, in the garden*) have to be clearly distinguished from gradable states such as *to be angry, to be sick, to be depressed*, since the latter can satisfy the requirement of non-homogeneity imposed by the Present Perfect. Finally, the authors argue that the semantic differences between the Present Perfect and the combination of *ter+*non-agreeing participle in all other tense-mode combinations cannot be compositionally derived and they therefore arrive at the conclusion that the Present Perfect has to be analysed as a grammatical idiom.

The paper by **Copley** examines the expression of future in two dialects of Indonesian. She gives evidence that in one of the dialects the morphemes *akan / mau / pasti* correspond to three different meanings. First, while *akan* and *pasti* can be used to make an offer, *mau* cannot. Secondly, in contexts where the event in the future does not depend on the wishes of the hearer (anyway-entailing contexts), *akan* is not felicitous while *mau* and *pasti* are acceptable. Finally, in future dispositionals (*Budi will eat fish*), only *mau* is possible while *akan* is excluded. Copley proposes to analyse the different future morphemes as aspectualised futures; more precisely, she proposes that these

morphemes contain a future modal which is in the scope of an aspectual operator: a progressive-like aspectual operator (for *mau*) and a generic-like operator (for *pasti*). The aspectualised futures are argued to allow anyway-entailing contexts, while the non-aspectualised future expressed by *akan* does not. In the proposed analysis the incompatibility of *mau* with offering contexts is analysed as a consequence of a conflict between the aspectual progressive operator – which presents the action concerned by the offer as already ongoing – with one of the felicity conditions on offers (namely that the offer is not acted upon if the hearer does not wish to accept the offer).

Kagan proposes to analyse Russian aspect in parallel with the distinctions between singular and plural in the nominal domain. She adopts a semantics for nominal number according to which the denotation of singular NPs only contains singular objects, while the denotation of plural NPs contains single objects as well as pluralities of objects. This implies that plural is taken to be the default number. This approach attributes the use of singular expressions in a context to pragmatic principles that favour the most restrictive meaning compatible with the state of affairs to be described. According to Kagan's analysis, perfective aspect in Russian denotes single events only, while the denotation of the imperfective contains single events as well as pluralities of events. Since cardinalised repetitions of telic events such as *jump three times* are telic but incompatible with the perfective aspect, this analysis treats perfective aspect as a special case of telicity that is restricted to single events. The imperfective, on the other hand, does not entail that the event is not atomic: atomicity is an implicature that arises from the fact that the competing perfective form was not used. Kagan supports this analysis with evidence from downward entailing environments: since in these environments plural is more informative, the imperfective is predicted to be preferred, a prediction that Kagan shows to be borne out.

Rothstein proposes an account of the present perfect in German that combines elements of post-state- and ExtendedNow-approaches to the perfect. Since the German present perfect allows future-shifted uses, the time span introduced by the present perfect need not end at utterance time and is therefore not strictly speaking an ExtendedNow-interval, but a more general perfect time span. According to Rothstein's analysis the German present perfect always introduces a perfect time span; stative and non-stative readings of the present perfect are contextually induced. If the right boundary of the perfect time span is distinct from the temporal trace of the event, the present perfect introduces a post-state and has stative properties. In the cases in which the right boundary of the perfect time span and the right boundary of the temporal trace of the event coincide, the present perfect has a non-stative preterite reading.

The paper by **Schaden** examines the temporal readings of the German

adverb *gerade*. This adverb has a progressive-like reading and an immediate anteriority reading with the choice between the two readings depending on the syntactic context: while simple tenses only allow the progressive reading of *gerade*, perfects allow both the progressive and the immediate anteriority reading. The ambiguity of *gerade* with perfects is analysed as a structural ambiguity that reflects attachment of the adverb above or below the projection of the perfect in the syntax. Schaden proposes a unified semantic analysis of both temporal uses of *gerade*: he argues that the information associated with aspect and perfect-features is scalar, forming Horn-scales on which *gerade* picks out the maximal element. Schaden further argues that *gerade* should not be analysed as the German expression of the progressive: *gerade* has other temporal readings besides the progressive (an immediate anteriority reading) and unlike the English-type progressive German *gerade* does not background the eventuality it associates with in a narrative.

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