TENSE AND ASPECT IN INDO-ARYAN LANGUAGES: VARIATION AND DIACHRONY

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Abbreviations

1 = First Person

2 = Second Person

3 = Third person

ABL = Ablative Case

ACC = Accusative Case

AOR = OIA Aorist

DAT = Dative Case

CAUS = Causative Morpheme

ERG = Ergative Case

EMPH = Emphatic clitic

F = Feminine Gender

FUT = Future Tense

GEN = Genitive Case

GER = Gerund

impf = OIA Present paradigm (and cognates)

IMPF = Imperfective Aspect (for crosslinguistic data)

IMPF = OIA Imperfective Participle (and cognates)

IMPFCT = OIA Imperfect

IMP = Imperative Mood

INF = Infinitival

INS = Instrumental Case

LOC = Locative Case

MIA = Middle Indo Aryan

M = Masculine Gender

NIA = New Indo Aryan

N = Neuter Gender

NOM = Nominative Case

NEG = Negative Particle/ Inflection

OIA = Old Indo Aryan

PASS = Passive Voice

PERF = OIA resultative stative participle (and cognates)

PST = Past Tense

PFCT = OIA Perfect

PL = Plural

PRES = Present Tense

PROG = Progressive aspect

QUOT = Quotative Marker

SG = Singular

VOC = Vocative Case

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Introduction

1.1 Goals

If the same principles of grammar are at work in structuring synchronic tense/aspect systems and changes in these systems, then patterns of variation and change in tense/aspect markers constitute an important research problem for a crosslinguistic semantic theory of tense/aspect categories. Conversely, insofar as they instantiate tendencies shaped by grammar, such diachronic patterns furnish important evidence towards an optimal universal representation for tense/aspect categories.

What view of the semantics of grammatical aspect categories can account not only for the synchronic interpretation of the morphological markers that instantiate them, but also for the crosslinguistically attested characteristic patterns of change in the interpretation of such markers? The main goal of my dissertation is to begin to answer this question by bringing together three distinct strands of research from the grammaticalization literature, semantics, and Indo-Aryan historical linguistics.

a. Typological/grammaticalization investigation into the crosslinguistic and diachronic patterning of grammatical aspect morphology.

b. Semantic accounts of sentence level aspect and the contribution of operators introduced by grammatical aspect morphology.

c. Change and variation in the morphology that realizes aspectual operators in some Indo-Aryan languages.

The empirical basis of this study is the diachronic changes and variation in markers realizing the progressive and imperfective aspects in Indo-Aryan languages. The type of

changes I am concerned with are widely attested shifts in the interpretation of aspect markers across time. In (1) and (2), '≫' should be read as "diachronically generalizes to".

(1) PROGRESSIVE ≫ IMPERFECTIVE (Bybee et al., 1994; Comrie, 1976)

(2) RESULTATIVE ≫ PERFECT ≫ PERFECTIVE/PAST (Bybee et al., 1994; Dahl, 1985, 2000)

Such changes have been documented extensively in the typological and grammaticalization literature. Labeled "grammaticalization paths" or "clines", these describe the typical paths along which morphological forms (or constructions), restricted to a particular expressive function, appear to semantically expand in scope to cover a wider range of expressive functions. (1) describes a pattern where the use of an originally progressive form or construction is extended to include other communicative functions of the imperfective, such as the habitual/generic function. The progressive form apparently expands to take over the domain of the imperfective aspect. (2) describes another change in which a morphological form or construction originally restricted to license only a result state interpretation is extended to a wider set of contexts licensing perfect or perfective interpretations.

As with many typological tendencies, these generalizations about grammaticalization paths generate more questions than they answer. What sort of changes are involved in the evolution of an aspectual marker from the 'progressive' to the 'imperfective'? What is the semantic content of the categories that constitute the input to or the output of a grammaticalization path? What assumptions need to be made about the relation between aspectual categories and the way in which they are morphologized in languages, in order to have a coherent account of these shifts? Addressing these questions can enable us to derive typological generalizations like those in (1) and (2) from a more general theory of tense/aspect semantics and language change. By introducing diachronic data into the domain of tense/aspect semantics as explanandum, this study aims to initiate this inquiry and develop a preliminary semantic account of the progressive and imperfective (and more peripherally, the perfect and perfective) aspects that can explain both the synchronic and the diachronic facts of their distribution and interpretation.

There are two interrelated dimensions to this dissertation. On the one hand, it presents a (reasonably) detailed study of some changes in the tense/aspect system of Indo-Aryan, in the process presenting some empirical discoveries about the diachrony of Indo-Aryan tense/aspect. On the other hand, it argues that consideration of diachronic patterns and wider synchronic data points to an analysis in which at least some aspectual categories are conceived of as general and specific versions of a formally similar semantic representation,

where the denotation of the general category subsumes the denotation of the specific one. I call this the 'nested denotation' or the 'nestedness' analysis of aspectual categories.

1.2 Unifying semantic and grammaticalization approaches

Natural language sentences employ a variety of devices to encode information about the temporal properties of the eventualities they describe — in particular their location in time (tense) and their temporal structure (aspect). The precise semantic contribution of the morphological and constructional devices available to languages varies and at times even appears to be incommensurate from language to language. Languages differ not only in the tense and aspect contrasts that they morphologically realize, but also in further details. What is the range of interpretations (un)available to a language-particular form that is said to realize a given aspectual category? For instance, why does the English Simple Present not license a progressive interpretation as do the present tense forms in other Germanic languages? How is the temporal/aspectual characterization of a morphological marker to be determined? Is the German Perfect to be classified as the instantiation of the perfect aspect or the past tense? These kinds of questions bring out the necessarily language-specific nature of temporal marking. On the other hand, tense/aspect category labels tend to be applied to forms across languages that converge on a set of related meanings, and license only a limited (although varying) range of interpretations.

Tense/aspect phenomena have been investigated from two perspectives — formal semantics and the typological/grammaticalization perspective. Both traditions have contributed important insights to the organization of temporal and aspectual space in natural languages. However, the two approaches focus on distinct facets of this domain and, at times, distinct phenomena, and have remained unbridged so far. I argue that unifying the typological/grammaticalization perspective with a formally precise characterization of the semantic content of tense/aspect categories can significantly further our understanding of their semantic contribution.

Formal semantic approaches to temporality are concerned with providing explicit semantic representations of language-specific tense/aspect categories (such as the widely studied English Perfect or the Progressive) that can account for the range of interpretations they license. On the other hand, typological studies in the grammaticalization tradition take a large scale approach to understanding temporal meaning, focusing on variation and diachronic change in tense/aspect systems (Bybee et al., 1994; Dahl, 1985, 2000). Relying on a wide empirical base, these studies have proposed crosslinguistic generalizations that describe

the synchronic and diachronic distribution of tense/aspect morphology. In the grammaticalization tradition, the diachronic distributional facts are often considered to constitute a *historical* explanation for the interpretation of categories in language-specific tense/aspect systems. The difference in the foci of the two approaches can be best illustrated through the example of the perfect, a much studied aspectual category in both.

Much of the semantic literature on the perfect aspect revolves around three issues in the interpretation of perfect morphology: the apparent polysemy of the perfect seen through its various readings, its (in)compatibility with past-referring positional adverbials (the 'present perfect puzzle'), and its truth-conditional contrast with perfective/past semantics. Attempts to account for the interpretational and selectional properties of the perfect (and the variation between languages with respect to these properties) include incorporating the basic Reichenbachian insight that the perfect involves a reference interval that follows the eventuality interval (E—R), and its more elaborated versions (Hornstein, 1990; Kiparsky, 2002; Klein, 1992; Portner, 2003, a.o.); the analysis of the perfect as a function from eventualities to their result states (Kamp & Reyle, 1993; Parsons, 1990; de Swart, 1998, a.o.); and the contribution of tense morphology to perfect interpretation (Pancheva & von Stechow 2004; Klein 1994).

On the other hand, the grammaticalization/typological perspective, articulated best in the results of large-scale studies involving several genetically related and unrelated languages (Bybee et al., 1994; Bybee and Dahl, 1989; Dahl, 1985, 2000), involves examining the diachronic origins of forms/constructions marking the perfect aspect and the other related functions of such forms. The significant findings of these studies are that perfect constructions (at least in most European languages) tend to start out as resultative constructions formed from result-stative participles and auxiliaries. These are often limited to eventive predicates involving change-of-state verbs (Ernout & Thomas, 1951, cited in Bybee et al., 1994:69). The diachronic evolution to perfect meaning is accompanied by the spread of this construction to non-eventive predicates. The next diachronic step is the change in the denotation of the morphology from perfect to perfective aspect or past tense. On this approach, a language specific morphological category labeled Perfect may, in principle, belong to any stage of this grammaticalization path. Variation in the properties of the perfect (licensing of past eventive interpretation, compatibility with past referring adverbials, etc.) follows from the position of a construction on the fixed grammaticalization trajectory. The mechanism responsible for these distributional changes in the morphological form that initially realizes the resultative or perfect aspect is *generalization* or *bleaching* in the semantics of the relevant morphology.

The resultative-to-perfect-to-perfective grammaticalization path presents a significant empirical generalization about change in the semantics of the resultative or perfect aspectual morphology. However, it can hardly be said to constitute an explanation for cross-linguistic variation in perfect/perfective semantics. Moreover, the mechanism purportedly driving the change, *semantic generalization*, receives no precise formalization in the grammaticalization model. Nonetheless, a formalization of these diachronic changes from the semantic perspective is desirable if they are determined by the same principles that determine the properties of synchronic aspectual systems. This study, while building on the empirical insights of the grammaticalization/typological literature, crucially differs from them in treating crosslinguistic and crosstemporal distributional differences in tense/aspect categories as *explananda* for formal semantics and not as the historical *explanantia* that they are often presented to be.

Let us make the assumption that grammatical principles and constraints specify the space not only for typological variation but also for language change. Further, let us assume that diachronically consecutive grammars are not characterized by radical discontinuities or unpredictable leaps, but that change consists of gradual discrete steps constrained by properties of grammar. Then it is historically necessary that the range of interpretations available to a morphological marker in a synchronic tense/aspect system be derivable (via some intermediate step) from the range of interpretations available to the same marker in a diachronically prior system. Therefore, analyses of the semantics of tense/aspect categories, based on their synchronic distributional and interpretational properties, must also be able to account for changes in the distribution and interpretation of tense/aspect morphology across time — the explanandum presented to formal semantics by grammaticalization and typological studies. Moreover, patterns of change in tense/aspect categories serve a crucial function in tense/aspect theorizing — first, theories of tense/aspect semantics should be able to provide principled explanations for recurring patterns of language change; and second, evidence from language change can adjudicate between competing theories of the semantics of tense/aspect categories. Bringing in data from language change into the empirical domain of tense/aspect theorizing is thus relevant from these two perspectives.

1.2.1 Describing aspectual categories

Before proceeding to analyze the semantic content of the aspectual categories that constitute the focus of this study, I will provide pre-theoretical, informal definitions for each of them.

There are three ways in which a term such as the progressive or the imperfective may be construed. First, it may refer to a semantically defined category, abstracted away from

language-specific variation. Second, it may refer to morphological markers that realize (or instantiate) a particular expressive function in the aspectual system of a given language. Third, it may refer to a particular semantic intepretation that may or may not be licensed by a unique morphological marker in the language. Examples from Hindi and further below from Czech illustrate these distinctions. In Hindi, the periphrastic progressive construction V+*rah* 'stay' (an auxiliary) realizes the progressive aspectual category and licenses an interpretation where the letter writing is construed as a single ongoing episode (3a) — a progressive interpretation. The imperfective participle V-*t* (3b) realizes the imperfective aspectual category and the most natural construal of the letter writing is that it is a habitual situation characterized by several episodes of letter-writing — an imperfective interpretation. Further, the interpretations available for the sentences in (3a) and (3b) cannot be reversed.

(3) a. niśā mujh-e khat **likh rah-i** thi
N.NOM.SG I-DAT.SG letter.NOM.SG write-PROG.F be-PST.F.SG
Niśā *was writing* me a letter. (PROGRESSIVE)

b. niśā mujh-e khat **likh-ti** thi
N.NOM.SG I-DAT.SG letter.NOM.SG write-IMPF.F be-PST.F.SG
Niśā (habitually/regularly) *wrote* me a letter. (HABITUAL)

We can say then that in Hindi both the progressive and imperfective are morphologically instantiated aspectual categories. In Czech, on the other hand, a sentence with the verb inflected for the so-called imperfective aspect, may license two types of interpretation — an interpretation where the letter writing is construed as a single ongoing unculminated episode, as well as an interpretation where the letter writing is construed as a series of episodes, which constitute a habitual, plural situation. Thus, although Czech does not morphologically realize the progressive aspectual category, the progressive interpretation is licensed by the same form that licenses a non-progressive habitual interpretation — the imperfective morphology, which realizes the imperfective aspectual category.

(4) psal mi dopis. (Filip, 1999)
write.PST.IMPF I-DAT letter
a. He *was writing* a/the letter to me. (PROGRESSIVE)
b. He (usually, regularly, etc.) *wrote* a/the letter to me. (HABITUAL)

Throughout this dissertation, I will refer to abstract semantic categories as aspects (e.g. progressive or imperfective aspects), morphological instantiations of abstract aspectual categories as forms/morphology (progressive or imperfective form or morphology), while their interpretations will be referred to as such. To distinguish between abstract semantic categories and the labels of morphological markers in languages, I follow the convention in Comrie (1976) — language-specific labels for morphological markers have an initial capital letter, while abstract semantic categories remain uncapitalized. So, in Hindi, the Progressive morphology realizes the progressive aspect that licenses the progressive interpretation, while in Czech, the Imperfective morphology realizes the imperfective aspect that licenses both the progressive and the non-progressive imperfective interpretations. In some cases, I will also say that the progressive morphology realizes the progressive operator, which yields a progressive predicate, and so forth.

At this stage, my characterization of the semantic contribution of aspectual categories is based mainly on the expressive functions that aspectual markers typically perform in languages. The progressive and the perfect have been the subject of much investigation based on their distribution and interpretation in Germanic and Romance languages. The imperfective-perfective opposition, on the other hand, is familiar from the Slavic languages — its most well-studied, if not typical, instantiation. Broader typological studies also provide some cross-linguistic clues about what these aspectual labels might stand for.

Imperfective: The term imperfective refers to a category of expressions that describe situations as ongoing or unculminated at the time of evaluation — also known as states and processes. Diagnostics used to determine the ongoingness of situations (or stativity) include the way in which such situations are interpreted as interacting with a reference time given by context in temporal discourse or overtly expressed by adverbials.

Ongoing situations can be of several types: they may involve single episodes, such as an *event in progress* or they may be situations that characterize temporally indeterminate periods. Typical characterizing interpretations are often described by terms such as habitual, generic, or dispositional. In languages which morphologize the imperfective as a distinct aspectual category, sentences licensing the characterizing interpetation are typically inflected with the imperfective morphology, as in the Hindi and Czech examples in (3) and (4). However, this interpretation is also available in languages which do not morphologize this aspectual category. For instance, in English, sentences inflected with the past tense morphology may have characterizing interpretations, despite the lack of distinct imperfective morphology in the language.

Progressive: The term progressive refers to a category of expressions with a specific

type of imperfective meaning. One fairly established view of the progressive aspect is that it denotes *derived states*, known as in-progress states that are derived from more dynamic situations like events or processes (e.g. Parsons, 1990; de Swart, 1998, Vlach 1981). The intuition behind these accounts is that sentences with progressive readings often imply that there is a relevant larger interval, which often correlates with an event or a process, that the interval referred to by the progressive is part of. For instance, the sentence *John was drawing a circle* makes reference to an interval that is typically (factoring out intensionality) part of a larger interval during which John drew a circle. This is in contrast to habitual or generic sentences, which do not make reference to such a larger interval. By the progressive interpretation, I will informally refer to an interpretation that often evokes this kind of larger interval regardless of whether the language has a distinct morphology that uniquely picks out such a class of expressions (e.g. Czech in (4)).

Perfective: The term perfective refers to a category of expressions that denote situations characterized by boundaries — also called events. Diagnostics used to determine perfective aspect or the eventive character of an expression have to do with the interpretation of such sentences with reference to a contextually salient reference time. Perfective sentences describe situations that are interpreted as being included in their reference time and typically advance reference time in narrative discourse. Languages differ as to whether they morphologically instantiate the perfective aspectual category; however the perfective interpretation is available to languages regardless of the presence or absence of distinct morphology. For instance, the perfective aspect morphology in Hindi denotes only eventive situations. The past tense morphology in English, on the other hand, may license the perfective interpretation when it denotes eventive situations, but is not restricted to this interpretation. An important descriptive fact about the morphologized perfective category in some languages is that the perfective marked forms may also refer to situations that are typically expressed by perfect morphological markers in other languages. This observation has been made most often for Russian (Dahl & Hedin, 2000; Paslavska & Von Stechow, 2003; Tommola 1986). The examples in (5) are from Tommola, 1986 (cited in Dahl & Hedin, 2000: 394) and show that the Russian Perfective may be used to describe an event (5a) or a situation that obtains after the event denoted by the predicate has occurred — the resultant state — as in (5b).

(5) a. El'cin **priexal** včera v Moskvu
Yeltsin arrive-PERF.PST yesterday in Moscow.ACC
Yeltsin *arrived* yesterday in Moscow.

b. El'cin **priexal** v Moskvu
Yeltsin arrive-PERF.PST in Moscow.ACC
Yeltsin *has arrived* in Moscow.

Perfect: The term perfect refers to a category of expressions that denote situations that obtain as a result of (or following) an event (Kamp & Reyle, 1993; Moens & Steedman, 1988; Parsons, 1990). Perfect expressions are aspectually stative and presuppose the existence of a prior event. In languages which morphologize the perfect as a distinct category, this class of situations is marked through the use of a distinct perfect marker — an affix or a periphrastic construction. However, the perfect interpretation is often available in languages which do not have a distinct morphological expression for the perfect aspect. As shown in (5b), the Russian Perfective can also make reference to a perfect state. The Hebrew Past tense form, which is aspectually neutral, can be construed as making reference to either an event (6a) or the result-state of such an event (6b), depending on the surrounding discourse context and adverbials (examples from Itamar Francez, p.c.).

(6) a. dani **xaca** et-ha-kvish ve=nixnas la-xanut.
dani cross-PST ACC=DEF-street and=entered DAT.DEF=store
Dani *crossed* the street and entered the store.

b. dani (kvar) **xaca** et-ha-kvish kshe-hu hivxin
dani already cross-PST ACC=DEF-street when=he notice.PST

be-xaver she-menofef elav
in-friend that-wave.PRES to.him
Dani *had crossed* the street (already) when he noticed a friend waving to him.

The examples in (5a-b) or (6a-b) are not adduced to claim that the non-perfect morphological forms in Russian or Hebrew license the same wide range of interpretations as are licensed by, for instance, the English Perfect. However, they do support the hypothesis that we need to make a distinction between language-specific aspectual morphology and abstract aspectual categories, and study the ways in which aspectual morphology may map onto one or more abstract categories. In the case of Russian, the Perfective maps onto the abstract categories perfective and perfect, while in Hebrew it is the Past tense that licenses perfect interpretation. This distinction between aspectual form and aspectual interpretation will be crucial throughout the dissertation since I am interested in mapping variation and change in the aspectual interpretation corresponding to the same forms across time.

1.2.2 Markedness, privative opposition, and blocking

An assumption implicit in the typological studies of aspectual expression is that the aspectual categories described above are systematically related to each other. Specifically, the imperfective is treated as a semantically more general category than the progressive while the perfective is treated as a semantically more general category than the perfect. The general-specific relations that are taken to characterize the progressive and the imperfective aspects, and the perfect and the perfective aspects are motivated by typological facts about their distribution, such as those discussed in §1.2.1.

(7)

General	Imperfective	Perfective
Specific	Progressive	Perfect

These relations can be articulated in terms of markedness, a notion that is familiar from traditional aspectological accounts (Comrie, 1976; Jakobson, 1936), but rarely employed directly in formal semantic analyses of aspectual categories.[1] Markedness, very simply, is about the asymmetrical relationship between elements in a system characterized by the presence and the absence of information. Morphological marking or complexity in one member of an opposition is assumed to correlate with the presence of some information that is lacking in but not incompatible with the unmarked member. The relation between the presence and the absence of a feature on a pair of elements is what constitutes a privative opposition. The unmarked term in such an opposition occupies a more general domain; the marked term is necessarily restricted in its domain due to the presence of the specific feature. This differs from equipollent opposition in which members of an opposition are both explicitly marked for the presence and the absence of a given feature. In such a case, one member is specified as –feature, while the other is specified as +feature.

There are two implications of assuming that (at least some) aspectual categories are members of a privative semantic opposition. First, it requires us to posit an overlap in the semantic domains of the progressive and the imperfective categories, or of the perfect and the perfective categories, rather than representing each of these categories as having an atomic semantic domain unrelated to the other category. This means that we need a transparent way of expressing these overlapping domains that also accounts for the typical distribution

[1] The idea of markedness and privative oppositions is best known from the perfective-imperfective opposition in the Slavic languages. I will have something to say about how the privative nature of the imperfective-perfective contrast can be semantically developed in §3.7 (also see Filip 1997). I will extend the idea of markedness relations between aspectual categories mainly to the relations characterizing the progressive and the imperfective aspects.

of these categories. Second, this assumption requires us to formulate an account of the interaction between the aspectual forms that realize these overlapping semantic domains. If both the general and specific aspectual categories are morphologized in a language, what determines the distribution of the categories in the overlapping domains?

I propose that this distribution can be explained through the principle of blocking. The idea of blocking is familiar from the morphological literature and refers to a resolution mechanism for (potentially) competing linguistic expressions with a similar semantic interpretation. The blocking principle adjudicates between the conflict by selecting the more specific expression; the expression with a more restrictive denotation. Blocking has not been invoked much in semantic analyses as the organizational principle underlying the distribution of aspectual morphology (but see Kiparsky 1998, 2002 and Olsen 1997). But it works straightforwardly when applied to the domain of aspectual semantics. On the blocking account of aspectual meaning, the imperfective and the perfective operators are taken to be compatible in principle with the domain of application of the progressive and the perfect, and may fail to productively license these interpretations only in the case of languages where these more specific categories are morphologically instantiated. In other words, specific aspectual categories, if morphologically instantiated, tend to *block* the application of the general categories in the specific domain.

A blocking-based conceptualization of aspectual semantics allows us to capture the descriptive facts about the relation between the progressive/imperfective and the perfect/perfective aspects. Take the case of the imperfective and the progessive categories. Blocking relations predict that if both the progressive and the imperfective are morphologically realized in a given language, the imperfective morphology will be restricted to *non-progressive* contexts. The imperfective is not available in the progressive domain because the more specific progressive morphology blocks that interpretation for the imperfective morphology. On the other hand, in the absence of a distinct progressive morphology, the blocking account predicts that the imperfective morphology should be able to license a progressive interpretation as well as a non-progressive interpretation. The same predictions hold for the distribution of the perfect and the perfective.

Morphological and aspectual blocking seem to differ in (at least) one aspect — regularity. Morphological blocking in inflectional or derivational paradigms is usually very regular. For instance, in English past tense formation, the class of verb roots which form their past tense by a change in the root vowel — *sing-sang*, *ring-rang*, *drink-drank*, do not typically

allow for an optional use of the regular past tense forming *-ed* affix (except in child language).[2] The blocking relations that characterize the distribution of general and specific aspectual categories do not seem to be as exceptionless. The linguistic data we encounter does not always present clearcut domains of distribution for every morphologically instantiated aspectual category. It often seems to be the case that the so-called general and specific categories are in free variation. For instance, in French, the Progressive and the Imparfait may both license a progressive interpretation (deSwart 1998). However, even in such cases, aspectual forms exhibit asymmetric distributional properties that, in fact, provide further evidence for the overlap in their domains. In the case of French, the Imparfait may license the progressive interpretation; the Progressive is not compatible with other Imparfait interpretations such as the habitual or the generic interpretations. Thus, in the case of these two aspectual categories, although we do not see blocking at work, the distributional facts support an organization of the aspectual domain into general and specific categories. This suggests that the theory of blocking for aspectual (and perhaps other temporal) categories might need to be formulated along slightly different lines than it has been for morphological phenomena. I discuss this in more detail in §3.7 and propose a possible correlation between blocking effects and relative recency of the specific aspectual morphology.

1.3 Theoretical proposal

My main argument is that a comprehensive analysis of the semantics of aspectual categories must involve unifying the semantic and grammaticalization approaches to aspectual meaning and incorporating the ideas of markedness and privative opposition that underlie large scale typological studies of aspectual categories. Since the conception of aspectual relations that emerges from the grammaticalization and typological literature is based on robust synchronic and diachronic patterns of distribution, it is important that we find a way to formalize this more precisely. This is a first try at tackling the problem, mainly in the domain of the imperfective aspect.

There are three properties that characterize the relation between the progressive and the imperfective aspects.[3] First, in the absence of a morphologically realized progressive operator, the progressive interpretation is licensed by the imperfective operator (e.g. Russian, Hebrew, Sanskrit). Second, the presence of progressive morphology often correlates with

[2]Kroch (1994: 5-8) cites cases of morphological doublets (e.g. *dived/dove*) and argues that these are competing forms that are historically unstable and arise as a consequence of dialect contact, rather than being a stable feature of grammatical paradigms.

[3]The perfect and the perfective aspects are related in a similar way empirically but it is beyond the scope of this dissertation to present an explicit analysis of the relation that characterizes these two aspects.

the absence of the progressive interpretations for the imperfective morphology (e.g. Hindi). Finally, as seen in (1), progressive morphological markers may diachronically generalize to license interpretations typically associated with the imperfective aspect. A unified analysis of the progressive and the imperfective operators should be able to transparently derive the relations between the distribution and interpretation of these forms that realize these categories.

The intuition that needs to be formalized is that the denotation of the progressive operator is a *sub-domain* (proper subset of) denotation of the imperfective operator. Intuitively, the denotation of the progressive is 'nested' inside the denotation of the imperfective as in (8).[4]

(8) imperfective [progressive]

I propose that this intuition can be captured by the representation of the imperfective and the progressive operators in terms of two types of relations between eventuality predicates and their instantiation intervals. My basic idea is that the progressive and the imperfective aspects differ in the properties of the larger interval that the denoted intervals are subintervals of. Specifically, the imperfective operator yields the set of intervals that are non-final subintervals of a larger interval within (INST) which the predicate is instantiated, while the progressive operator yields the set of intervals that are non-final subintervals of a larger interval at (AT) which the predicate is instantiated.[5]

(10) a. $[[\textsc{impf}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{inst}(P, t')]$

b. $[[\textsc{prog}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(P, t')]$

I will demonstrate that this characterization transparently reflects the nested denotations of the progressive and imperfective aspects, as motivated by the cross-linguistic and diachronic data. Moreover, I will show that the stativity of imperfective- and progressive-marked predicates naturally follows from this analysis without stipulation.

[4] Correspondingly, the denotation of the perfect operator should be treated as a proper subset of the denotation of the perfective operator.

(9) perfective [perfect]

[5] INST denotes a relation between a predicate and any interval within which it is instantiated, i.e. the interval corresponding to the run-time of the eventuality instantiating the predicate or any superinterval of such an interval. AT is more restrictive and denotes a relation between a predicate and the run-time of the eventuality instantiating the predicate.

1.4 Linguistic scope

The theoretical proposal I make is examined most closely in relation to Indo-Aryan diachrony and synchronic variation in the Indo-Aryan linguistic continuum. The contemporary New Indo-Aryan (NIA) languages investigated here belong to the Central-Southern sub-group of Indo-Aryan and include the standard languages Marathi, Hindi, and Gujarati and the non-standard languages Ahirani, Dehawali Bhili, Konkana, and Pawri. Diachronic data comes from Old Indo-Aryan (Vedic and Epic Sanskrit), Middle Indo-Aryan (Prakrit), and some Old New Indo-Aryan languages (Old Marathi and Old Gujarati). The data from the non-standard languages is based on my own fieldwork in North Maharashtra conducted at different times between 2003 and 2005. The diachronic claims about older stages of Indo-Aryan are based on original textual research in combination with observations noted in historical grammars. In addition to being a test case for the particular theory argued for, the facts presented here are relevant to reconstructing the broader empirical history of the Indo-Aryan tense-aspect system and the key changes that it undergoes. Although the central focus of this study prevents me from undertaking a detailed account of Indo-Aryan tense-aspect systems, I hope that the brief descriptions that I offer here can contribute to initiating a sustained and rich investigation of tense and aspect in Indo-Aryan diachrony.

1.4.1 Loss of tense distinctions in Indo-Aryan

A careful analysis of the changes in the distribution of tense/aspect morphology from Old Indo-Aryan (OIA) to Middle Indo-Aryan (MIA) reveals one important systemic change in the tense/aspect system of Indo-Aryan across time. Tense distinctions, expressed morphologically in the grammar of OIA, are lost in the MIA period.[6] The reorganization of the resulting MIA system is along aspectual lines; the verb morphology contrasts the imperfective and perfective aspect. The transition to the New Indo-Aryan languages is characterized by a reacquisition of tense distinctions through the use of past and present tense auxiliaries that form periphrastic constructions in conjunction with the aspectual morphology.

The claim that the MIA system intervening between OIA and NIA tense/aspect systems is characterized by only an aspectual contrast and no tense contrast is new from the

[6]This claim must be appropriately qualified. First, the loss of distinction between the present and the past tenses is clearly attestable through both MIA textual documentation and archaic systems instantiated in some NIA languages. The loss of distinction between the present and the future tenses is not directly documented in any available MIA text, but must be reconstructed as a property of the MIA Proto tense/aspect system for at least some NIA languages, based on the distribution of other morphological forms in these languages. The data description is contained in Chapter 4.

perspective of Indo-Aryan diachronic studies. Neither the traditional nor modern investigations in the grammar of Indo-Aryan languages have related the morphological distribution of MIA verbal morphology to an aspect-based reorganization of the tense/aspect system. In view of its importance to the reconstruction of developments in the tense/aspect systems of Indo-Aryan languages, I discuss this change in detail in Chapter 4. The next two subsections summarize the nature of the diachronic and synchronic data used in this study.

1.4.2 The diachronic data

The Indo-Aryan language family, with a 3000 year literary tradition, presents some of the richest available diachronic documentation for a close study of patterns of language change. The languages of the family are divided diachronically into three broad stages — the Old Indo-Aryan, the Middle Indo-Aryan, and the New Indo-Aryan languages. There are further divisions within each of these stages, corresponding to the grammatical features documented in texts belonging to these periods. The table in (11) gives an overview of the temporal range over which the tense/aspect changes that I am concerned with occur. The first column gives an approximate period for the attested stages; the stages themselves are in the second column. Since modern New Indo-Aryan languages will be discussed only insofar as they instantiate a Middle Indic phase or its consequent developments I am not assigning a uniform stage to them. Some of the texts which I will be referring to frequently in the dissertation are given in the last column.

(11) **The Chronology**

TIMELINE	LANGUAGE	SOURCE
1700-1200BCE	Vedic (OIA)	Ṛgveda (RV)
200BCE	Epic Sanskrit (OIA)	Mahābhārata (MBh)
300BC-700CE	Prakrit (MIA)	Vasudevahiṁḍi (VH)
700-1000CE	Apabhraṁśa (MIA)	
1000-1500CE	Old Marathi (Old NIA)	Dnyāneśwarī (D)
		Govindaprabhucaritra (GC)
	Old Gujarati (Old NIA)	Ṣaḍāvaśyakabālāvabodha.(SB)
	Old Hindi (Old NIA)	Prithvirāja Rāso (PR)
Present	Gujarati, Marathi, Hindi (NIA)	
	Pawri, Dehawali, Ahirani (NIA)	
	Konkaṇā (NIA)	

1.4.3 The synchronic data

In reconstructing the diachronic changes in the Indo-Aryan tense/aspect system, I also make crucial use of attested synchronic variation in the modern NIA languages. In addition to data from Marathi, Hindi, and Gujarati, I rely on my fieldwork on tense-aspect patterns in four non-standard NIA languages Ahirani, Dehawali Bhili, Konkana, and Pawri are four largely undescribed Indo-Aryan languages spoken by indigenous communities in central India. These languages belong to the larger Bhili and Khandeshi dialect continuum, a rich and heterogeneous linguistic area that shares boundaries with the linguistic areas of Hindi, Gujarati, and Marathi. My fieldwork in these closely situated linguistic communities has been critical to developing an understanding of the range of the differences and underlying similarities in the tense/aspect systems in the Central-Southern subgroup of Indo-Aryan languages.

The Bhili and Khandeshi dialects, described first by Grierson (1907) as 'broken dialects', are a group of distinct Indo-Aryan languages that share grammatical properties with the surrounding standard languages Hindi, Gujarati, and Marathi. Grierson's label really refers to the fact that these languages pattern like more than one surrounding standard language in different grammatical subsystems, leading to an impression that they are somehow 'mixed' varieties based on the standard languages. However, my fieldwork suggests that these languages are not only independent autonomous linguistic systems (this is not to deny contact effects), but also retain traces of older stages of Indo-Aryan lost in the modern standard languages. These languages are therefore crucial to the reconstruction of Indo-Aryan diachrony (and particularly its tense/aspect system). I want to note here that the very idea that the proto-system for NIA languages (late MIA) could lack the tense distinctions found in OIA and standard NIA languages comes from the organization of the synchronic tense/aspect systems of Pawri and Konkana. This is independently confirmed by textual documentation but the trigger for this interpretation of the textual data is really comparative reconstruction through synchronic patterns of distribution.

1.5 Roadmap

Chapter 2 describes the main issues in determining criteria for classification of predicates into aspectual classes, specifically with respect to progressive and imperfective predicates. I show how lexical stative and derived predicates like progressive and habitual/generic predicates are all characterized by certain properties, which has led to them being classified as stative predicates. I then demonstrate that existing analyses of the progressive and

imperfective operators fall short of providing an explanatory account of the properties of derived stative predicates and propose some desiderata for a unified account of the two. In Chapter 3 I describe the morphological correlates of the semantic similarity between lexical stative, progressive, and habitual/generic predicates which further justify a unified analysis of the two operators based on the desiderata developed in Chapter 2. This chapter further develops a formal account of the imperfective and progressive operators that meets these desiderata.

Chapter 4 describes how morphological tense distinctions of Old Indo-Aryan are lost in the tense/aspect system of late Middle Indo-Aryan (summarized already in §1.4.1). This chapter is essential to understanding the diachrony of Indo-Aryan tense/aspect but not crucial to following the argumentation and data in later chapters, which are relatively self-contained. Chapter 5 examines two changes in the history of imperfective aspectual marking in some Indo-Aryan languages. In the first kind of change, tense auxiliaries form periphrastic constructions in conjunction with imperfective verb forms which uniformly license progressive interpretation. In the second kind of change, which diachronically follows the first, the so-called "progressive construction" generalize along a grammaticalization path and 'become' markers of the imperfective aspect. I show how these empirical facts can be fruitfully interpreted using the theoretical analysis of the progressive and the imperfective operators developed in Chapter 3. Chapter 6 introduces a category called the 'focalized' progressive, which has been described in the typological literature to be a progressive marker with certain restrictions. I propose that the focalized progressive instantiates a variant of the progressive operator with an additional restriction on its domain — it may apply only to eventive predicates. This restriction predicts that the focalized progressive is not acceptable with lexical stative and derived stative predicates, a prediction that is confirmed by the data on this category. I then proceed to examine synchronic variation in the grammatical aspect markers expressing imperfective predicates in the Indo-Aryan languages and show how this variation can be easily explained once we assume three aspectual operators in a nested relation with each other — the imperfective, the progressive, and the focalized progressive. The languages differ with respect to which specific category of the progressive is realized, or whether the progressive is realized at all. This set of data thus further supports the particular structure of the larger domain of imperfective predicates, and the nested denotation of the imperfective, progressive, and focalized progressive operators that I argue for.

The conclusions of this study and questions presented for further research in study of Indo-Aryan diachrony and tense/aspect semantics are in Chapter 7.

Chapter 2

Aspectual classification and stativity

2.1 Introduction

Eventuality types, or aspectual classes, very broadly speaking, constitute a system of classification for predicates in natural languages. Languages categorize states of affairs in the world in particular ways that have been observed to be important for the semantic representation of predicates and the sentences they occur in. These categories are encoded in a variety of ways — lexical specification, verbal and nominal morphological marking, and adjunctive modifiers, such as adverbials. The precise contribution of inherent verb semantics, properties of nominal arguments, verbal morphology, and temporal adverbials in the compositional buildup of sentence-level aspectuality has been the subject of much research from a range of perspectives within semantics. In this chapter, I will discuss some results from the body of work that is concerned with the semantic classification of predicates into distinct aspectual classes. The findings of this chapter form part of the motivation for the analysis of the imperfective and progressive operators developed in Chapter 3.

The chapter has the following structure. In §2.2, I introduce the general issues in determining the criteria for classifying predicates into aspectual types and their relevance to the understanding of grammatical aspect marking. In §2.3, I describe several properties that are common to lexically specified stative predicates, progressive predicates, and habitual/generic predicates. It is due to this commonality between the three predicate classes that progressive and the habitual/generic predicates are considered derived stative

predicates. In §2.4, I review some eventuality-based analyses of the progressive and the imperfective aspectual operators, and conclude that they do not provide a satisfactory account of the stativity of progressive and imperfective predicates. In §2.5, I examine another influential view of aspectual operators as denoting functions from predicates of eventualities to predicates of times. This view, which relies on relations between temporal intervals, offers some explanation for the properties of progressive predicates. But I show that it falls short of an explanatory account for habitual/generic predicates based on temporal relations. In §2.6, I summarize my findings from earlier research, and propose a set of desiderata for an analysis of the two operators that form the basis of my analysis in §3.

2.2 Aspectual classification

The key question that concerns this dissertation is the semantic content of aspect-denoting verb morphology, also known as grammatical aspect. The contribution of such morphology is ultimately tied to the development of a more general system of predicate classification derived from their aspectual properties. In other words, phenomena studied under distinct headings like lexical aspect or grammatical aspect all pertain to the nature of predicational aspect and the factors that determine it. Mourelatos (1978) makes this point very clearly in discussing earlier classical analyses of the aspectual properties of lexical verbs.

> The familiar Vendler-Kenny scheme of verb-types, viz., performances (further differentiated by Vendler into accomplishments and achievements), activities, and states, is too narrow in two important respects. First, it is narrow linguistically. It fails to take into account the phenomenon of verb aspect. The trichotomy is not one of verbs as lexical types but of predications. Second, the trichotomy is narrow ontologically. It is a specification in the context of human agency of the more fundamental, topic-neutral trichotomy, event-process-state. (Mourelatos, 1978: 415)

The traditional category of lexical aspect (also Aktionsart, Situation aspect) pertains to the aspectual/temporal properties of simplex or composite (uninflected) verbal expressions, while grammatical aspect is concerned with the semantics of (usually paradigmatic) aspect denoting verb morphology. To illustrate, lexical aspect pertains to the properties that distinguish between the lexically stative predicate *love* and the lexically eventive predicate *build* in (1a) and (1b). On the other hand, grammatical aspect is concerned with the property that distinguishes between the two inflectional versions of the predicate *build* that occur in (1b) and (1c).

(1) a. John *loved* Mary. state, simple past
b. John *built* a house. event, simple past
c. John *was building* a house. event, progressive past

What are the criteria by which natural language predicates might be classified into a limited number of aspectual classes? The aspectual classes originally proposed by Vendler (1957, 1967) provided some schemata to divide the verbs of English — states, activities, accomplishments, and achievements.[1] Vendler's four-way classification is based on the criteria of durativity, change, telicity (set terminal point), and homogeneity. Dowty (1979) develops on this work by Vendler, Kenny (1963), and Ryle (1949), demonstrating how the four aspectual classes pattern distinctly with respect to their logical entailments, interaction with temporal adverbials, and tense/aspect morphology. In the later literature, the distinction along the telicity dimension, has become the main criterion for the classification of predicates into telic and atelic (or homogeneous) predicates (Herweg 1991, Michaelis 1997, Parsons 1990; Bach 1986; Krifka 1986, 1989, 1998 a.o.).

Predicate properties like homogeneity and telicity have been formalized in terms of the properties of the temporal intervals at which predicates are instantiated (in the interval semantics approach) or in terms of the properties of the eventualities, which are introduced as primitives, in the denotation of predicates (in the event semantics approach). The algebraic notion used to express the distinction between telic and atelic predicates is the mereological notion of *part*. Atelic predicates are true for any part of the interval at which (or eventuality for which) they are true. This property does not hold for telic predicates. Going back to the Vendlerian classification, atelic predicates include state and activity predicates while accomplishment and achievement predicates are telic.

On the event semantic approach, the domain contains, in addition to temporal intervals, a special type of individuals — eventualities. There are two sorts of eventualities — events and states. Telic (eventive) predicates denote events and atelic (stative) predicates denote states. Activity predicates are special because they are eventive but atelic. On the bi-sorted ontology of events and states, activity predicates are said to denote states (Herweg 1991; Michaelis 1997). However, yet another classification distinguishes between events,

[1]Since then, a central issue in aspectual classification has been to determine the set of entities that it applies to. Does it apply to lexically atomic expressions (such as verbs), or does it apply to more complex expressions that these lexical expressions are part of (such as verb phrases)? At least since Garey (1957) Verkuyl (1972), it has been pointed out that aspectual classification of verbs appears to vary based on the properties of the arguments they combine with. This apparent variation in aspectual class for individual verbs has been most widely interpreted to mean that the classification, in fact, describes verb phrase-level properties, since it is verbs in combination with their arguments that determine the aspectual class of the predicate denotation.

states, and processes (which correspond to activity predicates). On this tripartite sorting of the domain of eventualities, activity predicates pattern with events along the dimension of dynamicity and with states along the dimension of atelicity (Mourelatos, 1978; Bach, 1986; De Swart, 1998). For most purposes in this chapter and this dissertation, I will assume the bi-sorted event-state ontology and so it is useful to remember that the term stative predicates, in fact, refers to the union of the Vendlerian state and activity predicates. In some places, I will explicitly refer to activity predicates as such. I will distinguish Vendlerian states from stative predicates by using the term lexical statives to refer to them.

The perfective and imperfective aspectual categories correspond to this basic ontological distinction between events and states — perfective predicates (typically) denote events and imperfective predicates denote states. The event-state distinction has several reflexes in the grammar, one of them being its overt morphological expression in the form of perfective and imperfective marking in many languages. Event and state predicates also pattern differently with temporal adverbials (Vendler, 1967; Dowty, 1979), have different effects on the temporal sequencing of eventualities in narrative discourse (e.g. Hinrichs,1985; Partee, 1984), and have different logical entailments with respect to their instantiation in time.

An important question for a theory of aspectual categories is: what is the source of the differences between eventive and stative predicates? The diagnostics of temporal interpretation and logical entailments for stative and eventive predicates should follow from some more basic properties of the two kinds of predicates. In other words, out of the cluster of diagnostic properties that pick out the two classes of predicates, there has to be some property from which the others can be derived. Given that the bulk of this dissertation is about stative predicates and their morphological expression, this chapter introduces the properties of stative predicates that can serve as a starting point for getting at the notion of stativity.

This discussion links to the question of the semantics of grammatical aspect markers in the following way. As I will show in §2.3, progressive and habitual/generic imperfective predicates are typically based on eventive predicates but pattern like lexical statives in several respects. There are two ways in which progressive or imperfective aspect markers could contribute to deriving this stativity with base eventive predicates. On the one hand, they could be treated as stativizing operators, which derive stative predicates from non-stative predicates (a sort of type-shift). The progressive operator, for instance, is said to derive a predicate that denotes an *in-progress* state from a base eventive predicate (De Swart, 1998; Kamp & Rohrer, 1983; Moens & Steedman 1987, 1988; Parsons, 1990; Vlach, 1981, etc.). The habitual/generic operator could be treated as an operator that similarly

derives a habitual predicate from an eventive episodic predicate (e.g. Rimell 2004). On the other hand, particularly in the case of languages that have a single imperfective marker that is used with lexically specified stative predicates, progressive stative predicates, as well as habitual/generic stative predicates, these morphological markers can be considered to have a flagging function. De Swart (1998) offers this solution to account for the distribution of the French Imparfait, and calls it a *type-sensitive* operator. On this construal, the morphology merely reflects the stativity of the sentential predicate. The actual stativizing job for progressive or habitual/generic predicates is done by covert stativizing operators that derive in-progress or habitual/generic states from eventive predicates.

Neither of these conceptions of aspectual contribution really explicate the temporal relation between the derived predicate and the base predicate. How is the temporal interval/eventuality output by overt or covert progressive/habitual operators derivable from the temporal interval at which the predicate is instantiated? By what precise operation do we get from the eventive predicate to its in-progress or its habitual/generic counterpart? This is a question that has been fruitfully addressed with regard to the progressive operator in the considerable literature on the English Progressive and its truth-conditions in terms of intervals. To be precise, I am only extending this question to the operation deriving stative habitual/generic predicates from base eventive predicates. Moreover, I am interested in the possibility of having a parallel account of the two operators, given the morphological relations that hold between their exponents (Chapter 3).

2.3 Diagnostics of stativity

In this section, I discuss properties and diagnostics that unify lexical stative, progressive, and habitual/generic predicates — (a) subinterval property (divisiveness), (b) cumulativity, (c) the temporal overlap interpretation with respect to topically salient reference times introduced in narrative discourse, and (d) interaction with time-span and punctual time adverbials. Because progressive, and habitual/generic predicates pattern exactly like lexically specified stative predicates, the inference is that they are stative. I work up to this inference by showing how lexical stative, progressive, and habitual/generic predicates pattern with respect to the above-mentioned diagnostics.

For ease and speed of exposition, most of the discussion in the following sections is based on English progressive and habitual/generic predicates. Therefore, I want to clarify how I see the relation between the progressive/imperfective operators, progressive/imperfective

predicates, and the progressive/imperfective interpretation. In English, the *be -ing* construction is a morphologically realized progressive operator that outputs a progressive predicate. Non-progressive imperfective predicates in English (e.g. lexical stative predicates or habitual/generic predicates) do not have a corresponding imperfective morphological exponent, unlike in Hindi or Arabic. Non-progressive imperfective interpretations are typically licensed by the simple tense forms. In other words, non-progressive imperfective predicates in English appear in the simple tenses while non-progressive imperfective predicates in languages like Hindi or Arabic appear with the imperfective morphology, which realizes the imperfective operator. Regardless of whether there is overt imperfective/progressive morphology, I am assuming that progressive predicates, lexical stative predicates, and habitual/generic predicates across languages are imperfective (with the progressive as a special subtype) and should share certain properties. The fact that these predicates are also morphologically realized identically in some languages is evidence for this semantic similarity, not the reason for it. Therefore, an examination of English imperfective predicates should be as useful in determining the properties of the imperfective aspectual category and the imperfective operator as the study of a language with an overtly realized imperfective operator.

2.3.1 Homogeneity

The observation that a class of predicates has the subinterval/homogeneity property is fairly well-established in the literature on aspectual semantics (Bennett & Partee, 1972; Dowty, 1979 a.o.). The term homogeneity is due to Vendler (1957, 1967) who first noticed for a class of verbal predicates, that if they are true at a temporal interval, they are also true at any part of that interval. For instance, if the predicate *run* holds of an interval, it also holds of all its parts. On the other hand, if the predicate, *run a mile* applies to an interval, it cannot apply to any proper part of this interval. Therefore, *run* is a homogeneous predicate while *run a mile* is non-homogeneous. This distinction has been reconstructed in interval semantic approaches as the subinterval property (Bennett & Partee 1972).

> Subinterval verb phrases have the property that if they are the main verb phrase of a sentence which is true at some interval of time I, then the sentence is true at every subinterval of I including every moment of time in I. Examples of subinterval verb phrases are: *walk*, *breathe*, *walk in the park*, *push a cart*. (Bennett and Partee, 1972:17)

The subinterval property distinguishes between homogeneous and non-homogeneous predicates.[2] More generally, it distinguishes between stative predicates and eventive predicates. (2)-(5) illustrate this contrast. The subinterval entailment goes through only for the stative predicates (2)-(3) and not for the eventive predicates (4)-(5).

(2) a. John lived in Paris for five years. (state)
b ⇒John lived in Paris at every subinterval of those five years.

(3) a John walked along the beach for two hours. (activity)
b ⇒John walked along the beach at every subinterval of those two hours.

(4) a. John built a house in three years. (accomplishment)
b. ⇏John built a house at every subinterval of those three years.

(5) a. John reached the summit in two hours. (achievement)
b. ⇏John reached the summit at every subinterval of those two hours.

However, it turns out that the subinterval property also holds of progressive and habitual/generic predicates that are based on eventive predicates. In (6a-b) the progressive predicate based on the eventive predicate *build a house* allows the subinterval inference to go through.

(6) a. John was building a house for three years. (progressive)
b. ⇒John was building a house at every subinterval of those three years.

Similarly, in (7a-b), the generic predicate based on the eventive *build a house* has the subinterval interpretation.

(7) a. For several years, John built a house for every low-income client that approached him. (generic)

[2]Taylor (1977) and Dowty (1979) further distinguish within subinterval predicates through the notion of granularity; for a subclass of predicates (viz. activities) the subinterval property holds only with intervals down to a certain limit in size. For instance, the smallest subinterval of an interval at which the predicate *walk* is true might only contain the action of lifting one foot and so the predicate *walk* cannot be true of this subinterval. In general, it appears that the size of the subintervals at which a homogeneous/subinterval predicate may be true depends on world knowledge about the relevant eventuality. Since it is not crucial to my discussion, I will not make a distinction within the class of subinterval predicates based on the minimal size of subintervals. I am also factoring out the gappiness problem.

b. ⇒At every subinterval of those several years, John built a house for every low-income client that approached him.

Note that the availability of the subinterval inference is restricted to the generic predicate, and NOT the base predicate. (7b) does not mean that the base predicate *build a house* has to be true at every subinterval of the interval *for several years*. Rather, (7a) has an interpretation comparable to the paraphrase in (8a).

(8) a. For several years, John *had the policy of building/was willing to build* a house for every low-income client that approached him. (generic)
b. ⇒At every subinterval of those several years, John *had the policy of building/was willing to build* a house for every low-income client that approached him.

(7a) describes a characteristic property of John that holds of him over an interval. It is this property that has the subinterval property. It is true of John at every subinterval of the larger interval *for several years* that he *had the policy of building/was willing to build* a house for every low-income client that approached him. The non-transparency of the subinterval interpretation for the sentence in (7a) is because the English past tense licenses both eventive and habitual/generic interpretations, the eventive often being the default interpretation for eventive predicates. In languages with a distinct imperfective morphology (French, Russian, Hindi), the subinterval inference should go through without any difficulty. The example in (9a-b) is from Hindi and shows that the subinterval inference goes through for the eventive predicate *de* 'give' which appears overtly with imperfective morphology.

(9) a. koi kuch-bhi mãge niśā us-e vaha **de-ti thi**
anyone anything-EMPH ask-subj N-NOM her-DAT that give-IMPF.F.SG PST-F.SG
If anyone asked for something, Niśā gave him/her that.
b. ⇒At every sub-interval (of the contextually specified interval in the past), if anyone asked her for something, Niśā gave him/her that.

2.3.2 Divisiveness

In event-semantic approaches, the subinterval/homogeneity property surfaces as divisiveness and is defined in terms of eventualities instantiating a predicate (in contrast to intervals). Research on the extensive parallels in the structure of the nominal and the verbal domains, which correspond to the domain of objects and the domain of eventualities led to identifying

properties of predicates across syntactic categories (Bach 1981, 1986; Krifka 1986, 1989). The main idea is that the count:mass distinction in the nominal domain appears to have a reflex in the telic:atelic distinction in the verbal domain. While the subinterval property is restricted to verbal predications, divisiveness is a property of all predicates with a certain structure (10a-b)

(10) a. A predicate P is divisive if and only if, when it applies to an entity x, it also applies to any y that is part of x.[3]

b. $\text{DIV}(P) \leftrightarrow \forall x,y[P(x) \wedge y<x \rightarrow P(y)] \wedge \exists x \exists y[(P(x) \wedge y<x)]$

In the domain of eventualities, divisiveness is understood as a property of predicates of eventualities.

(11) $\text{DIV}(P_e) \leftrightarrow \forall e,e' \in U_e[P(e) \wedge e'<e \rightarrow P(e')] \wedge \exists e \exists e'[(P(e) \wedge e'<e)]]$

Divisive predicates of eventualities are predicates with the subinterval property and are closed under the subpart relation. The same data I used to show that lexical stative, progressive, and habitual/generic predicates have the subinterval property ((2)-(9)) straightforwardly extends to show that these predicates are also divisive.

2.3.3 Cumulativity

Yet another property of certain predicates is that they are cumulative. Consider the nominal predicates *an apple* and *apples*. If *an apple* applies to two entities x and y, it cannot apply to their sum, which would fall under the denotation of a predicate like *apples* or *two apples*. On the other hand, if the predicate *apples* applies to an entity x (some plural number of apples) and an entity y (another set of apples), it also applies to their sum. Cumulative predicates are thus closed under the sum operation. Cumulativity is defined in (12a).

(12) a. A predicate P is cumulative if and only if, when it applies to any two entities x and y, it also applies to the sum of x and y ($\oplus$ is the sum operation), and P should apply to at least two distinct entities x and y.

b. $\text{CUM}(P) \leftrightarrow \forall x,y[P(x) \wedge P(y) \rightarrow P(x \oplus y)] \wedge \exists x,y[P(x) \wedge P(y) \wedge \neg x=y]$

The version of cumulativity for eventuality predicates is in (13).

(13) $\text{CUM}(P_e) \leftrightarrow \forall e,e' \in U_e[P(e) \wedge P(e') \rightarrow P(e \oplus e')] \wedge \exists e,e'[P(e) \wedge P(e') \wedge \neg e=e']$

[3] '<' is the proper part relation between entities in the part structure. The definition in (10b) is that of strict divisiveness (Filip, 2003; Krifka, 1986).

A predicate like *push a cart* has cumulative reference because it denotes a non-delimited (temporally or otherwise) set of eventualities that are pushings of a cart. The sum of any two such eventualities would still fall under the denotation of *push a cart*. Lexically specified stative predicates have the cumulativity property. Because *live in Paris* and *swim in the pool* are cumulative predicates, the sum of two eventualities in the denotation of these predicates also falls under their denotation (14)-(15). On the other hand, *fix a broken computer* is a non-cumulative predicate. The sum of two eventualities in its denotation may not also fall in its denotation (16a-c).

(14) a. John lived in Paris from 1992 to 1993. (state)
b. John lived in Paris from 1993 to 1997.
c. ⇒John lived in Paris from 1992 to 1997.

(15) a. John swam in the pool from two to three in the afternoon. (activity)
b. John swam in the pool from three to four in the afternoon.
c. ⇒John swam in the pool from two to four in the afternoon.

(16) a. John fixed a broken computer from two to three in the afternoon. (event)
b. John fixed a broken computer from three to four in the afternoon.
c. ⇏John fixed a broken computer from two to four in the afternoon.

How do progressive and habitual/generic predicates pattern with respect to cumulativity? These seem to pattern exactly like lexically specified stative predicates, although they are based on eventive predicates. The sum of two eventualities in the denotation of the progressive predicate *was fixing a broken computer* also falls in its denotation (17a-c). Similarly, the sum of two eventualities in the denotation of the habitual predicate *fixed broken computers* also falls in the denotation of that predicate (18a-c).

(17) a. John was fixing a broken computer from two to three in the afternoon. (progressive)
b. John was fixing a broken computer from three to four in the afternoon.
c. ⇒John was fixing a broken computer from two to four in the afternoon.

(18) a. John fixed broken computers from 1992 to 1993. (habitual)
b. John fixed broken computers from 1993 to 1997.

c. ⇒John fixed broken computers from 1992 to 1997.

These facts show that lexically specified stative predicates, progressive predicates, and habitual/generic predicates all pattern together with respect to cumulativity.

In §2.3.1, homogeneity was taken to be a term equivalent to the subinterval property or divisiveness. On a different characterization, the class of homogeneous predicates, corresponding to atelic predicates in the domain of eventualities, is taken to be the class of predicates with cumulative and divisive reference (Moltmann, 1991; Filip, 2003). The cumulativity and divisiveness definitions are the same as in (13) and (11).

(19) $\mathrm{HOM}_e(\mathrm{P}) \leftrightarrow \mathrm{DIV}_e(\mathrm{P}) \wedge \mathrm{CUM}(\mathrm{P}_e)$
$\mathrm{CUM}(\mathrm{P}_e) \leftrightarrow \forall \mathrm{e},\mathrm{e}' \in \mathrm{U}_e[\mathrm{P}(\mathrm{e}) \wedge \mathrm{P}(\mathrm{e}') \rightarrow \mathrm{P}(\mathrm{e} \oplus \mathrm{e}')] \wedge \exists \mathrm{e},\mathrm{e}'[\mathrm{P}(\mathrm{e}) \wedge \mathrm{P}(\mathrm{e}') \wedge \neg \mathrm{e}{=}\mathrm{e}']$
$\mathrm{DIV}(\mathrm{P}_e) \leftrightarrow \forall \mathrm{e},\mathrm{e}' \in \mathrm{U}_e[\mathrm{P}(\mathrm{e}) \wedge \mathrm{e}'{<}\mathrm{e} \rightarrow \mathrm{P}(\mathrm{e}')] \wedge \exists \mathrm{e} \exists \mathrm{e}'[(\mathrm{P}(\mathrm{e}) \wedge \mathrm{e}'{<}\mathrm{e})]]$

On this definition of homogeneity, lexical statives, progressive predicates, and habitual/generic predicates are all homogeneous predicates since they have both divisive and cumulative reference. In the next sections, I will examine properties relating to temporal interpretation where these three types of predicates also pattern identically.

2.3.4 Interpretation in narrative discourse

The literature on temporal interpretation in narrative discourse and the temporal properties of eventive and stative predicates has shown that that they pattern distinctly with respect to topical intervals, such as those introduced by prior sentences. The fact that progressive and habitual/generic predicates behave like lexical stative predicates with respect to their temporal interpretation is yet another diagnostic that they have similar temporal structure.

The facts are as follows: in narratives with a simple linear structure and with all clauses in the simple past tense (in English), event sentences tend to advance the reference time (from the reference time introduced by the prior clause), while state sentences typically retain the reference time of the last-mentioned event (Kamp & Rohrer 1983, Hinrichs 1986, Partee 1984, Dowty 1986). This is exemplified by two stretches of narrative from Partee (1984:253) and Hinrichs (1981:66) respectively. The italicized *e* and *s* are labels for the aspectual status of the eventualities described by the clauses before them. The first three clauses in (20a) are eventive and move the action forward in time, while the next clause describes a state and describes an eventuality that overlaps with the reference time introduced by the previous clause. Hinrichs has noted, as seen from (20b), that states need not always be interpreted as overlapping the time in which the previous event is instantiated.

The state, *it was pitch dark*, comes about as a result of switching the light off and cannot hold during the temporal interval over which the event is instantiated.

(20) a. John got up (e), went to the window (e), and raised the blind (e). It was light out (s). He pulled the blind down (e), and went back to bed (e). He wasn't ready to face the day (s). He was too depressed (s).

b. Jameson entered the room (e), shut the door carefully (e), and switched off the light (e). It was pitch dark around him (s), because the Venetian blinds were closed (s).

Hinrichs proposes that (past-tense) sentences describing events and states pattern as follows: event sentences describe eventualities which occur *within* a current reference time, which subsequently causes the reference time to be shifted forward to an interval that follows the interval of the prior event. State sentences describe eventualities (states and processes) that include the current reference time, but need not overlap with the reference time of the prior-mentioned event. Thus events and states are temporally located differently with respect to the topic interval or reference time.[4]

(21) a. $E \subseteq R$
b. $S \supseteq R$

The stative predicates in (20a-b) do not involve verbal stative predicates. Consider the following example which illustrates that lexical stative predicates receive an identical interpretation in narrative discourse. In (22), the first two sentences contain eventive predicates and are interpreted as describing events taking place at consecutive intervals. The third sentence, on the other hand, is understood as describing a state that overlaps the times of the events mentioned in the prior discourse and also the time of the event in the next sentence. So the temporal interval of the state includes the reference time updated by the prior discourse and may extend beyond it.

(22) John got up (e) and went to the window (e). He looked down at the crowded street (e). He lived in the busiest quarter of the city (s). He closed the window (e).

As with divisiveness and cumulativity, progressive and habitual/generic predicates pattern similar to states in discourse. Consider the examples from Dowty (1986: 37-38) in

[4]Bittner (2006) calls this generalization aspect-based temporal location (TAL), and provides cross-linguistic evidence in favor of positing it as a universal principle for the temporal location of eventive and stative eventualities.

(23). The second sentence in the narrative sequence in (23a) is considered to refer to a time that follows the time of the event described by the preceding sentence. In both (23b) and (23c), on the other hand, the time of the eventuality described in the second sentence is understood as overlapping with the interval corresponding to the prior event from the first sentence. The progressive sentence in (23b) patterns similarly to the stative sentence in (23b) as far as non-advancement of reference time is concerned.[5]

(23) a. John entered the president's office (e). The president walked over to him (e).
b. John entered the president's office (e). The president was writing a letter (?).
c. Mary entered the president's office (e). The president sat behind a huge desk (s).

In (24a-b), the same context is retained. In (24a), the predicate receives an eventive interpretation and is construed as describing an event that follows John's entry. In (24b), the generic predicate, based on the same eventive predicate *receive*, is construed as describing an eventuality (a state?) that includes the updated reference time and also overlaps with the time of the event denoted by the prior sentence.

(24) a. John entered the president's office (e). The president received him warmly (e).
b. John entered the president's office (e). The president received his visitors only at this hour (?).

To sum up, this section shows that lexically specified stative predicates, progressive predicates, and habitual/generic predicates that are based on eventive predicates are all sequenced in a similar way with respect to the surrounding eventive sentences in discourse. Specifically, all three types of predicates are construed as including the updated reference time from the previous eventive sentence and extending beyond this time.

2.3.5 Time-span adverbials

One classic diagnostic that distinguishes between eventive and stative predicates is the *for an hour/in an hour* adverbial test. The basic observation is that lexical stative predicates are compatible with *for x time* adverbials, while event predicates occur very marginally with *for*-based adverbial prepositional phrases. Event predicates take *in x time* adverbials naturally, while lexical stative predicates do not occur with *in*-based adverbials. In (25)-(26), the stative predicates *live* and *swim* are compatible with *for*, but not with *in*. On the

[5]The question marks in (23b) and later in (24b) indicate that I have not yet established that progressive and habitual predicates denote states. It is difficult to make such a claim before it is determined how stativity is to be defined.

other hand, the event predicate *build a model airplane* in (26) occurs with *in* and is not felicitous with the *for* adverbial.

(25) a. John lived in Paris for a year. (state)
b. *John lived in Paris in a year.

(26) a. John swam for an hour. (activity)
b. *John swam in an hour.

(27) a. John built the model airplane in an hour. (event)
b. *John built the model airplane for an hour.

Progressive and habitual/generic predicates pattern exactly like the lexically specified stative predicates in this respect as well. Both classes of predicates are compatible with *for x time* adverbials and not good with *in x time* adverbials.

(28) a. John was building the model airplane for an hour. (progressive)
b. *John was building the model airplane in an hour.[6]

(29) a. John built model airplanes for several years. (habitual)
b. *John built model airplanes in several years.

2.3.6 Punctual temporal adverbials

Eventive and lexically specified stative predicates also pattern differently respect to certain punctual temporal location adverbials such as *when* adverbials. The eventualities described by eventive predicates are construed as following the temporal location specified by these adverbials (when they introduce events), whereas those described by the stative predicates are construed as extending beyond this temporal location.[7] In the examples from (30) to

[6]This sentence is okay if the progressive applies to the predicate after the temporal adverbial has applied, but on the reverse scope, which is the crucial one here, the sentence is bad.

[7]This is a simplification. The contribution of *when* adverbials with eventive predicates is far more complex and also involves causality and other facts (see e.g. Moens and Steedman, 1987). The point is however, that eventive predicates may never be interpreted as including and extending beyond the time introduced by the *when* adverbials while stative predicates are always interpreted that way. Further, the stative-like construal is harder for activity predicates, which I have been treating as stative until now (see 31). Activity predicates tend to pattern like event predicates in their interpretation with a punctual *when* adverbial or they require modification by the progressive.

(32), the type of predicate in the temporal clause is kept constant (eventive) while the main clause predicate type varies. The interpretations are different (but consistent with the generalization) when temporal clauses are based on stative predicates. In the sentence with a lexically specified stative predicate in (30), the time introduced by the *when* adverbial (the reference time) is understood as being included in the time at which the predicate *live in Paris* is instantiated. In (31) and (32), the most natural interpretation is where the reference time of the eventuality described in the main clause is located after the time introduced by the *when* adverbial.

(30) a. John lived in Paris when Mary saw him last. (state)
b. ⇒ John lived in Paris before Mary saw him last, during that time, and possibly continued to live there after that time.

(31) a. John swam in the pool when Mary arrived. (activity)
b. ⇒John swam in the pool *after* Mary arrived.

(32) a. John built the model airplane when Mary arrived. (event)
b. ⇒John built the model airplane *after* Mary arrived.

Again, progressive and habitual predicates pattern with lexical stative predicates in licensing an inclusion inference — the time introduced by the *when* adverbial is construed as being included in the time at which the progressive or habitual predicate is instantiated. In (33), the time of Mary's arrival is included in the time over which the progressive predicate *was building a model airplane* holds. Similarly, in (34), the time of Mary's seeing John is included in the time during which John was engaged in (as employment or hobby) building model airplanes.

(33) a. John was building the model airplane when Mary arrived. (progressive)
b. ⇒John was building the model airplane before Mary arrived, during that time, and possibly continued to build it after that time.

(34) a. John built model airplanes when Mary saw him last. (habitual)
b. ⇒John built model airplanes before Mary saw him last, during that time, and possibly continued to build them after that time.

2.3.7 Summary

The main goal of this section was to show that lexical stative predicates, progressive predicates, and habitual/generic predicates pattern in the same way with respect to some predicate properties, viz. divisiveness and cumulativity, and with respect to the way in which they are temporally located by discourse and temporal adverbials. One inference that can be derived from the facts in §2.3 is that progressive and habitual predicates denote properties of states just like lexically specified stative predicates. In other words, all three classes of predicates are stative. This inference is hardly novel or original and forms the basis of several analyses of the progressive and the imperfective aspects that I will present in the next section.

2.4 Predication over eventualities

If progressive and habitual/generic predicates are stative like the lexically specified stative predicates, then we have a puzzle. How do progressive and habitual generic predicates *become* stative? The crucial difference between lexical statives and progressive and habitual/generic predicates is that the latter are based on an eventive predicate. So there must be some operation that changes the eventuality type of the eventive predicate and derives a stative predicate — an operation performed by a stativizing operator.

The progressive has been analyzed as a stativizing operator that derives *in-progress* stative predicates from base eventive predicates in several analyses of the progressive (De Swart, 1998; Kamp & Rohrer, 1983; Moens & Steedman 1987, 1988; Parsons, 1990; Vlach, 1981, etc.). I will consider two of these analyses — Parsons (1990) and De Swart (1998).

2.4.1 Parsons 1990

The analysis in Parsons (1990) explicitly invokes the *in-progress* state uniquely associated with the event denoted by a predicate. An important aspect of the analysis of the progressive proposed by Parsons (1989, 1990) is that he dissociates the truth of progressive sentences from the truth of their non-progressive counterparts. This is achieved by positing that uninflected predicates denote both culminated and non-culminated eventualities. "A verb such as 'cross' is true of all crossings independently of whether they culminate." (Parsons 1990: 170). According to Parsons, changing an event predicate to the progressive form requires a corresponding semantic change — that the predicate be treated as a stative

predicate.[8] This is equivalent to saying that the progressive morphology is a stativizing operator as far as eventive predicates are concerned. Because the progressive sentence is aspectually stative, it truth-conditionally requires the eventuality denoted by the predicate to *hold*, but not necessarily *culminate*. Further, Parsons proposes that for every event that is in progress, there exists a uniquely associated state, the *in-progress* state, which holds as long as the event is in progress. Parsons' analysis is illustrated in (35) and (36) through his examples. The representation for the eventive non-progressive sentence in (35a) is given in (35b). The culmination inference for this sentence comes from that part of the representation (bold-faced) that specifies how the eventuality is instantiated within the temporal interval t.

(35) a. Agatha crossed the street.
b. (∃ t) [t<now & (∃ e)[crossing(e) & Subject(e, Agatha) & Object(e, the street) & **Cul(e,t)**]]

The progressive morphology in (36a) introduces the progressive operator that changes the eventive predicate into a stative one and specifies that the denoted state holds at an existentially quantified time t. It further restricts the state to an *in-progress* state corresponding to the associated event, but the notion of an *in-progress* state is not defined.

(36) a. Agatha was crossing the street.
b. (∃ t) [t<now & (∃ e)[crossing(e) & Subject(e, Agatha) & Object(e, the street) & **Hold(In-Prog(e,t))**]]

The stativizing progressive operator thus yields a stative predicate whose denotation is *in-progress* states, which are presumably part of a larger ongoing eventuality. The part relation that holds between the intervals of the stativized progressive predicate and the base eventive predicate is not specified anywhere in the analysis and possibly comes from the *in-progress* relation that is undefined in Parsons' theory. Furthermore, Parsons' theory does not explain the function of the progressive operator with lexically specified stative predicates. On his analysis, the progressive predicate derived from activity predicates is truth-conditionally equivalent to its non-progressive simple counterpart. So according to Parsons, the progressive sentence in (37a) and the simple past sentence in (37b) have the same truth conditions. But despite this, they are not substitutable in context and license distinct interpretations. There is no explanation of the contrast between the interpretations

[8] Parsons has a progressive rule that treats eventive predicates differently from non-eventive predicates in their interaction with the progressive operator (Parsons 1990: 170).

of progressive and non-progressive activity predicates on the account of the progressive offered by Parsons.

(37) a. John *was walking along the street* when Mary ran into him.
b. John *walked along the street* when Mary ran into him.

Finally, Parsons' theory also offers no explanation for why dynamic stative predicates occur in the progressive. Bach (1981) points out that stativizing accounts of the progressive do not take into consideration the distinction between dynamic (temporary) and static stative predicates, a key distinction within stative predicates. The progressive operator is, in fact, sensitive to this distinction (Carlson 1977), since only dynamic stative predicates may occur with the progressive morphology. In the examples in (38a-b), the progressive is compatible with the stative verbs 'lie' and 'live' only if the sentences describe eventualities that are temporary and subject to change. A fuller discussion of the empirical data is to be found in Dowty (1979: 174-177).

(38) a. The socks *are lying* on the floor.
b. I *am living* in California.
c. New Orleans *lies*/*is lying at the mouth of the Mississippi river.
d. Tarantulas *live*/*are living in the Amazon rain forest.

2.4.2 De Swart 1998: The progressive and aspectual coercion

De Swart (1998) also offers a stativizing analysis for the progressive operator (realized by the progressive morphology). She adopts the basic idea from previous literature (Kamp & Rohrer, 1983; Moens & Steedman 1987, 1988; Parsons, 1990; Vlach, 1981) that the progressive operator stativizes predicates in a special way — by yielding *in-progress* states. She assumes a tripartite sorting of the domain of eventualities and the supercategory of dynamic eventualities (the union of processes (activities) and events). The progressive operator denotes a function from dynamic predicates to stative predicates of the *in-progress* type (undefined).

(39) PROG: P(processes) ∪ E (events) → S (states)

De Swart further introduces the idea of aspectual coercion. Coercion is the general term used for any kind of contextual reinterpretation of an overt structure (Pustejovsky 1995). In the context of aspectual categories, it refers to the reinterpretation of the aspectual type of an uninflected predicate to suit the requirements of an aspectual operator that takes inputs

only of a given type. The most clearcut examples of aspectual reinterpretation arise when an eventuality description does not meet the input requirements of an aspectual operator, and we get an adjustment, a coerced interpretation of the input, which repairs the mismatch. De Swart uses invisible coercion operators to account for the use of progressive morphology with dynamic stative predicates.

On her theory, stative predicates, being non-dynamic, cannot be the input to the progressive operator which is restricted to dynamic predicates (39). The fact that the progressive does occur with stative predicates (as in (38)) is attributed to a covert coercion operator (C_{sd}) that maps stative predicates onto their dynamic counterparts, or, in other words, *dynamicizes* a stative predicate. This allows the stative predicate to be the input to the progressive operator; however, the covert coercion operator adds the additional semantic entailment that the eventuality description is dynamic or subject to change. The progressive of a stative predicate, thus denotes a state derived from an underlyingly dynamic eventuality description, and is therefore, distinct semantically from its non-progressive counterpart.

De Swart's account of the progressive captures a larger dataset by taking into consideration dynamic stative predicates in the progressive. However, it still leaves unexplained what stativization of dynamic predicates actually means. Specifically, how is the truth of the dynamic predicate related to the truth of its progressive counterpart? Before looking at the tradition in which this question has been addressed, I will briefly discuss how the imperfective operators have been conceptualized on the stativizing perspective.

2.4.3 Analyses of the imperfective operator

In languages with a distinct imperfective morphology (e.g. the French Imparfait or the Russian Imperfective), the imperfective-marked form of the verb occurs with lexically specified stative predicates, progressive predicates, as well as habitual/generic predicates. This suggests that if there is an imperfective operator, realized by such morphology, it should be able to have a unified semantics that can derive stative progressive and habitual/generic predicates from underlying eventive predicates *as well as* encode the stativity of lexically specified stative predicates. What kind of an operator can perform the dual functions of modifying the aspectual class of some predicates in its domain and reflecting the base eventuality type for other predicates in its domain? Further, the function of aspectual class modification involves two subfunctions — deriving progressive predicates from eventive predicates and deriving habitual/generic predicates from the same class of predicates. In a nutshell, if the imperfective morphology realizes the imperfective operator, then we must assume that the imperfective operator performs the three disjoint operations listed in (40).

(40) a. Derives progressive stative predicates from eventive predicates.
b. Derives habitual/generic stative predicates from eventive predicates.
c. Encodes the stativity of lexically specified stative predicates.

This makes the task of determining the semantic contribution of the imperfective operator (corresponding to imperfective morphology in languages) very complex. An alternative line of thinking has been very prominent in research on imperfective aspect and its language specific instantiations. On this view, the imperfective morphology *only* encodes states. In other words, it is a *type-sensitive* operator (De Swart 1998, Michaelis 2004). Unlike the progressive, which is a type-shifting operator that modifies the aspectual class of its input, at least some imperfective operators, might only *reflect* or *flag* the aspectual class of their input.

Let us see how exactly the imperfective as a type-sensitive operator works through De Swart's account of the French Imparfait. Type-sensitive operators differ from type-shifting operators in that they do not change the aspectual class of the predicate they apply to, but, on the other hand, they are sensitive to the aspectual class of the input predicate. The French Imparfait is a type-sensitive past tense operator that may apply only to stative (in De Swart's terms, homogeneous) predicates. This operator applies straightforwardly to stative predicates and yields a predicate that refers to states located in the past. However, it also appears with base eventive predicates as in the examples in (41a-b). The predicate *get my groceries* is eventive and may not directly form the input to the French Imparfait, which is type-sensitive and only takes stative predicates as its input. However, the sentences in (41a-b) are grammatical and license either the progressive or the habitual interpretation. How is this effected?

(41) a. Un jour, je **faisais** mes courses chez l'épicier quand je
One day I get-IMPF.PST my groceries at the grocery store when I
recontrai Jean
run-PERF.PST into Jean.
One day, I *was getting* my groceries at the grocery store, when I ran into Jean.

b. A cette époque-là, je **faisais** me courses chez l'épicier du coin
In those days, I get-IMPF.PST my groceries at the grocery store local
In those days, I *used to get* my groceries at the local grocery store.

De Swart proposes that the type-sensitive Imparfait presupposes that its input is a stative predicate. Its application to an eventive predicate triggers a coercion operator C_{eh}

(which coerces eventive predicates (e) into homogeneous (stative) predicates (h)). The coercion operator resolves the mismatch between the required input type for the Imparfait and the aspectual class of the eventive predicate. It reinterprets the eventive predicate as a stative predicate resulting in the contextually dependent progressive or habitual/generic interpretation for the sentence.

The empirical observation that the Imparfait can occur with lexically specified stative predicates, progressive predicates, and habitual/generic predicates is explained by a division of labor between the overt type-sensitive imperfective operator (the Imparfait morphology) and the covert invisible coercion operators that bridge the mismatch between actual input and presupposed input of the type-sensitive operator. The stativizing function, which, in the case of the progressive operator is associated with overt progressive morphology, is associated with covert coercion operators for the Imparfait.

To my knowledge, De Swarts' is the most explicit analysis of an imperfective aspectual form that attempts to account for the three distinct interpretations that such markers typically license — the lexical stative, the progressive, and the habitual/generic interpretation. Nonetheless, this account is not entirely satsfactory.

First, the morphologically instantiated imperfective operator performs a rather limited function — the real work of deriving stative predicates from eventive ones is done by the covert coercion operators that are never expected to surface in languages as morphological material. A more satisfactory account would be one in which the imperfective operator could perform all the three functions listed in (40) with some unifying semantic property.

Second, as with the progressive operator, it is still not clear how exactly the stativizing coercion operators do their work. How is an eventive predicate reinterpreted as a stative predicate? To make the point again, what is the temporal relation between the intervals corresponding to the eventive eventuality in the denotation of the input predicate and the stative eventuality in the output predicate? This question is not addressed in De Swart's account, and more generally, it is not addressed in accounts of aspectual operators as functions from predicates of eventualities of a particular type to predicates of eventualities of a different type.

In the next chapter, I develop a semantic representation for the imperfective operator that can overcome these problems by specifying the semantic content of stativizing operations and by attempting to derive the different stative interpretations from a single type of stativizing operation. The next section §2.5 describes interval-based analyses of the progressive that are closer in spirit to the solution that I describe in §3.

2.5 Predication over times

In the previous section, I examined an approach to aspectual modification in which morphological aspect markers are functions that yield predicates of eventualities of a different aspectual class from the aspectual class of the input predicate. Another possible way of looking at aspectual morphology is as instantiating functions that yield predicates over times. Aspectual operators (instantiated by aspectual morphology) are functions that relate an interval in which a predicate is instantiated to some other temporally related interval (the contextually salient interval or reference time.)

An intuitive way of thinking about the meaning of the progressive predicate is that it has a partitive meaning. It seems to denote part of a larger interval at which the base predicate is instantiated, or on the event semantic view, it denotes an eventuality that is part of the larger eventuality. This intuition has been formalized in several accounts of the progressive aspect, beginning with Bennett & Partee (1972).[9] Their formulation is given in (42a) and more formally represented (as a predicate of times rather than a proposition) in (42b) (where $\subset_{NF}$ means 'is a non-final subinterval of').

(42) a. [PROGϕ] is true at interval I iff there exists an interval I′ such that I $\subset$ I′, I is not a final subinterval of I′, and ϕ is true at I′.

b. $[[\text{PROG}\phi]] = \lambda \text{i}\ \exists \text{i}'[\ \text{i} \subset_{nf} \text{i}' \wedge \phi(\text{i}')]$

Dowty (1979) points out that this proposal for the meaning of the progressive fails in accounting for the imperfective paradox. Accomplishment predicates in the progressive do not license an inference about the existence of a larger interval in which the accomplishment predicate is instantiated. The imperfective paradox has generated a large amount of literature concerning the semantics of the progressive. The correct account of this inference relation lies in factoring in the modal properties of the progressive as first proposed in (Dowty, 1979) and in later literature (notably Landman (1990) and Portner (1996)).[10] Here, I am restricting myself to the temporal (aspectual) properties of the progressive in order to answer the larger question of how the progressive and imperfective operators might be connected. To keep the picture simple, I am taking an extensional perspective and from

[9] See Dowty (1979: 145) for a brief comparison with earlier theories of the contribution of the progressive (Jespersen, 1973; Scheffer, 1975).

[10] As Portner notes, the fact that an aspectual operator such as the progressive has a modal component to its meaning opens up a way to fruitfully inquire into the possible relations between aspect and modality. Imperfective morphology in several languages licenses generic interpretation. Genericity has been best analyzed in modal terms. But the connections between imperfective aspect markers and their modal semantics has not been explored in detail. In passing, I want to note that the fact that both progressive and imperfective aspects license modal interpretations is another reason for positing a unified account for both categories.

this perspective, Bennett & Partee's analysis of the progressive (42a) is adequate to capture the temporal relation between the progressive predicate and the base predicate. Of course, factoring out worlds does not mean that I do not consider them crucial for a complete account of the interpretation of the progressive (and imperfective) operators.

Unlike the interval semantic analysis in (42), the event-based analyses of the progressive that we saw in §2.4 do not explicitly appeal to the 'part' relation between the *in-progress* state and the eventuality denoted by the base predicate.[11] A more common way of introducing eventualities into semantic representations of aspectual operators is through the times at which they are true. On this approach, the input to an aspectual operator is a predicate of eventualities while the output is a predicate of times.[12] A standard way of representing aspectual operators is via (45). Aspectual operators give back a predicate of times that is related in some way (REL) to the time in which an eventuality instantiates a predicate (τ(e)). For instance, the relation could be one of temporal precedence, overlap, or inclusion.

(45) $[[\text{ASP}]] = \lambda P \lambda i\ \exists e[P(e) \wedge \text{REL}(\tau(e), i)]$

A widespread, but not necessary, interpretation of this relation between the runtime of eventualities and the times denoted by aspectually modified predicates is in terms of viewpoint operators (Smith 1991, Depraetere 1995). The idea is that aspectual operators perform a perspectival function and introduce a viewpoint on the eventualities denoted by the base predicate. This view of aspectual operators as offering a perspective on eventualities is interesting but does not really provide a more explanatory account of these operators than interval based analyses that do not assume it (e.g. Bennett & Partee 1972). It seems to me more important to be able to provide a correct characterization of how the intervals in the denotation of progressive/imperfective predicates relate to the eventualities in the denotation of the base predicate.

[11] Krifka (1992: 47) does propose an explicit semantic analysis that ties together the semantics of partitive case and progressive aspect. He proposes that the progressive is a partitive modifier in the eventuality domain. (43a) gives the general partitive modifier and its eventuality-based version PROG is in (43b).

(43) a. $\text{PART} = \lambda P \lambda x'\ \exists x'[P(x) \wedge x' \subseteq x\ ]$
b. $\text{PROG} = \lambda P \lambda e'\ \exists e[P(e) \wedge e' \subseteq e]$

Filip (1999) offers a similar semantics for the Czech imperfective operator:

(44) [IMPERFECTIVE ϕ] relates eventualities denoted by ϕ to their parts, where the notion of part is understood in the sense of the weak ordering relation $\subseteq$.

[12] This is almost identical to an interval semantic perspective on the contribution of aspectual operators. The only difference is that in pre-event semantic period, verbs and uninflected eventuality descriptions based on verbs were treated as properties of times.

In the next section, I look at what representation has been proposed for the imperfective operator and examine whether it does, in fact, offer an explanation for the three types of predicates it is associated with — the lexical stative, the progressive, and the habitual/generic predicates.

2.5.1 The imperfective operator

If we treat aspectual operators as functions from predicates of eventualities to predicates of times, then the progressive and the imperfective operators yield temporal predicates that are related in specific ways to the eventualities denoted by the base predicate. It has been proposed that the imperfective and the progressive operators both denote predicates of intervals that are subparts of the larger eventuality. Consider a standard representation of the imperfective (unbounded) operator.[13]

(46) $[[\text{unbounded}]] = \lambda P \lambda i\ \exists e[P(e) \wedge \tau(e) \supset i]$

The basic property of the unbounded operator (read progressive/imperfective) is that it yields a set of times that are *properly included* in the time of the eventuality. Smith (1991: 111) offers an informal temporal schema for the imperfective aspect that is very similar. She further claims that the distinction between the progressive and the imperfective is only in the domain of their application. The progressive operator applies only to events (non-stative situations) while the imperfective operator applies to all eventuality types (events and states). This representation of the progressive/imperfective operators ultimately derives from the Bennett & Partee (1972) analysis of the progressive.

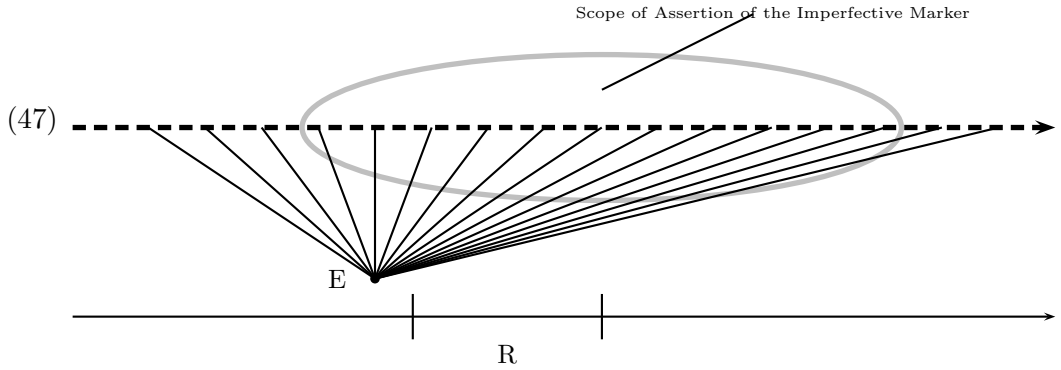
Does this representation for the imperfective operator account for its lexical stative, progressive, and habitual/generic uses? (46) yields at least the set of intervals that (42) does, and so it does account for the progressive uses of the imperfective operator.[14] Lexical statives are captured straightforwardly; if a lexical stative predicate holds of an eventuality, it also holds of parts of this eventuality. In the next section, I discuss how the representation of the imperfective operator fares with accounting for habitual/generic predicates.

[13] The particular formulation in (46) is from Pancheva (2003) but similar representations for the imperfective operator is found in Kratzer (1998), Bohnemeyer & Swift (2004) and others with variations. The similarity crucial here is that between the eventuality time and the time denoted by the imperfective-marked predicate.

[14] Note that this representation does not include the 'non-final subinterval' clause of the Bennett & Partee analysis, which is actually required to get the meaning of the progressive use of the imperfective. So it also yields the 'wrong' set of intervals if it is used as a representation of the progressive operator.

2.5.2 The imperfective operator and habitual/generic predicates

The real problem is to explain how the imperfective operator can yield predicates with a habitual/generic interpretation. As far as I know, there has been no explicit proposal that shows how the imperfective operator applies to a predicate of eventualities and returns a predicate of times in which the eventuality is instantiated habitually or generally (whatever that means). One intuitive answer is offered by Bohnemeyer (2002) in his discussion of the Yukatek Mayan Imperfective marker. Bohnemeyer suggests that a habitual predicate denotes a composite, but single unbounded situation. The Imperfective marker applies to this composite multi-event eventuality and yields a time that is a subinterval of this plural eventuality. Bohnemeyer's representation for the habitual interpretation of the Imperfective in Yukatek Mayan is given in (47). To simplify matters, I indicate the eventuality with an E and the time that the imperfective marker yields (the reference time) by R. E is an eventuality composed of a predicate instantiated multiply within a given interval, which is indicated by the different lines going from the E to points on the timeline. Each of these points represent an instantiation of the predicate. The eventuality interval (τ(e)) corresponds to this large interval. The imperfective marker yields a subinterval of this larger interval.



Habitual interpretation of the Yucatec Mayan Imperfective (Bohnemeyer, 2002)

This proposal implicitly assumes that a predicate to which the imperfective operator applies denotes composite, multi-event eventualities. But how is this predicate derived from a base predicate that only denotes single events? The habitual/generic predicate has to be related in some way to a base eventive predicate. What Bohnemeyer's analysis does not clarify is how we get from one to the other. A possible option would be to posit a covert generic/habitual state forming GEN-like operator that first derives the habitual/generic

predicate from a base eventive predicate, so that the input to the imperfective operator has the correct semantics and denotes a predicate of multi-event eventualities. But this is not part of Bohnemeyer's analysis, nor of any available analysis of the imperfective operator, to my knowledge.[15]

Let us try and extend the multi-event eventuality hypothesis further, abstracting away from language-specific morphology. Suppose we posit a covert GEN-like operator that applies to an eventive predicate ϕ and yields a multi-eventuality stative predicate. The imperfective operator applies to this and returns a predicate of times that is a subinterval of the runtime of this composite eventuality. The stativizing function is carried out by the covert GEN operator in this case. The order of application is given in (48)).

(48) [IMPF[GEN[ϕ]]]

Suppose we apply GEN to an eventive predicate like *(John) bake a cake* (50a). We obtain a multi-event eventuality which says that there are multiple instantiations of an eventuality of type *john bake a cake* in it (50b).[16]

(49) a. [GEN[John bake a cake]]
b. λe $\exists$e$'$[john-bake-a-cake(e$'$) $\wedge$ MULT-INST(e$'$,e)]

The imperfective operator applies to this multi-eventuality predicate and yields a subinterval of the runtime of the eventuality it denotes.

(50) a. IMPF[GEN[John bake a cake]]
b. λi $\exists$e$\exists$e$'$[john-bake-a-cake(e$'$) $\wedge$ MULT-INST(e$'$,e) $\wedge$ τ(e) $\supset$ i]

There are at least two obvious problems that I can see with taking this direction in the analysis of the imperfective operator .

First, GEN is standardly taken to be a covert quantificational adverbial operator similar to overt adverbs like *always*, *never*, *rarely*, etc. which quantify over eventualities and is in

[15]This and the following discussion should not be taken as a criticism of Bohnemeyer's particular analysis but rather an attempt to think through how available representations for the imperfective operator really deal with the habitual/generic interpretation that constitutes one core interpretation of an imperfective aspect marker crosslinguistically. I choose Bohnemeyer's visual representation as the starting point because it explicates some of the assumptions that underlie the explanation for why imperfective markers license habitual/generic interpretations — specifically the assumption that the input predicate to the imperfective operator is not a base eventive predicate, but rather a derived, multi-event eventuality.

[16]This is only a sketch of a possible analysis which is why I am not explicating the precise contribution of the GEN operator. Moreover, the semantics I have for the GEN here bears little resemblance to the semantics that has been proposed for GEN.

complementary distribution with them. If GEN applies to a predicate of eventualities before the imperfective operator, we should expect the resulting imperfective-marked predicate to be incompatible with other overt quantificational adverbials. But as far as I know, this expectation is not borne out in many languages with imperfective morphology.[17] Overt quantificational adverbials frequently occur with imperfective-marked sentences, suggesting that the GEN operator could not be part of the meaning of the imperfective-marked predicate. Specifically, the adverbs *rarely*, *never*, and *sometime* are incompatible with the roughly formulated meaning we have for GEN, but may still occur with the imperfective predicate in languages with imperfective morphology. The English sentences with the IMPF tag stand for the corresponding overtly marked imperfective sentences in languages which do have an imperfective marker.

(51) a. John *rarely* bakes-IMPF a cake.
b. John *never* bakes-IMPF a cake.
c. John *sometimes* bakes-IMPF a cake.

The examples in (52) are from a language with overt imperfective morphology — Hindi.

(52) a. niśā mujh-e **kabhi-kabhi** khat **likh-ti** thi
N.NOM.SG I-DAT.SG sometimes letter.NOM.PL write-IMPF.F PST.F.SG
Niśā *sometimes* wrote me letters
b. niśā mujh-e khat **nahi likh-ti** thi
N.NOM.SG I-DAT.SG letter.NOM.PL NEG write-IMPF.F PST.F.SG
Niśā did *not* write me letters.
c. niśā mujh-e **kabhi-kabār** khat **likh-ti** thi
N.NOM.SG I-DAT.SG occasionally letter.NOM.PL write-IMPF.F PST.F.SG
Niśā *occasionally* wrote me letters.

The second problem is similar and pertains to the intensional uses of imperfective-marked habitual/generic predicates that have led to GEN being analyzed as a modal operator. In a language with imperfective morphology, the English sentence in (51) occurs with overt imperfective markers, although the predicate is not multiply instantiated. In fact, it need not be instantiated at all, as can be seen from the second conjunct. This is illustrated by the imperfective morphology in the Hindi example in (53b).

[17] These facts are true at least for the several Indo-Aryan languages I have looked at, Russian, and Standard Arabic. I suspect this is a broad generalization that might have gone unnoticed because of the equation in the typological literature of imperfective morphology with the habitual reading, which is the most salient reading of an imperfective predicate in the absence of overt adverbials.

(53) a. This machine peels-IMPF potatoes, but we have never yet put one in it.

b. ye machine ālu **chil-tā** hai par ājtak
this machine.NOM.SG potato.NOM.PL peel-IMPF.M PRES.3.SG but until today

kisī-ne us-mẽ ālu nahĩ ḍā-le
anyone-ERG that-LOC potato.NOM.PL NEG put-PERF.M.PL

This machine peels potatoes, but no one has put potatoes in it until today.

From (51) and (53), it is clear that habitual/generic predicates have a wider interpretation than just the 'habitual' one. Not all non-progressive interpretations of imperfective morphology with episodic predicates can be explained by appealing to a multi-eventuality predicate derived by a GEN-like operator that forms the input to the imperfective.

Summary

The discussion in §2.5.2 has shown that the assumption that the imperfective operator applies to a derived habitual stative predicate denoting a multi-event situation does not yield a straightforward account of the interpretations of imperfective-marked predicates. For a more explicit account based on this assumption we need a correct formulation of this operator and a description of the division of labor between the covert operator and the overt imperfective operator in deriving the habitual/generic meaning for imperfective sentences. Second, if this is the way in which imperfective sentences are to be derived, there has to be an explanation of why GEN works differently from other quantificational adverbials that it has been compared to.

Before I conclude, let me point out the similarities between the eventuality-based analysis of the French Imparfait in §2.4.3 and the interval based analyses described here. De Swart treats the Imparfait as a type-sensitive operator and appeals to covert coercion operators that derive habitual/generic predicates from base eventive predicates to repair the mismatch between the requirement of the Imparfait and the semantics of the input event predicate. This coercion operator or covert GEN operator, as suggested here, is implicit in the account proposed by Bohnemeyer, and indeed, in general, in what is assumed about the imperfective operator (Klein, 1992; Smith, 1991; and others). In both cases, the semantic content of the actual stativizer is absent. The imperfective operator bears no real load in licensing the habitual/generic interpretation. In De Swart's case, the imperfective operator merely flags that the predicate is a derived habitual/generic stative predicate. For Bohnemeyer, and other similar analyses, the imperfective operator only yields a predicate of

times that are subintervals of the interval corresponding to the eventuality denoted by habitual/generic predicates. In both cases, the intermediate step from the eventive predicate to its corresponding derived stative predicate is a blackbox.

2.6 Conclusion

This chapter discussed aspectual classification and how the properties of the progressive and imperfective aspectual operators correspond to the aspectual class of stative predicates. §2.2 laid out some basic ideas in the literature on aspectual classification and types of predicates, focusing on stative predicates. Lexically specified stative predicates, progressive predicates, and habitual/generic predicates have something in common. They all have the subinterval (divisiveness) and cumulativity properties. Moreover, they pattern identically with respect to their temporal interpretation in narrative discourse, and with certain types of temporal adverbials. I proposed in §2.3 that it is due to these common properties that the three classes of predicates are often described as stative. The crucial difference between lexical statives on the one hand, and progressive and habitual/generic predicates on the other is that the latter are based on eventive predicates. What is the source of stativity in progressive and habitual/generic predicates? A plausible candidate for this source are aspectual operators such as the progressive and the imperfective, realized by progressive and imperfective morphology across languages.

In §2.4 and §2.5, I surveyed some representative analyses of the progressive and imperfective that attempt to account for the semantics of these operators and explain why these predicates are stative. My survey showed that although stativity is considered to be an important property of progressive and habitual/generic predicates, existing analyses do not directly address the question of how stative predicates are derivable from eventive predicates. Specifically, the stativity of the progressive and the habitual/generic predicates is stipulated in one kind of account, where some aspectual operators are treated as functions from predicates of events to predicates of states. The other kind of account treats aspectual operators as yielding predicates of times and relates the intervals output by these operators to larger intervals at which an eventuality is instantiated by the subset relation.[18] The main problem that this account faces is in the characterization of habitual/generic predicates. I showed in §2.5.2 that getting the imperfective operator with the subset semantics in (46) to license the habitual/generic interpretation requires making some assumptions

[18]It is worth noting here that the subinterval property, one diagnostic of stativity, is entailed by this representation. I will elaborate on this in Chapter 3.

about the predicate that constitutes the input to it. Further, these assumptions are far from unproblematic.

The next chapter has three goals. First, I will show that the semantic similarity between lexical stative, progressive, and habitual/generic predicates is paralleled by some morphological relations that hold between the forms that are associated with these predicates, both synchronically and diachronically. Second, I will argue that these strong parallels support an analysis of the progressive and imperfective operators that is characterized by three properties:

a. A *nested* account, where the progressive operator is a specific version of the more general imperfective operator.
b. A *transparent* account, in which the progressive/imperfective operators bear the load of deriving stative predicates rather than covert eventuality type changing operators.
c. A *stativity-driven* account, where the representation guarantees, rather than stipulates, the observed stativity of the predicates output by the progressive/imperfective operators.

Third, I will provide such an analysis of the progressive and imperfective operators.

Chapter 3

Semantics of the imperfective and progressive

3.1 Introduction

This chapter is about the distribution and the interpretation of progressive and imperfective morphology. In Chapter 2, I showed how lexical stative, progressive, and habitual/generic predicates pattern identically with respect to a cluster of properties associated with stativity. In this chapter, I introduce data that shows that there are strong morphological correlates of this semantic similarity crosslinguistically. These correlates support the hypothesis that the semantics of the progressive and the imperfective closely resemble each other. As seen in §2.4 and §2.5, existing analyses of the two aspectual categories and the corresponding operators do not provide a straightforward way of relating the two. In this chapter, I propose an analysis of the two operators that can account for the properties of the predicates they yield (the stativity properties/diagnostics) *as well as* satisfy the relatedness conditions between their morphological exponents.

One claim of this dissertation is that the semantic contribution of aspectual operators can be better understood if the properties of their morphological exponents are examined from the diachronic perspective and in relation to the larger system of morphosyntactically encoded tense/aspect categories in the language. Firstly, a close study of the relative distribution of aspect markers available within a language can help determine the division of labor between morphological principles (e.g. blocking) and the semantic values of aspect markers in the structuring of aspectual systems. Moreover, consideration of variation and change in the distribution and interpretation of aspect markers can allow for an account that

captures both the diachronic and synchronic facts pertaining to the relation between aspect markers. Finally, if we take morphological evidence for the relations between aspectual categories seriously, we have to restrict the range of our theoretical explanations to those that can denote these relations. Each of these points is further substantiated by the data in §3.2.

As stated in Chapter 2, consideration of the semantic and morphological facts motivates an account of the progressive and imperfective operators with these properties:

(1) a. A *nested* account, where the progressive operator is a specific version of the more general imperfective operator.
b. A *transparent* account, in which the progressive/imperfective operators bear the load of deriving stative predicates rather than covert eventuality type changing operators.
c. A *stativity-driven* , account where the semantics guarantees, rather than stipulates, the observed stativity of the predicates output by the progressive/imperfective operators.

At the heart of my analysis is the idea that the progressive and the imperfective aspects differ in the properties of the larger interval that the denoted intervals are subintervals of. Specifically, the imperfective operator yields the set of intervals that are non-final subintervals of a larger interval within (INST) which the predicate is instantiated, while the progressive operator yields the set of intervals that are non-final subintervals of a larger interval at (AT) which the predicate is instantiated.

(2) a. $[[\textsc{impf}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{inst}(P, t')]$
b. $[[\textsc{prog}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(P, t')]$

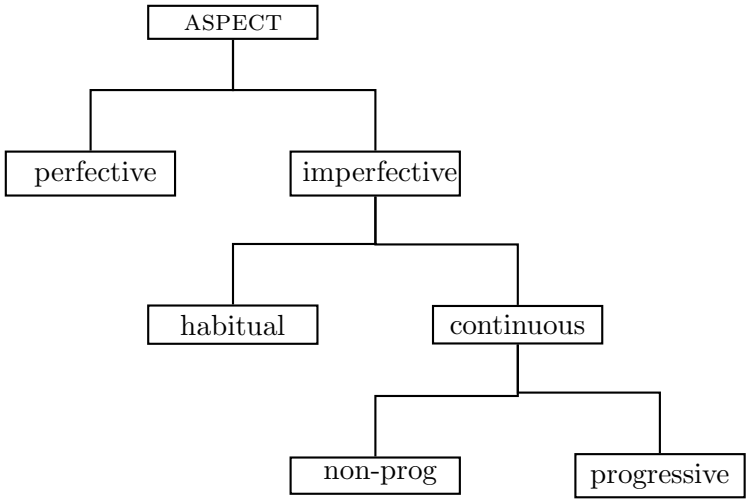
The main goal in this chapter is to demonstrate that this simple characterization has all the properties that I list in (1) as desiderata for the progressive/imperfective account. The organization of this chapter is as follows. In §3.2, I describe the morphological properties that relate the progressive and imperfective aspects, pointing out how these facts motivate a nested and stativity-driven account of the two categories. In §3.3, I argue that the semantic contribution of the progressive is best characterizable in terms of episodicity, a property of those predicates that are asserted to be instantiated at a specific temporal location. In §3.4, I present my analysis of the imperfective operator as denoting a function that applies to a predicate and yields a set of intervals that are subintervals of a larger interval *within* which the predicate is instantiated. I show how the various readings of the imperfective — the

progressive, the lexical stative, the habitual/generic, and the perfective-like reading — can all be accounted for with this general semantics for the imperfective. A further advantage of this account is that it guarantees without stipulation, the stativity of the predicates that are its output. In §3.5, I propose a semantics for the progressive operator that minimally differs from the imperfective semantics. This representation not only accounts for the range of readings available to the progressive operator, but also ensures that the *nestedness* condition is satisfied — the denotation of the progressive operator is properly included in the denotation of the imperfective operator. In §3.6 I discuss two additional aspects of the progressive — the inceptive/terminative inferences that it licenses and the habitual readings of the progressive morphology— and show how they follow from the semantics of the progressive operator. The habitual progressive facts also present an apparent problem for one aspect of the approach I have been taking so far — a transparent approach without postulating covert aspect-modifying operators. This problem is taken up in §3.6.3. In §3.7, I deal with a potential counterexample to the nestedness analysis that has been proposed: language with morphologically realized progressive and imperfective operators but without a blocking relation. I present a sketch of a possible explanation for why blocking might fail to hold in these circumstances. In §3.8, I conclude.

3.2 Morphological relations

In the typological literature on aspectual categories, the progressive is treated as a subcategory of the imperfective aspect. Consider the following representation of aspectual space from Comrie's classic text on aspect. The semantic domain of the imperfective aspect is constituted by the habitual, progressive, and non-progressive continuous classes of predicates. Habitual predicates describe eventualities extending over a long period of time (1976: 28-29). The 'continuous' category subsumes lexical stative predicates (which corresponds to his non-progressive category) and progressive predicates.

(3) **Subcategories of the Imperfective (Comrie, 1976)**



The particular labels that Comrie employs are not as important as the subsumption relation that characterizes the progressive and the imperfective categories in his representation. This relation is morphologically supported by three facts about the progressive and the imperfective aspects. First, in languages which do not instantiate a distinct progressive form, the imperfective performs the communicative function of the progressive. Second, in several aspectual systems, progressive forms appear to *block* the availability of a progressive interpretation for the imperfective form in contexts where it is potentially available. Third, the form/construction encoding the progressive aspect tends to diachronically generalize to license the interpretations typically associated with the imperfective, such as the habitual/generic or lexical stative interpretations.

3.2.1 Languages without a distinct progressive morphology

It is a well-noted typological observation that in languages without a morphologically distinct progressive aspect, the imperfective aspect (if morphologically instantiated) realizes the communicative function of the progressive aspect. This is one of the main motivations for treating the progressive as a subcategory of the imperfective. Consider the examples from three typologically diverse languages: Pawri, Standard Arabic, and Russian.

The Imperfective form in Pawri with the *-tal* affix may license the lexical stative, progressive, or habitual/generic interpretation, depending on overt or unspecified context.[1] The

[1]Pawri is one of the non-standard languages that I studied during my fieldwork in North Maharashtra,

form *bāltalu* in (4a) has the progressive interpretation (referring to a single ongoing episode of looking in the mirror) and occurs with the adverbial *evi* 'right now'. The adverbial is optional and the progressive interpretation may be licensed without any overt material. In (4b), the same form licenses a habitual interpretation, referring to a habit or tendency to look in the mirror that characterizes the subject referent). The adverbial *kāyam* 'always' is again optional. In (4c) the lexical stative verb *roy* 'live' inflects for the *-tal* affix and the sentence has a stative interpretation.

(4) a. chyu (evi) sovtā-hā ārhā-m bāl-**tal-u**
he.NOM right now self-ACC mirror-LOC look-IMPF-M.SG
He *is looking* at himself in the mirror then (right now).

b. chyu (kāyam) sovtā-hā ārhā-m bāl-**tal-u**
he.NOM right now/always self-ACC mirror-LOC look-IMPF-M.SG
He (always) *looks* at himself in the mirror.

c. chyi nandurbar-am **roy-tal-i**
She.NOM N-LOC live-IMPF-F.SG
She *lives* in Nandurbar.

The Imperfective in Modern Standard Arabic likewise may license both progressive (5a) and habitual interpretations (5b) with non-stative base predicates, as well as occur with a lexical stative predicate as in (5c). Examples are from Ryding (2005:442).

(5) a. **ya**-jlis**u** ᶜalaa l-maqᶜad-i
sit-IMPF.3.M.SG on the seat
He *is sitting* on the seat.

b. **ya**-ᶜmal**u** fii l-ᶜidaarat-i
work-IMPF.3.M.SG in the administration
He *works* in the administration.

c. **ta**-xtalif**u** ᶜan ghayr-i-haa
differ-IMPF.3.F.SG from others
She *differs* from others.

India. The data and judgements are based on fieldwork with native speakers of Māḷ village in Nandurbar district.

The Russian Imperfective patterns similarly in licensing progressive, habitual/generic and stative interpretations. In (6a), the imperfective form *pisal* 'wrote' refers to an ongoing activity of letter writing in the past, while in (6b), the same form refers to a habitual situation. In (6c), the lexical stative verb 'live' occurs in the imperfective form.

(6) a. Vanja **pisa-l** pis'ma kogda pojavilas' Nina
Vanja.NOM write-IMPF.PST.M letter.ACC.PL when appear.PERF.PST.F Nina.NOM
Vanya *was writing letters* when Nina appeared.

b. Vanja **pisa-l** pis'ma materi po voskresenjam
Vanja.NOM write-IMPF.PST.M letter.ACC.PL mother.DAT on Sunday.DAT.PL
Vanya *used to write* a letter to his mother on Sundays.

c. Vanja **zhi-l** vo Vladivostok-e
Vanja.NOM live-IMPF.PST.M in V-LOC
Vanya *lived* in Vladivostok.

3.2.2 Languages that realize imperfective and progressive aspect

In contrast to languages without a progressive form, in languages which do realize both the progressive and the imperfective aspects, the imperfective form often does not license the progressive interpretation.[2] Consider the examples from Hindi in (7).

(7) a. niśā mujh-e khat **likh rah-i** thi
N.NOM I-DAT letter.NOM write PROG-F PST.F.SG
Niśā *was writing* me a letter.

b. niśā mujh-e khat **likh-ti** thi
N.NOM.SG I-DAT.SG letter.NOM.SG write-IMPF.F PST.F.SG
Niśā (habitually/regularly) *wrote* me a letter.

c. purāne jamāne-ke log patthar-ke hathiyār **banā-te**
ancient age-GEN people.NOM.PL stone-GEN weapons make-IMPF.M.PL
the
PST.M.PL
In ancient times, people *made* weapons out of stone.

[2]Some cases in which this generalization does not hold are discussed in §3.7, where I discuss how blocking between aspectual categories might be understood.

d. niśā bambai-mẽ **rah-ti** thi
N.NOM.SG Bombay-LOC live-IMPF.F PST.F.SG
Niśā *lived* in Bombay.

Example (7a) illustrates the use of the past tense progressive construction (verb+*rah*), while (7b) is a past tense sentence in the imperfective aspect. (7a) describes a single unculminated eventuality of letter-writing and may not have the habitual or characterizing interpretation. (7b), on the other hand, may only license a non-progressive interpretation - e.g. the habitual/generic interpretations in (7b) and (7c), and the stative one in (7d). Further, the imperfective form in (7b-d) never licenses the progressive interpretation. For instance, (7b) cannot be uttered to refer to a single ongoing letter-writing episode.

Swahili has two distinct markers for the imperfective aspect — the progressive marker *na-* and an imperfective marker, *hu-* that appear as prefixes on verbs (Ashton, 1944; Palomé, 1967, Lindfors 2003).[3] *na-* and *hu-* are in complementary distribution and occur in the same slot in simple declarative sentences. According to Lindfors, *na-* licenses only a progressive interpretation and does not allow for habitual/generic reference. Thus, the example in (8a) cannot be interpreted as referring to a habitual activity. In contrast, *hu-* marks imperfective aspect and licenses only habitual/generic interpretations and not a progressive interpretation.[4] (8b) refers to a characteristic property of the subject referent of habitually coming to a contextually specified location. (8c) is a question about a characteristic property of the kind *Ng'-ombe* 'cow', about the food that members instantiating this kind generally eat.

(8) a. wa-toto wa-**na**-chez-a ki-wanja-ni
NPX2-child NC2-PROG-play-IND NPX7-plot-LOC
Children *are playing* on the plot. (Ashton 1944: 250)

b. yeye **hu**-j-a hapa
he HAB-come-IND here
He has the habit of coming/usually *comes* here. (Lindfors, 2003:35)

c. Ng'-ombe **hu**-l-a chakula gani
NPX10-cow HAB-eat-IND food gani
What food do cows *eat* (as their staple food)? (Ashton 1944:38 (cited in Lindfors 2003))

[3]The examples are taken from Lindfors (2003) and I have used her glosses. The Swahili-specific glossing abbreviations are: NPX = Nominal prefix; NC= Noun class; IND = Indicative; STAT = Stative.

[4]Lindfors calls *hu-* a habitual marker (HAB) and claims that it does not extend to generic reference. However, some of her examples suggest that the *hu-* prefix on verbs could allow for generic interpretation, as with the generic NP *Ng'-ombe* 'cows' in (8c).

The Hindi and Swahili data show that the distribution of imperfective markers in languages with a distinct progressive marker is markedly different from languages which have a single imperfective marker (Pawri, Arabic, and Russian). Specifically, it appears that the imperfective in such languages may not license the progressive interpretation like it does in Pawri or Arabic.

There are two possible interpretations of this variation in the imperfective distribution across the two types of languages. First, it might mean that the imperfective is a crosslinguistically variable category that, in some cases, is compatible with progressive interpretation, and in other cases, not. Second, it might mean that the semantic contribution of the imperfective and the range of its interpretations is crosslinguistically uniform, but its distribution is determined by the presence or absence of an overtly realized progressive category. The latter hypothesis makes a stronger claim about the imperfective but crucially relies on the notion of blocking between semantic categories with overlapping domains. I will discuss this hypothesis and how it fares against crosslinguistic data in §3.7.

3.2.3 The diachronic path from progressive to imperfective

The grammaticalization literature on the sources and evolution of the morphology for progressive and imperfective aspects notes yet another crosslinguistically robust generalization in the diachrony of such markers. Morphology originally restricted to progressive interpretation semantically generalizes to license the interpretations typically associated with the imperfective, such as the stative or habitual/generic interpretations. This generalization has been attested for the progressive markers in several languages such as Turkish, Scots Gaelic, Tigre, Yoruba (Comrie 1976), and Maa (Heine 1990). Here, I will illustrate the cases of Turkish, Tigre, and Old and Modern Gujarati (the only one among these three languages for which reliable historical data is available).

Turkish

Comrie (1976) and Dahl (1985) report that the distribution of the progressive suffix *-(I)yor)* in Turkish exemplifies an ongoing progressive-to-imperfective change. Based on their report and data from Turkish grammars, the situation appears to be as follows: The Turkish morpheme *-Ir* (labeled Aorist), until recently, used to license a range of imperfective interpretations such as the habitual-generic and was used in lexical stative, performative and reportive contexts (Johanson 1971). The Turkish Progressive *-(I)yor* (9a), on the other hand, was restricted to episodic, ongoing situations as is described even in some recent grammars (e.g. Kornfilt 1997:339-340). This clear-cut distribution is illustrated in (9a-b).

The examples are from Göksel and Kerslake (2005:331). In (9a), the verb form with *-(I)yor* refers to an ongoing working eventuality, while in (9b), the *-ir* inflected verb refers to a characteristic pattern of working — a habitual interpretation.

(9) a. saat ikide çaliş-**iyor-du**-m
At two o' clock work-PROG-PST.COP-1SG
At two o' clock, I *was working.*

b. genellikle iki saat çaliş-**ir-di**-m
Usually for two hours work-IMPF-PST.COP-1SG
I *would* usually *work* for two hours.

However, recently, the Progressive *-(I)yor* has begun to license a wider range of interpretations than just the progressive reading, especially in the colloquial language. It occurs systematically in lexical stative contexts (10a) and is also interchangeably used with the Aorist form (which realizes imperfective aspect) with habitual/generic interpretation (10b). The examples are from Göksel and Kerslake (2005:333). In (10a), *(I)yor* is used with the stative verb *tan* 'know'. The literal translation would be something like *You were knowing Ömer better than me*, which is ungrammatical in English, but fine in Turkish.

(10) a. sen Ömer'i benden daha iyi tan-**iyor-du**-n
you Omer me better than know-PROG-PST.COP-2SG
You *knew* (lit: were knowing) Ömer better than me.

b. O zamanlarda mehmet çok sigara iç-**iyor-du**
At that time M.NOM lot cigarrette smoke-IMPF-PST.COP.3.SG
At that time, Mehmet *used to smoke* (lit: was smoking) a lot.

The Aorist form, on the other hand, never licenses the progressive interpretation. These data have been interpreted as indicating that the Turkish Progressive is expanding to semantically overlap with the domain of the imperfective Aorist morphology, thus instantiating the progressive-to-imperfective shift.

Tigre: Two 'imperfective' markers

Bybee et al (1994) report on a number of languages (Tigre, Yagaria, Alyawarra, and Margi) which are characterized by two morphological markers for the imperfective aspect.[5] In

[5]Bybee et al (1994:144) describe these as 'present grams' rather than imperfective grams, and the data they provide is restricted to sentences with imperfective morphology and present tense marking.

the absence of diachronic data for these languages, it is difficult to empirically verify the historical changes in the distribution of the two morphological markers with overlapping distribution. However, as they show, it is possible to account for the presence of two forms with overlapping semantic domains, by hypothesizing a semantic generalization of the progressive form that results in an overlap with a previously existing imperfective morphology.

Consider the facts from Tigre, a language from the Semitic family. All the examples in 11-13) are from Raz's (1983) grammar of the Tigre language (pp. 70-72). The imperfective form (labeled Imperfect by Raz) has stative and habitual/generic interpretations.

(11) a. ...'azedi sanni **na'amrakka**
now indeed well we know-IMPF.1.PL you
Now indeed, we *know* you well. (Raz 1983: 70)

b. 'ana 'əb dəggalabye **'əkkatəb**
I with my left hand write-IMPF.1.SG
I *write* with my left hand.

Raz further describes a compound tense, based on the imperfective form with a present (*halla*) or past (*'ala*) tense auxiliary. This use is said to resemble the English present continuous or progressive use.[6]

(12) a. ḥəna hədāy **nətfarrar hallena**
we wedding go out-IMPF PRES.1.PL
We *are going out* to the wedding.

b. kaləb 'əb gabay **lə'e 'ala**
dog on road run-IMPF PST.3.SG
A dog *was running* on the road.

This periphrastic construction, moreover, also licenses habitual/generic interpretations as shown in (13a-b).

(13) a. wa'əb lagəd'o 'asək yom **təmayət hallət**
And of the (disease) gəd'o until today die-IMPF PRES.3.SG
And until today, they (lit. she, i.e. 'the camels') *die* of gəd'o disease.

[6]The progressive interpretation for a periphrastic construction based on an imperfective form with tense auxiliaries parallels some facts in Indo-Aryan diachrony that form the empirical base for Chapter 5.

b. 'ana nə'uš 'ət 'ana kəldol 'ət bet məhro **'əgayas 'alko**
I small while being I every time to school go-IMPF be-PST.1.SG
When I was young, I *used to go* to school every day.

While the periphrastic progressive construction can license progressive and non progressive interpretations, the Imperfect form which realizes imperfective aspect, may not license the progressive interpretation. This supports the conclusion that the partial overlap in the semantic domains of the two morphological markers is a result of the expansion in the semantic domain of the progressive construction.

Old and modern Gujarati

The progressive-to-imperfective shift appears to have taken place fully from Old Gujarati (cir. 1400 AD) to Modern Gujarati. The imperfective aspect in Old Gujarati is realized by the imperfective paradigm (labeled Present) inflecting for person and number.[7] This morphology licenses habitual/generic interpretation (14a) and also occurs with lexical stative predicates (14b-c).

(14) a. ju dharmaphala viṣai saṃśau **kar-ai** su
who religion.fruit about suspicion-NOM.SG do-IMPF.3.SG he
mahesaradatta jima apāi **paḍ-ai**
M.OBL.SG like trouble fall-IMPF.3.SG
He who *suspects* the fruit of religion, *falls* into trouble just like Mahesaradatta. (SB 147.29)

b. tāharai dehi apūrvu sugandhu **gandh-āi**
Your body.ABL wonderful fragrance smell-IMPF.3.SG
A wonderful fragrance *emanates* from your body. (SB 147.12-13)

c. tumhe atiṣaya-sahita jñāna-bhāvai-tau **jāṇ-a u**
you extra-with knowledge-quality-ABL know-PRES.2.PL
You *know* because of your ability for extra(sensory) knowledge. (SB 62.1)

The progressive aspect, an Old Gujarati innovation, is morphosyntactically encoded with a periphrastic construction based on the imperfective paradigm with a tense auxiliary (Bhayani 1998). The examples are in (15a-b).

[7] These Old Gujarati generalizations are made by Bhayani (1998). I have taken illustrative examples from *Ṣaḍāvaśyakabālāvabodhavṛtti* (SB), a fourteenth century Jaina religious text.

(15) a. tumhārā bhāṇej tumha vandi-vā
your nephew.NOM.SG you.ACC.SG greet-INF

āv-ai ch-ai
come-IMPF.3.SG PRES.3.SG
Your nephew *is coming* to greet you. (SB 51.29)

b. tiṇi mārg-i mahātmā **jā-i ch-ai**
that path-INS.SG sage.NOM.SG go-IMPF.3.SG PRES-3.SG
The sage *is going* along that path. (SB 156.25-26)

In (15a), the imperfective form of the verb *āv* 'come', in periphrasis with the present tense auxiliary is used to license an episodic progressive interpretation. The same kind of periphrasis in (15b) refers to an ongoing eventuality of the sage going along the road. This periphrastic construction based on the imperfective form and tense auxiliaries is restricted to progressive interpretation and may not have a habitual/generic reading in Old Gujarati.

Modern Gujarati, on the other hand, uniformly employs the innovated periphrastic progressive of Old Gujarati in both progressive and non-progressive imperfective contexts.[8] The periphrastic construction, restricted at an earlier stage only to progressive contexts, thus appears to generalize to license progressive as well as habitual/generic and stative interpretations at a later stage in the language. The bare (non-periphrastic) imperfective form, which licenses stative and habitual/generic interpretations in Old Gujarati (14) is now considered archaic and used very rarely with these interpretations.[9]

(16) a. niśā atyāre rasoḍā-mā roṭli **banāv-e ch-e**
N.NOM.SG now kitchen-LOC bread.NOM.SG make-IMPF.3.SG PRES-3.SG
Niśā *is making* bread in the kitchen right now.

b. niśā roj roṭli **banāv-e ch-e**
N.NOM.SG everyday bread-NOM-SG make-IMPF.3.SG PRES-3.SG
Niśā *makes* bread everyday.

c. niśā navsāri-mā **rah-e ch-e**
N.NOM.SG Navsari-LOC live-IMPF.3.SG PRES-3.SG
Niśā *lives* in Navsari.

[8]The Modern Gujarati facts are based on data and judgments from two native speakers from Navsāri in South Gujarat.

[9]This form has further acquired a modal function and has a possibility reading. It is often called the 'subjunctive'.

To summarize, the data from Modern Turkish, Modern Tigre, and Old and Modern Gujarati appear to illustrate different positions along the diachronic path from the progressive to the imperfective aspect. In Turkish, we see a change-in-progress situation, where the progressive has started to generalize and optionally licenses non-progressive imperfective interpretations. The Tigre progressive is similar to Turkish, but based on the available descriptions, has become further grammaticalized, so that the language appears to have two imperfective forms, of which only one may license the progressive interpretation. Finally, in modern Gujarati, the progressive construction has fully replaced the older imperfective form from Old Gujarati and uniformly licenses both progressive and non-progressive interpretations.

3.2.4 Summary

In this section, I showed that the semantic similarities between lexical stative, progressive, and habitual/generic predicates discussed in Chapter 2 are paralleled by certain morphological relations between the exponents of the three classes of predicates. In some languages, the three classes are realized with a single imperfective morphological exponent. In other languages, the realization of a distinct progressive form correlates with the absence of the progressive interpretation for the imperfective exponent. Further, there is a diachronic relation — progressive morphology from diachronically prior stages generalizes at later stages to license non-progressive imperfective interpretations through the so-called progressive-to-imperfective shift. I believe that these typological/grammaticalization-based observations about imperfective and progressive forms justifies the desideratum that the semantic denotation of the progressive operator should be a specific version (subset) of the imperfective operator — the *nestedness* property for the progressive/imperfective account.

(17) $[[\textsc{impf}]] \supset [[\textsc{prog}]]$

Moreover, these observations show that lexical stative, progressive, and habitual/generic predicates not only group together with respect to some property (single morphological exponent), but also diverge with respect to some other property (distinct morphological exponents). I showed in Chapter 2 that the common property is what we call stativity. In the next section, I will argue that the key property along which these predicates diverge is **episodicity** — the property that distinguishes the class of progressive predicates from non-progressive predicates.

3.3 Episodicity and the progressive

Episodic properties are properties of spatio-temporally delimited eventualities; situations that are crucially located in time and space. Sentences with episodic predicates describe particular events or episodes, while sentences with non-episodic predicates report a generalization over instances of individuals or eventualities. Carlson (1977)'s distinction between *stage-level predicates* and *individual-level predicates* is based on this contrast. Stage-level predicates express temporary, incidental, spatiotemporally delimited properties of individuals while individual-level predicates express tendentially stable, relatively permanent properties of individuals.Carlson formally characterizes this as a distinction arising from a difference between domains for predicates. Stage-level predicates are predicates of "stages" (spatiotemporal slices) of individuals, while individual-level predicates are predicates of individuals. Milsark (1974) makes a similar distinction with his terms 'state-descriptive' and 'property' predicates, where the former are described as "conditions in which an entity finds itself and which are subject to change without there being an essential alteration of the entity". Property predicates, on the other hand, "name some trait possessed by an entity, which is assumed to be more or less permanent or at least to be such that some significant change in the character of the entity will result if the description is altered (Milsark, 1977:12f.).

It appears then that the stage-level/individual-level or state-descriptive/property distinctions basically contrast predicates along the dimension of **episodicity**. (18) gives some examples of episodic and non-episodic sentences. (18a-d) describe events/episodes in which the subject referent, the dog, is involved. These episodes can naturally be spatiotemporally located by adverbial expressions like *in the afternoon* or *in the bedroom*, for instance. On the other hand, (18e-g) are generalizations about their subject-referents, an individual in (18e) and kinds in (18f-g), that are true in general, rather than at a particular spatiotemporal location.

(18) a. The dog *destroyed* my couch. (*episodic*)

d. The dog *was lying* under the bed. (*episodic*)

b. The dog *ran along* the shore. (*episodic*)

c. The dog *was trampling* all over my lawn. (*episodic*)

e. John *builds* model airplanes. (*non-episodic*)

f. The whale *suckles* its young. (*non-episodic*)

g. This machine *weighs* 100 pounds. (*non-episodic*)

The episodic/non-episodic distinction overlaps with the stative/non-stative distinction but makes a further critical cut in the stative domain. All non-stative predicates are episodic; non-stativity entails episodicity. Within the class of stative predicates, however, we can further distinguish between those denoting episodic states and those denoting non-episodic states (see the discussion in Krifka et al. (1995: 16-17)). Consider the stative sentences in (19a-d). The predicates *in the cage* and *hungry* in (19a-b) refer to temporally restricted situations involving the subject referents in their sentences while (19c-e) refer to relatively long-lasting and essential properties of their subject referents.

(19) a. Simba is in the cage. (*episodic stative*)
b. John is hungry. (*episodic stative*)
c. Simba is a lion. (*non-episodic stative*)
d. John is intelligent. (*non-episodic stative*)
e. John knows French. (*non-episodic stative*)

Thus, while non-stative predicates are always episodic, stative predicates divide along the episodicity dimension giving us the following predicate classification.

(20)

predicates		
stative		*non-stative*
non-episodic	*episodic*	*episodic*

As mentioned before, the class of episodic predicates (non-stative and some stative predicates) corresponds to the class of stage-level predicates, while the class of non-episodic stative predicates correspond to individual-level predicates. A number of grammatical phenomena have been shown to be sensitive to the episodic/non-episodic (or the stage-level/individual-level) distinction — for example, the Existential construction (Milsark, 1974), Absolute adjuncts (Stump 1985), small clause complements of perception verbs (perceptual reports) (Carlson, 1977), and compatibility with temporal and locative modifiers (Kratzer, 1995).

3.3.1 Progressive predicates

The progressive construction is considered to be yet another domain which distinguishes between episodic and non-episodic predicates. Carlson (1977) claimed that individual-level (corresponding to non-episodic) verbal predicates cannot appear in the progressive because

the progressive is syntactically restricted to stage-level (or episodic) predicates. The empirical observation is that a class of stative verbs like *know*, *weigh*, *extend* are ungrammatical in the progressive construction in English. Consider the examples in (21a-c).

(21) a. This elephant weighs (*is weighing) three tons.
b. The Grand Trunk Road extends (*is extending) from Narayanganj in Bangladesh to Kabul in Afghanistan.
c. John knows (*is knowing) French.

The compatibility of stative verbs with progressive morphology has been the subject of much discussion in the literature on the progressive (Taylor, 1977; Vlach, 1981; Dowty, 1979; Bach, 1981; De Swart, 1998). Among several diagnostics that distinguish stative predicates from non-stative predicates, Lakoff (1965) lists the ability to appear in the progressive; stative verbs are considered to be incompatible with the progressive construction. Since then, it has been noted that not all stative verbs resist the progressive; a subclass are grammatical in the progressive. Bach (1981) distinguishes between dynamic (temporary) and static stative predicates, of which the former are perfectly grammatical in the progressive. Static stative predicates express relatively permanent, characteristic properties of their subject-referents that are typically not subject to change. It is only these predicates that are incompatible with the progressive morphology.

Dowty (1979) makes the distinction between interval states which are stative but temporally delimited, and object-level states which are presented as temporally unbounded. The former correspond to Bach (1981)'s dynamic states and are compatible with the progressive as seen in (22a-d) from Dowty (1979:173).

(22) a. The socks are lying under the bed.
b. Your glass is sitting near the edge of the table.
c. The long box is standing on end.
d. One corner of the piano is resting on the bottom step.

Dowty further notes that the progressive construction with these stative predicates is subject to a semantic restriction. The examples in (23)-(26) illustrate that the progressive construction is not always available with this class of stative predicates and that some contexts require the use of the simple tenses with these predicates.

(23) a. The socks are lying under the bed.
b. ??New Orleans is lying at the mouth of the Mississippi river.

c. New Orleans lies at the mouth of the Mississippi river.

(24) a. Your glass is sitting near the edge of the table.
b. ??John's house is sitting at the top of a hill.
c. John's house sits at the top of a hill.

(25) a. The long box is standing on end.
b. ??The new building is standing at the corner of First Avenue and Main Street.
c. The new building stands at the corner of First Avenue and Main Street.

(26) a. One corner of the piano is resting on the bottom step.
b. ??That argument is resting on an invalid assumption.
c. That argument rests on an invalid assumption.

Dowty's characterization of the semantic restriction is as follows:

> Consideration of many such examples leads to the conclusion that the progressive is acceptable with these [stative] verbs just to the degree that the subject denotes a moveable object, or to be more exact, an object that has recently moved, might be expected to move in the near future, or might possibly have moved in a slightly different situation. (Dowty 1979: 175)

In other words, the progressive is acceptable with stative verbs only when the predicate is interpretable as a transient situation subject to change, i.e. when the predicate is episodic. Dowty considers Carlson (1977)'s proposal of the stage-level/individual-level distinction and suggests that this distinction lies at the heart of the variation in the acceptability of the (a) and (b) sentences in (23)-(26). Stative verbs like *lie*, *sit*, *stand*, etc. are lexically stage-level predicates. Examples like (23c)-(26c), on the other hand, contain a habitual predicate derived by an abstract generic operator G (Carlson, 1977: 274-275) that converts a stage-level predicate into an individual-level predicate, giving rise to the habitual reading for base stage-level verbal predicates. (23c)-(26c) assert that the predicates in them are instantiated for a number of instances (in fact, all instances within a reasonably large period of time).

The reason that (23b)-(26b) are judged unacceptable is pragmatic: the progressive makes the weaker claim that a predicate such as *lie at the mouth of the Mississippi River* is true at *one given instance* while we know (from the assumption that cities are typically

stationary over long stretches of time) that the predicate is in fact true of several such instances. The simple tense sentence, which makes the stronger claim is thus preferable over the weaker progressive by Grice's maxim of quantity. The progressive can be used in these cases only if the stronger claim is known to be false or not assumed to be uncontroversially true by the speaker (Dowty 1979: 177-178).

Dowty's characterization of what the progressive asserts about the instantiation of a predicate in time is intuitively accurate but gives rise to a puzzling question about the meaning of the progressive construction. Why is it that the progressive construction is restricted to stage-level or episodic predicates? Remember that Carlson accounts for the unacceptability of the progressive with individual-level predicates by stipulating that the progressive is syntactically restricted to the category of stage-level predicates. But as Dowty (1979: 178) observes, the problem with this restriction is that there is no obvious explanation for why it should hold.[10] I take this to be a basic puzzle about the semantics of the progressive aspect and the contribution of the progressive operator.

3.3.2 Episodicity

The intuition behind Dowty's characterization of the progressive and Carlson's claim that the progressive is restricted to stage-level predicates is that progressive predicates are interpreted as being subintervals of larger intervals that are temporally delimited or episodic. In other words, the domain of the progressive operator appears to be episodic predicates. Episodicity can be taken to be a second order property classifying natural language predicates of times and sentences. Informally, we can construe this property as follows: if a predicate is episodic then the intervals in its denotation must be bounded — i.e. characterized by either a left or a right boundary. A formal definition is proposed in (27a). A predicate is considered to be episodic if every temporal interval t in the denotation of P is part of an interval t' that is immediately preceded or followed by a temporal interval t'' at which the predicate is not instantiated.

(27) a. **Episodicity:** $\mathrm{EPI(P)} \leftrightarrow \forall t[P(t) \rightarrow \exists t'[t \subseteq t' \wedge P(t')] \wedge \exists t''[(t''< t' \vee t'<t'') \wedge \neg P(t'')]]$

b. A predicate is episodic iff any t in P is preceded or followed by a non-P time.

[10] Dowty then outlines an explanatory account for this restriction that combines Carlson's proposal with Taylor (1977)'s interval-based explanation arguing that the truth of stage-level stative verbal predicates (called interval statives on his classification) must also be evaluated relative to an interval rather than a moment. I do not pursue it here, but rather propose an alternative account that directly relates the stage-level restriction to the semantic contribution of the progressive operator.

This formulation of episodicity is an attempt to get at the intuitive difference between episodic (or stage-level) and non-episodic (individual-level) predicates, which has often been characterized in terms of transience vs. permanence.[11]

Now that we have a working definition of episodicity and what it means to be an episodic predicate, let me put forth a claim about the meaning of the progressive. I want to argue that the output of the progressive operator is a stative episodic predicate because it is derived from a base episodic verbal predicate. The empirical part of the argument builds up on observations about the distribution of the progressive made in earlier literature (for stativity, recall the discussion in Chapter 2). The real challenge is deriving the properties of stativity and episodicity from the meaning of the progressive operator (or morphology).

In Chapter 2, I argued that some accounts of the progressive as a stativizing operator fall short of being explanatory because they stipulate that the progressive derives stative predicates from (usually) non-stative predicates. The intermediate step, which should explain the source of the stativity for the progressive predicate, is absent. Similarly, Carlson's stipulation that the progressive is syntactically restricted to stage-level predicates does not really provide an explanation for the episodicity of the progressive (and the predicate it is derived from), because the episodicity does not follow in any way from the semantics of the progressive construction (as Dowty (1979: 178) correctly notes).

3.3.3 Summary

In this section I reviewed the arguments that natural language predicates can be classified along the episodicity dimension and that it is this property that underlies the contrast between stage-level and individual-level predicates. Based on facts about the acceptability of the progressive with stative verbs and the proposals in Dowty (1979) and Carlson (1977), I claimed that progressive predicates are episodic and that episodicity is one of the semantic contributions of the progressive operator/construction (the other being stativity). As with stativizing accounts of the progressive (Parsons, 1990; De Swart 1998; Vlach, 1981) which do not explain why progressive predicates are stative, there is no obvious explanation for why progressive predicates have episodic or stage-level interpretation. In §3.5, I propose a semantics for the progressive operator that can transparently derive predicates that are both stative and episodic.

The broader goal set out for this chapter is that of providing a satisfactory semantics for both the imperfective and the progressive operators. To that end, I first present a

[11] Needless to say, the actual length of the intervals denoted by P is typically irrelevant to the assertions made by episodic or non-episodic expressions.

semantics for the imperfective operator in §3.4. To repeat, the primary considerations for such an analysis are *nestedness* (denotation of the progressive is a proper subset of the denotation of the imperfective) and *transparency* (imperfective and perfective operators are load-bearing, rather than flagging operators). Further the account should be *stativity-driven* (the derived predicates must be stative) and, for the progressive, as shown in this section, *episodicity-driven* (the predicates output by the progressive operators must also satisfy episodicity).

3.4 The semantics of the imperfective operator

As discussed in Chapter 2, derived stative predicates are based on non-stative lexical predicates, but nevertheless, are characterized by the same properties as lexical stative predicates, viz. divisiveness and cumulativity. They are also interpreted as stative with respect to diagnostics involving temporal adverbials and patterns of temporal progression in narrative discourse. Further, in languages that contrast the imperfective and perfective aspects, these predicates appear with imperfective morphology, just like lexical stative predicates. A transparent account of the imperfective operator (realized by imperfective morphology) would:

(28) a. Derive progressive stative predicates from eventive predicates.
b. Derive habitual/generic stative predicates from eventive predicates.
c. Encode the stativity of lexically specified stative predicates.

In this section, I spell out the semantics of the imperfective operator and show how a unified representation can nevertheless yield the three types of predicates that are typically expressed by imperfective verb forms. I assume an ontology of sorted eventualities and temporal intervals as part of my basic setup. The domain of eventualities $\mathcal{E}$ contains two sorts of eventualities — events and states. Eventive predicates denote events while stative predicates denote states. $\mathcal{T}$ is the domain of non-null temporal intervals partially ordered by the relation of temporal precedence '$<$' and by the subinterval relation '$\subseteq$'.[12] Verb roots take an eventuality argument in addition to their thematic arguments and eventuality descriptions (uninflected sentence radicals) are predicates over eventualities. Aspectual

[12]I am taking logical representations to be expressions of a typed lambda calculus with the basic types of t (propositions), e (entities), s (eventualities), and i (intervals). x is the variable ranging over entities, e ranges over eventualities, and t over intervals, P over predicates of type <s,t> and Q over predicates of type <i,t>. For expository purposes, I am taking a strictly extensional perspective and factoring out worlds from the current analysis.

operators are of type <<s,t>, <i,t>>, i.e. they take predicates of eventualities (uninflected sentence radicals) as their input and yield predicates of times/intervals. τ is a function from $\mathcal{E}$ to $\mathcal{T}$ that maps eventualities to their run-time, the time at which they are instantiated in the world.

How predicates are instantiated in time differs for eventive and stative predicates and can be specified by defining the INST relation as in (29). If an eventive predicate P is instantiated in an interval t (represented by (INST(P, t)), this means that the run-time of the event instantiating P is included in the interval t. If P is stative, on the other hand, INST(P, t) means that P holds of (all subintervals of) t.

(29) $\text{INST}(\text{P, t}) = \begin{cases} (\exists \text{e} \in \mathcal{E} \mid \tau(\text{e}) \subseteq \text{t} \wedge \text{P(e)}) & \text{if P is eventive} \\ \text{P(t)} & \text{if P is stative} \end{cases}$

It is important to keep in mind that the interval in which P is instantiated is not necessarily identical to the run-time of the eventuality denoted by P. With an eventive predicate, the '$\subseteq$' relation allows for any (possibly unbounded) superinterval of the run-time of the event to be the interval in which P is instantiated. On the other hand, with a stative predicate, INST only asserts that P holds at least at t and possibly a superinterval of t.

The semantics of the imperfective or the progressive operators has usually been formulated in terms of the interval at which a predicate P is instantiated. Recall the representations of the progressive and the imperfective (unbounded) operators discussed in Chapter 2.[13]

(30) a. $[[\text{PROG}\phi]] = \lambda \text{i}\ \exists \text{i}'[\ \text{i} \subset_{nf} \text{i}' \wedge \phi(\text{i}')]$ (Bennett & Partee 1972)

b. $[[\text{unbounded}]] = \lambda \text{P} \lambda \text{i}\ \exists \text{e}[\text{P(e)} \wedge \tau(\text{e}) \supset \text{i}]$ (Based on Klein, 1994; Bohnemeyer & Swift, 2001; Pancheva, 2003)

The formulae in (30) are representative of the general approach to analyzing the contribution of the progressive or imperfective operators. In both cases, the operator yields a predicate denoting intervals that are subintervals of an interval that corresponds to the run-time of an eventuality instantiating the base predicate. In other words, the predicates that form the output of these operators are specified in terms of the AT relation; they denote subintervals of the interval AT which a predicate is instantiated.[14]

[13] In the formulations in (30), i is the notation for the variable ranging over intervals, as opposed to the notation I use, which is t.

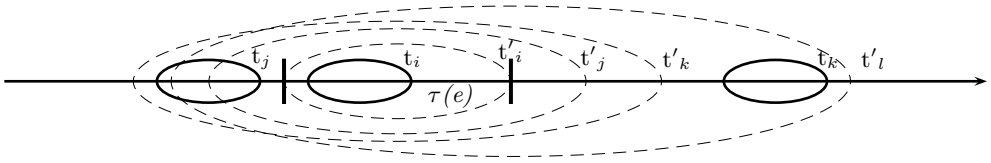
[14] Later, I will argue that the progressive should be formulated in terms of the AT relation and show how the contrast between the imperfective and the progressive can be elegantly captured with this.

The key to defining the semantics of the imperfective operator is by exploiting the properties of INST which is a distinct relation from AT. (31) contains the logical representation I propose for the imperfective operator.

(31) $[[\text{IMPF}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{INST}(P, t')]$

The imperfective operator denotes a function from predicates of eventualities to predicates of times that are non-final subintervals of the intervals within which P is instantiated. The set of intervals t' within which P is instantiated include the interval AT which P is instantiated ($\tau(e) = t'$), and ALL superintervals of such an interval ($\tau(e) \subset t'$). This is graphically represented by the diagram in (32).

(32)



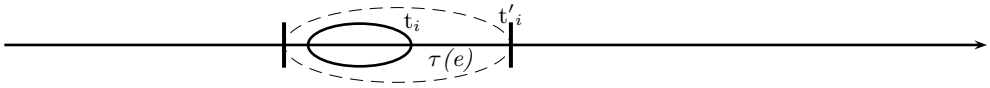
The intervals within which P is instantiated (corresponding to the different t' in the representation in (31)) are indicated with the dashed ellipses. Some possible subintervals of these intervals (possible values for t in the representation in (31)) are indicated with the solid ellipses. The interval t'_i constitutes the limiting case; it is the interval AT which a predicate is instantiated, in other words, the run-time of the eventuality that instantiates a given predicate (for eventive predicates). t_i is a non-final subinterval of this interval. The configuration that relates t'_i and t_i in (32) yields the progressive interpretation for the imperfective-marked predicate, since t_i is a non-final subinterval of the interval that is the run-time of the eventuality instantiating the predicate P.

How are the logical representation of the imperfective operator in (31) and its graphic illustration in (32) different from the representations in (30), especially the one in (30b)? The difference lies in the set of intervals that are the possible outputs of the operators represented in (30) and (31). In particular, the operators in (30a-b) restrict the set of intervals they yield to those that have the property of t_i in (33) – viz. they are non-final subintervals of the interval corresponding to the eventuality run-time.[15] In other words, the

[15]It should be clarified that this is not a problem for the representation in (30a) (which is a formalization of Bennett & Partee (1972)) since it is a claim about the semantics of the progressive operator, which must have this restricted output, but I will argue that it is problematic for the representation in (30b), which is a claim about the semantics of the imperfective operator, with a wider semantic range of interpretation (progressive, lexical stative, and habitual/generic), which must correspond to a wider range of intervals.

set of intervals output by the operators in (30) must be configurationally identical to t_i in (33).

(33)



On the other hand, the illustration in (32) shows that the predicate output by the imperfective operator in (31) is not restricted to denoting non-final subintervals of the eventuality run-time (or the time AT which the predicate is instantiated). The subinterval relation holds between the interval denoted by the imperfective-marked predicate and any interval *within* which the base predicate is instantiated — i.e. any superinterval of the interval AT which the base predicate is instantiated.

Specifying the semantics of the imperfective operator in terms of the INST relation guarantees that the imperfective-marked predicate is not restricted to 'progressive' intervals (subintervals of the eventuality run-time) but allows for a larger set of intervals to be in its denotation. The accuracy of the representation for the imperfective operator in (31) depends on whether the possible values for this larger set of intervals, in fact, correspond to the various interpretations of imperfective-marked predicates. There are three possibilities that are structurally different from the progressive configuration and I want to argue that each of these possibilities, in fact, does correspond to interpretations for predicates in the imperfective aspect.

(34) a. $t \subset t'$ and P is instantiated at all subintervals of t'

b. $t \subset t'$ and P is instantiated multiply/regularly/generally (or otherwise restricted by adverbial operators) in t'

c. $t \subset t'$ and P is instantiated within t' *and* within t and $t \supseteq \tau(e)$

Specifically, (34a) describes the configuration that yields the lexical stative interpretation; (34b) describes the configuration yielding the habitual/generic interpretation; and (34c) describes the configuration that yields the (yet to be discussed) perfective-like interpretation available to imperfective-marked predicates. In the following sections, I discuss each of these possibilities in detail.

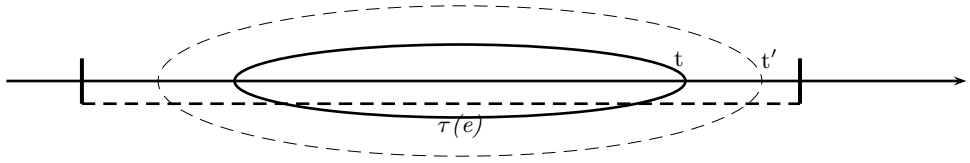
3.4.1 Lexical stative predicates and the imperfective operator

The progressive interpretation of an imperfective-marked predicate arises when the interval output by the imperfective operator is a subinterval of the interval within which a predicate is instantiated and this instantiation interval corresponds to the run-time of the event instantiating the predicate. Recall from (29) (repeated here as (35)) that the INST relation works differently with eventive and stative base predicates.

(35) $\text{INST}(\text{P, t}) = \begin{cases} (\exists \text{e} \in \mathcal{E} \mid \tau(\text{e}) \subseteq \text{t} \wedge \text{P(e)}) & \text{if P is eventive} \\ \text{P(t)} & \text{if P is stative} \end{cases}$

For eventive predicates, P is instantiated in an interval t if the run-time of e is included in t. For stative predicates, INST asserts that P holds of all subintervals of t (and possibly at a larger interval). Consider the configuration in (36) where the τ(e) (the interval between the two vertical lines indicating left and right boundaries) is a super-interval of t′, indicated by the dashed ellipse (the interval corresponding to t in INST(P, t)). This possibility can only hold if e instantiates a stative predicate. A subinterval t of an interval t′ in this case is also an interval that instantiates P.

(36) a. t $\subset$ t′ and P is instantiated at all subintervals of t′

b. 

On the lexical stative interpretation, imperfective predicates are construed as referring to an interval such that the base predicate is instantiated at all of its subintervals (e.g. *live in Paris*; *weigh ten tons* etc.). This is guaranteed by the imperfective operator in (31) because of the specification of the INST relation with stative predicates. Stative predicates are instantiated at all subintervals of the interval within which they are instantiated (P(t)), and the imperfective operator outputs the set of non-final subintervals of the INST interval. It follows then that for lexical stative predicates, the intervals denoted by the imperfective-marked predicates are also intervals at which the base predicate is instantiated. The contribution of the imperfective operator is trivial with respect to lexical stative predicates since the base predicate is already true at all subintervals of the interval in which it is instantiated.

3.4.2 Habitual/generic predicates and the imperfective operator

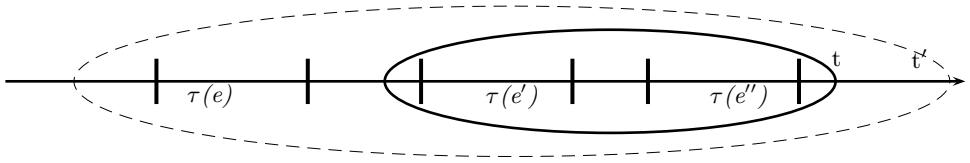
In contrast to lexical statives, habitual/generic predicates are derived from base predicates that are not true at all subintervals of the interval within which they are instantiated. The main intuition about habitual/generic predicates is that the episodic predicates on which they are based are instantiated with some regularity in a given situation (which may be explicitly conveyed by adverbs like *typically*, *usually*, *generally*, etc.). Sentences with habitual predicates express generalizations over instances of events/situations.

I noted in §3.2.1 and §3.2.2 that in languages which make an imperfective-perfective contrast, habitual/generic predicates appear with imperfective marking. In Chapter 2, we saw that there is no satisfying account of how habitual/generic predicates are derived from base episodic predicates. My contention is that the derivation is effected by the imperfective operator, specifically by the properties of the INST relation as opposed to the AT relation. The set of intervals in which P is instantiated (corresponding to t′ in (31)) includes the subset of intervals in which P is instantiated more than once.[16] The imperfective-marked predicate only asserts that the intervals in its denotation are subintervals of some t′ and remains vague about the temporal relation between the run-time of the eventuality instantiating the predicate and t′. It is this vagueness that allows for the habitual interpretation for imperfective-marked predicates.

The imperfective-marked predicate may denote an interval that is the subinterval of a larger interval within which the base predicate P is instantiated multiply/regularly/ habitually as represented in (37). In (37b), P is instantiated by e, e', and e''. t′, the instantiation interval, properly includes the run-time of these eventualities which instantiate the base predicate. Any subinterval of such an interval, e.g. the interval indicated by t, is part of the denotation of the imperfective-marked predicate.

(37) a. t ⊂ t′ and P is multiply/regularly/generally instantiated in t′

b.



[16] I should note here that the habitual interpretation of sentences with imperfective-marked predicates, which implies a generalization over several instances of events/situations is only one of the possible non-progressive interpretations for imperfective-marked predicates.

Non-habitual derived stative interpretations

One consequence of specifying the semantics of the imperfective operator in terms of the INST relation is that the temporal location of the run-time of the eventuality remains underspecified. The imperfective-marked predicate simply asserts that the base predicate is instantiated within some interval. In particular, it is not committed to the assertion that the predicate is instantiated multiply/regularly/generally within a given interval (unlike the assumption of the imperfective accounts we saw in §2.5.2). The imperfective-marked predicate yields the set of all intervals within which the base predicate is instantiated and overt or contextually given covert predicate modifiers such as adverbials or GEN serve to further restrict this set to a more specified subset of intervals.

The term 'habitual' for stative predicates derived from base episodic predicates implies that the predicate is instantiated habitually or with some generality in a given interval. However, the fact that sentences with habitual predicates may contain a range of frequency adverbials (including *never*, *seldom*, *rarely*, or *sporadically*), shows that the derived predicates cannot explicitly be marked for habituality or regular instantiation. The habitual or generic interpretation is thus only one of the possible interpretations for habitual predicates (the technical term for statives derived from base episodic predicates (Krifka et al. (1995)).

(38) a. John *never* drinks beer.
b. John *seldom* works in the workshop.
c. John *sporadically* comes to our Tuesday meetings.

This is further reinforced by the fact that the habitual/generic interpretation is also not the only one available (although it is a very salient interpretation) for sentences with no overt restricting adverbials. For instance, consider the sentences in (39a-c). These are instances of existential generics (Cohen, 2004). None of the sentences license a habitual or generic reading. Rather they make an existential claim about people who can break down under pressure, computers that can make mistakes, and an instance of John drinking beer. Nonetheless, they are all based on derived stative predicates and describe properties of their subject referents rather than reporting on specific episodes or events.

(39) a. People break down under the slightest pressure.
b. A computer makes mistakes.
c. [In response to a claim that John never drinks beer...] Oh, John drinks beer. I have seen him once with a pitcher.

In languages with imperfective morphology, these sentences, which involve existential quantification over individuals or situations, appear with imperfective marking. The sentences in (40a-c) are from Hindi and retain the same contextual interpretation as for their English variants in (39a-c).

(40) a. log thoḍese tanāv-se **dab jā-te** haĩ
people.NOM.PL little.OBL pressure-from depress-IMPF.M.PL PRES.3.PL
People get pulled down (depressed) from a little pressure.

b. kampyuṭar galati-yã **kar-tā** **hai**
Computer.NOM.SG mistake.NOM.PL do-IMPF.M.SG PRES.3.SG
A computer makes mistakes.

c. niśā biyar **pī-ti** **hai**
N.NOM.SG beer.NOM.SG drink-IMPF.F.SG PRES.3.SG
Niśā drinks beer.

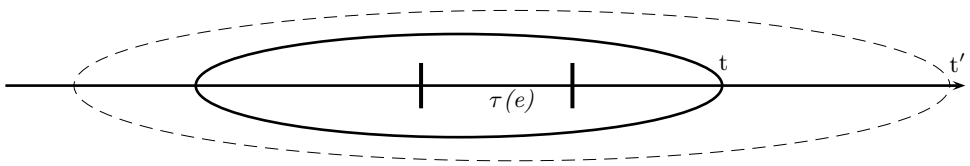
Each of the sentences in (40) assert that the predicate they contain is instantiated in time; there is no assertion about the frequency or regularity of instantiation. The representation of the imperfective operator proposed here is compatible with this non-habitual (yet stative and individual-level) interpretation of these derived predicates, because a subinterval of any interval of predicate instantiation is part of the denotation of the imperfective-marked predicate.

To conclude, in this section, I showed how the habitual/generic readings of imperfective-marked predicates and other individual-level, non-habitual readings can be accounted for with the general semantics that I proposed for the imperfective operator.

3.4.3 The perfective-like interpretation of imperfective-marked predicates

Yet another scenario is the configuration in (41).

(41) a. $t \subset t'$ and P is instantiated within t' *and* within t and $t \supseteq \tau(e)$

b. 

In this case, t', the interval within which P is instantiated by e, is a superinterval of $\tau(e)$. The interval output by the imperfective operator is a subinterval of t', but also a

superinterval of τ(e). The fact that the predicates output by the imperfective operator in (31) include a subset of intervals that are superintervals of the τ(e) might suggest that (31) is an incorrect representation for the imperfective operator. By overgenerating the set of perfective-like intervals, (31) yields the 'wrong' set of intervals.[17]

I want to argue here that what might appear to be an undesirable result of the representation in (31) turns out to be advantageous in light of wider data concerning the interpretation of sentences with imperfective-marked predicates. The specific interpretation relevant to the scenario in (41) is the perfective interpretation of these sentences, most well-documented for the imperfective aspect in Slavic languages.

Imperfective verbs in Russian (and Czech (Filip 1999)), in addition to licensing progressive and habitual interpretations, may also have a perfective use. Comrie (1976) calls this the 'general factual' or 'simple denotative' use of the imperfective aspect. Consider the example from Russian in (43). The imperfective verb *opravoval* can be interpreted as referring to an ongoing episode of car-repairing or to a completed, perfective event in which the car was repaired.

(43) co děla-l včera? opravova-l auto
what do.IMPF-PST yesterday repair.IMPF-PST car
What did he do yesterday? He *repaired/was repairing* the car. (Comrie, 1976: 113)

The fact that imperfective-marked predicates actually have a perfective interpretation and refer to completed events in one of their several uses, is strong evidence for the representation of the imperfective operator in (31). This representation guarantees that a subset of the intervals in the denotation of imperfective predicates correspond to intervals in the denotation of perfective predicates.

It is worthwhile to note here that standard representations of the imperfective operator, as in (30b) do not account for the perfective interpretation of imperfective-marked predicates, viz. that they can denote superintervals of the run-time of the eventuality instantiating the base predicate. It can of course be argued that changing the temporal relation from '$\subset$' to '$\subseteq$' can take care of the perfective interpretation with these predicates. Filip (1999), working within an eventuality-based framework, adopts this approach to account for the

[17] The contrast between the imperfective and perfective (unbounded and bounded) operators is standardly characterized by reversing the inclusion relation between the eventuality interval and the interval denoted by the aspectual operator (often called topic time or reference time).

(42) a. [[imperfective]] = λPλi $\exists$e[P(e) $\wedge$ τ(e) $\supset$ i]
b. [[perfective]] = λPλi $\exists$e[P(e) $\wedge$ τ(e) $\subset$ i]

perfective uses of imperfective predicates in Czech, and represents the imperfective aspect as denoting parts of eventualities, where part is taken to be the weak ordering relation '$\subseteq$'.

3.4.4 The imperfective-perfective opposition

In Slavic aspectology, the imperfective-perfective aspectual opposition has been characterized as a privative opposition with the imperfective as the unmarked member and the perfective as the marked member (Jakobson, 1936: 31). The marked member of a privative opposition is more restricted than the unmarked member, which may be used in place of the marked member in certain contexts. In §3.4.3, it was seen that the Russian Imperfective may license perfective interpretations. Comrie (1976: 113) claims that it is the 'general factual' or 'simple denotative' (= perfective) use of the Russian Imperfective that is "perhaps the strongest single piece of evidence in Russian (and in other Slavic languages) for considering the Perfective to be the marked form." The privative nature of the opposition also accounts for why imperfective predicates may license perfective interpretations but not vice versa. Perfective-marked predicates do not license habitual or progressive interpretations (See Forsyth, 1970: 350).

To my knowledge, there exists no semantically formulated account of the markedness opposition between the imperfective and the perfective aspects that can capture the range of interpretations available to imperfective predicates. The imperfective operator in (31) has the properties that an operator deriving imperfective predicates must satisfy — it can derive progressive and habitual/generic predicates, and encode the stativity of lexical stative predicates. Moreover, it can derive 'perfective' predicates because the representation naturally guarantees that a subset of intervals in its denotation are perfective intervals, viz. intervals within which the base predicate is instantiated. The representation I am assuming for the perfective operator is given in (44b). A comparison of the denotations of (44a) and (44b) shows that the denotation of the predicates output by the perfective operator is in a nested relation with (or a subset of) the denotation of the predicates output by the imperfective operator.

(44) a. $[[\textsc{impf}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{inst}(P, t')]$

b. $[[\textsc{perf}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \supseteq t' \wedge \textsc{inst}(P, t')]$

This is an interesting result of representing the imperfective operator in terms of the INST relation rather than the AT relation, since AT refers only to the interval corresponding to the run-time of eventualities instantiating a predicate and not superintervals of this interval.

3.4.5 The stativity of imperfective-marked predicates

At the end of Chapter 2 and the beginning of this chapter, I claimed that a satisfactory account of the imperfective operator must be stativity-driven. It must be able to transparently derive stative predicates (predicates characterized by divisiveness and cumulativity), and not have to stipulate that its output is stative (unlike the stativizing accounts of De Swart (1998) or Vlach (1981), for instance). In this section, I show how the representation of the imperfective operator that I have been arguing for, satisfies this condition. Divisiveness and cumulativity are defined for the domain of intervals in the following way:

(45) a. $\text{DIV(P)} \leftrightarrow \forall t,t'[P(t) \wedge t'<t \rightarrow P(t')]$
b. $\text{CUM(P)} \leftrightarrow \forall t,t'[P(t) \wedge P(t') \rightarrow P(t \oplus t')] \wedge \exists t,t'[P(t) \wedge P(t') \wedge \neg t=t']$

How do these properties follow from the representation of the imperfective operator in (31), repeated here as (46)?

(46) $[[\text{IMPF}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{INST}(P, t')]$

The predicate output by the imperfective operator denotes the set of intervals that are subintervals of the interval within which the base predicate P is instantiated. Divisiveness requires that every subinterval of the interval at which a predicate holds should also be an interval at which the predicate holds. For a predicate output by the imperfective operator, this means that every subinterval of the imperfective-marked predicate should also be an interval at which the imperfective-marked predicate holds. This is guaranteed to be true with our representation because any subinterval of the interval output by the imperfective operator in (46) is bound to be a subinterval of the interval within which the predicate is instantiated. Thus, imperfective-marked predicates are divisive.

Cumulativity states that a predicate P is cumulative iff it holds of two distinct intervals and when it holds of two disjoint intervals t and t′, it also holds of their sum. This property also follows from my proposal for the imperfective operator because the sum of any two non-final subintervals of the interval within which a predicate is instantiated must also be contained within this larger predicate instantiation interval.

Thus, the analysis of the imperfective operator that I provide, guarantees, rather than stipulates, the stativity of imperfective predicates.

3.4.6 Summary

In this section, I proposed a general meaning for the imperfective operator that can account for the progressive, the lexical stative, and the habitual/generic interpretations of

imperfective-marked predicates. Moreover, the operator derives predicates that include in their denotation a subset of intervals that correspond to 'perfective' intervals. I argued that this is a desirable result given that the interpretations available to the imperfective in Slavic languages include the perfective-like interpretation. This property of the imperfective operator also provides a semantic account of the privative opposition that has been intuitively understood to underlie the imperfective-perfective contrast. In §3.4.5, I explicated how the stativity of imperfective-marked predicates (the divisivity and cumulativity properties) also follows from the proposed representation of the imperfective operator.

The analysis presented so far has two of the three properties that I proposed for a satisfactory account of the imperfective and the progressive operators —- it is *transparent* in that the imperfective operator is load-bearing and derives stative predicates rather than flagging the stativity of predicates derived by an abstract, invisible operator; and it is *stativity-driven*, in that the stativity of the derived imperfective predicates is guaranteed by the representation of the imperfective operator and does not have to be separately stipulated. In the next section, I propose an analysis for the progressive operator that satisfies the third condition for a satisfactory analysis of the two operators — *nestedness*.

3.5 The semantics of the progressive operator

The progressive operator is identical to the imperfective operator except for one difference. It is specified in terms of the AT relation and not the INST relation. AT is defined as in (47). What AT does is to restrict the the interval AT which a predicate holds to the run-time of the eventuality instantiating the predicate. With eventive predicates, the value of t in AT(P,t) is equivalent to the run-time of the eventuality instantiating the predicate or the τ(e). With stative predicates AT relates a predicate with the maximal interval for which it is true. It asserts that the predicate does not hold of any larger interval other than t. The upshot is that AT is a more restrictive relation than INST.

(47) $\text{AT}(\text{P, t}) = \begin{cases} (\exists \text{e} \in \mathcal{E} \mid \tau(\text{e}) = \text{t} \wedge \text{P(e)}) & \text{when P is eventive} \\ (\text{P(t)} \wedge \neg\exists \text{t}'(\text{t}' \supset \text{t} \wedge \text{P(t}')) & \text{when P is stative} \end{cases}$

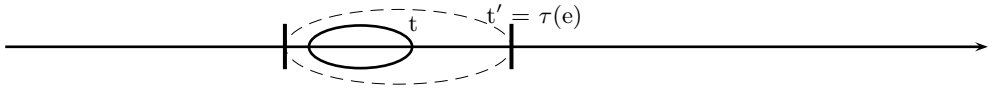
The progressive operator has the representation in (48).

(48) PROG: $\lambda \text{P}_{<s,t>} \lambda \text{t } \exists \text{t}'[\text{t} \subset_{nf} \text{t}' \wedge \text{AT(P, t}')]$

The progressive operator yields the set of intervals that are subintervals of the interval AT which the base predicate is instantiated. The relative configuration of the relevant intervals

is given in (49). The run-time of an eventuality e instantiating the base predicate, (τ(e)), is equal to t′ and the interval output by the progressive operator is a non-final subinterval of t′. In other words, the progressive interval is a non-final subinterval of the eventuality run-time.

(49)



This representation for the progressive operator is similar to the one proposed by Bennett and Partee (1972) for the English progressive except for the restriction imposed by the AT relation. Compare the two representations in (51).[18]

(50) a. [[PROGϕ]] = λi $\exists$i′[i $\subset_{nf}$ i′ $\wedge$ ϕ(i′)] (Bennett & Partee 1972)
b. [[PROGϕ]] = λt $\exists$t′[t $\subset_{nf}$ t′ $\wedge$ AT(ϕ, t′)]

AT explicitly restricts the t′ interval to the run-time of an eventive or stative eventuality. Bennett & Partee's representation on the other hand, makes no reference to the eventuality time (unless ϕ(i′) is to be translated as such). This distinction is relevant for stative base predicates which can also hold at a superinterval of the interval of which they hold. ϕ(i′) only asserts that a predicate is true of a given interval. AT specifies that t′ (corresponding to the i′ of Bennett and Partee) is the maximal interval at which the predicate ϕ is true with respect to stative predicates.

Specifying the semantics of the progressive operator in terms of the AT relation has three advantages:

a. *Nestedness:* It provides a nested account of the imperfective and the progressive aspects, where the denotation of progressive-marked predicates is a subset of the denotation of imperfective-marked predicates.
b. *Episodicity:* it explains why progressive-marked predicates usually receive an episodic interpretation in contrast to imperfective predicates which license both episodic and non-episodic interpretations.
c. It accounts for the difference in felicity judgements associated with Dowty's interval stative predicates.

I will discuss each of these in the following sections.

[18] As clarified before, the formalization is my translation of what Bennett and Partee state in words.

3.5.1 Nestedness

Compare the representations of the imperfective and the progressive operators that have been proposed here.

(51) a. $[[\textsc{impf}]] = \lambda P \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{inst}(P, t')]$
b. $[[\textsc{prog}]] = \lambda P \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(P, t')]$

INST is defined differently for eventive and stative predicates, and licenses different inferences about the interval for which the base predicate holds and how it relates to the instantiation interval (t').

(52) $\textsc{inst}(P, t) = \begin{cases} (\exists e \in \mathcal{E} \mid \tau(e) \subseteq t \wedge P(e)) & \text{if P is eventive} \\ P(t) & \text{if P is stative} \end{cases}$

The predicates of times output by the imperfective operators fall into four subsets depending on how the instantiation interval t' is specifically related to the maximal interval AT which a predicate holds. In (53), I am assuming that the imperfective operator has already applied to a predicate ϕ. The subscripted e and s are just shorthand for eventive and stative base predicates respectively. These are as follows: In (53a), the relevant interval t' is identical to the $\tau(e)$; in (53b), t' properly includes the $\tau(e)$. In (53c), t' is the maximal interval at which the stative predicate ϕ_s is true; in (53d), ϕ_s is true at an interval that properly contains t'.

(53) a. $\lambda t\ \exists t' \exists e[t \subset_{nf} t' \wedge \tau(e) = t' \wedge \phi_e(e)]$
b. $\lambda t\ \exists t' \exists e[t \subset_{nf} t' \wedge \tau(e) \subset t' \wedge \phi_e(e)]$
c. $\lambda t\ \exists t'[t \subset_{nf} t' \wedge \phi_s(t') \wedge \neg\exists t''(t'' \supset t' \wedge \phi_s(t''))]$
d. $\lambda t\ \exists t'[t \subset_{nf} t' \wedge \phi_s(t') \wedge \exists t''(t'' \supset t' \wedge \phi_s(t''))]$

The imperfective-marked predicate denotes the union of these sets. For my analysis of the imperfective and the progressive aspects to be a nested analysis, I must show that the denotation of the imperfective-marked predicate properly contains the denotation of the progressive-marked predicate. I want to show that the union of the two sets in (53a) and (53c) constitutes the denotation of progressive-marked predicates, which is specified in terms of the AT relation.

The definition for AT is reproduced in (54).

(54) $\textsc{at}(P, t) = \begin{cases} (\exists e \in \mathcal{E} \mid \tau(e) = t \wedge P(e)) & \text{when P is eventive} \\ (P(t) \wedge \neg\exists t'(t' \supset t \wedge P(t')) & \text{when P is stative} \end{cases}$

AT translates as in (54). Applying the progressive operator to a predicate ϕ yields the following two subsets of predicates.

(55) a. $\lambda t\ \exists t'\exists e[t \subset_{nf} t' \wedge \tau(e) = t' \wedge \phi_e(e)]$

b. $\lambda t\ \exists t'[t \subset_{nf} t' \wedge \phi_s(t') \wedge \neg\exists t''(t'' \supset t' \wedge \phi_s(t''))]$

The predicates in (55a) and (55b) are identical to the predicates in (53a) and (53c) respectively. It is clear from this that the denotation of the progressive operator constitutes a subset of the denotation of the imperfective operator. This proves that the analysis of the imperfective and progressive operators proposed here is characterized by nestedness.

3.5.2 Episodicity

How does the representation of the progressive operator in terms of the AT relation guarantee that progressive predicates and the base predicates they are derived from are (typically) interpreted as episodic? Recall the working definition for episodicity as a predicate property that I proposed in (27) (reproduced here as (56)).

(56) a. **Episodicity:** $\text{EPI(P)} \leftrightarrow \forall t[P(t) \rightarrow \exists t'[t \subseteq t' \wedge P(t')] \wedge \exists t''[(t'' < t' \vee t' < t'') \wedge \neg P(t'')]]$

b. A predicate is episodic iff any t in P is preceded or followed by a non-P time.

(56) states that a predicate is episodic if all the intervals in its denotation are parts of intervals that are bounded. The progressive operator applies to the set of predicates that are instantiated AT a specific interval which corresponds exactly to the run-time of the eventuality denoted by the predicate. From this, it follows that any base predicate to which the progressive applies is instantiated at an interval which is characterized by either left and right boundaries — i.e. it is episodic. Crucially, the temporal interval t' of which the progressive interval is a subinterval, is temporally bounded.

This contrasts with the imperfective operator, which does not guarantee that the predicates it applies to are temporally bounded. The predicate instantiation interval, given by the INST relation, includes temporally unbounded intervals,which are superintervals of the interval AT which the predicate is instantiated. The imperfective thus contrasts with the progressive with respect to episodicity.

3.5.3 Felicity judgements with interval and object-level states

In §3.3.1, I described a class of stative predicates (labeled interval states (Dowty, 1979) or dynamic states (Bach 1981)) that are grammatical in the progressive only in certain

contexts (*The socks are lying on the floor* vs. ?*New Orleans is lying at the mouth of the Mississippi.* Dowty accounts for the contrast by claiming that interval states (*lie*, *stand*, *rest*) are stage-level predicates and that the progressive is restricted to stage-level predicates. A progressive-marked sentence asserts that its base predicate holds at one given instance and is only felicitous in those contexts where it is known that the predicate does not hold at other instances or when the fact is in question. In contexts where a predicate is known to hold at several instances (as in the case of the location of cities), the progressive is judged to be too weak and therefore infelicitous. Sentences in the simple tenses (*New Orleans lies at the mouth of the Mississippi.*) are analyzed as containing habitual predicates, derived by an abstract generic operator. The ungrammaticality of object-level stative predicates (which are individual-level predicates) follows from the restriction of the progressive to stage-level predicates.

There are two drawbacks to this explanation. First, the stage-level restriction for the progressive operator has to be stipulated. Second, object-level stative predicates (*weigh*, *believe*, *love*) in the progressive are categorically ruled out, contrary to facts, which allow them in certain specific contexts. Let us first look at the facts with object-level stative predicates .

Object-level stative predicates and the progressive

Consider the examples in (57) with object-level statives in the progressive.

(57) a. I'm 8 weeks pregnant and right before I got pregnant I *was weighing* 187 (5'6), I went to the doctor at 6 weeks and *was weighing* 184...[19]

b. The original road *was extending* from railhead Lashio in Burma to Kunming in China...[20]

c. The first time that he said it, he was aware that it was not entirely true: but before he went to bed he *was believing* it.[21]

In the sentence in (57a), the progressive expression denotes a property that is typically stable but regularly subject to change in the given context: the pregnancy period. the progressive morphology is not infelicitous in this context, although the base predicate is an object-level state. The sentence in (57b) describes a situation that has ceased to hold; the road referred to (Ledo road in Burma) has fallen into disrepair, is no longer used, and needs

[19] www.babycenter.com/refcap/pregnancy/pregnancynutrition/1313887.html
[20] www.ibiblio.org/obl/docs/LIOB09-environment_and_law_in_burma.htm
[21] C.S. Lewis, "The Dream of the Island", from The Pilgrim's Regress (1986)

reconstruction. The object-level stative predicate *extend* is grammatical in this particular context because it is known that the predicate does not hold over an unbounded interval of time, specifically, that it ceased to hold at some time in the past. In (57c), *believe* appears in the progressive, also licensed by the contextually-given knowledge that the predicate does not hold of some interval prior to the interval at which it holds.

In each of these cases, object-level lexical stative predicates are perfectly acceptable in the progressive, given an appropriate context. The interpretation with the use of the progressive in a sentence contrasts with that of its simple tense counterpart in that the situation denoted by the base predicate is construed as bounded and subject to change in the progressive sentence. The corresponding simple tense counterparts are neutral with respect to such an interpretation as can be inferred from the fact that the progressive sentences in (57) are perfectly acceptable in the simple Past Tense as well. The syntactic restriction of the progressive operator to stage-level predicates cannot account for the occurrence of object-level predicates in the progressive.

On the other hand, if the progressive operator involves the AT relation as I have proposed here, we can account for both the fact that object-level stative predicates typically do not occur in the progressive, and for the fact that certain contexts license this usage. Object-level predicates typically describe properties that cannot be temporally located in the same way as stage-level predicates. The AT relation is a temporal location relation; the use of the progressive asserts that the base predicate is instantiated at a specific time. This presupposition is infelicitous in most contexts because object-level stative predicates are temporally unbounded properties. However, in some contexts, these properties are understood to be transient and temporally bounded. It is in these cases that object-level stative predicates are considered to be compatible with the progressive morphology.

Further, the AT relation eliminates the problem of stipulating that the progressive is syntactically restricted to stage-level predicates. The progressive operator asserts that the predicate to which it applies is temporally located at a specific interval (as opposed to being instantiated at some unspecified interval within a larger instantiation interval (given by INST). Making the AT relation a part of progressive semantics ensures that the set of predicates to which the progressive applies are temporally bounded or episodic predicates. The episodicity of the derived progressive predicate follows as a consequence of the episodicity of the base predicate.

3.5.4 Summary

In this section, I posited a semantics for the progressive operator that differs minimally from the semantics of the imperfective operator proposed in §3.4. I showed how this semantics captures the nestedness that characterizes the relation between the exponents of the imperfective and the progressive operators as well as providing an explanation for why progressive-marked predicates as well as the predicates from which they are derived, are interpreted as episodic or stage-level. In the next section, I discuss two readings of the progressive morphology that shed further light on the contribution of the progressive operator.

3.6 Some consequences and questions

Two readings of the progressive morphology support the hypothesis that the difference between the progressive and non-progressive imperfective predicates is best characterizable by the property of episodicity. The first involves the inceptive and terminative inferences licensed by the use of the progressive (§3.6.1) and the other is the habitual/generic interpretations that sentences with progressive-marked predicates license (§3.6.2). In both cases, the contribution of the progressive morphology (or operator) is to assert the temporal delimitedness of the interval at which the eventuality denoted by the base predicate is instantiated. The habitual reading of the progressive morphology also presents a deeper question about the transparency of aspectual modification operations (§3.6.3).

3.6.1 Inceptive and terminative inferences

Consider the examples in (58).

(58) a. ...all of a sudden they *were eating* breakfast together and flirting.[22]

b. The next thing she knew, she *was living* in a crappy two-bedroom in Buffalo and enrolled at Herbert Hoover High.[23]

In (58a), the earlier context describes a situation where the protagonist and a woman have not been on speaking terms. The use of the progressive in (58a) allows us to draw an inference that they have 'started' being on much better terms, a change of state evidenced by the breakfast-eating and flirting episodes. The inference, strengthened by the adverbial modifier, is that an episode of breakfast eating and flirting was not in progress (had not

[22] www.fictionalley.org/authors/issa/DFAW07.html

[23] www.teenreads.com/reviews/0689873190-excerpt.asp

even begun) prior to the contextually salient reference time. The progressive thus licenses an inceptive reading, where the eventuality denoted by the base predicate is inferred as having begun, i.e. as having a left boundary of instantiation.

Similarly, in (58b), the progressive implies that the interval at which the predicate *live-in-a-crappy-two-bedroom-flat-in-Buffalo* holds is preceded by an interval at which this predicate does not hold. In other words, the predicate is characterized at least by a left boundary. The right boundary is left unspecified, and the living episode might continue ever after, for all we know. The important point is that the progressive signals the episodicity of the predicate and allows the inference that the eventuality involves a change-of-state, a left boundary with some transition.

In (59a-c), the progressive sentences give rise to an inference (strengthened by the contexts and the 'until' adverbials) that the eventualities denoted by the predicates are characterized by a termination point, a right boundary. (59a) describes an eventuality to which the predicate *play-well* applies and introduces a later eventuality, which licenses the inference that the *playing-well* episode terminated. In (59c), the eventuality that the sentence refers to is inferred as extending back in time to the origin of the tribe, and the progressive licenses the inference that this eventuality ceased to hold at some point in time, that it was episodic in character.

(59) a. We *were playing* well and then panicked.[24]

b. Auto sales *were growing* rapidly until exorbitant import tariffs in 1994 cut deeply into sales of imported cars from authorized dealers.[25]

c. Their tribe *was living* peacefully until one day.[26]

Notice that (59b-c) are also grammatical in the simple tenses. The additional contribution of the progressive in these cases is to signal the transition to or from the state/process denoted by the base predicate.[27] The inference is that the base predicate from which the progressive predicate is derived refers to temporally bounded eventualities whose endpoints

[24] www.jconline.com/apps/pbcs.dll/article?AID=/20060304/SPORTS02010202/603040338/1152

[25] www.infoservices.com/stpete/65.htm

[26] www.amazon.com/exec/obidos/tg/detail/-/0440439884?v=glance

[27] Dowty 1979: 150) argues that the terminative inferences licensed by the progressive support a modal analysis of the progressive.

(60) John was watching television when Bill entered the room. (Dowty 1979:150)

In (60), the sentence does not entail that the television watching went on after the entering event; the episode might have terminated. The real entailment is that it was possible that the television-watching continued beyond the time specified by the *when*-clause.

can be 'invoked' by the use of the progressive. This inference is licensed because progressive predicates (and their base predicates) are episodic and this property follows from the semantics of the progressive operator that has been proposed in §3.5.

3.6.2 The habitual reading of the progressive

Yet another reading available to sentences with progressive-marked predicates based on episodic verbal predicates is the habitual reading (Sag, 1973). On this reading, the predicate to which the progressive operator applies is interpreted as a derived habitual/generic predicate rather than an episodic predicate. The progressive-marked sentences in (61) illustrate this reading.

(61) a. John *was driving* to the university until he rented an apartment closer to it.
b. For the first two months, Mary *was putting* the baby to bed.
c. Meanwhile, poachers *are killing* males (elephants) at an alarming rate for their tusks, which sell for lots of money on the black market.[28]

In the first example (61a), *drive-to-the-university* is an eventive predicate, but the progressive-marked sentence does not refer to a subinterval of the interval corresponding to a single episode of driving to the university. Rather, it conveys that there exists a larger interval within which there occurred multiple events in which John drove to the university and that this larger interval is of a temporally delimited nature. Similarly, in (61b), we infer that there were several culminated events of putting the child to bed during the two-month interval specified by the adverbial. Likewise for (61c).

One diagnostic for picking out this reading is to check whether the entailment that the event was completed goes through. If the progressive sentence is based on an eventive predicate, then it cannot entail that the event culminated (conveyed by the corresponding Simple Past sentence). However, if the progressive sentence is based on a habitual predicate, then the entailment about the culmination of an event denoted by the predicate associated with the sentence-radical should go through. This contrast is seen in (62). The adverbial modifiers serve to disambiguate the two readings, but are not necessary to license them.

(62) a. Yesterday, Mary *was putting* the baby to bed.
b. $\not\models$ Mary put the baby to bed.
c. For the first two months, Mary *was putting* the baby to bed.
d. $\models$ Mary put the baby to bed.

[28] http://www.sciencenewsforkids.org/articles/20031210/Feature1.asp

These facts suggest that the progressive predicate, on the habitual reading, does not directly apply to the eventive predicate associated with the uninflected sentence-radical, but rather to a derived habitual/generic predicate based on this sentence radical. The derivation is possibly effected by some abstract operator similar to GEN. The basic difference between (62a) and (62c) can be represented by the structures in (63a) and (63c) respectively.

(63) a. [PST[PROG[*mary-put-the-baby-to-bed*]]]
b. [PST[PROG[GEN[*mary-put-the-baby-to-bed*]]]]

The sentences in (61) are all also acceptable in the simple tenses with the habitual interpretation. In the simple tenses, the habitual interpretation can be said to arise because of a null GEN operator that applies directly to base episodic predicates. A habitual sentence like (64a) has the structure in (64b).

(64) a. For the first two months, Mary *put* the baby to bed.
b. [PST[GEN[*mary-put-the-baby-to-bed*]]]

What is the additional semantic contribution made by the progressive operator applied to the predicate derived by a covert GEN operator? I think that the effect of the progressive applied to habitual stative predicates is similar to the effect that it has on object-level stative predicates, discussed in §3.5.3. The progressive sentence contributes the additional assertion that the interval in which the habitual predicate is instantiated is temporally delimited; its simple tense counterpart is neutral with respect to this information. Progressive predicates, based on habitual/generic predicates, denote states that are characterized by episodicity and subject to change.

As Gennari (2003) notes, both lexical stative and habitual predicates are temporally persistent. They license an inference that they hold of superintervals of the intervals at which they hold. The progressive operator, specified in terms of the AT relation, explicitly cancels this inference, because it asserts that the base predicate is instantiated only AT a specific interval. The AT relation, as defined for stative predicates, asserts that there is no superinterval that properly contains the AT interval at which the stative predicate holds. It is this explication of the temporal boundary for stative predicates that is contributed by the progressive operator and that gives rise to the episodic interpretation for progressive-marked habitual predicates. This explicit information is absent for sentences in the simple tenses which are therefore neutral with respect to the temporal boundaries of the intervals in their denotation.

Before I conclude this section, let me point out that this reading for the progressive is not specific to English, but available to progressive morphology in other languages as well. My examples here come from Marathi (and this reading is also available to the Hindi Progressive). In Chapter 6, I will distinguish between languages that do not allow for this reading and languages in which this reading is predicted to be available, and propose an analysis that explains this variation within the progressive.

(65) a. gāḍī vikat ghyāy-cyā ādhi niṣā kāmāvar
car.NOM buy-INF-OBL before N-NOM.SG work-LOC

cālat jā-t hoti
walk go-PROG PST.3.F.SG

Before buying a car, Niśā *was walking* (lit: going walking) to work.

b. pahile don mahin-e niśā bāḷā-lā **zhop-va-t hoti**
first two month-PL, N-NOM.SG baby-ACC.SG sleep-CAUS-PROG PST.3.F.SG
For the first two months, Niśā was putting the baby to bed.

The Marathi examples in (65) are sentences with progressive marking. The progressive operator in Marathi is expressed by a periphrastic construction formed with the verbal participle with the affix *-t* and tense auxiliaries. In both examples, the progressive modifies a habitual predicate derived from an eventive predicate. (65a) refers to an interval during which the subject referent, *Niśā* made several trips to her workplace, while (65b) is licenses the interpretation that *Niśā* was responsible for putting the baby to bed or habitually put the baby to bed for the first two months (presumably after the baby's birth).

In the next section, I will point out why the habitual reading of the progressive presents a problem for one tenet of the approach taken here — transparency.

3.6.3 Transparency and derived stative predicates

In Chapter 2, I argued that one drawback of existing analyses of the imperfective and the progressive operators is that they appeal to covert, morphologically null operators that yield predicates that form the input to morphologically realized overt operators. For instance, eventuality-based analyses posit covert stativizing operators (e.g. De Swart 1998) while interval-based analyses assume some operator that must derive habitual predicates from base episodic predicates (e.g. Bohnemeyer 2002). The relation between the base predicate interval and the derived predicate interval is not explicitly provided in either analysis. The goal in this chapter was to provide a semantics for the imperfective and the progressive operators that explicitly related the intervals denoted by imperfective- or progressive-marked

predicates with the intervals at which the base predicate is instantiated. One guiding principle for this analysis was *transparency*.

A transparent approach takes overt morphological information seriously and attempts to compositionally build meaning with minimal reference to covert operations. The challenge for such an approach is to develop an appropriate 'load-bearing' semantics for morphological categories such as aspectual markers that can yield the range of interpretations available to them without requiring the mediation of covert stativizers or other such devices. Formulating the imperfective operator in terms of the INST relation, for instance, gives an underspecified semantics that accounts for the main readings of imperfective-marked predicates (progressive, habitual/generic, lexical stative, and perfective) and is also transparent. On this account, the imperfective morphology (affixal or constructional) realizes the imperfective operator and applies directly to sentence-radicals to yield the right kind of predicate without intervening covert operations. I take this to be an advantage of my analysis in that it does not require the postulation of an abstract stativizing or some such similar operator, but directly relates the base predicate with the imperfective-marked predicate via the semantics of overt imperfective morphology.[29]

Transparency is a methodological desideratum rather than a rigid constraint on logical representations. The hypothesis is that the constituents of the surface string of a sentence are the primary meaning bearing parts of a given semantic structure. The resulting semantic output may be ambiguous between several interpretations, which could then be disambiguated by covert operations that select for particular readings. Transparency only rules out the postulation of abstract operations *before* surface operations have taken place. In other words, positing a covert operator to whose output an overt morphologically realized operator applies (e.g. De Swart's analysis of the French Imparfait from Chapter 2), is dispreferred on this approach. Transparency is a restrictive principle and places serious constraints on the kinds of explanations that are acceptable, putting a particular emphasis on determining the lexical meanings of grammatical morphology such as tense/aspect markers. In the semantic domain examined here of the imperfective and the progressive aspects, this restrictiveness has served a useful purpose in providing a relatively simple semantics for the two operators. The alternative type of analysis, which resorts to covert operations, is not only less explanatory but also lacks the diachronic and cross-linguistic applicability that the analysis proposed here offers.

However, this approach faces a problem when dealing with the habitual reading of

[29] An operator like GEN is still available as a covert quantificational adverbial operator but the crucial difference is that it does not have the status of a stativizer, and it operates on the output of an imperfective-marked predicate to license the generic reading.

progressive-marked predicates, where the interpretation requires that an abstract habitual operator be applied *before* the progressive operator has applied.

The non-habitual and the habitual readings of the progressive can be informally expressed by the two structures in (66) for the expression *Mary was putting the baby to bed.* On the standard progressive reading (66a), the sentence refers to a single event, while on the habitual reading (66b) the sentence refers to a delimited stretch of time in which Mary was in the habit of putting the baby to bed.

(66) a. [PST[PROG[*mary-put-the-baby-to-bed*]]]
b. [PST[PROG[GEN[*mary-put-the-baby-to-bed*]]]]

The problem for the transparency approach is that there seems to be no overt morphological structure that corresponds to the semantic operation induced by the GEN operator in the semantic structure in (66b). At least for this case, we must assume a covert operator that applies to the sentence-radical before an overt operator such as the progressive does. A possible way out of this problem is to argue that this effect (covert before overt) is a result of a conflict between the complexity of the semantic structure and the expressive constraints on the morpho-syntactic structure. English has an aspectually neutral tense morphology (which is compatible with all aspectual interpretations, constrained by blocking) and an overt progressive operator. Sentences in the aspectually neutral simple tenses license the habitual interpretation because they are aspectually under-specified and compatible with both imperfective and perfective interpretations. Sentences with progressive-marked predicates license the interpretation that the base predicate is temporally delimited. The language does not have the expressive resources to deal with the complex semantics necessitated by an episodic predicate based on a derived habitual predicate. The outcome is that either morphological operator is acceptable for the expression of this complex semantic structure. Evidence for this is that both the simple tense morphology or the progressive morphology are acceptable in the expression of derived habitual episodic predicates. In (67a-b), we see that both the simple past and the progressive are acceptable verb forms for the derived predicate and contribute a more or less similar meaning. On the other hand, in (67c-d), the semantic effect of the simple past and the progressive verb forms is markedly different.

(67) a. For two months, Mary was putting the baby to bed.
b. For two months, Mary put the baby to bed.
c. Yesterday, Mary was putting the baby to bed.
d. Yesterday, Mary put the baby to bed.

This does not constitute a solution to the problem posed for transparency by the habitual progressive data, but presents an alternative approach to dealing with the semantic contribution of morphological material without resorting to covert material. The problem still remains open for further research.

3.7 The imperfective, the progressive, and blocking

In §3.2.2, I claimed that in languages which realize the imperfective and the progressive aspects imperfective-marked sentences typically do not license the progressive interpretation. On the other hand, the progressive interpretation is available to the imperfective in languages without a morphological progressive. These data can be interpreted in two ways: (a) the semantics of the imperfective operator differs from language to language, or (b) the semantics of the imperfective operator remains constant, but its distribution depends on the presence or absence of a morphologically realized progressive category. The second interpretation makes a stronger universal claim about the semantics of the imperfective operator and requires a further assumption that morphological forms with overlapping semantics are in a blocking distribution. The morphological realization of a specific semantic category blocks the application of a general semantic category in the specific domain. The *nested* analysis of the imperfective and the progressive that has been presented here provides an appropriate semantics to express the blocking relation. The range of the morphologically realized progressive operator is a subset of the range of the imperfective operator, and therefore, progressive-marked predicates block the progressive interpetation for imperfective-marked predicates. This semantics, together with the assumption of blocking, provides a simple explanation for the variation in the distribution of the imperfective morphology in languages with and without a morphologically realized progressive.

One contribution of the approach adopted here is that it teases apart the roles of morphological organization and semantic specification in the surface distribution of aspect markers in languages. It demonstrates how the distribution of an aspect marker is not solely determined by its semantic specification, but also by the existence and semantic specification of other aspect markers in the language.

3.7.1 Exceptions to blocking

However, the problem with this explanation, as I mentioned in §1.2.2, is that the blocking relation between exponents of aspectual categories does not parallel the relatively exceptionless pattern of morphological blocking phenomena. Not all languages which realize

both the imperfective and the progressive categories block the progressive interpretation for imperfective-marked predicates. In this variety of languages, imperfective-marked predicates appear to be in free variation with progressive-marked predicates in licensing progressive interpretation.

Consider the examples from Godié, a language of the Kru family (Marchese 1979: 108). In (68a), a special locative construction licenses a progressive interpretation. In (68b), the verb appears in the imperfective form and may license both progressive and a non-progressive habitual interpretation.

(68) a. ɔ **kɷ** sʉkʌ́ 6lɨ **dʌ**
she PROG rice pound place
She *is pounding* rice.

b. ɔ **6lɨ** sʉkʌ́
she pound-IMPF rice
a. She (habitually) *pounds* rice.
b. She *is pounding* rice.

Marchese further notes that in Godié (and most other Kru languages), the overlap in the possible interpretations for the progressive and the imperfective (labeled incompletive by him) aspectual morphology is constrained in one direction. The imperfective marker is compatible with a progressive interpretation; the progressive morphology is never compatible with a non-progressive (e.g. habitual or lexical) interpretation. So, for instance, the sentence in (68a) cannot receive the characterizing interpretation that the subject referent habitually pounds rice. A similar distribution of progressive and imperfective verb forms is also attested in more familiar languages such as French and Spanish. (69) gives examples from French that parallel the distribution of the progressive and imperfective in Godié.

(69) a. Il **lave** sa voiture
he wash-IMPF his car
a. He *washes* his car.
b. He *is washing* his car.

b. Il **est** **en train de laver** sa voiture
he be.3.SG in process of wash his car
a. He *is washing* his car.
b. *He *washes* his car.

It might appear that my analysis for the progressive and the imperfective operators is weakened by data from languages where the blocking relation does not hold between progressive- and imperfective-marked predicates. However, notice that the explanation provided here consists of two parts: (a) a nested analysis for the denotations of imperfective and progressive predicates, and (b) the blocking assumption. While the data from Godié and French shows that blocking is not exceptionless, it provides further evidence that the nestedness analysis is on the right track.

The overlap between the imperfective- and progressive-marked predicates is constrained; only imperfective-marked predicates can optionally license the progressive interpretation, and not vice versa. This demonstrates clearly that the denotation of imperfective-marked predicates properly includes the denotation of progressive-marked predicates — the crux of my hypothesis implemented by the nestedness property of the analysis proposed in this chapter. The data then does not pose a problem for the particular semantics that I have proposed for the two operators. However, it does pose a serious problem for my conception of the morphological relations that determine the distribution of overlapping semantic categories — viz. the blocking assumption. If blocking in the aspectual domain appears to be a language-specific option and not a categorical crosslinguistic fact, should we give up the idea of blocking entirely as part of the explanation for the distribution of overlapping semantic categories?

I think that the blocking assumption captures in a very intuitive way the insight of grammaticalization-based/typological studies that aspectual categories are in a privative opposition and makes a strong prediction about how aspectual space could get distributed when both the general and specific categories are morphologically realized in a given language. This prediction is validated in one set of languages, but falsified in another set. Rather than giving up the blocking hypothesis entirely, it appears to be more reasonable to examine whether there might exist yet another factor conditioning the relative distribution of overlapping semantic categories that can explain this diverging behavior. In the next section, I discuss two possible candidates for this part of the explanation: (a) competition between economy and expressiveness; and (b) diachronic status of aspect morphology. I propose that either of these factors could be seen as limiting the effect of the blocking principle and contributing to determining the distribution of aspectual categories.

3.7.2 Blocking and free variation

Competition between expressiveness and economy

Koontz-Garboden (2004) observes that there is statistical variation between Spanish monolinguals and bilinguals in the use of forms licensing progressive interpretation. Specifically, Spanish speakers, influenced by their contact with English, tend to use the Spanish Progressive (a periphrastic construction) more frequently than monolingual speakers in the expression of progressive meaning. The other competing form for the same progressive semantics is the Spanish Present, a synthetic form. Koontz-Garboden proposes two opposing constraints (framed within Optimality theory) to account for this variation in the expression of progressive meaning. The first is a faithfulness constraint (MAX-λ) which favors the use of the form that is semantically more specified with respect to the input specification. The second is a markedness constraint (labeled *X^0) that penalizes overt syntactic structure. The faithfulness constraint prefers candidates that are maximally expressive with respect to the input (EXPRESSIVENESS). The markedness constraint prefers syntactically and morphologically less complex forms (ECONOMY). The Spanish Progressive is a more expressive but less economical form. The Spanish Present is a less expressive but more economical form. Koontz-Garboden argues that the monolingual/bilingual variation arises as a result of variation in the probabilistic distribution of these two constraints and predicts that such variation can only arise in languages with both a synthetic and analytic means for expressing the progressive aspect.

Kiparsky (2005) offers a similar account of the Vedic Injunctive, a morphological form that freely alternates with several other tense/aspect marking categories in Vedic in a puzzling way. Kiparsky argues that the free ranking of EXPRESSIVENESS and ECONOMY constraints predicts a free alternation between less expressive (less explicitly specified) but more economical and more expressive but less economical forms for the expression of a given meaning.

Looking back to my formulation of blocking, we can reconceive of it as really articulating the faithfulness or the EXPRESSIVENESS constraint. The blocking principle states that given two available forms for the expression of a meaning σ, the most explicit, semantically specific form is used for expressing σ. Based on Koontz-Garboden (2004) and Kiparsky (2005), we can see that in addition to semantic specification, morphological/syntactic complexity also counts as a determining factor in whether one or both of the competing forms surface in the language in the expression of the same semantics.

I noted earlier in §3.7.1 that languages with a morphologically realized imperfective and

progressive fall into two sets — those where the imperfective does not license a progressive interpretation (e.g. Hindi); those where the imperfective freely alternates with the progressive in licensing the progressive interpretation (e.g. Godié, French). The proposals discussed here allow us to make sense of this diverging behavior in languages with the same set of morphosyntactic devices. In the first case, we have a categorical ranking of EXPRESSIVENESS above ECONOMY which prevents the imperfective-marked predicate (regardless of whether it is simple or complex) from licensing the progressive interpretation. In the second case, we have a free non-categorical ranking between the two constraints that results in the free alternation between the forms output by either constraint ranking.[30]

(70) a. EXPRESSIVENESS ≫ ECONOMY (Hindi, Swahili)

b. EXPRESSIVENESS, ECONOMY (Godié, French, Spanish)

To conclude, this section shows that in languages with both imperfective and a progressive forms, their distribution is determined not only by the blocking principle but also by the relative morphological complexity of both forms. This third factor predicts that free variation between the general imperfective-marked predicates and the specific progressive-marked predicates will only be attested in languages where the former class of predicates is morphologically simpler than the latter class of predicates.

Diachronic status of aspect morphology

The second possible explanation for free variation between imperfective- and progressive-marked predicates is not an independent explanation but closely relates to and builds upon the one sketched out above. The basic idea is that free variation occurs only in those cases where the exponent of the progressive aspect is diachronically more recent than the exponent of the imperfective aspect, and is not a fully grammaticalized aspect marker. The relative chronological appearance of the imperfective and progressive morphology links with the earlier explanation of morphological complexity in two ways.

First, forms for innovated semantic categories are built up from the existing morpho-syntactic devices in a language and are expected to be morpho-syntactically more complex than forms for already existing semantic categories. So the claim that the marker for the progressive aspect be diachronically more recent than the marker for the imperfective aspect is compatible with the situation that the progressive marker is structurally more complex

[30]Notice that on the third possible ranking where ECONOMY is categorically ranked above EXPRESSIVENESS, the specific yet morphologically complex progressive form would never be expected to surface.

than the imperfective marker. Not only is it compatible, it further provides a motivation for why the progressive might be structurally more complex than the imperfective.

Second, if the progressive marker is diachronically more recent than the imperfective marker, we can predict that the general imperfective marker licensed the progressive interpretation at the pre-progressive stage. In the absence of a competing more expressive expression such as a progressive marker, the imperfective emerges the winning candidate in the expression of progressive semantics. The innovation of the semantically more expressive progressive marker, facilitated by the morphosyntactic resources of the language, results in competition between the older imperfective and the innovated progressive forms. The same constraints of ECONOMY and EXPRESSIVENESS, ranked freely with respect to each other, account for this competition and the resulting free alternation. The less expressive but more economical imperfective form alternates with the more expressive but less economical innovated progressive.

On this diachronic scenario, the competition is assumed to be the consequence of an innovation that changes the aspectual sub-system. This line of explanation takes a more restrictive perspective on free variation than the accounts offered by Koontz-Garboden (2004) and Kiparsky (2005). Specifically, it hypothesizes that imperfective- and the progressive-marked predicates will alternate in the expression of progressive semantics in only those languages in which the progressive is a relatively more recently innovated category than the imperfective. It also hypothesizes that every language with an innovated progressive form and an existing imperfective form should undergo a stage where the two forms are in free alternation: a stage with free constraint ranking between EXPRESSIVENESS and ECONOMY.

This explanation also goes one step further in predicting three logical possibilities as the diachronic outcome of constraint competition. The first possibility is that the free ranking of constraints remains stable in the language system, while the other possibility is that the freely ranked constraints are later reordered into a categorical ranking. The free variation scenario in (71a) outputs a system in which the imperfective and the progressive (or to generalize, the more economical but less expressive vs. the less economical but more expressive form) forms remain in a stable relation of free variation. The ordering in (71b) outputs a system where the distribution of the imperfective is blocked by the progressive (e.g. Hindi), while the ordering in (71c) outputs a system in which an innovated progressive fails to be established as a stable grammatical category in the language.

(71) a. ECONOMY, EXPRESSIVENESS

b. EXPRESSIVENESS $\gg$ ECONOMY

c. ECONOMY $\gg$ EXPRESSIVENESS

It is an empirical question whether the attested cases of (71a), for instance, Spanish, French, or Godié reflect an effect of a stable grammar with freely ranked constraints or whether they represent the intermediate stage from a progressive-less system to one with the progressive, which, as I stated before, must be characterized by a non-categorical constraint ranking. The latter option makes a stronger claim about the distribution of the imperfective and the progressive (and more generally, general and specific aspectual forms). The claim is that all cases where the distribution of imperfective- and progressive-marked predicates is not determined by the blocking principle, are cases of a 'grammar in flux' or a non-stable system with free non-categorical constraint ranking. Such grammars are predicted, on this claim, to diachronically 'move' to a more stable system of categorical constraint ranking, instantiating the systems in (71b) or (71c). it remains to be seen if such a strong claim can be justified and what kind of data could constitute evidence for it.

Summary

The question for this section was whether there is an explanation for why languages which realize both a progressive and an imperfective category show diverging distributional properties for the imperfective. In particular, the blocking principle failed to explain the existence of languages in which the imperfective freely alternates with the progressive in licensing the progressive interpretation. I sketched out an explanation for this free variation along the approach taken in Koontz-Garboden (2004) and Kiparsky (2005) to argue for the relevance of morpho-syntactic complexity as yet another factor in determining the distribution of the two types of predicates. I also offered a sketch of a diachronic explanation that builds up on these formal accounts and motivates the free variation in terms of the relative recency of the specificprogressive marker. The diachronic story also makes distinct predictions about the outcome of the constraint competition which corresponds to three typological possibilities for the changes following the innovation of a progressive marker. Finally, I proposed that one of these possibilities (free variation) could be reduced to the transitional effect of a system in flux rather than being the reflection of a stable system of free constraint ranking.

3.8 Conclusion

Let us summarize the main points of discussion in this chapter. In §3.2, I presented crosslinguistic and diachronic ecidence to argue that the semantic similarity between lexical stative, progressive, and habitual predicates observed in Chapter 2 has morphological correlates in synchronic and diachronic phenomena. Based on these facts, I set out to provide an analysis

for the imperfective and the progressive operators that is consistent with the nestedness relation that characterizes their outputs. An additional constraint was that the operators be load-bearing i.e. they specify how the inferences they license follow from the predicates of temporal intervals that they yield. In §3.4, I proposed that the imperfective operator should be formulated in terms of the INST relation. This formulation provided a natural account for the progressive, lexical stative, habitual/generic, as well as the (sometimes attested) perfective-like readings of sentences with imperfective-marked predicates. The semantics of the progressive operator (§3.5) , formulated in terms of the *at* relation, constitutes a minor variation on the imperfective operator. However, this difference can account for the main readings available to sentences with progressive-marked predicates and straightforwardly show why the denotation of progressive predicates is a proper subset of the denotation of imperfective predicates. I also showed how the specification of progressive semantics in terms of AT in contrast to INST is also responsible for the episodicity effect of the progressive. In §3.6 I discussed two additional inferences licensed by progressive-marked predicates and considered why one of these — the habitual reading of the progressive — poses a problem for the transparency principle that has guided this analysis. §3.7 showed that a nested semantics for the imperfective and progressive operators, together with the blocking principle, failed to account for a subset of languages which realize both the progressive and imperfective operators. These are languages in which there is no blocking effect; the imperfective freely alternates with the progressive in the expression of progressive semantics. I suggested, based on analyses of comparable data, that in such cases, yet a third factor, viz. morphological complexity, is responsible for determining the relative distribution of the two categories. I provided a sketch of a diachronic explanation that motivates the formal account offered for such free variation.

Chapter 5 and Chapter 6 are empirical studies of diachronic and synchronic facts about the distribution and interpretation of the imperfective and progressive markers in some Indo-Aryan languages. These chapters build up on and further substantiate the theoretical analysis developed in this chapter. The next chapter provides the background for comprehending the changes in the systems discussed in these later chapters.

Chapter 4

The loss of tense distinctions

4.1 Introduction

This chapter, together with Chapters 5 and 6, comprises the empirical basis of my dissertation. Part of the goal of this dissertation is to reconstruct some broad changes in the diachrony of the Indo-Aryan tense/aspect system. This empirical goal interfaces with the theoretical account of the imperfective and progressive aspects from Chapters 2 and 3 in a dual way. First, there are some patterns of change and variation in the history of Indo-Aryan languages that can be naturally explained with the theory developed there. On the other hand, diachronic data from a language family as well and long documented as Indo-Aryan, can allow us to reassess and make precise our understanding of patterns of change in aspectual categories (such as the grammaticalization paths briefly described in Chapter 3). The next two chapters will explicate this relation.

In this chapter, I build the empirical background necessary to understand the changes occurring in late Middle Indo-Aryan (MIA) and New Indo-Aryan (NIA) languages. In doing so, I also make an original empirical claim about the reorganization of the tense/aspect system from Old Indo-Aryan (OIA) to MIA.[1] In particular, I show that the proto-system underlying at least some Indo-Aryan languages must be reconstructed as an aspect-based system that lacks a morphologically expressed tense contrast.

I will argue that both textual data and synchronic comparison support the reconstruction of the following broad changes in the Indo-Aryan tense/aspect system:

[1]When I speak about tense/aspect systems at the level of the language family rather than individual languages or dialects, I am not over-generalizing. The effects of the particular changes I am concerned with are visible in most MIA dialects and their NIA descendents, justifying this generalization.

(1) a. Morphological distinctions between the past, present, and future tenses in OIA were lost in the proto tense/aspect system underlying some NIA languages.
b. The present-past distinction was lost in the transition from OIA to MIA.
c. The resulting MIA system was based on the contrast between the imperfective and perfective aspects.
d. OIA future tense morphology was lost in a subset of the MIA dialects, viz. the ancestors of the standard languages Marathi and Hindi.

This claim is new for Indo-Aryan historical linguistics for the following reason. Although the loss of individual tense/aspect markers and paradigms has been carefully documented in Indo-Aryan historical grammars (Beames, 1872-79; Bloch, 1914; Kellogg, 1893, and others), this loss has not been connected to the reorganization of the larger tense/aspect system along aspectual lines. In particular, it has been assumed that the semantic category Tense is morphosyntactically encoded in Indo-Aryan at all times from OIA onwards. My claim is that the facts require a different interpretation. While OIA and many contemporary NIA languages both have morphological tense distinctions, at least a subset of MIA languages are best analyzable as lacking this category. I present two kinds of evidence in support of this claim: (a) textual data from MIA and early NIA, and (b) internal and comparative reconstruction based on the synchronic distribution of OIA-cognate morphology in the NIA languages. I show that a number of the distributional properties of the MIA and synchronic NIA tense/aspect markers fall into place once we assume that the OIA tensed system was reorganized along the aspectual dimension at some stage in MIA.

A full treatment of the changes in the tense/aspect system from OIA to NIA in all its detail is far beyond the scope of this brief study. The goal is rather to determine what the broader principles are that might underlie the loss and innovation of tense/aspect markers and changes in the distribution and interpretation of existing markers in Indo-Aryan diachrony. The loss and reacquisition of morphological tense marking appears to be one promising candidate for this. The goal for this chapter is to present the various arguments that support this hypothesis, creating the basis for asking more specific empirical questions about change in Indo-Aryan tense/aspect.

The fact that such a change has been extensively documented through textual data over a long period of time is also exciting from a theoretical perspective, since it can provide the empirical basis for furthering our understanding of how languages change from being tense-based systems to aspect-based systems and vice versa. If there are generalizations to be made about morphological expression and loss of overt tense marking over time and the

principles that determine this, the Indo-Aryan family presents a rich location for studying them.[2]

4.1.1 Indo-Aryan chronology and the data

The chronological ordering of the linguistic stages that I will be referring to is in (2). Indo-Aryan languages are divided into three broad stages — separated by double lines in (2), with sub-stages within each stage.

(2) **The Chronology**[3]

TIMELINE	LANGUAGE	SOURCE
1700-1200BCE	Vedic (OIA)	Ṛgveda (RV)
200BCE	Epic Sanskrit (OIA)	Mahābhārata (MBh)
300BC-700CE	Prakrit (MIA)	Vasudevahiṁḍi (VH)
700-1000CE	Apabhraṁśa (MIA)	
1000-1500CE	Old Marathi (Old NIA)	Dnyāneśwarī (D)
		Govindaprabhucaritra (GC)
	Old Gujarati (Old NIA)	Ṣaḍāvaśyakabālāvabodha.(SB)
	Old Hindi (Old NIA)	Prithvirāja Rāso (PR)
Present	Gujarati, Marathi, Hindi (NIA)	
	Pawri, Dehawali, Ahirani (NIA)	
	Konkana (NIA)	

The leftmost column in (2) gives the approximate dates for each period, the center column gives the name for the language(s) or dialect(s) representing the period, and the rightmost column gives the textual source used for each period. For the contemporary NIA languages, the data is based on my native intutions (Marathi and Hindi) and fieldwork with informants (Gujarati, Pawri, Dehawali, Ahirani, and Konkana). The data for the non-standard languages (Pawri, Dehawali, Ahirani, and Konkana) report my own fieldwork findings. Some of the OIA data and most of the MIA and Old NIA historical data are findings from my own textual research.

[2]It is worthwhile to note that Proto Indo-European has been reconstructed as an aspect-based system lacking morphological tense marking. Vedic, the oldest documented OIA language, on the other hand, makes morphological tense distinctions. If I am correct, MIA (or more precisely, the proto-system for some NIA languages) lacks tense distinctions, while NIA regains them. This suggests a cyclic pattern for loss and acquisition of tense at least within this branch of Indo-European.

[3]Approximate dates are based on Witzel (1999), Bubenik (1996), Alsdorf(1936), Tulpule (1960), Pandit (1976), Beames (1966).

4.1.2 Structure of the chapter

The organization of this chapter is as follows. In §4.2, I describe the present and past referring categories in Vedic and Epic Sanskrit, which shows the OIA does morphologize the present-past tense distinction. The main goal of §4.3 is to demonstrate that unlike the OIA system, MIA does not contrast the past and present tenses, but realigns its morphological forms along an aspectual contrast between the imperfective and the perfective aspects. I provide textual evidence from MIA to argue against two widely held assumptions in the MIA grammatical literature — (a) the OIA Present Tense paradigm (labeled **impf** here) realizes present tense in MIA and (b) the OIA *–ta* participial paradigm realizes the past tense in MIA. In particular, I show how these forms have been inaccurately classified despite careful documentation of their actual distribution in the MIA texts. In §4.4, I support my claim with evidence from NIA languages, which reflect to varying degrees, the aspectual properties of the **impf** paradigm and its lack of temporal specification. I argue that the NIA facts can be accounted for only on the hypothesis that **impf** realizes imperfective aspect in MIA. In §4.5, I present some evidence for the loss of the relatively stable OIA Future Tense morphology for the ancestor of some NIA languages, thus reconstructing a completely tense-less state for one branch of Middle Indic. In §4.6 I bring up a puzzle for the apparent change in the semantics of the **impf** paradigm from OIA to MIA. How does a morphological marker for present *tense* radically shift to become a marker of imperfective *aspect*? I lay out a tentative hypothesis that **impf** realizes imperfective aspect at all stages in Indo-Aryan and that its apparent restriction to the present tense in OIA is an effect of the presence of past referring categories in OIA. This hypothesis can provide a natural explanation for the distributional changes in **impf** from OIA to MIA. §4.7 summarizes the evidence and my interpretation of it and concludes.

4.2 The past-present distinction: OIA to MIA

The main goal in this section is to demonstrate that the morphologized distinction between the past and present tenses that characterizes the OIA tense/aspect system is absent in its MIA counterpart. I proceed to show this in the following way. First, I describe the distribution of the morphological forms that refer to past and present eventualities in OIA and show that the two tenses are morphologically contrasted at that stage. §4.2.1 provides a brief description of the Vedic tense/aspect system — focusing on morphological markers with present and past time reference. §4.2.2 describes the properties of the tense/aspect system of Epic Sanskrit, concentrating on the collapse of semantic distinctions between the

various past-referring categories of Vedic and the increase in the use of the PERF morphology for past time reference. In §4.2.3, I describe the morphologically simplified tense/aspect system of MIA, and demonstrate that the loss of past-referring finite verb morphology has consequences for the configuration of the tense/aspect system, as is evidenced in the distribution of both the **impf** and PERF morphology. §4.4 brings in further evidence for the loss of the past-present distinction in MIA based on comparative data from synchronic NIA languages.

4.2.1 OIA: Vedic

The OIA verbal morphological system consists of several paradigms marking distinct intersections of temporal, aspectual, and modal categories (Delbrück, 1888; Whitney, 1889; Speijer, 1886). The discussion here is restricted to the present and past tense forms of the indicative mood. Descriptive grammars of OIA make reference to a number of finite past tenses that are employed in referring to past eventualities — the Imperfect, the Aorist, and the Perfect. The distribution of these forms is extremely complex and involves a number of apparently overlapping contexts of occurrence. For a detailed description of the range of semantic interpretations available to each of the past-referring categories, the reader may turn to Delbrück 1888, Gonda 1962, Renou 1925, and Hoffman 1967. The main generalizations for Vedic tense/aspect have been worked out by Delbrück (1888) and more recently, analyzed in a Reichenbachian framework by Kiparsky (1998).[4] The distribution of the various forms is summarized in (3).

(3)

TENSE	ASPECT			
	neutral	**imperfective**	**perfective**	**perfect**
present		*gaccha-ti* Present		
past	*a-gaccha-t* Imperfect		*a-gā-t* Aorist	*ja-gā-ma* Perfect

[4]The only point where Kiparsky's analysis differs from the one summarized here is with respect to the Aorist. Kiparsky analyzes the Aorist as denoting the resultative perfect. However, he does show that the Aorist allows for eventive past time interpretations, a property at odds with the stative meaning of a resultative category. Gonda (1962) describes in detail both the eventive and resultative uses of the Aorist. This distribution suggests that it could be a category similar to the Russian Perfective, which licenses both eventive and stative interpretations (Paslavska & von Stechow, 2003). This difference of opinion is not of import to the discussion here, which is limited to establishing that Vedic morphologizes the present-past distinction.

Each italicized form is the third person singluar form of the paradigm that it represents for the verb *gam* 'go'. The term below the form lists the label for the paradigm in the Indo-European tradition. The cell that a form occurs in indicates how the distribution of that paradigm may be best (although not perfectly) classified in terms of language-neutral semantic categories. The neutral aspect cells indicates that the paradigm is not specified for any aspect, but is compatible with both perfective and imperfective representations (in spite of the misleading name for the neutral past tense form — the Imperfect).

The Present in Vedic

The Present paradigm listed in (4) is an important morphological paradigm in Indo-Aryan diachrony that has cognates in the MIA and NIA languages.

(4) **Present tense paradigm**

PERSON	SG	DUAL	PL
1-M F N	gacchā-**mi**	gacchā-**vas**	gacchā-**mas**
2-M F N	gaccha-**si**	gaccha-**thas**	gaccha-**tha**
3-M F N	gaccha-**ti**	gaccha-**tas**	gaccha-**nti**

The changes in the distribution of this paradigm and the interpretations it is associated with will be traced over a broad diachronic period. In particular, although the paradigm is restricted to the present time imperfective interpretation in OIA, this changes at the MIA and NIA stages. Forms from this paradigm, regardless of which stage they appear at, are uniformly glossed **impf** (for imperfective aspect) in the boldface, in contrast to other glosses which follow the small capitals convention.

The **impf** paradigm realizes the present tense in Vedic. It is aspectually imperfective and licenses both progressive and non-progressive stative interpretations. The examples in (5) illustrate the progressive interpretation for **impf**.

(5) a. **śíśī-te** nūnám paraśú-ṃ suāyasá-ṃ
sharpen-**impf.**3.SG now axe-ACC.SG iron-ACC.SG
Now, he *is sharpening* his axe, made of iron. (RV 10.53.9c)

b. sóma-sya dhā́rā **pava-te** nṛcákṣasa
S-GEN.SG stream.F.SG flow-**impf.**3.SG radiantly
The stream of Soma *is flowing* radiantly. (RV 9.80.1a)

In (5a), the **impf** form refers to an ongoing episode of axe-sharpening, temporally located by the adverbial *nūnám* 'now'. (5b) is uttered as the Soma juice is being passed through

a strainer to be filtered and also has an episodic progressive interpretation. In (6), we see that **impf** also licenses non-progressive interpretations and can occur with lexical stative predicates (6a) and also give rise to a habitual/generic interpretation (6b-c).

(6) a. tuvā́ṃ hí agn-e diviyá-sya **rāja-si**
you.NOM.SG EMPH A-VOC.SG heaven-GEN.SG reign-**impf.**2.SG
Agni, you (are the one who) *reign* over the heaven. (RV 1.144.6a)

b. ukṣá-bhiḥ... úṣo vára-ṃ **vaha-si**
bull-INS.PL U.VOC.SG boon-ACC.SG carry-**impf.**2.SG
Uṣas (Dawn), you *carry* (convey) the boon with the bulls (RV. 6.64.5 a-b)

c. sá íd bhojó yó gṛhá-ve **dádā-ti**
he.NOM.SG PTCL generous.NOM.SG who.NOM.SG beggar-DAT.SG give-**impf.**3.SG
He is a generous man who *gives* to the beggar. (RV 10.117.3a)

Based on this distribution of **impf**, it may be said that **impf** is the morphological paradigm specified for present tense and imperfective aspect in Vedic.

The Imperfect in Vedic

The Imperfect paradigm listed in (7) is cognate to the Greek and Latin Imperfect. The inflection consists of the prefix-like augment *a* that marks past temporal location and the secondary person-number suffixes. The distribution of this paradigm is different in OIA. Unlike in ancient Greek and Latin, the OIA Imperfect is not restricted to imperfective interpretation, but appears to also license the eventive interpretation.

(7) **Imperfect paradigm**

PERSON	SG	DUAL	PL
1-M F N	**a**-gaccha-**m**	**a**-gacchā-**va**	**a**-gacchā-**ma**
2-M F N	**a**-gaccha-**s**	**a**-gaccha-**tam**	**a**-gaccha-**ta**
3-M F N	**a**-gaccha-**t**	**a**-gaccha-**tām**	**a**-gaccha-**n**

Consider the examples in (8). In (8a) the lexical stative predicate *śī* 'lie' has the Imperfect inflection and the sentence has a stative interpretation — it describes a state holding in the past; the state to which the defeated enemy of the protaganist had been reduced. (8b) has the habitual interpretation and refers to plural past instances of worshipping.[5]

[5]The verb *yaj* 'worship' belongs to the *Ātmanepada* class of verbs which conjugate differently from the *Parasmaipada* class of verbs, whose paradigm is given in (7). Also note that *yaj* does not have a stative meaning in this sentence, but rather refers to active acts of worship indicated by ritual sacrifice and offering. This is what makes the Imperfect-inflected predicate a habitual predicate.

(8) a. vṛ́ṣṇo vádhri-ḥ pratimā́naṃ búbhūṣan purutrā́
manly.NOM.SG emasculated-NOM.SG like becoming everywhere

vṛtró **a-śay-at** víasta-ḥ
V.NOM.SG lie-IMPFCT.3.SG dismembered-NOM.SG
Emasculate yet claiming manly vigour, thus Vrtra *lay* with scattered limbs dismembered. (RV 1.32.7.c-d)

b. yathā́ **á-yaj-a** ṛtú-bhiḥ deva de-vā́n
as worship-IMPFCT.2.SG time-INS.PL God.VOC.SG God-ACC.PL

evā́ yaja-sva tanúvaṃ sujāta
thus worship-IMP-2-SG self noble-born-VOC.SG
As you regularly *would worship* the Gods, O God, noble-born, thus worship yourself now. (RV 10.7.6c-d)

As mentioned above, the Imperfect is not restricted to stative interpretation but may also refer to culminated events. In (9), eventive verbs like 'slay', 'cut (through)', and 'choose' are inflected with Imperfect morphology but do not receive a stative interpretation.

(9) a. **á-han** áhi-m ánu apás **tatarda** prá
kill-IMPFCT.3.SG dragon-ACC.SG up water-ACC.PL open-PFCT.3.SG forth

vákṣaṇā **a-bhina-t** párvatā-nām
rushing cut-IMPFCT.3.SG mountain-GEN.PL
He *slew* the Dragon, then *opened up* the waters, and *cut* channels through the mountain torrents (rushing forth). (RV 1.32.1c-d)

b. vṛṣāyámāṇo **a-vṛṇī-ta** sóma-m tríkadruke-ṣu
like.a.bull.NOM.SG choose-IMPFCT.3.SG soma-ACC.SG three.beaker-LOC.PL

a-piba-t sutá-sya
drink-IMPFCT.3.SG pressed-GEN.SG
As a bull, he *chose* the Soma and in three sacred beakers *drank* of the pressed (Soma). (RV 1.32.3a-b)

The first example, (9a), narrates a series of events taking place one after the other. The Imperfect inflected verbs *ahan* 'killed' and *abhinat* 'cut', cannot be interpreted as ongoing or unculminated in this narrative context. These sentences take the narrative forward, akin to eventive predicates, showing that the Imperfect morphology can also license eventive

interpretation. (9b) describes a particular event of Soma-choosing and drinking, where the eventive interpretation is again the most natural one for the Imperfect given the context.

The Imperfect is described as the tense typically used for narrating sequences of past events (Delbrück 1876:90; Whitney, 1892; Hoffmann 1967:151). The fact that the Imperfect may license both stative and eventive interpretations in Vedic suggests that it is aspectually neutral. Imperfect-inflected predicates describe both stative and eventive eventualities located in the past with respect to speech time. Based on its aspectual neutrality, Kiparsky (1998) analyzes the Vedic Imperfect as realizing the aspectually unmarked past tense category.

Interim summary

So far, we have seen that the Present and the Imperfect realize the present and the past tenses respectively, which shows that the present-past contrast is morphologized in OIA at the Vedic stage. The Aorist and the Perfect, to be discussed next, are aspectually marked, but in addition, perform a temporal location function, which is why they have been described as 'past tenses' in grammatical descriptions of Vedic. Taken together, the Vedic morphological system must be interpreted as one making morphological distinctions between the present and past tenses.

The Aorist in Vedic

For Proto-Indo-European, the Aorist has been reconstructed as the marker of perfective aspect in opposition to the imperfective Imperfect. Within Vedic, it has been notoriously difficult to establish this contrast based on the uses of the Imperfect and Aorist (Gonda, 1962:258-261; Delbrück, 1876; Hoffman, 1967).[6] As we have seen, the Imperfect licenses both stative and eventive interpretations which is why it is analysed as an aspectually unmarked past tense in Vedic. The distribution of the Aorist is complex but it most frequently denotes culminated, completed events located in the past time as in (10a-b).

(10) a. **nā́tarī-d** asya sámṛti-ṃ vadhā́nāṃ
NEG-bear-AOR.3.SG he-GEN impact-ACC.SG weapon-GEN.PL
He *did not withstand* (failed to withstand) the impact of his weapons. (RV 1.32.6)

[6]Hoffman (1967) has been able to demonstrate that within the subsystem of prohibitive injunctives, the augmentless Imperfect and Aorist forms license an imperfective and perfective interpretation respectively, suggesting that the original PIE contrast might be visible only in this sub-system at the Vedic stage.

b. sávanaṃ vivér apó yáthā purā́
oblation.NOM.SG work-INJ.3.SG work.ACC.SG as formerly

mána-ve gātú-m **áṣre-t**
M-DAT.SG way-ACC.SG provide-AOR.3.SG

The oblation has fulfilled its purpose, just as it once *prepared* the way for Manu. (10.76.3)

The Aorist is especially used in referring to the immediate past time, paralleling the 'recent past' use of the English Perfect, where the event denoted by the base predicate is interpreted as having occurred just before speech time.

(11) a. gā́-m aṅgaíṣa ā́ hvaya-ti dárv aṅgaíṣo **ápāvadhī-t**
cow-ACC.SG here call-**impf.**3.SG tree.ACC.SG here fell-AOR.3.SG

vasann araṇyāny-āṃ sāyá-m **á-krukṣ-ad** íti manya-te
living forest-LOC.SG night-ACC.SG scream-AOR.3.SG QUO think-**impf.**3.SG

Here, (someone) calls out to a cow, here (someone) *has felled* a tree; at night, living in the forest, one thinks that someone *has screamed*. (RV 10.146.4)

b. idā́ hí vo dhiṣáṇā devī́ ahn-ām **á-dhāt**
now PTCL you.DAT.SG D.NOM.SG goddess.NOM.SG day-ACC.SG set-AOR.3.SG

pītí-ṃ sám mádā a-gma-tā vaḥ
drink-ACC.SG towards gladdening reach-AOR.3.PL you.ACC.SG

This day, now, the Goddess Dhiṣaṇā *has set* forth the drink for you. The gladdening draughts *have reached* you. (RV 4.34.1.c)

Further the Aorist has an aspectual function. In subordinate clauses and in modal contexts, it marks perfective aspect and relative anteriority of an eventuality with respect to the interval denoted by the main clause (like the English Pluperfect). I do not discuss these functions in detail in the interest of continuing with the main point of this section — the present-past distinction in Vedic. The Aorist is relevant to establishing this because it realizes yet another category that contrasts with the Present in morphologically marking this tense distinction.

The Perfect

The Perfect, like the Aorist, is reconstructible for Proto-Indo-European as an aspectual category with result-stative value (Renou 1925).[7] In Vedic, this function is retained for a class of achievement predicates, but most often, the Perfect has past time eventive reference.[8] The examples in (14) illustrate the temporal locating function of the Perfect.

(14) a. á́ **dad-e** vas trī-n yukt-ān
to give-PFCT.1.SG you-DAT.SG three-ACC.PL yoked-ACC.PL
I *recieved* three (chariots) in harness for you. (RV 1.26.5.a-b)

b. urú kṣáyā-ya **cakrir-e**
wide.ACC.SG dwelling-DAT.SG make-PFCT.3.PL
[They conquered heaven, earth, and the waters] They *made* themselves a wide homeland. (RV 1.36.8.a-b)

Summary for Vedic

In this section, I described the distribution of four morphological paradigms: the Present, the Imperfect, the Aorist, and the Perfect. The Present contrasts with the other three categories in its temporal reference. The Imperfect is the unmarked past tense, and may refer to both stative and eventive eventualities located in the past. The Aorist and the Perfect, originally aspectual categories, also have past time eventive reference. The tense

[7] For a full description of the uses of the Perfect, I refer the reader to Renou (1925) which is devoted to the Vedic Perfect and a more concise summary in Kiparsky (1998). The Perfect paradigm is formed with a special reduplicated stem and its own set of person-number endings.

[8] Consider the Perfect forms of the verbs in (12). These denote result-states and have a default present time reference. This, according to Renou, is diachronically the earliest function of the Perfect.

(12)

	root	perfect	interpretation
a.	*vid* 'know'	*veda*	'knows' (has come to know)
b.	*cit* 'think'	*ciketa*	'knows' (has come to know)
c.	*bhi* 'fear'	*bibhāya*	'fears' (has become frightened)
d.	*juṣ* 'rejoice'	*jujoṣa*	'rejoices' (has rejoiced)
e.	*dhā* 'hold'	*dadhāra*	'holds' (has held)
f.	*sthā* 'stand'	*taṣṭhau*	'stands' (has stood)

With these predicates, the Perfect licenses a result-stative interpretation and may be coordinated with the Present, which has present time reference. This is illustrated in (13). The perfect form of the the verb *bhi* 'fear' is *bibhāya* and it is used in this context to refer to the state of having become scared, which holds at reference time (the present).

(13) ká īśa-te tujyá-te kó **bibhāya**
who flee-**impf.**3.SG rush-**impf.**3.SG who fear-PFCT.3.SG
Who *is fleeing* and *rushing*, who is afraid? (RV 1.84.17)

opposition between the Present and the other three categories supports the descriptive claim that Vedic realizes the present-past distinction morphologically.

4.2.2 OIA: Epic Sanskrit

There are two main points of distinction between Vedic and the later OIA Epic Sanskrit stages in the categories for present and past time reference according to existing grammatical descriptions.

a. The Imperfect, the Aorist, and the Perfect may be used interchangeably for past time reference and often occur together (Oberlies, 2003:152-154; Brockington, 1998:352; Speijer, 1886).
b. A new participial form — the PERF form — becomes available for referring to past, culminated events.

The distribution of the Present remains unchanged. The generalization is that the past-present opposition is still maintained at the Epic Sanskrit stage of OIA. In this section, I will run through examples of the the Imperfect, the Perfect, and the Aorist to show that they all have past time reference and occur in the same discourse contexts.[9] The examples in (15) illustrate the use of the Imperfect, the Aorist, and the Perfect forms in the same

[9]For the purpose of showing that the present and the past tenses are morphologically contrasted in Epic Sanskrit, it is not crucial to know the real distribution of the three forms. Specifically, the claim that I have to make pertains to MIA, which does not inherit any of them from OIA. However, I want to point out that it is problematic to assume that the Imperfect, the Aorist, and the Perfect are interchangeable with no real distinction between them at the Epic Sanskrit stage. Moreover, as far as I know, it has not been substantiated through a close linguistic and statistical study of the distribution of the three forms. It is not clear whether the Imperfect, Aorist, and Perfect forms are available for every verb or whether there are semantic restrictions (or tendencies) for preferred paradigms for particular verbs. Further, while it is known that all three forms license past eventive interpretations, it is unknown whether all of them are also compatible with past stative interpretations (a highly unlikely possibility). This question can only be resolved through textual studies directed by semantically sophisticated research questions.

In the absence of more nuanced research that yields insight into their distribution, however, we can speculate about why it might be the case that the three categories do not appear to be distinguishable in terms of their function in Epic Sanskrit. In my opinion, the strongest candidate for an explanation is the possibility that the writers of the Sanskrit Epics, are, in fact, speakers of a language with a proto MIA type system (characterized by a single perfective form and no further distinctions within the perfective domain). This is not at all impossible since we know that the MIA Prakrits were the vernacular languages in the region at least since the 300 BCE (based on Aśokan inscriptions). On the other hand, Sanskrit was the learned language of prestige. It is possible that MIA native speakers, whose language was characterized by a single aspectual category that referred to past situations — the perfective — mapped on the distinct Vedic paradigms onto this single category, when writing in Sanskrit. This can account for why the three paradigms appear to be undifferentiated in terms of their distribution. It also accounts for the increased frequency in the usage of the PERF morphology (Avery, 1875), an anticipation of the later MIA system, where this is the only exponent of the perfective aspect.

local discourse, without any apparent difference in interpretation. (15a) employs the Aorist and the Imperfect side-by-side, while in (15b), the directed motion verbs *gam* 'go' and *āgam* 'come' are inflected in the Aorist and the Perfect respectively with no apparent meaning difference.

(15) a. sa me vara-m **a-dā-t** prītaḥ kṛtam
he.NOM.SG I.DAT.SG boon-ACC.SG give-AOR.3.SG pleased-NOM.SG 'honored'

ity aham **a-bruva-m**
thus I.NOM.SG say-IMPFCT.1.SG

He, pleased, *gave* me a boon, and I *said* (that I was) grateful (honored). (Mbh. 15.38.4a)

b. sa ca daityagaṇa-s tadā pātālam **a-gama-t**
he-NOM.SG and demon.group-NOM.SG then P-ACC.SG go-AOR.3.SG

sarvo viṣādabhayakampita-ḥ tataḥ pitāmaha-s tatra...
all sorrow.fear.trembling-NOM.SG then great.father-NOM.SG there

ājagām-a viśuddhātmā pūjayiṣyaṃs tilottamā-m
come-PFCT.3.SG pure.soul.NOM.SG worship.desiring T-ACC.SG

And then that entire group of demons, trembling with sorrow and fear, *went* to the netherworld. Then the Grandfather, the one of pure soul, *came* there to worship Tilottamā. (Mbh. 12.40.20-21)

The sentences in (16a-c) are consecutive sentences and refer to events taking place one after another in time, advancing reference time, each of them using the Aorist, the Imperfect, and the Perfect respectively.

(16) a. etac chru-tvā muni-r dhyāna-m **a-gama-t** kṣubhitendriya-ḥ
this hear-GER sage-NOM.SG meditation-ACC.SG go-AOR.3.SG agitate.sense-NOM.SG
Hearing this, the agitated sage, *went* into meditation. (Mbh. 2.16.27a)

b. ta-sya eva ca āmravṛkṣa-sya chāyā-yāṃ **samupāviśa-t**
that-GEN.SG PTCL and mango.tree-GEN.SG shade-LOC.SG sit-IMPFCT.3.SG
And he *sat* in the shade of that mango tree. (Mbh. 2.16.27c)

c. ta-sya upaviṣṭa-sya mune-ḥ utsaṅg-e **nipapāt-a** ha
that-GEN.SG sitting-GEN.SG sage-GEN.SG lap-LOC.SG fall-PFCT.3.SG PTCL
Into that seated sage's lap *fell* a (mango). (Mbh.2.16.28a)

The data in (15) and (16) makes the simple point that the past tense in Epic Sanskrit is morphologically realized by three paradigms, which contrast with the Present tense paradigm.

The PERF form and Epic Sanskrit

PERF is the label I use for the Indo-Aryan cognate of Proto-Indo-European deverbal, resultative, adjectival (participial) morphology with the *-*to*/*-*no* affix that attaches to verb roots.[10] This morphology is not part of the finite verbal paradigm of Vedic (which inflects for person-number-mood features) but overlaps with the verbal system due to its aspectual properties. In Vedic, the PERF morphology is stative and realizes the resultative aspect as seen in the example in (17).[11]

(17) **stīr-ṇáṃ** te barhí-ḥ **su-tá** indra
strew-PERF.N.SG you.DAT.SG B-NOM.N.SG extract-PERF.M.SG I.VOC.SG

sóma-ḥ **kṛ-tā́** dhān-ā́ át-tave te hárib-hyāṃ
S-NOM.M.SG prepare-PERF.M.PL barley-NOM.M.PL eat-INF you-GEN.SG horse-DAT.DU

The Barhis (grass) *is strewn* for thee; Indra, the Soma *is extracted*. The barley grains *are prepared* for thy two bay-horses to eat. (RV 3.35.7 (cited in Jamison, 1990:5))

The stative PERF form starts to receive a wider distribution in Epic Sanskrit (Oberlies 2003; Speijer 1886). The form licenses an eventive interpretation and refers to past culminated events. (18) lists the paradigm for PERF when it is used predicatively.[12]

(18) **The PERF paradigm**

PERSON	SG	DUAL	PL
MAS	ga-**taḥ**	ga-**tau**	ga-**tāḥ**
FEM	ga-**tā**	ga-**tau**	ga-**tāḥ**
NEU	ga-**tam**	ga-**te**	ga-**tāni**

[10] This is cognate to the English past participial morphology *-ed/-en*.

[11] It has been claimed that the PERF morphology licenses an eventive (past time) interpretation in Vedic, but Jamison (1990) shows that PERF is uniformly stative at the earliest Vedic stage.

[12] PERF originates as a stative adjective and its complete inflectional paradigm is based on the nominal categories — number, gender, and case. As a sentential predicate, PERF agrees with the nominative marked theme argument in number, gender, and case. The construction is passive, so the agentive argument appears in the instrumental case. The nominative case forms of the PERF paradigm in all genders and numbers are the constitutive forms for the PERF paradigm when it gets incorporated into the verbal system of OIA.

Evidence for the availability of an eventive interpretation for PERF comes from its use with past-referring temporal adverbials, and coordination of PERF clauses with other past tense clauses. The examples in (19) show that the bare PERF morphology is compatible with past-time adverbials which locate the event (as opposed to a state) denoted by the PER predicate at a specific time in the past.[13]

(19) a. **purā** **devayuge** ca eva **dṛṣ-ṭaṃ** sarvaṃ mayā vibho
formerly D-LOC.SG and EMPH see-PERF.N.SG everything I-INS.SG lord-VOC.SG
Lord, formerly, in the age of the Deva (Gods), I *saw* everything. (Mbh. 3.92.6a)

b. **hṛ-tā** gau-ḥ sā **tadā** te-na
steal-PERF.F.SG cow-NOM.F.SG that-NOM.F.SG then he-INS.3.SG

prapāta-s tu na **tark-itaḥ**
consequence-NOM.M.SG PTCL NEG consider-PERF.M.SG
Then he *stole* the cow, but *did* not *consider* the consequences. (Mbh. 1.93.27e)

Further, sentences with PERF-inflected predicates can be conjoined with the Imperfect (20a), the Aorist (20b), and the Perfect (20c), the three past-time event denoting forms in Epic Sanskrit. In each of the cases, PERF is interpreted as referring to a past event and not a result-state.

(20) a. **yadā** tu rudhire-ṇa aṅg-e **parispṛṣ-ṭo** bhṛgūdvahaḥ
when PTCL blood-INS.SG body-LOC.SG touch-PERF.M.SG great.energy-NOM.M.SG

tadā **a-budhya-ta** tejasvī... ca idam **a-bravī-t**
then rouse-IMPFCT.3.SG radiant.NOM.SG and this say-IMPFCT.3.SG
And when the (preceptor Rama) of great energy, *was touched* in the body by the blood, then, the radiant one woke up, and... said this. (MB 12:3:10 a-d)

b. yadā pūrvaṃ **gata-ḥ** kṛṣṇa-ḥ śamārtha-ṃ kaurav-ān prati
when before go-PERF.M.SG K-NOM.SG peace-ACC.SG K-ACC.PL to

na ca taṃ lab-dha-vān kāma-ṃ tato yuddha-m
NEG and that obtain-PERF-ACT.M.SG desire-ACC.SG therefore battle-NOM.SG

a-bhū-d idam
be-AOR.3.SG this

[13]In all the glosses involving PERF forms, gender information is given only for those NPs with which PERF agrees, because PERF contrasts with other paradigms in agreeing with the nominative NP in number and gender.

When, in the past, Kṛṣṇa *went* to the Kauravas for peace, he did not obtain that desired goal, and therefore, this battle *happened*. (Mbh. 9.62.2)

c. tayor aṇḍāni **nidadh-uḥ** **prahṛṣ-ṭaḥ** paricārikā-ḥ...
their egg-ACC.PL deposit-PFCT.3.PL rejoice-PERF.F.PL maid-servant-NOM.F.PL

tataḥ pañcaśat-e kāl-e kadrūputr-ā **viniḥsṛ-tāḥ**
then 500-LOC.SG time-LOC.SG K.son-NOM.M.PL burst.out-PERF.M.PL
The happy maidservants *deposited* their eggs...then after five hundred years, the sons of Kadru *burst out* (Mbh. 1.14.13-14)

Summary so far

So far in §4.2, we have seen that in Vedic (§4.2.1) and in Epic Sanskrit (§4.2.2), the opposition between the present and the past tenses is morphologically expressed by distinct paradigms. The Present (**impf**) paradigm realizes present tense, while the Imperfect, the Aorist, and the Perfect are used to refer to past time eventualities. The Imperfect, in particular, is the aspectually unmarked past tense. In Epic Sanskrit, PERF, a stative participle from Vedic which denotes result-states, also begins to license eventive interpretations and may be used to refer to past, culminated events.

The following stage, MIA, inherits only two of these temporal/aspectual paradigms — the **impf** and the PERF paradigms. The next section is concerned with establishing the correct semantic categorization for these morphological paradigms. Specifically, in the Indo-Aryan linguistic tradition, **impf** and PERF are considered to be the markers of present and past tense respectively. I will argue that, in fact, **impf** and PERF realize the imperfective and perfective aspects in MIA.

4.2.3 The past-present opposition in MIA?

The changes from the inflectional system of verbal contrasts in OIA to the relatively morphologically impoverished inflectional system of MIA have been described in terms of 'erosion' or 'simplification', primarily because many of the rich conjugational paradigms and the semantic categories they expressed were lost in MIA (Bloch, 1914; Kellogg, 1893; Pischel, 1900; Vale, 1948). The MIA tense/aspect system inherits only the **impf**, the PERF, and the Future (§4.5) paradigms from OIA.[14] The rich system of past tense markers is lost.

[14]MIA also inherits other non-finite participial forms (the potential participle and the imperfective participle) which are incorporated into the finite tense/aspect systems in NIA languages. However, the constructions that these forms participate in are innovated in MIA or in NIA and cannot be said to be directly inherited from OIA.

Pischel (1900), on the basis of careful textual study, reports that the Imperfect, the Aorist, and the Perfect occur in MIA texts only as a few scattered forms for a few verbs.[15] The only remaining past-referring paradigm from Epic Sanskrit is the PERF paradigm and it is used regularly for past time reference. Further, the distribution of the **impf** paradigm appears to undergo an unexpected change from OIA to MIA. **impf** marks the imperfective present tense in OIA; in MIA it extends to license past time reference as well. This change in the distribution of the **impf** paradigm has been documented clearly in MIA grammars (Pischel, 1900; Bloch 1914:247). How are these changes to be interpreted? What is the correct characterization of the MIA tense/aspect system?

My interpretation of these facts is as follows: The present-past opposition realized in OIA by distinct present and past tense morphology is lost in MIA. Instead, the **impf** and PERF paradigms realize the aspectual contrast between the imperfective and the perfective aspects. The **impf** paradigm does not randomly extend to past-time reference. Rather it has a grammatically determined distribution. In addition to having present time reference, the **impf** paradigm refers only to *stative* eventualities located in the past time. In a nutshell, I will defend the claim that the basic opposition in MIA (excluding the future tense) is that between the imperfective and perfective aspects as seen in (21).

(21) **Aspectual contrast in MIA**

Semantic Category	morphological exponent
imperfective aspect	**impf**
perfective aspect	PERF

This claim challenges the standard understanding about the semantic values for these two paradigms in MIA, which is the present *tense* and past *tense* respectively (Bloch, 1914, 1965; Chatterjee, 1926; Pischel, 1900; Vale, 1948, a.o.).

(22) **The standard position: Tense contrast in MIA**

Semantic category	morphological exponent
present	**impf**
past	PERF

[15] The single instance of the Imperfect retained in MIA is the Imperfect form of the verb *as* 'be' (Pischel, 1900:421-22). The Aorist occurs relatively more frequently (Pischel, 1900:422-24), while the Perfect is preserved only as an archaism for a few verbs. Bloch (1965:228-233) reaches the same conclusion.

In spite of this tense-based classification of the two forms, none of the authors listed above fails to document the ubiquitous use of the **impf** paradigm for past time reference.[16] In the next two sections, I will offer two kinds of evidence in support of my claim that contra the standard position in (22), **impf** and **perf** realize an aspectual opposition between the imperfective and perfective. The textually documented facts are discussed in §4.3. In §4.4, I show how synchronic facts in several New Indo-Aryan languages provide strong support to this hypothesis.

4.3 The imperfective-perfective opposition in MIA

In order to prove that the **impf** and the PERF paradigms realize the imperfective-perfective aspectual contrast in MIA, and not the present-past tense contrast, I must show that these paradigms are characterized by certain distributional properties. Specifically, I have to show that:

(23) a. Unlike the present tense, the **impf** paradigm is NOT restricted to present time reference but may also license past time reference.
b. In its past uses, the **impf** paradigm is systematically restricted to stative reference. Conversely, past-referring stative predicates may only appear with **impf** inflection.
c. Unlike the past tense, the PERF paradigm may not refer to all types of eventualities located in the past with respect to speech time.
d. The PERF paradigm may only denote culminated, completed eventualities.

If all these facts hold for the MIA stage, then the correct characterization of the MIA system has to be in terms of an aspectual, rather than temporal, contrast. To make the point clearly, an imperfective aspect marker, but not a present tense marker, would be expected to show up systematically with past time reference. It is an imperfective aspect marker, rather than a present tense marker that would be restricted to only stative reference. Similarly, a perfective aspect marker, and not a past tense marker, would be restricted to only eventive reference.[17] The correct characterization of the MIA system is thus dependent on whether

[16] Pischel rightly observes that the past 'tense' is productively expressed either by the PERF or the **impf** forms. Bloch (1914:247), in his study of the Marathi language, refers to the 'temporal indeterminacy' of the **impf** morphology (by which he means its use in past situations) that has been inherited by modern Marathi from MIA.

[17] The possibility that these paradigms have both aspectual and temporal value is ruled out here, at least as far as the present-past opposition is concerned. The fact that the **impf** may license both present and past time interpretations suggests that it is not specified for present tense. I will show in §4.3.2 that the interpretation of PERF is similarly not restricted to only past time culminated eventualities. Specifically, PERF may also have future temporal reference.

the data really corresponds to what I claim in (23a-d).[18]

4.3.1 MIA: impf as imperfective aspect

The OIA **impf** paradigm and its cognate in MIA are given in (24) and (60) respectively. In addition to phonological changes, the dual number category is lost in MIA, with a contrast only between singular and plural number.

(24) **OIA: impf paradigm**

PERSON	SG	DUAL	PL
1-M F N	gacchā-**mi**	gacchā-**vas**	gacchā-**mas**
2-M F N	gaccha-**si**	gaccha-**thas**	gaccha-**tha**
3-M F N	gaccha-**ti**	gaccha-**tas**	gaccha-**nti**

(25) **MIA: impf paradigm**

PERSON	SG	PL
1-M F N	gacchā-**mi**	gacchā-**mo**
2-M F N	gaccha-**si**	gaccha-**tha**
3-M F N	gaccha-**i**	gaccha-**nti**

On the standard categorization for the **impf** paradigm in MIA, it realizes the present tense and refers to eventualities in the present time. (26a-b) exemplifies the use of **impf** for present time reference. (26a) contains a generic predicate while (26b) contains a lexical stative predicate *jāṇ* 'know' and a habitual (passivized) predicate.[19]

[18] On my proposal, the imperfective-perfective opposition between the **impf** and PERF paradigms is really a categorical grammatical fact about the system and not a variable tendency or a stray observation. The hypothesis is strong: most NIA languages must be reconstructed as based on a proto-system like MIA, with an aspectual contrast between the imperfective and perfective aspects without a present-past tense contrast. It might seem that the data I offer is sparse and unrepresentative (my own textual research is limited to a single text for this period — the *Vasudevahiṃḍī*, an archaic Mahārāṣṭrī Prakrit text (Alsdorf 1936)). However, it is important to note that my claim is also substantiated by (a) the empirical observations about **impf** found in MIA grammatical descriptions, and (b) the distribution of PERF and, especially **impf**, in synchronic NIA languages. Taking all these facts into consideration, the aspectual hypothesis offers much wider data coverage than the tense hypothesis and points out a promising direction for further systematic research in MIA and NIA tense/aspect diachrony.

[19] As I noted before in §4.2.1, the **impf** paradigm realizes present tense and imperfective aspect. It appears on lexical and derived stative predicates denoting eventualities located in the present.

(26) a. nipphala-ṃ duma-ṃ pakkhiṇ-o vi **paricchaya-nti**
fruitless-ACC.SG tree-ACC.SG bird-NOM.PL also abandon-**impf.**3.PL
Even birds *abandon* a fruitless tree. (VH.DH 31.24-25)

b. eeṇa tumam na **jāṇa-si** kiṃ pi kajja-ṃ
this-INS.SG you NEG know-**impf.**2.SG what PTCL use-NOM.SG
kīr-ai
do.PASS-**impf.**3.SG
Do you not *know* what use *is made* of this? (VH.DH 32.13)

On the other hand, the **impf** paradigm is often used with past time reference as well. Consider the short narrative in (27), which reports a past episode about a monkey who entered a mountain cave and mistook some sticky liquid tar to be water. He tried to drink it and got his face and hands caught in it (and ultimately perished in the cave). The verbs are inflected sometimes in the PERF and sometimes in the **impf** paradigm. I have translated PERF forms with the English Past and the **impf** forms with the English Present.

(27) a. sa ...ekka-m pavvayaguha-m **pat-to**
he.NOM.SG one-ACC.SG cave-ACC.SG arrive-PERF.M.SG
He *reached* a cave.(VH.KH 6.10)

b. tattha ya silājau-m **parissava-ti**
there and bitumen flow-**impf.**3.SG
There, some bitumen (tar) *flows* (from the walls of the cave).(VH.KH 6.10)

c. so... jalaṃ ti mannamāṇo... muha-ṃ **chubbha-ti**
He.NOM.SG water thus thinking mouth-ACC.SG touch-**impf.**3.SG
Thinking it to be water, he *touches* (his) mouth to it. (VH.KH 6.11)

d. taṃ **baddha-ṃ**... hatth-e **pasār-ei** te vi **baddh-ā**
it stick-PERF.3.SG hand-ACC.DU spread-**impf.**3.SG they also stick-PERF.M.PL
It *got stuck*. (He) *spreads* his hands. They also *got stuck*. (VH.KH 6.12)

(27) is very representative of how the **impf** and PERF inflected forms are interspersed throughout the *Vasudevahiṃḍī*, the text I have used for the MIA stage. However, on the 'Present tense/Past tense categorization of the **impf** and PERF paradigm respectively, these facts are inexplicable. If these forms provide information about temporal location

with respect to speech/coding time, why do all the sentences in (27) not occur with the same tense marking, since they all report eventualities located at a specific time in the past?

As far as I can understand, the traditional explanation for this phenomenon has been that the **impf** form is very widespread in the 'historical present' function. In the historical present, eventualities occurring in the past are presented as if they were occurring in the present in order to make the narrative more vivid. The use of **impf** for past time reference is thus interpreted as an idiosyncratic narrative device, rather than a categorical grammatical fact about the MIA tense/aspect system. My goal here is to show that the former analysis is inaccurate and that the **impf**-as-imperfective analysis accounts for the facts much better.

The 'historical present' hypothesis

Here is an example of the historical present use of the English Present as a rhetorical device, in describing past-time eventualities.[20] The situation under discussion belongs to a historical moment in the past (July 1812), yet is narrated as if occurring in the present. Cooper (1986: 31) describes this as a rhetorical device to 'relocate discourse to some past location.' In other words, the deictic center for temporal location, which is the speech/coding time by default, is shifted to the past in order to achieve a particular narrative effect.

(28) (07-28-1812) ...As the sun rises, Napoleon *sees* that the Russian army has withdrawn. Napoleon *gives up* on catching the Russian army. Napoleon and French army *enter* Moscow, peopled by only a few thousand Russians. Fires *break out* across Moscow, burn for four days, and *leave* the city in ruins

How can we determine whether the use of the **impf** for past-time reference in MIA is governed by aspects of narrative structure or by a grammatical principle about the organization of the MIA tense/aspect system? There are two simple ways to distinguish between the scopes of the two proposals.

a. by examining the class of predicates with which **impf** typically occurs and the interpretations it licenses.
b. by examining if the perspectival shift effected by the supposed historical present use of **impf** is consistent within a narrative.

First, if the use of **impf** for past time reference is a narrative device, then we expect that **impf** should not be restricted to predicates of a particular aspectual class. Notice, for

[20] http://www.txdirect.net/users/rrichard/napoleo1.htm

instance, that in (28), the English Present appears on stative predicates (e.g. *see*) as well as eventive predicates (*give up*, *enter*) and allows for an eventive interpretation of the eventive predicates. That is, we interpret this discourse as narrating events that occurred in the past. Further, consecutive sentences, if they contain eventive predicates, advance reference time. So the entry into Moscow is understood to take place after Napoleon gives up on catching the Russian Army and the fires in Moscow are understood to take place following the entry into Moscow.

Second, we also expect on the historical present hypothesis that for a piece of narrative in which the deictic center has been relocated to a past location, the tense marking should remain consistent, assuming that all eventualities within that narrative are understood to overlap with the shifted perspectival center or the shifted 'present' of the narrative.

Neither of these expectations is met in the text that I examined. When it refers to past time eventualities, **impf** licenses only stative interpretations, appearing on lexical stative, progressive, and habitual/generic predicates. In particular, in these uses, it does not appear with eventive predicates to license an eventive interpretation (unlike the eventive interpretations licensed by the English Present in (28)). Further, narratives are not uniformly shifted to a past time location where all clauses — both eventive and stative — are inflected in the **impf** paradigm. Within any given narrative, eventive predicates do not appear with **impf** inflection.

Consider the narrative fragment in (29).

(29) a. **pat-to** ya Seṇiyo rāyā ta-m paesa-m,
reach-PERF.M.SG and S.NOM.SG king.NOM.SG that-ACC.SG place-ACC.SG
And King Seniya *reached* that place. (VH.KH. 17.1)

b. **vand-io** ṇe-ṇa viṇayeṇa-m
greet-PERF.M.SG he-INS.SG monk-ACC.SG
He *greeted* the monk. (VH.KH. 17.1)

c. **piccha-i** ṇa-m jhānaniccala-m
gaze-**impf.**3.SG that-ACC.SG meditation.unmoving-ACC.SG
(He) *gazed* at the meditation-engrossed one. (VH.KH. 17.1)

d. **pat-to** titthayarasamīva-m
reach-PERF.M.SG monk.close-ACC.SG
He *reached* (came) close to the monk. (VH.KH. 17.3)

The predicates in (29a-b) *reach that place* and *greet the monk* are eventive and have PERF inflection. The predicate in (29c) has **impf** inflection. Suppose this **impf** inflection does mark a perspectival shift and relocates the discourse to the past to achieve a stylistic effect. Then it is unexpected that the very next sentence (29d) should appear with PERF inflection, rather than continuing with the **impf** marking that characterizes the previous sentence. The hypothesis that the present tense marker, **impf**, performs a narrative historical present function when it refers to past time eventualities is untenable given this kind of distribution for **impf** in discourse. Further, if we examine the aspectual class of the predicate in (29c), we see that *gaze at the meditation-engrossed one* is stative (atelic) and not eventive. This coincidence, that **impf** in its so-called historical present function, appears with the only stative predicate in this mini-narrative is suspicious and begs for a more general account of **impf** distribution.

Throughout the text, **impf** is restricted to stative predicates and does not introduce a perspectival shift that is then maintained in later discourse. (30) offers yet another example. The predicate *notice a well* in (30a) is eventive and the verb is inflected in the PERF paradigm. The predicates in (30b-c) *observe the man* and *stand* are stative (atelic), based on lexical stative predicates, and the verbs are inflected in the **impf** paradigm.

(30) a. te-ṇa palāyamāṇ-eṇa purāṇakuv-o
that-ERG.SG running-ERG.SG old.well-NOM.M.SG

taṇadabbhaparichinn-o **diṭ-ṭho**
grass-covered-NOM.M.SG notice-PERF.M.SG
That running one *noticed* an old well covered with grass. (VH.KH. 8.6)

b. tattha ayagar-o mahākā-o vidāriyamuh-o
there python-NOM.SG gigantic-NOM.SG open.mouthed-NOM.SG

gāsiukām-o tam purisam **avaloe-i**
hungry-NOM.SG that-ACC.SG man-ACC.SG observe-**impf.**3.SG
There a giant python, baring its mouth, eager to eat, *observed* the man. (VH.KH. 8.9)

c. sapp-ā bhīsaṇ-ā aṣiukām-ā **ciṭṭha-nti**
snake-NOM.PL fearsome-NOM.PL eat.desiring-NOM.PL stand-**impf.**3.PL
Fearsome snakes, eager to bite, *stood* (in the well).(VH.KH. 8.9)

Now it is possible to account for the distribution of PERF and **impf** inflected forms in (27), repeated here as (31). The translations are uniformly in the English Past, but this

interpretation does not come from a tense specification for the **impf** paradigm or from its use as perspective shifter.

(31) a. sa ...ekka-m pavvayaguha-m **pat-to**
he.NOM.SG one-ACC.SG cave-ACC.SG arrive-PERF.M.SG
He *reached* a cave.(VH.KH 6.10)

b. tattha ya silājau-m **parissava-ti**
there and bitumen flow-**impf.**3.SG
There, some bitumen (tar) *flowed* (from the walls of the cave).(VH.KH 6.10)

c. so... jalaṃ ti mannamāṇo... muha-ṃ **chubbha-ti**
He.NOM.SG water thus thinking mouth-ACC.SG touch-**impf.**3.SG
Thinking it to be water, he *touched* (his) mouth to it. (VH.KH 6.11)

d. taṃ **baddha-ṃ**... hatth-e **pasār-ei** te vi **baddh-ā**
it stick-PERF.3.SG hand-ACC.DU spread-**impf.**3.SG they also stick-PERF.M.PL
It *got stuck*. (He) *spread* his hands. They also *got stuck*. (VH.KH 6.12)

The predicate *reach the cave* in (31a) describes an event; the verb has PERF inflection. The predicate in (31b), *flow* is an atelic stative predicate; the inflection is **impf**. (31c) is less obvious because a predicate like *touch his mouth to it* could be interpreted either as an eventive predicate or as an atelic stative predicate.[21] In (31d), the predicate *get stuck* is eventive, and, as expected, the verb has PERF inflection in both instances. The predicate, *spread hands*, on the other hand, is like *touch*, and has an atelic interpretation in this context.

In this section, I showed that IMPF-marked forms refer to eventualities located in the past, not because of a perspectival shift in order to achieve narrative/rhetorical goals, but rather, because the IMPF paradigm realizes the imperfective aspect in MIA. In the absence of a tense opposition in the language, the MIA **impf** may refer to stative eventualities

[21] This can be determined if we check it against the properties and diagnostics from Chapter 2. I suggest that the **impf** inflection, in fact, disambiguates the aspectual class of the predicate in this case. A similar argument can be made for *spread hands* in (31d). In both cases, it is the morphology that determines the denotation of the predicate; the uninflected predicate is compatible with both eventive and stative denotations. Further, an alternative interpretation that is available to imperfective marking in languages in general, and possibly to the MIA **impf** is the conative interpretation. On this reading, the predicate in (31c) would be roughly interpreted as *tried to touch his mouth to it*, while the one in (31d) would be interpreted as *tried to spread his hands*. Both interpretations fit the context very well; the impossibility of getting native speaker judgments for MIA and the absence of more detailed semantic research on the different readings of the MIA **impf** make this possible reading difficult to verify at this stage.

located at both present and past times. Next, I provide examples where **impf** licenses past time interpretations with three types of stative predicates — lexical stative, progressive, and habitual/generic.

impf and stative predicates

In (32), we see that the lexical stative verbs *parivas* 'live' and *suṇ* 'hear' appear with **impf** inflection.

(32) a. egam-mi kira nayar-e kā vi gaṇiyā rūvavati
One-LOC.SG some town-LOC.SG some courtesan.NOM.SG beautiful.NOM.SG

guṇavati **parivasa-i**
skilled.NOM.SG live-**impf.**3.SG

In some town, there *lived* a beautiful and skilled courtesan. (VH.K. 4.12)

b. **suṇanti** ya bhayavay-o vayaṇa-ṃ... dhammakahāsaṃsia-ṃ
hear-**impf.**3.PL and monk-GEN.SG word-ACC.SG religious.story.filled-ACC.SG

And they *heard* the words of the monk, filled with religious stories. (VH.K. 5.5-6)

In (33), **impf** appears with base eventive predicates and licenses habitual/generic interpretation. In (33a), the predicates *give food-drink* and *offer a goat* are eventive, the **impf** inflection licenses a past time habitual interpretation for these predicates. The predicate in (33b) *perform Yoga* is also eventive and has a habitual interpretation in this context.

(33) a. so ya bambhaṇo varisevaris-e tam-mi devayā-e
he.NOM.SG and brahmin.NOM.SG year.year-LOC.SG that-DAT.SG deity-DAT.SG

...anna-pāṇa-m **de-i** chagalam ca **nivede-ti**
food.drink-ACC.SG give-**impf.**3.SG goat-ACC.SG and offer-**impf.**3.SG

And that Brahmin, year after year, *used to give* food and drink and *used to offer* a goat to the deity (VH:KH 29.20)

b. tato aham aṇṇayā kayāi āyariyagiharukkhavāḍiyā-e
Then I.NOM.SG other some time teacher.house.tree.garden-LOC.SG

joga-m **kare-mi**
yoga-ACC.SG do-**impf.**1.SG

Then, sometimes, I *would perform* Yoga in the orchard at my teacher's house. (VH:DH 37.1)

The examples in (34) show that **impf** also licenses progressive interpretation with base eventive predicates. In (34a), the sentence with the **impf** inflected verb provides a 'temporal frame' (very much like the progressive) for the event of the spitted-out betel leaf falling. The eventuality of going is seen as ongoing at the time of the event. In (34b), **impf** licenses a similar progressive temporal frame interpretation.

(34) a. so ya ḍiṇḍī... bhavaṇa-ssa āsaṇṇeṇa **gacchati**
he.NOM.SG and worshipper.NOM.SG house-GEN.SG near go.**impf.**3.SG

dhaṇasiriy-e tambolo-ṃ nicchuḍha-ṃ **paḍi-yaṃ** ḍiṇḍi-ssuvvariṃ
D.GEN.SG leaf-NOM.N.SG spat.out-NOM.N.SG fall-PERF.N.SG worshipper-LOC.SG

And the worshipper *was going* from near that house. Dhaṇasiri's spat-out (betel)-leaf *fell* on the worshipper. VH.D. 51.12-14)

b. so vi laliyāgoṭṭhi-e samaṃ gaṅgā-e **khella-i**
he-NOM.SG also friend.group-GEN.SG with river-LOC.SG play-**impf.**3.SG

te-ṇa ya khellant-eṇa pattacchejja-ṃ **di-ṭṭhaṃ**
he-INS.SG and playing-INS.SG leaf.bed-ACC.N.SG notice-PERF.N.SG

And he *was playing* by the river with his group of friends. And the playing one *noticed* the seat made from leaves(VH.D. 58.18)

Summary

In this section, I argued that contra the standard position in MIA linguistics, the **impf** paradigm does not realize the semantic category past tense, but is rather an exponent of the imperfective aspect. I showed that this categorization of **impf** accounts for its distribution when it has past time reference much better than the alternative 'historical present' hypothesis. I demonstrated through narrative fragments that the 'historical present' hypothesis is untenable for two reasons. First, it does not explain the restriction of **impf** forms to stative predicates. Second, it does not explain why the perspectival shift, supposedly initiated by **impf** does not continue through **impf** marking in later sentences in the narrative. I also showed that **impf** appears with both lexical stative and base eventive predicates; in the latter case, it may license either a progressive or a habitual/generic interpretation. The generalization is that **impf** inflected predicates have stative denotation, the semantic value of the imperfective aspect. Thus, to conclude, the **impf** paradigm realizes the imperfective aspect in MIA.

4.3.2 MIA: PERF as perfective aspect

Let us again review the standard position on the semantic value of **impf** and PERF in MIA. According to this position, PERF realizes the past *tense* in MIA.

(35) **The standard position: Tense contrast in MIA**

Semantic category	morphological exponent
present	**impf**
past	PERF

I want to argue in this section that PERF realizes perfective aspect and aspectually contrasts with **impf**, which I just showed to be an exponent of the imperfective aspect. The past tense and the perfective aspect are overlapping categories. Perfective sentences denote culminated, completed eventualities, which usually have taken place in the past with respect to speech/coding time. Past tense sentences assert that the eventualities they describe are located in the past with respect to speech/coding time. The crucial difference between the two categories is that the past tense does not restrict the aspectual class of the predicates in its denotation, while the perfective aspect is restricted to eventive predicates.

PERF-based sentences uniformly advance reference time

Evidence that PERF yields eventive predicates comes from the distribution of perfective-marked forms in narrative discourse. PERF forms in consecutive sentences license eventive interpretations. Eventualities described by later sentences are typically understood to occur later in time than the eventualities described by prior sentences. A representative example is given in the narrative fragment in (36). The main predicate in each of the sentences in (36a-e) is a PERF-inflected form. The story describes the events before the sacrifice of a goat, beginning with the departure of the family (with their friends and relatives) to the sacrificial stake. Every following sentence is understood to describe an eventuality that took place later in time, each of them ordered with respect to each other.

(36) a. tato te mitta-bāndhava-sahiā... **ga-yā**
then they.NOM.PL friends-relatives-with.NOM.PL go-PERF.M.PL
Then they *went* there with their friends and relatives.

b. chagal-o vi ya maṇḍe-uṃ tatth-eva **ni-o**
goat-NOM.M.SG also and decorate-INF there-EMPH take-PERF.M.SG
And the goat also *was taken* there to be decorated.

c. gandha-puppha-malla-puyāvises-eṇa ya **acchi-yā** devayā
sandal-flowers-worship-ingredients-INS and worship-PERF.M.PL god.NOM.M.PL
The Gods *were worshipped* with sandalwood paste, flowers, the ingredients of worship.

d. gharamahattara-ehi ya **bhaṇi-yam** chagala-o āṇ-ijj-au
house-elders-INS.PL and say-PERF.N.SG goat-NOM.SG bring-PASS-IMP.3.SG
And the house elders *said*: Let the goat be brought.

e. tato ta-ssa putt-o... chagalaya-m āṇe-uṃ **ga-to**
then his son-NOM.M.SG goat-ACC.SG bring-INF go-PERF.M.SG
At that, his son... *went* to bring the goat. (VH:D 29.25-28)

The fact that PERF describes eventive eventualities which advance reference time strengthens the hypothesis that PERF is an aspectual rather than a tense category. We have seen in §4.3 that **impf** is uniformly used to refer to stative eventualities in the past time. Therefore, PERF, even if it is hypothesized to carry past tense specification, must also carry the aspectual information that it is restricted to eventive predicates. Yet another property of PERF described below suggests that PERF, in fact, is sometimes incompatible with past tense interpretation, suggesting that it is not specified for past tense.

PERF licenses perfect interpretation

Another argument that PERF realizes perfective aspect and not past tense comes from the perfect-like interpretation available to the PERF form. On this interpretation, the PERF sentence describes a result-state that holds at speech time (a present time interpretation). If PERF realizes the past tense, then it is unexpected for it to license a stative present time interpretation. Nevertheless, that happens to be one of the available readings for PERF. Consider the sentences in (37).

(37) a. kim mann-e devī passamāṇī...
why think-**impf.**1.SG lady.NOM.SG looking.NOM.SG

nicchalcchī **ṭhi-yā**
unmoving.eyes.NOM.SG stand-PERF.F.SG

I wonder why the watching lady *has stood* (still) with an unmoving gaze?

b. tiy-e vi **avaloi-o** **di-ṭṭho** ya ṇā-e so
she-INS.SG also look-PERF.M.SG notice-PERF.M.SG and she-INS.SG that.NOM.SG

puris-o cakkhuramaṇ-o
man.NOM.SG eye-beautiful.NOM.SG

She also *looked*, and she *noticed* that man, attractive to the eye.

c. **cinti-yam** ca ṇā-e asaṃsayam eyam-mi puris-e
think-PERF.N.SG and she-INS.SG undoubtedly this-LOC.SG man-LOC.SG

nivesi-yā ṇā-e diṭṭhi
rest-PERF.F.SG her-FEM.SG gaze.NOM.F.SG

And she *thought*: "undoubtedly, she (the lady) *has rested* her gaze on this very man." (VH:K:9)

The context is as follows: the queen and her maidservant are standing at the window of the palace looking down at the street below. The maidservant notices that her mistress has stood still with her eyes fixed on something. (37a) is the maidservant's thought described by the narrator. The PERF inflected form describes this state which is interpreted as overlapping with speech time — a present time interpretation. In (37b), the PERF inflected forms are from the perspective of the narrator and describe the actions of the maidservant. These describe events in the past time and also use PERF-inflected forms. The final instance of a PERF-form in (37c) *nivesiyā* 'has rested' is part of a sentence with present time reference. It describes a thought of the maidservant and asserts that the mistress has rested her gaze on somebody at the coding/speech time.

The PERF form, in these examples, and more generally, licenses a resultative perfect interpretation and the temporal location of the result-state interval is understood to overlap with the speech time. These facts are incompatible with the categorization of the PERF morphology as a past tense marker, and support its categorization as the marker of perfective aspect. It has been observed that perfective predicates may also license a resultative present perfect interpretation, e.g. for Russian (Paslavska & Von Stechow, 2003).

Summary

Based on the restriction of PERF in MIA to eventive predicates and its ability to license a resultative-perfect present time interpretation, I conclude that PERF is better classified as an aspectual category that contrasts with **impf**. The distribution of **impf** has shown that it realizes the imperfective aspect in MIA. PERF contrasts with IMPF in realizing the imperfective aspect and not the past tense. In §4.4, I will provide further evidence for this categorization based on on two uses of the PERF form in NIA languages — PERF is also used in conditional and immediate future contexts in the NIA languages. This distribution is compatible with an aspectual perfective specification but inexplicable if we assume that PERF realizes the past tense. Finding comparable data in MIA can cinch the argument for the perfective specification of PERF, but even in the absence of such data (I have not been able to locate such data for MIA) the PERF-as-perfective hypothesis accounts for the facts better than the PERF-as-past-tense hypothesis taking into consideration both the textual data and the distribution of PERF-cognates in NIA languages.

4.3.3 The MIA tense/aspect system: A summary

In this section I showed that the **impf** and the PERF paradigms, inherited from OIA, show a markedly different distribution in MIA. Standardly characterized as realizing the present and the past tense categories respectively, these two paradigms are better categorized as realizing the imperfective and the perfective aspects. Evidence for this categorization comes from the distribution of the two paradigms in narratives where IMPF uniformly licenses stative interpretations, while PERF licenses eventive interpretations. IMPF morphology regularly occurs on lexical stative, progressive, and habitual predicates. The perfect-like present tense interpretation available for PERF also provides evidence against the 'past tense' analysis for this form.

Before I move on to the data, I will make a small point here about why the fact that MIA does not morphologize the present-past distinction has escaped notice so far. As far as I know, this empirical claim has not been made in the considerable literature on the OIA, MIA, and NIA verb systems. Why did no one who has examined the textual data from MIA (or synchronic comparative data from NIA) ever 'discover' that the present-past opposition from OIA gives way to an aspectual imperfective-perfective opposition in MIA? I believe this is a reflex of what I call the 'tense-bias' in traditional philological literature. There are two factors that have resulted in a tense-bias in the analysis of the MIA facts. First, MIA was analyzed by speakers of tensed languages (Germanic or New Indo-Aryan), and second, MIA was analysed as a linguistic system that was intermediate between two

tensed language systems — the OIA and the NIA languages. Both factors contributed to the default assumption that MIA also realized a morphological contrast between the present and the past tenses. In the context of the MIA system, tense-bias has basically amounted to an erroneous reinterpretation of the MIA linguistic facts so that MIA comes out having a present-past distinction. It is assumed that the **impf** paradigm, which is understood to realize the present tense in OIA, maintains its distribution, and the ubiquitous use of the present tense in past time contexts is reinterpreted as a reflecting the use of a narrative device. As for the PERF paradigm, it was considered to replace the past-referring categories of OIA and therefore analyzed as the unmarked past tense. The systematic grammatical aspectual properties that determine the distribution of the **impf** and the PERF paradigms got overlooked on this categorization.

In section §4.4 I show that the imperfective-perfective hypothesis, based until now on internal evidence from MIA texts, receives stronger confirmation from the comparative grammar of some NIA languages.

4.4 Loss of the past-present distinction: Evidence from NIA

The synchronic tense/aspect systems of some NIA languages reflect the effects of the reorganization of the MIA system along aspectual lines. In particular, the distribution of the **impf** (or its counterparts) and the PERF paradigms in these languages supports an aspectual and not a temporal specification for these forms.[22]

There are two complicating factors to the reconstruction from MIA to NIA — both of which have, to some extent, obscured a clear account of the imperfective-perfective contrast that underlies the MIA tense/aspect system. First, many synchronic NIA systems have reacquired the contrast between the past and present tenses through innovated tense auxiliaries, which are obligatory in most contexts. Second, not all NIA languages inherit the **impf** paradigm to realize the imperfective aspect. In addition to **impf**, there exists another

[22]The MIA text that I examined is the *Vasudevahiṃḍī*, written in archaic Jain Mahārāṣṭrī and it represents only one of the MIA dialects that the NIA languages descend from. The aspectual basis of the MIA tense/aspect system is however, not limited to a single dialect, but is reconstructible for several MIA dialects, since the **impf** and PERF paradigms occur in the same configurations in these languages as well (Pischel 1900; Chatterjee, 1926). The standard NIA languages investigated here, Marathi, Hindi, and Gujarati, have been traced as descendents of Mahārāṣṭrī and a closely related dialect, Śauraseni. The non-standard NIA languages Ahirani, Dehawali Bhili, Konkaṇā, and Pawri are spoken in areas geographically contiguous to the areas of Marathi, Hindi, and Gujarati and are linguistically close to these languages. it appears reasonable on this basis to hypothesize that they also descend from the same MIA dialects (or their variants). As we shall see, some of these languages, in fact, retain a structural system that is closer to the MIA system than the standard languages, which supports classifying them as belonging to the same larger branch of NIA as Marathi, Hindi, or Gujarati.

paradigm, that of the imperfective participle (glossed IMPF), which constitutes yet another exponent of the imperfective aspect. NIA languages vary in which of the two paradigms is selected as the marker of imperfectivity.[23] The IMPF paradigm is also purely aspectual and lacks tense specification.

The use of IMPF in MIA

The IMPF paradigm is part of the non-finite verbal system of OIA but it gets incorporated into the finite verbal system of MIA. The imperfective participle has a full nominal paradigm and declines for number, gender, and case. Parallel to the PERF paradigm, the nominative cases in all three genders get employed when IMPF is used as the main clausal predicate. (38) gives the MIA paradigm for IMPF in MIA for the verb *gacch* 'go'.

(38) **The IMPF paradigm**

PERSON	SG	PL
MAS	gacch-**anto**	gacch-**antāḥ**
FEM	gacch-**antī**	gacch-**antyāḥ**
NEU	gachh-**antam**	gacch-**antāḥ**

In MIA, bare IMPF forms may appear as the main clausal predicates licensing an imperfective interpretation, in particular, the habitual interpretation (Sen 1995: 372-373, Singh 1980: 150-151).[24] The changed distribution of this category in MIA is significant because in several contemporary NIA languages, IMPF rather than **impf**, realizes the imperfective aspect. The precise semantic relation between **impf** and IMPF within MIA needs to be examined much more closely, but is beyond the scope of this dissertation. For the purposes of the exposition of the NIA systems, I am assuming that **impf** and (IMPF) forms are variant realizations of the imperfective aspect in MIA. The NIA data, as we shall see, supports this assumption.

[23] Some languages, e.g. Gujarati, make use of both **impf** and IMPF forms in their tense/aspect system, while others, e.g. Pawri, uniformly use only the IMPF as the exponent of the imperfective aspect.

[24] The best documented interpretations for the MIA IMPF paradigm are habitual past and the counterfactual interpretations. Both uses are attested across the contemporary NIA languages as well. The non-past use of the bare participial form is less commonly attested in late MIA texts. However, it has been noted by the Prakrit grammarians of the late MIA period in their grammars that this form is temporally unrestricted and may refer to present, past, (and future) eventualities: Puruśottamadeva *traikālye śatṛ* and Mārkaṇḍeya *prākṛtasarvasva sarvadā śatṛ* (Sen 1995; Oberlies 2003).

4.4.1 Pawri: The Middle Indic Configuration

Most NIA languages distinguish between the present and the past tenses by means of tense auxiliaries (Beames, 1966; Bloch, 1914, 1965; Hoernle, 1880; Kellogg, 1893; and others). Specifically, the imperfective (**impf**, IMPF) and perfective (PERF) forms combine with present and past tense auxiliaries to form periphrastic constructions with both tense and aspect specification. This is illustrated by the examples from contemporary Gujarati in (39) and Hindi in (40).

(39) a. niśā rasoḍā-mā roṭli **banāv-e** **ch-e**
N-NOM.SG kitchen-LOC bread-NOM.SG make-**impf.**3.SG PRES-3.SG
Niśā *is making/makes* bread in the kitchen.

b. niśā rasoḍā-mā roṭli **banāv-ti** **ha-ti**
N-NOM.SG kitchen-LOC bread-NOM.SG make-IMPF.F.SG PST-F.SG
Niśā *was making/used to make* bread in the kitchen.

(40) a. niśā rasoi-mẽ roṭi **banāti** **hai**
N-NOM.SG kitchen-LOC bread-NOM.SG make-IMPF.F.SG be-PRES.3.SG
Niśā *makes* bread in the kitchen.

b. niśā rasoi-mẽ roṭi **banā-ti** **thi**
N-NOM.SG kitchen-LOC bread-NOM.SG make-IMPF.F.SG be-IMPF.F-SG
Niśā *used to make* bread in the kitchen.

The non-standard language Pawri is significant in this respect because it lacks obligatory present/past tense marking. In Pawri, the imperfective aspect is realized by an extended variant of the MIA IMPF paradigm.[25] The Pawri Imperfective lacks temporal specification and systematically licenses imperfective interpretation in both present and past times. The Pawri Imperfective and Perfective paradigms for the verb *khā* 'eat' are given in (41) and (42).

[25] Grierson (1907) speculates that these are older adjectival endings similar to the *-l* endings attested for the PERF form in late MIA, Marathi, and the Eastern Indo-Aryan languages.

(41) **Pawri Imperfective**

GENDER	SG	PL
MAS	khā-ta-lu	khā-ta-lā
FEM	khā-ta-li	khā-ta-lyā
NEU	khā-ta-la	khā-ta-le

(42) **Pawri Perfective**

GENDER	SG	PL
MAS	khād-yu	khād-ā
FEM	khād-i	khād-yā
NEU	khād-a	khād-e

The examples in (43) and (44) illustrate this.

(43) a. chyu kāyam ārhā-m svotā-hā=j **bāl-ta-lu**
he-NOM always mirror-LOC self-ACC-CL look-IMPF.M.SG
He always *looks* at himself in the mirror.

b. Dhanirāyā, āpu kāy kādav **khā-ta-lā**
D-VOC you-NOM.HON what mud-NOM eat-IMPF.M.PL
Dhanirāyā, *are* you *eating* mud?

In (43), both eventualities are interpreted at a time that overlaps with the utterance time. In (43a) the imperfective form of the verb *bal* 'look' licenses a habitual interpretation; in (43b), the imperfective form of *khā* 'eat' licenses an episodic progressive interpretation and refers to an ongoing episode of (what is perceived to be) mud-eating. In (44), on the other hand, the eventualities must be interpreted as occurring at a time prior to the utterance time.

(44) a. mi **rov-ta-li** tevī mehe senḍu lāg-yu
I.NOM play-IMPF-F.SG then I-ACC.SG ball.NOM hit-PERF.M.SG
When I *was playing*, a ball hit me.

b. vārirāya$_j$ jangalbāri-daryā-m **phir-ta-lu**. tevī chyu$_i$
V.NOM forest-valleys-LOC wander-IMPF-M.SG then he.NOM
tināhā$_j$ **hād-yu.**
he-ACC call-PERF.M.SG
Vārirāyā$_j$ *was wandering* in the forests-valleys. At that time, he$_i$ called out to him$_j$.

c. āgyāḍvāji bānge-n talapi otu
A-NOM hemp-GEN addict-NOM be-PERF.M.SG
chyu kāyam bāng **pi-ta-lu**
he-NOM always hemp-NOM drink-IMPF-M-SG
Agyāḍvāji was a hemp addict. He *would* always *drink* hemp.

In (44a), the temporal adverbial clause contains an imperfective-marked verb *rov-ta-li*, while the main clause contains a perfective verb to be interpreted as referring to a past time eventuality. The imperfective-marked verb also receives a past time interpretation but temporal clause does not contain any overt expression of the past tense such as a tense auxiliary. In (44b), the second clause is perfective and has past time interpretation. The first clause with the imperfectiv-marked verb is interpreted as referring to a past time eventuality overlapping with the event of calling out described in the second clause. In (44b), the past tense auxiliary *otu* 'was' in the first clause shows that the imperfective-marked verb *pi-ta-lu* must have a past time interpretation.

None of the imperfective-marked clauses in (43) and (44) have overt tense marking, unlike Gujarati or Hindi. Nevertheless, they may be interpreted as referring to either present or past time eventualities, with or without disambiguating material in the surrounding linguistic context. The distribution of the Pawri Imperfective is identical to the distribution of the **impf** paradigm in MIA, and more generally imperfective markers cross-linguistically — it occurs with lexical stative, progressive, and habitual/generic predicates. (43) and (44) illustrated the use of IMPF to license progressive and habitual interpretations. An example of the lexical stative use of this form is in (45).

(45) chyi pel nandurbār **roy-tal-i**
she.NOM earlier Nandurbar live-IMPF-F.SG
Earlier, she *lived* in Nandurbar.

Pawri synchronically instantiates a temporally unspecified imperfective marker, while most other surrounding languages have innovated periphrastic constructions with overt tense marking. The periphrastic tense/aspect configurations in the standard NIA languages (e.g. Gujarati (7) and Hindi (40)) obligatorily specify the temporal location of eventualities in addition to their aspectual properties. This is not to say that Pawri does not have *any* morphological means of marking the past-present distinction. Pawri does have tense auxiliaries that are cognate to the auxiliaries of Gujarati; however, unlike in the other languages, these auxiliaries are not obligatory and are rarely expressed in discourse (except in the case of copular constructions)[26]

The Pawri Perfective and temporal interpretation

In summarizing §4.3.2, I mentioned that the PERF paradigm in NIA languages occurs in conditional contexts and also licenses immediate future interpretations, two uses that are

[26]In fact, most of the examples I have for tensed sentences in Pawri are elicited translations of Marathi or Gujarati sentences.

incompatible with categorizing PERF as a past tense marker. The Pawri Perfective, cognate to the MIA PERF also licenses these two interpretations in addition to the eventive past time interpretations that we saw in (44a-b). (46) illustrates the three interpretations licensed by PERF — the perfective past (46a), the conditional (46b), and the immediate future (46c). In (46b), the Perfective form appears in the antecedent of the conditional clause and refers to the future possibility of going to Bombay. In (46c), the use of the perfective form implies that the speaker is certain about the accomplishment of the event described by the perfective clause. The event itself is located in the future of speech time.

(46) a. chyi suri ākhā khet **nind-a**
that girl.ERG.SG entire field.NOM.N.SG weed-PERF.N.SG
That girl *weeded* the entire field.

b. mi mumbai **ga-yu** tedihi tār kām **kari-hi**
I.NOM M go-PERF.M.SG then your work.NOM.SG do-FUT-1.SG
If I *go* (lit. went) to Mumbai, I will give him your message.

c. Tu yāhri baṭh. mi pāc miniṭ-ām **āv-yu**
you.NOM here sit.IMP.2.SG I.NOM.SG five minute-LOC come-PERF.M.SG
You sit here. I *will come* (lit. came) back in five minutes.

A complete analysis of the semantics of the MIA and NIA perfective morphology is beyond the scope of this study. These data, however show that the Pawri Perfective, cognate to the MIA PERF paradigm, lacks temporal specification and refers to culminated events, justifying its categorization as a tenseless aspectual category rather than a tense category. The PERF form patterns uniformly with respect to these two uses in all the NIA languages examined here. I will not be discussing this use of the PERF forms for other languages in the interest of brevity.

Pawri and the reconstruction of the MIA tense/aspect system

It needs to be pointed out here that the Pawri data, especially from the imperfective domain, is significant for the reconstruction of the diachrony of the Indo-Aryan tense/aspect system. The distribution of the IMPF paradigm in Pawri is structurally identical to the distribution of **impf** in MIA. In fact, the hypothesis that the MIA system was aspect-based rather than tense-based was formulated because of my fieldwork on Pawri. The existence of an NIA language with only an imperfective-perfective contrast and optional tense marking (surrounded by standard languages with aspectual contrast *and* obligatory tense auxiliaries) triggered

the idea that Pawri might represent an archaic proto-system without the present-past distinction. The actual MIA data that confirms this hypothesis is abundantly documented in the MIA literature. However an accurate analysis of this data was facilitated only after the discovery of the Pawri facts.

The following sections will show that although the distinction between the past and the present tenses is morphologically realized in the other NIA languages studied here, these exist sub-domains even within the tensed systems where tense is not overtly realized.[27] The hypothesis that the proto-system for NIA articulated only an imperfective-perfective contrast and lacked the present-past tense distinctions is capable of providing an account of the lack of tense specification in these sub-domains.

4.4.2 Konkana

Konkana presents a case where the **impf** paradigm, parallel to MIA, licenses both past and present imperfective interpretations, but its forms are available only for a subset of the cells of the person-number-gender paradigm. The Konkana Present Imperfective and Past Imperfective paradigms are given in (47) and (48). In both tables, the singular cells and the first person plural cell contains identical forms that are cognate to the MIA **impf** paradigm. The second and third person plural forms are innovations based on the IMPF form that are specified for tense information.[28]

[27]The status of the bare **impf** and IMPF paradigms in NIA languages appears to parallel the status of the Injunctive in Vedic (Kiparsky 2005). Both forms are unspecified for tense and in the absence of tense auxiliaries are compatible with both a present, a past, and (in some cases) a subjunctive/irrealis interpretation. IMPF, in particular, is used in several NIA languages in a counterfactual sense. This use has been attested since MIA.

[28]The first person plural cell is uniformly based on the passive stem of the verb. This change for the first person plural cell is first attested for Gujarati in the 14th century (Bhayani 1998) and is reflected in other non-standard languages as well. The basis of the forms in the shaded cells in the IMPF paradigm. In the Present Imperfective, the auxiliary has been incorporated into the IMPF form. The shaded cells in the Past Imperfective paradigm are based on IMPF (with an elision of the affixal *-t*) and a past tense auxiliary. Since this periphrastic construction does not appear to be available as a full paradigm in Konkana, it could be speculated that these constructions might be borrowed from the neighboring standard language Marathi to fill in a possible morphological gap.

(47) **Konkana imperfective present**

PERSON	SG	PL
1	bol-u	bol-ja/ju
2-M	bol-as	bol-tās
2-F		bol-tyās
3-M	bol-a	bol-tā
3-F		bol-tyā

(48) **Konkana imperfective Past**

PERSON	SG	PL
1	bol-u	bol-ja/ju
2-M	bol-as	bol-ā vhatā
2-F		bol-ā vhatyā
3-M	bol-a	bol-ā vhatā
3-F		bol-ā vhatyā

These mixed paradigms in Konkana could be puzzling because it is not clear why the Present and Past Imperfective are identical in a subset of the cells, and why it is precisely those cells that realize the morphological categories of person and number. Part of this puzzle is solved when this part of the paradigm is related to the MIA **impf** paradigm that it is cognate to, which inflects for person and number. On the other hand, the IMPF-based cells carry gender-number information because the IMPF paradigm inflects for gender and number.[29]

The other puzzle is why the same forms appear in both the Present and the Past Imperfective. The hypothesis that **impf** realizes the imperfective aspect without any temporal specification in the proto-systme for NIA languages provides an answer to this puzzle. The fact that the **impf** paradigm forms part of both the Present Imperfective and Past Imperfective paradigms in Modern Konkana in fact constitutes evidence that this paradigm must have originally been temporally unspecified.

The examples in (49) illustrate that the subset of **impf** forms within the modern Konkana paradigms are ambiguous between present and past time interpretation. (49a-b) are ambiguous, while (49c) can be disambiguated by the use of present or past referring adverbials *ātā* 'now' and *tava* 'then'.

(49) a. mi yāḷbhar vāvarā-m **jā-u**
I.NOM all day field-LOC go-**impf.**1.SG

an bhākar=bi **rāndh-u**
and bread.NOM-EMPH cook-**impf.**1.SG

a. I *go* in the field all day, and *make* bread (cook) as well.

b. I *would go* in the field all day, and *would make* bread (cook) as well.

[29]The morphological distinction between the second and the third persons in the Present Imperfective paradigm is due to an incorporated second person auxiliary.

b. mā kava=bi kapḍā **dhuv-u** an ti bhāṇḍ-ā
I.NOM when=EMPH clothes.NOM.PL wash-**impf.**1.SG and she.NOM dish-NOM.PL

ghās-a
clean-**impf.**.3.SG

a. Always, I *wash* the clothes and she *cleans* the dishes.

b. Always, I *would wash* the clothes and she *would clean* the dishes.

c. ātā/tava to nāśiklā **rāhā**
Now/back then he.NOM.SG N-ACC.SG live-**impf.**.3.SG
Now/back then, he *lives*/*lived* in Nasik.

The constitution of the Konkana Imperfective paradigms provides synchronic evidence for the semantic specification of **impf**. The Konkana cognate of the **impf** paradigm, for the limited number of cells in which it is retained, has the same temporal and aspectual distribution as it does in MIA, further supporting the analysis I have provided for the MIA **impf**.

4.4.3 Gujarati

The distribution of the **impf** and IMPF paradigms in Modern Standard Gujarati is roughly as follows; IMPF is the general imperfective form which forms periphrastic constructions with tense and modal auxiliaries. The **impf** paradigm is used only with the present tense auxiliary.[30] Tense auxiliaries are considered to be obligatory in most indicative contexts, but there are exceptions. In some cases, the bare **impf** paradigm may be used with past or present time imperfective interpretation. Consider the examples from Gujarati in (50).

(50) a. māro divas em **jā-e** **ch-e**. hũ̃ savāre
my day.NOM thus go.**impf.**3.SG PRES-3.SG I.NOM morning-LOC

uṭh-u, **nhā-u**, pachi pujā **kar-u**, pachi
wake-**impf.**1.SG bathe-**impf.**1.SG then prayer.NOM do-**impf.**1.SG then

bajār-mā̃ **jā-u**
market-LOC.SG go-**impf.**1.SG
My day goes thus: I wake up, bathe, then pray, then go to the market ...

[30] In the southern dialects of Gujarati, particularly, the Surti dialect, IMPF is used even with the present tense auxiliary.

b. hũ̃ jyāre-jyāre Sanskrit **bhaṇ-u** tyāre-tyāre bā
I.NOM when S.NOM study-**impf.**1.SG then mother.NOM

ma-ne lāḍu **āp-e**
I-ACC.SG sweet.NOM give-**impf.**3.SG
Whenever I would study Sanskrit, my mother would give me a sweet.

The **impf** form ordinarily appears with present tense interpetations in periphrasis with a tense auxiliary. However, in (50a), we see that the bare **impf** form in a sequence of clauses, headed by a tensed clause, may license a habitual present time interpretation. In (50b), the same **impf** form licenses a habitual past time interpretation with an overt adverb of quantification.

The examples from (50) show that in certain contexts (e.g. sequence of events or overt quantificational adverbials) Gujarati allows the **impf** form to be temporally anchored without the presence of overtly expressed tense auxiliaries. The existence of such a sub-domain where **impf** is compatible with both present and past time interpretations, supports the hypothesis that **impf** lacks temporal specification in MIA.

4.4.4 Ahirani, Dehawali Bhili, Marathi

In this set of languages, the **impf** paradigm is part of the tense/aspect system but it licenses *only* a past imperfective interpretation. The precise distribution of the **impf** paradigm in these three languages differs. In Ahirani, it occurs with both progressive and non-progressive (lexical stative and habitual/generic) predicates; in Dehawali Bhili, it is restricted to non-progressive imperfective predicates with past time interpretation. In Marathi, it is also restricted to non-progressive past predicates, but it is further considered to be an archaic form rarely occurring in informal discourse.[31] I will discuss the facts of this synchronic variation in Chapter 6. In this section, what is relevant to our discussion is that the restriction of the **impf** paradigm to a past time interpretation is inexplicable on the **impf**-as-present hypothesis, but accounted for on the **impf**-as-imperfective hypothesis. The existence of these languages in the NIA typology thus lends further support to the latter hypothesis. I briefly list the **impf**-cognate paradigms of Ahirani, Dehawali Bhili, and Marathi and provide examples that illustrate the range of interpretations they license. The main goal of presenting this data is to highlight the fact that in some languages **impf** is restricted to past time interpretation.

[31] This variation in the distribution of the **impf** paradigm is conditioned by the presence or absence of more specific innovated imperfective morphology such as a progressive morphology and its grammaticalization status in the particular language.

Ahirani

The Ahirani cognate of the **impf** paradigm is given in (51).

(51) **Ahirani Imperfective Past**

PERSON	SG	PL
1	bol-u	bol-ut
2	bol-e	bol-et
3	bol-e	bol-et

In Ahirani, **impf** occurs with lexical stative as well as progressive and habitual predicates, always with a past interpretation. (52a-b). (52a) refers to an ongoing episodic event of crying at some specific time in the past. (52b) contains a habitual predicate and is only interpretable as referring to a past time habit. (52) contains a lexical stative predicate and also licenses a past time interpretation.

(52) a. tumi gay-el vha-tāt tavhaḷ bāḷ pakka **raḍ-e**
you.NOM.PL go-PERF PST-M.PL then baby.NOM.SG lot cry-**impf.**3.SG
While you were gone, the baby *was crying* a lot.

b. āmi roj poryā-s-ne śāḷā-mā **povs-āḍ-ut**
We.NOM everyday boys-PL-ACC school-LOC reach-CAUS-**impf**.1.PL
We used to drop the children off to school everyday.

c. bāpu maḷyā-m rhāy-e
B.NOM.SG farm-LOC live-**impf.**3.SG
Bāpu *used to live* on the farm.

Dehawali Bhili

Dehawali Bhili, yet another non-standard language, presents a slightly different picture. The **impf** paradigm is restricted to past time interpretation, but unlike Ahirani, **impf** may not license progressive interpretation. **impf** only occurs with lexical stative and habitual predicates. The Dehawali Bhili cognate of the **impf** paradigm is given in (53).

(53) **Dehawali Imperfective Past**

PERSON	SG	PL
1	bol-u	bol-ji
2	bol-o	bol-ā
3	bol-e	bol-e

The examples in (54) illustrate the use of the **impf** paradigm in Dehawali Bhili. **impf**-marked forms are restricted to lexical stative (54a) and habitual (54b-c) predicates. (54b) refers to a habitual activity that the subject referents engaged in as children — going to sell fruit (after collecting it from the forest). (54c) describes the situation for sugarcane cutters in Gujarat at the time when the speaker worked there as a daily laborer — a stative situation in the past time. (54d) shows that even in the absence of explicit adverbial marking, sentences with **impf**-marked forms may not license the progressive interpretation. (54d) is unacceptable on the progressive interpretation but fine on the habitual interpretation.

(54) a. mārā bāhāko mārā-hāte ro-ye
My father.NOM.SG me-with live-**impf.**3.SG
My father *used to live* with me.

b. āmã̃ hānā āth-ā tāhã̃ jāmba vec-ā **jā-ji**
We.NOM small PST-M.PL then J-NOM.PL sell-INF go-**impf**.1.PL
When we were small, we used to go to sell Jāmba (*Eugenia Jambolana*) fruit.

c. gujrātā-m jāsti roji **mil-e** ān khel poihā mil-talā
G-LOC more wage.NOM.PL get-**impf.**.3.SG and lot of money.NOM get-IMPF.M.PL
In Gujarat, (we) used to get more wages, and (we) would get a lot of money.

d. āmã̃ jāmba vecā **jā-ji**
We.NOM J.NOM.PL sell-INF go-**impf.**1.PL
*We *were going to sell* Jāmba (*Eugenia Jambolana*) fruit.

The Dehawali data thus shows the the **impf** paradigm is further restricted to a specific semantic domain in the past, a situation which does not have a transparent cause if we hold that **impf** is a category with present tense specification.

Marathi

In modern standard Marathi, the **impf** paradigm is also restricted to a past time non-progressive interpretation, but its occurrence in the language is very rare. It appears in literary texts and is considered to be an archaic form. Marathi does not add to the typology of **impf**-distribution in NIA languages, but provides an additional instance of a language where **impf** only licenses habitual and lexical stative past time interpretations, like Dehawali Bhili. I give the Marathi cognate of the **impf** paradigm in (55) for completeness.

(55) **Marathi Imperfective Past**

PERSON	SG	PL
1	bol-ẽ	bol-ũ
2	bol-as	bol-ā
3	bol-e	bol-at

The upshot of the data discussed in this section is that the set of languages where **impf** has only past time interpretation constitute important evidence for assuming that **impf** lacks tense specification.

Summary

The distribution of the imperfective forms cognate to MIA (**impf** and IMPF) across a section of NIA languages confirms the findings from the MIA textual data — the loss of morphological distinctions between the present and the past tenses. The NIA languages retain this underlying tenseless system to differing degrees in sub-domains of the tense/aspect system. Pawri represents the most archaic stage with a single imperfective morphological paradigm that has past and present reference. The Konkana imperfective paradigm is morphologically composite and part of this paradigm, cognate to the **impf** paradigm, is identical for the past and present tenses. In Gujarati, **impf** has both past and present time reference in specific syntactic contexts although indicative clauses are generally tense-marked in this language. Ahiriani, Dehawali Bhili, and Marathi, present cases where **impf** licenses only past-time interpretation, a situation inexplicable on the **impf**-as-present hypothesis. These comparative data, taken together, provide strong support for the claim that the tense distinctions in the NIA tense/aspect system must be considered innovations modifying a basically aspectual substrate system. The varying distribution of the imperfective forms can be best analyzed as relic functions of a category with general semantics that is blocked by semantically more specific morphology.

4.5 The loss of the present-future distinction

The preceding section, based on MIA and NIA data, made the claim that the distinction between the past and the present tenses was lost in MIA, which was based on an aspectual contrast between the imperfective and the perfective aspects. So far we have factored out

the future tense from our discussion about the loss of morphological tense distinctions. While MIA lost its past-referring categories, it retained the OIA Future paradigm. (56) presents my understanding of the basic tense/aspect categories in MIA.

(56) **MIA aspect-based system**

semantic category	morphological form
imperfective aspect	**impf**
perfective aspect	PERF
future tense	Future

The MIA Future paradigm for the verb *gam* 'go' is listed in (57). The paradigm is based on a distinct stem, formed with an augment *-(i)ssa* to which the primary person-number endings are added.

(57) **MIA Future paradigm**

PERSON	SG	PL
1-M F N	gam-issā-mi	gam-issā-mo
2-M F N	gam-issa-si	gam-issa-tha
3-M F N	gam-issa-i	gam-issa-nti

Of the modern NIA languages under consideration here, Marathi and Hindi have lost the MIA Future entirely, Ahirani and Konkana in part, while the other languages retain it. In the larger Indo-Aryan language context, most languages have lost the MIA Future and innovated/recycled forms to mark future reference. Only Gujarati and the languages/dialects contiguous to the Gujarati linguistic area retain the OIA future morphology (Beames, 1872-79; Kellogg, 1893; Hoernle, 1880). As far as grammatical descriptions of MIA go, there is no attested MIA tense/aspect system that has lost the future tense morphology. The future is attested until the very late MIA texts (Pischel 1900, Bloch 1965).

On the other hand, in the earliest NIA texts for Marathi, the MIA Future is already lost and a new future morphological paradigm has been innovated. Old Hindi data is slightly more complex because there is no Old NIA text that can be traced to be the direct ancestor of contemporary standard Hindi.[32] Beames (1872-79) and Kellogg (1893) have noted the presence of the MIA Future in the Old Hindi (Braj) literature (Beames 1966: 113-114;

[32]Modern standard Hindi is closely related to the Braj, Awadhi, and Baiśwari dialects in which older literature is found and which presents an approximation of the older dialect on which standard Hindi might be based.

Kellogg 1893: 313-315). However, Modern Hindi shows no traces at all of the MIA Future and instead uses an innovated form for future reference.

This gap in the textual evidence underdetermines the precise path of morphological loss of the OIA/MIA future morphology and the innovation of future morphology in Marathi and Hindi. Two possibilities present themselves :

(a) The MIA Future was in direct competition with the innovated future paradigms and it is the consequence of this competition (the loss of the old future) that is reflected in Old NIA texts.
(b) There is no direct competition between the MIA Future and the innovated Future paradigms but that there is an intermediate **future-less** stage between the two systems with future markers.

I will argue that it is possibility (b) that is the more likely option in light of the comparative evidence that we have from NIA textual and variational data. We can hypothesize a future-less tense/aspect system as the ancestor of the NIA systems for at least some NIA languages — viz. Marathi, Hindi, and Konkana. What would be the properties of such a proto-system? If the system lacks a distinct form for future temporal reference as a result of the loss of future morphology, we would expect existing aspectual or modal morphology to be employed for future reference. Such a system would lack any explicit device for temporal location in the future. Taken together with the claim that this proto-system system (as derivable from the MIA aspect-based system) also lacks a distinction between the past and the present tenses, we have a reconstructed system that does not mark any tense distinctions at all.[33]

I argue for the possibility (b) rather than the possibility (a) because there is no evidence at all for a direct competition between the older and the innovated future tense paradigms. On the other hand, the *future-less system* hypothesis is supported by several empirical facts from Old Marathi and Hindi as well as data from modern Konkana and Ahirani. My empirical claim is that some stage of proto NIA must have been a future-less stage, where the **impf** was employed for future temporal reference. Thus, the innovated future morphology in Marathi and Hindi leads to a *re-articulation* of tense distinctions in a basically un-tensed system. Crucially, it is not an effect of the *maintenance* of existing tense distinctions from the older tensed system.

[33]This is not an empirical claim about the genetic relation between Marathi and Hindi, but rather a speculation about the common properties that would have to characterize the ancestors for both languages. The Marathi and Hindi innovated future tenses, although based on the same basic paradigm (the **impf** paradigm), are quite different from each other.

I will present three arguments in support of this claim. In §4.5.1, I will provide evidence from composite future paradigms in Ahirani and Konkana that contain elements of the **impf** paradigm. In §4.5.2, I argue that the morphological structure of the Marathi and Hindi innovated future paradigms also supports the hypothesis of a future-less stage. Finally, in §4.5.3, I demonstrate that distributional facts from Old Marathi about the innovated future morphology and the **impf** paradigms also confirm the hypothesis of a future-less stage.

4.5.1 Composite paradigms

Ahirani and Konkana are characterized by composite future paradigms that contain elements from both the MIA Future paradigm (57) and the **impf** paradigm.[34] Consider the Ahirani paradigms in (10) and (12).[35]

(58) **The Ahirani impf paradigm**

PERSON	SG	PL
1	bol-u	bol-u-t
2	bol-e	bol-e-t
3	bol-e	bol-e-t

(59) **The Ahirani future paradigm**

PERSON	SG	PL
1	bol-su	bol-su-t
2	bol-śi	bol-śā-t
3	bol-e	bol-ti-t

The Ahirani future paradigm is composite in the following way. The first and second person morphology is cognate to the MIA future paradigm. The third person forms, on the other hand, are based on the **impf** paradigm.[36] The third person plural future form does not appear elsewhere in the language (because the singular forms have been generalized across number), but it is cognate to the MIA and Old Marathi **impf** form for the third person plural. The main point is that the future paradigm of Ahirani is composed from the forms of the MIA future paradigm in the first and second persons and the forms of the **impf** paradigm in the third person.

[34] It is important to note that the morphological forms of **impf** borrowed in creating the future paradigm do not necessarily correspond to the modern **impf** paradigms of these languages, since they reflect the form of the **impf** paradigm from an earlier stage. In both cases, however, the borrowed forms are cognate to older stages of the **impf** paradigm.

[35] A fact particular to Ahirani is that the plural forms are generally derived from the singular with a *-t* suffix.

[36] For immediate reference, the MIA **impf** paradigm is listed in (**??**) reproduced from (60).

(60) **MIA: impf paradigm**

PERSON	SG	PL
1-M F N	gacchā-**mi**	gacchā-**mo**
2-M F N	gaccha-**si**	gaccha-**tha**
3-M F N	gaccha-**i**	gaccha-**nti**

Konkana presents a variant of a similar configuration as seen from (61) and (62).

(61) **The Konkana impf paradigm**

PERSON	SG	PL
1	bol-u	bol-ja
2	bol-as	bol-ā
3	bol-a	bol-at

(62) **The Konkana future paradigm**

PERSON	SG	PL
1	bol-i-(l)	bolu-s
2	bol-śi	bol-śā
3	bol-i-(l)	bol-ti-(l)

The cells shaded grey contain forms that are cognates of the corresponding MIA Future paradigm while the remaining forms are cognate to the **impf** paradigm.[37] The *-l* affix that is given in brackets for the forms of the **impf** morphology in (62) is the future marking affix in Marathi (see 4.5.2) and is optionally employed in Konkana.[38]

The examples in (63) illustrate the future tense in contemporary Konkana. In (63a), the form in the first conjunct is cognate to the MIA Future paradigm while the future-referring form in the second conjunct has its cognate in the **impf** paradigm. In (63b), both forms belong to the MIA Future paradigm.

(63) a. goḍ āmbā **lāv-śi** tava=c goḍ āmbā **lāg-ti**
sweet mango.NOM plant-FUT.2.SG then sweet mango.NOM bear-**impf.**3.PL
if you *will plant* a sweet mango, then sweet mangoes *will be borne* (on the tree).

b. jar tumi hindu-dharmā-sārkha **karś-ā** tar mar-i **jāśā**
If you.NOM.PL Hindu-religion-like do-FUT.2.PL then die-GER go-FUT.2.PL
If you *will do* any (ritual) that is part of the Hindu religion, you *will die*

The configuration of the Ahirani and Konkana paradigms — partially based on the older MIA Future and partially on the **impf** paradigm — suggests that the **impf** paradigm has

[37] The **impf** part of the composite future paradigm in Konkana does not appear to be directly related to the particular forms of the **impf** paradigm that are current in Konkana. However, they can be reconstructed as variants of the **impf**morphology based on data from Old Marathi, where both morphological variants are used.

[38] The use of this affix in Konkana appears to be an effect of contact with the standard language Marathi rather than a result of common development for several reasons. First, this affix is already attested in Old Marathi (cir. 1270 AD) for the entire paradigm without any traces of the MIA Future. If the composite paradigm of Konkana is to be reconstructed as an intermediate stage between the stages with a complete MIA future paradigm MIA and a complete *-l* affix based paradigm, we have to assume that two ordered changes took place following the loss of the future morphology without either spreading through the entire paradigm: (a) the spread of the **impf** morphology to some cells of the future paradigm, and (b) the innovation of the *-l* affix that attaches only to the cells realized by the **impf** morphology. On the other hand, contact with a language that has a complete *-l* based paradigm constitutes a simpler explanation for both the presence of the *l* affixes in only a select number of cells in the future paradigm, as well as for the optionality of *-l* marking.

spread into the semantic domain of future reference in precisely those cells of the person-number paradigm where the future morphology is lost. While the Ahirani and Konkana facts in themselves do not argue for a future-less stage in the diachrony of these languages, they do show that an existing aspectual paradigm (the **impf** paradigm) from the system has been employed for future reference in precisely those cells where the future morphology is lost and there is no other exponent for the future tense. Positing that the **impf** paradigm lacks temporal specification and is only specified for aspectual imperfectivity allows us to make sense of this spread from 'present tense' to future tense.

4.5.2 The morphological basis of the innovated future paradigms

Related to the data from Ahirani and Konkana are the morphological paradigms of Old (and Modern) Marathi and Hindi, both of which are based entirely on the **impf** paradigm. The Old Marathi Future is characterized by an invariant *-l* affix that is added to the **impf** morphology across the paradigm while Hindi employs a *g* affix, inflecting for number and gender that is suffixed to the **impf** morphology, already inflected for person and number.

The Old Marathi paradigms for the **impf** morphology and the future tense are given in (8) and (9).[39]

(64) **Old Marathi impf paradigm**

PERSON	SG	PL
1	bol-eṃ	bol-ōṃ
2	bol-asi	bol-ā
3	bol-e	bol-ati

(65) **Old Marathi innovated Future**

PERSON	SG	PL
1	bol-e-n	bol-ō-ni
2	bol-aśī-l	bol-ā-l
3	bol-e-l	bol-ati-l

The comparative paradigms for Old Hindi are given in (66) and (67).

(66) **Old Hindi impf paradigm**

PERSON	SG	PL
1	bol-ūṃ	bol-eṃ
2	bol-e	bol-o
3	bol-e	bol-eṃ

(67) **Old Hindi innovated future**[40]

PERSON	SG	PL
1	bol-ūṃ-gā	bol-eṃ-ge
2	bol-e-gā	bol-o-ge
3	bol-e-gā	bol-eṃ-ge

[39] In the first person forms, the affixal *-l* assimilates to the nasalized vowel giving a dental *n*.

[40] The Hindi Future also inflects for gender, which is marked on the innovated affix *-g*. I have factored this information out to keep the paradigms simple. The paradigm contains forms marked for the masculine gender.

It is fairly transparent that both these paradigms are derived from the particular cognates of the **impf** paradigm in the respective languages. This relation between the **impf** and future paradigms is puzzling unless we hypothesize a diachronically prior future-less stage (following the loss of MIA Future morphology) where the **impf** paradigm was used to mark future temporal reference. The innovation of the new Marathi and Hindi Future tense paradigms, on this hypothesis, would be the result of a re-articulation of the tense contrast between the present and the future tenses.

In the next section, I examine textual data from Old Marathi that supports this claim.

4.5.3 Future reference in Old Marathi

In this section, I argue that the innovated future morphology cannot have been in direct competition with the older MIA future morphology at any stage for MIA or post-MIA ancestors of Old Marathi. Instead, data from Old Marathi suggests that the MIA Future must have been replaced by the **impf** paradigm, resulting in a stage where there was no morphological contrast between the present and the future tenses. The innovated future paradigms led to the re-articulation of tense distinctions in an un-tensed system and was not an effect of the maintenance of existing tense distinctions from the older MIA system, which contrasted the future tense with the non-future.

My empirical arguments come from the distribution of the **impf** and future tense paradigms in Old Marathi. First, in Old Marathi texts, the **impf** morphology is sometimes used with a future time interpretation instead of the innovated Future. Second, negated clauses with future time reference may only occur with the **impf** forms and not the Future forms. Third, **impf**, rather than the innovated Future morphology is preferentially used in interrogative contexts. This demonstrates that **impf** is compatible with future time reference and, in fact, in certain syntactic contexts, is the only attested form for expressing future time.

How do these facts bear on the larger hypothesis that we are concerned with verifying? The main claim at stake here is an empirical one: Do the available textual data support a loss of the morphological distinction between the present and the future tenses in some reconstructed stage between MIA and Old Marathi or do they support the hypothesis that the tense contrast was retained throughout MIA and Old NIA, despite the replacement of the MIA Future by the innovated Old Marathi Future paradigm? The use of **impf** for future temporal reference is inexplicable if we assume that the innovated future paradigm directly replaced the MIA Future paradigm. However, such use of the **impf** paradigm is to be expected on the assumption that the loss of the MIA Future led to the use of the **impf**

morphology for future temporal reference. There was no direct morphological competition between the MIA Future paradigm and the innovated Future of Old Marathi.

The impf morphology in future contexts

In (68a-d), we see examples of the **impf** morphology with distinct future reference. In (68a-b), the **impf** form appears after clauses with verbs marked with the innovated future. The eventuality referred to by the **impf** form is temporally located after speech time just like the eventuality described by the future-marked forms. However, there is no explicit marking for temporal location. In (68c), the first clause, where the verb form is **impf**, has a modal interpretation and describes the possibility of someone putting the baby into the well, and asks a question that refers to a future time. It is the **impf** form of the verb *kar* 'do' that is used in this future-oriented question and not a form from the Future paradigm. (68d) announces a decision about the future made by a saint, regarding a dispute over the control of a child, but the verb is inflected with the **impf** morphology.

(68) a. ...nāk **jāi-la** mhaṇe kān **jātī-la** mhaṇe
nose.NOM go-FUT.3.SG QUO ear.NOM.PL go-FUT.3.PL QUOT

ḍoḷ-e **jā-tī** mhaṇe
eye-NOM.PL go-**impf.**3.PL QUOT
(his) nose *will go*, his ears *will go*, his eyes *will go* (lit. go). (GC: 73)

b. je yeṇeṃkāraṇ-i samast-āṃ paritoṣa **ho-ila** devatāṃ
that this.reason-INS.SG all-ACC.PL satisfaction.NOM.SG be-FUT.3.SG god.ACC.PL

maga teṃ tumh-āṃ īpsit-ā arth-ā teṃ **de-ti**
Then they you-DAT.PL desired-ACC.SG object-ACC-SG they give-**impf.**3.PL
If all the Gods *will be* satisfied (if satisfaction will become to all Gods), then they *will give* (lit. give) you the desired object...

c. ekādhīye vihir-i **ghāli-ti** tehaveḷi kāi **kari-si**
some well-LOC.SG put-**impf.**3.PL then what do-**impf.**2.SG
He might put (the baby) in a well, what *will* you *do* then (lit. do you do then)? (GC.55)

d. tumh-ā lobha kar-uṃ **lābh-e** pari lekaruṃ na **labh-e**
you-DAT love.NOM.SG do-INF get-**impf.**3.SG but child.NOM.SG NEG get-**impf.**3.SG
You *will get* to love (the child), but you *will* not *get* the child. (GC.56)

The data in (68) shows that the **impf** morphology is often used to refer to future eventualities, and alternates with the innovated Future to mark future temporal reference.

impf with negated and interrogative future-referring sentences

I mentioned that the **impf** morphology, and not the innovated Future, is the only attested form in future-referring negated sentences and preferentially used in interrogative contexts. This section illustrates this point. Consider the example in (69). All the affirmative clauses have future inflection while the negated clauses use the **impf** forms. The sentences, however, uniformly refer to a future interval. The commas separate distinct clauses in this example.

(69) āvo **khā-i-la** mhaṇe, na **khā-ye** mhaṇe, āvo **hās-ai-la** mhaṇe,
Oh eat-FUT.3.SG QUOT NEG eat-**impf.**3.SG QUO Oh smile-FUT.3.SG QUOT

na **hās-e** mhaṇe, āvo **bol-āi-la** mhaṇe, na **bol-e** mhaṇe
NEG smile-**impf.**3.SG QUOT Oh talk-FUT.3.SG QUO NEG talk-**impf.**3.SG QUO

Oh, he *will eat*, no, he won't eat (lit. doesn't eat); he *will smile*, he won't (lit. doesn't smile); he *will speak*, he won't speak (lit. doesn't speak). (GC. 89)

The examples in (70a-c) are consecutive sentences within the same discourse.

(70) a. koṇhā-ci goruv-ẽ **rākhā** kã̃...
Someone-GEN cattle-NOM.PL tend.**impf.**2.PL QUES

Will you tend (lit. do you tend) to someone's cattle? (LC.40:37)

b. hẽ **rākh-a-ila**, pari **doh-e** nā, **soḍ-īla**, pari
he tend-FUT.3.SG but milk-**impf.**3.SG NEG untie-FUT.3.SG but

bāndh-e nā
tie-**impf.**3.SG NEG

He *will tend* (to the cattle), but will not (lit. does not) milk them; he *will untie* (the cattle), but will not (lit. does not) tie them.

c. te-ṇẽ mhaṇita-lẽ āmhĩ **bāndhau-ni** āmhĩ **dohau-ni**
he-ERG.SG say-PERF.N.SG we-NOM.PL tie-FUT.1.PL we-NOM.PL milk-FUT.1.PL

He said, 'We *will tie* (them); we *will milk* (them).'

The first sentence (70a) is a yes-no question with future time reference and the verb 'tend' is inflected with the **impf** morphology. In (70b), the response to the question involves the

use of both the **impf** morphology (for the negated clauses) and the innovated future (for the affirmative clauses). The affirmative clauses in (70c), on the other hand, are inflected with the innovated future morphology.

The data in (69) and (70) demonstrate that in some syntactic contexts, future temporal reference is systematically expressed by the **impf** morphology. This pattern of distribution is surprising and is not attested for the older MIA Future paradigm, suggesting that it is not inherited from MIA. I can only speculate on the particular distribution of the **impf** morphology in the Old Marathi data. My hypothesis is that the innovated Future morphology instantiates the non-past perfective aspect in Old Marathi, at least originally. This can account for both the morphological facts and the distributional facts in Old Marathi. It has been speculated that the *-l* endings in Marathi are of participial origin and reflect the remnants of the perfective participle that must have been cliticized to the **impf** morphology to yield the future tense. This **impf**+PERF basis for the future tense is also visible in Hindi where the *-g* endings (inflecting for number and gender like the participles) have been traced to the participle *gata* 'gone'. If the future is aspectually perfective, this otherwise unaccountable employment of the perfective forms in its formation, can be explained. Moreover, this assumption also makes sense of the distribution of **impf** and the innovated Future in Old Marathi. The future, being aspectually perfective, is restricted to eventive future eventualities. Negated, interrogative, and modal sentences do not set up perfective contexts. The **impf** morphology, on the other hand, being imperfective, is aspectually compatible with these contexts.

Old Marathi and the present-future morphological contrast

Do available textual/comparative data support a loss of morphological distinction distinctions between the present and the future tenses in some reconstructed stage between MIA and Old Marathi/Hindi? Or do they support the hypothesis that the tense contrast was retained throughout MIA and NIA, despite the replacement of the sigmatic future morphology by the innovated future morphology?

Let us first consider the latter hypothesis in light of the available facts. If the present-future contrast is retained constantly at all stages in that set of languages which have lost the MIA future morphology, then the following distribution is to be expected in Old Marathi.

a. The MIA future and *not* the **impf** morphology must alternate with the innovated future, suggesting direct competition between two alternative ways of future marking.

b. The MIA future and *not* the **impf** morphology must occur in contexts in which the innovated future morphology may not be used; viz. negated and interrogative clauses.

However, Old Marathi retains no traces at all of the MIA future and it is the **impf** morphology that alternates with the future for expressing future time. This distribution is better accounted for if we adopt the hypothesis that at some stage between the textually documented stages of MIA and Old Marathi, the **impf** morphology was the only available morphological device for future temporal reference. At such a stage, the language lacks any morphologized distinction between the present and the future tenses. The Old Marathi and Hindi innovated Futures constitute the re-articulation of these tense distinctions in a later system from a prior tense-less system. Not only does this hypothesis account for the use of the **impf** morphology for future reference in Old Marathi, but it also provides a possible motivation for the morphological presence of the **impf** paradigm in the future paradigms in several NIA languages. As described in §4.5.1 and §4.5.2, the forms of **impf** are employed in the future tense paradigm of the modern languages in two ways. In Ahirani and Konkana, these forms are directly incorporated into the composite future paradigm, while in Marathi and Hindi, the innovated future paradigm is entirely based on the inflected **impf** morphology.

Summary

The goal of this section was to determine whether available textual and comparative data from Old and Modern NIA languages allow us to differentiate between two possible scenarios that could have preceded the rise of the innovated future morphology in some NIA languages. I argued that the limited data available supports the reconstruction of a proto-stage that was characterized by the absence of a morphological contrast between the present and future tenses as opposed to a stage at which the innovated future and the older future morphology were in direct competition. At a broader level, this reconstruction, although limited by the absence of decisive textual data, allows us to tentatively posit a completely tense-less aspectually based proto-system for at least some Indo-Aryan languages.

4.6 Extending the impf morphology to past and future times

This chapter so far has focused on the changes in the distribution of the the **impf** morphology and more peripherally, the PERF morphology, across stages of Indo-Aryan. On the account presented here, the **impf** morphology realizes the present tense in OIA but the imperfective aspect in MIA. This change from present tense to imperfective aspect allows

the **impf** morphology to be systematically extended to past and future temporal reference. The problem is this: How does a morphological form specified for present *tense* diachronically change to realize the imperfective *aspect* with no tense specifications? In other words, how do we get a change from a tense specification like the one in (71a) to the temporally unspecified one in (71b)?

(71) a. $[[\textbf{impf}_{OIA}]] = \lambda P \lambda t\ [t \bigcirc \text{now} \wedge P(t)]$

b. $[[\textbf{impf}_{MIA}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{INST}(P, t')]$

Bybee et al (1994) report two crosslinguistically attested diachronic changes in morphological forms that realize the present tense in languages. In the first kind of change, a present tense markerstarts marking the future tense across time. In the second change, the present tense marker gets extended to marking past time imperfective reference diachronically.

(72) a. PRESENT $\gg$ FUTURE

b. PRESENT $\gg$ (past/temporally unrestricted) IMPERFECTIVE

The change, such as the one instantiated by the Indo-Aryan data, appears to also have cross-linguistic parallels. But the question remains: How does a *tense* marking form semantically change to become an *aspect* marking form diachronically?

This section is an attempt to lay out a possible answer this question for the case of the Indo-Aryan **impf** morphology. A cautionary note is required. This section is speculative in nature and is based on limited data and the observations of Sanskrit and NIA linguists. I put forth this proposal only as a starting point for more nuanced and systematic textual research that can verify the hypothesis presented here.

My proposal is as follows: At all times in Indo-Aryan, the **impf** morphology has only an aspectual specification and no tense specification. In other words, the **impf** morphology is never, even in the Oldest IA texts, the 'present tense' morphology, but always an imperfective aspect marking morphology. Therefore, there is *no change at all* in the semantic specification of the **impf** morphology from OIA to MIA. However, there is a marked change in the *distribution* of this morphology from OIA to MIA. This distributional change is to be attributed to the loss of existing past-referring morphological categories. Consideration of broader OIA data and descriptions of the distribution of the **impf** paradigm in OIA, allows me to make this tentative claim about the semantic contribution of **impf**.[41]

[41] The question we asked about MIA comes up in this context as well. If **impf** paradigm denotes the imperfective aspect in OIA, why has it been labeled the 'Present Tense' and why does the literature on OIA

4.6.1 impf morphology as tenseless imperfective: Vedic

Delbrück (1876), the first detailed investigation into the tense/aspect system of OIA, notes that the 'historical present' use of the **impf** morphology was not foreign to the poets of the Ṛgveda, the oldest available IA text. I want to argue that the use of **impf** morphology with past time reference is not determined by a narrative device, but is a more systematic effect of the semantic specification of **impf**. **impf** realizes the imperfective aspect in OIA and lacks temporal specification. In other words, i want to claim that **impf** in OIA is semantically identical to **impf** in MIA.

Let us consider an example. (73a-b) belong to a single verse that describes the famous conquest of Vṛtra, an enemy of Indra, who is the protagonist in this hymn, as well as several others. This verse describes how Vṛtra's mother was not spared by Indra and suffered the same fate as her son. All the verbs (bold-faced) in this verse are past-referring categories (the Imperfect and the Perfect), except for the last verb, which has **impf** inflection. The first two verbs, *abhavat* 'became' and *jabhāra* 'cast/threw' are eventive, while the **impf** inflected verb *śaye* 'lay' in (73b) is stative and has past time reference. **impf** may be used for past time reference because it is temporally unspecified and only specified for the imperfective aspect. A stative predicate is imperfective and may be marked with the **impf** morphology.

(73) a. nicā́vayā **a-bhav-at** vṛtráputrā
humbled become-PST-IMPF.3.SG V-NOM.SG

índro asyā áva vádhar **jabhār-a**
I-NOM.SG her at thunderbolt cast-PFCT.3.SG

Vṛtraputrā (Vṛtra's mother) *became* humbled; Indra *cast* his thunderbolt at her. (RV. 1.32.9a-b)

b. úttarā sū́ḥ ádhara-ḥ putrá **āsīt**
above mother-NOM.SG below son-NOM.SG be-PST.IMPF.3.SG

dānuḥ **śay-e** sahávatsā ná dhenú-ḥ
D-NOM lie.**impf.**3.SG with-calf-NOM.SG like cow-NOM.SG

The mother above, the son *was* below; Dānu (Vṛtra's mother) *lay* (lit. lies), like a cow with her calf. (RV. 1.32.9c-d)

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not make note of this fact? The answer to the first question is again, 'tense-bias'. The answer to the second question is that the literature does make very careful note of the non-temporally restricted (particularly past-time) uses of the **impf** morphology, and as with MIA, attributes these uses to the rhetorical function of the present tense — the 'historical present' use.

Some other examples from the same hymn, otherwise dominated by the OIA past referring categories, illustrate this contrast. In (74a), the sentence describes how the waters are flowing over the body of Vṛtra, who lies, with his limbs dismembered by Indra. Uniformly, it is stative (atelic) predicates with past time reference that appear with **impf** inflection.

(74) a. ...śáyānam máno rúhāṇā áti **yā-nti** ápa-ḥ
lying courage rising over go-**impf.**3.PL water-NOM.PL
The waters (of the river), taking courage, *were flowing* (lit. flow) over the lying one. (RV. 1.32.8b)

b. vṛtrá-sya niṇyáṃ vi **cara-nti** ắpa-ḥ
V-GEN.SG away move-**impf.**3.PL water-NOM.PL
The waters *were carrying* (lit. carry) away Vṛtra's mysterious form(?) RV.1.32.10c)

(73) and (74) suggest that the distribution of the **impf** morphology in the oldest Indo-Aryan is governed by factors more systematic than rhetorical or stylistic aspects of narrative, particularly, since the **impf** inflection appears on stative verbs in narrative contexts otherwise using past-referring morphological categories. I noted this correlation between the stativity of predicates and **impf** inflection for the MIA **impf** distribution as well. As I claimed in §4.3.1, this systematic correlation is inexplicable on the 'historical present' account of the use of **impf** for past time reference but follows naturally from the **impf**-as-imperfective hypothesis.

Other evidence for impf as imperfective

Further evidence that the **impf** morphology may refer to past as well as present time imperfective eventualities comes from grammatical descriptions, both traditional and more modern. Pāṇini (cir. 500 BC), specifies that the **impf** morphology may be used to describe past time eventualities if it is licensed by past-time adverbials such as *sma* and *purā* 'formerly' (P. 3.2.118-119). Whitney (1889: 278) observes that this restriction is not found in the Ṛgveda (written at least seven centuries before Pāṇini) and that the adverbially unmodified **impf** morphology occurs freely in referring to past time eventualities (Whitney 1889: 278; Gonda (1962: 218)). Delbrück (1886:129) also notes that in the Brahmana language (late Vedic stage), the **impf** with the marker *sma* may only denote imperfective aspect, never perfective.

There is a possible generalization lurking here, which needs to be verified. The generalization is that the distribution of the **impf** morphology is not completely free; it is restricted

to past time *imperfective* reference, because the form has aspectual and not temporal meaning. This descriptive evidence for Pāṇini and the modern grammarians is only suggestive but points to a very promising direction of research for determining the actual distribution of **impf** in Vedic and the factors it is governed by.

4.6.2 impf morphology as tenseless imperfective: Epic Sanskrit

Speijer (1886: 243-245), describes the Sanskrit Present Tense as being 'what it is everywhere, the expression of facts present or represented as such.' Considering this self-evident, he moves on to discuss the more important uses of the present tense **impf** morphology — its use in reference to eventualities in past and future time.

impf and past time reference

With respect to the past-referring function of the **impf** morphology, Speijer observes that the most common employment of **impf** in past contexts is in denoting progressive or habitual situations. Such use of the **impf** is often licensed by two past time adverbials *sma* and *purā* 'formerly' but these are not necessary and generally wanting in the body of a narration (Speijer 1886: 245).[42] Consider the examples in (75) cited in Oberlies (2003: 145-46).

(75) a. sabhā-yām ṛṣa-yas tas-yām paṇḍav-aiḥ saha **āsa-te**,
hall-LOC.SG seer-NOM.PL that-LOC.SG P-INS.PL with sit-**impf**.3.SG

āsāṃ-cakr-uḥ narendrāḥ ca
sit-PFCT-3.PL king-NOM.PL and

In that hall, the seers *were sitting* (lit. sit) with the Pāṇḍvas. And the kings *became seated*. (Mbh. 2.4.7)

b. sā **pra-jajvāl-a** sarvataḥ, mandaṃ **daha-ti** pāvakaḥ
she-NOM.SG up-light-PFCT.3.SG all-around slowly burn-**impf**.3.SG fire-NOM.SG

She (the pyre) lit up all around (in flames)....The fire *was burning* (lit. burns) slowly. (R. 3.68.3).

In (75a), the first sentence refers to a past time at which the seers were sitting (in the state of having been seated) in the hall with the Pāṇḍavas. The verb is inflected with the

[42] The idea that the use of the **impf** in past contexts must be licensed by specific adverbials is due to the rules in Pāṇini (3.2.118-119). However, grammarians such as Whitney and Speijer seem to be faced with substantial data that contradicts this rule. If what I am proposing is true, *sma* and *purā* are only optional adverbial modifiers for past-time reference. The **impf** morphology by itself is not specified for temporal location and is therefore compatible with past and present time reference.

impf morphology. The next sentence describes the kings assuming the sitting position in that same hall; the verb has the Perfect inflection.[43] Clauses are separated y commas. In (75b), the first sentence describes the event of the pyre lighting up completely with a Perfect-inflected form, while the next sentence describes the homogeneous process of the fire burning afterwards, but still in the past time, with the **impf** morphology. The appearance of **impf** with atelic predicates and licensing imperfective interpretation is consistent with the semantics I am claiming for **impf** in OIA.

Further **impf** is often used for the backgrounding function that the progressive aspect performs in English. **impf** sets up a temporal frame in the past-time, within which an event is considered to occur. In the example in (76a), the **impf**-inflected form refers to an iterated episodic eventuality, during which the event of seizing (with Perfect inflection) is said to take place. Both eventualities are located in the past time.

(76) etad eva yadā vākya-m **āmreḍaya-ti** vāsava-ḥ
thus just as sentence-ACC.SG repeat-**impf.**3-SG V-NOM.SG

anādṛ-tya tataḥ śakra-ṃ graha-ṃ **ja-grāh-a** bhārgava-ḥ
disobey-GER then Ś-ACC.SG offering-ACC.SG seize-PFCT-3.SG B-NOM.SG

As Vāsava (Indra) *repeated* that sentence (over and over), disobeying Śakra (Indra), Bhārgava *seized* the offering. (Mbh. 3.124.13)

in (77), the **impf**-inflected form *han-ti* licenses the futurate reading of the progressive progressive, but with past itme reference. The form describes an unculminated eventuality of killing, and sets up an interval during which the event of speaking takes place, also in the past.

(77) yadā droṇasut-o garbh-ān pāṇḍū-nām **han-ti** Mādhava
when D-NOM.SG children-ACC.PL P-GEN.PL kill-**impf.**3.SG M.VOC.SG

tadā kila tva-yā Drauṇi-ḥ kruddh-ena **uk-ta-ḥ** arimardana
then EMPH you-INS.SG D-NOM.SG angered-INS.SG speak-PERF-M.SG A.VOC.SG
Mādhava, As Droṇasuta *was killing* (was about to kill) the children of the Pāṇḍus, O slayer of foes, Drauṇi *was spoken* to thus by you, who was angered. (Mbh. 14.66.10)

In (78), we have examples of the **impf** morphology licensed by the past referring adverbials *purā* 'formerly' and *sma*, licensing a stative (78a) and a habitual (78b) interpretation.[44]

[43]This is the Periphrastic Perfect, distinct from the reduplicated Perfect, but with the same semantic interpretation in Epic Sanskrit as the reduplicated Perfect.

[44]Oberlies (2003: 147) notes several instances of the **impf** + *sma* used to refer to *present* time habitual situations rather than past time situations in Epic Sanskrit. Here is what my hypothesis is. It might be the

(78) a. śayāna-m **sam-upāsa-nti** ya-m **purā** paramastriy-aḥ
sleeping-ACC.SG revere-**impf.**3.PL who-.ACC.SG formerly excellent-women-NOM.PL

The sleeping one (Bhīṣma), whom, formerly, the most excellent women *revered.* (Mbh. 7.50.38a)

b. **nivedaya-nti** **sma** tadā kunt-yā bhaikṣ-am sadā niś-i
deliver-**impf.**3-PL then K-INS.SG alms-ACC.PL always night-LOC.SG

They *would deposit* the alms with Kunti every night. (Mbh. 1.157.5)

impf and future time reference

Both Speijer (1886) and Oberlies (2003) note that the **impf** morphology frequently refers to eventualities in the future. Some examples are in (79a-b).

(79) a. śvo rājasevak-āḥ asmā-n **niḥ-sāraya-nti**
tomorrow king.servant-NOM.PL us-ACC.PL turn-out-**impf.**3.PL

Tomorrow, the king's servants *will turn* us *out* (lit. turn out) (R. 3.68.13)

b. tasmāt śakra-vadh-ārth-āya vṛtr-am **ut-pād-ay-ā-mi** aham
therefore S-destruction-purpose-DAT-SG V-ACC.SG create-**impf.**.3.SG I

Therefore, I *will create* (lit. create) Vṛtra, for the purpose of destroying Śakra (Indra). (Mbh. 5.9.42)

c. kśipram eva **vinaśya-ti**
soon EMPH perish-**impf.**3.SG

Very soon, he *will die* (lit. dies). (R. 3.20.18)

Thus, we see that it is reasonable to hypothesize that the facts in Epic Sanskrit are comparable to the facts in MIA — the **impf** morphology is temporally unspecified at both stages and carries only aspectual specification. **impf** refers to imperfective eventualities and the temporal location of these eventualities is fixed through context or by adverbial modifiers. If this hypothesis is proved correct, then we do not have to assume a radical shift for **impf** from present tense to imperfective aspect from OIA to MIA.

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case that the **impf** + *sma* construction does not really license a past time interpretation, but rather, a past or a present time characterizing intepretation. The examples in (75a-b) are both naturally translatable by the progressive, whereas the examples in (78) require the simple past or the *would* construction which both have a characterizing interpretation.

4.6.3 Summary

In this section (§4.6) I put forward a speculative proposal about the semantic specification of **impf** in OIA. I proposed that Vedic and Epic Sanskrit data, supports the tentative hypothesis that **impf** lacks tense specification even at the OIA stage. This hypothesis, if proved correct, has the desirable consequence that we do not need to appeal to any semantic change at all in order to understand the aspectual configuration of the MIA system. There is no sudden extension of the **impf** morphology to past (and future) reference in MIA (or a comparable prot-NIA system). The aspectual specification of **impf** remains constant across OIA and MIA.

At first glance, this might look like an improbable hypothesis because we know that there is a marked difference in the distribution of **impf** in OIA and in MIA. What is the reason for this difference if **impf** retains the same semantics throughout? The answer to this question, I believe, lies in the relative richness of the tense/aspect systems of OIA and MIA. OIA had three distinct past-referring categories (the Imperfect, the Aorist, and the Perfect) in addition to **impf** which was used in a particular subdomain of the past — the imperfective subdomain. The Imperfect and the Aorist, in particular, were past tense categories (with distinct past affixes). Although the **impf** morphology was temporally unspecified, the presence of these categories created the effect of a present-past opposition between the **impf** on the one hand and the past-referring categories on the other. This effect, is of course, not substantiated by the textual data, which reveals that the **impf** regularly occurrs with past and future time interpretations. The presence of a distinct future referring category, the OIA future, had a corresponding effect that descriptive grammars posited a present-future morphological opposition, while carefully noting that this opposition was belied by the regular use of the **impf** morphology in referring to future eventualities. The loss of the past referring morphological categories by the MIA stage, and the future by the Old NIA stage, resulted in making more visible the actual semantic domain of the **impf** morphology.

If my hypothesis is correct, then the only explanation necessary for the changed distribution of **impf** from OIA to MIA would have to be the loss of OIA past referring categories which makes the MIA tense/aspect system, and the actual semantic specification of **impf** much more transparent. The **impf** morphology throughout Indo-Aryan is tenseless and realizes the imperfective aspect.

4.7 Conclusion

In this chapter, I laid out the distribution of the past, present, and future referring morphological categories in OIA, MIA, and NIA. I demonstrated that the radical simplification of the verbal system from OIA to NIA, via MIA, involves a substantive change in the configuration of Indo-Aryan tense/aspect system. Specifically, the OIA system with its tense contrasts between the past, the present, and the future tenses, was reconfigured into an aspect-based system with a contrast between the imperfective and the perfective aspects. The **impf** morphology, which realized imperfective aspect was apparently restricted to non-past and non-future situations in OIA, but was extended to past and (for a sub-set of languages) future reference in MIA. The loss of the OIA Imperfect, Perfect, and Aorist morphology in MIA correlated with the emergence of the aspectually perfective PERF morphology. The MIA system, based on the **impf** and PERF morphology, was an aspectual system, lacking tense contrasts.

I then pointed out that the diachronic changes laid out in this chapter present a puzzle for the semantic representation of tense and aspect categories. How does a morphological category supposedly instantiating 'present tense' such as the **impf** morphology get extended to past, and, in some cases, to future reference? Based on evidence from Vedic and Epic Sanskrit, I speculated that there was, in fact, no change in the semantics of the **impf** morphology from OIA to MIA, and that the **impf** morphology realized the temporally unspecified imperfective aspect at all stages of OIA and MIA. This hypothesis, which needs to be verified by systematic textual study, has the advantage of providing a simple explanation for the changed distribution of **impf** from OIA to MIA. On this hypothesis, we do not need to assume any radical change in the semantic specification of **impf** to explain its changed distribution. This change can be interpreted as a result of the morphological loss of OIA past referring categories in the transition from OIA to MIA. In other words, the change is a result of an alteration in the larger tense/aspect system, and not of a radical shift in the semantic specification of an individual morphological form.

Chapter 5

The imperfective aspect in Indo-Aryan

5.1 Introduction

This chapter has both empirical and theoretical goals. At the descriptive level, I aim to trace the progressive-to-imperfective grammaticalization path as it is instantiated in Indo-Aryan diachrony. There are two theoretical motivations to this empirical study. First, an explication of the discrete steps involved in this widely attested path can motivate more substantially the nested analysis of the progressive and the imperfective aspects presented in Chapter 3. Second, a close examination of the Indo-Aryan diachronic facts reveals that the emergence of the morphologized progressive aspect in several NIA languages is closely linked to the emergence of morphologically overt tense marking. This connection between the emergence of markers for temporal location and the progressive provides a new piece of evidence for the analysis of the progressive presented in Chapter 3. The theoretical goal of this chapter is to demonstrate how the pattern of diachronic facts discussed here follows from the analysis in Chapter 3. There are two changes in the imperfective domain between the MIA and the NIA stages that will be examined.

A. The tensed progressive construction: In several Old and Modern NIA languages (Old Gujarati, Hindi, and Pawri of the set examined here) periphrastic constructions based on imperfective morphology and present or past tense auxiliaries uniformly license a progressive interpretation. At later stages, this so-called "progressive construction" generalizes to license non-progressive imperfective interpretation.

B. The Locational Progressive construction: An innovated periphrastic progressive construction based on the IMPF paradigm and a tenseless locational auxiliary is first attested in the MIA tense/aspect system. This construction is ambiguous between present and past time reference at the MIA stage.[1] At the NIA stage (attested only in Old and Middle Marathi), this construction apparently generalizes to license non-peogressive imperfective interpretation, instantiating the progressive-to-imperfective shift. I call this the 'locational' progressive construction because the tenseless auxiliary performs the function of locating the imperfective predicate without explicitly anchoring with respect to speech time like the tensed auxiliary-based progressive constructions.

These changes present a puzzle about the progressive aspect as well as the progressive-to-imperfective shift. How is the semantics of the progressive aspect connected to its morphological composition? Why do tensed or tenseless auxiliaries, in periphrasis with the imperfective morphology, uniformly license progressive semantic interpretation? Can the progressive-to-imperfective shift be characterized autonomously if, at least in some cases (e.g. the tensed progressive construction), the change goes hand-in-hand with the emergence and spread of a new morphological feature such as tense in the tense/aspect system? These are the questions that this chapter attempts to answer.

The organization of this chapter is as follows: In §5.2, I introduce data from Old and Modern NIA languages showing the relation between overt tense marking and the progressive interpretation. §5.3 offers an account of these facts based on the theory of the imperfective and progressive aspects that I have been developing in this dissertation. In §5.4, I discuss the Locational Progressive construction, which appears first in MIA texts and is retained in only one NIA language — Marathi — and in §5.5 propose an explanation for the progressive-to-imperfective path that it appears to undergo in the history of Marathi. The conclusion §5.6 summarizes the findings from MIA and NIA diachrony and and relates them to the semantic representations for the imperfective and the progressive aspects proposed in Chapter 3.

5.2 Tense marking and the periphrastic progressive

In Chapter 4 (§4.3 and §4.4) I established that the **impf** and IMPF paradigms instantiate the imperfective aspect (unspecified for tense) in the MIA tense/aspect system and may be interpreted as referring to eventualities located either in past or present time. At

[1] I am going to factor out the future tense in the course of this discussion because the periphrastic construction rarely occurs with a future tense auxiliary, and because in the later languages, this type is attested much later than the past and present periphrastic constructions.

the next stage, NIA languages innovate tense auxiliaries that form periphrastic constructions with these imperfective forms, which explicitly locate the eventualities denoted by the imperfective-marked predicate in the present or the past. One broad generalization with respect to this change emerges: at the onset of their attested occurrence, periphrastic constructions based on the imperfective forms and tense auxiliaries *always license only a progressive interpretation*. In other words, at least for some NIA languages, the progressive forms differ from the imperfective forms, only in the overt presence of a tense auxiliary. Descriptive grammars of Old and Modern NIA languages (Dave, 1935; Kellogg, 1893; Master, 1964; Tulpule, 1960; Bhayani, 1998, a.o.) clearly distinguish the progressive constructions from the non-progressive imperfective forms and document this innovated progressive as being constituted by the MIA imperfective morphology and innovated tense auxiliaries. At a diachronically later stage, the periphrastic imperfective+tense constructions cease to be restricted to the progressive interpretation and begin to license non-progressive imperfective (lexical stative and habitual/generic) interpretations, thus manifesting the progressive-to-imperfective shift (see Dahl (1995: 417) who makes that claim for Hindi.).

The table in (1) schematically represents this change. In (1) V and Aux refer to the verbal form and the tense auxiliary respectively, while the subscripts indicate the semantic contribution of these forms.

(1)

	progressive	non-progressive
Stage 1	V_{impf}	
Stage 2	V_{impf}+Aux_{tns}	V_{impf}
Stage 3	V_{impf}+Aux_{tns}	

At stage 1, the bare imperfective form of the verb licenses both progressive and non-progressive imperfective interpretations. At stage 2, following the emergence of overt tense auxiliaries, the periphrasis of the imperfective forms V_{impf} with an overt past or present tense auxiliary (V_{impf}+Aux_{tns}), is restricted to a progressive interpretation. The bare V_{impf} forms license non-progressive imperfective interpretations. At stage 3, the periphrastic construction, V_{impf}+Aux_{tns}, generalizes to license both progressive and non-progressive interpretations. The increase in the gray area from Stage 2 to Stage 3 represents the progressive-to-imperfective grammaticalization shift.

The progressive-to-imperfective shift, in this particular case, can also be viewed in terms of the spread of overt tense marking from the specific progressive semantic context to the more general imperfective semantic context. I will argue that this instantiation of the progressive-to-imperfective shift is better interpreted in this way.

5.2.1 MIA to NIA: tense auxiliaries

In Chapter 4 I showed that the MIA temporal system morphologically contrasted imperfective and perfective aspects and did not contrast the past and the present tenses. Further, some comparative evidence from NIA supports the hypothesis that some NIA languages originally lacked a present-future contrast as well. Most contemporary NIA languages, on the other hand, do distinguish between the past, present, and future tenses. The past-present distinction, moreover, is morphologically realized by tense auxiliaries that form periphrastic constructions in combination with the aspectual morphology inherited from MIA.[2] The table in (2) shows the difference between imperfective marking in MIA and its modern cognates from Hindi and Gujarati.

(2)

	present	past
Gloss	*does*	*used to do*
MIA	kar-ai, kar-anto	
Hindi	kar-tā **hai**	kar-tā **thā**
Gujarati	kar-e **ch-e**	kar-to **hato**

In MIA, the **impf** and the IMPF paradigms realize the imperfective aspect. Since these forms are unspecified for tense, they may refer to eventualities located in the past, the present, and sometimes, the future. In Hindi and Gujarati, on the other hand, the same imperfective forms (factoring in phonological change) must occur in combination with tense auxiliaries.[3] Going back to the older stages of Gujarati and Hindi, it is possible to reconstruct the discrete steps along this path of change.

5.2.2 Old Gujarati to Modern Gujarati

In Old Gujarati, both the **impf** and the IMPF paradigms inherited from MIA are employed in the formation of imperfective periphrastic constructions.[4] The construction with the

[2] I believe that the morphological basis of the present and past tense auxiliaries is common to the languages investigated here and probably constitutes a common inheritance (see Beames (1966: 171-209) for discussion on the morphological sources of these auxiliaries and changes in their phonological shape.). The present tense auxiliaries are cognate to the **impf** paradigm of the verb *as* 'be' or *accha* 'sit' (Turner 1936). The past tense auxiliary is based on the IMPF form of the MIA verb *ho* 'become' (but see Beames (1966) for an alternative proposal).

[3] The English glosses in the second row are approximate and are only intended to convey that the bare and the periphrastic forms license an imperfective interpretation.

[4] All the examples for Old Gujarati are taken from the text *Ṣaḍāvaśyakabālāvabodhavṛtti* (SB), written by Taruṇaprabhācārya (cir. 1355 CE) and edited by Pandit (1976).

present tense reading is formed from the **impf**-inflected verb and the present tense auxiliary. The construction with the past tense reading is formed with the **impf** form and the past tense auxiliary. In both cases, the difference between the readings for the periphrastic constructions and the bare forms is clear. The periphrastic constructions are restricted to the progressive interpretation while the bare forms typically license non-progressive imperfective interpretations (Bhayani 1998).[5] Consider the examples in (3).

(3) a. su ājīvikā kāraṇ grāmaloka-taṇāṃ
he-NOM.M livelihood reason-INS.SG village.people-GEN.PL

vācharu **chār-tu**
cattle.NOM graze-IMPF.M.SG

For his livelihood, he *used to graze* the cattle of the villagers. (SB. 211.19)

b. anerai din-i sandhyāsama-i... vācharu le **āva-tau**
another day-LOC.SG evening-LOC.SG cattle.NOM bring.GER come-IMPF.M.SG

hūn-tau su sarpp-i ḍas-iu
PST.M.SG he-NOM.SG snake-INS.SG bite-PERF.M.SG

One day, in the evening, he *was bringing* back the cattle (when) a snake bit him. (SB. 211.20)

In (3a) the sentence with the bare **impf** form describes an eventuality located in the past time and has a habitual reading. The immediately following sentence in the text (3b) uses the periphrastic construction *āva-tau hun-tau* 'was coming' based on the IMPF form and the past tense auxiliary, and licenses the progressive interpretation — it refers to a particular episode of bringing back the cattle, during which something happened.

(4a-b) also illustrate the same contrast. The bare **impf** form *ram-antā* in (4a) licenses the habitual past interpretation while the periphrastic construction with the past tense auxiliary *guṇa-tau hu-ntau* has the progressive reading. The sentence describes an ongoing past event of reciting a text, during which the deity invoked by the text appeared before the sage.

[5]That Gujarati does not employ a single imperfective form across both tenses is an idiosyncratic fact about the standard variety of the language. The contemporary Surti dialect spoken in South Gujarat differs from the standard language in using the IMPF paradigm to realize the imperfective aspect across all tense and modal configurations. In modern standard as well as Old Gujarati, the bare **impf** paradigm is not obligatorily associated with the present tense and is often attested with past time interpretation in subordinate clauses and in habitual/iterative contexts (see §4.4.3). What is relevant to the discussion here is that the presence of overt tense auxiliaries results in a progressive interpretation for the periphrastic constructions in Old Gujarati.

(4) a. āpaṇi gaṃgā-tīr-i **ram-antā**
we river-bank-LOC.SG play-IMPF.M.PL
We *used to play* on the river-bank...(BR. 118 (cited in Bhayani 1998: 87))

b. tadā kāli tihã̃... divākaru muni garuḍopapātādhyayanu
that time there D.NOM sage.NOM G.NOM
guṇa-tau **hu-ntau**
repeat-IMPF.M.SG PST.M.SG
At that time, there, the sage Divākara *was repeating* the *Garuḍopapātādhyayanu* text. (SB. 144.30-31)

A similar contrast is observed in present tense imperfective sentences. In this case, it is the **impf** paradigm that gets employed in the periphrastic construction. The bare **impf** form is used in characterizing sentences with habitual/generic and lexical stative predicates as illustrated in (6a-c).[6]

(6) a. ji **sambujjh-aiṃ** ti sagalāi jīva jã̃ **jīv-aiṃ**...
those sense-**impf.**3.PL those all living those live-**impf.**3.PL
tã̃ hiṃsā na **kar-aiṃ**
those violence.NOM NEG do-**impf.**3.PL
All those who *sense* (are conscious) are living (beings). Those who *live*, do not *commit* violence (SB. 27.12)

b. tumhe atiṣaya-sahita jñānabhāvai-tau **jāṇ-a u**... mūrkhabhāvatā
you extra-with knowledge.quality-ABL know-**impf.**2.PL foolishness.quality
kari haũ na **jāṇũ̃**
due to I NEG know-**impf.**1.SG
You *know* because of your ability for extra(sensory) knowledge. Due to my foolishness, I do not *know*. (SB. 62.1-2)

[6]The **impf** paradigm by itself is not restricted to present time reference. The examples I provide here have present reference because I am contrasting the bare **impf** form with the corresponding **impf**-based periphrastic construction, which has only present time reference. Sentences with the bare **impf** form often describe eventualities located in the past time. In (5), for instance, the context sets up a past interval, and the **impf** form is interpreted as referring to a habitual situation that overlaps with this interval.

(5) **Context:** ...all those days, he lived in a temple called *Siṃhaniṣadyāyatana*.
sandhyāsamai devagṛha bāhiri... svādhyāu **kar-ai**
in the evening temple outside self-study do-PRES.3.SG
In the evening, he *used to study* outside the temple. (SB. 41.11-12)

(6a) is a statement about living organisms with generic reference and contains an **impf**-inflected form. In (6b), a lexical stative predicate *jāṇ* 'know' also has **impf** inflection.

On the other hand, the predicates in (7a-b) are expressed by the periphrastic construction based on the **impf** form and the present tense auxiliary. These sentences license the progressive interpretation, i.e. they are interpreted as referring to a particular ongoing event.

(7) a. jiṇ-i mārg-i tumhe **jā-u** **ch-au** teh mārga huntau ju
which-INS path-INS you go-**impf.**2.SG PRES-2.SG that path from which

vāmau mārgu tiṇ-i mārg-i mahātmā **jā-i** **ch-ai**
left-NOM path-NOM that-INS path-INS sage-NOM go-**impf.**3.SG PRES-3.SG
The path by which you *are going*, the sage *is going* by the path that is to the left of that path (SB. 156. 25-26)

b. tumhārā bhāṇej tum-ha vand-ivā **āv-ai** **ch-ai**
your nephew.NOM you-ACC.SG greet-INF come-**impf.**3.SG PRES-3.SG
Your nephew *is coming* to greet you. (SB. 51.29)

The context for (7a) is as follows: someone, with the intention of killing the sage, asks a passerby if he knows what path the sage has taken. The passerby responds with a lie, hoping to avert the crime, and states that the route by which the individual *is going* is not the same as the one that the sage *is* currently *walking* along. In (7b) someone is asked to convey to the king the news that his nephew is on his way to see him. In both cases, the periphrastic construction correlates with an episodic interpretation of the eventuality and asserts that the eventuality has not yet culminated — which is a progressive interpretation.

To summarize, the Old Gujarati data shows that the morphological distinction between imperfective forms without overt tense auxiliaries (the **impf** and IMPF forms) and periphrastic constructions based on these forms in combination with tense auxiliaries, systematically correlates with a semantic distinction between the progressive and the non-progressive imperfective interpretations. The generalization that these imperfective+tense periphrases uniformly license the progressive interpretation has led to them being analyzed as exponents of the progressive aspect in Old Gujarati (Bhayani 1998; Dave 1935).

Modern Gujarati

In Modern Gujarati, however, there is a marked difference in the distribution of these periphrastic constructions. They are no longer restricted to the progressive interpretation

but are compatible with both progressive and non-progressive imperfective interpretations. The sentences in (8) and (9) illustrates the range of semantic interpretations available to the present and past auxiliary based periphrastic constructions.

(8) a. niśā atyāre rasoḍā-mā roṭli **banāv-e** **ch-e**
N.NOM.SG now kitchen-LOC bread.NOM.SG make-**impf**-3.SG PRES-3.SG

Niśā *is making* bread in the kitchen right now.

b. niśa roj roṭli **banāv-e** **ch-e**
N.NOM.SG everyday bread.NOM.SG make-**impf.**3.SG PRES-3.SG

Niśā *makes* bread everyday.

c. kavi rājaśekhar paścim taraf-no pradeś apabhraṃśa kavi-yo-nũ
poet R.NOM west direction-GEN region.NOM A. language poet-PL-GEN

khās sthān hovā-nũ sūcit **kar-e** **ch-e**
main place be-INF suggestion do-**impf.**3.SG PRES-3.SG

The (writings of the) poet Rājaśekhar *suggests* the western region to be the main location of the Apabhraṃśa language poets. (Bhayani 1998: 29)

d. niśā navsari-mā **rah-e** **ch-e**
N.NOM.SG Navsari-LOC live-**impf.**3.SG PRES-3.SG

Niśā *lives* in Navsari.

(8a-d) are present tense sentences based on the **impf** form and the present tense auxiliary. (8a) licenses a progressive interpretation parallel to its function in its Old Gujarati. (8a) forms a minimal pair with (8b), which licenses the habitual interpretation. The adverbial modifiers in each sentence *atyāre* 'now' and *roj* 'everyday' serve to disambiguate the two interpretations. (8c) is a characterizing sentence with generic reference while (8d) is based on a lexical stative predicate and refers to a stable property of the subject referent.

The sentences in (9) show that the same range of interpretations are available to the periphrastic construction based on the IMPF form and the past auxiliary. The construction may have the progressive reading (9a), the habitual (9b) or the generic (9c) readings and also occurs with lexical stative predicates (9d).

(9) a. hũ̃ kāle **ram-ti** **ha-ti** tyāre man-e kāṭo
I.NOM yesterday play-IMPF.F.SG PST-F.SG then I.DAT thorn.NOM

lāg-yo
hurt-PERF.M.SG
Yesterday, I *was playing* when a thorn pricked me.

b. hũ̃ nānpaṇ-mā benpaṇiyo-sāthe bāg-mā **ram-ti** **ha-ti**
I.NOM childhood-LOC friend-PL-WITH park-LOC play-IMPF.F.SG PST-F.SG
In my childhood, I *used to play* with my friends in the park.

c. dhārmik sāhitya-mā keṭlāk rūḍh prākrita-prakāro
religious literature-LOC many established P-varieties.NOM

vapr-ā-tā **ha-tā**
use-PASS.IMPF.M.PL PST-M.PL
Many established varieties of Prakrit *were used* in religious literature. (Bhayani (1998: 27)

d. niśā pelā navsari-mā **rah-ti** **ha-ti**
N-NOM-SG earlier Navsari-LOC live-IMPF.F.SG PST-F.SG
Earlier, Niśā *used to live* in Navsari.

Summary

The data from Old and Modern Gujarati illustrates one pattern of instantiation for the progressive-to-imperfective shift in Indo-Aryan. The main properties of this shift are: the emergence of the progressive morphology is correlated with the emergence of a morphologically articulated past-present contrast. Diachronically, the periphrastic progressive constructions generalize to license both progressive and non-progressive imperfective interpretations. This pattern appears to be paralleled in Hindi and Pawri, which I will describe in the next two sections.

5.2.3 Old and modern Hindi

The rare occurrence of past or present tense auxiliaries (and consequently, morphologically expressed tense distinctions) has been noted for Old Hindi — the language of Chand Baradai

and Old Baiśwari) (Beames 1966; Kellogg 1893).[7] The bare IMPF forms license imperfective (progressive and non-progressive) interpretations with both past and present reference.[8] The Old Hindi data comes from *Prithvirāja Rāso* by Chand Bardai, the oldest attested Old Hindi text (cir. 1300 CE).

Both the sentences in (10a-b) have the progressive reading. (10a) is interpreted as having past time reference, whereas (10b) has present time reference.

(10) a. tina andara giddhani **bhrama-ta** jyau kandarā muninda
that-OBL inside vulture-NOM.PL wander-IMPF.M.PL like caves sages

Vultures *were wandering* through them (the elephant's bodies) like sages through mountain caves. (PR. Kanavajja 518)

b. **dhuk-ata** dhāra-dhāra sõ **bak-ata** māra-māra sõ
thrust-IMPF.M.PL sword.NOM. they shout-IMPF.M.PL 'kill' they

jhuk-ata jhāra-jhāra sõ **tak-ata** sāra-tāra sõ
crouch-IMPF.M.PL weapon.NOM. they watch-IMPF.M.PL steel-blade they

They *are thrusting* their swords (at each other); they *are shouting* (crying out) 'kill, kill'; they *are crouching* from the weapons; they *are watching* the steel-blades. (PR. 6.39 (cited in Beames 1966: 131)

The context prior to (10a) describes the valorous act of the poet himself where he made holes in the bodies of elephants. He observes that following this act vultures entered the pierced bodies of these elephants and *were wandering* through them. In (10b), which is part of a much longer description of a fight in the royal court, the poet describes ongoing

[7] As I have described before, the NIA languages inherit two morphological exponents of the imperfective aspect — the **impf** and the IMPF paradigms. The Gujarati data shows that both forms are incorporated in the periphrastic tensed constructions in Old and Modern Gujarati. In Hindi, the IMPF form is the main exponent of the imperfective aspect in the indicative mood. The **impf** morphology is also used in Old Hindi in both indicative and subjunctive contexts, but it does not participate in forming peripherastic tense-based constructions. Further, the **impf** paradigm gets further and further restricted in later Hindi and is described as having only a subjunctive/future-oriented function in 19th century grammars of Modern Hindi. In this section, I am restricting my attention to the IMPF form and constructions based on it because it seems to have continued across Hindi diachrony to be the general exponent of the imperfective aspect.

[8] Beames (1966: 121-122) proposes that these bare participial forms are remnants of originally periphrastic constructions based on the IMPF paradigm that are attested in MIA and Old Marathi. There is no morphological evidence for this proposal but it allows Beames to unify the variation (presence vs. absence of auxiliaries) in Modern NIA imperfective based constructions, and establish a direct link between the Hindi data and the MIA data. I will discuss the MIA periphrastic constructions and its NIA cognates in §5.4. Here, unlike Beames, I am assuming that the bare IMPF participle is morphologically simple and not a construction with an invisible incorporated auxiliary.

events as they unfold before his eyes, supporting a present time interpretation (an Old Hindi version of the sports commentary).

The sentences with the IMPF forms in (11) have non-progressive interpretations with present time reference. (11a) has the habitual present reading while (11b-c) are generic characterizing sentences. (11b) describes changes that take place in summer and (11c) describes the properties of a kind — the virtuous wife.

(11) a. kātik **kara-ta** puhkara-sanāna
K.LOC do-IMPF.M.SG Puhkar-bath-NOM.SG
In (the month of) Kātika, he *performs* ablutions in Puhkara (a pilgrimage site). (PR. 1.198)

b. **suk-ata** sarovara **mac-ata** kīca **talaf-ata**
dry-IMPF.M.PL lake-NOM,PL stir-IMPF.M.SG mud-NOM pant-IMPF.M.PL
mīna tana
fish body.NOM.PL
The lakes *dry* up, the mud *stirs* up; the bodies of the fish *pant*. (PR. 60.17)

c. **kaha-ti** na devar-ki kuvata kulatiya kalaha
speak-IMPF.F.SG NEG brother.in.law.GEN bad.word.NOM virtuous quarrel
ḍarā-ti
fear-IMPF.F.SG
The virtuous (wife) does not speak of her brother-in-law's bad words; (she) fears a quarrel. (Sat. 15 cited in Beames (1966: 131-132))

(12) shows that IMPF forms also license non-progressive interpretations in the past time. The context before (12a) describes a past time confrontation between an elephant and the protagonists. The sentence in (12a) is a description of the elephant who was characterized by the two properties — a gaze and a hiss similar to those of the divine serpent. (12b) describes the owner of this elephant, a king who *reigned* sovereign over his kingdom. The lexical stative predicate *rāj* 'rule' has IMPF inflection and also licenses a past time interpretation.

(12) a. nāga-nāga sama najari tihi **phuṅkār-atu** phana jhūṇḍ
N.OBL.SG like gaze.NOM.SG his hiss-IMPF.M.SG snake-head host
His gaze was like the nāga-nāga$_i$ (the many-headed divine serpent of Viṣṇu) and he *used to hiss* exactly like his$_i$ host of snake-heads. (PR. DK.74a-b)

b. rājasu **rāja-ta** mātulaha matulahi atula
royally reign-IMPF.M.SG uncle.NOM.SG crazed (matta elephants) incomparable

prahār
attack

Kṛṣṇa's uncle *reigned* royally (with style) and he had several elephants of incomparable strength to attack (PR.DK 70) elephant's name is kuvalayāpīḍa

The examples from (10)-(12) thus show IMPF lacks temporal specification and realizes the imperfective aspect in Old Hindi, licensing the progressive or non-progressive imperfective interpretations with present or past time reference. Specifically, Old Hindi, unlike Old Gujarati, does not have overt tense marking, nor does it have a distinct marker for the progressive aspect. As we shall see, this situation changes in Middle Hindi and 19th century Hindi, where the emergence of tense auxiliaries appears to correlate with the emergence of the progressive aspect.

Middle Hindi

The case that the periphrastic constructions based on the IMPF form and tense auxiliaries uniformly license the progressive interpretation cannot be made as clearly for Middle Hindi as it has been made for Old Gujarati. The reason for this is that writers of historical grammars of Hindi have not documented the precise communicative function of these periphrastic constructions when they occur in Middle Hindi. My own textual research can only suggestively and not definitively point to what the facts are. Based on my observations, it appears that Middle Hindi instantiates a stage where the bare IMPF forms freely alternate with the innovated periphrastic IMPF+tense constructions in the expression of progressive semantics. Recall the discussin in §3.7 where I argued that such free alternation is to be expected at an early stage in the grammaticalization of a new progressive marker. This alternation is formally representable as a free ranking of two relevant constraints, ECONOMY and EXPRESSIVENESS.

Kellogg (1893: 310-328), in his discussion of the verbal system of the *Tulsi Rāmāyaṇa*, a later Middle Hindi text (cir. 1600 CE) written in the Baiśwari dialect, observes that tense auxiliaries are occasionally added to the IMPF form to license an unambiguous present or past time interpretation.[9] However, he does not clarify whether the presence of tense

[9]The language of the *Tulsi Rāmāyaṇa* is most often noted as Awadhi. It is not clear to me why Kellogg calls the language Baiśwari, but in so far as it concerns the dialect employed in the same text, this nomenclatural variance should not make a difference.

auxiliaries correlates with the progressive interpretation. It is difficult to determine the interpretations associated with the IMPF+tense periphrastic constructions in the absence of more detailed philological research as has been done for Old Gujarati (Bhayani 1998).

However, a preliminary look at the tensed periphrastic constructions in *Tulsi Rāmāyaṇa* suggests that the Middle Hindi facts are comparable with the Old Gujarati facts, where the IMPF+tense periphrastic constructions uniformly license the progressive interpretation. Middle Hindi differs from Old Gujarati in that the bare IMPF forms are also freely used with progressive interpretation. (13) illustrates the facts. In (13a), the bare IMPF form licenses the progressive interpretation, while in (13b), the same form has a generic interpretation. In (13c), the context is as follows: the wife of the protagonist (Rāma) has been kidnapped by the demon Rāvaṇa and Rāma is censuring himself for having allowed it to happen. He refers to the birds and the beasts of the forest, who he feels *are rebuking* him for the unhappy incident. In this context, the most appropriate interpretation for the sentence with the overt tense auxiliary is an episodic progressive one.

(13) a. Rāma tuma-hiṁ **avaloka-ta** āju
Rāma.NOM.SG you-ACC.PL look-IMPF.M.SG today

Rāma *is looking* at you today. (TR. 2.106)

b. saba santa sukhī **vicaran-ta** mahi
all saint.NOM.PL happy walk-IMPF.M.PL earth

All saints *move about* happily on earth. (TR. cited in Kellogg (1893: 318)

c. mānah-ũ mori **kara-ta** **hahĩ** nindā
think-**impf.**1.SG my do-IMPF.M.PL PRES-3.PL censure.NOM

I feel as if they *are rebuking* me. (TR. 3. 36)

While the data in (13) can hardly be said to provide definitive evidence of the distribution of bare IMPF forms and the periphrastic IMPF+tense constructions in Middle Hindi, they are suggestive of one stage along the trajectory well-documented for Old Gujarati, and synchronically investigable in Pawri (as we shall see in §5.2.4). In the next section, I propose that facts from later Hindi (19th century), in fact, confirm the hypothesis that Hindi parallels Gujarati in that the presence of tense auxiliaries correlates with the progressive interpretation.

19th century Hindi

More direct evidence that the periphrastic IMPF+tense constructions are correlated with the progressive interpretation comes from the synchronic descriptions of Hindi found in late 19th century grammars by linguists like Kellogg and Beames. The main generalization seems to be as follows. The bare IMPF form licenses only non-progressive imperfective interpretation with both past and present reference. The IMPF+tense forms, on the other hand, license both progressive and non-progressive interpretations but are restricted to the temporal reference provided by the tense auxiliary (Kellogg 1893: 463-470; Beames 1966: 179). (14) gives representative examples from Kellogg (1893) which contrasts the progressive (14a) and the habitual (14b) readings for the same verbal periphrasis — the IMPF+past construction. (14c) illustrates that the bare IMPF form licenses the non-progressive interpretation.

(14) a. ṭhaur-ṭhaur dundubhi **bāj-te** **th-e**
every place drums beat-IMPF.M.PL PST-M.PL
Drums *were beating* everywhere. (Kellogg 1893: 469)

b. jis nagar-mẽ **jā-te** **th-e** tahã̃-ke rājā
which city-LOC go-IMPF.M.PL PST-M.PL there-GEN king-NOM
ati-śiṣṭācār kar unhẽ le **jā-te** **th-e**
courtesy do.GER they.ACC.PL take.GER go-IMPF.M.PL PST-M.PL
Whichever city (they) would go to, the kings of those (cities) *would escort* them with utmost courtesy. (Kellogg 1893: 470)

c. koi us-ke rāj.bhar-mẽ bhūkhā na **so-tā**
one.NEG.POL his kingdom.entire-LOC hungry NEG sleep-IMPF.M.SG
No one *would sleep* hungry in his entire kingdom (Kellogg 1893: 464)

Beames further states that the bare IMPF forms are incompatible with the progressive interpretation, a marked change from Old Hindi (10), and entirely compatible with the Modern Standard Hindi facts. This suggests that the overlapping distribution of the bare IMPF form and the periphrastic IMPF+tense constructions in 19th century Hindi is constrained. The bare form can only license non-progressive interpretations; it is only the periphrastic forms that are compatible with both progressive and non-progressive interpretations. This distribution appears to be exactly the opposite of Middle Hindi where the bare IMPF forms were shown to be compatible with both the progressive and the non-progressive interpretations. How can these two stages with opposing distribution be reconciled with each other diachronically?

Further the 19th century Hindi distribution of the IMPF and IMPF+tense forms is slightly unexpected on our assumptions about the semantics of the IMPF forms and IMPF+tense constructions. IMPF realizes the general imperfective aspect while the IMPF+tense constructions are hypothesized to realize the progressive aspect. In the 19th century Hindi distribution, the general IMPF form appears to be restricted to the non-progressive imperfective interpretation (14c) while the IMPF+tense constructions are compatible with both progressive (14a) and non-progressive imperfective (14b) interpretations. How is this unexpected distribution to be accounted for?

Explaining the Middle/19th century Hindi distribution

Comparing the Middle Hindi and the 19th century Hindi scenarios allows us to hypothesize an intermediate stage (that can be confirmed through future text-based research) which is identical to the Old Gujarati stage with a distinct morphological progressive (the IMPF+tense construction and) and a general imperfective (the bare IMPF paradigm).

Middle Hindi, then, can be interpreted as a stage prior to the grammaticalization of the IMPF+tense construction, with free alternation between the general IMPF and the specific IMPF+tense forms. This is the stage at which the ECONOMY and EXPRESSIVENESS constraints are freely ranked with respect to each other, generating the variation in the expression of progressive semantics. The table in (15) describes the relative distirbution of IMPF and IMPF+tense constructions at the Middle Hindi stage. The left-most column distinguishes between the progressive and the non-progressive readings. The bare IMPF form is compatible with both types of readings (the English glosses give the semantic range of interpretations available to each form or construction.) The IMPF+tense constructions license only a progressive interpretation and are further restricted by the temporal reference of the auxiliary they are based on.

(15) **Middle Hindi:** EXPRESSIVENESS, ECONOMY

		IMPF+tense	
	IMPF	IMPF+PRES	IMPF+PST
Readings	maĩ ā-tā	maĩ ā-tā **huṃ**	maĩ ātā **thā**
progressive	*I am/was coming*	*I am coming*	*I was coming*
non-progressive	*I come, I used to come*		

The next stage is a reconstructed stage which parallels Old Gujarati. At this stage, which I label Middle Hindi′, the progressive IMPF+tense constructions block the **impf** form

from licensing the progressive interpretation. This stage can be modeled by a categorical ranking of EXPRESSIVENESS above ECONOMY, which prevents the bare IMPF form from licensing the progressive interpretation. In (16), this change is indicated by the shaded cells for the progressive row for the IMPF form. The progressive interpretation is no longer available to IMPF at this stage. It is important to keep in mind that this is a reconstructed stage, for which we have no direct textual evidence but only indirect evidence from Middle Hindi and 19th century Hindi.

(16) ***Middle Hindi′:*** EXPRESSIVENESS ≫ ECONOMY

		IMPF+tense	
	IMPF	IMPF+PRES	IMPF+PST
Readings	maĩ ā-tā	maĩ ā-tā **huṃ**	maĩ ātā **thā**
progressive		*I am coming*	*I was coming*
non-progressive	*I come*, *I used to come*		

In the next stage of 19th century Hindi, for which we again have documentary evidence, the IMPF+tense constructions generalize, instantiating the progressive-to-imperfective shift. The effect of this generalization is that the IMPF+tense constructions, earlier restricted to only progressive interpretation, can now license both progressive and non-progressive imperfective interpretations. The original imperfective form IMPF remains restricted to the non-progressive imperfective interpretation.

(17) **19th century Hindi**

		IMPF+tense	
	IMPF	IMPF+PRES	IMPF+PST
Readings	maĩ ā-tā	maĩ ā-tā **huṃ**	maĩ ātā **thā**
progressive		*I am coming*	*I was coming*
non-progressive	*I come*, *I used to come*	*I come*	*I used to come*

The evidence from Middle Hindi and 19th century Hindi, thus, allows us to reconstruct the intermediate Middle Hindi′ stage at which the overt presence of tense auxiliaries systematically correlates with the progressive interpretation, whereby the IMPF+tense constructions can be considered to be the exponents of the progressive aspect. Note that we do not yet have an explanation for *why* the progressive-to-imperfective shift occurs — either in 19th century Hindi or in Old Gujarati. In §5.3, I will propose an explanation for this

shift that relies on the conflict between the same two constraints — EXPRESSIVENESS and ECONOMY.

Modern Hindi

Modern Hindi differs from Kellogg's documented 19th century Hindi in that the periphrastic IMPF+tense constructions that licensed progressive interpretation are no longer compatible with the progressive interpretation. In the modern language, these are restricted to non-progressive imperfective interpretations. The progressive reading is licensed by an innovated periphrastic construction that finds no mention in the 19th century grammars of Hindi.[10] This construction is based on a gerundival form of the verb and the perfective form of the auxiliary *rah* 'stay' and tense auxiliaries (V-GER + *rah*-PERF + TNS).

The distribution of the progressive construction and the IMPF+tense construction is illustrated in (18). For perspicuity, I have glossed the aspectual part of this construction as PROG rather than labeling the individual parts of the periphrasis. (18a) employs the progressive construction and cannot have a non-progressive imperfective interpretation such as the habitual interpretation. In contrast, the sentence in (18b), which originally licensed the progressive interpretation (in 19th century Hindi) is no longer compatible with that interpretation and is restricted to the non-progressive, in this case, the habitual interpretation.

(18) a. niśā roṭi **banā rah-i** **hai**
N.NOM bread.NOM make-PROG.F.SG be-PR.3.SG
Niṣā *is making* bread. NOT *Niṣā *makes* bread.

b. niśā roṭi **banā-ti** **hai**
N.NOM bread.NOM make-IMPF.F.SG be-PR.3.SG
Niṣā *makes* bread. NOT *Niṣā *is making* bread.

The path from Old Hindi via Middle Hindi and Kellogg's 19th century Hindi to Modern Hindi exhibits a similar trajectory as was observed for Old and Modern Gujarati. A stage without overt tense auxiliaries is followed by a stage with tense auxiliaries where the presence of tense auxiliaries is correlated with the progressive interpretation. The overt presence

[10] Annie Montaut (p.c.) informs me that the modern Hindi Progressive construction does occasionally occur in the literature of the 19th century but it is the IMPF+tense construction that usually licenses the progressive interpretation. In the contemporary variety of Modern Hindi, this construction, infrequently attested in 19th century literature, has become the default exponent of the progressive aspect, blocking the use of the IMPF+tense construction in this specific context.

of tense morphology triggers an aspectual contrast between the progressive and the non-progressive imperfective aspects. The next stage involves the generalization of the tensed progressive constructions, or the instantiation of the 'progressive-to-imperfective shift'.

The Hindi case is more complicated than Gujarati in two ways. First, while the Gujarati data presents stages of categorical distribution for the IMPF and IMPF+tense forms, the only available evidence for Hindi is from stages of variable distribution of the two forms. Second, while the progressive-to-imperfective shift in Gujarati has led to the leveling of aspectual contrast between the progressive and non-progressive imperfective aspects, this aspectual contrast has been renewed in Hindi through the syntactic innovation of a new periphrastic progressive construction.

5.2.4 Pawri

Pawri is characterized by a pattern that appears to be similar to 19th century Hindi and Old Gujarati. Present and past tense auxiliaries are optional in Pawri and their overt presence corresponds to a progressive interpretation. The bare IMPF form is compatible with both progressive and non-progressive interpretation.[11].

Let us consider the Pawri facts without overt auxiliaries first. A sentence with a IMPF form in Pawri and no adverbial modifiers can be interpreted as containing a progressive or a habitual predicate with present or past time reference. The four possible interpretations are give in (19a-d).

(19) chyi lugḍā **duv-tali**
she clothes-NOM.N.PL wash-IMPF.F.SG

a. She *is washing* the clothes (right now).

b. She (habitually) *washes* clothes.

c. She *was washing* the clothes (at that time).

d. She (habitually) *washed* clothes, (in the past).

[11]The data for Pawri is based on fieldwork with speakers that involved both elicitation and observation of spontaneous speech. Tense auxiliaries occur infrequently in spontaneous conversations, but are often supplied when speakers are asked to translate sentences from the standard language, Marathi, which has obligatory tense marking. My observation of naturally occurring discourse points to the pattern of distribution for tense auxiliaries that I note here. The elicitation data also supports this pattern — tense auxiliaries in imperfective clauses most often correlate with the progressive interpretation. However, none of my informants categorically rejected the overt presence of tense auxiliaries in non-progressive imperfective contexts. This could be the effect of contact with more standard languages, in which tense is morphologically marked in both progressive and non-progressive contexts. Alternatively, it could be the case that there is no categorical restriction on the co-occurence of tense auxiliaries with non-progressive predicates. I will discuss this further in §5.3

(19) shows that the IMPF form by itself is unspecified with respect to temporal (past-present) and aspectual (progressive-non-progressive) distinctions. Temporal adverbials may be used to disambiguate the intended interpretation. The examples in (20) illustrate this. In (20a-b), the adverbial *dāḍīn* 'always' favors the habitual interpretation, while in (20b), the adverb *pel* 'formerly' further locates the eventuality prior to utterance time. In (20c-d), the adverbs *evi* 'now' and *tetār* 'then' favor an episodic interpretation of an event in progress at utterance time and before utterance time respectively.

(20) a. chyi **dāḍin** lugḍā **duv-tali** (present habitual)
she always clothes-NOM.N.PL wash-IMPF.F.SG
She *always washes* the clothes.

b. **pel** chyi **dāḍin** lugḍā **duv-tali** (past habitual)
Formerly she always clothes-NOM.N.PL wash-IMPF.F.SG
Formerly, she *always washed* the clothes.

c. chyi **evi** lugḍā **duv-tali** (present progressive)
she right now clothes-NOM.N.PL wash-IMPF.F.SG
She *is washing* the clothes *right now.*

d. chyi **tetār** lugḍā **duv-tali** (past progressive)
she then clothes-NOM.N.PL wash-IMPF.F.SG
She *was washing* the clothes *right then.*

Tense auxiliaries are optional, and if overtly present, temporally locate the eventualities denoted by the predicate with respect to utterance time. The presence of tense auxiliaries, in addition to providing temporal location, also yields a progressive interpretation of the IMPF-marked predicate. The relevant examples are in (21a-b).

(21) a. chyi lugḍā **duv-tali** **se**
she clothes-NOM.N.PL wash-IMPF.F.SG be-PR.SG
She *is washing* the clothes.
NOT: She *washes* clothes.

b. chyi lugḍā **duv-tali** **oti**
she clothes-NOM.N.PL wash-IMPF.F.SG be-PST.F.SG
She *was washing* the clothes.
NOT: She habitually *washed* clothes.

The overt present tense auxiliary in (21a) has a present progressive interpretation, while the overt past tense auxiliary in (21b) licenses the past progressive interpretation.

The Pawri Imperfective and Progressive paradigms are given in (22)-(24). The imperfective paradigm is temporally unrestricted and does not morphologize the present-past distinction while the progressive paradigms are distinguished from the imperfective only through the presence of an overt tense auxiliary.

(22) **Pawri Present/Past Imperfective**

GENDER	SG	PL
MASC	duv-ta-lū	duv-ta-lā
FEM	duv-ta-lī	duv-ta-lā
NEU	duv-ta-la	duv-ta-lā

(23) **Pawri Present Progressive**

GENDER	SG	PL
MASC	duv-ta-lū **se**	duv-ta-lā **setāhā**
FEM	duv-ta-lī **se**	duv-ta-lā **setāhā**
NEU	duv-ta-la **se**	duv-ta-lā **setāhā**

(24) **Pawri Past Progressive**

GENDER	SG	PL
MASC	duv-ta-lū **otu**	duv-ta-lā **otā**
FEM	duv-ta-lī **oti**	duv-ta-lā **otyā**
NEU	duv-ta-la **ota**	duv-ta-lā **otā**

The generalization is that in Pawri, the periphrastic IMPF+tense periphrastic constructions (23)-(24) license a progressive interpretation while the bare IMPF form is compatible with both the progressive and the non-progressive interpretations.

Significance of Pawri

Pawri is significant because it provides synchronic evidence for a phenomenon that has been attested only diachronically through the Old Gujarati and Old/Middle Hindi data. The appearance of overt tense marking in imperfective sentences correlates with the progressive interpretation for these tensed sentences. Pawri thus synchronically instantiates an archaic stage in the development of morphological tense distinctions in a set of Indo-Aryan languages, confirming the aspectual and temporal configuration that we posit for the Older Gujarati and Hindi systems.

5.2.5 Summary

In this section, I presented data from Old and Modern Gujarati, Old, Middle, and Modern Hindi, and Modern Pawri, in order to describe a diachronic phenomenon in some Indo-Aryan languages — the correlation between the emergence of tense distinctions and the emergence of the progressive as a distinct aspectual category. This correlation is attested directly in Old Gujarati and Modern Pawri and can be reconstructed for some stage of Middle Hindi.

Moreover the data from Modern Gujarati and Hindi shows that the aspectual contrast between the progressive and the non-progressive imperfective aspects, morphologically articulated only by the overt presence of tense auxiliaries, is not diachronically stable. In both these languages, the periphrastic IMPF+tense constructions have been extended to non-progressive contexts and are compatible with habitual/generic and lexical stative interpretations. Gujarati and Hindi pattern differently in one respect. The IMPF+tense construction may still license the progressive interpretation in Gujarati; Hindi, on the other hand, has innovated a new progressive construction that blocks the more general IMPF+tense construction from licensing the progressive interpretation.

Abstracting away from language-specific morphological forms, we can understand the data from these three languages at different periods as instantiating stages along a single abstract trajectory. At stage 1, MIA has a single imperfective form which licenses both progressive and non-progressive imperfective interpretations. At stage 2, tense operators, realized by present and past tense auxiliaries, apply to the imperfective-marked predicates and uniformly yield a progressive interpretation. The un-tensed imperfective-marked predicates are still compatible with the progressive interpretation. At stage 3, the tensed imperfective predicates block the progressive interpretation for the un-tensed imperfective predicates, thus morphologizing the progressive-imperfective aspectual contrast. At stage 4, in an apparent manifestation of the progressive-to-imperfective shift, this contrast ceases to be preserved. The tensed imperfective predicates generalize to license both progressive and non-progressive imperfective interpretations. The un-tensed imperfective predicates continue to be restricted to non-progressive imperfective interpretations. This leveling of contrast is followed by a reinstatement of the same contrast through morphological innovation of a new progressive construction at stage 5, thus re-initiating the cycle. At stage 6, the innovated progressive construction blocks the distribution of the generalized progressive construction, leading to a categorical distribution of the innovated progressive and the generalized imperfective forms.[12]

[12]In the abstract trajectory that I describe above, stages of categorical distribution of forms (stage 1 and

(25) presents this trajectory in tabular form. The comma in individual cells indicates that the two forms seperated by the comma are in free variation at that stage. The absence of the comma indicates categorical distribution of the progressive and non-progressive imperfective forms. The languages corresponding to the different stages are in the rightmost column (abbreviated for reasons of space).

(25) **Changes in the imperfective domain in some IA languages**

	progressive	non-progressive	Language
Stage 1	V_{impf}		MIA, Old H
Stage 2	V_{impf}+Aux_{tns}, V_{impf}	V_{impf}	Pawri, Old G
Stage 3	V_{impf}+Aux_{tns}	V_{impf}	Mid H
Stage 4	V_{impf}+Aux_{tns}	V_{impf}+Aux_{tns}, V_{impf}	Mod G 19C H
Stage 5	V_{prog}+Aux_{tns}, V_{impf}+Aux_{tns}	V_{impf}+Aux_{tns}	
Stage 6	V_{prog}+Aux_{tns}	V_{impf}+Aux_{tns}	Mod H

5.3 Tense and the progressive: an account

The stages in (25) suggest a cyclic pattern of change involving the articulation, the loss, and the re-articulation of an aspectual contrast. Constructions originally restricted to progressive interpretation gradually generalize to also license non-progressive imperfective interpretations, followed by the morphological renewal of the progressive aspect through an innovated construction. The particularities of the Indo-Aryan data lead us to a specific question about the semantic contribution of tense morphology to aspectual interpretation: Why does imperfective morphology in periphrasis with tense auxiliaries uniformly give rise to the progressive interpretation in the languages we have examined? I believe that the explanation for the progressive-to-imperfective shift, at least as it is instantiated in Indo-Aryan, must be framed in the context of this specific question.

My account of the diachronic changes we have seen so far, and more generally, for the trajectory in (1) consists of three ingredients. The first ingredient is the **nested denotation**

3) must be understood to be invariably interspersed with stages of free variation between forms (stage 2 and 4), regardless of whether we have diachronic evidence for this fact. For instance, the Gujarati data presents two stages of categorical distribution, while the crucial Hindi evidence comes only from stages of variable distribution. Nevertheless, the abstract trajectory in both these branches of Indo-Aryan is understood to be the same. The data simply corresponds to distinct slices of this trajectory that are available to us through our current state of knowledge about these languages.

analysis of the progressive and the imperfective operators defended in Chapter 3. It is necessary to emphasize that such an analysis is the absolute minimum we need to proceed with a diachronic explanation for the progressive-to-imperfective shift. Without an explicit way to relate the denotations of the progressive and the imperfective operators, it is impossible to characterize the kind of diachronic change that is instantiated by such a generalization in the distribution and interpretation of the specific progressive forms. The second ingredient is the idea that the presence of tense auxiliaries in imperfective-marked sentences correlates with a progressive interpretation because of a **scalar implicature** licensed by overt tense marking rather than an explicit assertion of the IMPF+tense periphrasis.[13] The third ingredient is the hypothesis that the progressive-to-imperfective shift is an epiphenomenal effect of a syntactic change — overt tense marking becomes obligatory in all syntactic contexts. This weakens the conventionalized association of IMPF+tense periphrases with the progressive interpretation. Both progressive and non-progressive imperfective predicates must be overtly marked for tense, resulting in the leveling of the morphological contrast between the progressive and the non-progressive imperfective aspects.

5.3.1 Tense marking and the progressive interpretation

Consider the representations of the imperfective and the progressive operators that I proposed in Chapter 3. Recall that the distinction between the two operators lies in the properties of the larger interval which the intervals denoted by the imperfective- or progressive-marked predicates are subintervals of. The imperfective operator yields the set of intervals that are non-final subintervals of a larger interval within (INST) which the predicate is instantiated, while the progressive operator yields the set of intervals that are non-final subintervals of a larger interval at (AT) which the predicate is instantiated.

(26) a. $[[\text{IMPF}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{INST}(P, t')]$
b. $[[\text{PROG}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{AT}(P, t')]$

In Chapter 4, I argued that both the **impf** and IMPF paradigms realize the imperfective aspect in MIA, which is inherited by the later NIA languages. Accordingly, let us assume that the morphological affixes in these paradigms have the representation in (26a). (27)

[13] The preferential interpretation for tense marked imperfective predicates as progressive predicate also has to with the fact that progressive predicates are episodic. Episodic predicates are more likely to be overtly specified for temporal location than non-episodic predicates. This assumption has its basis in the general intuition that the denotations of episodic or stage-level predicates are spatio-temporally located eventualities/intervals (Carlson 1978) with a distinct argument for spatio-temporal location (Diesing 1992; Kratzer 1995).

gives a standard representation for the present and the past tenses. Tense operators are functions of type <<*i*, *t*>,<*i*, *t*>> which take as input predicates of times (e.g. the output of aspectual operators like the imperfective and the progressive) and locate these intervals with respect to a time which is set up as the 'now' of temporal deixis, the default being utterance time.

(27) a. [[PRESENT]] = $\lambda P_{<i,t>} \lambda t$ [t$\bigcirc$now $\wedge$ P(t)]
b. [[PAST]] = $\lambda P_{<i,t>} \lambda t$ [t<now $\wedge$ P(t)]

Suppose these are the semantic values of the past and present tense auxiliaries in Gujarati, Hindi, and Pawri. Then the puzzle presented by the data in §5.2 is the following: How does applying a tense operator (realized by an overt tense auxiliary) to the predicate output by an imperfective operator yield a progressive predicate? In other words, how does tense marking restrict the denotation of an imperfective-marked predicate to those intervals that are non-final subintervals of the interval AT which a predicate is instantiated? Is there a compositional source at all for the progressive interpretation generated by the input in the left in (28)? Can we get the output of IMPF to compose with the tense operators in (27) so that the resulting predicate has exactly the same properties as a tensed *progressive* predicate?

(28) [TNS[IMPFϕ]] $\Rightarrow$ [TNS[PROGϕ]]

Consider the sentence in (29a) repeated here from (7b). The uninflected eventuality description has the simplified representation in (29b) while the fully inflected sentence with the imperfective and tense operators can be represented as in (29c). The sentence has a progressive interpretation.

(29) a. tumhārā bhāṇej tumha vandivā **āv-ai** **ch-ai**
your nephew you-ACC-SG greet-INF come-PRES.3.SG be-PRES.3.SG
Your nephew *is coming* to greet you. (SB. 51.29)

b. [λe (come-to-greet-(e) $\wedge$ Ag(e, your nephew) $\wedge$ Th(e, you))]

c. [PRES [IMPF [λe (come-to-greet(e) $\wedge$ Ag(e, your nephew) $\wedge$ Th(e, you))]]]

Let us see how the imperfective and the present tense operators apply to the uninflected eventuality description. I will use the term *come-greet(n,y)* as shorthand for the uninflected eventuality description. The imperfective operator applies to the eventuality description

and outputs a set of times that are subintervals of the intervals within which the predicate is instantiated (30a). The past tense operator applies to this property of times and locates the imperfective interval with respect to utterance time (30b). The progressive operator, if applied to the eventuality description, would yield the predicate given in (30c).

(30) a. IMPF applied to eventuality description

$\lambda P_{<s,t>}\lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{inst}(P, t')]$ (*come-greet(n,y)*)

$= \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{inst}(\textit{come-greet(n,y)}, t')]$

$= \lambda t\ \exists t'\exists e[t \subset_{nf} t' \wedge \textit{come-greet(n,y)}(e) \wedge \tau(e) \subseteq t')]$ (by definition of INST)

b. PRES applied to [IMPF[eventuality description]]

$\lambda P_{<i,t>}\lambda t\ [t \bigcirc \text{now} \wedge P(t)]\ (\lambda t\ \exists t'\exists e[t \subset_{nf} t' \wedge \textit{come-greet(n,y)}(e) \wedge \tau(e) \subseteq t')])$

$= \lambda t\ [t \bigcirc \text{now} \wedge [\lambda t\ \exists t'\exists e[t \subset_{nf} t' \wedge \textit{come-greet(n,y)}(e) \wedge \tau(e) \subseteq t')](t)]$

$= \lambda t\ [t \bigcirc \text{now} \wedge [\exists t'\exists e[t \subset_{nf} t' \wedge \textit{come-greet(n,y)}(e) \wedge \tau(e) \subseteq t')]]]$

$= \lambda t\ \exists t'\exists e[t \bigcirc \text{now} \wedge t \subset_{nf} t' \wedge \textit{come-greet(n,y)}(e) \wedge \tau(e) \subseteq t')]$

c. PROG applied to eventuality description

$\lambda P_{<s,t>}\lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(P, t')]$ (*come-greet(n,y)*)

$= \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(\textit{come-greet(n,y)}, t')]$

$= \lambda t\ \exists t'\exists e[t \subset_{nf} t' \wedge \textit{come-greet(n,y)}(e) \wedge \tau(e) = t')$ (by definition of AT)

It is clear that the aspectual information contained in (§30b) is not the same as that contained in (§30c). In particular, there is no piece of information in (§30b) that asserts that t′ must be interpreted as the interval AT which the eventuality is instantiated, the crucial condition for the progressive interpretation.[14] The application of a tense operator to a predicate modifed by the imperfective operator does not entail that the larger interval of which the denoted interval is part of, is equivalent to the run-time of the eventuality. Why then does the IMPF+tense periphrasis uniformly give rise to the progressive interpretation in Old Gujarati, Middle and 19th century Hindi, and Modern Pawri?

[14]The question of compositional equivalence is restricted to the aspectual properties of the output predicate and not information about its temporal location, which is explicitly provided by the tense operator and not part of the semantics of the progressive operator.

5.3.2 The progressive inference as implicature

My hypothesis is that the progressive interpretation (the AT relation between t and t′) is not entailed by the periphrastic IMPF+tense constructions. Rather, the explicit marking of temporal location via tense auxiliaries gives rise to an implicature about the temporal properties of t′, the larger interval within which the base predicate is instantiated. The implicature — which can be called the progressive implicature — is that this larger interval is the one AT which the base predicate is instantiated.

How does this inference come by? Let us reconsider the Old Gujarati facts. The bare **impf** and IMPF forms are inherited from MIA where they are compatible with both progressive and non-progressive imperfective interpretations. At some stage in Old Gujarati, overt tense auxiliaries start appearing in clauses with **impf** and IMPF forms, to mark temporal location.[15] This emergence of overt tense auxiliaries results in a syntactic contrast between imperfective sentences with overt tense marking and those without overt tense marking.

Imperfective sentences with overt tense marking temporally locate the intervals denoted by the imperfective predicate at some time in relation to the deictic 'now'. However, they contribute more information than their un-tensed counterparts, which are interpretable in the present or past times without any disambiguating tense auxiliary. The use of tense auxiliaries appears to violate the quantity maxim.[16] The presence of overt tense marking therefore triggers an inference that the speaker intends to convey something more than just temporal location. The sentences with the tense-less imperfective predicates are understood to make a weaker assertion than imperfective sentences with overt tense marking.

The implicature is calculated as follows: The sentence without a tense auxiliary is compatible with both progressive and non-progressive imperfective interpretations. The encoder explicitly employed a tense auxiliary specifying the temporal location of the contextually salient interval. Therefore, the temporal location of the relevant interval must be important in the interpretation of the predicate denotation. It is most likely that the base predicate

[15]The question of how and why exactly morphologized tense distinctions emerge in this set of languages is a very difficult one to answer satisfactorily. Here I am assuming that tense is a core semantic category whose morphological expression is important in the temporal systems of languages and that languages may innovate this semantic category with already available syntactic resources. Once the grammar expresses this category, it is reasonable to expect that its expression might diachronically become obligatory in certain syntactic contexts. For the languages we have been examining in this chapter, overt tense marking is optional in the same syntactic context, an imperfective-marked clause, but later becomes obligatory in this context (Modern Gujarati and Hindi). What I am concerned with here is the systematic semantic pattern associated with the optionality of overt tense marking.

[16]The quantity submaxim requires speakers to make their contribution at least as, and not more, informative than required. This maxim is systematically exploited in pragmatics to yield upper-bounding generalized conversational implicatures associated with scalar values (Horn 1972, 1989; Gazdar 1979; Hirschberg 1991).

is instantiated only at the specified temporal location and not at any other location.[17] The restrictive interpretation is that the imperfective predicate with overt tense marking denotes a subinterval of the interval AT which the base predicate is instantiated — which is what the progressive asserts.

The account sketched out in this section is really a pointer towards an analysis rather than an explicit account of why the presence of tense auxiliaries corresponds to the progressive interpretation in the languages I described. The idea is that tense auxiliaries serve to restrict the denotation of the imperfective-marked predicates but not in any strictly compositional way. Taking the approach that the progressive interpretation arises as an implicature rather than an assertion/entailment provides an explanatory account of why this periphrasis has the interpretation it does without requiring any radical change in the semantic value of the imperfective or the tense operators. This needs to be developed further in future research. One piece of evidence that this account is on the right track comes from the interpretation of imperfective clauses with overt tense marking in Pawri, the non-standard languages that patterns similar to Old Gujarati and Middle Hindi.

5.3.3 The progressive implicature in Pawri

The patterning of tense auxiliaries in Modern Pawri (§5.2.4) parallels the Old Gujarati and Old Hindi data — overt tense marking in clauses with IMPF forms licenses the progressive interpretation. If I am correct in claiming that the progressive interpretation arises as an implicature rather than being an entailment of the IMPF+tense periphrasis, then this should be a testable fact in the Modern Pawri system. Specifically, the progressive implicature should be cancellable and not result in a contradiction if explicitly denied. Secondly, the IMPF+tense periphrasis should not exclusively be associated with the progressive aspect, but rather, preferentially license the progressive interpretation.

Based on the limited data that I have, both these hypotheses seem to be verified by the Pawri facts. In elicitations, my informants accepted tense auxiliaries in clauses with habitual or generic interpretation although such sentences were most naturally were interpreted as referring to on-going events.[18]

[17] It is important to distinguish between the function of tense auxiliaries and other temporal adverbials. The specification of adverbials explicitly restricts the predicate denotation to a given interval. Tense auxiliaries do not inherently perform any restrictive function beyond specifying the general location of an eventuality in relation to the deictic center.

[18] A note of clarification is in order. In §5.2.4 I claimed that the non-progressive imperfective interpretation is not available to the IMPF+tense periphrasis. However, this was only to keep the exposition simpler. The facts are that the non-progressive interpretation is *dispreferred* for the IMPF+tense periphrasis, not *unavailable*. I repeat the relevant sentences from (21) in (31). The crucial bit is that the habitual interpretations

(32) a. chyi khet-ām **nind-tali** **se**
she-NOM field-LOC weed-IMPF.F.SG be-PRES.SG
She *is weeding* in the field OR %She *weeds* in the field.

b. chyi kāyam khet-ām **nind-tali** **se**
she-NOM always field-LOC weed-IMPF.F.SG be-PRES.SG
She always *weeds* in the field.[19]

b. chyi khet-ām **nind-tali** **se** paṇ evi ni **nind-tali**
she-NOM field-LOC weed-IMPF.F.SG be-PRES.SG but now NEG weed-IMPF.F.SG
She (generally) *weeds* in the field but she *is* not *weeding* right now.

(32a) has two interpretations, the habitual one being less preferred than the progressive one. In (32b), which is also elicited, the habitual interpretation, triggered by the universal adverbial, is the most salient one. This supports the hypothesis that the IMPF+tense periphrasis does not compositionally yield a progressive predicate of intervals, but rather, that the progressive interpretation is the most salient interpretation available to this periphrasis by implicature that arises because of the overt expression of temporal location in a tense/aspect system otherwise lacking the morphological expression of the past-present distinction. Further (32c) shows that the progressive implicature is cancellable. The first conjunct in the sentence employs the IMPF+tense periphrasis and implicates that there is an ongoing weeding event overlapping with speech time. The second conjunct denies this implication with the temporal adverbial *evi* 'now'. The first conjunct thus, does not entail that the event is in progress, because otherwise, (32c) should be a contradiction. But it is not; it has the interpretation that although the specified individual characteristically weeds the field, she is not engaged in that task at speech time.

The data in (32) shows that overt presence of tense auxiliaries in Pawri does not entail a progressive interpretation. If I am correct in my claim that Pawri offers a synchronic parallel

are dispreferred for these sentences with overt tense marking.

(31) a. chyi lugḍā **duv-tali** **se**
she clothes-NOM.N.PL wash-IMPF.F.SG be-PR.SG
She *is washing* the clothes. **dispreferred:** She *washes* clothes.

b. chyi lugḍā **duv-tali** **oti**
she clothes-NOM.N.PL wash-IMPF.F.SG be-PST.F.SG
She *was washing* the clothes. **dispreferred:** She habitually *washed* clothes.

[19]I verified that this sentence does not have the interpretation corresponding to 'Everyday, she *is weeding* in the field.' That interpretation requires the use of another auxiliary *roy* 'remain' which allows quantification over subintervals of the larger event interval.

to the Old Gujarati/Hindi IMPF+tense construction, then the progressive interpetation must arise as an implicature in these languages as well. Naturally, both the diachronic and the synchronic facts need to be much more thoroughly investigated in order to determine the division of labor between the semantics and the pragmatics of the IMPF+tense construction. What is offered here is an outline for proceeding along that investigation.

5.3.4 The progressive-to-imperfective shift

The discussion so far has attempted to explain the emergence of the progressive aspect and how it relates to overt tense marking. I have crucially relied on the nested denotation analysis of the imperfective and the progressive operators presented in Chapter 3 and proposed that overt tense marking in imperfective clauses gives rise to an implicature that the imperfective-marked predicate is a progressive predicate (in other words, denotes the set of intervals that are non-final intervals of the interval AT which the base predicate is instantiated.). However, this does not explain why the progressive-to-imperfective shift is instantiated via distinct stages from Old to Modern Gujarati and Hindi.

In this section, I suggest that this shift is closely related to one independent ongoing change in the tense/aspect system of these languages — viz. the reinstitution of a morphological contrast between the present and the past tenses. The presence of overt tense auxiliaries in some types of clauses reflects this ongoing change. I want to claim that the progressive-to-imperfective shift simply reflects the completion of this change in the imperfective domain. Within the imperfective domain, overt tense marking starts out in clauses with episodic, progressive predicates and extends to all imperfective clauses. The progressive-to-imperfective shift is, on this view, not a spontaneous generalization of a special 'progressive' form, but merely an epiphenomenon of the spread of overt tense marking. In fact, both the emergence of the progressive aspect as a distinct category, and its generalization via the progressive-to-imperfective shift, are epiphenomena of the syntactic spread of tense marking across clause types, which happens to be conditioned by semantic contexts.

The rest of the discussion rests on three assumptions — (a) The nested denotations of the progressive and the imperfective operators, (b) that the progressive interpretation arises as an implicature following the emergence of overt tense marking, and (c) that overt tense marking spreads across imperfective clause types because of an independent constraint that requires overt tense marking in all finite clauses.[20]

[20]Some independent evidence for this assumption comes from changes between MIA and Old Marathi examined in Deo (2001). The facts are as follows: MIA does not require an overt copula in copular constructions with nominal predicates. Nor does it require overt auxiliaries in negated clauses based on participial forms such as IMPF or PERF. In Old Marathi, an overt copula/auxiliary becomes obligatory in both these

If we assume that the progressive interpretation for IMPF+tense constructions first arises as an implicature, then there are two diachronic scenarios that we can construct to explain the progressive-to-imperfective shift. On the first scenario, this shift can be considered to be the result of spontaneous generalization or bleaching (as is done in the grammaticalization literature). On the second scenario, we can derive the progressive-to-imperfective shift from the change that we know is already taking place in the language — the spread of overt tense marking. The second approach is simpler because it does not posit an ad hoc semantic generalization of a morphological category, and it is the one that I believe must be pursued to obtain a fuller account of the Indo-Aryan facts.

Scenario 1 — spontaneous generalization

On the spontaneous generalization scenario, we start out with the implicature arising from optional overt tense marking. Imperfective clauses with tense auxiliaries implicate that the imperfective predicate is a progressive predicate. At the next stage this implicature undergoes pragmatic strengthening and becomes part of the assertion of the IMPF+tense construction. This is a necessary step on this scenario because the progressive-to-imperfective shift requires that the starting point for such a shift is a marker that asserts progressive semantics. The IMPF+tense construction thus becomes compositionally non-transparent and grammaticalizes to yield a new aspectual category ' the progressive'. At the next stage, the progressive marker, the non-compositional IMPF+tense construction, generalizes to license both progressive and non-progressive imperfective interpretations.[21] On this scenario, the fact that overt tense marking is attested in both progressive and non-progressive imperfective clauses in Modern Gujarati and Hindi, would be interpreted as a consequence of the progressive-to-imperfective shift. The IMPF+tense construction is the progressive morphology, which has diachronically generalized to license non-progressive interpretations.

The steps involved on the first scenario are shown in tabular form in (33).

contexts. In Deo (2001) I argue that these facts indicate the articulation of syntactic structure through the diachronic rise of a functional category, say IP. The facts about negation also hold for Gujarati and Hindi where the negation marker involves an incorporated auxiliary, a marked change from MIA. The spread of overt tense marking across imperfective clauses in the data described here could be interpreted as yet another phenomenon ultimately tied to this abstract change in the syntax. The emergence of a new functional category in the syntactic structure of a language might correlate with a constraint that the head of such category be obligatorily filled. The rise and spread of tense distinctions in the form of innovated tense auxiliaries reflects the effects of this abstract change. Regardless of whether this hypothesis is true, the assumption that the spread of tense marking is effected by a syntactic constraint on overt tense expression seems to be justified by the facts — tense marking does get generalized in Gujarati and Hindi.

[21] Because of the nested denotation that we have for the imperfective and the progressive operators, this generalization simply involves the weakening of the semantic value of the IMPF+tense construction, such that it is defined in terms of the weaker INST rather than the stronger AT relation.

(33) **Scenario 1: spontaneous semantic generalization**

	progressive	non-progressive	explanation
Stage 0	V_{impf}		MIA
Stage 1	V_{impf}+TNS	V_{impf}	by progressive implicature
Stage 2	$[V_{impf}+TNS]_{prog+tns}$	V_{impf}	pragmatic strengthening
Stage 3	$[V_{impf}+TNS]_{impf+tns}$		semantic generalization

Stage 0 is the MIA stage which lacks tense marking altogether. At stage 1, overt tense marking gives rise to the progressive implicature, which results in a morphological contrast between progressive and imperfective predicates. At stage 2, we have pragmatic strengthening which results in a non-compositional progressive semantics for the]IMPF+tense periphrasis. I have indicated this in (33) by subscripting the semantic value of the whole periphrasis outside the square brackets. The progressive can be said to be the "constructional" value of this periphrasis, since the individual forms in the composition cannot be said to contribute this meaning. The grey shaded area in this row indicates the denotation of the IMPF+tense periphrasis, which ungergoes change at stage 3, indicated by the increase in the grey area in the next row. At stage 3, the periphrastic progressive construction generalizes to license non-progressive interpretations. This is yet another instance of grammaticalization, which involves change in the semantic value of the constructional progressive operator.

Scenario 2 — spread of tense marking

On the second scenario, we can reconstruct the diachronic facts differently.

(34) **Scenario 2: spread of tense marking**

	progressive	non-progressive	explanation
Stage 0	V_{impf}		MIA
Stage 1	V_{impf}+TNS	V_{impf}	by progressive implicature
Stage 2	V_{impf}+TNS		spread of tense marking

Just as in scenario 1, the aspectual contrast between the progressive and non-progressive imperfective predicates arises as an implicature of overt tense marking in some imperfective clauses (stage 1). This is a conventionalized implicature and remains diachronically stable. At stage 2, A syntactic constraint on overt tense marking in all clause types results in the spread of tense auxiliaries to non-progressive imperfective contexts. This results in

the weakening of the progressive implicature for the IMPF+tense construction. The morphological contrast between the progressive and the non-progressive imperfective aspects is leveled because tense marking becomes obligatory in both types of clauses.

On this scenario, the generalization of a construction restricted to progressive interpretation at a diachronically prior stage, is crucially *not* a result of changes in the semantic values of forms or constructions. The IMPF+tense construction does not become non-compositional as in scenario 1, nor does it change in semantic value from the progressive to the imperfective. On the second scenario, the semantic values for the compositional elements in the construction are retained across time. The change in distribution is derived by an extra-semantic syntactic constraint on tense expression in clauses.

Comparing the two scenarios

The first account of the progressive-to-imperfective shift presented here, needs to appeal to two processes of grammaticalization. In the first case, we have the non-compositional creation of a new progressive category, in the second, this category generalizes (grammaticalizes) to license non-progressive interpretations, and its semantic value changes to that of the imperfective operator. The second scenario presents a simpler account of the same changes because it derives the grammaticalization patterns by relating them to the semantic and pragmatic contribution of overtly expressed tense marking across time. Further, it relies on a syntactic constraint on obligatory tense expression to explain the progressive-to imperfective shift.

5.3.5 Summary

The main goal in §5.3 was to account for why the IMPF+tense periphrasis in Old Gujarati/Hindi and Pawri license the progressive interpretation and how the progressive-to-imperfective shift has been instantiated in Gujarati and Hindi. I argued that the simplest answer to this question relies on the formulation of progressive and imperfective semantics along the lines proposed in §3, and the idea that the innovation of tense marking gives rise to the progressive interpetation by implicature rather than by assertion. I presented some synchronic data from Pawri to support the implicature-based account for the progressive interpretation available to the IMPF+tense construction. I further argued that this account, with very few additional assumptions, can explain the progressive-to-imperfective shift in Gujarati and Hindi as the weakening of implicature driven by a constraint on obligatory tense expression in finite clauses. In terms of the larger issue of aspectual representation, I want to point out that the diachronic data presented above supports distinguishing between

the semantics of the progressive and imperfective aspects along the lines I have proposed in Chapter (3). The fact that the progressive morphologically differs from the imperfective only by the overt presence of explicit temporal locators (viz. tense auxiliaries) at some stage in these languages constitutes evidence that the two aspects are distinguished by some condition on temporal location, which is provided by the AT relation. The progressive asserts that a predicate is instantiated AT a particular temporal location; the imperfective is neutral with respect to this information.

5.4 The Locational Progressive construction

In §5.2 and §5.3, I examined a specific kind of change in Indo-Aryan diachrony where the progressive-to-imperfective shift is intimately connected to the spread of overt tense marking in imperfective clauses. In (25) (reproduced in (35)), based on the Gujarati, Hindi, and Pawri data, I proposed an abstract trajectory for this shift, which is constituted by a series of gradual steps.

(35) **Changes in the imperfective domain in some IA languages**

	progressive	non-progressive	Language
Stage 1	V_{impf}		MIA, Old H
Stage 2	V_{impf}+Aux_{tns}, V_{impf}	V_{impf}	Pawri, Old G
Stage 3	V_{impf}+Aux_{tns}	V_{impf}	Mid H
Stage 4	V_{impf}+Aux_{tns}	V_{impf}+Aux_{tns}, V_{impf}	Mod G 19C H
Stage 5	V_{prog}+Aux_{tns}, V_{impf}+Aux_{tns}	V_{impf}+Aux_{tns}	
Stage 6	V_{prog}+Aux_{tns}	V_{impf}+Aux_{tns}	Mod H

In the grammaticalization literature, the progressive-to-imperfective shift is typically described as being the result of semantic bleaching or generalization. The changes in §5.2 suggest that this shift is not effected by spontaneous generalization/bleaching in the semantics of progressive morphology, but rather by the spread of an expressive resource — tense marking. Being based in the particularities of the Gujarati/Hindi/Pawri data, it remains to be seen if this explanation can be generalized to other crosslinguistic instances of the progressive-to-imperfective shift. As a general principle, however, it seems desirable to be able to account for semantic change in one domain (viz. aspect) as being motivated by an expressive function relative to another domain (e.g. tense) rather than being a spontaneous shift in the meaning of a morphological marker.

In this section, I describe yet another instantiation of the progressive-to-imperfective shift in Indo-Aryan history that confirms this principle, although via a more complex series of steps. In this version of the progressive-to-imperfective shift, we have a progressive construction based on IMPF and a locational tenseless auxiliary *acch* 'sit', first attested in MIA. This construction generalizes to license non-progressive imperfective interpretations in Middle Marathi. The changes are traceable through the Old and Middle Marathi cognates of this construction.[22]

The MIA Locational Progressive construction examined here does not carry tense specification unlike the IMPF+tense constructions of Old Gujarati, Hindi, and Pawri. Nevertheless, we see that this construction (or rather, its cognates) undergoes a change in its distribution in Old and Middle Marathi. The puzzle is this: How do we motivate the progressive-to-imperfective shift for this case, since it does not appear to be obviously related to the spread of overt tense marking (or any such expressive information) across semantic contexts? Do we need to resort to spontaneous generalization in order to explain the generalization of the MIA Locational Progressive construction?

I will argue here, that although the MIA Locational Progressive construction appears, on the surface, to be a counter-example to the hypothesis that the progressive-to-imperfective shift is motivated by the spread of some expressive resource (such as tense information), a closer look at the data shows that this change also conforms to this generalization. Specifically, the progressive-to-imperfective shift, even in this case, is correlated with the marking of tense distinctions. The original progressive constructional paradigm (which lacks tense specification) bifurcates into two distinct tensed paradigms diachronically. This bifurcation goes hand-in-hand with the generalization in the semantics of this construction. Therefore, the 'Locational Progressive' variant of the progressive-to-imperfective shift in Indo-Aryan also supports the hypothesis that this shift is not unmotivated but rather occurs because the progressive marker is a more expressive form than the imperfective marker; it carries both aspectual and tense information as opposed to the imperfective that lacks tense specification.

[22]The data in this section is based on the following texts for each of the periods:

(36)

Stage	Language	Text	
Stage 1	MIA		
Stage 2	Late MIA (∼ 700 CE)	*Vasudevahiṃḍī* (1930)	VH
Stage 3	Old Marathi - GC (∼ 1250 CE)	*Govindaprabhucaritra* (Kolte 1944)	GC
Stage 4	Old Marathi - D (∼ 1270 CE)	*Dnyāneśwari* (Dandekar 1953)	D
Stage 5	Middle Marathi (∼ 1650 CE)	*Candracūḍa Daftar* (Apte 1920)	CD

5.4.1 The MIA Progressive

The **impf** paradigm in MIA realizes the imperfective aspect and licenses lexical stative (37a), habitual (37b), as well as progressive (37c) interpretations. I have also shown that **impf** is temporally unrestricted and is compatible with both present and past-time interpretation.

(37) a. egamm-i kira nayar-e kā vi gaṇiyā rūvavati
One-LOC.SG some town-LOC.SG some courtesan.NOM.SG beautiful.NOM.SG

guṇavati **parivasa-i**
skilled.NOM.SG live-**impf.**3.SG

In some town, *lived* a beautiful and skilled courtesan. (VH: KH 4.12)

b. so ya bambhaṇ-o varise-varis-e tamm-i devayā-e
he and brahmin-NOM.SG year-year-LOC.SG that-DAT.SG deity-DAT.SG

...anna-pāṇa-m **de-i** chagala-m ca **nivede-ti**
food-drink-ACC.SG give-**impf.**3.SG goat-ACC.SG and offer-**impf.**3.SG

And that Brahmin, year after year, *used to give* food and drink and *used to offer* a goat to the deity (VH:KH 29.20)

c. so ya ḍiṇḍī... bhavaṇa-ssa āsaṇṇeṇa **gaccha-ti**
he.NOM.SG and worshipper.NOM.SG house-GEN.SG near go-**impf.**3.SG

dhaṇasiriy-e tambola-ṃ nicchuḍha-ṃ **paḍiy-aṃ** ḍiṇḍi-ssuvvariṃ
D-GEN.SG leaf-NOM.N.SG spat.out-NOM.N.SG fall-PERF.N.SG worshipper-LOC.SG

And that worshipper *was going* from near that house. Dhaṇasiri's spat-out (betel)-leaf *fell* upon the worshipper. (VH.D. 51.12-14)

In later MIA literature, a new periphrastic construction based on IMPF and the verb *acch* 'sit' is attested (Sen 1995, Pischel 1900, Bubenik 1998).[23] This construction is described as indicating 'continuity of action' (Sen 1995: 112) and conveying that the eventuality denoted by the verb is in progress at the reference interval. I call this construction the Locational Progressive construction because of the use of the positional verb *acch* 'sit' as the progressive marking auxiliary in this construction. The examples in (38) illustrate the use of this construction.

[23]The grammaticalization of the verb *acch-ati* as an auxiliary in different NIA languages has been described in Turner (1936). In later stages, the **impf** form of this verb is restricted to present tense reference. But there is no evidence of this restriction in the MIA data.

The auxiliary verb *acch* 'sit' (glossed PROG because it contributes the progressive interpretation) has **impf** inflection in each of these examples and the contexts support either a present or past interpretation. (38a) is addressed to a sleeping person, who is accused of being irresponsible in face of the presence of a religious person outside the house. In (38b), the grieving (weeping) of the brahmin's wife is understood to be ongoing at the time of the brahmin's return, which is in the past time and expressed by the PERF morphology. Similarly, in (38c), the narrator is describing how he was in the middle of thinking up a plan for the capture of the thief, when another person (the thief himself) approached him.

(38) a. bāhiṁ gilāṇ-o accha-i tumaṃ... **suva-anto** **accha-si**
Outside sageNOM.SG be-**impf.**3.SG you-NOM sleep-IMPF.M.SG PROG.**impf.**2.SG
There is a sage outside (and) you *are sleeping.* (VH:SV 117.27)

b. so vi ya bambhaṇ-o... **āga-o** bambhaṇ-ī ya
that also and Brahmin-NOM.SG return-PERF.M.SG Brahmin-FEM.NOM.SG and
dīnavayaṇā **paritapp-antī** **accha-i**
sorry.face.NOM.SG grieve-IMPF.F.SG be-PROG.**impf.**3.SG
And the brahmin... returned. And the Brahmin's wife, sorry-faced, *was grieving.* (VH.D. 31.4-5)

c. ahaṃ ekka-ssa... sahayārapāyava-ssa heṭṭhā niviṭ-ṭho
I one-GEN.SG S.tree-GEN.SG base sit-PERF.M.SG
...coragahaṇopāya-ṃ **cintaya-nto** **acchā-mi**
thief.capture.plan-ACC.SG think-IMPF.M.SG PROG.**impf.**1.SG
Seated at the base of a *Sahayāra* tree, I *was thinking up* a plan to capture the thief. (VH.AK.40.5-6)

Optionality of the Locational Progressive: EXPRESSIVENESS **and** ECONOMY

As with any syntactic or morphological innovation, the frequency of the progressive construction in the MIA texts where it is first attested, is relatively low.[24] Further, the Locational Progressive construction is not obligatory in progressive contexts; it appears in free variation with the **impf** paradigm to license progressive interpretation.

[24]I have not been able to get an accurate count of the occurrences of this construction in the entire text of Vasudevahiṁḍī (VH), the text I am using for MIA data; however, I have come across a total of 14 occurrences of this construction in the text, which is approximately 200 pages in length.

A particularly good illustration of this optionality can be seen in the following sentences, which are separated by a single clause in the narrative. The context is as follows: the narrator's wife has apparently lost her life due to snake bite. The narrator, having fallen unconscious by the blow, upon regaining consciousness, is grieving at the loss. Both sentences refer to the same ongoing eventuality of weeping. In (39a), the eventuality referred to by the **impf** form forms the background to the event of the sun setting and must be translated with the progressive in English. In the other sentence, (39b), the overt progressive construction backgrounds the event of a monk coming to the help of the narrator.

(39) a. ...mohamuvagato haṁ paccha **āga-to** ya bahuṁ
unconsciousness.reach-PERF.M.SG I later come-PERF.M.SG and a lot

vilavā-mi tāva ya **atthaṇga-to** divasayaro
weep-**impf.**1.SG just then and set-PERF.M.SG sun.NOM.M

...I became unconscious. Later, I *came to* and I *was weeping* a lot, (and) just then, the sun *set*. (VH: AK 46.29)

b. ahaṁ avi ta-ssa ujjāṇa.devakula-ssa taṁ ghettuṇa duvāramūle
I also that-GEN.SG grove.temple-GEN.SG her-ACC.SG take-GER door-LOC.SG

acchā-mi **vilav-anto**
PROG.**impf.**1.SG weep-IMPF.M.SG

I also, taking her (body), *was weeping* at the door of the grove-temple. (VH:AK. 47.1)

I proposed in §3.7 that such free variation between the markers of the progressive and the imperfective aspects is to be expected in the period following the innovation of a new progressive morphological category and reflects the free ranking between two opposing constraints EXPRESSIVENESS and ECONOMY. The innovated Locational Progressive construction is more expressive since it marks progressive aspect, but it is less economical because it is syntactically more complex than the **impf** paradigm. On the other hand, **impf** is more economical but less expressive. The free variation between these two forms for the expression of progressive semantics is to be expected at a diachronic stage where a new morphological category is innovated via the progressive construction.

The MIA Locational Progressive differs from the innovated progressive constructions of Old Gujarati, Old Hindi, and Pawri primarily in tense specification. The auxiliaries that form the periphrastic progressive construction in those languages are overt exponents of present or past tense; the auxiliary that is part of the MIA progressive periphrasis has no

temporal function and exclusively marks progressive aspect in conjunction with the IMPF paradigm. In §5.3, I proposed that the progressive interpretation for the IMPF+tense construction arises as a result of a generalized implicature rather than from the compositional semantics of the IMPF form and tense auxiliaries. With the MIA Locational Progressive construction, I am assuming that the locational auxiliary 'sit' directly contributes to the progressive semantics of the construction.[25] In other words, the MIA Locational Progressive asserts, rather than implicates, progressive semantics.

5.4.2 Old Marathi

The cognates of the MIA locational progressive construction are attested only in Old Marathi from among the set of languages examined here.[26] This might be the case because Marathi is the only language for which it is possible to trace a direct line of descent from Middle Indo-Aryan to Old Marathi relatively accurately by following the Jaina Mahārāṣṭrī literature in the MIA period (Tulpule 1960, Bloch 1914, Master 1964). The MIA text I have examined is an archaic representative of the Jaina Mahārāṣṭrī literature. There are two distinct linguistic stages detectable in the Old Marathi literature — here represented by two texts — the *Govindaprabhucaritra* (GC) and the *Dnyāneśwari* (D). Although these texts have been written at approximately the same time (D is dated a couple of decades after the GC), the GC presents a more archaic linguistic picture than the D.[27]

In Old Marathi, imperfective sentences are licensed by two distinct morphological forms — (a) the **impf** paradigm and (b) the MIA Locational Progressive construction. In GC, the Locational Progressive licenses only progressive imperfective interpretation, while **impf** is restricted to non-progressive imperfective interpretations. D should be considered less archaic because, in this text, the Locational Progressive construction is no longer restricted

[25]It is difficult to determine how exactly the lexical semantics of a verb like 'sit' contributes the precise temporal relation expressed by the progressive, the AT relation. For the purposes of this exposition, I am factoring out that issue and assuming that the progressive information comes from the auxiliary. I cannot make this assumption for the tense auxiliaries of Old Gujarati, Hindi, and Modern Pawri, because, in these cases, the auxiliaries are not uniquely employed to mark progressive aspect, but serve a temporal location function in addition.

[26]There are approximately 160 clauses with this construction in the Dnyāneśwari, a text with 9000 verses. This is based on an automatic search on the electronic version of the text, the only text for Old Marathi that is available electronically (http://www.stanford.edu/∼adeo/dnya). I thank my parents, Chhaya and Sharad Deo, for painstakingly typing in the text for the electronic version.

[27]These can be attributed to two facts: first, they are written in different geographical areas, suggesting dialectal differences in their grammars. Second, it is known that one of them, the Dnyāneśwari, has been re-edited and modernized in the 15th century AD, 200 years after the text was originally composed. It is well-established that the GC, and the Mahānubhāva literature that it forms part of, reflect more faithfully the spoken language of the period that the texts were written in than the more mainstream Bhakti literature of the same period (Tulpule 1960, Kolte 1944)

only to progressive interpretations but it may also license other imperfective interpretations. Intuitively, in D, the use of the Locational Progressive appears to be extending to non-progressive imperfective contexts.

Old Marathi — the Govindaprabhucaritra (GC)

(40) illustrates the use of the MIA locational progressive in the GC.[28] As in MIA, the construction lacks tense specification; it realizes the temporally unspecified progressive aspect. The same construction is compatible with a progressive interpretation and either past or present temporal reference. The sentences in (40a-c) are illustrations where the Locational Progressive licenses a present time progressive interpretation.

(40) a. kāi vo jā-le yā brāhmaṇā-ciyā rāṇḍāṃ-si
What O happen-PERF.N.SG this.OBL brahmin-GEN woman-DAT.SG

āmu-ceṃ kuṇabīyāṃ-ce anna **khā-ti** **as-e**
Our peasant-GEN.N.SG food-NOM.N.SG eat-IMPF.F.SG PROG-**impf.**3.SG
O, What has happened to this Brahmin woman? She *is eating* our peasant food. (GC. 54)

b. guṇḍo-cā māthā-houni prakāsu **niga-tu** **as-e**,
G-GEN.SG head-from light-NOM.SG emanate-IMPF.M.SG PROG-**impf.**3.SG

āpeṃ āpo **bola-tu** **as-e**
self-INST.SG self-NOM.SG talk-IMPF.M.SG PROG-**impf.**3.SG
Light *is emanating* from Guṇḍo's head, he *is talking* to himself. (GC.4)

c. rāuḷo āmhĩ Pāṇiyeṃ-vīna **mara-te** **as-o**
R-VOC we-NOM water-without die-IMPF.M.PL PROG-**impf.**1.PL
Rāuḷa, we *are dying* without water.

The Locational Progressive may also have past time progressive reference as is illustrated in (41a-b), which are part of a narrative description of a past episode reported by the narrator. The use of the PERF form in the second clause in (41a) locates the description in the past time. The progressive construction itself contributes no tense information.

[28] IMPF has undergone phonological change and lost the nasal consonant. In Old Marathi, the form is marked with *-(a)t* and often (unlike the earlier participial form of MIA) remains uninflected for gender and number features, thus showing no agreement with the subject (41b). In the later language, this form is uniformly uninflected in periphrastic constructions. The *acch* auxiliary of MIA also undergoes phonological change and the palatal aspirated stop is weakened to a dental fricative (ch ≫ s). This change is not specific to the auxiliary, but an independent phonological change in the language.

(41) a. āmhīṃ rāuḷā-si bhītari koṇḍi-leṃ mhaṇauni
we-ERG R-ACC.SG inside lock-PERF.N.SG saying

bobā-teṃ **ase-ti** tavaṃ vidyārthī ā-le
shout-IMPF.M.PL PROG-**impf.**3.PL then disciple-NOM.PL come-PERF.M.PL

The (boys) *were shouting* ' We have locked the Rāuḷa inside.' At that time, (his) disciples came. (GC.61)

b. jhirmiṭ-jhirmiṭ pāṇi **ye-ta** **as-e**
drizzle water-NOM.SG come-IMPF PROG-**impf.**3.SG

The water *was coming* in a drizzle. (GC. 121.209)

(42) clearly illustrates how the temporal interpretation of the Locational Progressive construction is contextually determined. Both examples are from the same narrative, separated by an intermediate clause. In (42a), the locational progressive describes a playing eventuality in the past that is ongoing at the time of the arrival of the officer, also in the past (as determined by the PERF form). This is from the narrator's perspective. (42b), on the other hand, is a sentence uttered by the servants of the officer, who protest that they cannot go ahead because the *gosāvi* 'ascetic' *is playing* — engaged in a playing activity at utterance time (from their perspective) . The morphology used is still the Locational Progressive construction.

(42) a. vaḍā-cī pārambī dharuni gosāvī kheḷu **karī-ta**
Banyan-GEN root-NOM.SG hold-GER G-NOM.PL play-NOM.SG do-IMPF.M.PL

ase-ti tavaṃ adhīkārīyā dāṇḍī-ye bais-oni ā-lā
PROG-**impf.**3.PL then officer-NOM.M.SG carriage-LOC sit-GER come-PERF.M.SG

The Gosāvī *was playing* (doing play), catching hold of the Banyan roots, when the officer came sitting in a carriage. (GC.75)

b. tīh-iṃ mhaṇīta-leṃ āmhāṃ cāl-av-e nā
they-ERG say-PERF.M.PL we-ACC.PL walk-ABIL-PRES.3.SG NEG

puḍhāṃ rāuḷa **kheḷa-ta** **ase-ti**
ahead R-NOM.PL play-IMPF.M.PL PROG-**impf.**3.PL

They said, 'We are not able to walk. The Rāuḷa *is playing* ahead.' (GC. 75)

impf in GC

In contrast to the free variation in MIA between **impf** and the Locational Progressive construction, GC exhibits a non-overlapping distribution of the two morphological forms. **impf** is restricted to licensing only non-progressive imperfective interpretations with both present and past time reference. This is a categorical claim about the distribution of **impf**, and it should be remembered that my evidence for this comes only from one Old Marathi text, the GC. I have not been able to find a single example in the GC where **impf** licenses a progressive interpretation. This limited data supports a non-overlapping distribution for the locational progressive and the **impf** paradigm at the GC stage.

The sentences in (43a-c) illustrate the use of **impf** in GC. In (43a), **impf** licenses a habitual interpretation with present time reference, while in (43b-c), **impf** refers to habitual eventualities in the past.

(43) a. gosāvi **ye-ti** tari pāk parichedu **kar-iti**...
G-NOM.SG come-**impf.**3.SG then food.NOM destruction.NOM do-**impf.**3.SG

prasādu **kari-ti**
offering.NOM do-**impf.**3.SG

When the Gosāvi *comes*, he *destroys* the food.He *partakes* of it (*lit.* makes it an offering). (GC.180)

b. ekācẽ lẽkaru gosāvī **kheḷ-avi-ti** tẽ saralẽ
one-GEN.SG child.NOM G-NOM.SG play-CAUS-**impf.**3.PL it die-PERF.3.N.SG

'The Gosāvi *used to play* with someone's child. It died.' (GC. 55)

c. cuki-bhuli te cāṭayā-hĩ **sāṅgha-ti**
mistake-NOM.PL he disciple-ACC.PL-EMPH tell-**impf.**3.PL

āṇi upādhiyāhĩ **sāṅgha-ti**
and teacher-ACC.PL-EMPH tell-**impf.**3.PL

He *used to tell* the students as well as the teachers their mistakes. (GC. 53)

The main distinction between the MIA and the Old Marathi GC system lies in the morphological relation between the **impf**paradigm (which realizes the general imperfective aspect) and the innovated Locational Progressive construction (which realizes the specific progressive aspect). The free variation in MIA is replaced by a categorical restriction to non-overlapping domains for the two forms in GC. In §3.7, I mentioned that the free variation that follows the morphological innovation of the progressive category diachronically can

lead to three logical possibilities — (a) continued free variation, (b) categorical distribution of the innovated progressive and the general imperfective, and (c) the loss of the innovated progressive. The GC data appears to instantiate possibility (b) and this distribution is consistent with later changes in the language, where the Locational Progressive extends beyond the progressive domain.

The change from MIA to the Old Marathi of GC can be represented as in (44). Stage 1 is the stage without a morphologically distinct progressive. Stage 2 is the stage corresponding to late MIA, characterized by an innovated progressive (V_{impf}+Aux_{prog}) which is in free variation with the general imperfective aspect form (**impf** in this case). This is indicated by the presence of both forms in the cell corresponding to progressive at Stage 2. The subscript *prog* indicates that the locational auxiliary contributes progressive semantics. In GC, the imperfective form no longer licenses the progressive interpretation.

(44) **Change from MIA to Old Marathi - GC**

	progressive	non-progressive	Language
Stage 1	V_{impf}		MIA
Stage 2	V_{impf}+Aux_{prog}, V_{impf}	V_{impf}	Late MIA
Stage 3	V_{impf}+Aux_{prog}	V_{impf}	Old M - GC

Old Marathi – the Dnyāneśwari (D)

D represents the next stage along this diachronic trajectory. The locational progressive construction not only blocks the domain of the **impf** paradigm, but further generalizes to license non-progressive imperfective interpretations. In GC, the Locational Progressive is restricted to the progressive domain. But in D, the Locational Progressive is additionally compatible with habitual/generic and lexical stative interpretations. As in GC, **impf** licenses only non-progressive interpretations.[29] This is tabulated in §45. Stage 1 to Stage 3 are the same as for (44). Stage 4 indicates the change from GC to D. where the Locational Progressive (V_{impf}+Aux_{prog}) expands in scope and occurs in free variation with **impf** (V_{impf}) in licensing non-progressive imperfective interpretation.

[29]There are two main exceptions to the restriction of **impf** to non-progressive contexts. First, **impf** is uniformly employed in negated sentences. I have not come across an example where the auxiliary in the progressive construction is negated. Second, the verbs of speaking (*bol*, *mhaṇ*, *sāṃg*, each of which introduce quoted speech, occur in the **impf** form, although they have an episodic reading.

(45) **Changes from MIA to Old Marathi - D**

	progressive	non-progressive	Language
Stage 1	V_{impf}		MIA
Stage 2	V_{impf}+Aux$_{prog}$, V_{impf}	V_{impf}	Late MIA
Stage 3	V_{impf}+Aux$_{prog}$	V_{impf}	Old M - GC
Stage 4	V_{impf}+Aux$_{prog}$	V_{impf}+Aux$_{prog}$, V_{impf}	Old M - D

Examples that support this distribution of the Locational Progressive and **impf** are given from (46)-(48) In (46a-b), we see that the locational progressive, like its GC cognate, licenses progressive interpretation.[30]

(46) a. gavhāru nidrāsukhe ghara **jaḷa-ta as-e**
fool-NOM-SG sleep-pleasure-INS.SG house-NOM.SG burn-IMPF PROG-**impf.**3.SG

te na **dekh-e**
that-NOM.SG NEG see-**impf.**3.SG
The fool, being lost in sleep, does not see that his house *is burning.* (D. 13.741)

b. maga teṇeṁ kelā siṁhanādu
then he-ERG do-PERF.M.SG lion.call-NOM

to **gāja-ta as-e** adbhutu
that-M.SG sound-IMPF PROG-**impf.**3.PL wondrous
Then, he made the lion-call (with his conch shell). That *was sounding* in a wondrous way (D.1.125-126)

The sentences in (47a-c) show that the Locational Progressive also licenses non-progressive imperfective interpretations. In (47a), the sentence contains a characterizing predication. The property of the Aśvattha tree to spread downwards is not an incidental property that holds at a particular time. The Locational Progressive, used in this sentence, is compatible with the generic interpretation. In (47b), the Locational Progressive has generic reference as well. The sentence does not describe a particular episode of debating but poses a general question about whether such a property is instantiated at all. (47c) contains a lexical stative predicate and licenses a characterizing non-progressive interpretation.

[30]Yet another change in the morphology of the IMPF participle that is part of the Locational Progressive construction must be mentioned. In D, and later, this form often appears as an invariant form with no inflection for number and gender. Modern Marathi only uses the uninflected variant of IMPF in progressive constructions. The sentences in (46) contain this uninflected form as well.

(47) a. hā sthāvarā-hi taḷiṁ **phāṁka-ta as-e**
this unmoving-ACC.SG down spread-IMPF PROG-**impf.**3.SG

adhiṁcāṁ ḍāḷiṁ
low-GEN.PL branch-INS.PL

This (tree) *spreads* with its lower branches (all the way) down to the unmoving. (D.15.212)

b. uju kā avhāṭā rathu kai khaṭapaṭā
right or unused path chariot-NOM.SG what debate-NOM.SG

kari-tu as-e
do-IMPF PROG-**impf.**3.SG

Does a chariot *debate* (lit. do debate) on (whether it should follow) the main road or the unused path? (D.12.121)

c. sarvabhūtāṁkureṁ bīja **virūḍha-ta ase**
all.living.sprout-LOC.PL seed.NOM dwell-IMPF PROG-**impf.**3.SG

teṁ mī
that I.NOM

The seed that *dwells* in all living beings (lit. all beings that have sprouted?), that is me (D. 10.304)

The distribution of **impf** undergoes no change. It is restricted to licensing non-progressive imperfective interpretation as in GC. (48) exemplifies some uses of **impf**.

(48) a. teṁ brahmatva... heṁ to **pāv-e** jo
that B-NOM this he.NOM obtain-**impf.**3.SG who

aisā mā-teṁ **bhaj-e**
thus I-DAT worship-**impf.**.3.SG

That Brahmatva (oneness with Brahman), he *obtains* it, who *worships* me in this way. (D. 14.397)

b. kīṁ lavaṇeṁ=ci jaḷa **vir-eṁ** saṁsarge
Or salt-LOC=emph water-NOM dissolve-**impf.**3.SG contact-INS

kāḷkūṭa **mar-e**
poison-NOM die-**impf.**3.SG

Or is it water that *dissolves* in the salt, (or) is it the poison that *dies* upon contact (with the one who consumes it)? (D.2.15)

5.4.3 Middle Marathi

So far we have seen that the Locational Progressive construction, with which **impf** freely alternates in MIA, restricts the semantic domain of **impf** at the GC stage of Old Marathi. At the D stage, the Locational Progressive generalizes and appears in free variation with **impf** to license non-progressive imperfective interpretations (examples in (47) and (48)). The next stage, represented by Middle Marathi prose, instantiates yet another step along the progressive-to-imperfective trajectory.

(49) **Changes from MIA to Middle Marathi**

	progressive	non-progressive	Language
Stage 1	V_{impf}		MIA
Stage 2	V_{impf}+Aux_{prog}, V_{impf}	V_{impf}	Late MIA
Stage 3	V_{impf}+Aux_{prog}	V_{impf}	Old M - GC
Stage 4	V_{impf}+Aux_{prog}	V_{impf}+Aux_{prog}, V_{impf}	Old M - D
Stage 5	V_{impf}+Aux_{prog}		Mid M

At this stage, stage 5 of the tabulated version of the trajectory in (49), the locational progressive construction fully takes over the domain of the **impf** paradigm and freely licenses both progressive and non-progressive imperfective interpretations. The **impf** paradigm becomes infrequent and is rarely attested at this stage.[31] Although the **impf** paradigm does not completely disappear in Middle Marathi, it is effectively taken over by the Locational Progressive construction at this stage. Following this stage, the Locational Progressive becomes the default exponent of the imperfective aspect in Marathi, licensing both progressive and non-progressive interpretations. The set of changes from MIA to Middle Marathi, taken together, instantiate the progressive-to-imperfective shift.[32]

[31] Bloch (1914) remarks that in Modern Marathi (of his period), this form is restricted to the function of the habitual past. In contemporary Marathi, **impf** is considered to be an archaic form and used sometimes in literary texts. The only traces of this paradigm in the spoken language are for the auxiliary *āh* and a modal verb *pāhije*.

[32] A brief examination of the devotional (Bhakti) and other religious literature of the prior period (e.g. Tukārāmagāthā or the Dāsabodha of Rāmadāsa (both early 17th century)) reveals that the older variational system continues in these texts. The use of **impf** is frequent (this appears to be a property of poetic texts even much later) and the Locational Progressive licenses both progressive and non-progressive interpretations. In the absence of careful statistical counts of these data, there is very little insight that can be gained from studying these stages. Further, the fact that these are versified texts might reflect the poetic license and use of archaisms often documented for this genre. I therefore turn to a much later period in Middle Marathi, which being preserved in a non-literary text (official correspondence of the Candracūḍa family (1734-1764)), is likely to more faithfully document the language of the period it was written in.

5.5 MIA to Middle Marathi: The progressive-to-imperfective shift

Before I provide data from Middle Marathi, let me again present the question that I posed at the beginning of this section (§5.4). What motivates the progressive-to-imperfective shift from MIA to Middle Marathi? The change from Late MIA (Stage 2) to GC (Stage 3) can be motivated through the interaction of the two opposing constraints on morphological expression — EXPRESSIVENESS and ECONOMY. The emergence of an innovated progressive and the blocking that it effects at the GC stage can be understood to be the result of the categorical ranking of EXPRESSIVENESS above ECONOMY. The Locational Progressive, being semantically specific, is more expressive than the **impf** paradigm, and emerges as the winning candidate for the expression of progressive meaning on this categorical ranking.

However, there is no obvious explanation for Stage 4 and Stage 5. The Locational Progressive construction is *neither* more expressive *nor* more economical in the expression of non-progressive imperfective meaning. The Locational Progressive is syntactically more complex than the **impf** paradigm and so it violates ECONOMY. The Locational Progressive is also specified for progressive aspect (while **impf** is under-specified) and so it violates the EXPRESSIVENESS constraint which requires faithfulness to input. This violation arises because the Locational Progressive is specified for extra features (PROG) that are not present in an input corresponding to a habitual or lexical stative sentence. Since the Locational Progressive is a 'worse' candidate for the expression of non-progressive imperfective meaning than **impf** is with respect to both constraints, it is obvious that no re-ranking of these two constraints can allows us to model this progressive-to-imperfective shift. To conclude, an interaction of EXPRESSIVENESS and ECONOMY fails to explain why it is that the Locational Progressive generalizes to license non-progressive interpretations and takes over the domain of the IMPF paradigm.

Having reached this impasse, it might appear that at least for this variant of the progressive-to-imperfective shift, we must posit that there is spontaneous generalization in the semantics of the Locational Progressive construction. Resorting to spontaneous generalization/semantic bleaching is problematic because it implies that there can be no predictability about such a change or an understanding of the factors conditioning it. For the first instance of the progressive-to-imperfective shift that I described, I proposed that the progressive-to-imperfective shift could be interpreted as an epiphenomenon of the spread of overt tense marking rather than an independent change by itself. I want to argue here that a similar explanation for the progressive-to-imperfective shift from MIA to Middle Marathi

is possible if we take a closer look at the morphological facts of the linguistic stages.

My claim is that the Locational Progressive (or rather, its cognates) generalizes to license non-progressive imperfective interpretations *because* it is semantically more expressive than it competitor, the **impf** paradigm. It is semantically more expressive because, like its Old Gujarati, Hindi, and Modern Pawri counterpart, it also carries tense specification. To make sense of this apparently contradictory claim about the Locational Progressive, we must examine the changes in the morphological paradigm of this construction that already start being attested in Old Marathi.

The bifurcation of the Locational Progressive paradigm

An independent morphological change in the paradigm of the Locational Progressive construction is the bifurcation of the single temporally unspecified periphrastic paradigm into two distinct paradigms which mark present and past tense location. In the original MIA Locational Progressive construction, there is no cliticization or auxiliary incorporation. In Old Marathi (both GC and D), however, the auxiliary *-as* optionally encliticizes to the IMPF form. The two forms are written connected in the orthography, and the auxiliary appears in a reduced form. (50) and (51) lists the periphrastic and cliticized paradigms of the Locational Progressive (exemplified with the verb root *bol* 'speak').[33]

(50) **OM Periphrastic Progressive**

	SG	PL
1	bol-at as-e	bol-at as-o
2	bol-at as-asi	bol-at as-ā
3	bol-at as-e	bol-at as-ati

(51) **OM Cliticized Progressive**

	SG	PL
1	bol-atase, bol-ato	bol-ataso
2	bol-atosi	bol-atasā
3	bol-atase, bol-ato	bol-atāti

While most forms in the cliticized paradigm are transparent, the variants for the first and third person singular present a problem because the auxiliary appears to be optionally realized in these cells of the paradigm. Bloch (1914: 255) suggests that this shows that the bare IMPF forms may also function as main verbs in Old Marathi clauses. Doderet (1927:566-7), however, argues that these are the result of further incorporation of the auxiliary in the same paradigm and the extension of the first plural in the singular. I am agnostic about the morphological origins of these forms. What is important to the discussion here is that within Old Marathi, there are two distinct 'extended' and 'reduced' variants that are cognate to

[33]The participial inflection for IMPF in Old Marathi is either *-t*, *-tu*, or *-to*, when it is not declined for number and gender. The use of the *-t* inflection in the paradigms is for transparency; it shows most easily how the periphrastic paradigm is related to the cliticized paradigm.

the same MIA Locational Progressive paradigm. Bloch (1914: 255) observes that the forms in the cliticized paradigms often appear to be morphological variants of the periphrastic forms. According to him, both paradigms retain the lack of temporal specification that characterizes the original paradigm and may have both present or past time reference.

In Middle Marathi, the extended and reduced variants of the Locational Progressive paradigm, crystallize into two distinct paradigms corresponding to the present imperfective and the past imperfective categories respectively. The paradigm with cliticized auxiliaries (52) has a restricted interpretation —it is only compatible with present time imperfective reference.[34] The periphrastic variant of the paradigm is restricted to past time reference.

(52) **MM Present Imperfective**

	SG	PL
1	bol-ato	bol-ato(õ)
2	bol-atos	bol-atā
3	bol-ato	bol-atāt

(53) **MM Past Imperfective**

	SG	PL
1	bol-at ase	bol-at aso
2	bol-at asasi	bol-at asā
3	bol-at ase	bol-at asati

(54) illustrates the use of the Locational Progressive in clauses with a non-progressive imperfective interpretation. In (54a-b), the use of the cliticized forms licenses a present time imperfective interpretation.

(54) a. tyāci kharcā-ci begami-visi patra **ye-tāt**
he-GEN expense-GEN provisions-about letter-NOM.PL come-PRES.IMPF.3.PL
He *sends* letters about expenses (and need for) provisions. (CD.84) lit.His letters about expenses (and need for) provisions *come*.

b. kamāvisdār-ās patra pāṭhavi-le tar tum-cā ujūr
revenue.officer-ACC.SG letter.NOM send-PERF.N.SG then you-GEN excuse-NOM
kar-tāt
make-PRES.IMPF.3.PL
When (I) send (lit. sent) a letter to the revenue officer, then (he) *gives* (lit. makes) your excuse. (CD. 115)

The bifurcation of the Locational Progressive paradigm into two distinct paradigms which are specified for tense is an important factor that conditions its generalization. The

[34]There is further incorporation of auxiliaries and the bare participial forms are the preferred variants at this stage. The table in (52) is a partial paradigm; the feminine and neuter gender forms have not been included for simplicity.

Locational Progressive paradigms carry tense specification unlike the **impf** paradigm and therefore, they are more expressive and more faithful to the input than the **impf** paradigm. The generalization of this construction can, on this interpretation, be motivated by the same ranking of constraints that yields the GC system — EXPRESSIVENESS ≫ ECONOMY. The Locational Progressive, which marks temporal information is considered to be more expressive than its rival candidate, the **impf** paradigm. The period of variation where both the Locational progressive and **impf** alternate with each other can be modeled by the free ranking of the two constraints, while the generalization of the Locational Progressive and its takeover of the non-progresisve imperfective domain can be modeled as the result of the categorical ranking of EXPRESSIVENESS above ECONOMY.[35]

5.5.1 Summary

The data from MIA to Middle Marathi discussed in section §5.4 presents one more version of the progressive-to-imperfective shift. The Locational Progressive starts out in MIA as a marker of progressive aspect and gradually generalizes to license non-progressive imperfective interpretations at the Middle Marathi stage. The apparently unmotivated nature of this change can be explained if the changes in the morphological paradigm of the Locational Progressive are taken into consideration. The bifurcation of the originally temporally unspecified paradigm into two distinct morphological paradigms that are specified for temporal location — the Present Imperfective cliticized paradigm and the Past Imperfective periphrastic paradigm — makes the Locational Progressive semantically more expressive than the **impf** construction. It is this expressiveness of the Locational Progressive that favors this construction in contrast to the less specific **impf**, leading to its generalization.

5.6 Conclusion

In this chapter, I examined two variants of the progressive-to-imperfective shift in Indo-Aryan diachrony. The empirical findings of this investigation are that at least in the Indo-Aryan cases, this diachronic path is not spontaneously triggered, but is motivated by the innovation of new expressive resources in the language — specifically, tense information. In the first change, attested in Old Gujarati and Hindi, the progressive-to-imperfective shift

[35] Yet another pair of constructions that have not been mentioned here are the IMPF+tense constructions that also start appearing in Old Marathi. These constructions are innovations, and like the Old Gujarati, Hindi, and Pawri, progressive, built unambiguously, with a tense auxiliary. These constructions freely alternate with the Locational Progressive construction in the expression of progressive semantics and in the later language, block the use of the Locational Progressive to license progressive interpretation, thus replaying a by-now familiar cycle of free variation and blocking.

is a direct consequence of the pattern of spread of innovated tense auxiliaries. In the MIA-Marathi case, the shift correlates with the bifurcation of a single temporally unspecified paradigm into two distinct paradigms with tense specification.

There are two ways in which the theory of the progressive and the imperfective aspects developed in Chapter 3 relates to the changes described here. First, a semantics for the progressive and imperfective operators (and the predicates they yield) that transparently relates the two, is a minimal necessity in analyzing these changes. Without an account of the two operators similar to the nested denotation account that I offer in Chapter 3, it is impossible to make sense of why markers of progressive aspect appear to diachronically turn into markers of the imperfective aspect.

Second, in Chapter 3 I characterized the main difference between the progressive and the imperfective aspects in terms of episodicity or temporal location. The IMPF+tense construction provides a particularly transparent indication that this is the key distinction between the two aspectual categories. The progressive in Old Gujarati/Hindi and Pawri is built out of the imperfective aspect marker (IMPF) and a temporal locator (tense auxiliaries). In a less transparent way, the MIA/Marathi progressive is also built out of the same kind of morphological material. It has been observed that the lexical sources for the progressive are often locative elements (prepositions, locative case markers, or locative case auxiliaries (e.g. *stay*, *reside* etc.) where spatial location is metaphorically extended to express temporal locatedness (Bybee et al. 1994: 127-133). The Indo-Aryan data presents a clear case of how the semantics of the progressive is basically a more specific version of the semantics of the imperfective, with the additional information contributed being temporal location.

Chapter 6

Synchronic variation in Indo-Aryan

6.1 Introduction

The account of the imperfective and the progressive aspects I have been sketching out so far builds on three ideas. The first is that the main distinction between the imperfective and progressive operators is best characterizable in terms of episodicity or temporal locatedness. The second idea is that the distributional and interpretational differences between the two operators can be expressed formally by defining the two in terms of the INST and AT relations respectively. This captures the nested relation between the two operators and their morphological exponents, while ensuring an explanation for the full range of their interpretational possibilities as well as their stativity. A further assumption that the distribution of overlapping semantic categories is determined by blocking accounts for the contrast between languages with and without a morphologically realized progressive operator respectively.

Each of these three points received further support from the facts in Indo-Aryan diachrony discussed in Chapter 5. This chapter has two goals. First, it introduces a new aspectual category called the 'focalized progressive' that is described as a variant of the progressive aspect in the typological literature (Bertinetto et al 2000; Johanson 1971, 2000). I propose an analysis for this category as a more specific version of the progressive, where the domain of the progressive operator is restricted to eventive base predicates. Second, I describe variation in the distribution of the morphological exponents of the imperfective and progressive aspects in contemporary Indo-Aryan languages and demonstrate how the relative semantic domains of these forms depend on the particular category of the progressive that is realized in the language.

6.2 The 'focalized' progressive

According to Johanson (2000), the notion of focality has to do with the narrowness of the temporal interval in relation to which a category (such as the progressive or the perfect) may be interpreted. Johanson treats grammatical aspect markers as viewpoint operators and classifies them into intra-terminals (roughly imperfective and progressive) and post-terminals (the varieties of perfect) operators. These categories are further subject to variation in terms of the degree of focality that characterizes their distribution. The focalized progressive is the term for a morphological form that expresses progressive semantics, but is restricted to some kinds of intervals. The point of this section is to make precise the sort of intervals that the focalized progressive predicate refers to.

Focalized progressive constructions are described as "those expressing the notion of an event(*uality*) viewed as going on at a single point in time, ...called the 'focalization' point" (Bertinetto et al 2000). The so-called focalization point might be overtly expressed or part of the presuppositional basis of the sentence. Further, such a point does not localize the actual duration of the eventuality; it only asserts that the eventuality is ongoing at that point in time.

Consider the Italian and English examples in (1). The Italian Progressive (1a and 1c), which is said to instantiate the focalized progressive category, refers to a single point in time at which the eventuality of working or giving a signal is taking place. The corresponding English sentences (1b and 1 d), with the same interpretation, also have progressive marking.

(1) a. ...quando Gianni é arriv-ato Anna *stava* ancora *lavora-ndo*
when Gianni arrive-CP Anna be.PST still work-PROG
When Gianni arrived yesterday, Anna *was* still *working.* (Bertinetto 2000:564).

b. When John arrived, Ann *was* still *working.*

c. proprio mentre il capitano *stava* *da-ndo* il signale
pardon come.PST the captain be.PST give-PROG the signal
The pardon came when the captain *was giving* the signal. (Bertinetto 2000:565).

d. The pardon arrived when the captain *was giving* the sign to the firing squad.

On the other hand, in some contexts where English uses the Progressive construction, the Italian Progressive appears to be ungrammatical, and the sentence must be translated with the Imperfetto (semantically past imperfective), as in the pair of examples in (2).

(2) a. ...il poliziotto prend-eva nota di ció che diceva l'oratore.
the policeman take-IMPF.PST notes of what said speaker
The policeman was taking notes of what the speaker said. (Bertinetto 2000: 566)
b. (Moment by moment), the policeman *was taking* notes of what the speaker said.

The adverbial assumed for this pair of sentences is *moment by moment*, which was not translated in the actual example. According to Bertinetto, the sentence in (2a) is ungrammatical in the progressive construction because the Italian Progressive (which instantiates the focalized progressive) is incompatible with the adverbial *moment by moment*, which refers to more than one point within an eventuality interval. On the other hand, this sentence is grammatical in the English Progressive construction because the English progressive is a durative progressive (the other progressive category) and may refer to intervals larger than a moment within the larger eventuality interval.

The empirical differences between the Italian and the English progressive markers require us to make a two-way aspectual contrast within the progressive category: the restricted focalized progressive exemplified by Italian and the unrestricted durative progressive exemplified by English. Two questions need to be answered once we split up the progressive category into two distinct sub-categories. First, what is the semantic content of the focalized progressive operator as distinct from the progressive operator whose semantics was given in Chapter 3? Second, what is the diachronic relation, if any, between the two categories? I answer both these questions in this section.

6.2.1 Characterizing the difference

The forcalized progressive category is described, to my knowledge, only in the papers in Dahl (2000), which is a survey of tense and aspect markers in the languages of Europe. Bertinetto et al (2000), Bertinetto (2000), and Johanson (2000) make the generalization that the focalized progressive offers a viewpoint from a single point in time at which the eventuality denoted by the predicate is ongoing. The durative progressive viewpoint, in contrast, does not have to be punctual, but could be a larger interval. It is difficult to determine exactly what this intuitive difference follows from or how it can be formalized. In particular, it is not clear how 'ongoingness' is to be interpreted.

Consider the examples in (3). (3a) and (3c) are from English and the predicates they contain are perfectly acceptable in the progressive. On the other hand, (3b) and (3d), which are translations in Italian, are ungrammatical in the progressive. They must be translated with the Imperfetto.

(3) a. The socks *were lying* on the floor.
b. *I calzini si *stavano sparpagliando* per terra.
c. John was driving to the university for several months until he rented an apartment closer.
d. *John *stava guidando* all' universitá per diversi mesi finché trovó un appartamento píú vicino.

It is hard to see how an account of the focalized progressive in terms of "a single point at which an eventuality is ongoing" can explain the difference between Italian and English acceptability judgements for the same predicates when they occur in the progressive. The predicate *lie on the floor* denotes a state which holds at every subinterval (the limiting case being an instant) of the interval at which it holds. From this, it follows that whether the relevant viewpoint offered by the focalized progressive is punctual or involves a larger interval, the eventuality denoted by the predicate *lie on the floor* must be ongoing at this point or interval. But although this is true, the Italian progressive is ungrammatical with this predicate. Similarly for the contrast in (3c-d). The progressive in (3c) is based on a habitual stative predicate, which also denotes a state that holds for all of its subintervals. This means that the state must be ongoing at the punctual viewpoint that the focalized progressive morphology in Italian takes on the eventuality. Nevertheless, the sentence is ungrammatical when translated with the progressive in Italian.

I take a slightly different perspective on the relative meanings of the focalizes and the durative progressive. My hypothesis is that the differences in the distributional and interpretational properties of the two categories arises from the domains of the two operators. The focalized progressive operator has a restricted domain — it may apply only to non-stative predicates. The durative progressive operator, on the other hand, is unrestricted; it may apply to both eventive and stative predicates. The representation for the focalized progressive operator and the durative progressive (= the progressive described in Chapter 3) are given in (4). I use the notation *ev* to refer to the type of events, a subtype of the type of *s*, the type of eventualities.

(4) a. $[[\textsc{foc-prog}]] = \lambda P_{<ev,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(P, t')]$
b. $[[\textsc{dur-prog}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \textsc{at}(P, t')]$

This minimal distinction between the focalized progressive and the durative progressive operators rules out the focalized progressive with two kinds of stative predicates — lexical statives and derived habitual/generic statives. It gives a precise explanation for why (3b)

and (3d) are ungrammatical while the corresponding English sentences in (3a) and (3c) are grammatical. The base predicate in both cases is a stative predicate (a lexical interval state in (3a-b) and a derived habitual state in (3c-d). The Italian Progressive cannot apply to these predicates because it instantiates the focalized progressive operator, which only has eventive predicates in its domain. Therefore, the Italian sentences based on these predicates are ungrammatical. The English Progressive can apply to stative predicates because it instantiates the durative progressive operator.

The consequence of this distinction between the two operators and their exponents is that a predicate modified by the focalized progressive operator, may only refer to a subinterval of a dynamic eventuality, i.e. an eventuality characterized by some internal change. Habitual predicates, although they are often based on dynamic predicates, are themselves stative or non-dynamic. This result is important in view of the fact that Johanson (2000) explicitly rejects the proposal I have sketched out in his discussion of focality.

> Focality oppositions do not distinguish 'processes' (non-transitional events involving internal gradual change) from 'states' (non-transitional events not involving any internal gradual change). (Johanson 2000:86)

The reason that Johanson comes to this conclusion is connected with the view of aspect that he subscribes to. According to Johanson, aspectual operators are viewpoint operators that apply to pre-determined Situation-types. Situations like *drive to the university* have the situation-type of accomplishment and a viewpoint operator such as the progressive directly applies to this situation-type to yield a viewpoint on the situation. The possibility that the base predicate to which the progressive applies is a derived state (a habitual state, as in (3c-d) is ruled out on this bi-componential view of aspectual operators (Smith 1991). For Johanson, then the eventive-stative distinction is made on the basis of the situation type of the eventuality description. Naturally, this distinction cannot account for the use of the focalized progressive because the focalized progressive is not only ungrammatical with lexical states, but also with derived states, which are based on eventive predicates. By failing to make the distinction between eventive predicates and derived stative predicates based on eventive predicates, Johanson ends up rejecting the proposal that the focalized progressive is restricted to eventive predicates.

In so far as Bertinetto (2000), Bertinetto et al (2000), and Johanson (2000) seem to suggest, the focalized progressive category is reasonably represented aspectual category in European languages, particularly in Romance (Italian, French, Albanian, Romanian). If the focalized progressive is a restrictive variant of the more familiar English type durative progressive, then an account along the lines I have proposed provides an attractive way

of representing their respective semantic contributions. The focalized progressive has the same semantics as the durative progressive with one difference. The domain of the focalized progressive operator is restricted to eventive predicates. The focalized progressive applies to eventive predicates and yields a set of intervals that are subintervals of the interval AT which the eventive predicate is instantiated. The durative progressive, being unrestricted with respect to its domain, applies to both eventive and stative predicates. The advantage of this representation is that the denotation of focalized progressive-marked predicates is a subset of the denotation of durative progressive-marked predicates. In other words, the focalized progressive and the durative progressive have nested denotations. This is parallel to the relation between the progressive and the imperfective aspects that was proposed in Chapter 3.

(5) a. $[[\text{FOC-PROG}]] = \lambda P_{<ev,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{AT}(P, t')]$

b. $[[\text{DUR-PROG}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{AT}(P, t')$

c. $[[\text{IMPF}]] = \lambda P_{<s,t>} \lambda t\ \exists t'[t \subset_{nf} t' \wedge \text{INST}(P, t')$

I believe that conceiving of these categories in terms of their nested denotations (as in (5)) is useful for explaining the facts of their relative distribution crosslinguistically. I also consider this relation of nested denotations to be useful in characterizing the diachronic change from the progressive to the imperfective aspects. We have already seen that diachronically, markers of the progressive aspect generalize to license non-progressive imperfective interpretations. It is an interesting question whether the progressive aspect starts out as a focalized progressive category and further generalizes to license durative progressive interpretations (where the prgoressive operator may apply to both eventive and stative predicates). Bertinetto et al (2000) present a hypothesis that the diachronic data supports a development from the durative progressive to the focalized progressive, and illustrate this with case of changes from Latin to Italian. My analysis of the two categories together with an assumption that more specific information cannot be added to the semantics of a grammatical form but only lost, predicts that the development should be from the more restrictive focalized progressive to the less restrictive durative progressive. Whether this, in fact, corresponds to the data is a matter of future research.

In the next section, I will demonstrate how this three way contrast in the imperfective aspectual domain can explain the synchronic variation in the exponents of the imperfective and progressive aspects in the Indo-Aryan languages I examine.

6.3 Synchronic variation in the Indo-Aryan imperfective

The goal of this section is to examine how the various morphological exponents of the imperfective aspect in a set of modern Indo-Aryan languages systematically instantiate one of the three overlapping aspectual categories that structure the imperfective domain on my proposal — the imperfective, the durative progressive, and the focalized progressive.

6.3.1 Pawri

I start with Pawri, a language in which tense information (present-past distinction) is very infrequently realized. The bare imperfective aspect morphology in Pawri 'V-*ta-lu/i*' , licenses the focalized progressive, the durative progressive, and the non-progressive interpretations.[1] Consider the examples in (6).

(6) a. mi culu **lagāḍ-tal-i** tehi mehe āṭṭho cut-yu
I hearth light-IMPF.F.SG then I-DAT.SG fire-NOM.M burn-PERF.M.SG
I *was lighting* the hearth when I got burnt by the fire.

b. goḍhu gar-mā āv-lu karin ākkhā
snake.NOM house-LOC come-PFCT.M.SG therefore all
bāyrā **bi-tal-ā**
women.NOM.PL fear-IMPF-F.PL
All the women *were feeling scared* because the snake had come into the house.

c. chyi pel nandurbār **roy-tal-i**
she.NOM earlier Nandurbar live-IMPF-F.SG
Earlier, she *lived* in Nandurbar.

d. āgyāvaḍji bānge-n talapi otu. chyu kāyam bāng
A-NOM hemp-GEN addict-NOM be-PST he-NOM always hemp-NOM
pi-tal-u
drink-IMPF-M.SG
Agyāḍvāji was a hemp addict. He always *drank* hemp.

(6a) has the focalized progressive interpretation and refers to a particular episode of lighting the hearth during which the speaker got burnt. (6b) contains a lexical stative

[1] I distinguish between the focalized progressive and the durative progressive interpretation on the basis of whether the base predicate is interpreted to be eventive or stative.

predicate and receives an episodic interpretation. This corresponds to the durative progressive interpretation for the Pawri Imperfective. (6c) licenses the non-progressive stative interpretation, while (6d) licenses the non-progressive habitual interpretation.

Thus, the Pawri system represents the typological case where a single imperfective form licenses the interrpetations corresponding to three distinct, but overlapping categories — the focalized progressive, the durative progressive, and the imperfective.

The focalized progressive in Pawri

In §5.2.4, I discussed an optional periphrastic construction in Pawri based on the IMPF form and tense auxiliaries. This construction is progressive in so far as the non-progressive interpretation is dis-preferred for sentences appearing in this construction. In particular, it should be noted that the most salient reading for this construction is the focalized progressive reading. Further, it is hard for speakers to get the durative progressive reading for sentences with this construction. Consider the example in (7). The preferred reading for this sentence is the focalized progressive — the sentence asserts that the subject referent is engaged in the weeding activity at that moment (reading a). Speakers do not rule out the habitual reading (b) completely for this construction. But it seems to be much harder to get the distinct durative progressive reading where the base predicates is interpreted as a derived stative predicate to which the progressive applies.

(7) chyi khet-ām **nind-tali** **se**
she-NOM field-LOC weed-IMPF.F.SG be-PRES.SG
a. She *is weeding* in the field.
b. % She *weeds* in the field.
c. %%These days, she is weeding in the field.

I do not have an explanation for the variability in the acceptability of this construction with the two interpretations in (7). The infrequency of the IMPF+tense construction in Pawri makes it difficult to determine whether the language has a distinctly grammaticalized focalized progressive construction at all.

6.3.2 Ahirani

Unlike Pawri, Ahirani does have a very frequently occurring progressive construction that contrasts with the morphology that realizes imperfective aspect.[2] The contrast between

[2]The Ahirani progressive morphology (cognate also to the Hindi progressive) is also used in the Marathi dialects spoken in North Maharashtra, contiguous to the Ahirani and Hindi linguistic area. The distribution

the imperfective and the progressive aspects in Ahirani is encoded by the (cognates of the) **impf** paradigm and an innovated periphrastic progressive construction respectively. In (8) and (9), I list the Ahirani Past Progressive and Past Imperfective paradigms.

(8) **Ahirani Past Progressive**[3]

	SG	PL
1	kari rhayantu	kari rhāyantut
2 3 M	kari rhāyantā	kari rhāyantāt
2 3 F	kari rhāyanti	kari rhāyantyāt
3 N	kari rhāyanta	kari rhỹantāt

(9) **Ahirani Past Imperfective**

PERSON	SG	PL
1	kar-u	kar-ut
2	kar-e	kar-et
3	kar-e	kar-et

The distribution of these two categories in Ahirani suggests that the Ahirani Progressive paradigm realizes the focalized progressive aspect and not the durative progressive aspect. This is illustrated through the examples in (10) and (12).

(10) a. mi ghar ā-vyu tavhaḷ rādhā pustak
I.NOM home come-PERF.M.SG then R.nom book.NOM

vāc-i rhā-inti
read-GER PROG-PST.F.SG
When I came home, Rādhā *was reading* a book.

b. kāldis rādhā ek jhāḍ **lāv-i rhā-inti**
yesterday R.NOM one tree.NOM plant-GER PROG-PST.F.SG
Yesterday, Rādhā *was planting* a tree.

(10a) refers to an ongoing event of book-reading during which the speaker's entry occurred. The base predicate is eventive. Similarly, (10b) is based on an eventive predicate. The progressive construction is grammatical in both these instances. On the other hand,

is similar to that in Ahirani.

[3]The progressive construction is based on the gerund form of the verb, and a progressive auxiliary cognate to the verb 'stay' and tense marking with a cliticized auxiliary.

consider the examples in (11a-b). Both these examples can be translated with the English progressive construction and still be well-formed. However, they are ungrammatical in Ahirani. In (11a), the base predicate is a lexical stative, while in (11b), the base predicate is a derived habitual stative, based on an eventive predicate.

(11) a. *rādhā-lā bhitī **vāṭ-i** **rhā-inti**
R-DAT fear.f.nom feel-GER PROG-PST.F.SG
Rādhā *was feeling* frightened.

b. *rādhā te varis śāḷā-m roj **śikv-i** **rhā-inti**
R-NOM.SG that year school-LOC everyday teach-GER PROG-PST.F.SG
That year, Rādhā *was teaching* at the school everyday.

The focalized progressive restricts its domain to eventive predicates while the durative progressive does not place such a restriction on its domain. The sentences in (11) are ungrammatical in Ahirani because the Ahirani Progressive realizes the focalized progressive and not the durative progressive aspect. it is precisely lexical and derived stative predicates that are unacceptable with the progressive construction in Ahirani.

The intended interpretations for (11a-b) must be licensed by the Ahirani Imperfective morphology (**impf**) as in (12a-b).

(12) a. rādhā-lā bhitī **vāṭ-e**
R-DAT fear.f.nom feel-**impf.**3.SG
Rādhā *was feeling* frightened.

b. rādhā te varis śāḷā-m roj **śikv-e**
R-NOM.SG that year school-LOC everyday teach-**impf.**3.SG
That year, Rādhā *taught* at the school everyday.

The general imperfective morphology **impf** also licenses lexical stative (13a) and habitual (13b) interpretations.

(13) c. rādhā mumbai-mā **rhā-ye**
R.NOM mumbai-LOC live-**impf.**3.SG
Rādhā *lived* in Mumbai.

d. rādhā roj mumbai-le **jā-ye**
R.NOM everyday mumbai-ACC go-**impf.**3.SG
Rādhā *went* to Mumbai everyday.

The generalization for Ahirani is that Pawri realizes the imperfective and the focalized progressive aspects. It is important to note that the focalized progressive, for the most part, blocks the imperfective form from licensing the focalized progressive interpretation. Speakers regularly rejected sentences in which I substituted the focalized progressive construction with the corresponding **impf** form to determine whether such sentences were acceptable. An example of such contrast is in (14). (14b) is considered to be ungrammatical suggesting that the focalized progressive blocks the general imperfective form from licensing the specific interpretation.

(14) a. kāldis rādhā ek jhāḍ **lāv-i** **rhā-inti**
yesterday R.NOM one tree.NOM plant-GER PROG-PST.F.SG
Yesterday, Rādhā *was planting* a tree.

b. *kāldis rādhā ek jhāḍ **lāv-e**
yesterday R.NOM one tree.NOM plant-**impf.**3.SG
Yesterday, Rādhā *was planting* a tree.

An exception to this blocking relation is a restricted sub-class of activity predicates, which includes the verbs of speaking, and some manner of motion verbs. These predicates, inflected with the imperfective **impf** affixes sometimes license episodic progressive interpretations. The lack of blocking in this sub-domain also constitutes evidence that the domain of the imperfective operator (and its morphological exponent) subsumes the domain of the focalized progressive operator. (15) contains a spontaneously occurring example with the activity predicate *raḍ* 'cry', which has **impf** inflection, but gets an episodic interpretation.

(15) tumi gay-el vha-tāt tavhaḷ bāḷ pakka **raḍ-e**
you.NOM.PL go-PERF be-PST.M.PL then baby.NOM.SG lot cry-**impf.**3.SG
While you were gone, the baby *was* crying a lot.

6.3.3 Hindi

The Hindi Progressive morphology is cognate to the Ahirani progressive, but in Hindi, this construction realizes the durative progressive and not the focalized progressive. The imperfective aspect in Hindi is realized by the IMPF+tense construction discussed in Chapter 5. The main evidence that the Hindi Progressive realizes the durative progressive comes from the compatibility of this construction with lexical and derived states. The examples in (16) illustrate the use of this construction with base eventive predicates. (17) contains examples of the progressive construction with base stative predicates.

(16) a. maĩ ghar ā-i tab rādhā kitāb
I.NOM home come-PERF.M.SG then R.nom book.NOM
paṛh **rah-i** thi
read.GER PROG PST.F.SG
When I came home, Rādhā *was reading* a book.

b. kal rādhā ek peṛ **lagā** **rah-i** thi
yesterday R.NOM one tree.NOM plant-GER PROG PST.F.SG
Yesterday, Rādhā *was planting* a tree.

The Hindi Progressive, unlike the Ahirani progressive, may also apply to base stative predicates. These are of two types — lexical statives (17a) and derived habitual stative predicates (17b). In Hindi, sentences containing progressive predicates based on such stative predicates, are fully grammatical.

(17) c. rādhā-ko ḍar **lag** **rah-ā** thā
R-DAT fear.m.nom feel-GER PROG PST.M.SG
Rādhā *was feeling* frightened.

d. rādhā us sāl skul-mẽ roj **paṛh-ā** **rah-i** thi
R-NOM.SG that year school-LOC everyday teach-GER PROG PST.F.SG
That year, Rādhā *was teaching* at the school everyday.

The examples in (18a-b) illustrate the use of the Hindi Imperfective (IMPF+tense). The IMPF+tense construction licenses non-progressive imperfective interpretations and occurs with lexical stative predicates (18a) and habitual predicates (18b).

(18) a. rādhā mumbai-mẽ **rah-ti** **thi**
R.NOM mumbai-LOC live-IMPF.3.SG PST.F.SG
Rādhā *lived* in Mumbai.

b. rādhā roj mumbai-ko **jā-ti** **thi**
R.NOM everyday mumbai-ACC go-IMPF.F.SG PST.F.SG
Rādhā *went* to Mumbai everyday.

In Hindi, the Progressive categorically blocks the Imperfective from licensing progressive interpretations. This is illustrated in (19). This sentence may not refer to a single crying episode on part of the child (while the parent was away for a few hours) but must refer to a characteristic property of the child over some long-term period of absence.

(19) *āp gay-e th-e tab baccā bahut
you-NOM.PL go-PERF be-PST.M.PL then baby-NOM.SG lot

ro-tā thā
cry-IMPF.M.SG PST.M.SG

a.*While you were gone, the baby *was crying* a lot.

b. While you were gone, the baby *used to cry* a lot.

These data suggest that the right semantic characterization of the Hindi Progressive is that it realizes the durative progressive aspect while the Hindi Imperfective realizes the imperfective aspect. Further, the Progressive categorically blocks the Imperfective from licensing progressive interpretation.

6.3.4 Interim summary

The three languages examined so far instantiate three typological possibilities given the nested domains of the focalized progressive, the durative progressive, and the imperfective aspects. In Pawri, a single form of the verb realizes the most general imperfective aspect, which subsumes the meaning of the focalized progressive and the durative progressive aspects. Ahirani (parallel to Italian) divides the imperfective domain in one way, distinguishing between the focalized progressive and the the rest of the imperfective domain. Hindi, parallel to English divides the imperfective domain in yet another way, making the distinction between the durative progressive and the general imperfective aspects.

(20)

Aspectual Category	Pawri	Ahirani	Hindi	?
focalized progressive	V-*talu*	V-ger+prog+tense		A
durative progressive			V-ger+prog+tense	B
imperfective		**impf**	IMPF+tense	C

The fourth logical possibility is a system in which the focalized progressive, the durative progressive, and the imperfective aspects each have distinct morphological exponents. Before I examine a language which instantiates this possibility — Dehawali Bhili — I should consider yet another parameter that determines the typological space of variation for the exponents of the imperfective and two progressive aspects. This parameter is blocking, a factor that has consistently been coming up in discussions of the distribution of aspectual space. In addition to variation regarding which of the three categories is/are realized by

a language, languages may vary with respect to whether the specific categories block the range of specific interpretations available to the general category.

It is my hypothesis that the crosslinguistic distribution of imperfective and progressive forms can be captured by (a) this simple division of the imperfective aspectual space into three distinct but overlapping categories (two of which are optionally realizable), and (b) parametric variation with regard to blocking.

The final linguistic system in this study instantiates the typological possibility of a language that realizes the focalized progressive, the durative progressive, and the imperfective aspects, in which the distribution of the general categories is not blocked by the specific categories.

6.3.5 Dehawali Bhili

Dehawali Bhili is a language with three distinct paradigms with differing interpretations. A progressive paradigm, cognate to Ahirani and Hindi, is restricted to the focalized progressive interpretation. The V-*talo* paradigm, cognate to the general Pawri Imperfective licenses both focalized progressive and durative progressive interpretations. Yet a third paradigm, cognate to the **impf** paradigm, realizes the general imperfective aspect.

(21) **The Dehawali Bhili imperfective aspectual space**

Aspectual Category	Form
focalized progressive	V-ger+prog+tense
durative progressive	V-*talo*
imperfective	**impf**

Let us examine the distribution of each of these paradigms in sequence. (22) contains examples of the construction that realizes the focalized progressive in Dehawali Bhili. The sentence in (22a) is grammatical because it contains an eventive predicate. On the other hand, (22b) and (22c) contain a lexical stative and a habitual predicate respectively and are unacceptable with this progressive construction.

(22) a. ãy te buk **vāc-i riyo ātho** tāhã̃
I.NOM that book.NOM.SG read-GER PROG.M.SG PST.M.SG then

ek pān phāṭi gey-lo
one page.NOM.SG tear-GER go-PERF-M.SG
While I *was reading* the book, one page got torn.

b. *ãy **huv-i riyo ātho**
I.NOM sleep-GER PROG.M.SG PST.M.SG
I *was sleeping.* (okay on the reading: I was falling asleep.)

c. *ek vorohõ-āge ãy śāḷā-me **hikv-i riyo ātho**
One year-before I.NOM school-LOC teach-GER PROG.M.SG PST.M.SG
One year ago, I *was teaching* at a school.

The V-*talo* construction realizes the durative progressive aspect in Dehawali Bhili. This form is compatible with base eventive as well as lexical stative and derived stative predicates. The focalized progressive construction in Dehawali Bhili does not block the durative progressive in the specific forcalized progressive meaning. Consider the examples in (23a-b). Both examples contain eventive predicates and are acceptable in the durative progressive aspect as well as in the focalized progressive.

(23) a. ãy te buk **vāc-talo** tāhã̃
I.NOM that book.NOM.SG read-IMPF.PST.M.SG then

ek pān phāṭi gey-lo
one page tear-GER go-PERF-M.SG one page-NOM-SG

While I *was reading* the book, one page got torn.

b. ti vāṭe-ne to ko'o **āv-talo**
that-FEM way-INS he.NOM home.NOM come-IMPF.PST.M.SG
He *was coming* home taking that way.

In (24a-b), we see that the durative progressive is also compatible with base stative predicates unlike the focalized progressive in (22b-c). (24a) contains a lexical stative predicate, while (24b) contains a habitual derived stative predicate.

(24) b. ãy ko'o gi-yo tāhã̃ to **huv-talo**
I.NOM home go-PERF.M.SG then he.NOM sleep-IMPF.PST.M.SG
He *was sleeping* when I went home.

c. mahārāṇā pratāp- ān śivājī mahārāj- iyā-hã̃n
M and S they-DAT.PL

kāyam ādivāsī-hĩ modāt **mil-tali**
always A-GEN.SG help.NOM.F.SG get-IMPF.PST.F.SG

Mahārāṇā Pratāp and Śivājī Mahārāj *were* always *getting* the Ādivāsis' help.

The data in (23) and 24) shows that the V-*talo* form realizes the durative progressive and is not blocked by the focalized progressive in licensing focalized progressive interpretations.

The third form in Dehawali Bhili that license imperfective interpretations is the **impf** form. We know this to be the most archaic morphological layer of the three forms because this paradigm is cognate to the OIA and MIA **impf** paradigms. The most salient readings for this form are the non-progressive imperfective interpretations — the lexical stative and the habitual interpretations. The examples in (25) illustrate this use of the **impf** paradigm. Note that among the three forms being discussed for Dehawali Bhili, *only* the **impf** paradigm is compatible with lexical stative and habitual predicates to license the characterizing interpretation.

(25) b. āmã̃ hānā āth-ā tāhã̃ nijāmpurā-m roy-jī
We-NOM small PST-M.PL then N-LOC live-**impf.**1.PL
When we were small, we lived in Nijāmpur.

b. āmã̃ hānā āth-ā tāhã̃ jāmba vec-ā **jā-ji**
We.NOM small PST-M.PL then J-NOM.PL sell-INF go-**impf**.1.PL
When we were small, we used to go to sell Jāmba (*Eugenia Jambolana*) fruit.

However, the **impf** paradigm is not blocked in licensing progressive interpretation by the other two more specific aspectual forms. (26a-b) are examples where the **impf** paradigm licenses the progressive interpretation. In (26a), the base predicate is stative and the interpretation is episodic, referring to a particular episode of sleeping. In (26b), the base predicates are eventive and the **impf** forms license the focalized progressive reading.

(26) a. ãy ko'o gi-yo tāhã̃ to **huv-e**
I.NOM home go-PERF.M.SG then he.NOM sleep-**impf.**3.SG
He *was sleeping* when I went home.

b. seherā-hə̃m nov-ẽ poṃg-ẽ **bānd-ā-e**
city-LOC.PL new-NOM.PL house-NOM.PL build-PASS.**impf.**3.PL

ān novy-ā soḍky-ā **nĩg-e**
and new-NOM.PL road.NOM.PL appear-**impf.**3.PL
In the cities, new houses *were being built* and new roads *were appearing.*

It should be made clear that the **impf** paradigm does not freely occur with progressive interpretations. I have not been able to determine the precise constraints on when **impf** is blocked and when it is permitted to license the progressive interpretation. The alternation between the focalized progressive and the durative progressive constructions is much more free than that between **impf** and the other two forms.

6.4 Conclusion

In this chapter, I introduced yet another semantic category that is considered to be am ore restricted variant of the progressive — the focalized progressive. I proposed that this category differs from the durative progressive (which is the specification of the English Progressive) in having a restricted domain. The focalized progressive is restricted to eventive predicates while the durative progressive applies to predicates belonging to all eventuality types. This distinction predicts that the focalized progressive should be ungrammatical with lexical stative and derived stative predicates. This prediction is confirmed by the limited available Italian data. I proceeded to use this three way aspectual contrast between the focalized progressive, the durative progressive, and the imperfective to capture the synchronic variation in the distribution of imperfective and progressive markers in some Indo-Aryan languages. I showed that the four languages described instantiate the four typological possibilities for imperfective and progressive marking given the nested denotations of the three categories. Dehawali Bhili presented an additional complexity in that the distribution of the three instantiated aspectual forms is not constrained by blocking.

Chapter 7

Conclusion and questions

The central goal of this dissertation was to examine how crosslinguistic and diachronic generalizations about aspectual categories from the grammaticalization and typological literature can be integrated with the insights about the semantics of aspectual categories coming from the formal semantic literature. I explored this problem in the semantic domain of the progressive and the imperfective aspects. The specific question guiding this dissertation was: What kind of theory of progressive and imperfective semantics (and their operators instantiated by language-specific morphology) can account for the range of interpretations that they license as well as capture the properties of their synchronic and diachronic distribution? I proposed one such theory in Chapter 3 and showed how it meets the necessary desiderata that I articulated for a crosslinguistically viable theory of the progressive and the imperfective aspects. An important issue that needs to be tackled in positing that the progressive and the imperfective have nested denotations is that of Blocking. The factors determining whether it is free variation or blocking that can characterize the relation between the morphological exponents of the progressive and the imperfective aspects are not completely obvious. My explanation for this optionality is tentative and requires further explication. Moreover, there seems to be an intuitive correlation between the presence of free variation and the relative recency of the innovated aspectual category, which needs to be further fleshed out and examined against crosslinguistic diachronic data.

Another issue that I alluded to in the introduction to this dissertation is the relationship between the perfect and the perfective aspects. The generalizations made about the crosslinguistic and diachronic distribution of these forms appears to closely parallel the generalizations made for the progressive and the imperfective aspects. First, in the absence of a morphologically realized perfect operator, the perfect interpretation is often licensed by the perfective operator (e.g. Russian, Mahārāṣṭrī). Second, the presence of perfect morphology

often correlates with the absence of the the perfect interpretation for the perfective morphology (e.g. Hindi). Finally, morphological exponents of the perfect aspect may diachronically generalize to license interpretations typically associated with the perfective aspect. A comparable analysis for the perfect and perfective aspects that can semantically substantiate these observed relations between their morphological exponents can serve to underscore the general viability of an approach that integrates typological observations about aspectual categories with a compatible formal semantics.

The second goal of this dissertation was to present some hypotheses about the diachrony of the Indo-Aryan tense/aspect system, based on textual and comparative evidence. Given the preliminary stage of knowledge that we are at concerning the semantics of Indo-Aryan tense/aspect forms, the findings are necessarily tentative. But they present several theoretical questions about the abstract changes underlying the reorganization of the Indo-Aryan tense/aspect system from OIA to MIA and from MIA to NIA. These findings also present specific empirical questions that can be answered on the basis of careful textual research. One of these questions concerns the precise distribution of the **impf** paradigm in Vedic and later OIA. The hypothesis that this paradigm is temporally unspecified and aspectually imperfective opens up the possibility of re-examining its status with respect to the original aspectual opposition in Indo-European. Within Vedic, this hypothesis also has implications for the aspectual relation between the Present Injunctive and the **impf** paradigms, if we consider that the **impf** takes over the imperfective domain originally realized by the Present Injunctive. For the MIA and the NIA periods, I have pointed out locally several gaps in the data that can be filled following meticulous research over a sustained period. Here I consider one gap in our empirical understanding that this dissertation has helped to identify. The rise of tense distinctions in the form of tense auxiliaries and the semantic effect it has on the tense/aspect systems of the NIA languages has not been studied in much detail. The contribution of tense auxiliaries during the linguistic stages at which they are optional (much of the Old and Middle NIA periods) is not well-understood. This study is important from the philological perspective because it can facilitate a much better interpretation of texts and the real properties of the grammatical system at different stages. From the generative perspective, the findings of such research can serve as the empirical basis for the study of how semantic categories get articulated in languages and the syntactic effects of this.

The third facet to this dissertation was the use of field data from undescribed non-standard Indo-Aryan languages to reconstruct some diachronic trajectories in the Indo-Aryan tense/aspect system. The crucial role that these languages play in arriving at a feasible account of some diachronic facts of MIA and Old NIA attests to their general

importance for understanding Indo-Aryan history and typological space. Given the scope of this dissertation and the brevity it necessitates, it has not been possible to provide detailed descriptive sketches of these languages as part of this dissertation. However, the project is an important one not just for these languages, but for the larger Bhili-Khandeshi dialect continuum in Central India that these languages belong to. Here, I have barely been able to scratch the surface of the rich variation these languages present and the archaic systems they retain. If this dissertation can persuade Indo-Aryan linguists and others of the need for sustained empirical research on these languages and the promise that such research holds for a better understanding of the Indo-Aryan language family, I would consider it to be the main success of this endeavor.

Bibliography

Alsdorf, Ludwig. 1936. Vasudevahindi, a Specimen of Archaic Jaina Maharastri. *Bulletin of the School of Oriental Studies* 8(2/3):319–333.

Andersen, Paul Kent. 1986. Die *-ta* Partizipialkonstruktion bei Ashoka: Passiv oder Ergativ? *Zeitscrift für Vergleichende Sprachforschung* (99):75–95.

Ashton, E. O. 1949. *Swahili grammar*. London: Longman.

Avery, John. 1875. Contributions to the History of the Verb-Inflection in Sanskrit. *Journal of the American Oriental Society* 10:219–324.

Avery, John. 1884. The Unaugmented Verb-Forms of the Rig- and Atharva Vedas. *Journal of the American Oriental Society* 11:326–361.

Bach, Emmon. 1981. On time, tense, and aspect: An essay in English metaphysics. *Radical Pragmatics* pages 63–81.

Bach, Emmon. 1986. The algebra of events. *Linguistics and Philosophy* 9(1):5–16.

Beames, John. 1872-79. *A Comparative Grammar of Modern Indo-Aryan Languages of India*. Delhi: Munshiram Manoharlal. Republished 1966.

Bennett, Michael. 1981. Of Tense and Aspect: One Analysis. *Syntax and Semantics* 14:13–29.

Bennett, Michael and Barbara Hall Partee. 1978. *Toward the Logic of Tense and Aspect in English*. Indiana University Linguistics Club.

Bernd Heine, Ulrike Claudi and Friederike Hunnemeyer. 1991. *Grammaticalization: A Conceptual Framework*. Chicago: University of Chicago Press.

Bertinetto, Pier Marco, Karen H. Ebert, and Caspar de Groot. 2000. The Progressive in Europe. In Ö. Dahl, ed., *Tense and Aspect in the Languages of Europe*, pages 517–558. Berlin: Mouton de Gruyter.

Bhayani, Harivallabh. 1998. *Gujarati Bhāṣānu Aitihāsik Vyākaraṇ*. Pārśva Publication, address = Ahmedabad.

Binnick, Robert. 1991. *Time and the Verb: A Guide to Tense and Aspect*. Oxford University Press.

Bittner, Maria. 2006. Aspectual universals of temporal anaphora. *Rutgers ms. To appear in S. Rothstein, ed., Theoretical and Crosslinguistic Perspectives on the Semantics of Aspect, John Benjamins* .

Bloch, Jules. 1914. *The Formation of the Marathi Language*. Delhi: Motilal Banarsidass. Translated by Dev Raj Chanana. Published 1970.

Bloch, Jules. 1965. *Indo-Aryan from the Vedas to Modern Times*. Paris: Adrien-Maisonneuve. Translated by Alfred Master.

Bohnemeyer, Jürgen. 2000. Event order in language and cognition. *Linguistics in the Netherlands* 17:(pp. 1–16).

Bohnemeyer, Jürgen. 2002. *The Grammar of Time Reference in Yukatek Maya*. Munich: Lincom Europa.

Bohnemeyer, Juergen and Mary Swift. 2004. Event Realization and Default Aspect. *Linguistics and Philosophy* 27(3):263–296.

Brockington, John. 1998. *The Sanskrit Epics*. Brill Academic Publishers.

Bubenik, Vit. 1996. *The Structure and the Development of Middle Indo Aryan Dialects*. Delhi: Motilal Banarsidass.

Bubenik, Vit. 1998. *Historical Syntax of Late Middle Indo Aryan (Apabhramsa)*. Amsterdam: John Bejamins Publishing Co.

Bybee, Joan, Revere Perkins, and William Pagliuca. 1994. *The Evolution of Grammar. Tense, Aspect, and Modality in the Languages of the World*. Chicago: The University of Chicago.

Carlson, Gregory N. 1977. *Reference to kinds in English*. Ph.D. thesis, University of Massachusetts.

Carlson, Gregory N. and Francis J. Pelletier, eds. 1995. *The Generic Book*. Chicago: The University of Chicago press.

Chatterji, Suniti Kumar. 1926. *The Origin and Development of the Bengali Language*. George Allen and Unwin Ltd. Reprinted 1975 by D.Mehra, Rupa& Co., Calcutta.

Cipria, A. and C. Roberts. 2000. Spanish Imperfecto and Pretérito: Truth Conditions and Aktionsart Effects in a Situation Semantics. *Natural Language Semantics* 8(4):297–347.

Cohen, Ariel. 2004. Existential Generics. *Linguistics and Philosophy* 27(2):137–168.

Comrie, Bernard. 1976. *Aspect: An Introduction to the Study of Verbal Aspect and Related Problems*. Cambridge University Press.

Comrie, Bernard. 1985. *Tense*. Cambridge University Press.

Cooper, R.G. 1986. Tense and discourse location in situation semantics. *Linguistics and Philosophy* 9(1):17–36.

Dahl, Östen. 1978. *On the definition of the telic/atelic (bounded/non-bounded) distinction*. University of Gothenburg, Dept. of Linguistics.

Dahl, Östen. 1985. *Tense and Aspect Systems*. Oxford: Basil Blackwell.

Dahl, Östen, ed. 2000. *Tense and Aspect in the Languages of Europe*. Berlin: Mouton de Gruyter.

Dahl, Östen and Eva Hedin. 2000. Current Relevance and Even Reference. In Ö. Dahl, ed., *Tense and Aspect in the Languages of Europe*, pages 386–401. Berlin: Mouton de Gruyter.

Dave, Trimbaklal N. 1935. *A Study of the Gujarati Language in the 16th Century*. London: The Royal Asiatic Society.

Davidson, Donald. 1967. The logical form of action sentences. *The Logic of Decision and Action* 81:95.

de Swart, Henriette. 1998. Aspect Shift and Coercion. *Natural Language and Linguistic Theory* 16:347–385.

de Swart, Henriette and Arie Moelndijk. 2001. In Pursuit of the 'Perfect' Perfect. In *Cahiers Chronos*.

Declerck, Renate. 1979. *Aspect and the Bounded/unbounded (telic/atelic) Distinction*. Mouton.

Delbrück, Berthold. 1888. *Altindische Syntax*. Halle, Tübingen: Niemeyer, 2nd edn.

Deo, Ashwini. 2001. The Rise of the IP in Indo-Aryan. Manuscript, Stanford University.

Depraetere, Ilse. 1995. On the necessity of distinguishing between (un) boundedness and (a) telicity. *Linguistics and Philosophy* 18(1):1–19.

Doderet, W. 1927. The Grammar of the Jnaneswari. *Bulletin of the School of Oriental Studies* 4(3):543–573.

Dowty, David. 1977. Toward a semantic analysis of verb aspect and the English 'imperfective' progressive. *Linguistics and Philosophy* 1(1):45–77.

Dowty, David. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Kluver Academic Publishers.

Dowty, David. 1986. The effects of aspectual class on the temporal structure of discourse: semantics or pragmatics? *Linguistics and Philosophy* 9(1):37–61.

Filip, Hana. 1999. *Aspect, Eventuality Types and Nominal Reference*. New York: Garland Publishing.

Filip, Hana. 2003. Prefixes and the delimitation of events. *Journal of Slavic Linguistics* 11(1):55–101.

Forsyth, James. 1970. *A Grammar of Aspect. Use and Meaning in the Russian Verb*. Cambridge: Cambridge University Press.

Garey, Howard. 1957a. Verbal Aspect in French. *Language* 33(2):91–110.

Garey, Howard B. 1957b. Verbal aspects in French. *Language* 33:91–110.

Gennari, Sylvia P. 2003. Tense Meanings and Temporal Interpretation. *Journal of Semantics* 20(1):35–71.

Ghatage, Amrit. 2000. *Amrita. The Collected Papers Contributed by Prof. A. M. Ghatage*. Ahmedabad: Shreshthi Kasturbhai Lalbhai Smarak Nidhi.

Giorgi, Alessandra and Fabio Pianesi. 1997. *Tense and Aspect. From Semantics to Morphosyntax.*. Oxford Studies in Comparative Syntax. Oxford: OUP.

Göksel, Asli and Celia Kerslake. 2005. *Turkish: A Comprehensive Grammar*. Routledge.

Gonda, Jan. 1951. *Remarks on the Sanskrit Passive*. Leiden: E. J. Brill.

Gonda, Jan. 1962. *The Aspectual Function of the Rgvedic Present and Aorist.*. S-Gravenhage, Mouton.

Grassman, Hermann, ed. 1964. *Wörterbuch zum Rigveda*. Weisbaden: Otto Harrasowitz, 2nd edn.

Grierson, G. A. 1907. *Linguistic Survey of India: Indo-Aryan Family, Central Group*, vol. IX–III. Delhi: Motilal Banarsidass. Reprinted 1967.

Harris, Martin. 1982. The 'past simple' and the 'present perfect' in romance. In N. Vincent and M. Harris, eds., *Studies in the Romance Verb*, pages 42–70. London and Canberra: Crook Helm.

Haspelmath, Martin. 1998. The Semantic Development of Old Presents: New Futures and Subjunctives without Grammaticalization. *Diachronica* 15:1:29–62.

Herweg, Michael. 1991a. A Critical Account of Two Classical Approaches to Aspect. *Journal of Semantics* 8:362–403.

Herweg, Michael. 1991b. A Critical Examination of Two Classical Approaches to Aspect. *Journal of Semantics* 8(4):363–402.

Herweg, Michael. 1991c. Perfective and Imperfective Aspect and the Theory of Events and States. *Linguistics* 29:969–1010.

Hinrichs, Erhard. 1986. Temporal anaphora in discourses of English. *Linguistics and Philosophy* 9(1):63–82.

Hoernle, R.A.F. 1880. *A Comparative Grammar*. Amsterdam: Philo Press. Reprinted 1975.

Hoffmann, K. 1967. *Der Injunktiv im Veda; eine synchronische Funktionsuntersuchung.*. Heidelberg, C. Winter.

Hornstein, Norbert. 1990. *As Time Goes By: Tense and Universal Grammar*. Cambridge, MA: MIT Press.

Jacobi, Hermann. 1886. *Ausgewählte Erzählungen in Maharashtri*. Leipzig: S. Hirzel.

Jakobson, Roman. 1984. The structure of the Russian verb (1932). *Russian and Slavic Grammar Studies 1931-1981* pages 1–14.

Jamison, Stephanie. 1990. The Tense of the Predicated Past Participle in Vedic and Beyond. *Indo-Iranian Journal* 33(1):1–19.

Johanson, Lars. 2000. Viewpoint Operators in European Languages. In Ö. Dahl, ed., *Tense and Aspect in the Languages of Europe*, pages 27–188. Berlin: Mouton de Gruyter.

Kamp, Hans and Uwe Reyle. 1993. *From Discourse to Logic*. Dordrecht: Kluwer Academic Publishers.

Kellogg, S. H. 1893. *Grammar of the Hindi Language*. Delhi: Motilal Banarsidass. Second edition, reprinted 1990.

Kiparsky, Paul. 1998. Aspect and Event Structure in Vedic. In R. Singh, ed., *Yearbook of South Asian Languages and Linguistics*, vol. 1. Sage Publications.

Kiparsky, Paul. 2005. The Vedic Injunctive: Historical and Synchronic Implications. *The Yearbook of South Asian Languages and Linguistics* .

Klein, Wolfgang. 1994. *Time in Language*. London: Routledge.

Klein, Wolfgang. 1995. A Time-Relational Analysis of Russian Aspect. *Language* 71 (4):669–695.

Kolte, Viṣṇu B. 1944. *ŚrīGovindaprabhuCaritra*. Pune: Snehavardhan Publishing House.

Kornfilt, Jaklin. 2005. *Turkish*. Routledge.

Kratzer, Angelika. 1995. Stage-level and individual-level predicates. *The Generic Book* pages 125–175.

Kratzer, Angelika. 1998. More Structural Analogies between Pronouns and Tenses. In *Semantics and Linguistic Theory 8*. Ithaca, Cambridge, MA.

Krifka, Manfred. 1989. Nominal reference, temporal constitution and quantification in event semantics. *Semantics and Contextual Expression* 75:115.

Krifka, Manfred. 1992. Thematic Relations as Links between Nominal Reference and Temporal Constitution. In I. Sag and A. Szabolcsi, eds., *Lexical Matters*, pages 29–53. Stanford, CA: CSLI Publications.

Krifka, Manfred. 1998. The origins of telicity. *Events and Grammar* 197:235.

Krifka, M., F.J. Pelletier, G. Carlson, A. ter Meulen, G. Chierchia, and G. Link. 1995. Genericity: An Introduction. *The Generic Book* pages 1–124.

Kroch, Anthony. 1994. Morphosyntactic variation. In *Proceedings of the 30th annual meeting of the Chicago Linguistics Society*, vol. 2, pages 180–201.

Lakoff., Geroge. 1965. On the Nature of Syntactic Irregularity.

Landman, Fred. 1992. The Progressive. *Natural Language Semantics* 1:1–32.

Lindstedt, Jouko. 2000. The Perfect – aspectual, temporal, and evidential. In Ö. Dahl, ed., *Tense and Aspect in the Languages of Europe*, pages 365–384. Berlin: Mouton de Gruyter.

Londfors, Anna-Lena. 2003. Tense and aspect in swahili. Uppsala university, unpublished ms.

Marchese, Lynell. 1986. *Tense/aspect and the development of auxiliaries in Kru languages*. Summer Institute of Linguistics; University of Texas at Arlington.

Masica, Colin P. 1991. *The Indo-Aryan Languages*. Cambridge Language Surveys. Cambridge: Cambridge University Press.

Maslov, Jurij. 1988. Resultative, Perfect, and Aspect. In V. P. Nedjalkov, ed., *Typology of Resultative Constructions*, pages 63–86. Amsterdam and Philadelphia: John Benjamins.

Master, Alfred. 1964. *A Grammar of Old Marathi*. Oxford: Clarendon Press.

Michaelis, Laura. 1998. *Aspectual Grammar and Past-Time Reference*. London and New York: Routledge.

Michaelis, Laura. 2004. Type shifting in construction grammar: An integrated approach to aspectual coercion. *Cognitive Linguistics* 15(1):1–67.

Milsark, Gary L. 1974. Existential sentences in English. MIT Ph.D. Dissertation.

Moens, Marc. 1987. *Tense, aspect and temporal reference*. University of Edinburgh.

Moens, Marc and Mark Steedman. 1988. Temporal ontology and temporal reference. *Computational Linguistics* 14(2):15–28.

Mohansingh, Kavirāv, ed. 1933. *Pṛthvīrāja Rāsau of Chand Baradai*, vol. 1-4. Jaipur: Rajasthan Viśva Vidyāpīṭh.

Musan, Renate. 2001. The Present Perfect in German: Outline of its Semantic Composition. *Natural Language and Linguistic Theory* 19:355–401.

Nedjalkov, Vladimir P., ed. 1988. *Typology of Resultative Constructions*. Amsterdam and Philadelphia: John Benjamins.

Oberlies, Thomas. 1998. *Historische Grammatik des Hindi: Die Genese seines morphologischen Systems aus dem Mittel-und altindischen*. Dr. Inge Wezler Verlag für Orientalistische Fachpublikationen.

Oberlies, Thomas. 2003. *A Grammar of Epic Sanskrit*. Berlin and New York: Walter de Gruyter.

Olsen, Mari Broman. 1997. *A Semantic and Pragmatic Model of Lexical and Grammatical Aspect*. Outstanding Dissertations in Linguistics. New York: Garland Publishing.

Pancheva, Roumyana. 2003. The Aspectual Makeup of Perfect Participles and the Interpretations of the Perfect. In M. R. Artemis Alexiadou and A. von Stechow, eds., *Perfect Explorations*, pages 277–306. Berlin: Mouton de Gruyter.

Pandit, Prabodh Bechardas, ed. 1976. *Śrī Taruṇaprabhācārya's Ṣaḍāvaśyakabālāvabodhavṛtti (cir. 1355 CE)*. Bombay: Bharatiya Vidya Bhavan.

Parsons, Terence. 1990. *Events in the Semantics of English: A Study in Subatomic Semantics*. Cambridge, MA: MIT Press.

Partee, Barbara. 1973. Some Structural Analogies between Tenses and Pronouns in English. *Journal of Philosophy* 70:601–609.

Partee, Barbara. 1984. Nominal and temporal anaphora. *Linguistics and Philosophy* 7(3):243–286.

Paslavska, Alla and Arnim von Stechow. 2003. Perfect Readings in Russian. In M. R. Artemis Alexiadou and A. von Stechow, eds., *Perfect Explorations*. Berlin: Mouton de Gruyter.

Piñon, Christopher. 1995. An Ontology for Event Semantics. Unpublished Stanford University dissertation.

Pischel, R. 1900. *Grammatik der Prākrit-Sprachen*. Delhi, India: Motilal Banarsidass. Translated from German by Subhadra Jha, 1981.

Polomé, Edgar. 1967. Swahili language handbook .

Renou, Louis. 1925. *La valeur du parfait dans les hymnes védiques*. Paris, E. Champion.

Rimell, Laura. 2004. Habitual sentences and generic quantification. *Proceedings of WCCFL* 23.

Rothstein, Susan. 2004. *Structuring Events: A Study in the Semantics of Lexical Aspect*. Blackwell.

Ryding, Karin C. 2005. *A Reference Grammar of Modern Standard Arabic*. Cambridge: Cambridge University Press.

Sag, Ivan. 1973. On the State of Progress on Progressives and Statives. *New Ways of Analyzing Variation in English. Georgetown University Press, Washington, DC* pages 83–95.

Sen, Sukumar. 1995. *Syntactic Studies of Indo-Aryan Languages*. Tokyo: Tokyo University of Foreign Studies.

Singh, Ram Adhar. 1980. *Syntax of Apabhramsa*. Calcutta: Simant Publications.

Smith, Carlota. 1991. *The Parameter of Aspect*. Dordrecht: Kluwer Academic Publishers.

Speijer, J.S. 1886. *Sanskrit Syntax*. Delhi: Motilal Banarsidass. Republished 1973.

Stump, Gregory T. 1985. *The Semantic Variability of Absolute Constructions*. Dordrecht: Reidel.

Traugott, Elizabeth Closs and Bernd Heine. 1991. *Approaches to Grammaticalization*. Amsterdam: John Benjamins.

Tulpule, Shankar G. 1960. *An Old Marathi Reader*. Pune, India: Venus Prakashana.

Turner, Ralph L. 1936. Sanskrit "a-kseti" and Pali "acchati" in Modern Indo-Aryan. *Bulletin of the School of Oriental Studies* 8(2/3):795–812.

Vale, Ramchandra N. 1948. *Verbal Composition in Indo-Aryan*. Poona, India: Deccan College Postgraduate and Research Institute.

Vendler, Zeno. 1957. Verbs and times. *The Philosophical Review* 66(2):143–160.

Vendler, Zeno. 1967. *Linguistics in Philosophy*. Cornell University Press Ithaca, NY.

Vlach, Frank. 1981. The Semantics of the Progressive. *Syntax and Semantics* 14:271–292.

Whitney, William Dwight. 1889. *Sanskrit Grammar*. Leipzig: Breitkopf und Hartel.

Whitney, William Dwight. 1892. On the Narrative Use of the Imperfect and the Perfect in the Brahmanas. *Transactions of the American Philological Association* 11:5–34.

Witzel, Michael. 1999. Substrate Languages in Old Indo-Aryan (ṛgvedic, Middle and Late vedic. *Electronic Journal of Vedic Studies (EJVS)* 5(1):1–67.

Zucchi, Sandro and Michael White. 2001. Twigs, Sequences and the Temporal Constitution of Predicates. *Linguistics and Philosophy* 24(2):223–270.