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The Semantic Typology of Pluractionality

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Abstract

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Doctor of Philosophy in Linguistics

University of California, Berkeley

Professor Andrew Garrett, Chair

This study examines the linguistic expression of pluractionality (event plurality), bringing together data of several types to develop a synthesis of different perspectives—broad crosslinguistic comparison, detailed studies of individual languages, psychological findings on event perception—and builds these into an account of the semantics of event plurality. In particular, it addresses the contrast proposed by Cusic (1981) between two types of pluractional meaning: event-external (repetition *of* events) and event-internal (repetition *within* events).

A crosslinguistic survey based on data from a genetically and geographically balanced language sample is used to identify common parameters of variation in pluractional meaning. Certain features, including particular types of events and arguments, are found to co-occur frequently with event-internal pluractional meaning, and this clustering of features is taken to support the centrality of the event-internal/event-external contrast.

The contrast between these two types of pluractional meaning is argued to depend on a conceptual distinction between grouped and ungrouped pluralities, which has its

basis in perception. Strong parallels can be seen between characteristics of event-internal pluractionals and characteristics favouring perceptual grouping of objects and events (as identified in psychological research beginning with the early Gestalt psychologists and including more recent findings on event segmentation).

The proposed conceptual distinction between grouped and ungrouped pluralities is reflected in an analysis which treats the distinction between event-internal and event-external pluractionality as parallel to that between collective and distributive interpretations of plural NPs. This is an extension of Landman's (1996, 2000) analysis of collectives and distributives to events.

The analysis is examined further in case studies of Yurok (Algic, Northwestern California) and Chechen (Nakh-Daghestanian, Northeastern Caucasus). These studies provide detailed descriptions of the use of pluractionals in each language. The findings are largely consistent with the suggested semantics and the results of the crosslinguistic survey, and raise interesting additional questions about the relationship of pluractionality to intensification, habituality and imperfective aspect.

This study supports the value of bringing psychological findings to bear on certain linguistic phenomena, and the possibility of making semantic generalisations based on grammatical descriptions of a large number of languages which can then be refined through detailed fieldwork.

Andrew

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List of abbreviations

1, 2, 3	1 st , 2 nd , 3 rd person	LAT	lative case
A	transitive subject	LOC	locative (case in Chech.; PVP or preposition in Yur.)
ABS	absolute case	O	transitive object
ALL	allative case	OBL	oblique case form
ART	article	PASS	passive
ATTR	attributive	PERF	perfect
CIRC	circumstantial	PL	plural
COLL	collective	PLincl	inclusive plural (of 1 st person)
CONJ	sentence conjunction	PLL	pluractional
COP	copula	PPL	present participle
CVsim	simultaneous converb	PRON	pronoun
CVtemp	temporal (anterior) converb	PRS	simple present
DAT	dative case	PST	past
DEM	demonstrative	PVP	preverbal particle
DX	deictic prefix	REP	repetitive
ERG	ergative case	rf	reflexive
FUT	future	Russ.	Russian
GEN	genitive case	S	intransitive subject
IMPF	imperfect tense	SG	singular
INTERR	interrogative	SIM	simulfactive
I-REL	indefinite relative adverb	WP	witnessed past tense
ITR	iterative		

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Chapter 1

Introduction

“Number is the most underestimated of the grammatical categories. It is deceptively simple, and is much more interesting and varied than most linguists realize.” (Corbett 2000:1)

1.1 The phenomenon of pluractionality

Nominal number is a well-studied phenomenon, though as Corbett (2000) has shown, its complexity is often disregarded. In contrast, verbal number has been studied relatively little and is typically treated much more peripherally than either nominal number or other verbal categories such as tense and aspect. Typological studies (Dressler 1968, Cusic 1981, Xrakovskij 1997) have illustrated the varied manifestations and meanings of verbal plural markers. However, these variations have for the most part not been analysed in the context of general theories of plurality or of events.

This study examines the linguistic expression of event plurality or ‘pluractionality’ (Newman 1990), bringing together data of several types to try to develop a synthesis or convergence of different perspectives: broad crosslinguistic comparison, detailed studies of individual languages, results from psychology on event structure and perception, and semantic theories of event plurality. In particular, this study addresses the following questions. First, among the many variations in pluractional meaning across languages, is there a recurrent distinction or set of distinctions which is clearly basic? If so, is this parallel to the behaviour of nominal plurality and can it therefore be integrated

into a general theory of plurality? Second, how is verbal number connected to other categories which affect event structure—namely, aspect and Aktionsart? Third, how are the similarities and differences between objects and events, nouns and verbs reflected in the semantics of nominal and verbal number?¹

This chapter outlines the background, goals and methods of the rest of the dissertation. In section 1.2 I define grammaticalised pluractional markers and distinguish them from related phenomena. Section 1.3 discusses earlier studies of pluractionality and the typologies of pluractional meaning which they have proposed. Relevant theoretical and methodological background is addressed in 1.4, and in 1.5 I outline the organisation of the rest of the dissertation.

1.2 Grammatical expression of event plurality

Events, like entities, can be single or multiple. Events are frequently observed to happen repeatedly, habitually, frequently or infrequently, for example. The plurality of events may be expressed by various grammatical means. In English, several constructions can be associated with event plurality, as seen in (1).

(1) a. Argument plurality

Three children woke up. [multiple awakenings]

¹ For general discussion, I will not distinguish states from events and use the term ‘event’ to include both. However, I take states to be non-prototypical events and when discussing the properties of events in general, states (along with other types of events) may not conform to the behaviour described.

b. Aspectual category

Ryan **is knocking** on the door. [multiple knocks]

c. Adverbial expression of repetition

Marijke came to visit **many times**. [multiple instances of visiting]

Unlike English, many languages have verbal markers dedicated to the expression of event plurality, as exemplified in (2).

(2) a. Hausa verb reduplication (Newman 2000:423-424)

tùna remind tuntùnā remind many or often

hàifā give birth hàhhaifā give birth many times/to many children

b. Yup'ik -qaqe- postbase (Jacobson 1984:535)

nere- to eat nerqaqluniq eating now and then

quuyurni- to smile quuyurniqa'aqluni smiling now and then

ayag- to go ayakaqluni moving now and then from
place to place

c. Finnish repetition suffixes (Karlsson 1999:239)

ajaa	drive	ajella	drive around
astua	step	astella	step, walk around
kysyä	ask	kysellä	ask repeatedly
oppia	learn	opiskella	study

The difference between the examples in (1) and (2) is straightforward. While the English examples in (1) describe multiple events, none of the constructions involved directly or inherently expresses event plurality. For instance, plural NPs (1a) and the progressive (1b) produce plural event interpretations only under certain circumstances. These same constructions do not imply event plurality in (3):

- (3) a. Jacob liked **the apples**.
b. **The children** built a clubhouse.
c. Nora **is running**.

Plural arguments can only indicate plurality of events if the argument is the incremental theme, and/or the argument is interpreted distributively (neither of which is the case in 3a-b). Similarly, the English progressive generally produces plural event interpretations when combined with semelfactive predicates like *sneeze*, *knock*, *flash*. In other words, these constructions can interact with particular types of events and contexts to produce plural event meanings, but do not express event plurality.

This study examines grammaticalised categories which specifically indicate event plurality. My assumption is that these will be representative of the “core” of pluractional functions and meanings, and that variations between such categories can be used to identify recurrent contrasts in pluractional meaning both within languages and across languages. While other constructions which may indicate event plurality should ultimately be integrated into a theory of pluractional meaning, they fall outside the scope of this study.

However, drawing a line between pluractionality and other phenomena is not necessarily as simple as this brief summary suggests. The rest of section 1.2 examines in more detail some grammatical phenomena which are closely related to pluractionals. Section 1.2.1 considers two classes of verbs which require a plural argument. Section 1.2.2 addresses the relationship of pluractionality to aspect and Aktionsart.

1.2.1 Plural-argument verbs

As already noted, plurality of an argument may be associated with plurality of an event in certain circumstances, but it is nonetheless clear that nominal plural marking does not directly encode event plural meaning.² However, there is another phenomenon more closely related to pluractionality involving verbs which specify the singularity or plurality of one of their arguments (cf. Durie 1986, Mithun 1988, Corbett 2000).³ Many languages

² Conversely, pluractional markers often indicate the plurality of one of the verb’s arguments. This observation led Cusic (1981) to suggest that nominal and verbal plurality overlap in function and that languages with grammaticalised pluractional marking are less likely to have nominal number distinctions, a hypothesis which will be tested in chapter 2.

³ This phenomenon is noted earlier by Greenberg (1966:36), but not distinguished from plurality of events: “The category of number in verbs is found in two different ways. Verbs may agree with their subject in number or more frequently in number and person. There are also languages in which the verb itself has

have pairs of verbs—related by suppletion or in some cases by derivation—which differ only in whether a particular argument is singular or plural. For example, in Southern Paiute, in addition to the regular means of indicating argument number via agreement, “there are certain verb stems that are inherently limited in their reference to number, the singular-dual of the intransitive subject or transitive object being expressed by a stem which is etymologically distinct from that for the plural of the intransitive subject or transitive object.” (Sapir 1930:241-2) This is illustrated in (4):

(4) Southern Paiute argument-numbered verb stems (Sapir 1930:242)

qari-	one sits, dwells	yuywi-	several sit, dwell
pitci-	one arrives	im ^w ii-	several arrive
tsik'an'na-	one appears	maya-(ŋu-)	several appear
watci-	to put one (object)	yun'a-	to put several (objects)

This phenomenon is not a form of argument-marking or agreement expressed on the verb. Durie (1986:357-361) notes several grammatical characteristics which show that suppletive number distinctions of this type are distinct from agreement. For example: number suppletion occurs in environments in which agreement morphology is generally absent, such as control constructions; number suppletion always indicates number of the absolutive argument, regardless of whether the language is morphologically ergative or

singular and plural (sometimes also dual) stems which indicate singularity or plurality of action. In such cases plurality includes plural subject and/or plural object or frequentative action.”

accusative; and where there is a mismatch between syntactic and semantic number of an argument, agreement morphology reflects syntactic number whereas stem suppletion reflects semantic number.

Do plural argument verbs constitute a type of pluractional? Like a plural NP argument, a suppletive or derivationally marked plural-argument verb *may* indicate multiple events, but does not necessarily do so. For example, Rice (1989:800) notes of the Slave “multiple aspect” illustrated in (5) that it indicates actions which are “not necessarily separate”, and in this respect it contrasts with the “distributive aspect” (which is otherwise similar).

(5) Slave multiple aspect (Rice 1989:801)

ʔedeyihdla	‘I tore, ripped, skinned it’
ʔedehdla	‘I tore, ripped, skinned them’ (multiple)
yáʔedíhdla	‘I tore, ripped, skinned each’ (distributive)
yetáʔeníʔwe	‘s/he cut it to pieces’
yetáʔewe	‘s/he cut them to pieces’ (multiple)
yetáyáʔíʔwe	‘s/he cut each to pieces’ (distributive)

Dressler (1968:66) also does not separate derivational morphology indicating argument number from plural event marking.

These alternations always reflect the number of an intransitive subject or transitive object, never a transitive subject, regardless of whether a language is morphologically or syntactically accusative or ergative (Mithun 1988:214, Durie 1986:357). The pluralised argument is the prototypically affected participant. On the basis of this observation, Mithun argues that “[t]he primary function of stem alternation is not to enumerate entities, but to quantify the effect of actions, states, and events.... The implied plurality of effect is a feature of their basic meaning. Walking alone is classified lexically as a different activity from walking in a group; speaking is different from conversing; murdering an individual is different from massacring a village.” (ibid.:214)

In this respect, verbs which distinguish argument number are closely related to pluractionals (cf. also Corbett 2000:246). As a result, I start with the assumption that verbs of this type are distinct from true grammatical pluractionality, but in chapter 2 look for any correlations between the presence or absence of these two phenomena in individual languages.

However, an apparently similar group of verbal markers which indicate distribution of events over participants or spatial locations will be treated differently. The Yup’ik examples in (6) illustrate a typical distributive marker:

(6) Yup’ik postbase –qu- ‘to V one after another’ (Jacobson 1984:542)

ayag-	to leave	ayakuut	‘they are leaving one after another’
tekite-	to arrive	tekitequut	‘they keep arriving one after another’
iqlu-	to tell a lie	iqluquuq	‘he is telling lies’
nere-	to eat	ner’qui, nerqui	‘he is eating them one after another’

Like argument-numbered verbs, distributive markers link argument plurality to event plurality. However, distributive markers *necessarily* indicate plurality of events (since each location or participant is involved in a separate event), as appears to be the case with the Slave distributive aspect in (5) above. However, distributive markers are unlike other pluractionals in that they *only* indicate plurality of events which is distributed over participants or locations and never have the more prototypical repetition meaning. In the survey in chapter 2 I treat them as a special subclass of pluractional category, including them among pluractionals for most measures but also considering them together as a class to see if they have any distinct properties.

1.2.2 Pluractionality, aspect and Aktionsart

Pluractional markers which indicate repetition of events are often regarded as aspectual categories (e.g. Corbett 2000:247). Cusic (1981:57) summarises two common views of pluractional meaning:

“[P]lural action has traditionally been related to the basic aspectual distinctions in two general ways: either a separate category—say iterative—has been set up and it is claimed that semantically the iterative is constituted of a series of perfective/imperfective or durative/non-durative situations; or the plural categories are presented as subsumed under the functional meaning of one of the basic categories, usually imperfective or durative In both views the status of multiple action is secondary—either it is parasitic on the category of single action, or it is a subtype of the imperfective/durative category.”

I will argue that there is a close relationship between pluractionality, aspect and Aktionsart, and that pluractional categories are perhaps best understood as a type of Aktionsart. This view is in accord with both Dressler (1968) and Cusic (1981).

First, it is clear that there are strong connections between pluractionality and aspect/Aktionsart, since repetition of an event frequently produces a change in temporal contour and telicity. For example, a telic event repeated an indefinite number of times produces an atelic activity interpretation.

- (7) I jumped off the roof. (single, instantaneous action)
I jumped off the roof again and again. (extended action)

It is also the case, as noted with reference to the English progressive examples in (1) and (3), that aspectual categories which are not inherently pluractional can nonetheless produce interpretations of repetition when combined with certain types of events.

- (8) a. Joe is painting.
b. Your neighbour is knocking on the door.

While the English progressive does not always produce a plural event interpretation, as can be seen from (8a), an interpretation of repetition is almost obligatory in (8b)—except perhaps in some very special circumstances, such as when viewing a slow-motion video of someone knocking on a door.

Within the realm of aspectual meaning, a distinction is drawn between aspect and Aktionsart. A number of subtly varied definitions of this contrast, based on morphological and/or semantic criteria, have been proposed since it was introduced by Agrell (1908:78). Comrie (1976:6-7, n.4) describes two common views: that aspectual distinctions are grammaticalised, whereas Aktionsart distinctions are lexicalised (i.e. inherent verb meanings); and the view he identifies as common in Slavonic studies, that Aktionsart is lexicalised via derivational morphology.

Cusic (1981:63) proposes a distinction between aspect, which “classifies events as they are asserted to be realized in time”, and Aktionsart, which “classifies events in abstraction from real time”, arguing that pluractionals therefore fall under the heading of Aktionsart. Singularity or plurality of an event is independent of a particular instantiation in time. However, this seems to conflate aspect and tense: tense is what ties an event to an actual instantiation in time, and aspects (such as the English progressive) are compatible with different tenses.

The distinction I will adopt here depends on the notion of viewpoint or perspective (cf. Langacker 1987, 2000 and Smith 1991). Aspect encodes a viewpoint on an event—for example, whether the event is seen as an ongoing process, or as a completed whole (cf. Comrie 1976:3). However, Aktionsarten can be regarded as characterising event structures *independent* of viewpoint. This distinction may well line up with other criteria. For example, it may be that derivational affixes are more likely to indicate change in event structure independent of viewpoint, where inflectional affixes indicate a change in viewpoint. This distinction is not completely unrelated to Cusic’s proposal: an actual instantiation of event involves both a specific location in time and a

viewpoint on the structure of the event, and these two are independent. Adopting this distinction places pluractionals clearly in the category of Aktionsart (since the difference between singularity and plurality is not dependent on viewpoint in this sense).

Aspectual markers proper may produce pluractional interpretations by coercion: if the temporal structure required by the aspect is incompatible with the event-structure of the predicate, the combination forces a reconstrual of the predicate in order to fit the aspectual contour. However, even in apparently clearcut examples such as that of *knock* in (8b), repetition is merely the most likely interpretation, based on general knowledge of the world. While the slow-motion video interpretation is likely to be rare, it is no less acceptable (i.e. in the appropriate context, it is not anomalous to use 8b to describe such a situation).

While I conclude that pluractionals are distinct from grammatical aspect, they are still closely connected. Like other lexical and derivational Aktionsarten, pluractionals often interact with aspect (as will be seen in Chechen in chapter 5).

1.3 Typologies of pluractional meaning

This study focuses on the grammaticalised expression of event plurality, as defined above. Having distinguished such categories from other related phenomena, in this section I consider earlier studies of pluractionals and the types of meaning variation they have identified. There have been three major crosslinguistic studies of pluractionality, each proposing different typologies of pluractional meaning. These studies are reviewed in turn in 1.3.1-1.3.3, and then in 1.3.4 I discuss some of the questions raised by the

studies and the comparisons between them which will be relevant to the rest of this dissertation.

1.3.1 Dressler (1968)

Dressler (1968), as part of his study of verbal plurality, proposes a typology of pluractional meaning involving four main types (Aktionsarten, *ibid*:51), each of which includes many nuanced subtypes.

First, Iterative Aktionsart (Dressler 1968:62-65) includes pluractional meanings with clearly distinct repetitions, including discontinuous, frequent, reversative and other subtypes. The Iterative class is exemplified in (9).

(9) Quileute (Dressler 1968:63/Andrade 1933:187)

xálatšli I cut it

xá'alatšli I cut it often, repeatedly

The Distributive Aktionsart (Dressler 1968:65-74) consists of repetition distributed over participants or locations or performed in different directions, as illustrated in (10).

(10) a. Quileute (Dressler 1968:66/Andrade 1933:187)

kwe-'tsa' he is hungry

kwe-'k^utsa several people are hungry

- b. Lithuanian (Dressler 1968:69)
- | | |
|-----------|--|
| piáuti | schneiden (to cut) |
| piáustyti | in mehrere Stücke schneiden (to cut in several pieces) |

The Continuative (ibid.:74-77) includes prolonged, continued, or characteristic action, as in (11).

- (11) a. Eastern Ojibwa (Dressler 1968:77/Bloomfield 1957:127)

pemosse	he walks
pepimusse	he walks on and on

- b. Klamath (Dressler 1968:75/Barker 1963:30(140), 44(386))

domna	er hört, gehorcht (he hears, he obeys)
do-damnis	einer, der gehorcht (one who obeys)

Finally, the Intensive (ibid.:77-84) includes meanings of intensified, exaggerated and attenuated action, as in (12).

- (12) a. Nahuatl (Dressler 1968:81/Garibay 1961:31)

tlaqua	er isst (he eats)
tla-tlaqua	er isst reichlich (he eats plentifully)

b. Tzeltal (Dressler 1968:81/Berlin 1963:214)

-nit to push it

-nititan to push it rapidly in a curvy, crooked path

Some of the categories Dressler includes in this fourth class will not be classified as pluractional here. They are intensive (or attenuative) in effect, effort, size of action, etc. While intensive and attenuating meanings are relatively common secondary meanings of categories indicating repetition or some other type of clearly plural event meaning, they do not by themselves qualify as pluractional (since apart from the general common meaning of “increase” or “decrease”, there is no necessary connection between plural number and intensity).

The range of examples and their classification provided by Dressler (1968) gives an overview of variation in pluractional meaning. His division of pluractionality into these general classes also highlights the various ways in which event structure can be pluralised: repetition or extension in time, distribution over participants or locations.

1.3.2 Cusic (1981)

Cusic (1981) is a study of pluractionality and particularly its connections to aspect. One of the most important proposals Cusic makes is that events have a hierarchical structure, and that plurality may occur at any of the three different levels of this hierarchy. Cusic labels these the phase level, the event level, and the occasion level, and plurality at each of these levels is illustrated in (13) with examples from Cusic (1981:61):

- (13) a. Phase-level: an event consists of multiple repeated phases

The mouse nibbled and nibbled the cheese.

- b. Event-level: an event is repeated on a single occasion

The mouse bit the cheese again and again.

- c. Occasion-level: an event is repeated on multiple occasions

The mouse was always nibbling at the cheese.

This hierarchical structure is the basis of what Cusic identifies as the most important semantic contrast in pluractional meaning. While plurality at all three levels is possible, Cusic proposes that event-level and occasion-level repetition are commonly expressed by the same grammatical categories, but that there is a grammatically significant distinction is between phase-level repetition (plurality *within* events) and event-level repetition (plurality *of* events), whether on a single occasion or multiple occasions (ibid.:79). I will refer to these two types (phase level and event level repetition) as “event-internal” and “event-external” plurality (following Garrett 2001, and based on Cusic 1981:77).

The event-phase distinction is the first of four parameters Cusic identifies on which pluractional meaning may vary. The remaining three he terms “relative measure”, “connectedness”, and “distribution”.

The parameter of relative measure (ibid.:80) refers to meanings of increase and decrease associated with pluractionality. Cusic argues that both event-internal and event-

external repetition can also incorporate meanings of increase or decrease of size or effect of action. This is similar to Dressler's Intensive Aktionsart.

Connectedness (ibid.:96) refers to "the relative prominence of bounds at the phase and event levels": in other words, how distinct or discontinuous the individual repetitions are (whether events or phases). Cusic links this parameter to the mass-count distinction in NPs .

Finally, the parameter of Distribution refers to "separation in time, space, or some other way, of actor from actor, action from action, object from object, property from property, and so on....[D]istributivity can be thought of as a function which takes the internally or externally plural complex entity, redivides it into its separate bounded units, and assigns these units to temporal loci, spatial loci, or matches them one-to-one with other bounded units." (ibid.:102)

Cusic treats the first parameter as the primary distinction, and it is cross-cut by the others, so that features such as relative measure are evaluated separately for repetitive (phase-level) and repeated (event-level) repetition. Unlike Dressler's distinction of four major types of pluractionality, Cusic's crosscutting parameters create a large number of possible types of pluractional meaning. However, as Cusic observes, the parameters are not entirely independent, and what appear to be logically possible combinations of features may be unattested.

In this thesis I will return to various elements of Cusic's typology several times, and in particular the distinction between internal and external plurality will be central.

1.3.3 Xrakovskij (1997)

Xrakovskij (1997) is a collection of studies of pluractional (“iterative”) meanings in different languages and language families, which share a common framework outlined in Xrakovskij’s introduction, which is what I consider here.

Xrakovskij proposes two crosscutting binary semantic features to distinguish the major varieties of pluractional meaning:

- I Plural situations occur either (a) at one time or (b) at plural times.
- II: Participants in the situations are either (a) identical or (b) nonidentical (i.e. at least one participant is nonidentical).

The combination of these features produces four logically possible types (though Xrakovskij notes that subclassifications are possible, *ibid*:25). These are laid out in table 1.1, reproduced from Xrakovskij (1997:27):

Combinations of values	Semantic type of plurality	Examples
Ia, IIa	Multiplicative (terminal)	The boy tapped at the window for several minutes. The patient coughed all night.
Ia, IIb	Distributive (terminal)	In a week's time the fox carried away all the neighbours chicks one by one; The student is paying back his debts
Ib, IIa	Iterative (non-terminal)	The boy visits his granny every year The student pays back his debts every month The patient coughs at night
Ib, IIb	----	----

TABLE 1.1 Main distinctions in pluractional meaning of Xrakovskij (1997)

The notion of distributivity (or nonidentical participants) is much the same as that in Cusic (1981) and Dressler (1968). However, the distinction between action at one time or at plural times is different. The Iterative appears to involve specifically habitual (“nonterminal”) repetition (cf. Xrakovskij 1997:58). Neither Cusic nor Dressler distinguishes habitual repetition from other types of repetition in this way.

Finally, the last of the possible feature combinations (Ib, IIb) is not exemplified. However, it does not seem to be excluded by any principle, and in fact examples can be constructed which seem to meet its definition. For example, *The fox carries one of the neighbour's chicks away every week* involves habitual repetition, distributed over distinct participants. The combination seems to be possible as long as the context permits

distribution over a potentially unbounded set of participants, in order to be compatible with a habitual interpretation.

Xrakovskij's basic typology distinguishes (at most) four categories, providing a very general classification for pluractional categories. Other than the distinction between habitual and nonhabitual repetition, the typology does not include any variations in the level of structure at which plurality is present, and the binary features identified as basic are quite different, for instance, from the highest-level contrast proposed by Cusic (between event-internal and event-external meanings).

Some further comparisons are drawn between the three different studies in 1.3.4, and are used to establish questions to be examined in this dissertation.

1.3.4 Comparison of the three studies

The crosslinguistic survey in chapter 2 re-evaluates some of the basic issues addressed in these three earlier studies with data from a genetically and geographically balanced sample of languages. A number of questions arise from the comparison of the three studies, and from more specific proposals made by the individual authors.

The main issue is simply how pluractional meanings are categorised, and what parameters of variation are taken to be the most basic. Dressler's classification distinguishes four types which apparently have similar status. Cusic, on the other hand, treats the distinction between event-internal and event-external pluractionality as central, whereas Xrakovskij picks out both the distributive/non-distributive and habitual/non-habitual distinctions as establishing major divisions. In chapter 2 I consider whether and on what basis any such distinctions can be identified as primary.

In particular, I address the possible significance of Cusic's proposed hierarchy of event structure. Not only does Xrakovskij make no distinction between repetition *of* an event and repetition *within* an event, but he does not directly distinguish between repetition on one occasion and on more than one occasion. Xrakovskij's notion of "at one time" is quite different from Cusic's notion of occasion. For Xrakovskij, action carried out repeatedly during a period of one week (as in table 1 above) is considered to be at one time (nonhabitual). Occasions in Cusic's terminology are less clearly defined but, as the following example (1981:66) shows, can include bounded ("terminal") sets of repetitions:

(14) The salesman rang the doorbell twice.

which has at least the following two interpretations:

- a. On two separate occasions he rang the bell once.
- b. On one occasion he rang the bell two times.

Cusic uses the two different proposed interpretations of this example as evidence for a level of occasions (distinct from events). However, exactly what counts as an occasion is not made explicit. I suggest an informal definition of occasions, as follows. In the example above, intuitively, if the salesman approaches the door, rings the bell, leaves and then returns later and repeats the sequence, he has rung the bell on two separate occasions. If he approaches the door and rings the bell, waits for a moment and rings the bell again, these actions occur on a single occasion. If the sentence is altered to include the modifier "in one week", the first of these interpretations is strongly favoured; if "in

one minute” is used instead, the preference shifts to the second interpretation. In other words, the surrounding circumstances or frame of an event seem to be important in characterising occasions. There are certain prototypical prior or surrounding conditions to an event of ringing a doorbell. If multiple instances of doorbell-ringing occur within one instantiation of these conditions, they are regarded as occurring on a single occasion. If the surrounding conditions are repeated with each instance of doorbell-ringing, they count as multiple occasions.

How useful each of the sets of distinctions proposed by Cusic and Xrakovskij are is a matter to be addressed in the crosslinguistic survey, and I will argue in chapter 2 that the hierarchical structure proposed by Cusic better characterises the variations in pluractional meaning found across languages.

There are a number of more minor points of comparison, including the treatment of distributivity. Xrakovskij takes distributivity as one of the basic features of his typology, but this is restricted to distribution over participants—presumably treating spatial distribution as a minor variant. Cusic and Dressler class participant and spatial distributivity together, apparently treating distributivity as a more general function of separation, and this separation may be in space or between participants. Distribution over participants can (at least trivially) be thought of as involving distribution over locations, since two physical entities cannot occupy precisely the same location, but whether distribution over locations is a regular meaning of pluractionals and whether it is an interpretation in its own right, independent of participant distributivity are questions which will be addressed in chapter 2.

The individual studies provide further questions to consider. One of particular interest is raised by Cusic, who, based on the observation that verbal plurality often secondarily indicates or implies nominal plurality, suggests that there is an inverse correlation across languages between the presence of nominal and verbal number distinctions. This proposed correlation is tested on the language sample in chapter 2.

Dressler (1968), Cusic (1981) and Xrakovskij (1997) establish some major parameters of semantic variation in pluractionals and, both individually and in comparison with each other, raise a number of questions and hypotheses to be tested in the following chapters.

1.4 Methodology and theoretical background

Pluractionality has been studied as a typological phenomenon, and has received some discussion in theoretical semantics. However, these two perspectives on pluractionality have generally not been brought together, except briefly by Lasersohn 1995, and doing so is one of the goals of this study.

In the remainder of this section I outline some methodological and theoretical assumptions essential to the proposals of this dissertation. In 1.4.1 I briefly discuss the view of semantics I adopt here, and in section 1.4.2 consider some basic problems involved in doing semantic typology.

1.4.1. Event semantics and cognitive linguistics

The descriptive and typological background laid out above provides a basis for the crosslinguistic survey in chapter 2. However, I have so far not addressed the background

to any of the semantic issues which will shape the discussion of pluractionals in chapters 3-5, and that is the focus of this section.

None of the three crosslinguistic studies outlined above goes very far in offering an account of the semantics of pluractionality. All identify recurrent distinctions in meaning (though these distinctions differ from study to study) but do not propose a common or core semantics for pluractionals.

As noted above, pluractionality has been addressed in formal semantics by few authors, primarily Lasersohn (1995), but also by Ojeda (1998). Other authors have adapted Lasersohn's analysis of pluractionals to account for phenomena in English and other languages, e.g. Zimmermann (2003), Van Geenhoven (2004), Matthewson (2000) and Bar-el (2002).

I will address the details of Lasersohn's analysis in chapter 3. However, the most basic detail of his proposal is that it assumes events are entities in the ontology and that pluractionality involves the pluralisation of events. While it is in theory possible to analyse pluractionals in a semantics which does not incorporate events, the use of events permits the treatment of pluractionals as involving basic pluralisation of the same type.⁴ I will not address the relative proposed merits of accounts which do and do not incorporate events (cf. Parsons 1990, for example), but will simply assume a semantics containing events.

As a matter of convenience and explicitness, I will use at least some basic logical metalanguage as a means of representing proposed meanings. However, while the

⁴ If an occurrence is plural it *must* be plural in one of three (or possibly more) dimensions: time, participants, locations. Events do not have an existence independent of any (all) of these dimensions.

proposals in this dissertation are not specifically cast in the terms of any single theoretical framework, my approach to the semantics of pluractionals depends on some basic tenets of cognitive linguistics (as found in, for example, Langacker 1987, 1991; Lakoff 1987, Sweetser 1990, Talmy 2000). Two major assumptions are relevant to this study. First, I assume that meanings are conceptualisations (in other words, mental structures or processes) rather than truth conditions. In chapters 3 to 5 I will propose and discuss a semantics for pluractionals. While the forms used to represent the meanings include logical expressions, they are intended to describe conceptual structure rather than facts about the world. Secondly, I assume that language is not isolated from other aspects of cognition, and expect that grammatical structure is at least partly motivated by more general types of cognitive structure. This assumption is basic to the goal of integrating psychological data on event perception with the linguistic data on pluractionality, and in particular, the distinction between repetition of phases or parts of events and repetition of complete events. Structures common in perception have been argued by cognitive linguists to be reflected in language in various ways (e.g. Langacker 1987, Talmy 2000, Croft & Cruse 2004, cf. also Barsalou et al. 2003). I will add to these claims the proposal in chapter 3 that the distinction between repetition of events and repetition of phases within events has its basis in the perception of groups and hierarchical structures of objects and events.

Therefore, a theory which does not incorporate events can account for pluractionals by permitting a plural operator to pluralise either time or location or participant arguments.

1.4.2 Semantic typology

Where syntactic typology compares the forms used to fill specific grammatical functions, the goal of semantic typology is to compare the meanings expressed linguistically for some particular domain, and to determine constraints and patterns in these meanings across languages. Semantic typology is a young subfield in linguistics, though it has its origins in works such as Berlin & Kay (1969), Wierzbicka (1972), Berlin, Breedlove & Raven (1974), Anderson (1982), Bybee (1985), and Talmy (1985).

There are various strategies for comparing meanings across languages, for example, by examining patterns of lexical relations or by examining entailments. However, in order to do this, almost all crosslinguistic semantic studies are based on detailed fieldwork investigation of the specific lexical and grammatical items in question (for example, the studies of spatial language by Stephen Levinson and others, e.g. Levinson 2003, Levinson & Wilkins 2006).

Making semantic generalisations based on information in grammars is highly problematic. The comparison of meanings is dependent on descriptions, glosses and example sentences in context. Different grammar-writers use different terminology and have different assumptions, and provide varying amounts of data for the items in any given semantic domain. Moreover, based on the small number of examples of any particular phenomenon available in a typical reference grammar, it is difficult to make claims about meanings with any degree of certainty.

Levinson & Wilkins (2006:513) state that semantic typology can only be based on fieldwork data. While they are undoubtedly right that conclusive studies require crosslinguistic fieldwork, I suggest nonetheless that there is a useful role for surveys of

the type presented here. While many details of meanings are likely to be missing from existing linguistic descriptions, it still may be useful to draw broad comparisons across grammars. Variability between grammatical descriptions can be hoped to even out somewhat with increasing sample size, and I claim that the kind of study presented in chapter 2 can give an overview of the likely major variations in meaning for some particular semantic domain. At a minimum, a study based on prior grammatical descriptions can be used to identify questions for fieldwork, including potentially relevant semantic parameters and likely approaches to investigating them. This study will use data from grammars to outline a number of basic characteristics of pluractionals and to formulate hypotheses about their semantics across languages. These hypotheses can then be tested more thoroughly using fieldwork data from a far smaller number of languages (in this case just two).

1.5. Outline of following chapters

The structure of the rest of the dissertation is as follows. Chapter 2 consists of a crosslinguistic survey which addresses a range of basic questions about pluractionals, including possible correlations of pluractional marking with other grammatical phenomena such as nominal number marking and plural argument verbs, as well as the significance of Cusic's event/occasion distinction. Chapter 3 compares the linguistic distinction between repetition of phases and repetition of events to psychological findings on event perception and event boundaries. Drawing on the correlations between these, I propose an account of the semantics of pluractionality.

Chapters 4 and 5 consist of case-studies of pluractionality in Yurok and Chechen, which both support and challenge the proposals from chapter 3 in various ways and lead to some refinement of the analysis. Finally, chapter 6 summarises the results and conclusions, and suggests ways in which they may be relevant to other areas of semantics.

This study combines broad crosslinguistic comparisons, detailed individual-language analysis and findings in psychology and attempts to consider them together to establish a general theory of pluractional meaning. Bringing together research from these independent areas of study is a complex task, and this project is inevitably an incomplete attempt at a synthesis. However, I will argue that the results as they stand offer some useful insights into the semantics of pluractionals.

Chapter 2

A crosslinguistic survey of pluractionality

2.1 Introduction

This chapter will provide an overview of the occurrence, form and use of pluractionals and related categories in a genetically and geographically balanced sample of 43 languages. As discussed in chapter 1, there have been several crosslinguistic studies of pluractionality (Dressler 1968, Cusic 1981, Xrakovskij 1997) which have attempted to classify types of meaning variation in pluractional categories. In this chapter, I will re-examine a number of issues raised by these earlier studies and identify commonly recurring patterns in pluractional meaning. I will also address some more basic questions, namely, what forms grammaticalised pluractionality takes and how it relates to other grammatical features, such as nominal number and the presence of plural argument verbs.

In chapter 1 I addressed the methodological problems and criticisms of attempting to study semantic variation based on information in grammars. This study focuses on those characteristics which are often easily identified in the data, and describes general patterns which appear to hold across languages. However, because of the inherent limitations of the data, the value that I assume such proposed patterns to have is in the formation of hypotheses about pluractional meaning across languages, and this is the way the findings of this survey are used in the rest of the dissertation.

The chapter is structured as follows. I present details of the sample and define the constructions to be studied in section 2.2. The forms of pluractionals and their relationship to nominal number and plural argument verbs will be covered in sections

2.3-2.5. Sections 2.6-2.7 cover the apparent variations in meaning found in pluractionals across the surveyed languages. As has already been shown in other studies, the range of meaning variation in pluractional categories is large. Pluractionals, in addition to indicating the plurality of events (which itself may involve plurality in time, space or participants), frequently provide information about the magnitude of events (augmentative or diminutive meanings), their distribution in time or space (on one or multiple occasions, close or distant), and many other subtle variations. I will consider both the range of meanings that can be identified and whether any semantic contrasts can be identified as basic. Ultimately I will argue that the distinction made by Cusic (1981) between event-external (event-level) and event-internal (phase-level) pluractionality can be found in a range of languages and accounts for at least some of the patterns of meaning variation.

2.2 Sample and collection of data

The languages included in the study were selected for genetic and geographical coverage. The sample was designed to cover the following geographical areas. In each of these areas, languages of different genetic stocks were chosen.¹ In addition to the basic geographical and genetic criteria, quality of available descriptions was taken into account in selecting the specific sample languages.²

¹ Based on information from SIL's Ethnologue and the genetic database of the Berkeley-Leipzig Autotyp project, <http://www.uni-leipzig.de/autotyp>

² Sources consulted for all languages are listed in Appendix A.

sub-Saharan Africa	‡Hoan, Luvale, Ewe
North Africa	Hausa, Syrian Arabic, Lango
Caucasus	Chechen, Georgian
Europe	Russian, Finnish, Basque
(C. &) N. Asia, Siberia	Korean, Turkmen, Evenki
Indic subcontinent	Kannada, Burushaski
S. and SE. Asia	Mandarin, Thai, Vietnamese
Polynesia, Micronesia, Melanesia	Fijian
New Guinea	Yimas, Amele, Kobon, Daga
Australia	Nunggubuyu, Kayardild, Wardaman
Alaska to Oregon	Central Alaskan Yup'ik, Thompson River Salish, Slave
California	S. Sierra Miwok, Yurok
Intermontane North America	Kiowa, Koasati, Wichita, S. Paiute
eastern North America	Tuscarora
Mexico and Central America	Chalcatongo Mixtec, Tzutujil
South America	Imbabura Quechua, Guaraní, Hixkaryana, Yagua

TABLE 2.1: Languages in the sample

In order to record information about pluractionals and the features with which they correlate, an initial definition of pluractionals is required. Based on the criteria given in chapter 1, forms treated as pluractionals were those which met the definition in (1).

(1) Closed-class constructions which apply to a verbal head and which produce an expression of event plurality.

This definition rests on the following assumptions. First, ‘closed-class constructions’ includes inflectional and derivational morphemes, reduplication, and potentially other grammatical devices such as word order. This excludes lexical adverbials which denote multiplicity/iterativity etc. (e.g. English *again and again*). There is certainly a cline of grammaticalisation of pluractionality and in some cases pluractional meaning may not be clearly or fully grammaticalised. For example, auxiliaries may be difficult to separate from lexical verbs. Ewe has what appears to be a pluractional auxiliary (Duthie 1996:41). However, deciding what is truly an auxiliary rather than a lexical verb is often difficult (for example, English *gonna* has few of the properties usually assumed to hold for auxiliaries in English). This is an unavoidable problem with a survey of this type, and in such cases I rely on identifications provided by grammars—for instance, including as a grammaticalised pluractional the Ewe repetitive auxiliary.

Second, ‘producing an expression of event plurality’ requires that pluractionality is the basic meaning of the construction—or one of the basic meanings for polysemous constructions, such as augmentative reduplication in Thompson River Salish (Thompson & Thompson 1992:81-84)—and not a secondary result of the interaction of the category’s meaning with some other element. To return to an example discussed in chapter 1, the English progressive indicates repetition with some verbs (semelfactives, e.g. *He is coughing*), but is not treated as a pluractional category because this repetition is a secondary result of the meaning of the progressive. Since the meaning of the progressive requires extension in time, instantaneous events are coerced into a repetition meaning. Similarly, habitual categories are excluded unless examples show them to be clearly pluractional, since they typically refer to an action or state which is characteristic of an

entity and/or a time period, without any necessary repetition involved. A habitual statement can be based on as little as one occurrence, perhaps even none, as long as the speaker believes the event is likely to be characteristic of the situation or entity involved.³ However, categories which have several meanings, one of which is pluractionality, *are* treated as pluractionals.⁴

At this point I will briefly define several terms which appear in the discussion which follows. For the most part, names used to refer to grammatical categories are those provided in published descriptions (except where these directly conflict with definitions adopted here) and are not taken to accurately reflect the semantics of the categories or to be consistent across languages. However, in discussing the meanings of pluractionals I will use the following terms.

Frequentative meanings such as ‘to do often’

Duplicative meanings such as ‘again’, involving two repetitions of the same action

Reversative two-way action, ‘e.g there and back’

Distributive a category denoting events distributed over multiple spatial locations or with a plural argument, the individual parts of which act or are acted on separately

³ Langacker (1997:198) makes this point, giving as an example the statement *This door opens to the inside*. As he says, “[t]he sentence implies that the door is constructed and mounted in such a way that, if it is to be opened, it will swing to the inside rather than to the outside. The door can perfectly well be described in this manner even if it was mounted in place during construction and has never actually been opened at all.”

⁴ These two alternatives are not always easy to distinguish, though.

2.3 General features of pluractionals

This section examines some general features of pluractionals: their frequency and distribution around the world and the forms which they typically take. This will provide an overview of some basic patterns in the grammaticalisation of pluractionality.

2.3.1 Frequency and distribution

One of the striking findings in the survey is simply the apparent frequency of pluractionals across languages. 36 out of the 43 languages have at least some kind of grammaticalised pluractionality. Given this frequency it seems surprising that pluractionality has been so little studied, in contrast to phenomena like aspect. One contributing factor is likely to be the marginality of pluractionals in most European languages, as is true for the European languages in the survey, Russian, Finnish and Basque. Russian has several pluractional formations, but these are highly lexicalised. For Basque, grammatical descriptions give no indication of any pluractionality, while Finnish seems to have a productive but relatively marginal pluractional derivation which can be seen in a number of verbs, as in the following examples:

(2) Finnish frequentative verbs (Sulkala & Karjalainen 1992:312)⁵

aja ‘drive’	ajella ‘drive around’
kysy/ä ‘ask’	kysellä ‘ask repeatedly’
ime/ä ‘suck’	imksiä ‘be sucking’

⁵ For information on the use of this construction with recently coined verbs (e.g. *email*) I am grateful to a native speaker of Finnish (whose name I do not know) at ICLC 2003 in Barcelona.

Pluractionals are found in all of the geographical areas covered. However, it seems grammaticalised pluractionality is especially prevalent in North America (cf. Mithun 1988a,b 1999). Of the ten North American languages in the sample, all had at least one relatively productive or frequent grammaticalised means of expressing pluractionality. The phenomenon is apparently less common in South America, where only one of the four languages, Yagua, had any pluractionals. The seven languages in which I found no pluractional categories are Basque, Burushaski, Hixkaryána, Guaraní, Imbabura Quechua, Lango, and Mandarin Chinese. In total there were 83 pluractional categories distributed over the other 36 languages in the survey, though they vary widely in range and frequency of use.

In comparing how extensively pluractionality is grammaticalised in different languages, number of pluractional categories is only one factor which should be taken into account. Productivity and frequency of use of the pluractionals are at least as important. If a language has three pluractionals which are rarely used, it might be argued to have ‘less pluractional’ than a language with one high frequency category. In a survey of this type, frequency information is mostly lacking (though in many cases, authors of grammatical descriptions note if a category is very restricted in use). Therefore, where ‘degrees of pluractionality’ are discussed (or correlated with other features, like nominal plurality) I base this on the number of pluractional categories in a language along with any available productivity information. I assume that where grammars do not mention restricted productivity, and examples do not suggest it, the category is relatively widely used with different verbs. More detailed studies (such as those presented in chapters 4

and 5) are essential to give a complete picture of the extent to which any given category is used productively or frequently by speakers.

Table 2.2 shows the division of languages in the survey according to how extensively they indicate grammaticalised pluractionality. The categories are defined as follows: (1) languages with no apparent verbal plurality; (2) languages with one or more grammaticalised pluractionals which are used rarely, primarily for stylistic effect, or with a limited class of verbs, or which are highly lexicalised or produce pluractional meaning with only a small subset of verbs; (3) languages one or two productive grammaticalised means of expressing pluractionality which appears to be used with some frequency; (4) languages with two or more such categories.

No pluractionality	Basque, Burushaski, Guaraní, Hixkaryana, Imbabura Quechua, Lango, Mandarin Chinese (7)
Marginal pluractionality	Finnish, Syrian Arabic, Korean, Chalcatongo Mixtec, Turkmen, Russian, Vietnamese (7)
1 or 2 pluractionals	Georgian, Ewe, Kiowa, Hausa, Chechen, Yimas, Kayardild, Fijian, Kannada, Nunggubuyu, Thai, Yagua, Wardaman, Daga, Tzutujil, Yurok, Amele, Southern Sierra Miwok, Wichita, Kobon, Tuscarora, Thompson River Salish, Koasati (27)
>2 pluractionals	Central Alaskan Yup'ik, Evenki, †Hoan, Slave, Southern Paiute, Luvale (6)

TABLE 2.2: Surveyed languages according to number and use of pluractional categories

2.3.2 Forms of pluractionals

The basic morphological features of the pluractional categories were noted: whether these meanings are encoded by full or partial reduplication, affixation, particles, suppletion, or other means.

Reduplication and (typically derivational) affixes are both very common forms for pluractionals. Languages with multiple pluractionals often have both of these types, though of course this depends on the general derivation strategies of the language. For example, Central Alaskan Yup'ik has a huge and highly productive system of verb 'postbase' suffixes, many of which have pluractional meaning, but no reduplication.

The incidence of full and partial reduplication, affixes and other types of construction to express pluractionality in the survey languages is summarised in table 2.3.

<u>Form of pluractional</u>	<u>Number of pluractionals</u>
Full reduplication	6
Partial reduplication	10
Full or partial reduplication ⁶	2
Non-reduplicative affixes	55
Other ⁷	10
Total	83

TABLE 2.3: Forms of pluractional categories

⁶ I.e. both are possible, apparently with the same meaning, or are used with the same meaning but with different verbs.

While nonreduplicative affixes are by far the most common means of expressing pluractionality, a significant minority of pluractionals are indicated by reduplication. This is consistent with the results of Bybee, Perkins & Pagliuca (1994:167), who found iterativity to be the most common meaning of (verb) reduplication, especially full reduplication. No pluractional category in the survey was found to be marked primarily by suppletion.⁸

2.4 Correlation of pluractionals with nominal plurality

Nominal number and pluractionality clearly have a close relationship in their function, as discussed in chapter 1. The interpretation of a verb can be affected by the number specification of an argument. For example, in English, plurality of an argument NP can suggest plurality of action:

(3) Several children cried [multiple instances of crying]

Conversely, plurality of events can indicate plurality of arguments, as in example (3) from Slave where a verb in the seriative aspect denotes multiple action but also (as a consequence) multiple objects:

⁷ 'Other' includes such forms as serial constructions, verb chaining or repetition, internal modification and auxiliaries.

⁸ However, there are languages in which an otherwise derivationally marked contrast has suppletive forms for a subset of verbs. One example is the Russian unidirectional/multidirectional motion pair *idti* 'to go in one direction', *xodit'* 'to go there and back/around/other multidirectional motion'. Chechen also has a number of suppletive pairs of this type, such as *tuoxa-* 'to hit (once)', *d.iatta-* 'to hit (repeatedly)', though the pluractional contrast is more commonly marked by ablaut.

(4) Slave seriative aspect (Rice 1989:594)

yáíhtsin ‘make one after the other, make pl.’

Cusic (1981:111-12) claims that:

A striking fact about languages which have plural verbs is the pattern of agreement which holds between the plurality of the verb and plurality in subject or object noun phrases. Most languages with morphologically signalled plurality in the verb have optional or no number marking in the noun, while the distributive or collective plurality of the noun is often implied by the verbal plurality.

If this pattern is valid, one hypothesis would be that there is a functional overlap between nominal and verbal plurality and perhaps that languages with verbal plurality have less need for nominal number marking. This would be similar to proposals regarding other grammatical phenomena which seem to involve a trade-off between expression on the noun and expression on the verb, as has been argued in work on verbal aspect and nominal definiteness, which may be complementary in certain ways (cf. Filip 2001).

The available data on the surveyed languages does not straightforwardly support this hypothesis. Table 2.4 shows the extent of pluractional marking in languages with full, optional or partial, and little or no nominal number marking.⁹ The distinctions in nominal number are as follows: (1) Most nouns distinguish number; (2) Number distinctions are not available for some types of nouns, or are optional or only found in certain environments; (3) Number distinctions are very limited, typically to human nouns

⁹ Note that these categories are very broad and encompass a great deal of variation within them, especially the second category.

and personal pronouns; (4) Nouns generally do not distinguish number, except for personal pronouns and at most a handful of other nouns.

Nominal number	No pluractionality	Marginal pluractionality	1-2 pluractionals	>2 pluractionals
1 (Most)	Burushaski, Imbabura Quechua	Finnish, Russian, Syrian Arabic, Turkmen	Chechen, Ewe, Georgian, Hausa, Kiowa, Yimas	Central Alaskan Yup'ik, Luvale, #Hoan
2 (Some)	Basque, Guaraní, Lango	Korean	Kannada, Kayardild, Southern Sierra Miwok, Thai, Tzutujil, Wardaman, Yagua	Evenki, Southern Paiute
3 (Few)	Mandarin Chinese		Amele, Daga, Koasati, Kobon, Nunggubuyu, Tuscarora	Slave
4 (None)	Hixkaryana	Chalcatongo Mixtec, Vietnamese	Fijian, Thompson River Salish, Wichita, Yurok	

TABLE 2.4: Correlation between pluractionality and nominal number distinctions

Table 2.5 shows just the numbers of languages without their names.

Nominal number	No pluractionality	Marginal pluractionality	1-2 pluractionals	>2 pluractionals
1 (Most)	2	4	6	3
2 (Some)	3	1	7	2
3 (Few)	1	0	6	1
4 (None)	1	2	4	0

TABLE 2.5: Pluractionality and nominal plurality (numbers of languages)

If nominal plurality and pluractionality tend to overlap functionally as ways of indicating plurality of participants, then a cluster of languages might be expected in the shaded corner cells. Languages with an extensive system of pluractionals should have less widespread nominal number distinctions (though Cusic does not comment on whether or not the reverse occurs or should be expected). Clearly, while a group of languages with regular pluractionality also has little nominal number marking, a similar-sized or larger group of such languages has more widespread nominal number marking. Moreover, of the seven languages which appear to lack pluractionality, only three have near-universal nominal number marking. Near or complete absence of nominal number marking is rare in all types of languages.

The large group of languages with one or more regular pluractionals and either partial or little nominal number marking is difficult to assess without more detailed study. It appears that partial or optional nominal number marking is relatively common in languages both with and without pluractionals. However, it is possible that nominal number marking is less frequent in exactly the types of situations in which pluractionals tend to pluralise arguments. Thus, while there is no strong evidence from this relatively crude measure to support an inverse correlation between nominal number and pluractional marking, further examination may reveal them to have complementary functions with respect to indicating argument plurality. It has been established crosslinguistically (Nichols 1992:146, Corbett 2000:56) that nominal number distinctions, if not present in all nominals, will be present at the top of the animacy/empathy hierarchy (cf. Silverstein 1976) and absent in NPs of low animacy/empathy. Across languages, cut-offs are found at all points along the continuum:

speaker > addressee > 3rd person > kin > human > animate > inanimate

Some examples of this from the languages in the survey are summarised in (5):

(5) a. Southern Paiute (Sapir 1930)

Plural suffixes are limited to animate nouns (including pronouns). Both animate and inanimate nouns allow optional reduplication to indicate plurality, though this (originally) has a distributive meaning.

b. Koasati (Kimball 1990)

Singular/plural distinction in 1st and 2nd person pronouns; optional plural marking for nouns referring to humans

c. Amele (Roberts 1987)

Number distinguished in pronouns and kinship nouns only

d. Lango (Noonan 1992)

Personal pronouns distinguish number; otherwise, “[p]lurals regularly appear only with human and animal nouns and common tools or implements” (ibid.:83)

Nominal plurality is most frequently marked in high animacy NPs. Pluractionals, on the other hand, primarily pluralise intransitive subjects and/or transitive objects (though a

few pluralise S+A or S+A+O). Table 2.6 shows the number of pluractional categories in the surveyed languages which pluralise each type of argument:¹⁰

<u>Pluralised argument</u>	<u>Number of languages</u>
O only	10
S only	4
	(2 of which pluralise only S of stative)
A only	0
S/O	12
S/A	4
S/A/O	5

TABLE 2.6: Arguments pluralised by pluractionals

Of 35 pluractional categories in the survey languages which can have an argument-pluralising function, 26 pluralise only absolutive arguments, i.e. transitive objects and/or intransitive subjects. In addition, some of the pluractionals which pluralise S or S/O also pluralise mainly (or only) nonagentive subjects. For example, in Yurok, verbal reduplication often pluralises objects, and also stative and unaccusative intransitive subjects:

¹⁰ These classifications are sometimes based only on examples, if there was no discussion of argument pluralisation in the grammar. In these cases, it is possible that additional arguments could be pluralised but were not exemplified.

(6) Yurok (Garrett, Blevins & Conathan 2005)

hl'ewkwoh	to be broken	hl'ekwhl'ew	to be broken (of several things)
ket'ey	to park, moor	ket'ket'ey-	to lie (of boats)
yekwohs-	to bend, fold	yekwoyekwoh	to fold several things

Transitive objects have been studied crosslinguistically and the markedness of different types of transitive objects can be defined in terms of the animacy hierarchy (Comrie 1979, Croft 1990:127). It is interesting that unmarked (prototypical) transitive objects are low-animacy/low-definiteness.¹¹ In other words, nominal plurality is most often marked on high animacy NPs, while verbal plurals mainly pluralise a class of arguments which are prototypically of low animacy. In certain languages and in certain contexts either a pluractional or a nominal plural marker may have the effect of pluralising the same argument, but the central uses of the two types of plurality pluralise different types of arguments. Thus, while the strong claim that languages with pluractionality are likely to lack nominal number is not borne out, there is a potentially complementary relationship between the two phenomena.

2.5 Pluractionals and argument-numbered verbs

As already noted, Durie (1986) has shown that it is quite common across languages to find pairs of either suppletive or derivationally related verbs which differ depending on

¹¹ If a language lacks overt case marking for some class of direct objects, the unmarked cases—the most prototypical direct objects—will be low in animacy and definiteness. For example, Croft (1990:114-115,

the singularity or plurality of the transitive object or intransitive subject. I refer to these as argument-numbered verb pairs, and have already suggested that there are good reasons for treating them as distinct from the phenomenon of pluractionality, though potentially related to it (in contrast to Corbett 2000 and Collins 2001, for instance, who group these together). Distributives, which have some similarities to plural-argument verbs, are discussed in the sections on pluractionals proper for the reasons outlined in chapter 1.

2.5.1 Forms of argument-numbered verbs

Argument numbered verbs are formed by both derivation and suppletion (Durie 1986). The pattern of forms these verbs take is somewhat different from the patterns noted above for pluractional verbs. Table 2.7 shows the numbers of languages in the survey with various different types of argument-numbered verb forms.

Nonreduplicative affixation	1 (Nunggubuyu)
Suppletion	4 (Georgian, Kiowa, Wichita, #Hoan)
Suppletion + nonreduplicative affixation	6 (Burushaski, Thompson River Salish, Yurok, Slave, Southern Paiute, Daga)
Internal modification	1 (Chechen)
Suppletion + internal modification	1 (Koasati)

TABLE 2.7: Forms of plural-argument verbs

data from Shackle 1972:69) discusses the case of Punjabi, where pronominal direct objects, animate nouns and definite inanimate nouns require a postposition while indefinite inanimate nouns are unmarked.

Of the thirteen languages with definite argument-numbered verb pairs, suppletion is found in eleven (sometimes along with other forms). The verbs in (7) and (8) exemplify such pairs in Georgian and Yurok. In Yurok, for example, there are suppletive pairs which cover a range of meanings including motion and position as well as other basic activities like eating and talking:

(7) Georgian singular and plural verbs (Aronson 1990:406)¹²

gat'exs	'break something'	daamt'vrevs	'break (e.g. dishes)'
mok'vdeba	'someone dies'	daixocebian	'they die'

(8) Yurok (Garrett, Blevins & Conathan 2005)

chwinkep-	'to speak'	tohkow	'to talk together'
chyuuk'wen	'to sit'	rek'iin	'to sit (pl.)'

In this respect, plural-argument verbs contrast with pluractionals, which I noted in section 2.3.2 are almost never suppletive. Two explanations for this difference suggest themselves. First, the most obvious difference between plural argument verbs and pluractionals is that the former type tends to be restricted to a small number of verbs, where the latter is often a widespread semantic contrast for which a suppletive system seems implausible. However, this apparent difference might be misleading, as the second proposal suggests: if a few suppletive pluractional-nonpluractional pairs exist in a particular language, they may be less likely to be noticed as pairs than a similar class of

argument-numbered verb pair. Distinctions in nominal or participant number are widespread and commonly inflectionally marked, and therefore argument-numbered verb pairs may stand out precisely because their meanings seem “similar” (indicating the same event but with one versus multiple participants in a particular role). Suppletive pluractionals, on the other hand, may simply be regarded as independent roots with unrelated meanings. For example, there are arguably suppletive pluractional-nonpluractional pairs in English, such as *hit-beat*.

In addition to the findings with respect to suppletion, argument numbered verb pairs which involve derivational morphology tend to have different morphological characteristics from pluractionals. While pluractionals are most frequently marked by nonreduplicative affixes, reduplication is still relatively common (as shown in table 2.3), yet reduplication is apparently not a typical marker of plural argument verbs. A proposal from Bybee, Perkins & Pagliuca (1994) regarding the grammaticalisation of reduplication and its meanings may be relevant to this observation. They suggest that all reduplication begins as full reduplication and may be reduced by phonological erosion and assimilation. The meaning of reduplication evolves alongside its form, and thus full reduplication “expresses the earlier, fuller meaning of reduplication, while the partial reduplications express more general meanings and meanings that occur later on the evolutionary path” (ibid.:167). They predict that full reduplication is maximally iconic, i.e. “the repetition of the verb signals repetition of the action described by the verb”, and note that iterativity is the meaning most commonly associated with verb reduplication, which supports their prediction (ibid.:168-9).

¹² Transliterated from the original which uses the Georgian alphabet.

To summarise, suppletion and affixation are common forms for indicating differences in argument number, while reduplication and affixation are common for pluractionals. The absence of suppletive pluractional forms may be incidental, but the absence of reduplicative plural-argument verbs is plausibly not so.

2.5.2 Meanings of argument-numbered verbs

This section will briefly consider the semantics of verbs with suppletive singular/plural-argument stems. Durie (1986:363) notes that “verb stem suppletion appears to invariably select for the number of the absolutive argument”. Durie’s survey includes over 40 languages with argument-number suppletion. The same pattern is illustrated in (9) and (10) with examples from the surveyed languages.

(9) †Hoan

||a’a-si cui -‘a ki |’on tc’one

thing-dim drop.sg perf prep tree on

‘The thing has dropped from the tree’ (Collins 2001:472)

||a’a- |a’a gun ki |’on tc’one

thing-pl drop.pl prep tree on

‘The things have dropped from the tree’ (Collins 2001:472)

(10) Thompson River Salish

łqw=áp-m ‘to sit down, stay at home’

łáq-ix ‘plural persons sit down (in group)’

(Thompson & Thompson 1996:1216)

The absolutive argument is also the participant most commonly pluralised by ‘true’ pluractionals, as noted above, and the reasons given for this are also relevant here. The absolutive argument is typically the affected participant, and if the verb involves a change of state then repetition of the occurrence it denotes may require plurality of the affected participant (as discussed in section 2.4.1). Similarly, since the affected participant is more ‘inherent’ to the action of the verb, its singularity or plurality has a larger effect on the nature of the event, and thus suppletive pairs are likely to distinguish number in this participant.

Suppletive plural argument verbs are always limited in number—Durie (1986:356) notes “reported totals ranging from a few to a few dozen”. The survey data show a consistent pattern in the semantic classes of verbs which distinguish argument number in this way. Verbs tend to refer to motion and position, along with other basic (often culturally and socially central) activities, like eating and talking. This can be seen in examples (8), (9) and (10) above, as well as in the following representative examples of argument-numbered stems from Southern Paiute:

(11) Southern Paiute singular and plural stems (Sapir 1930:242)

ya-, yaŋwi-	‘to carry one (object)’	yu’a-	‘to carry several (objects)’
avi-	‘one lies’	qwavi-	‘several lie’
pa(i)yi-	‘one returns’	pan·aya-	‘several return’
ap·ii-	‘one sleeps’	aq·ɔ’i-	‘several sleep’
paq·a-	‘to kill one (anim.O)’	qɔ’i-, qɔyɔ’i	‘to kill several’

The particular range of semantic fields in which verbs may have suppletive number forms is interesting. Motion and position verbs denote actions and situations which are ‘basic-level’ in several respects: concrete, spatial, and prime sources for grammaticalisation. For example, the grammaticalisation of stance/posture verbs as auxiliaries and aspect markers is common across languages (Heine & Kuteva 2002). In addition, they denote types of action which are significantly (visually and spatially) different when they involve multiple rather than single entities.

Durie suggests that singular/plural stem pairs are the extreme form of a more general phenomenon—verbs which semantically encode argument number. It seems that they are restricted to verbs and arguments where number might have a maximal effect, producing essentially different events. Spatial configurations, for example, constitute one area in which English has apparently plural argument verbs such as *gather*, *scatter*.¹³

2.5.3 Correlation between plural argument verbs and pluractionals

A final question of interest with respect to argument-numbered verb pairs is whether their presence has any positive or negative correlation with the presence of pluractionals. Thirteen languages have (suppletive or derivational) argument-numbered verbs, twelve of which have at least some pluractional verbs. In other words, twelve of the 36 languages with pluractional markers also have argument-numbered verbs, compared to one of the seven languages which have no pluractionals. Given the small number of languages concerned, no firm conclusions can be drawn from this, but these numbers suggest a possible connection between the two phenomena.

2.5.4 Summary

The survey data show that pluractionals are frequent across a wide range of languages. Affixes and reduplication are the most common forms for pluractionals. Plural-argument verbs, in contrast, are typically formed by suppletion or affixation. I have also shown that pluractionality has no clear correlation with the absence of nominal plurality, and have proposed an explanation for this which suggests that nominal plurality and verbal pluractionality may behave in a complementary manner with respect to the types of NPs they most commonly pluralise.

¹³ These verbs seem to require semantically plural arguments, though of course not necessarily grammatically plural ones.

2.6. Variations in pluractional meaning

A major goal of this survey is to identify significant parameters on which pluractional meanings may vary, and the most general meaning distinctions which occur across languages. Based on the data collected, I developed the following list of common parameters of variation. This is not an exhaustive list but contains those features for which information was relatively easily recoverable from grammars, and covers most of the major distinctions proposed by Dressler (1968), Cusic (1981) and Xrakovskij et al. (1997).

(i) *Single/multiple occasions*

This feature is binary: either a pluractional may indicate repetition on multiple occasions or not. Single occasion repetition is taken to be the default in the absence of explicit evidence that the pluractional can indicate repetition on multiple occasions.

(ii) *Continuity/intermittence of repetition.*

In evaluating the temporal continuity of different types of repetition I distinguished between continuous and noncontinuous, where continuity was the default (not necessarily implying strict continuity but rather lack of explicitly required separation). Categories which did not qualify as continuous are those which have meanings like ‘do now and then’, ‘do intermittently/off and on’, or frequentative-type meanings (‘do often’) requiring separation of events in time.

While coding the data it became clear that in some cases a more fine-grained distinction might be made within the ‘continuous’ category, primarily based on the

meaning of pluractionals when applied to different types of activity predicates (motion and non-motion). Activities do not lend themselves easily to meanings of continuous repetition, but generally have one of three possible resulting meanings. Pluractionalised activity predicates can either denote continuous (extended) action or intermittent periods of action. An additional possibility for motion predicates is that when pluractionalised they acquire a multidirectional interpretation, such as ‘move around’, ‘move here and there’, or ‘move back and forth’—in other words, the pluractional multiplies phases of motion, where phases are distinguished by change of direction rather than a gap in time or completion of some kind (as is common with non-activity predicates). This role of directionality in bounding motion phases is an interesting issue for investigation. Unfortunately this detailed distinction could not be sufficiently reliably coded across many of the surveyed languages, and so I simply suggest that this finer distinction might prove useful in future studies of pluractionality.

(iii) *Argument pluralisation*

Pluractionals can imply the plurality of an argument or distribute repetitions over a plural argument. For each category, it was noted whether such an interpretation of S, A, or O arguments was a possible meaning of the pluractional.

(iv) *Participant distributives*

From those pluractionals which indicate argument plurality I separate those which lack a basic repetition meaning, and only indicate plurality of events via plurality of participants

(i.e. those with meanings like ‘do one after another’). These are also considered alongside pluractionals with only spatial distribution interpretations (‘do here and there’).

(v) *Spatial interpretations*

Pluractionals may have an interpretation of spatial distribution of events. In such cases, the meaning may apply only to certain classes of verbs (motion verbs or states, for example) or it may apply more generally. Also in this category are true spatial distributives, categories which only have pluractional meaning involving spatial distribution. Such categories will be considered along with participant distributives, as noted above.

(vi) *Number of phases/repetitions*

There was a clear distinction in the survey data between two instances and multiple instances, but no finer distinctions were made. Differences in glossing between, for example, ‘do multiple times’ and ‘do several times’ were not considered indicative of meaning differences across grammars, since there is a good chance these are due to variation in authors’ glosses or speakers’ translations. However, the contrast between ‘two’ and ‘multiple’ was taken to be clear.

(vii) *Simultaneity/sequentiality*

Multiple events may occur in sequence (over time) or may occur simultaneously (if there are multiple participants or spatial locations involved). Pluractionals always indicate plurality in at least one of these three dimensions of time, participants and space. While

repetition in time is perhaps the most typical meaning for pluractionals, if repetitions are distributed across locations or participants they need not be sequential. Where they are sequential, this is often reflected by glosses such as ‘one by one’. The values for this feature are simply + and – sequential.

Other features

A number of other features will not be covered here. I assume, at least for now, that the following are more specialised nuances of a subset of pluractionals which seem to apply ‘on top of’ the basic features of repetition: augmentation and diminution; degree of effort; and direction of action (though multidirectional motion is noted with spatial distributivity).

Another important distinction which was omitted from the list above is the distinction between event-external and event-internal repetition (repetition of complete events versus repetition of phases within events). This was disregarded for the purposes of coding the data on the assumption that the distinction could not be directly recovered from the information in grammars. However, I will return to this distinction in section 2.7 and suggest that there is a pattern of co-occurring features which may identify event-internal pluractionality.

Summary

The data were coded for a range of basic characteristics for which there is a good level of evidence. While there are certainly more features which could be examined, these include

many of the apparently most basic features discussed in earlier typologies, such as number of occasions, identity of participants and spatial distribution.

There are, of course, gaps and question marks in the data, and the findings presented here are based on classifications which best fit the available data.

2.6.1 Repetition on single vs. multiple occasions

For most pluractionals in the survey, examples largely suggest repetition on a single occasion. However, in many cases it is not clear that multiple occasion repetition is excluded. For example, the Evenki pluractional verb below, though probably involving a single occasion, could potentially be distributed over multiple occasions:

(12) Evenki dispersive aspect (Nedjalkov 1997:251)

sura- ‘ask’ sura-kta ‘ask several questions’

Clear multiple occasion meanings were only found in 16 of the 83 pluractional categories. I also identified another 5 categories which seemed extremely likely to permit a multiple occasion interpretation, though this could not be determined definitively from the examples (usually because a translation was slightly ambiguous). Even including these extra five categories, the number is relatively small number, and it is likely that at least some of the remaining categories may indicate repetition on multiple occasions even though such examples are absent from the grammars in question. One possible reason

that this might be expected is because the single occasion examples are most striking and more clearly distinct from habituals.¹⁴

However, even based on the small list above there are certain patterns. First, it seems that duplicative and reversative categories are likely to indicate multiple occasion repetition. They refer to a single repetition or reversal of an action, and there is no evidence to suggest that occurrence of the first action is required to be on the same occasion as the second. This is exemplified by the Ewe repetitive/frequentative auxiliary *ga-* in (13).

(13) Ewe repetitive/frequentative auxiliary *ga-* (Duthie 1996:41; tentative gloss mine)

Kofi lá ga dzó etsɔ

Kofi FUT REP leave tomorrow

Kofi will leave again tomorrow

There are also a number of explicit frequentatives, meaning ‘do often, do regularly’ (for example, a postbase in Yup’ik glossed as ‘regularly’).

In comparison, the glosses and examples of some categories strongly suggest that repetition is restricted to one occasion. For example, this is the case with some uses of the extensive suffixes in Luvale.

¹⁴ In chapter 1, I argued that habitual and continuative aspectual categories are not inherently pluractional categories though they have a number of similarities in meaning.

(14) Luvale extensive suffixes (Horton 1949:99-100)

-jingumuka	turn briskly
-j'ingwomwoka	oscillate
-telumuka	turn away to side
-telwomwoka	stagger from side to side

Such examples are similar to Cusic's examples of event-internal repetition (which he defines as being inherently restricted to a single occasion), and I will return to them in section 2.7. However, there are also a number of intermediate cases in which, while glosses mainly suggest single occasion repetition, multiple occasion interpretations sometimes seem possible. In (15) I give three examples of reduplication in Yimas, the first two of which refer to a single occasion, the second of which might refer to repetition on one or more occasions.

(15) Yimas iterative reduplication (Foley 1991:318-319)

- a. kaywi na-iratay-kwalca-kia-ntut
daughter II SG 3SG S-cry(RED:*iray*-)-rise-NIGHT-RM PAST
'(His) daughter woke up crying and crying.'
- b. na-mpu-wurtwurt-tay-pra-kia-k
3SG O-3PL A-put down(RED:*wul*-)-try-toward-NIGHT-IRR
'They kept trying to put it down in the water as they came.'

- c. arm m-um ima-mpu-nan-nanaŋ-
 water NR DIST-1 PL water O-3PL A-2SG D-DUR-
 apapi-ŋa-ntut
 put in(RED:*api*)-BEN-RM PAST
 ‘They were repeatedly gathering water for you all.’

Most pluractional categories seem to be able to describe repetition on a single occasion, with only a few specifically frequentative categories clearly limited to multiple-occasion meanings.

However, it is interesting to note that in some cases the distinction between single and multiple occasion repetition depends on the interaction of a pluractional with other grammatical features. For example, in Nunggubuyu (Heath 1984:341), iterative reduplication has a multiple occasion meaning specifically in negative contexts—in other words, instead of meaning ‘not V repeatedly’, the combination of a negative with the pluractional produces the meanings ‘repeatedly not V’. A similar phenomenon is found in Yurok and this will be analysed in chapter 4 as a type of neg-raising (cf. Garrett 2001a).

2.6.2 Continuity vs. intermittence

As described above, variation in continuity of repetitions is classified as either continuous, discontinuous, or either (typically depending on the verb with which the

pluractional occurs). Disregarding the cases in which continuity was not applicable, or where no assessment could be made, the distribution of categories is as follows:¹⁵

+ Continuous	50
- Continuous	11
+ / - Continuous	16

TABLE 2.8 Continuity of repetitions

In general, pluractionals indicating explicitly discontinuous events are infrequent. Those pluractionals which fall into the third class (+/- continuous) are particularly interesting, and in some cases relevant to the more detailed categorisation of continuity outlined above, based on the behaviour of activity verbs. For example, the Yup'ik 'repeated/reversative' postbase seems to indicate reversal of direction with motion verbs, but with other kinds of activities it has an intermittent meaning, as shown in (16).

(16) Yup'ik 'repeated/reversative' postbase (Jacobson 1995:539)

ane-	'to go out'	anqetaartuq	'he is going in and out'
ayag-	'to leave'	ayaketaartuq	'he is leaving, then returning, then leaving again'
nere-	'to eat'	nerqetaartuq	'he keeps eating at intervals'

¹⁵ Note that the numbers in the table do not add up to 83. The missing pluractionals either had no value for continuity (e.g. because they express only simultaneous participant distributivity) or, in one case, because

It is interesting to note that while the pluractional postbase in (16) indicates multidirectional motion and discontinuous (non-motion) events, multidirectional motion is also a common meaning of motion verbs with categories which otherwise indicate continuous repetition (and thus is presumably regarded as an event boundary but not a discontinuity between events).

Other pluractionals which fall into the last class are those which seem to indicate repetition on either one or more than one occasion. For example, the Yurok Intensive can indicate repetition which is continuous on a single occasion or distributed over multiple occasions, as will be seen in detail in chapter 4.

Duplicative and reversative categories with meanings like ‘again’ generally do not seem to be restricted to continuous repetition (so long as there are two instances of the action) and in some cases clearly indicate repetition on separate occasions. However, the specifically discontinuous pluractionals do not all indicate repetition on multiple occasions; several can indicate repetition which appears to be on a single occasion but with a meaning such as ‘off and on’, ‘now and then’, ‘intermittently’.

(17) Russian *po-* + *-va* intermittent action verbs (Wade 1992:270)¹⁶

blestet’	to shine	pobleskivat’	to glint
smotret’	to look	posmatrivat’	to steal glances at

the examples were simply too ambiguous to determine this feature.

¹⁶ Transliterated from original Cyrillic.

2.6.3 Participant plurality

Participant plurality is the primary meaning of participant distributives as well as plural-argument verbs, but also a secondary meaning of a large number of basic pluractionals.

Participant plurality and participant distribution can be divided into three main types:

i. ‘Obligatory’ participant plurality reading of pluractionals. Like the spatial readings with motion verbs, certain verbs (e.g. creation and destruction verbs and other non-repeatable changes of state) when repeated imply plural objects, even with pluractionals which otherwise do not seem to pluralise objects. For example, this seems to be the case with the Yup’ik postbase meaning ‘do repeatedly’:

(18) Yup’ik ‘repeatedly’ postbase (Jacobson 1984:429-430)

kaugtur- to strike

kaughtuaraa ‘he is striking it repeatedly’

igar to write

igarauq ‘he is writing letters to various people’

In the case of a verb meaning ‘write’, if writing takes place repeatedly then the normal implication is that multiple things are written. The type of object created may be specified (cf. noun incorporation) or may be conventionally understood.

ii. Participant plurality as one meaning of ‘regular’ pluractionals. e.g. the pluractional of ‘kick’ may mean ‘kick many people’ (as an alternative interpretation to ‘kick many times’).

iii. Participant distributives, which will be discussed further in 2.6.4.

As noted in section 2.4, it is common for pluractionals to pluralise either O or S/O (26 of the 35 argument-pluralising categories identified). Less frequently, pluractionals may pluralise A, but only ever as a combined category with S, i.e. pluralising all types of subjects, not just transitive subjects.¹⁷ Categories which pluralise transitive subjects (the least common argument to be pluralised) are more likely than other pluractionals to be distributives, have distributive meaning, and this is discussed further in the next section.

Another question is what the characteristics are of multiple argument-pluralising categories in the same language. It does not appear that languages have any even distribution of the arguments which different pluractionals may pluralise (for example, so that the various possibilities are covered by different categories). In most languages, pluractionals only pluralise the transitive object or the intransitive subject. In addition, there are several cases in which more than one pluractional in a single language will pluralise the same argument (or arguments). For example, Slave has two categories which may pluralise S/A/O, depending on context. One is the ‘seriative’, denoting actions on or by multiple entities in succession, the other is termed the ‘distributive’, but the plural argument readings of the two can be strikingly similar. For example, compare the seriative -í- and distributive -yá- prefixes in their effect on a transitive object:

¹⁷ The pluralisation pattern is an ergative one, grouping together S and O. However, this pattern shows no correlation with syntactic or morphological ergativity in the survey languages (cf. also Durie 1986).

(19) Slave seriative: (Rice 1989:594)

yáíhtsin ‘make one after the other, make pl.

(20) Slave distributive (Rice 1989:677)

ʔónéyágodéla ‘s/he gave them each away separately, one after another’

(cf. ʔónégodéla ‘s/he gave them (animate) away’)

2.6.4 Distributivity

Distributives, while they can be regarded as a subtype of argument pluralisation and spatial distribution meanings, seem to be a special category. They consistently pluralise participants or locations, but unlike plural argument verbs they require pluractionality. Distributives can often be assessed for sequentiality, spatial readings etc. like other pluractionals. They can be thought of as a specific subtype of pluractional which always has spatial or plural-argument readings (and sometimes both). In this section and the next (2.6.5) I will consider some of the properties of distributives in terms of which arguments they pluralise, what kinds of spatial readings they have, and other common features.

In order to count as a distributive, a category had to have no apparent pluractional use that did not involve distribution either in space or across participants, i.e. that consisted of repetition only in time (which can be thought of as the ‘basic’ pluractional meaning).

There are 14 true distributive categories in the languages surveyed; 11 of these have plural argument readings, and 7 spatial readings, including 3 which have *only* a

spatial distribution interpretation (i.e. 5 have both argument and spatial distribution meanings). For example:

(21) Argument plural only: Yup'ik distributive postbase (Jacobson 1984:542)

tekite- 'to arrive' tekitequut 'they are leaving one after another'

nere- 'to eat' ner'qui 'he is eating them one after another'

(22) Spatial plural only: #Hoan "Verb-ing around" suffix (Collins 2001:466)

Titi 'a-kí 'am-q||o

Titi PROG kí[PL] eat-around

'Titi is eating around (e.g. in several places in one day)'

(23) Argument and spatial plural: Evenki distributive (Nedjalkov 1997:251):

d'ava- 'take/seize'

d'ava-ty- 'take/seize several objects one by one'

lo:van- 'hang (meat or fish for drying)'

lo:vat- 'hang (pieces of meat or fish for drying) here and there'

Almost all of these categories are indicated by affixes, the one exception to this being unidirectional/multidirectional motion pairs in Russian, which are marked by stem-internal consonant or vowel changes, among other forms:

(24) Russian unidirectional/multidirectional motion verbs (Wade 1992:340)

bezhat' run (in a single direction)

begat' run (there and back, or in multiple directions)

Distributives also seem to pluralise different arguments from other pluractionals, as can be seen from the figures in table 2.8.

<u>Argument pluralised</u>	<u>Non-distributives</u>	<u>Distributives</u>
O	7	3
S	3	1
A	0	0
S/O	9	3
S/A	2	2
S/A/O	3	2

TABLE 2.8: Argument pluralisation by distributive and non-distributive pluractionals

Distributives and non-distributive pluractionals have different patterns of argument pluralisation. While distributives still have a tendency to distribute only S and O arguments and exclude A (7 out of the 11 categories), the tendency appears to be less strong than with non-distributive pluractionals (19 out of 24 categories). The possibility of pluralising agents seems quite a natural property for distributives to have. Pluractionals in general tend to pluralise affected arguments, often as a consequence of the change of state denoted by the verb (especially with creation and destruction verbs, for instance).

Distributives, on the other hand, are highly individuating, tending to place more emphasis on the individual entities which are performing or undergoing the action (with meanings like ‘do one by one’). While this meaning may certainly be applied to transitive objects, subjects are more typically animate and highly individuated. I predict that if another class were distinguished, consisting of pluractionals which do not have a purely distributive meaning but which nonetheless tend to produce distributive interpretations of plural arguments, then these pluractionals would pattern with distributives and the relationship between distributivity and S/A arguments would be more evident.

2.6.5 Spatial distribution readings

Spatial distribution is a common pluractional effect. Multiple instances of an event occur at different spatial locations, either simultaneously or sequentially. These meanings can be divided into four main groups.

First, with motion verbs, spatial distribution readings are a typical result of pluractionality, particularly with temporally continuous categories. For example, the Yup’ik ‘repeatedly’ postbase when applied to motion verbs means ‘around’ (Jacobson 1984:429):

(25) Yup’ik ‘repeatedly’ postbase (Jacobson 1984:429)

akngir-	in pain	akngiaguq	‘he is repeatedly having pains, aching’
aqvaqur-	to run	aqvaquaguq	‘he is running around’

Secondly, some categories are specifically spatial distributives, indicating repetition of an action or situation at various points in space. This is not common but seems to be the case, for example, with the Kiowa active and stative distributive inflections (26):

(26) Kiowa active distributive inflection (Watkins 1984:180)

ó·kó 0-t^hón-dó·-dé-èm à-cán-góm
 well [3sg]-dig-be-nom-where [1sg]-arrive-distr/pf
 ‘I got around to places where wells had been dug’

Thirdly, there are distributives with both spatial and participant meanings, as in Amele:

(27) Amele distributive (Roberts 1987:313)

Uqa sab eu cawal-**ade**-i-a
 3s food that grab-dist.-3s-tod.p
 ‘He grabbed all of that food’

Uqa maha cunug wal-**ade**-i-a
 3s land all search-dist.-3s-tod.p
 ‘He searched the whole land’

Lastly, some categories have spatial interpretations in addition to basic temporal pluractional interpretations, with or without argument plural or argument-distributive interpretations. This is the case with the Koasati multiplicative:

(28) Koasati -ci-(Kimball 1991:329-330)

póckan	‘to squirt’	počí:cin ¹⁸	‘to squirt again and again’
aboyótlín	‘to scatter something’	aboyotlí:cin	‘to scatter something all over’

The first of these types (spatial interpretation only with motion verbs) is common and was discussed briefly in the section on continuity, since multidirectional motion appears to be one type of discontinuity meaning in which change of direction separates the repeated phases or events. The second type, consisting of categories which only have a spatial interpretation, is quite infrequent and occurs only in Kiowa, †Hoan, and marginally in Russian (lexicalised in a contrast between unidirectional and multidirectional motion verbs). The third and fourth types are each represented by a handful of examples in the surveyed languages.

The final question to be addressed regarding spatial distributive interpretations is what types of pluractional meaning they co-occur with—for example, whether any repetition meaning is continuous or discontinuous. The survey data show that categories with a secondary spatial interpretation tend to be continuous. Good examples of this are found in Hausa and Evenki, illustrated in (29) and (30):

¹⁸ Kimball (1991:330) notes: “When suffixed to a verb terminating in the class suffix *-ka*, *-ci*₂ often converts *-ka* to *-li...*”

(29) Hausa pluractional reduplication (Newman 2000:424)

munà ta nannēmansu ‘we kept on looking for them’ (continuous)

sunà buḅḅullôwa ‘They were appearing’ (in numbers or all over)

(30) Evenki dispersive (Nedjalkov 1997:251)

ana- ‘push’ ana-cta- ‘push several times’

in’e- ‘laugh (briefly)’ in’e-cte- ‘smile for some period of time’

d’avra- ‘go by boat’ d’avra-cta- ‘travel by boat in different places’

tuksa- ‘run’ tuksa-cta- ‘run here and there’/‘run in different
places’

This generalisation is not necessarily a strong one, since categories classified as continuous predominate in the survey data. However, it may still be of interest in considering possible parallels between distribution of events in space and time. Spatial distribution (meanings such as ‘here and there’, ‘all over’) presumably involves discontinuity in space. If pluractionals involve a plural operator which can apply to time, space or participants, we might expect that spatial distribution meanings would typically arise with pluractionals which indicate temporally distributed or intermittent repetition, and this is not obviously the case.

2.6.6 Number of repetitions

As explained above, I distinguished pluractional meanings of ‘two’ and ‘many’ iterations. In the great majority of pluractionals, instances are uncounted. There are six categories in the data which refer to two repetitions—either duplicative (‘again’), or reversative (‘back’) meanings. Of these only two *always* refer to two repetitions, the others having this meaning only in certain contexts (and generally a multiple repetition meaning elsewhere).

The two ‘pure’ duplicative/reversative categories occur in Slave (31) and Yagua.

(31) Slave duplicative *na-* (Rice 1989:734)

gohdáká?edachu s/he opened the door

góhdqká?edachú s/he opened the door again (where dá + na → dq)

One common characteristic of duplicatives has already been noted: they seem to be discontinuous or potentially discontinuous, and in some cases the two phases can clearly occur on separate occasions. Although the behaviour of duplicatives is distinctive in some interesting ways, the relative infrequency of this meaning suggests this is a minor semantic distinction in pluractional semantics. While it is possible that duplicatives show correlations with other pluractional features, they will not be discussed further here.

2.6.7 Simultaneity/sequentiality

In some cases, sequentiality appears to be unspecified (i.e. not specifically required, or at least not identified in grammars) and as a result certain spatial and argument readings may not be sequential. For instance, the Georgian examples in (32b) do not seem to suggest sequentiality:

(32) Georgian *da-* preverb (Hewitt 1995:165)

a. Repetitive meaning:

ga-xetk you will split one X

da-xetk you will split them/one X many times

b. Plural O meaning:

ga-gzavni you will send one X

da-gzavni you will send them

ga-jacv-av you will rob one X

da-jarcv-av you will rob them

However, other categories do indicate specifically sequential repetition. For example, this is the case with the Yup'ik postbase *-qu-*, which has an argument-pluralising function.

(33) Yup'ik postbase -qu- (Jacobson 1984:542, partly repeated from example 22)

ayag-	to leave	ayakuut	they are leaving one after another
tekite-	to arrive	tekitequut	they are leaving one after another
nere-	to eat	ner'qui	he is eating them one after another

2.6.8 Summary of features

In this section I have identified a number of parameters on which pluractional meaning can be seen to vary across languages, and which include many of the parameters discussed by Dressler (1968), Cusic (1981) and Xrakovskij (1997).

In some cases, I have shown that these parameters are not fully independent. For example, the number of repetitions indicated is related to the likelihood that intermittent and multi-occasion repetitions are possible; the availability of spatial distribution interpretations seems to be more likely with verbs indicating continuous rather than intermittent repetition; and while pluractionals can pluralise various combinations of S, A and O arguments, distributive pluractionals are more likely than other types to pluralise an A argument.

At this stage, these kinds of observations seem quite disparate, and none of the parameters suggests itself as a primary classificatory distinction between types of pluractional meaning. However, in the next section I will propose that some of these correlations are connected, and that taken together (perhaps along with other features I have not examined) they define a pair of crosslinguistic semantic prototypes of pluractional meaning.

2.7 Event-internal and event-external repetition

Cusic's distinction between event-internal and event-external repetition was initially excluded from the survey. Since many grammars lacked sufficient information to determine whether repetitions could be distributed over multiple occasions or not, distinguishing between event-internal and event-external repetition in the survey data seemed to be impossible.

However, in examining the survey data, I found a significant number of cases in which the pluractional meaning clearly referred to a single complex event. Two main types of examples can be identified, and the verbs in (34) from Yup'ik and Syrian Arabic illustrate both types.

(34) a. Yup'ik %ur- postbase 'do purposely by several actions' (Jacobson 1984:581)¹⁹

alleg-	to tear	allguraa	he is tearing it up
kaleg-	to brush against	kalguraa	he is strumming it
kuve-	to spill	kuvuuraa	he is spilling it out over an area

b. Syrian Arabic augmentative verbs (Cowell 1964:253)

kasar	to break (e.g. in two)	kassar	to break (e.g. to pieces)
safa?	to clap, slap (once or more)	saffa?	to clap (e.g. in applause or rhythm)

¹⁹ % indicates that certain ("weak") base-final consonants are dropped before this postbase (Jacobson 1995:44)

The first type consists of repetition of a semelfactive base verb and the resulting meaning is necessarily confined to a single occasion. This is the case for Yup'ik *kalguraa* 'he is strumming it' and also for Syrian Arabic *saffa?* 'to clap (e.g. in applause or rhythm)'. In both cases, the base event is a more-or-less instantaneous event which does not indicate a change of state. Some typical semelfactive verb meanings are 'cough', 'kick', 'knock', 'flash'. Such an event can, naturally, be repeated on one or more occasions. However, here, when combined with the relevant pluractional category (augmentative gemination in Arabic, the *%ur-* postbase in Yup'ik), the resulting meaning is necessarily restricted to a single occasion. Clapping once on each of multiple occasions does not constitute applause (or, I assume, clapping in rhythm, even if the intervals between claps are regular). Similarly, making a single stroke on the strings of a guitar once on each of several occasions does not constitute strumming. The repetitions of these events form a series whose character (and perhaps purpose or effect) is not the same as that of multiple separate instances of the base event.

The second type involves repetition of an achievement—an event which is basically instantaneous but which *does* involve a change of state. Yup'ik *alleg-* 'to tear' and Syrian Arabic *kasar* 'to break' are of this type. In both of these cases, the meaning of the pluractional form indicates that a single entity has undergone the change of state repeatedly, perhaps to some point of completion (being torn up or broken into pieces). This second type does not obviously fit Cusic's proposed restriction to repetition on a single occasion. For example, it is possible for something to be broken up over a long period of time, with smaller instances of breaking occurring one by one. However, in such a case there is still some sense in which these breaking instances are grouped

together into a larger complex ‘breaking up’ event. The nature of this grouping will be addressed in much greater detail in chapter 3. However, for now I note that Cusic’s requirement of repetition restricted to a single occasion as a diagnostic of event-internal pluractionality does not seem to be adequate—at least without some significantly more developed notion of what counts as an occasion. Both of the types of examples illustrated above strongly suggest repetition of phases which are combined into a single, complex event.

It is not possible to classify all examples included in this survey as indicating either event-internal or event-external repetition: even with a more precise definition of the contrast, glosses of examples are ambiguous in many cases. However, it is possible to identify a significant set of examples like those in (34) which have an event-internal repetition meaning, and as a result to identify a set of pluractional categories in different languages which can produce such a meaning. By examining such categories, I suggest that a pattern of common semantic features can be seen which is characteristic of event-internal pluractionality. Describing this pattern is the goal of the rest of section 2.7.

The survey data include several languages in which a pluractional marker seems consistently to indicate event-internal repetition with different verbs. In Yup’ik, the *%ur-* postbase exemplified in (34) is one such category. Yurok repetitive reduplication is another, as will be discussed in detail in chapter 4. Other likely examples include the Southern Paiute durative-iterative; Koasati multiplicative *-ci*; Kobon iterative aspect; Evenki iterative/multiplicative suffixes; Turkmen repetitive; Tzutujil lentitive and repetitive suffixes.

There are also cases in which a single pluractional marker has both event-external and event-internal-type interpretations, apparently depending on the verb with which it combines. For example, Kayardild verbal reduplication is illustrated by Evans (1995) with several different verbs. With some, the reduplication indicates a plural subject or simple repetition of an event (35a,b). However, with others, the resulting meaning is similar to the Yup'ik and Syrian Arabic examples above: repetition is inherently confined to a single occasion (35c).

(35) Kayardild verbal reduplication (Evans 1995:290)

(a) Plural subject

maku-wala	jani-jani-ja	niwan-ji
woman-lot(nom)	search-REDUP-ACT	him-MLOC
‘Many women searched for him’		

(b) General repetition

waldarra	jabi-jabi-j,	kurumbu
moonNOM	shudder-REDUP-ACT	barbed spearNOM
‘Moon shuddered and shuddered, but the spear could not be pulled out’		

(c) Event-internal repetition (inherently single-occasion)

kurdalatha	‘spear at, try to spear’
kurdala-kurdalatha	‘dig in sand with stick for eggs’
ngawiiija	‘breathe’
ngawinyawija	‘pant’

For the purposes of this section, I do not distinguish between these two types of event-internal pluractionality. However, languages with each type will be investigated in detail in chapters 4 and 5: Yurok, which has an event-internal pluractional marker; and Chechen, which has a single pluractional formation which produces both event-internal and event-external meanings, depending primarily on the semantics of the base predicate.

Features shared by many of the examples of event-internal meaning include: continuousness in time; inherent multiplicity; Aktionsart of the base verb; and singular or collective arguments. I will consider each of these characteristics in turn.

2.7.1 Continuousness in time

A high degree of continuity of repetition is common in the class of recognisable event-internal pluractionals. Intuitively this seems obvious: the longer the gap which exists between repetitions, the less likely they are to be regarded as parts of a single event, and the less clear the distinction between one and more than one occasions becomes. Prototypical events presumably occur in a continuous period of time. No clearly

intermittent meanings were found which suggested a single event (for example, a meaning such as “to break into pieces by breaking now and then”).

2.7.2 Typical or inherent multiplicity

With respect to the Kayaradild examples in (35c), Evans (1995:290) notes that the actions (digging, breathing) are “inherently multiple”. Many examples of event-internal pluractionality involve events which typically or inherently occur as multiple repetitions (e.g. clapping, strumming, as in 34). Often these are verbs with which multiple repetitions of an action are commonly performed for a single purpose or with a common result, or which refer to naturally repeated processes (like shivering, coughing and sneezing).

I observed in 2.6.6 that pluractionals indicating only two repetitions often seem to permit intermittent or multiple-occasion interpretations. It is not surprising, then, to note that such pluractionals do not occur with event-internal pluractional meaning—all clearly event-internal examples involve multiple, uncounted repetitions.

2.7.3 Aktionsart of the verb

Certain types of verbs, and in particular certain Aktionsarten, appear to be more likely than others to occur with event-internal pluractional meaning. As noted already, semelfactive predicates frequently form pluractionals with this type of meaning. Additional examples from Turkmen are given in (36).

(36) Turkmen repetitive suffixes (Clark 1998:537)²⁰

/θilkmek/ 'to shake' /θilkelemek/ 'to shake, quiver'

/baθmak/ 'step on' /baθgılamak/ 'trample'

The nature of semelfactive predicates means that they are generally easily repeated in quick succession, and therefore may lend themselves to an interpretation of continuous repetition when pluralised. Moreover, many of these verbs are typically or inherently multiple, as discussed in 2.7.2.

Achievements also commonly occur with event-internal type interpretations, as already illustrated with the Yup'ik and Syrian Arabic examples in (34) and further exemplified by Koasati in (37):

(37) Koasati *-ci* (Kimball 1991:329-330)

páħin 'to split something up'

páħi:cin 'to splinter something'

tařabanáp-ka-n 'to jump over'

tařabanap-lí:ci-n 'to overflow'

Unlike the semelfactive base verbs, pluralised achievements of this type are characterised more by their cumulative effects than by the strict continuity or rhythmic nature of the

²⁰ Clark gives both Cyrillic and phonemic forms. I reproduce only the phonemic forms for convenience.

repetitions themselves. However, the cumulative effect on a single object sometimes gives the pluractional verb an apparently bounded, accomplishment-like interpretation, as in the following example (again from Turkmen).

(38) Turkmen repetitive suffixes (Clark 1998:537)

/owmok/ to make small

/owkolomok/ to grind, to crumble

Repeatedly making something smaller has an endpoint defined by the effect on the object. Grinding or crumbling, for instance is complete when the object is (completely or appropriately) ground.

It is interesting to note that only some types of achievements have this apparent event-internal pluractional meaning. Verbs of instantaneous action on an object (with meanings like ‘break’, ‘pick’, ‘drop’) are common, whereas achievement verbs with meanings like ‘arrive’ and ‘die’ do not seem to show this behaviour, and I will consider this difference further in chapter 3.

The remaining types of predicate are activities, accomplishments, and states. States are relatively infrequent in the survey data and are nonprototypical events, and I leave them aside for now.²¹

²¹ This is perhaps because unless a category applies *only* to stative verbs, the examples most typically representative of pluractional meaning are those involving repetition. A few examples of stative verbs with a pluractional which otherwise appears to indicate event-internal repetition are found with the Koasati *-ci* suffix (Kimball 1984:329). When applied to states, this suffix can produce a spatial distribution meaning: *aboyótlín* ‘to scatter something’ > *aboyotlí:cin* ‘to scatter something all over’, etc. Without actual examples it is unclear whether ‘all over’ refers to free spatial distribution or to distribution over an object (e.g. ‘all

Activities are extended in time but with no inherent boundary, whereas accomplishments have a final transition or change of state. Many pluractionals when applied to an activity produce a meaning of durative or extended action. Since activities have no inherent boundaries, any temporally continuous repetition of an activity can only arbitrarily be divided into distinct events and thus might be regarded as event-internal repetition. Example (39) from Kobon is of this type.

(39) Kobon iterative aspect suffix –ö (Davies 1981:173)

Aram-ö Ribam nö daŋ han-no

go-iter Ribam ridge across sleep-rempast1pl

We kept on going and slept across at Ribam

Whether or not such examples truly behave as single events must be addressed in studies of specific languages, as must the question of whether pluractional categories which have exclusively event-internal pluractional meaning can apply to activities. The second of these questions will be addressed in the examination of Yurok in chapter 4.

Accomplishments, by contrast, do not appear to produce event-internal interpretations when repeated. No instances of repetition of accomplishments were obviously restricted to single occasions, or to have a single completion of the type found with repeated achievements. For example, accomplishments occur with duplicative

it is unclear whether ‘all over’ refers to free spatial distribution or to distribution over an object (e.g. ‘all over the bed’). Another non-stative example suggests it might be the latter: *wananátlin* ‘to shiver’ > *wananatlí:cin* ‘to shiver all over’ (ibid:329)

meanings, as in (40), and with repetition meanings, as in (41), but in neither case does the repetition have any obvious characteristics of event-internal repetition:

(40) Luvale repetitive suffixes (Horton 1949:99)

-sónonona re-write

-ámbulula repeat what was said, tell, relate

(41) Yup'ik +a- postbase 'to V repeatedly' (Jacobson 1984:429-430)

igar- to write igarauq he is writing letters to various people

atur- to sing atarauq he is singing various songs

I will argue in chapter 3 that the absence of apparent event-internal interpretations of accomplishments is not an accident, and that accomplishments are typically incompatible with event-internal repetition.

Based on the survey data, the main conclusions that can be drawn are: that distinctive event-internal pluractional meanings are commonly seen with semelfactive and achievement base verbs; that activities often produce a durative interpretation which may also be event-internal in meaning; and that there is no evidence from the survey data that accomplishments can occur with event-internal pluractional meaning.²²

²² As will be seen in the next chapter, accomplishments *can* occur with event-internal pluractional meaning, but they are coerced into a conative reading (without the final boundary).

2.7.3 Common cause, goal or result

One class of event-internal pluractional meanings was identified above based partly on the presence of a single final boundary: repeated achievement verbs as exemplified by Yup'ik *alleg-* 'to tear' > *allguraa* 'he is tearing it up' in (34). More generally, it is possible to identify series of repetitions which share common causes, goals or results. For example, this is the case with the following examples from Southern Paiute:

(42) Southern Paiute durative-iterative –yi- (-ŋqi-) (Sapir 1930:150)

taŋ'wi'tciɣɪ' keeps time by tapping with (his) foot

ta'pi'ŋ'ana'χiŋqi' stamps (on the ground to make it smooth

2.7.4 Argument types

There appears to be a restriction on the treatment of arguments of an event-internal pluractional. In a number of languages, pluractionals allow event-repetitions to be distributed over participants. For example, pluractional reduplication in Hausa has this use. The pluractional in (43a) contrasts with the non-pluractional form in (43b).

(43) Hausa reduplication (Newman 2000:423)

a. mutànē sun fĩfita

'The men went out (one by one or going in and out)'

b. mutānē sun fīta

‘The men went out (non-plural)’

However, such meanings are not found with event-internal pluractionals. With an event-internal pluractional, both the subject and object are either singular or appear to be interpreted as a group. For example, while pluractionals often pluralise transitive objects, the pluractional markers which regularly produce event-internal meanings either indicate repeated action on a single object or action on multiple objects which are not highly distinct, and which in many cases seem to be plural because the verb indicates a non-repeatable change of state. The Syrian Arabic augmentative exemplified earlier in (34) shows just such behaviour:

(44) Syrian Arabic augmentative verbs (Cowell 1964:253)

ʔa^ʕtaf to pick (e.g. a flower) ʔa^ʕt^ʕtaf to pick (e.g. many flowers)

Pluractionals of this type do not appear to indicate a plural argument with an interpretation such as ‘each’, ‘separately’ (the type of interpretation found with participant distributives). I have also found no examples in which an apparently event-internal pluractional pluralises the agent of a transitive verb.

2.7.5 Summary

I have suggested that there is a discernible pattern of co-occurring features in the survey data which may identify event-internal repetition. Following Cusic (1981), I assume that repetition inherently confined to a single occasion is a diagnostic of event-internal pluractionality. However, I noted above that it does not seem to identify all instances of such repetition; a second identifying characteristic of event-internal repetition is the presence of a final boundary or transition. Examining cases of event-internal pluractionality across the survey languages provides a list of common features of phase-level repetition. While none of these features individually is a necessary property of phase-level repetition, together they define a core or prototype of event-internal pluractionality.

Moreover, the pattern of features outlined in this section can be compared to the findings in section 2.6, and may shed light on some of the correlations observed there. For example, I noted in 2.6.3 that distributive categories are more likely to pluralise a transitive agent than other pluractionals. I add to that the observation that distributives do not appear to occur with event-internal meaning, and that event-internal pluractionals do not pluralise transitive Agents. Similarly, duplicative categories often permit repetitions to be distributed over occasions, and duplicative categories never produce event-internal pluractional interpretations. While taking into account the limited nature of the survey data, the characteristics examined here suggest two general classes of pluractional meaning:

- (45) a. Event-internal
high continuity
single-occasion
semelfactive/achievement verbs
plural count
typically or inherently repeated
common goal or completion
pluralises (nonagentive) S or O arguments
- b. Event-external
continuous or intermittent
single or multiple occasions
all Aktionsarten
dual or multiple count
pluralising S/A/O arguments

Comparing these two lists highlights the fact that the characteristics of event-internal pluractionals are in many cases restrictions: limits on the type of verbs, the arguments pluralised, the number of occasions, and so on. In the next chapter I will discuss these characteristics in more detail and will argue that they reflect constraints on the types of repetition which can be treated as a single, internally plural event.

2.8 Summary and conclusions

This chapter has provided a general overview of the frequency and distribution of pluractionals and a number of their major semantic characteristics. The results of the survey show that pluractionals are clearly distinct in form and function from ‘plural’ (argument-numbered) verbs, and that with respect to argument pluralisation they are also different (perhaps complementary) in function from nominal plurality.

I have also identified a set of parameters on which pluractional meaning commonly varies across languages, and several correlations between them. However, the most significant claim with respect to pluractional meaning is that Cusic’s event-internal/event-external distinction can be observed in a number of languages in the sample. Though not always directly grammatically encoded by pluractional markers, event-internal pluractional interpretations have some consistent properties, which I suggest constitute a kind of prototype, and which may reflect some important characteristics of their semantics. This is the issue which will be addressed in the next chapter.

Chapter 3

The semantics of event-internal and event-external pluractionals

3.1 Introduction

This chapter focuses on the contrast between event-internal and event-external pluractional meanings. In chapter 2, I demonstrated the presence of this contrast in the surveyed languages and argued (following Cusic 1981) that it is the most basic distinction in the semantics of pluractionals. However, while the two types of pluractional are identifiable in even the limited data from grammars, the nature of the semantic distinction between them has not yet been addressed.

Cusic (1981), who first proposed the distinction between the two types of pluractionality, does not suggest what the precise behaviour of each type might be or how to identify them reliably. In chapter 2 I described several features of the two types of pluractional meaning, which I will argue provide important clues to their distinct semantics. Event-internal pluractionals are defined by a set of characteristics which tend to co-occur:

1. Verb type: semelfactive predicates commonly occur with event-internal pluractionality, as do certain types of achievements, while accomplishments do not. Activities often seem to receive a ‘default’ event-internal interpretation, since if they are repeated continuously they lack any inherent boundaries which would distinguish separate events.
2. Typical multiplicity: events which are typically or inherently repeated are more likely to be construed with event-internal plurality, such as breathing,

coughing, knocking or digging. Often these types of repetition also have a common goal (e.g. an action of knocking at a door to attract someone's attention involves repetition with a single, specific goal) or incremental theme (e.g. chopping up a log is completed when the wood is in appropriate-sized pieces).

3. Argument types: event-external pluractionals allow repetitions to be distributed over participants; event-internal pluractionals have singular or collective arguments.¹
4. Proximity or continuousness in time: event-internal pluractionals refer to repeated occurrences which are essentially continuous, or which have minimal temporal separation (at a relevant level of granularity). Glosses are typically of the type 'be doing', 'keep doing,' or otherwise emphasise continuity.

In this chapter I will consider how these characteristics might shed light on the semantics of event-internal pluractionals and as a consequence the event-internal/event-external contrast. As discussed in chapter 1, I assume an essentially cognitive linguistic view of semantics (cf. Langacker 1987, 1991): that meanings are conceptualizations and that language has no direct relationship to the state of the world, only an indirect one via conceptual structure. It is possible, therefore, to examine both the relationship between the world and conceptual structure (primarily the domain of psychology) and the relationship between conceptual structure and language (primarily the domain of linguistics). In this chapter I will look at these two relationships together, in the context

¹ Closer examination of Yurok in chapter 4 will show the correct generalisation to be more complex, but for now I adopt this simpler statement based on the results of chapter 2.

of pluractionals: first at what is known about the relationship between characteristics of events in the world and the way they are grouped or individuated by observers; and second, how this knowledge contributes to a theory of pluractional meaning.

In section 3.2 I argue that the characteristics of event-internal pluractionals identified above are crucially linked to their semantics, and provide evidence that event-internal pluractionals genuinely constitute unitary (though complex) events.² I propose that there is a cognitive process of grouping of repeated occurrences, closely parallel to processes of visual grouping which have been well known in psychology since the Gestaltists in the early 20th century. In section 3.3 I consider Lasersohn's (1995) treatment of pluractionals, which includes an account of the contrast between event-internal and event-external meanings. I assess his analysis in light of the data from the cross-linguistic survey and the observations in 3.2, identifying a number of problems which need to be addressed. In section 3.4 I outline a semantics for pluractionals based on Landman (1996, 2000), which draws on the idea of grouping as the basis for an analysis of the event-internal/event-external contrast. I will show that this relatively simple account predicts certain features of pluractionals which have already been established, including the differing behaviour of plural arguments with event-internal and event-external pluractionals. Finally, I consider several issues this account does not address, and argue that a richer theory of verb lexical semantics is needed to explain some of the patterns and generalisations I describe.

² An interesting question which I do not address is whether event-internal pluractionals share their characteristic features with other types of complex event. For instance, serial verb constructions (which Durie 1997 argues form a complex event) seem a promising place to look for possible parallels, and perhaps for general constraints on what can be packaged in a single event.

3.2 The construction of events and objects

I propose that the characteristics common to event-internal pluractionals, such as continuousness in time and identity of participants, are precisely the characteristics which allow or encourage humans to construe repeated occurrences as constituting a single, complex event. I will argue that the construal of repetition (or any other complex occurrence) as a single complex whole is parallel to the construal of multiple entities or parts as complex wholes in object perception. In 3.2.1 I examine the analogies between events and objects in perception and the reasons for believing that similar processes of interpretation might apply in the two domains. In 3.2.2 I outline some well-known properties of object perception (the “grouping” laws first proposed by Gestalt psychologists) and more recent findings regarding grouping in event perception and examine the parallels between these two. In 3.2.3 I compare these general grouping laws (applicable to both events and objects) to the characteristics of event-internal pluractionals.

3.2.1 Analogies and disanalogies in the perception of events and objects

In our everyday experience, and particularly in using language, we divide the continuous stream of occurrences we perceive into events.³ We categorize them, decide when they begin and end and how they are distinct from other events. It is easy to imagine different construals of the same observed sequence of occurrences. For example, we can imagine seeing a child hold a ball in her hand, retract her arm and then swing it forward with

³ I use the term ‘event’ to indicate a particular type of mental entity. For lack of a better expression, I use the term ‘occurrences’ to refer to actual situations or conditions in the world which might be construed as an event or a phase of an event.

force, releasing the ball; the ball rises and falls in an arc and soon afterwards lands on the ground. While this description breaks the sequence into six or seven components, each of which might be viewed as a distinct event (holding, retracting, swinging, releasing, etc.), most observers would not hesitate to categorise the sequence as a single event of ‘throwing a ball’. There is a significant body of psychological research devoted to understanding how humans divide the ongoing changes we perceive into what we consider to be coherent events (cf. Zacks & Tversky 2001, who summarise much of this work).

The psychological question of how events are individuated is fundamentally connected to an understanding of pluractionality. In order to understand the cognitive basis for the distinction between repetition *within* events and repetition *of* events, it is important to know what determines whether a perceiver will tend to combine any given series of occurrences into one complex event or treat them as a sequence of distinct events. The view of meaning which I adopt assumes (as outlined in chapter 1) that a linguistic form provides a particular way of construing experience, and that the construals of experience which language permits should reflect or be motivated by universal cognitive processes. Cognitive processes evident in perception, in particular, have been argued to play an important role in structuring language (e.g. Langacker 2000, Talmy 2000).⁴

Object perception has been a major topic of concern in psychology, and in particular the question of how we perceive a clearly organized structure from complex

⁴ Based on an array of psychological evidence, Barsalou (1999) also argues that perception, combined with memory and attention, forms the basis of conceptual systems and symbolic representation.

and often incomplete or ambiguous stimuli. This was a major question for the Gestalt psychologists (e.g. Köhler 1947, Wertheimer 1923, Koffka 1935). Similar problems may be seen to apply to events. As Zacks & Tversky (2001:5) point out:

“Event perception can be regarded as the temporally extended analog of object perception: Events are objects in the manifold of the three dimensions of space plus the one dimension of time.... Observers recognize objects by their distinctive shapes, colors, textures, tactile properties, and motion. They recognize events based on these features of their component objects and configurations of objects, but also on the basis of their temporal structure... we will take this analogy seriously, and will see that many attributes of object perception generalize naturally to events.”

Events are dynamic configurations of objects, space and time, and we can identify some structural parallels between objects and events immediately. Objects have boundaries in space; events have boundaries in time. Objects often have distinct functional parts as do events (e.g. the above example of throwing a ball), and these parts can be useful in categorisation, since “where parts join, they give rise to distinctive physical features: contour discontinuities or maxima in local curvature” (Zacks & Tversky 2001:5).

Given multiple objects of a particular type, languages often provide us with alternate construals which either group those objects into a mass or complex object, or individuate them (cf. Wierzbicka 1988, Langacker 1997), e.g. *foliage* versus *leaves* (Croft & Cruse 2000:64). Similarly, the collection of objects required to play a game of chess can be referred to as *chess pieces* (individuated) or *a chess set* (viewed as a single object). Such contrasts are paralleled in the domain of events, e.g. *to walk* versus *to take steps*, *to*

talk versus *to say (multiple) things*. Langacker (1997) argues that any plurality (whether of entities or events) involves a conceptual structure consisting of both the multiple individuals and a higher-order whole which they constitute. However, in any given construal of the entities or events, the whole may be more or less salient than the parts. Linguistic categories may divide a conceptual continuum (with the parts maximally salient at one end and the whole maximally salient at the other) into two or more parts. I suggest that pluractionals depend on exactly this type of division: event-internal pluractional categories provide a construal which groups repeated occurrences (i.e. profiles the whole), where event-external pluractionals profile the individual occurrences at the expense of the higher-order whole.

In sections 3.2.2 and 3.2.3 I will summarise psychological findings on the perception of objects and events which demonstrate their parallelism and support the significance of grouping (forming a complex whole) as a general cognitive process. In 3.2.4 I show how these findings may be related to the characteristics of event-internal pluractionals, and support Cusic's claim that event-internal pluractionals, though internally plural, form a complex whole and function as a singular event.

3.2.2 Gestalt principles in object perception

Most psychological theories of object perception have assumed that "perception should be regarded as some process of interpretation or construction from the incomplete information provided by the retinal image" (Bruce, Green & Georgeson 1996:71) based on a combination of the physical properties of the image and the expectations of the

perceiver given his/her existing knowledge and experience.⁵ The perceiver has to make assumptions about the physical world which give rise to a particular perceived structure, though the exact nature of these assumptions is open to debate. Bruce et al. (ibid.:72) note, for example, that they may be very specific assumptions which are learned through experience, such as that particular objects have a characteristic shape; or they may be more general and more directly determined by the structure of the brain, such as that “similarly oriented texture elements should be grouped together”.

In the first half of the twentieth century, the Gestalt psychologists pointed out that although we experience physical objects as having a natural cohesion and distinctiveness from other objects, visual stimuli have no *inherent* division of this type into objects. There is therefore a need for some explanation of how we interpret visual stimuli in order to perceive objects as distinct physical entities. Some type of structure or interpretation is imposed by the viewer on a visual scene, and this is a fundamental but non-trivial task in visual perception. The actual visual stimuli we receive rarely correspond straightforwardly in their discontinuities to objects in the physical world.

Wertheimer (1923) identified a number of factors which affect the way we form our perceptions of objects. Certain arrangements of stimuli in the visual field encourage people to perceive them as forming a complex whole rather than as individual objects. The overriding principle is that the natural product or goal of perception is a “good figure” or gestalt – a coherent whole, a whole which is different from the sum of its parts. “Of several geometrically possible organisations that one will actually occur which possesses the best, simplest and most stable shape” (Koffka 1935:138). Factors which

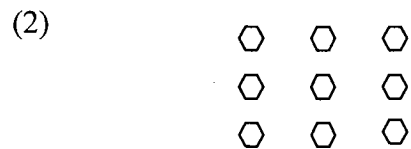
⁵ The main opposition has come from J.J. Gibson’s theory of ecological perception (e.g. Gibson 1979).

favour the perception of a coherent whole are listed in (1), and I will address each of these in turn in the remainder of this section:⁶

- (1) a. Proximity
- b. Similarity
- c. Closure
- d. Continuation
- e. Common fate
- f. Familiarity

a. Proximity

Objects which are close together in the visual field are grouped together more readily than objects which are further apart. For example, the image in (2) will tend to be viewed as three columns rather than three rows simply because the vertical distance between adjacent shapes is smaller than the horizontal distance.



⁶ More recent research has tried to clarify and quantify such notions as similarity (e.g. Olson & Attneave 1970), “goodness” of form (e.g. Hochberg & Brooks 1960) and other features, as well as the interaction and relative speed of operation of the different factors. However, these terms are still useful to describe general characteristics of visual grouping.

b. Similarity

Objects which are similar are grouped together more readily than objects which are dissimilar. For example, despite the same distances between rows and columns, picture (3a) below tends to be viewed as three rows, (3b) to be viewed as three columns, and (3c) (perhaps a little less reliably) as diagonal lines:



c. Closure

Stimuli are grouped together if they tend to complete some closed form. Viewers prefer complete figures, and will fill in gaps in the visual stimulus to create them. Example (4) is typically perceived as consisting of three rectangles with one extra bracket on the left, rather than as three “columns”—i.e.] [—with one extra bracket on the right, despite the fact that this pairing violates both the principle of proximity and any possible left-to-right scanning preference of subjects literate in English (cf. Chan & Bergen 2005).⁷



⁷ Diagram from ‘Semiotics for Beginners’ (Daniel Chandler),
<http://www.aber.ac.uk/media/Documents/S4B/sem08.html>

d. Continuation

The principle of continuation refers to a tendency to perceive smooth lines without abrupt changes of direction, and to group objects so that they form such lines. For example, the preference for smoothness causes the letter X to be perceived as consisting of two intersecting lines, rather than four lines meeting at a central point or two V shapes in opposite orientations.

e. Common fate

Objects which move or together or change in parallel tend to be perceived as connected. In other words, there is an invariant relationship between the objects (in the context of an ongoing change). Common motion is the best known illustration of this phenomenon.

Example (5a) is seen as a line consisting of four objects. However, if two objects (even if not adjacent) move in one direction and two in another, the line is now perceived as being broken up into two smaller groups.

(5) a. □ □ □ □

b. □ □
 ↓ ↓
 □ □ □ □
 ↓ ↓
 □ □

f. Familiarity

Though the Gestalt psychologists were primarily interested in a nativist theory of perception of “good figures”, they recognised that our perception of objects depends on

our knowledge and expectations, and the importance of this principle has been argued by many others (cf. Gregory 1970, Palmer 1975, Bruder 1978, among many others). Familiarity of an object facilitates its perception from incomplete (e.g. partially occluded) visual information. For example, Vecera and Farah (1997) found that when presented with two overlapping shapes, subjects' ability to identify test locations as being on the same or different shapes was improved when the shapes were familiar (letters in their normal orientation) rather than unfamiliar (rotated letters). This effect is the most clearly established top-down factor affecting object-recognition.

'Grouping laws' such as these are important principles for the understanding of object perception (and have applications in the computational modelling of vision, etc.). Given the parallels between objects and events noted earlier, similar laws might be predicted to operate in event perception. However, the characteristics above are not obviously directly relevant to events (e.g. it is difficult to see precisely how a principle of 'closure' applies to events). More recent psychological research has produced a related list of factors which affect the perceptual individuation of events.

3.2.3 Individuation of events

The problem of object grouping has a close parallel in the perception of events. Perceptually, we are presented with a sequence of occurrences without inherent boundaries, and humans group parts of this stream into distinct events. In a similar vein to studies of object perception, there have been a number of studies examining how subjects individuate events. For example, a typical experimental protocol (devised by Newton 1973) involves presenting subjects with short videos showing an actor engaged

in a sequence of activities and asking them to divide the sequence into “meaningful” units by pressing a button at points they perceive as unit-boundaries. Zacks & Tversky (2001:8) point out that observers can consciously adjust the level at which they segment events (e.g. if they are asked to divide a sequence into the largest or smallest meaningful units), but also spontaneously adjust the level of segmentation in response to certain changes in the stimulus. The findings of these experiments are often presented in a very different way from the Gestalt principles of object grouping because (I believe) of researchers’ background assumptions about objects and events. In event-segmentation studies the assumption is that we are exposed to more-or-less continuous perceptual changes and must decide how to divide this stream into separate events. In other words, we face a problem of individuation. In contrast, the Gestalt psychologists’ approach to object perception assumed that the visual field often contains multiple parts on which perceivers must somehow impose a higher-order structure—a problem of grouping. This difference in view, however, does not obviously reflect an inherent difference between objects and events: our perception of occurrences is continuous in time just as our visual field covers a continuous region of space, and in both we experience changes in quality which are the basic stimuli from which we perceive objects and events. Therefore I will assume that the absence or reverse of a condition which encourages the perception of an event boundary constitutes a condition favouring event-grouping. Given this assumption, the literature on event-individuation suggests that the following factors favour grouping of occurrences into events, and I will address these in turn.

- (6) a. Perceptual continuity
- b. Common cause
- c. Familiarity
- d. Common goal

a. Perceptual continuity

Studies show that subjects tend to segment events at points with the highest degree of perceptual discontinuity, i.e. maximal change in physical features of the action (Zacks & Tversky 2001:8). For example, Newton et al. (1977) used choreographic notation to code actors' movements and found a correlation between degree of change in position and perceived event-boundaries.⁸ Thus, periods of action with relatively high perceptual continuity are likely to be grouped together.

b. Common cause

Zacks & Tversky (2001:10) predict (based on findings from Michotte 1946/1963) that subjects will place event boundaries at the points at which they perceive causal interactions. The basis for this prediction is that perceived causal interactions coincide with a particular type of perceptual discontinuity. This prediction appears to be borne out by the results of Wolff (2003), who demonstrated that when observing the interaction of two objects with no possible intervening cause, perceivers tend to interpret the scene as a single event (and to encode it linguistically in a single clause).

⁸ For example, they noted a much higher degree of change between a perceived event boundary and its immediately *preceding* point than its immediately *following* point.

Repetitions sharing a single initial cause seem unlikely to occur frequently (a possible example would be a ball bouncing repeatedly as the result of a single initial action). However, I predict that a related pattern might be found in which repetitions with the same causer (and same mechanism of causation) would be grouped together whereas similar repetitions with distinct causers would not.

c. Familiarity

Predictable or familiar sequences of occurrences tend to be grouped together into large chunks. As the sequence becomes less predictable, subjects divide it into smaller segments. For example, Newtonson (1973) presented subjects with one of two films showing a short sequence of “problem-solving” behaviour. One film contained an unexpected action inserted into the sequence. Subjects in this condition began segmenting the sequence into smaller units following the unexpected action than subjects viewing the sequence without the insertion.

It is not just familiarity of the action which encourages larger event-segments, but also familiarity of participants. Graziano, Moore & Collins (1988) found that when children are asked to segment a videotape of another child, they produce larger segments if they are given information about the child appearing in the video before viewing the tape.

Predictability and familiarity appear to produce strong top-down processing effects. If an action is familiar, subjects presumably have a “script” (Schank & Abelson 1977) with slots they can fill with information about the current event. The script provides them with expectations about the structure of the event. If the event deviates

from the script, they are no longer able to integrate the information at such a high level and must switch to evaluating smaller segments of behaviour. Similarly, Graziano, Moore & Collins (1988:571) suggest that when a participant is familiar, subjects may begin with “an overall schematic conception of the other into which new information must be integrated”—i.e. a high-level schema similar to a script, but based on characteristics of a person.

d. Common goal

A change in perceived goal (i.e. the satisfaction of one goal and perhaps the adoption of a new one) favours the perception of an event boundary. Zacks (2004) shows that subjects’ inferences about actors’ intentions and goals have a strong effect on event-segmentation, independently of physical characteristics of the stimulus. Zacks (ibid:981) argues that “observers segment activity in terms of the largest goals they can identify”. Thus, a sequence for which a common goal can be inferred is likely to be grouped into a single event.

Having established characteristics favouring grouping both in object perception and event perception, it is now possible to compare the two, and to consider whether and how these characteristics might apply to the grouping or individuation of pluractional occurrences.

3.2.4 Comparing the grouping of objects and events

The characteristics favouring event-grouping described above can be thought of as those producing a “good figure” in the Gestaltists’ sense: characteristics which ensure

smoothness of contours and a coherent, bounded whole, though (unlike objects in the visual field) bounded in time rather than space. While the differences in the nature of objects and events mean that there is not an exact correspondence between the characteristics favouring grouping for each, there are still some strong similarities.

First, the principle of good continuation for objects is mirrored in the domain of events by the importance of perceptual continuity, or lack of abrupt perceptual change. While smoothness of contour of a line in space is simple and relatively easy to quantify, perceptual continuity of occurrences involves continuity on many dimensions (such as consistency of participants, their orientations, the size and effect of actions, etc.). Since events are relational and involve characteristic configurations in space, causal relationships and time, this complexity is not surprising.⁹

Second, the principle of closure (preference for objects consisting of a bounded region) is arguably parallel to the grouping together of occurrences which have a common goal or completion (i.e. share a final boundary in time). The parallels between boundedness of objects in space and boundedness of events in time have been discussed extensively, for example, by Talmy (1978, 2000), and Langacker (1987), and a comparison has been drawn between count (bounded) and mass (unbounded) nouns and perfective (bounded) and imperfective (unbounded) aspect.

Third, the effect of familiarity seems obviously parallel in the perception of objects and events. The prior knowledge and expectations of perceivers determine to a

⁹ Lack of perceptual change may seem to parallel similarity of subparts, but I suggest in fact it is more comparable to good continuation, since what studies have shown to be relevant is the rate of change over time, rather than similarity between subparts.

large degree the ways in which they group or individuate stimuli. A familiar sequence of occurrences is likely to be grouped together, just like a familiar arrangement of entities.

Though the parallel is perhaps not immediately obvious, common fate of objects may also be compared to the effect of common cause or goal of events. Common fate of distinct areas of the visual field aids in identifying a complex figure in relation to its surroundings or background due to the parts of the figure behaving in parallel ways. Identifying a common cause or goal is similarly a way of distinguishing a complex event from surrounding events by shared behaviour—even though the crucial piece of behaviour is simply sharing a causal interaction. The difference between common fate and common cause/goal can be understood as an effect of the inherent differences between events and objects. Objects are relatively stable in nature over time, and therefore coordinated motion or change of distinct perceptual entities over time provides information about persistent stability in the relationship between the perceptual entities. On the other hand, events are defined by their shape evolving over time. The type of common behaviour which might indicate that two perceptually distinct occurrences form a single event could be either a shared origin or a shared completion.

These parallels are shown in table 3.1.

Gestalt grouping laws	Factors favouring event “chunking”
proximity	—
similarity	—
continuation	perceptual continuity
closure	common goal
common fate	common cause/common goal
familiarity	familiarity

TABLE 3.1: Factors which affect grouping of objects and events

I suggest that the principles of similarity and proximity have not been assessed in event segmentation studies because of the nature of the stimuli studied. The events used as stimuli are linear sequences of actions in which the actor progresses from one stage to the next without interruptions or pauses. This is not because of any necessary characteristic of events, and not even because of any necessary characteristic of the events studied. For example, Zacks, Tversky & Iyer (2001) used videos of a subject making a bed and doing dishes (among other events). Both temporal proximity and similarity of subparts of these activities could potentially be varied (e.g. pausing or interposing another activity between the washing of individual dishes) and might plausibly have an effect on event segmentation. The object-perception stimuli studied by Gestalt psychologists are no more comprehensively representative of typical objects: we are rarely faced with natural visual stimuli consisting of dots spaced out in the visual field which we have to group into regions, and so on. One possible use of the comparisons

drawn here between object and event grouping is to generate new hypotheses about event segmentation which may be tested in future experiments.

Having considered the characteristics of event individuation in general, it is relatively straightforward to apply the same patterns to repeated occurrences to predict the kinds of factors which will cause them to be grouped. Perceptual discontinuities between repetitions should encourage perceivers to separate them into distinct events (for example, change in a participant's orientation, temporal gaps, or the insertion of different occurrences – however brief – between repetitions). Similarly, since segmentation of occurrences tends to coincide with perceived achievement of goals, we can expect that repetitions with an identifiable common goal will tend to be grouped together, with the final event boundary occurring when the goal is achieved. We may also predict that repetitions perceived to have a common cause are likely to be grouped together into a single event. However, this is difficult to assess since it is difficult to imagine scenarios in which multiple causes would be present without a distributive-argument reading. This is something which could potentially be assessed experimentally with a carefully constructed scenario using an easily repeatable, intransitive predicate with a separate physical trigger for each repetition.¹⁰ For example, a simple movie could be constructed in which a lightbulb flashes repeatedly but each flash appears to have a separate cause (a human hand pushing a button, an animal walking over the button, a flash of lightning striking, etc.) in order to determine how easily such a sequence is construed as a single event of the lightbulb flashing (repeatedly). In addition, predictability and familiarity of a series of repetitions should favour the perception of a single event (i.e. events which are

¹⁰ If the predicate is intransitive, the distributive-argument problem might be avoided.

typically repeated, such as breathing, knocking and coughing, will tend to be grouped together).

Finally, I propose that proximity and similarity of repetitions are important factors affecting grouping. Proximity of occurrences in time parallels the Gestalt grouping effect of proximity in space. Similarity of repetitions (perhaps in manner and duration of the occurrence, for example) should also encourage grouping, just as similarity of entities does.

The perceptual factors behind the Gestalt laws and the findings on event segmentation are relevant to the linguistic encoding of pluractionality in two ways. First, such factors motivate the emergence of a linguistic distinction between grouped and ungrouped pluralities of events. Conceptual categories are built (at least in part) on the basis of perceptions. Given the assumption that meaning is conceptual structure, it should not be surprising when linguistic semantics reflects perceptual processes. Second, such perceptual processes are likely to correlate with the *use* of pluractionals. If we assume that event-internal pluractionals construe repeated events as a group and event-external pluractionals construe them as distinct events, then it is reasonable to expect that event-internal pluractionals will be used to refer to the kinds of repetition which might be grouped in perception. This is not to say that every time a speaker wishes to describe a repeated event, s/he judges whether it meets perceptual criteria for grouping and then describes it accordingly. Undoubtedly, particular predicates become conventionalised with either event-internal or event-external meaning. At the same time, in many cases speakers may be able to choose whether to describe a given instance of repetition as constituting a single event or not (much like the choice discussed above between *foliage*

and *leaves*, for example), and the choice will depend on many factors outside the scope of this discussion. However, events which share many of these characteristics are more likely to be described with event-internal pluractionality than those which do not. Moreover, some of these characteristics may be grammaticalized in the form of restrictions on the kinds of events which can be described with event-internal pluractionals. Some such restrictions will be discussed later in the chapter.

The comparisons between the Gestalt grouping laws, the factors affecting event-segmentation, and the characteristics favouring event-internal pluractional interpretations are summarised in table 3.2.

Gestalt object-grouping	Event grouping (general)	Event grouping (repetition)
proximity	[proximity]	proximity
similarity	[similarity]	similarity
continuation	perceptual continuity	non-distributive arguments, etc.
closure	common goal	common goal or completion
common fate	common cause	common cause
familiarity	familiarity	typical or inherent repetition

TABLE 3.2: Comparison of factors favouring object and event grouping and event-internal pluractionality

The observed characteristics of pluractionals noted at the beginning of the chapter are therefore broadly consistent with the experimental findings on event-segmentation. Stronger confirmation of the connection between these two could be obtained by

applying the experimental methods of event-segmentation studies to stimuli involving repetition, and varying factors such as proximity of repetitions, perception of common goal or cause, etc. I leave such confirmation for future research, and for now simply argue that the closeness of fit between characteristics of event-internal pluractionals and findings on event segmentation and object perception is strongly suggestive.

What also remains to be determined is the relative weighting of these criteria. It is likely that some are more central to the perception of a grouped event than others, and in fact the linguistic evidence strongly suggests that this is so. For example, an event-internal pluractional interpretation necessarily treats repetition as occurring over a single time period and therefore repetitions must be relatively continuous (at a relevant level of granularity). On the other hand, examples such as that in (7) seem to show that repetitions which are closely spaced but which apparently do not share a common goal or completion are frequently described as event-internal repetition.

(7) Southern Paiute Durative-Iterative –yi-, (ŋqi-) (Sapir 1930:150)¹¹

taŋ'wi'tciɣi'	keeps time by tapping with (his) foot
qini'p-uχwi'	(mouse) gnaws
tA'pi'ŋ'ana'χiŋqii'	stamps (on the ground to make it smooth)

¹¹ Sapir notes that the durative-iterative is distinct in “conceiving of the action as not strictly continuous, but broken up into a rapid series. It differs from the normal iterative (expressed by reduplication) in that the repeated acts cohere into a single durative unit.” (1930:150).

It may be appropriate to treat factors affecting the grouping of repeated occurrences as defining a crosslinguistic prototype (cf. Croft 2001). Certain characteristics may be necessary, others weighted strongly or less so. The prototype would motivate the categories of specific languages, but might be reflected in slightly different ways (varying ranking of criteria, or one or two necessary and sufficient criteria for using an event-internal pluractional description).

In this chapter so far I have claimed that existing psychological research on object and event segmentation supports a universal cognitive-perceptual basis for the distinction between grouped and ungrouped plural objects and events, and that the characteristics of event-internal pluractionals coincide strongly with the characteristics subjects use to identify (complex) objects and events in psychological experiments. In the remainder of the chapter I turn to the possible semantics of event-internal and event-external pluractionals. First, I consider an existing proposal regarding the contrast between event-internal and event-external pluractionality in the light of the data in chapter 2 and the ideas presented in section 3.1. Having identified several issues which a complete account of the contrast must address, I go on to outline a semantic theory which may meet these requirements, and in particular is consistent with the idea that event-internal pluractionals involve the construal of a series of repetitions as a singular (internally plural) event.

3.3 Lasersohn's account

Lasersohn (1995) is the one existing analysis (as far as I am aware) which makes a proposal about the semantic contrast between event-internal and event-external meanings. In Lasersohn's analysis, both event-internal and event-external pluractionals denote sets

of events. The meaning of a pluractional (PA) of a verb V is as follows (Lasersohn 1995:256):

$$(8) \quad V\text{-PA}(X) \Leftrightarrow \forall e \in X [P(e)] \ \& \ \text{card}(X) \geq n$$

where X ranges over sets of events and the cardinality of X is pragmatically determined. In other words, a pluractional verb is true of a set of events X in the case that every event (e) in X has a particular property, P. The property P is what makes the events the appropriate type and is related to V in one of two ways, as addressed below. It is also specified that the number of events in X is more than some pragmatically-determined minimum, n.

For Lasersohn, the distinction between event-internal and event-external pluractionals (or in his terms between “repetitive” and “repeated” events, since he adopts Cusic’s terminology) depends on the nature of the phases which make up the pluractional event (Lasersohn 1995:244):

“ The fundamental difference between repetitive [= event-internal] and repeated [= event-external] action... is apparently that repeated action involves multiple events of the type denoted by the verb, while repetitive action involves multiple events of a different type, but which sum up to form a single token of the event type corresponding to the verb.”

This distinction is incorporated into pluractional meaning via the nature of P. In the case of event-external pluractionals, it is stipulated that P=V, i.e. all subevents in the set are of the type of the base verb. For an event-external pluractional of a verb meaning, for

instance, ‘jump’, this means that all the phases of the plural event are jumping events. For event-internal pluractionals (Lasersohn’s “repetitive action”), the nature of P is specified in the lexical entry.¹²

Lasersohn (ibid.:265) notes a similarity between this property of event-internal pluractionals and “participatory distributive” entailments of collective noun phrases, as the following sentence illustrates (ibid.:107):

(9) John and Mary lifted a sack of potatoes onto the truck.

This sentence has a collective reading in which John and Mary together lifted the sack of potatoes onto the truck. It is not true of either John or Mary that they lifted the sack of potatoes onto the truck, but nevertheless the sentence still has entailments about what John as an individual and Mary as an individual did.

“John must have exerted some kind of upward force against a sack of potatoes, and so must Mary. In other words, there are certain properties which the individual members of the group denoted by the subject must have if the sentence is to be true, much like in a distributive sentence such as *John and Mary are asleep*. The difference is only that in [9], the relevant property is not the same one expressed by the verb phrase; to exert upward force on a sack of potatoes is not necessarily to lift it.” (ibid:107)

¹² I do not address Lasersohn’s statement that the phases of an event-internal pluractional “sum up to form a single token of the event type corresponding to the verb” (ibid: 244), which seems to be false with many of the examples he considers from Cusic (1981). For example, Saho *barar* ‘to fly’ becomes *barrar* ‘to flutter (to flap the wings in an effort to fly)’ (Tauli 1958:141/Cusic 1981:83, discussed in Lasersohn 1995:245). While the phases of fluttering are not instances of flying, neither is fluttering itself.

Lasersohn proposes that for event-internal pluractionals, the type of event denoted by the verb provides information about the subphases but the subphases are not (necessarily) of the type of the verb. (Lasersohn’s claim does not in fact exclude a specification in the verb’s lexical entry that the phases *are* of the same type as the verb; but if that should be the case, event-internal and event-external pluractional meanings would presumably be identical.) This can also be compared to the relationship of steps to walking. Walking requires steps to occur, but a single step does not constitute walking. With an event-external pluractional, on the other hand, each event making up the pluractional is an instance of the event-type denoted by the base verb and the pluractional denotes a set of such events.

To distinguish the temporal, spatial and argument plural readings of pluractionals, Lasersohn (ibid.:256) adds a requirement that the subevents must not overlap with each other in either time, space or one of their participants:

$$(10) \quad V\text{-PA}(X) \Leftrightarrow \forall e, e' \in X [P(e) \& \neg f(e) \circ f(e')] \& \text{card}(X) \geq n$$

where f is “a temporal or spatio-temporal trace function or a thematic role assigned by the verb” (ibid.:253). It is possible to add more specific constraints which require the non-overlapping (i.e. plural or distributive) argument to be subject, object, etc. for any particular category which has such restrictions. Lasersohn also notes that for some pluractional interpretations, simple non-overlap may not be enough since this still allows repetitions to be completely continuous in time or space. He proposes that in such cases, a separate clause can be added requiring an interval of time or space *between* the

repetitions (the issue does not arise for participant readings). For example, in the case of separation in time, Lasersohn proposes the following (ibid.:254):

$$(11) \quad V\text{-PA}(X) \Leftrightarrow \forall e, e' \in X [P(e) \& \neg \tau(e) \circ \tau(e')] \& \\ \exists t [(\mathbf{between}(t, \tau(e), \tau(e')) \& \neg \exists (e'') [V(e'') \& t = \tau(e'')]) \& \text{card}(X) \geq n]$$

The bolded clause states that there is a time (t) which is in between the times of events e and e', and that there is no other event of type V which occurs at t. A similar specification can be made for distribution in space, though it is more complex since locations must be specified in three dimensions instead of one (Lasersohn 1995:254-5).

Lasersohn's analysis raises a number of questions on which the data in chapter 2 may shed some light. First, does the proposed distinction between the two types of pluractional interpretations based on the nature of P account for the characteristics of pluractionals across languages? It is true that a number of prominent examples of event-internal pluractionals appear to have phases which are not identical in type to the base verb, including many of the examples cited in Cusic (1981). For example:

(12) a. Madi (Cusic 1981:78/Tucker 1940:210)

tsi "bite"

Otsi "gnaw"

b. Saho (Cusic 1981:83/Tauli 1958:141)

barar “to fly”

barrar “to flutter” (i.e. to flap the wings in the effort to fly)

In (12a) we assume the phases are diminutive biting actions (a subtype of biting). In (12b) phases are individual flaps of the wings (i.e. motions characteristic of flying but without the necessary specification that they take place in the air).

However, following Cusic’s definition of an event-internal pluractional, there is no a priori reason it could not consist of phases of the type of the base verb. His claim is only that the repeated occurrences make up a single event (1981:61). For example, there is no apparent reason why an event-internal pluractional may not apply to a verb meaning ‘knock’ and produce a complex event of knocking with individual knocks as its phases. In fact, this is much like the repetition interpretation of the English progressive when combined with a semelfactive verb, as in *He’s knocking on the door*, which seems to create a single complex event of knocking (cf. Strauss 2002). Several languages examined in chapter 2 appear to have instances of just this type. For example:

(13) Turkmen (Clark 1998:537) –la/le suffixes

/θilkmek/ ‘to shake’ /θilkelemek/ ‘to shake, quiver’

/baθmak/ ‘step on’ /baθgılamak/ ‘trample’

The phases of shaking repeatedly are individual shakes, and the phases of trampling are individual steps.

It is also interesting to note that the relationship between phases and base verb type is highly consistent across languages. As seen in the crosslinguistic survey, phases of event-internal pluractionals, if not of the type of the base verb, are commonly diminutive or conative instances of the base verb, or indicate an extended activity phase of an achievement or accomplishment verb without its final boundary.¹³ For example, in Latin, the event-internal pluractional *adventāre* of the verb *advenīre*, ‘arrive’, means ‘approach’ (2001b:11). This is not necessarily incompatible with the idea that $P=V$ for event-external pluractionals, and not for event-internal pluractionals: it may be the case that for event-internal pluractionals, $P=\text{dim}V$ (or however this diminutive relationship is to be expressed). However, I will argue in section 3.5 that whether or not P is equal to V is generally not a property of the meaning of a pluractional category, but rather of its interaction with the lexical semantics (in particular, Aktionsart) of the predicate to which it applies. The case study of Chechen in chapter 5 will illustrate this in detail. Lasersohn’s account does not address the interaction of pluractional meaning with verb meaning, and it is clear that some discussion of this is needed to account for the range of interpretations

¹³ In addition to these “decrease” meanings, Cusic (1981) also identifies “increase” meanings. However, these are almost all meanings of increase in the event as a whole, not in the size or effect of its phases. For example, many of Cusic’s examples simply appear to be continuative/durative readings, which is the natural result of (event-internal) repetition in time with certain Aktionsarten. Cusic gives two examples in which an event-internal pluractional may indicate augmentation of phases, and neither case necessarily does so:

(1) Arabic (Wehr 1976:826/Cusic 1981:85) *kasara* “he broke (something)”, *kassara* “he smashed (something)” (i.e. by repeated or forceful blows)

(2) Luiseño (no reference/Cusic 1981:85) *cori* “cut”, *coori* “cut with a buzz saw” (i.e. quickly and with great mechanical activity).

Therefore, I take diminutive or conative meanings to be at least the norm for cases in which $P \neq V$.

pluractionals receive. The question of whether $P=V$ is secondary to the semantic/conceptual distinction between the two types of pluractionals, which I have argued is founded on a distinction between grouped and ungrouped pluralities. This is the idea which forms the basis of the analysis to be outlined in 3.4.

3.4 A group-based approach to object and event plurality

Landman (1996, 2000) offers a theory of plurality which incorporates a notion of grouping. In this section I propose a simple adaptation of Landman's analysis to represent the semantic difference between the two types of pluractionals.

I retain his logical formalism, though my assumption is that it represents conceptual structure rather than truth conditions. I take the formalism as provisional and use it specifically because I think it helps to make clear the type of meaning distinction I propose and connects it to the perceptual process of grouping discussed in 3.1.

Having argued that the distinction between event-external and event-internal pluractionals has its basis in a cognitive process of grouping, what remains to be explained is how such a process is reflected in the semantics of grammatical categories, and how the categories combine with individual predicates to produce readings of repetition in space, time, etc. The goal is to describe as completely as possible the meaning (i.e. the conceptual structure) contributed by a typical pluractional category to an utterance, and to show how this interacts with the semantics of the predicate, arguments and any other features of the context to produce the resulting meaning.

Landman (1996, 2000) assumes, following Link (1983), that the domain of individuals contains singular (atomic) individuals, and plural individuals which are sums

of singular individuals. He also proposes, following Link (1984), an operation of group formation which “maps a sum onto an atomic (group) individual in its own right” (Landman 1996:427).

Landman uses the distinction between plurals and groups to account for the collective-distributive distinction in NPs. Distributive interpretations involve regular plural NPs, and collective interpretations involve (atomic) group NPs—sums which have undergone group-formation. For example, Landman (1996: 427) discusses the sentence in (14):

(14) John and Bill carried the piano upstairs

On the distributive reading, John and Bill separately carried the piano upstairs. There are (at least) two events of carrying the piano upstairs, of which one has John as its agent and the other Bill. On the collective interpretation there is a single event of carrying the piano upstairs whose agent is John and Bill. The distributive interpretation is as follows:

(15) CARRY-PIANO(j) & CARRY-PIANO(b) \leftrightarrow *CARRY-PIANO(j \cup b)

The plural *CARRY-PIANO includes all the atoms of CARRY-PIANO and their sums. On this interpretation of the sentence, the sum of John and Bill is a plural individual and *CARRY-PIANO must be true of that sum (j \cup b).

In other words, the collective-distributive distinction is reduced to a distinction between singular and plural predication. Landman (1996:428, based on Landman 1989) assumes that:

- “all basic predicates, nominal or verbal, are semantically interpreted as sets of atoms;
- there are (at least) two modes of predication:
 1. **singular predication** applies a basic predicate to an atomic (singular or group) individual
 2. **plural predication** applies a plural predicate distributively to a plural sum of such atomic individuals.
- noun phrases like *John and Bill* and *the boys* can shift their interpretation from sums to groups (the boys as a group).”

Landman’s second major proposal is that the difference between singular and plural predication is also a difference between thematic and non-thematic predication: a singular predicate is one whose argument fills a thematic role. Plural predicates have special, non-thematic “plural roles”. Plural roles are sums of thematic roles, e.g. a plural agent is the sum of the agents of the atomic parts of the plural event. For example, on a collective reading, example (11) above is a singular predicate and has an atomic agent whose parts are John and Bill. The group as a whole fills the thematic role of agent, and neither John nor Bill by himself is the thematic agent. On the distributive reading, John

and Bill are agents of the atomic carrying events, and together they fill a non-thematic plural role of the verb *carry*.

Landman's proposals can be used to account for the behaviour of pluractional verbs as well as plural NPs. Both singular and plural events are already required (since verbal predicates can combine with either singular/group or plural individuals). In addition, I assume that the grouping operation applied to entities can similarly be applied to plural events¹⁴. Events and their arguments can both now be singular, group or plural. A plural event with only group/singular arguments produces a repetition (event-external) reading, while a plural event with a plural argument produces a distributive (event-external) reading. A group event produces an event-internal pluractional reading, and therefore any morphologically plural arguments must be collectively interpreted. In other words, the collective-distributive distinction in the interpretation of plural NPs is exactly mirrored by the event-internal/external distinction in the interpretation of plural events. Event-internal pluractionals are predicates of groups, while event-external pluractionals are predicates of true plural events.

- (16) a. An event-external plural predicate is a predicate of plural events (e), each consisting of proper subparts (events) e_1, \dots, e_n
- b. An event-internal plural predicate is a predicate of "group atoms", i.e. events (e) whose ungrouped counterparts ($\downarrow e$) have proper subparts e_1, \dots, e_n

¹⁴ A similar idea was proposed in Strauss (2002) to account for the two possible readings of cardinal adverbials in English, e.g. *John knocked on the door four times* may either refer to a sequence of four knocks designed to attract someone's attention or to four separate occasions on which John came to the door and knocked (some unknown number of times). However, Strauss's analysis otherwise takes a quite different approach to how group formation interacts with the semantics and syntax of verbs and their arguments.

Given this basic meaning, I will outline the way in which the pluractional combines with a verb and its arguments and consider how this can account for the features of event-internal and event-external pluractionals which seem to occur across languages. For now I assume a very basic representation of lexical entries of verbs:

- (17) a. λe [jump(e)] (Intransitive verb)
 b. $\lambda x \lambda e$ [kiss(e) & Theme(e)=x] (Transitive verb)

Following Kratzer (1996) I assume that the external argument of a verb is added in the syntax. This assumption is not essential at this stage but will turn out to have benefits in chapter 4, where I will examine the asymmetric treatment of internal and external arguments in Yurok.

A pluractional marker introduces a plural operator (*) which picks out nonsingular sums of events of the specified type:¹⁵

- (18) a. jump (plural) λe [*jump(e)]
 b. kiss (plural) $\lambda x \lambda e$ [*kiss(e) & Theme(e)=x]¹⁶

¹⁵ Landman (1996, 2000), among others, takes plural meaning to be unmarked (i.e. the plural includes both atoms and their sums), an assumption which I have not adopted at this point. As a consequence, the pluractional forms in (18b) and (19b) do not have plural Theme roles (since their arguments can be singular if they have a simple repetition interpretation). In fact, assuming the distinction between thematic and plural roles may require the weak notion of plurality, but I leave this issue for future work.

¹⁶ In fact, I will show in the next chapter that the pluractional can pluralise both the verb and its internal argument.

In (18a), for example, *jump consists of plural sums of jumping events. If the pluractional marker has event-internal meaning, it also groups the event:

- (19) a. jump (i-plural) $\lambda e [\uparrow *jump(e)]$
 b. kiss (i-plural) $\lambda x \lambda e [\uparrow *kiss(e) \ \& \ Theme(e)=x]$

In (19a), e is an atomic group event whose ungrouped counterpart ($\downarrow e$) consists of plural jumping events.

Now we have either a plural or a group-plural event which can combine with its other arguments. An event-internal pluractional will only be able to take singular or collective-plural arguments, since it is an atomic predicate. A singular predicate has arguments which fill the thematic roles introduced by the particular type of event described. The event may therefore consist of a group of repeated subevents, but these subevents must have identical participants. An event-external pluractional, on the other hand, is a plural predicate and therefore its syntactic arguments do not fill thematic roles of the predicate, but plural roles (i.e. sums of thematic roles of the atomic parts of the plural event). Therefore it is in theory possible for any argument of an event-external argument to be given a distributive reading.

This very simple attempt to adapt Landman's analysis of plurality seems to produce some of the correct results: event-internal pluractionals are atomic (though internally plural) events, and as a result cannot take plural arguments and therefore will not allow distributive readings over any argument, unlike event-external pluractionals. Such an account also has the advantage of integrating the semantics of pluractionals into

a general theory of plurality, attributing both the event-internal/event-external distinction and the collective/distributive distinction to a distinction between grouped and individuated pluralities. By requiring a single mechanism to deal with both phenomena, this account also reflects the claims made earlier in this chapter about the parallels between objects and events and the idea that both are subject to a general cognitive process of grouping.

However, there are a number of specific questions which remain to be addressed. First, this account does not address one of the issues raised in the discussion of Lasersohn (1995), namely whether the repeated subphases are of the same type as the base verb (i.e. P=V) for event-internal pluractionals. Lasersohn's analysis of the event-internal/event-external pluractional contrast rests on the idea that the repeated phases of an event-external pluractional are of the type of the base verb, whereas the phases of an event-internal pluractional are not, but are lexically specified. However, I have presented examples from a number of languages which appear to contradict this claim. It appears that with some event-internal pluractional categories and some verbs, P=V, but not with others. In section 3.5.1 I consider how a principled explanation for the distinction between the two types might be given.

Second, this account does not address the issue of plurality in time versus plurality in space but simply contrasts participant-distributive plurality with "basic" event-plurality. A simple way to address this is to adopt Lasersohn's solution and specify that the subparts of either time, space, or a participant be non-overlapping:

- (20) a. EVENT-EXTERNAL
 $\lambda e [*jump(e) \ \& \ \forall e', e'' \subset e [-f(e') \circ f(e'')]]$
- b. EVENT-INTERNAL
 $\lambda e [\uparrow *jump(e) \ \& \ \forall e', e'' \subset \downarrow e [-f(e') \circ f(e'')]]$

where f is “a temporal or spatiotemporal trace function or a thematic role assigned by the verb” (ibid:253). For event-external pluractionals with temporal and spatial distribution readings we might need to go further and specify that not only are $f(e')$, $f(e'')$ non-overlapping, there are intervals of time or space between them, suggested by Lasersohn (1995:254) (as discussed in section 3.2). With participants, simple plurality produces the correct distributive reading.

However, given such an analysis, temporal and spatial plurality are both theoretically possible in all cases, yet for markers which can encode both types it is clear that temporal plurality is the default. It is also possible to make generalisations about the types of verbs which tend to produce readings of spatial or participant, rather than temporal, plurality. There is therefore a need for some more precise description of the lexical semantics of verbs in order to understand how they interact with the pluractional meaning to produce temporal, spatial or argument plural readings. This is discussed further in section 3.5.2.

Thirdly, event-internal pluractionals *do* appear to produce plural-argument interpretations, though not quite with the same meaning as event-external pluractionals. Plurality of a patient or theme argument, in particular of an argument for which the verb

correspond to conceptual structures consisting of a plural event and its plural argument, with a distributive association between them. However, I suggest that at the least these two types of construction differ in the degree of prominence they give to the plural nature of the event. In the case of English distributive NPs, where Landman's analysis requires the event to be pluralised as a consequence of the plural argument, the plurality of the event is clearly secondary to (and derived from) the plurality of the participant.

3.5 Interaction of pluractionals with verb lexical semantics

Two of the problems raised with the account above involve predicting the type of reading which will occur when the pluractional is applied to a particular verb. First, what is the nature of the internal phases of the repetition? For an event-internal pluractional, are the phases of repetition of the same type as the base verb? Second, how does the semantics of verbs influence the choice of reading (plurality in time, space or participants)?

3.5.1 Phase-type of event-internal pluractionals

Lasersohn's analysis raised the issue of whether phases of an event-internal pluractional are of the same type as the base verb or not. I gave examples of both types above ($P=V$, $P\neq V$), and suggested that there are at least two types of situations in which the phases of an event-internal pluractional are not of the same type as the base verb. First, there are languages with event-internal pluractional categories which have as part of their meaning some element of diminution, often producing interpretations of small, insufficient or minimal action. This seems to be the case, for example, with the Yup'ik postbase in (22):

(22) Central Alaskan Yup'ik- *mciur(ar)*- 'to V a little at a time' (Jacobson 1984:497)

nere- to eat neremciurtuq he is eating a little at a time

unatar- to pick berries unatamciurtuq he is picking berries a few at a time

For event-internal pluractionals which consistently produce phases of a type (P) which is different from V, we can assume that this is a property of the pluractional's meaning. In such a case we need to add to the meaning of the pluractional category some specification of the relationship between P and V. The relationship is most frequently one of diminution (e.g. reduced size or effect of phases). Of course, there may be subpatterns and also lexically specified exceptions, but a consistent difference between the nature of P and V should be generally attributable to the semantics of the pluractional marker.

In cases where P=V with some verbs but not others, there are two possibilities (which are not necessarily incompatible). First, there may be specific lexicalised exceptions to a general pattern in which P=V, determined by convention or by encyclopedic knowledge about the type of event, pragmatics, etc. Second, a meaning such as diminution may arise with specific classes of verbs, and as a product of the interaction of the pluractional semantics with the meaning of the verb. Garrett (2001b:12) notes this situation in Latin, where many telic predicates receive conative interpretations with the event-internal pluractional, rather than the simple repetition meaning found with other verb types:

(23) Latin repetitive (Garrett 2001b:12)

advenīre	‘arrive’	adventāre	‘approach’
consulere	‘consult, decide upon’	consultāre	‘deliberate’
noscere	‘get to know, find out’	noscitāre	‘examine, investigate’
capere	‘catch’	captāre	‘try to catch’

In these examples, the subphases of the pluractional event are attempts at—or preparatory actions to—the change of state normally indicated by the verb. For example, ‘deliberating’ is a repetition or extension of the process leading up to a decision. I suggest that in such cases, the default event structure of the verbs in question is not compatible with the semantics of an event-internal pluractional, and thus some different interpretation is required.

In the languages surveyed, there are two classes of verbs which are most commonly subject to this kind of reconstrual when combined with event-internal pluractionals. Accomplishments (with meanings such as ‘build a house’, ‘learn a lesson’) and certain achievements (with meanings such as ‘arrive’, as in the first Latin example above), when combined with an event-internal pluractional, produce a conative interpretation, often extended in time. In other words the pluractional pluralises some process which would normally lead to a completion, without pluralising the completion.

It is necessary to determine what these classes of verbs have in common that causes them to be incompatible with an event-internal pluractional meaning. In particular we need to explain why some achievements but not others fall into this category.

Accomplishments have a particular characteristic which distinguishes them from other Aktionsart classes and may cause them to be highly individuated, and therefore not easily amenable to a grouped interpretation. Accomplishments involve extended action in time, as do activities. However, accomplishments are not internally homogeneous but consist of two distinct phases, a process phase and a change of state (which I will refer to as the transition, following Croft in prep., and essentially equivalent to the term ‘culmination’ in Parsons 1990). This is the cause of the well-known difference in entailment patterns in (24):

- (24) Malachi was painting. (entailed: *Malachi painted.*)
Malachi was building a house. (not entailed: *Malachi built a house.*)

The process of painting, if repeated more-or-less continuously, produces an extended process of painting. However, repeating an event of house-building produces multiple events which are distinguished from each other by a clear final boundary—namely, the completion of each house. However, since achievement verbs with meanings like ‘break’ can occur with event-internal pluractionals (as in example 25 from Yurok), the presence of a final boundary alone cannot be what makes accomplishments different from other verb types. What distinguishes accomplishments from the other basic Aktionsart classes (as described by Vendler 1967, Dowty 1979) is that they already have a complex event-profile since they consist of two distinct phases.

(25) Yurok repetitive (Robins 1985:255)

tikwohs ‘to break’ tikwtikwohs ‘to break in pieces’

If this is the relevant characteristic which prevents repeated accomplishments from being grouped together, how can we explain the existence of achievement verbs with similar behaviour? Achievements are usually considered to be single-phase events, consisting of a change-of-state transition (such as ‘breaking’, ‘grabbing’, etc.) and therefore their temporal structure seems compatible with an event-internal pluractional. One of the defining characteristics of achievement verbs in English is supposed to be their inability to occur in the progressive (unless with a repetitive interpretation):

(26) ?Flora is breaking her leg.

Flora is breaking the plates. [interpreted as repeated breaking]

However, it has also been noted by many authors that achievements *do* occur in the progressive:

(27) Flora is arriving.

Flora is winning the race.

Parsons (1990:24) takes this as an indication that perhaps achievements, like accomplishments, involve a process phase. However, given the difference between examples in (26) and (27) and the pluractional data, it seems more likely that there are (at

least) two types of achievements: those which are typically understood as involving a process phase and those which are not. Croft (in prep.:15) terms verbs like *arrive*, which can occur with the progressive, “runup achievements”:

“A number of achievement verbs, including *die* and *fall asleep*, are acceptable in the progressive (*She’s dying!*) with the interpretation that the participant is undergoing a process – “the runup” – which culminates in the achievement (death). The process has a specified resulting state, like an accomplishment. However, dying does not involve an incremental change to achieve that state: a dying person is not “half-dead” in a measurable way (despite the idiom); instead s/he is still alive until the instant in which s/he dies. In other words, dying is like an accomplishment without a verbal scale, or like an unmeasurable achievement that is “extended” over time.”

What accomplishments and runup achievements have in common is that their aspectual contours include two distinct phases: a process which is extended in time, plus a final transition which is (conceived of as) instantaneous. It is this characteristic which I suggest makes them incompatible with event-internal pluractionals, since such an event can neither form one of a series of rapidly repeated phases, nor can it be ‘expanded’ to produce a durative, continuous reading (like that found with activities) *unless* the final transition is removed from the event contour.

The effect of combining such a predicate with an event-internal pluractional and producing a conative meaning is very similar to well-known examples of aspect shift or coercion (cf. Zucchi 1998, de Swart 1998, among others) or reconstrual, as described by Croft (in prep.:4):

In many cases, the combination of verb stem and [tense-aspect] construction involves a **construal operation**, that is, a reconceptualization of the situation's aspectual structure. Sometimes the reconceptualization of the situation's structure is simply a shift in what part of the aspectual contour is profiled. In other cases, it involves a more substantial restructuring of the aspectual contour of the situation, using a combination of encyclopedic knowledge about the situation, context-specific knowledge of that particular instance of the situation type, and general cognitive operations such as the shift of attention.

These event-types may in theory be restructured in more than one way to fit an imposed event profile. De Swart (1998) proposes coercion operators which convert a homogeneous event to a non-homogeneous one, a state to an event, etc., but which do not specify exactly what the transformation is (making the event iterative, inchoative, etc.), recognising that this process is highly dependent on contextual and pragmatic factors.

This interaction with Aktionsart can be incorporated into the analysis discussed in 3.4 by adding to the event-internal pluractional a requirement that the subparts of the complex event not be complex themselves. Whereas Lasersohn (1995) assumed that for all event-internal pluractionals, $P \neq V$, I have shown that in many cases this is not so. However, in the case of accomplishments and run-up achievements, P is not the same as V . For event-internal pluractionals, therefore, I suggest that $P =_{sp} V$, where $_{sp}$ is intended to represent a restriction to a single-phase event type.¹⁸ I assume that accomplishments and run-up achievements have in their semantics both a process phase and a culmination (cf.

¹⁸ The constraints on P with event-internal pluractionals may vary from language to language, but the general pattern I predict is for languages to require non-complex subevents.

Parsons 1990) and therefore must undergo restructuring in order to occur with event-internal pluractionality. In the cases examined, this necessarily requires the removal of their culmination phase (since the process can occur without culmination but not vice versa) but I do not in principle rule out other ways of meeting such a restriction.

In this section I have accounted for a regular class of cases in which $P \neq V$ for an event-internal pluractional, and have shown that this is not a property of the pluractional itself but rather a result of the interaction of the pluractional with the semantics of the verb.

3.5.2 Choice of plural dimension: time, space or participants

In chapter 2, I presented examples of pluractional categories which only produce a spatial or participant-distributive interpretation. However, in categories which permit multiple interpretations, the choice of interpretation is often constrained or determined by the specific verb used as well as by contextual information.

The basic meaning I have suggested is associated with pluractionals is compatible with any of the three interpretations.¹⁹ However, (a) the temporal, causal and spatial structure of a particular event type (or class) may restrict the possible interpretations, and (b) encyclopedic knowledge or experience of a particular event type may produce a strong bias towards a particular interpretation.

As a very simple summary, I suggest there is a hierarchy of interpretation preference. Temporal interpretation of plural events is the most common and spatial

¹⁹ This is clearcut at least for event-external plural meaning, and this is the case I will consider in this section. The next chapter will address the issue of spatial and participant plurality with event-internal pluractionals, since this is a problem for the analysis of Yurok.

interpretations are the most restricted. Participant-plural interpretation (whether simultaneous or sequential in time) is the primary interpretation if there are morphologically marked plural participants or in certain cases in which the event denotes a change of state not normally repeated by a single participant. Spatial interpretations are only ever primary in cases where (a) the verb is 'location-prominent' (discussed below, including motion, location/distribution and posture verbs); or (b) temporal and participant interpretations are not possible because the verb is stative and/or has a participant defined by its spatial configuration or location relative to a background (such as a spot or hole).

This picture is complicated by the fact that the time, space and participants of events are not independent. For example, it is almost always the case that multiple participants have distinct spatial locations, and that events in multiple spatial locations require either multiple participants or multiple times (since a single participant typically cannot be in distinct locations at the same time). Events may be plural in time and not plural in either space or participants, but time is the only dimension with this independence. In some cases it seems straightforward to claim that one dimension is more prominent than another. For example, it seems reasonable to assume that the distinct spatial locations occupied by plural participants are simply a part of our background knowledge about objects and not a profiled element of the plural-event interpretation. Similarly, it is typically the case that a distributive interpretation of a plural subject as in example (29) may be understood to refer to events which are either simultaneous or sequential in time. Thus even if there is plurality in time, it is clearly secondary to the interpretation of participant-plurality.

(29) Chechen pluractional verb (Yu 2003:296)²⁰

beerash suuna maralilxira
child.PL 1SG.DAT embrace.PLL.WP

‘The children embraced me.’

However, in other cases it makes no sense to try to identify a single dimension in which the event is plural:

(30) Yurok Iterative (fieldnotes EW 1:25)

tohpew- ‘have a hole in’ tegohpew- ‘have holes in’

A hole or spot is an object which may be an event participant, but its definition as an object is dependent on its spatial configuration or location relative to a background. Similar considerations arise with verbs of spatial distribution (such as English *scatter*) which may require multiple objects to be distributed in multiple locations. In such cases there seems to be no a priori reason to treat plurality of objects or plurality of locations as primary in any way.

At this point it is possible to define several classes of predicates which typically or frequently produce interpretations of plurality in dimensions other than time.

1. Change-of-state predicates produce argument plural interpretations.

²⁰ As noted in chapter 5, the orthography used for Chechen here is based on Nichols & Vagapov (2004) and does not completely match the original transcription in Yu (2003).

2. Motion/change-of-location predicates produce interpretations of multidirectional action, with additional temporal OR argument plural interpretation
3. Location and posture (including inchoative, i.e. entry into a posture) predicates produce an interpretation of spatial and argument plurality.
4. Stative predicates with no prominent role for location produce argument plural interpretations.

Context may encourage other interpretations of such predicates, but these are the primary or default readings they generally produce.

An additional class of predicates which receives plural-argument interpretations consists of verbs with (one or more) morphologically plural arguments. Verbs which permit a temporal-repetition interpretation with singular arguments frequently receive a participant-distributive interpretation if they occur with a plural argument. With an event-external pluractional, morphological plural marking of *any* argument can encourage an interpretation of distribution of repetitions across that argument. With event-internal pluractionals, plural marking of an internal argument may produce an interpretation of distribution of repetitions across the argument. With any other argument, the interpretation of a plural NP must be collective.

In this section I have tried to show that while it may be convenient to refer to temporal, participant or spatial interpretations of event-plurality, it is frequently the case that these are not clearly separable or distinguishable. The interconnectedness of time, space and participants of events is something that the basic analysis outlined above is not able to capture in any obvious way. What is needed is a richer lexical semantic representation for individual events to be able to represent and predict the various

possibilities for interpretation. For instance, what is it about the role of motion or location in the semantic structure of verbs I have termed ‘location-prominent’ that produces an interpretation of plurality in space? Examples such as the Yurok *tegohpew* ‘have holes in’ suggest that it is not simply that all predicates in this class subcategorise for a location argument, for instance.

3.6 Conclusions

In this chapter I have argued that the distinction between event-internal and event-external pluractionals is plausibly based in a general cognitive process of grouping, which occurs in both object and event perception. Such a process is supported by results in psychology and is consistent with theories in linguistics and psychology which treat language and conceptual structure as grounded in perception (e.g. Barsalou 1999, Barsalou et al. 2003, Langacker 1991, Talmy 2000).

I have adapted the analysis of plurality in Landman (1996, 2000) which is based on a distinction between grouped and ungrouped pluralities, and which makes some correct predictions about the behaviour of the two types of pluractional. I have also addressed some data which this theory does not easily account for and argued that a richer analysis of event structure and verb lexical semantics is needed.

In chapters 4 and 5 I will apply the analysis and generalisations outlined above to more detailed data from Yurok and Chechen, considering how pluractionals combine with verbs and their arguments to give the interpretations found in the two languages. Yurok has two pluractionals which appear to indicate event-internal and event-external plurality, respectively, and is therefore an ideal language in which to investigate the

contrast further. Chechen has a single pluractional and in chapter 5 I will focus on the role of verbal semantics and aspect in creating event-internal and event-external interpretations.

Chapter 4

Pluractionality in Yurok

4.1. Introduction

4.1.1 Goals of the chapter

This chapter consists of a detailed study of the pluractional system in the Yurok language of northwestern California. Yurok has two pluractional categories which have been argued to have event-internal and event-external semantics, respectively (Garrett 2001a), and therefore it is an ideal language to use in testing and refining the analysis proposed in chapter 3.

The goals of this chapter are: first, to describe the functions and interpretations of the Yurok pluractionals in detail; and second, to consider whether the findings are consistent with the model of event-internal and event-external pluractional meaning developed in the previous chapter.

In the remainder of section 4.1 I provide relevant background information about Yurok and briefly describe the forms of the two pluractionals. Section 4.2 describes the basic uses of the pluractionals: the differences between the two categories in indicating temporal repetition and plurality of participants. In section 4.3 I describe several other, less frequent uses of the pluractionals, including their occurrence with nominals. Section 4.4 considers the interaction of the two pluractionals with verb lexical semantics, and in particular, *Aktionsart*. Finally, in section 4.5 I show how the behaviour of the Yurok pluractionals is consistent with the type of analysis I have proposed, using a distinction between grouped and ungrouped pluralities. However, the two pluractionals also have a

number of uses in addition to the typical event-internal and event-external meanings considered in chapter 3, and I will discuss these in detail and consider their implications for the analysis of pluractionals in other languages.

4.1.2 Forms of the Yurok pluractionals

Yurok is a native language of Northwestern California which is currently spoken fluently by only a few elders. Yurok belongs to the Algic family, and is related to neighbouring Wiyot and to the Algonquian languages.

The language has two grammatical categories which indicate pluractionality. The so-called Iterative infix is described by Robins (1958), who summarises its meaning as that of “plurality, intensity, or iteration of the action, state or process denoted by the verb” (1958:82). Garrett (2001a) describes the Repetitive, a verbal reduplication which indicates “that an action is repeated a number of times in a relatively short time” (Garrett 2001a:277). The following description of the forms of the pluractionals is a brief summary of the detailed account in Garrett (2001a).

The basic form of the Iterative is an infix *-eg-* (or *-rg-*, if it precedes the rhotic vowel *-r-* in the first syllable of the root). The infix is positioned after the first consonant of the root:¹

¹ Citation forms for which no source is identified come from Garrett, Blevins & Conathan (2005) *Preliminary Yurok Dictionary*, available at <http://linguistics.berkeley.edu/~yurok>. Sources for other examples include published and unpublished texts and fieldwork, and are identified abbreviations listed in appendix B, mostly based on Garrett et al. (2005). References prefixed EW are from my fieldnotes.

The orthography is that of the Berkeley Yurok Project and is largely the same as Robins (1958), with the following changes: <hl> = [ɬ]; <kw> = [kʷ]; <ɾ> in syllable nucleus = [ɻ] (Robins <ɾ>); <ch> and <sh> = [tʃ] and [ʃ] respectively (for Robins' <c> and <s,ʃ>); and doubled vowels are long.

b.	new-	to see	nuuw-	to see repeatedly (cf. R55, LA16-7:71)
	pewom-	to cook	puuwom-	e.g. attributive <i>puuwomin</i> ‘a cook’)

In addition to verbs such as *kweget* which appear to have frozen Iterative infixes (for which no non-infixed counterpart is known), the pattern in (3a) also applies to so-called double Iteratives. A verb already infixed with Iterative *-eg-* may undergo the vowel change (producing *-iig-*). The meaning of such double Iteratives is addressed in section 4.3.4.

The Repetitive is formed through reduplication, prefixing a heavy syllable or two light syllables, depending on the structure of the root (Garrett 2001a:271). Garrett argues that historically the form of the reduplicant is disyllabic (CVCV-). However, the second vowel has been lost, except when the first C is a sonorant and the second C is not a glottal stop (compare 4a-b). Additionally, the sequence *-V’V-* in the root is reduced to *-VV-* in the reduplicant (4c).

(4)	a.	sitoh	to splinter	sitsitoh	to splinter several times
		kwryrh	to whistle	kwrykwryrh	to be whistling
		tikwon-		tikwtikwon-	to break in pieces

b.	mekwehl		mekwomekwehl	to be in heaps
	yekwoh		yekwoyekwoh	to fold up or to fold pl. O
	lo'moh		lo'molomoh	to knead, pummel repeatedly
	menoot-	to pull	menomenoot	to keep pulling (EW 2:24b)
c.	ma'epet-	to tie up	maama'epet-	to tie right up
	mo'oh	to curl up	moomo'oh	to be lumpy

Based on recent fieldwork it appears that speakers' current use of the Iterative and Repetitive differs in some respects from the pattern of use seen in earlier materials (e.g. in the fieldnotes and publications of Kroeber, Waterman and Robins, mainly in the first half of the 20th century), and this is problematic for a description of the functions of the pluractionals. However, the main type of discrepancy is that speakers do not produce—and in some cases do not recognise—certain pluractional forms and meanings which are evident in older material. I assume that the use of the pluractionals has contracted along with the decline in use of the language. In this chapter I note when particular uses are only found in older data, but nevertheless include them in the analysis of the pluractional system as a whole, provided they are supported by sufficient evidence.

4.2. Main uses of the Iterative and Repetitive

In this section I describe the central uses of the two pluractionals. The most common meaning of both is to indicate repetition in time, and I will show (in accordance with

Garrett 2001a) that the Iterative and Repetitive produce event-external and event-internal pluractional meanings, respectively. Additionally, I examine the effects of the Yurok pluractionals on plurality of participants and locations, and show that there is a pattern of differences in behaviour which can be linked to the contrast between event-external and event-internal meaning.

4.2.1 Basic uses: repetition in time

Both Repetitive and Iterative categories are used to refer to repeated actions or events, and are clearly pluractional in meaning. However, there is a basic difference in the type of repetition to which they refer. The infixed Iterative forms are most often glossed as ‘regularly’, ‘often’ (5) and in certain contexts as ‘repeatedly’, ‘again and again’ (6), while the Repetitive forms refer to closely-spaced repetitions on a single occasion (7).

(5) Iteratives

- a. negep-ek’ nepuy
 eat.ITR-1SG salmon

I eat salmon all the time (EW 1:28)

- b. yok legaayo’ ku mewihl
 here pass.ITR ART elk

The elk come through here (EW 2:23b)

c. kipun kwegeskwes-ek'²

winter have.a.cold.ITR-1SG

In the wintertime I have a cold (EW 2:30)

d. ... tu' 'o sego'n sega'ani 'o menechok'w.
...CONJ LOC happen.ITR.3SG often LOC disappear.3SG

... and it often happened that it disappeared in these runs. (LA16-7:16)

While the habitual/frequentative use of the Iterative shown above is the most common, the Iterative may also be used to refer to repetition on a single occasion, as in (6).

(6) Single occasion Iteratives:

a. yohpen-i kegepoyur-ek'
drift.in.a.circle-ATTR swim.ITR-1SG

'I swim around it several times' (ES:27)

b. cho hl'o'ronep-e'm k'i kwen cho ko regaayo'rep-e'm
IMPER stop.moving-2SG ART I-REL PVP FUT run.past.ITR-2SG

'Stop at each place you pass' (RS-1/R176-177)

² This Iterative infix occurs with what appears to be a Repetitive base. However, there is no attested nonreduplicated verb *kwesek'* and no obvious plural meaning of the reduplicated form. Since I have otherwise been unable to elicit an Iterative of a Repetitive verb I assume that *kweskwes-* is a frozen Repetitive and is not semantically plural, at least for the speaker who provided this example.

- c. kich tegin
 PERF ring.ITR
 ‘The bell’s ringing every now and then’ (EW 2:26)

(7) Repetitives

- a. kich **pegpegoh** ku ‘yohlkoych’
 PERF split.REP ART log
 I made the log into kindling (split it multiple times) (EW 2:6)
 [cf. pegoh(s-), ‘to split’]

- b. ko’moy-o’ (’o) **prkwprkwr**
 hear-SG LOC knock.REP
 ‘I hear knocking’ (someone’s at the door) (EW 2:1)
 [cf. prkwr, ‘to knock’]

- c. kich ho **yekwoyekwoh**
 PERF PST fold.REP
 ‘I folded them’ *or* ‘I folded it up’ (EW 2:3)
 [cf. yekwoh(s-), ‘to fold’]

It has previously been argued by Garrett (2001a) that this difference is a distinction between event-external and event-internal repetition of exactly the type described by Cusic (1981): the Iterative describes a series of separate events of the same type while the

Repetitive construes a series of like occurrences as the phases of a single event. Clearly, the frequentative, multiple occasion examples of the Yurok Iterative fall within the general profile of event-external pluractionality. The examples of the Repetitive considered so far also have obvious characteristics of event-internal pluractionality: the examples in (7) indicate relatively continuous repetition of single-phase, near-instantaneous occurrences (semelfactive and achievement verbs) on a single occasion. Moreover, the glosses show that the repetition can be interpreted as having a common goal or a common completion (for example, ‘splitting something right up’ has a completion when the object is appropriately split). The single-occasion Iteratives in (6) lack one or more of these characteristics. For example, the repeated occurrences described in (6b) and (6c) are clearly discontinuous in time. Example (6a) plausibly involves continuous repetition, but of a type of event which generally does not co-occur with event-internal pluractionality. Swimming around an object is presumably an accomplishment (since it is both telic and extended in time, with a path argument functioning as an Incremental Theme), and (as shown in chapters 2 and 3) accomplishment predicates across languages only occur with event-internal pluractional meaning if they are somehow reconstrued, generally as activities (i.e. the final transition phase of the accomplishment is removed, producing a conative interpretation).

This distinction between the repetition meanings of the Iterative and Repetitive is almost entirely regular and consistent (a small number of exceptions will be discussed in section 4.3.3 below). Robins (1958:82) notes a number of “specialized” meanings of the Iterative in addition to basic repetition, but these are primarily cases in which the basic repetition meaning has become attached to a particular context and takes on additional

associations of the context. For example, the Iterative of *meyoomey*- ‘to be pregnant’, means ‘to lose one’s children in childbirth’. This can be understood as the lexicalisation of a scalar implicature: if a woman has had multiple (surviving) children, it is uninformative to say merely that she has been repeatedly pregnant. However, if the children do not survive after birth, the pregnancy is the salient characteristic. By saying she has been repeatedly pregnant, it is normally implicated that the stronger statement (she has multiple children) is not true.

For most verbs marked with one of the pluractionals, a meaning of temporal repetition seems to be the default. For example, when a speaker is presented with an Iterative- or Repetitive-marked verb with no additional context and asked what it means, the explanation offered almost always involves repetition in time. However, the Yurok pluractionals, like those in many other languages, have other semantic effects besides indicating repetition in time. In the next two sections (4.2.2 and 4.2.3) I will show how the pluractionals interact with particular classes of verbs and with argument number, appearing to produce interpretations of argument plurality and spatial distribution.

4.2.2 Plurality of locations

As seen in chapter 2, it is common for pluractionals to produce interpretations in which multiple events are distributed across multiple spatial locations. However, I will show in this section that the Repetitive and Iterative have spatial interpretations only as a result of their interaction with the lexical semantics of specific classes of verbs, not as a regular part of their meaning.

With a number of verbs, the Repetitive suggests actions or states distributed

within a very limited area, typically the boundaries of a single entity:

(8)	tekun-	to be stuck together	tektekun-	to be stuck together in several places
	pegon-	to split (intr.)	pegpegon-	to split in several places
	swechon-	to be torn	swechowechon-	to be torn in several places, be all torn up (EW 4:7)
	sweton-	to crack, split	swetowetoh	to crack in several places

However, the fact that these verbs form a closely related semantic group suggests that the resulting meaning may in fact have more to do with the lexical semantics of the verbs than with the meaning of the Repetitive. All of the verbs in this group refer to a state (or inception of a state) involving a subpart of the internal argument or an “entity” (such as a hole) which is defined by its location on the internal argument. Multiple instances of the state or inception naturally involve different locations on the internal argument. For instance, if a shirt has a tear in, that tear occupies some location on the shirt. If the shirt receives a second tear, this tear must occupy a new location (or it is in fact not a separate tear). A shirt with several tears necessarily has tears in several locations.

Similarly, the Iterative does not have a systematic spatial interpretation. As discussed in chapter 2, event-external pluractionals in a number of languages permit interpretations of free spatial distribution of events (‘to do all over, all around’). However, in Yurok this meaning seems to be expressed only adverbially, as in (9).

- (9) Niki 'u koosi ten
all PST everywhere rain
'It was raining everywhere' (R 58)

4.2.3. Plurality of participants

While the Yurok pluractionals do not generally have a spatial interpretation, both the Repetitive and the Iterative can have the effect of pluralising event-participants. However, there are systematic differences in the kinds of arguments they pluralise and the types of verbs with which they most frequently have this effect.

Since nouns in Yurok generally do not indicate number, it may seem that pluractionals provide a useful strategy for emphasising the plurality of particular participants. However, pluractionals in Yurok do not fill the function filled in other languages by nominal number. It is typical to leave the number of an argument expressed by an NP semantically unspecified (by any means). Where pluractionals have an argument-pluralising effect, I propose that in most cases they bring attention to the plurality (repetition or otherwise) of the event and only secondarily to the argument.

Repetitive

The generalisation proposed in chapter 3 is that event-internal pluractionals do not produce distributive-argument interpretations, and that their arguments are always singular or collective. However, Yurok challenges this generalisation. The Repetitive can produce plural interpretations of the objects of transitive verbs (O), as in (10a), and the

there is not an obvious common characteristic among the verbs that can. The verbs seem mainly to refer to states of inanimate physical objects which might be found grouped together. For example, *ket'ket'ey* describes a group of boats moored together. In addition, several of them refer specifically to spatial configurations or characteristic spatial properties (such as length) of objects. The significance of these generalisations is unclear. However, the class has a similarity to the semantic field in which suppletive singular/plural verb forms are common, as discussed in chapter 2. Number suppletion is most often found in verbs of motion, posture and spatial configuration, as well as such socially and culturally central events as eating. I suggested that singular/plural stem pairs occur with events and participants where number differences might have the greatest effect (i.e. events which are maximally different when occurring with singular and plural participants). Event-internal pluractionals used to pluralise participants may be a less extreme manifestation of this phenomenon: while the same root is used to encode the event when it involves a singular or a plural subject, the event-internal pluractional produces a complex event—in a sense, a different type of event.

It is also possible for the Repetitive to pluralise the subject of nonstative intransitive verbs, though such verbs are relatively infrequent. For example:

- (13) ki penpenoh ku 'wryhl
 FUT drop.REP ART egg
 The eggs'll drop (be careful!) (AG 07-1)

In contrast to the effect of the Repetitive to indicate plurality of intransitive

However, speakers' translations and explanations of Repetitive examples reveal that in fact this is not the case. The Repetitive may also be used to describe a situation in which multiple objects are affected by a single action.

(15) kich yekwoyekwoh

PERF REP.fold

'I folded them (in sequence or all at once)' (EW 3:20)

The two speakers whom I have consulted consider example (15) appropriate in a context in which a pile of papers is folded together with a single action. In this case, it seems the event can only be plural if we assume that the action is distributed to individual entities (with all of the phases of the event occurring simultaneously), and therefore the claim that arguments of event-internal pluractionals are always singular or collective cannot be correct. This problem will be addressed in section 4.5.2.

In general, the restrictions on argument pluralisation with the Repetitive can be taken to support the idea that (at least some types of) argument plurality are not compatible with a construal of repeated occurrences as a single event.

Iterative

The Iterative can also pluralise arguments. It often pluralises the subject of an intransitive (16a,b; 17a), and may also pluralise the subject or object of a transitive verb (16c,d; 17b-e).

- (16) a. **wegesah** to bathe oneself (pl. S)
(LA 16-7:64)
- b. **pegi'iy-** to go mussel-gathering (pl. S)
(R 82)
- c. **negep-** to eat (pl. A *or* repeatedly)
(EW 3:16)
- d. **negahchk-** *vt* to pay (pl. A *or* pl. O)
(EW 5:12)

- (17) a. **ku hegel**
FUT dance. ITR
We're gonna dance (EW 1:10)
- b. **kich negep-i'm-ehl ku popsew**
PERF eat. ITR-COLL-3PL ART bread
They (2/3 people) already ate the bread (EW 3:16b)
- c. **cho nu rego'omech-e'm**
IMPER MOT pursue. ITR-PL
go and chase them all (pl. O) away! (R 82)

d. ma negahchk-ek'

PST pay.ITR-1SG

I paid to more than one person/I made several payments (E 5:12)

e. syegaahlk-oy-ek'

kick.ITR-PASS-1SG

I was kicked by each of them, one at a time (EW 1:41)

Typically, with both transitive and intransitive verbs, the plural subject interpretation alternates with the repeated event interpretation, e.g. *wegesah* 'to bathe (pl. S)', which can also have a repeated event meaning as in the phrase *ku 'o wegesah*, 'bathing place (where one regularly bathes)'.

The class of intransitive verbs which receive a plural subject interpretation with the Iterative appears to consist primarily of unergative-type verbs (those in which the subject is the initiator of the event), which contrasts with the Repetitive pattern of pluralising subjects of stative and some unaccusative verbs, and seems consistent with the ability of the Iterative to pluralise transitive subjects.

Transitive objects are of particular interest since both the Iterative and Repetitive can pluralise this argument. An expected difference based on the data in chapter 2 would be that the Repetitive would permit only collective plural interpretations of the object, where the Iterative would produce distributive readings. However, as pointed out above, the Repetitive can produce a distributive reading of its object. The verbs whose objects may be pluralised by the Repetitive are generally semelfactives or achievements and their

objects are acted on all together or in a relatively continuous sequence, and they are mostly of low animacy/individuation. The Iterative appears to have a more flexible use to indicate plurality of objects, and may pluralise objects which are animate, more highly individuated, which do not undergo a change of state, and so on, as in (17d), *negahchk-*, meaning ‘to pay several people or make several payments’.

Finally, there are a few examples in which the Iterative pluralises the subject of a stative intransitive verb, as in (18).

(18)	lo’ogey	to be black	lego’ogey	to be black (pl.S) (EW 1:19)
	noorew	to be pretty	negoorew	to be pretty (pl.S) (EW 1:19)
	chey(kel-)	to be small	chegey(kel-)	to be small (pl.S)
	keychek	to be tired, exhausted	kegeychek	to be tired (pl.S) (EW 5:6)

There is not an obvious semantic difference between the verbs which produce plural subject readings with the Iterative and those which do so with the Repetitive (and none, to my knowledge, do so with both)³. However, there appears to be a subtle but consistent difference in the interpretation obtained. Based on recent data from two speakers, it appears that plural subject interpretations produced by Iterative verbs are more compatible with highly individuated subjects than with mass-like pluralities, as shown by the following examples:

³ The first two of these cases (*lego’ogey* and *negoorew*) may belong to a class of verbs with which the Iterative can have Repetitive meaning, based on the phonological shape of the roots (to be addressed in section 4.3.3). However, the remaining examples do not seem to belong to this class.

- (19) a. noorew-ohl ku we'yonok
 pretty-3PL ART girl.PL
 The girls are pretty (a group together) (EW 5:10)
- b. negoorew-ohl ku we'yonok
 pretty.ITR-3PL ART girl.PL
 The girls are all pretty, each one is equally pretty. (EW 5:10)
- c. nikichyu lego'ogey
 all be.black.ITR
 They're all black (referring to houses). (EW 4:27)

The use of the Iterative in (19b) clearly places emphasis on each girl individually being pretty, in contrast to the group interpretation in (19a). The sentence in (19c) was used to refer to highly individuated entities (houses), and the speaker noted that the form *lego'ogey* would not be appropriate applied to flowers (which are more mass-like), for example.

Argument pluralisation with the Repetitive and Iterative is summarised in table 4.1:

Pluralised argument	Repetitive	Iterative
Transitive Object	yes	yes
Stative intransitive subject	yes	yes
Unaccusative Intransitive subject	yes	[yes] ⁴
Unergative intransitive subject	no	yes
Transitive subject	no	yes

TABLE 4.1: Argument pluralisation possibilities with the Repetitive and Iterative

In the first two cases, where either Iterative or Repetitive may pluralise a particular argument, the Repetitive seems to pluralise entities of low individuation, or which tend to occur in groups in particular spatial configurations. The Iterative can pluralise almost any argument, and always seems to suggest a high degree of distinctness of entities.

4.2.4 Comparison with the Collective

Given the use of the pluractionals as indicators of argument plurality, it is interesting to compare them to another verb category in Yurok which is referred to as the ‘collective plural’ by Garrett et al. (2005:xiv).⁵ The Collective is a suffix (of the form *-e'm-*, *-i'm-*, *-oo'm-* or *-uu'm-*, depending on the verb) which is added to many verb stems, to which plural personal inflectional endings are then added. The following example is from Robins (1958:35):

⁴ I do not have any clear examples of this type, but predict that such examples are possible based on all other data.

⁵ Robins (1958:35) refers to this as the ‘incremental plural’.

(21) helomey- to dance + -e'm- (Collective)

1pl. helomeye'moh

2pl. helomeye'mo'w

3pl. helomeye'mehl

The suffix has been termed the Collective since it seems to refer to action by a single group of people, as shown by the following examples:

(22) a. Kelew hes ho helomey-**e'm-o'w**?

2PL INTERR PST dance-COLL-2PL

Have you folks been dancing? (RHR 4)

b. Telog-**e'm-o'w** ni pulik

sick-COLL-2PL LOC downriver

Down river the people are ill. (R 36)⁶

c. Ti'nishoo ki nep-**i'm-oh**?

what FUT eat-COLL-1PL

What are we going to eat? (YLCB 3-03:18)

⁶ Robins (1958:35-36) notes that the second person plural form of forms both with and without the collective plural ('incremental plural') is used indefinitely to refer to "people in general".

d. Ko'moy-**o'm**-o'w hes?

understand-COLL-2PL INTERR

Do you (pl.) understand? (YLCB 3-04:20)

However, the suffix does not have collective plural meaning in the sense of joint action. It suggests action by a plurality of individuals who are somehow grouped together, but who do not act together as a group to perform a single action. In fact, the verbs which may take a collective suffix are typically inherently distributive verbs—verbs describing events which can *only* be performed by individuals. Dancing or eating, for instance, may be done by a group together, but each individual is dancing or eating as part of a group. This is unlike predicates with meanings like ‘build a house’, ‘lift the piano’, where (on a collective plural interpretation) the predicate applies to the group, but not to an individual member of the group.

It appears that, while the collective suffix and the two pluractionals may all have subject-pluralising functions, these functions are subtly different. The Repetitive applies to the subjects of stative and unaccusative verbs, and produces a plural subject of low individuation. The Iterative can apply to the subjects of transitive and unergative verbs as well as other arguments, and produces an interpretation of higher individuation of the plural participant. The Collective applies specifically to inherently distributive verbs and indicates that a number of subjects perform an action together (i.e. they somehow behave as a group, even though their actions are individual).⁷

⁷ Note the example in (17b) which uses both the Iterative and Collective.

4.3. Other uses of the pluractionals

This section addresses several more peripheral uses of pluractional marking in Yurok: first, both Iterative and Repetitive are used in some cases to form nouns or indicate nominal plurality; second, the Iterative can produce a meaning of intensification with certain gradable predicates; and finally, there is a class of cases in which the Iterative appears to take on the semantic function of the Repetitive.

4.3.1 Nouns formed with the Iterative and Repetitive

A number of nouns in Yurok include pluractional morphology. The Iterative is commonly found in deverbal characterising nouns (which refer to one who habitually participates in the action of the verb), as illustrated by the following examples:

- (23) *wrgrs* fox (cf. *wrsry* ‘to be thin’)
megokw dog (cf. *mokwoch* ‘to bark’)
nepe’wishneg otter (cf. *nepe’wish* ‘fish’, *negep* ‘eat.ITER’, i.e. ‘fish-eater’)
prgr’y (1) moldy acorns; (2) sorrel (cf. *pr’ypr’w* ‘to be sour’)

While in these examples the Iterative retains its pluractional meaning, it is also used in a few cases to indicate nominal plurality. Nouns in Yurok generally do not have plural forms: the base form of a noun is neutral with respect to number. However, a small number of nouns have an optional plural form, and among these, the marker of plurality is in several cases the Iterative:⁸

⁸ Robins lists nine such nouns in his grammar (1958:23), and a few more appear in the lexicon.

(24)	perey	old woman	pegerey
	mewimor	old man	muuwimor
	sepolah	field, prairie	segepolah

Nouns containing the Repetitive are less common. While there are a number of nouns containing reduplication, only a few can be said to contain the Repetitive marker (the others being onomatopoeic, and/or containing reduplication which does not match the form of the Repetitive). The forms in (25) are instruments or causes of repeated sounds normally described with a Repetitive verb. The forms in (26) refer to the plurality of an entity. However, for all of these examples, the form is identical to a noninflected verb, and therefore it may not even be appropriate to describe them as Repetitive nouns but rather as noninflected verbs used in nominal function.

(25)	chokchoop'	drum	
			(cf. <i>chokchoop'a'r</i> 'to drum'; no attested * <i>choop-</i> , but similar <i>s'ooponem-</i> 'to hit with the fist, <i>s'oks'ooponem-</i> 'hit with the fist repeatedly', etc.)
	kwrykwryrch	screech owl	
			(cf. <i>kwrykwryrch-</i> 'to whistle, keep whistling')
	tintinoh	bell	
			(cf <i>tintinoh</i> 'to be/keep ringing')

- (26) mrkwrhl mountain **mrkwr**mrkwrhl mountain chain
 hlkr'mrk knot **hlkr'**hlkr'mrk something with knots in it

In their limited occurrence with nouns, the Iterative and Repetitive retain the same basic contrast in meaning that they have with verbs.

4.3.2 The Iterative used to indicate intensification

A number of Iterative forms shows what appears to be an intensive meaning. Certain gradable predicates occur with the Iterative infix to mean 'be really/very X':

- (27) a. ku k'-uuk **skuu**woksi'm ku pekoyoh
 ART 2SG-child like.ITR.SG ART red
 your kids really like the candy (red licorice) (EW 1:28)

- b. niko'l skewok ku pekoyoh
 always want ART red
 Every day they want the candy (EW 1:28)

(27a) shows the Iterative meaning 'really like'. In example (27b), in which an Iterative form might be expected since the meaning is clearly one of regular repetition, the Iterative is absent (though the habitual meaning is provided by *niko'l*). The verbs in (28) show similar behaviour:

(28)	kaam-oksim-	to dislike	kegaam-oksim	to really dislike
				(ALK 74:25)
	t-oksim-	to admire	teg-oksim-	to praise
	wa's-ok(sim-)	to pity, be sorry for	wega's-ok(sim-)	to be very sorry for
				(KFD 76) ⁹
	swoopin-	to spill	swegoopihl	to pour with rain
	swoopihl	to pour with rain		

These examples raise an interesting problem for an analysis of the semantics of the Iterative, since it is not obvious how a genuine meaning of intensification could result from a plural event meaning, and this issue will be addressed in section 4.5.4.

4.3.3 Iteratives with event-internal meaning

While the description and examples above show a consistent distinction between the meanings and uses of the Repetitive and Iterative, a group of examples can be found which appears to contradict this basic contrast. There are a number of verbs which take the Iterative infix but with which the Iterative seems to have an event-*internal* meaning. For example:

(29)	a.	tohpew-	have a hole in	tegohpew-	have holes in, be full of holes
	b.	myaahlkep-	to jump	myegaahlkep-	to jump up and down

⁹ Robins gives the meaning of wega'sok(sim-) as 'to be unselfish' (R 261).

The Repetitive-like nature of these examples can be highlighted by comparing them to semantically similar verbs which have Repetitive forms. The verb *tegohpew* ‘have holes in’ indicates spatial distribution within the bounds of a theme argument, much like the Repetitive form *tektekun* ‘to be stuck together in several places’, or *swechowecho’n* ‘to have tears in several places’. Similarly, *myegaahlkep* ‘jump up and down’ is very close in its pluractional meaning to Repetitive *kotkoti’r* ‘to hop up and down’, indicating relatively continuous repetition of an instantaneous action (a prototypical Repetitive meaning).¹⁰ A more complete list of verbs which show this Repetitive-like behaviour when marked by the Iterative infix is given in (30).

(30) a.	myaahl-	to jump	myegaahl-	to jump up and down (EW 2:8)
	nooloch-	to answer	negooloch-	to be answering (EW 1:5)
	swoomet-	to smell (tr.)	swegoom	to sniff around, be sniffing (EW 3:12)
	naap-	to step	negaap-	to keep stepping (e.g. on sbdy’s foot) (EW 3:36)
	naamewet-	to bite, grab in one’s mouth	negaamewet-	to be biting (EW 2:12)
b.	tahtos-	to starve	teguh	to starve (pl. S)
	kohchew-	to catch	kegohchew-	to be catching (fish) (EW 3:14)

¹⁰ I take this verb to be a Repetitive since it has the expected reduplicative structure and event-internal pluractional meaning, even though it has no attested unreduplicated counterpart.

	pahchew	to move	pegahchew-	to move around (e.g. small motions of leaves) (14:23)
c.	lo'p'-	to blink	lego'p'-	to be blinking
d.	tm-	to shoot	tmeg-	to hunt
e.	ke'yolew	to spit	kege'yolew	to spit (> 1 time) (JB 01-09)
	ke'ype'hl	there is a flicker of lightning (AG 6/28/06)	kege'ype'hl	there is lightning (EW 1:33)
	---	---	trgr'ykr'ry	it's spotted (EW 3:20)
	rorkwi'hl	the waves break	regor	waves are running up
	sesomen-	to scratch	segesomen-	to scratch a bunch of times (EW 3:27)
f.	lekoot	to stab	liikoot	to stab >1 time (EW 5:4)
	teykelew	to bite	tegeykelew	to keep biting (EW 3:9)
	chwinkep-	to say, speak, pray	chweginkep-	to talk

The verbs in (30) are grouped into six classes. For five of these—(30a-e)—it seems likely that Repetitive reduplication is not possible for phonological reasons and that therefore the Iterative, since it is semantically quite close to the Repetitive, is used instead.¹¹ The few remaining examples in (29e) are unexplained.

The first four types of examples (29a-d) fail to reduplicate because in some way each type does not match the necessary template for reduplication. As summarised in section 4.1, Repetitive reduplication consists of a CVC- or CVCV- prefixed reduplicant. The sequence -V'V- is reduced to -VV- in the reduplicant. For the purposes of the account suggested here, it is also relevant to note that there are two epenthetic segments: an *h*, inserted “after any short *a* or *o* that would otherwise be followed by a voiceless (nonglottalized) obstruent” (Garrett 2001a:265/Berman 1981:257-259); and a glottal stop following the same vowels where they would otherwise be followed by a glottalized obstruent (Berman 1981:258). The verbs in (30a-e) pose various problems for Repetitive reduplication:

1. Roots beginning CVV-

Since Repetitive reduplication copies a short vowel, roots beginning CVV- present a problem: there is no short vowel to copy. A small number of CVV- roots do have Repetitive forms, but there is not a consistent shape for the reduplicant of such verbs, suggesting that these cases are not part of a regular pattern, as illustrated in (31).

¹¹ Thanks to Andrew Garrett for pointing out the patterns described in this section.

- (31) a. syaahlk- ‘to kick’
 sya’syaahlk ‘to kick repeatedly’
- b. s’oophonem- ‘to hit in the face’
 s’oks’oophonem ‘to hit in the face repeatedly’

In (31a), the reduplicant is CV’-, and in (31b) it is CVk-. These reduplicated forms are established lexical items and I suggest that the reduplication is (at best) no longer productive with verbs of this form.

2. Roots with epenthetic h or glottal stop

In those roots in (30b-c), the second consonant (either *h* or glottal stop) is epenthetic. It is possible that the epenthetic segment cannot be copied by reduplication, thus ruling out a Repetitive form.

3. Consonantal roots

The few roots in Yurok which consist only of a C(C)- sequence (e.g. 30d) are clearly a problematic input for reduplication, since there is no root vowel to copy.

4. Roots producing bad output sequences

The verbs in (30e) are a heterogeneous class, but in each case, applying Repetitive reduplication to the root produces an unattested (presumed unacceptable) phonological sequence as its output. Roots in which $C_1=C_2$ cannot reduplicate unless the consonant is a sonorant (producing a CVCV- reduplicant), since otherwise reduplication would produce

a sequence of two identical consonants ($C_1VC_{2=1}C_1VC-$) which does not occur in Yurok. This is true for the roots *sesomen-* and *rorkwihl-*.

Other roots may produce unattested sequences. For example, the reduplicated form of *ke'yolew* would be **ke'yke'yolew*, where /'yk/ (with unglottalised *k*) is never attested.

These proposed blocks to reduplication may account for a number of apparently exceptional uses of the Iterative, and can also be taken to support a close semantic relationship between the two pluractionals (which might not be expected between, for example, a continuative and a habitual aspect marker, to which some of the typical uses of the Yurok pluractionals may be compared).

Given that the Iterative infix appears to produce an event-internal meaning with these verbs, the question arises of what happens if an event-external interpretation is required. It may be that the Iterative form can have both meanings, though I have not found clear examples showing this to be the case. Another possibility is to use the double Iterative in cases where it may be necessary to disambiguate or to emphasise that an event-external pluractional meaning is intended.

4.3.4. Double Iteratives

The form of the double Iterative was described in section 4.1: an already infixal *-eg-* becomes *-iig-*. This form often functions as a basic Iterative for verbs which have a frozen *-eg-* infix, and in this case has the same meaning as the regular Iterative (e.g. *kweget* 'to visit', *kwiiget* 'to visit regularly', as in example 3). However, Robins cites

some verbs for which both the single and double Iterative are attested but no difference is noted between them (forms and glosses from Robins 1958:84):

(32)	rohsim-	to spear	regohsim-	to be speared regularly
			riigohsey-	
	na'aw-	to catch surf fish	nega'aw-	to be a surf-fish catcher
			niiga'aw-	
	raayo'r(ep-)	to run past	regaayo'r(ep-)	to run past often
			riigaayo'r	
	rorkwihl	the waves break	regor(kwihl-)	the waves keep breaking
			riigor	
	chwin(kep-)	to talk	chwegin(kep-)	to talk regularly
			chwiigin	
	hlkyorkw-	to watch	hlkyegor(kw-)	to watch, be a spectator
			hlkiigor	
	mehl'en	to ask for, to beg	megehl'en	to go around begging
			miigehl'en	

Note that most of these verbs either appeared in (30), or fit the root shapes identified as problematic for reduplication. I suggest that the reason for the lack of distinction noted between the single and double Iterative in most of these cases is that the single Iterative is used in place of the Repetitive, and that while it may also be used with an event-external meaning, speakers in some cases use the double Iterative to clarify or emphasise that they

c. Double Iterative (event-external)

noohl Tmry 'we-Roy ho riigor

as.far.as Cannery Creek PVP waves.come.up.ITR.ITR

The waves come up as far as Cannery Creek (R104)

The sentence in (34b) shows an event-internal interpretation of the Iterative form *regor*: waves were running up (continuously or persistently in a single time period). In contrast, (34c) shows a generic/habitual (event-external) interpretation: typically or generally, the waves come up to a certain point. I suggest that the double Iterative is used here in order to make the interpretation unambiguously event-external.

4.4. The relationship between Aktionsart and the pluractionals

A final descriptive issue to address in Yurok is the interaction between verb lexical semantics, specifically Aktionsart, and the uses of the pluractionals. In chapter 3 I argued that certain Aktionsarten (in particular, accomplishments and run-up achievements) are incompatible with event-internal pluractional semantics, whereas all types of verbs can occur with event-external pluractionality, and here I examine these claims with respect to Yurok.

Verbs of all Aktionsart types can occur with the Iterative to produce a meaning of repetition in time, as shown in examples (35)-(39):

(35) State (temporary)

- a. yo' kwelekw we-'e'goroyew-ek' kich mehl ka'aal
he well 3-be.in.debt.ITR-SG PERF CIRC slave

He has become a slave through being continually in debt (R 131)

- b. kegemoloch-ek'

be.jealous.ITR-1SG

I'm jealous all the time. (EW 5:15)

(36) Activity

- a. tegenpewihl

rain.ITR

It rains a lot (EW 1:23)

- b. niko'hl ho 'ne-krgrtk-rk'

always PST 1-fish.ITR-SG

I always used to fish (TTW A:106)

(37) Accomplishment

- a. Mep kego'm 'w-egoyek'.

PST hear.ITR 3-tell.PASS-SG

The story was told. (R 99)

(35) State (temporary)

- a. yo' kwelekw we-'e'goroyew-ek' kich mehl ka'aal
he well 3-be.in.debt.ITR-SG PERF CIRC slave

He has become a slave through being continually in debt (R 131)

- b. kegemoloch-ek'

be.jealous.ITR-1SG

I'm jealous all the time. (EW 5:15)

(36) Activity

- a. tegenpewihl

rain.ITR

It rains a lot (EW 1:23)

- b. niko'hl ho 'ne-krgrtk-rk'

always PST 1-fish.ITR-SG

I always used to fish (TTW A:106)

(37) Accomplishment

- a. Mep kego'm 'w-egoyek'.

PST hear.ITR 3-tell.PASS-SG

The story was told. (R 99)

- b. Wishtu' ki yegohku' mocho kich slo'ehlk-o' 'oohl.
 and/so FUT make.PASS.ITR.3SG if PERF be.thin-3SG person
 This is how they will make it [medicine] if a person gets weak. (I4:47)

(38) Achievement

- a. tu' wi 'o kegemol-e'm.
 and there LOC steal.ITR-2SG
 [You have your own fishing place underneath] and are always stealing there
 (LA16-5:10)

- b. tegeloye'w
 tell.a.lie.ITR.3SG
 s/he [tells] lies all the time (JE82)

(39) Semelfactive

- a. chpi ne-'e'goch-ek'
 only 1-sneeze.ITR-SG
 I sneeze all the time (JB 02-6)

Repetition of activity verbs as in (36) confirms that event-external pluractionals are not restricted to applying only to bounded predicates: the event-external category can coerce a bounded interpretation of activity (i.e. activity occurring for a limited period on each occasion). For instance, example (36b) describes repeated periods of fishing of some

(presumably prototypical or contextually determined) length, rather than repeated events which are delimited in some inherent way (as is the case with accomplishments and achievements, for instance).

Event-external repetition on a single occasion could in principle occur with verbs of any of these classes (with a discontinuous meaning). However, in Yurok the Iterative frequently occurs with accomplishment verbs—specifically those involving spatially-bounded motion—to indicate relatively continuous repetition. With accomplishment verbs, the meaning of the Iterative is something like ‘to do to completion or boundary, repeatedly’. While many types of event may either require temporal discontinuity in order to constitute multiple events (i.e. activities) *or* simply be inherently discontinuous because of the change of state they entail (e.g. achievements like *arrive*), bounded motion is easily repeated continuously.

(40)	yohpol-	to fly in a circle	yegohpol-	to fly in circles (P 129)
	kwomhlenekw-	to drift back	kwegomhlenekw-	to move back and forth on the water (P 116)
	kwomhlech-	to turn back	kwegomhlech-	to walk back and forth (P 125)

Repetitives, in contrast, are more restricted in the verbs they may apply to. They are most often formed from verbs denoting punctual events or actions (41). As already discussed, a

number of Repetitives are also formed from intransitive stative verbs and pluralise the subject of the verb (42).

- (41) **syaahlk-** to kick **sya'syaahlk-** to kick (more than once)
kwryrch- to (give a) whistle **kwrykwryrch** to whistle 2/3 times, be
whistling (EW 2:22)
- (42) **no'op-** to be tall **noono'op** to be tall (pl. S)
(EW, fieldnotes)
- penoh** to fall/drop (intr.) **penpenoh** to fall/drop (pl.S) (AG 07-1)

As noted in section 4.2.1, a bounded, accomplishment-like interpretation may arise when the Repetitive is applied to semelfactive and achievement base verbs. This is common in cases where repetition affects a single object, and translations are typically of the form 'to do to completion', 'to do right up'.

- (43) **hlkr'mrkrhlkin-** to knot **hlkrmlhkr'mrkrhlkin-** to tie up in knots
tikwon- to be broken **tikwtikwon-** to be broken in pieces,
or pl. S (EW 4:23)
- kwryrch-** to whistle **kwrykwryrch-** to whistle a song or
whistle repeatedly (EW
4:9)

These forms are also compatible with a meaning of simple repetition, or in some cases with a plural argument interpretation, as their translations suggest. In other words, the Repetitive does not impose a specific boundary on the event but simply permits the bounded interpretation in context. A single event frequently has a single goal or completion, and a sequence of repetitions viewed as a single event can suggest a common result.

The Repetitive does not appear to occur with activities or accomplishments. As discussed in chapters 2 and 3, accomplishments across languages rarely occur with event-internal pluractional meaning, and then only if they are reconstrued as activities (without their final boundary). I suggested in chapter 3 that this is because they are already internally complex, and do not make possible phases of a larger event. In Yurok, accomplishments are not attested with the Repetitive at all, and this is also the case for run-up achievements.

Activities do occur with event-internal pluractional meaning in some other languages, generally producing a meaning of continuation or prolongation of the activity. For example, this is the case for one of the pluractionals in Latin (Garrett 2001b:8-9):

(44)	a.	crepāre	to make a sharp noise	crepitāre	to crackle, produce series of noises
		salire	to jump	saltāre	to dance
		spuere	to spit	spūtāre	to keep spitting, spit repeatedly

b.	fundere	to pour	funditāre	to keep pouring out
	gerere	to carry	gestāre	to carry about, carry with one, wear
	quaerere	to look for, seek	quaeritāre	to keep on looking for

The examples in (44a) show prototypical event-internal (repetition) meanings. The examples in (44b) show the pluractional applied to activity verbs, producing a meaning of ongoing action.

However, there appear to be no examples of this type in Yurok. Activities may be analysed as complex or internally plural (e.g. Parsons 1990:184), since they are divisible into phases or subevents of some type. Thus I suggest that the difference between the use of the Yurok Repetitive and markers of event-internal pluractionality in other languages may depend on whether activities are treated with other internally complex predicates, like accomplishments, or as consisting of only a single phase, like other types of predicates.

The following table summarises the possible combinations of Aktionsart type with the Repetitive and Iterative.

	Repetitive	Iterative
Activities	no	yes
Accomplishments	no	yes
Run-up achievements	no	yes
Other achievements	yes	yes
Semelfactives	yes	yes
States	yes (participant plural only)	yes

TABLE 4.2: Repetitive and Iterative with different Aktionsart classes

As with the different patterns of pluralisation of participants, the Repetitive is clearly more restricted in its behaviour than the Iterative.

4.5. Adapting the proposed semantics to account for Yurok

In this final section I apply the skeleton semantics for pluractionals proposed in chapter 3 to the Yurok data. First, section 4.5.1 summarises the major descriptive characteristics to be accounted for and their possible significance for the analysis. In sections 4.5.2 to 4.5.5 the semantics for pluractionals proposed in chapter 3 is applied to the Yurok pluractionals and various challenges posed by the Yurok data are addressed.

4.5.1 Summary of descriptive facts and their significance

The Yurok Iterative and Repetitive have event-external and event-internal meaning, respectively. The Iterative in Yurok typically refers to repeated events—frequently, but not always, habitually or characteristically repeated events. Apart from its basic meaning

of repetition, an indicator of its plurality is the fact that the repetitions can be distributed over an argument of the verb. Event-internal pluractionals are also clearly plural in some respects: they involve repetition of a base event and can apparently be distributed over an internal argument. However, in certain ways they seem to function as singular (as would be expected based on the definition of event-internal pluractionals): they are restricted to single occasions, and are not distributable over any argument other than an internal one (object, stative or unaccusative subject); in addition, they are unable to pluralise events which already have complex internal structure (activities and accomplishments).

These characteristics raise three main questions for the analysis outlined in the previous chapter. First, the frequent use of the Iterative to indicate habituality requires some consideration. A simple meaning of plurality does not by itself produce a habitual interpretation. Second, the apparent distribution of event-internal pluractionals over internal arguments contradicts the claim in chapter 3 that event-internal pluractionals denote group events and take only singular or collective arguments. Finally, the intensive meaning of the Iterative infix is also not transparently related to the semantic pluralisation of an event, raising the issue of how the intensive meaning arises with particular types of verb.

4.5.2. Application of the basic analysis to Yurok

The adaptation of Landman (1996, 2000) proposed in the previous chapter distinguished plural events from group events (which are atomic and are formed by applying a group operator to a plural event). The distinction between event-internal and event-external

pluractionality is effectively a distinction between singular and plural predication, and is parallel to the distinction between collective and distributive NPs.

- (45) a. An event-external plural is a plural event (e) consisting of proper subparts (events) e_1, \dots, e_n
- b. An event-internal plural is a “group atom”, an event (e) whose ungrouped counterpart ($\downarrow e$) has proper subparts e_1, \dots, e_n

Event-external pluractionals denote plural events which may have plural (distributive) participants or times. Event-internal pluractionals, since they are atomic events, may only have singular or collective participants and times.

This distinction seems to account for certain characteristics of the Yurok pluractionals. Repetitive pluractionals may not be distributed over multiple occasions, and may not be distributed over any argument of the verb in the way the Iterative seems to. However, as seen earlier, event-internal pluractionals *can* produce plural interpretations of certain arguments, as seen in (46) (repeated from 15) though they never pluralise agents, unlike the Iterative.

- (46) kich **yekwoyekwoh**
PERF **REP.fold**
I folded them (sequentially *or* all at once)

If action in such an example is instantaneous, then the action of folding must be interpreted as being distributed over the parts of the object, e.g. the individual papers, in order for the event to be plural. I suggest that this pattern is due to an asymmetry in the nature of internal and external arguments. Kratzer (1996) proposes that internal arguments are part of the verb's lexical entry and external arguments are added in the syntax. This proposal is in part motivated by the fact that internal arguments generally play a much bigger role in determining the interpretation of the verb than external arguments (cf. Marantz 1984). Following Kratzer's proposal, I suggest that the operations of pluralisation and group formation which are introduced by the event-internal pluractional are actually applied to the verb together with its internal argument, and so pluralisation can apply to the internal argument along with the event, as in (47):

- (47) a. $\lambda x \lambda e [\text{fold}(x)(e)]$
 b. $\uparrow * \lambda x \lambda e [\text{fold}(x)(e)]$

A plural folding event consists of multiple phases, each of which is a single folding of a single object (say, a piece of paper). Such a plural event may consist of either multiple folds of a single object, simultaneous folding of multiple objects, or multiple folds of multiple objects (distributive folding). The external argument is added after an event-internal pluractional has applied and produced a group predicate, and therefore an external argument of an event-internal pluractional can only be a singular or group entity.

4.5.3. Habituality

A second question is whether the semantic distinction between the Repetitive and Iterative can really be ascribed to a difference between plural and group events. One of the most frequent uses of the Iterative is in habitual contexts. Where the semantics proposed for event-external pluractionality involves a simple plurality of events, habituality requires an abstraction away from specific instances to identify a characteristic tendency or pattern of occurrences. The repetition of an event, even distributed across multiple occasions, does not by itself imply any general pattern.

Though I will argue against this view, the habitual interpretation of the Yurok Iterative might seem to suggest that its meaning does not involve (low-level) quantification over events, but rather sentence-level quantification over situations (such as a generic operator).¹² The interaction of the Iterative with negation also seems to support this possibility, since there are numerous examples in which the pluractional takes scope over negation (Garrett 2001a:285), as in example (48), suggesting that the Iterative might be an operator with sentential scope:

(48) mos **tegen**

NEG rain.ITR

‘It never rains’ (R 82)

In (48), the expected meaning based on the syntactic structure is ‘It doesn’t rain repeatedly (though, for example, it might rain once or twice)’. The actual interpretation

¹² Thanks to Anastasia Giannakidou for pointing out evidence favouring this possibility.

differs from this in two respects. First, the Iterative appears to take scope over negation (i.e. ‘It repeatedly doesn’t rain’, rather than ‘It doesn’t rain repeatedly’). In addition, the interpretation is strengthened from repeated lack of rain to complete lack of rain (from ‘repeatedly not’ to ‘never’). The fact that the Iterative appears to scope outside negation supports the notion that it does not simply pluralise the event expressed by the verb but rather quantifies over entire situations, with a generic/characterising or even universal meaning.

Several observations can be offered to counter this idea. First, in addition to the fact that the Iterative does not always have habitual meaning, the repetition can be measured precisely with number expressions (meaning “three times” etc.), though the Iterative is not common in such contexts. The examples in (49) both involve counted repetitions, but the Iterative infix is used only in (49a).

- (49) a. Nek kwelekw ku nahksemi wegoych-ok’
 1SG well ART three be.away.at.night.ITER-1SG
 ‘I shall be away three days’ (R 100)
- b. nahksemi ho kweget noohl ‘esi ko’moy-ok’
 three.times PST visit then PST hear-1SG
 ‘I visited her three times before I heard it’ (R 101)

An example like (49a) suggests that the Iterative is not compatible with a habitual interpretation in all of its uses, and does indicate a plurality of events. The optionality of

pluractional morphology in such cases is interesting, and may be compared to the optionality of nominal plural marking in the presence of number specification in some languages (e.g. Quechua, cf. Cole 1985).

The second objection to the idea that the Iterative quantifies over situations concerns the interaction of the Iterative with negation seen in (48) above. As suggested by Garrett (2001a) and also Wood & Garrett (2002), this behaviour may be accounted for as a type of neg-raising (“the availability of a lower-clause reading or understanding of a higher-clause negation”, Horn 1989:308). Krifka et al. (1995) point out that in the interaction of generic or habitual meaning with negation, negation can often take either wide or narrow scope. For instance, the sentence *Cows do not eat nettles* may be taken to mean either “that cows do not have the habit of eating nettles, or that they have the habit of not eating nettles (that is, in situations that contain nettles, they do not eat them)” (ibid.:123). Neg-raising is a form of pragmatic strengthening, from a contradictory to a contrary interpretation. As Horn (1989:328-329) points out, the neg-raised (contrary) reading always “applies to a proper subset of the situations in which the contradictory applies”. The expected reading of (48), ‘It doesn’t rain repeatedly/regularly (though it may rain once or more)’ is weaker (less informative) than the neg-raised version ‘It repeatedly/regularly doesn’t rain’—disregarding, for the moment, the additional strengthening from ‘habitually not’ to ‘never’. Contexts in which a speaker wishes to express specifically the weaker of these statements are likely to be few: a statement about the absence of a positive habit is pragmatically much less likely than a statement about the existence of a specific (negative) habit. Neg-raising appears to be a natural and

straightforward way to account for the behaviour of the Yurok Iterative with negation.¹³

Another piece of evidence suggesting the Iterative need not be assumed to be a sentence-level habitual operator is the fact that habitual interpretations are possible with non-Iterative verbs and no overt adverbial quantification, as in (50):

(50) a. Won soo tohkow...
 differently thus/so talk.in.a.group
 They talk a different language; [it would not be good for you to marry
 with them]. (LA16-2:6)

b. Wr'rrgrch' kwel yo'hlkoych' wi' hoh.
 alder bark? 3PL firewood PRON make
 [wr'rrgrch'?] They make firewood out of that. (AS1:113)

While repetition of events on different occasions is clearly compatible with a habitual meaning, the Iterative itself need not provide the habitual force in such a sentence. However, Bybee et al. (1994:159) note that a possible grammaticalisation path for habituals is to develop from iteratives, which would suggest that there is a close connection in their meanings.¹⁴

¹³ It is interesting to note that a similar phenomenon apparently occurs with reduplication in Nunggubuyu. Heath (1984:341) observes that “The combination of negative with -Rdp- indicates that a potential event which could have occurred at a number of times regularly failed to occur; a translation with ‘never’ is also possible in some contexts.”

¹⁴ Note that Bybee et al. distinguish two types of repeated-event meaning, ‘iterative’ and ‘frequentative’, which do not correspond exactly to the distinction between event-internal and event-external meaning. Iterative, for Bybee et al., “describes an event that is repeated on a particular occasion” (ibid.:127), while

For now, I assume that the plural-event meaning I have proposed for the Iterative is appropriate and that it is easily compatible with, though perhaps not by itself the source of, habitual interpretations.

4.5.4 Iteratives with intensive meaning

Yurok is not the only language in which pluractionals produce an intensification meaning with certain predicates (e.g. Cowell 1964:253 notes both pluractional and intensive meanings for augmentative verbs in Syrian Arabic). However, while there is a connection between plurality and intensification in that they both indicate increase (one of number, one of degree), it is not obvious how the suggested semantics of a pluractional marker would produce intensification. In order to account for these cases, Wood & Garrett (2002) suggested that the function of the Iterative with verbs such as those in (51), repeated from (28), was in fact not true intensification but rather pluralisation of some implicit participant. For example, we suggested that the suffix *-ok(sim)* in fact means something like ‘have thoughts (of a particular type). Thus, *skewoksim-* means ‘have good thoughts’ and the Iterative *skuuwoksim-* would mean ‘have many good thoughts’, i.e. ‘think very well of’.

frequentative “includes habitual meaning—that a situation is characteristic of a period of time—but additionally specifies that it be frequent during that period of time”. Thus, the single-occasion interpretations of the Yurok Iterative would presumably be classed as iterative, while the multiple-occasion and habitual interpretations would be frequentative. “Iterative means that an action is repeated on a single occasion. In order to include habitual, the only change necessary is the loss of restriction that the repetition be on a single occasion.” (ibid: 159)

- (51) kaam-oksim- to dislike kegaam-oksim to really dislike (K
74:25)
t-oksim- to admire teg-oksim- to praise
wa's-ok(sim-) to pity, be sorry for wega's-ok(sim-) to be very sorry for
(KFD 76)

However, this proposal seems implausible for an example such as that in (52), in which the base verb (*mrmry*, 'be pretty') is apparently morphologically simple and for which it is almost impossible to construct a hypothetical plural meaning of the type suggested.

- (52) kwesi segep noohl 'o ge's, to' ch'ume'y
CONJ Coyote then LOC think CONJ how

'u-mrgmry k'i we'yon

3-pretty.ITR ART girl

Then Coyote thought, "How very pretty that girl is." (LA16-7:66)

Instead, I suggest that these truly intensive meanings involve pluralisation of an implicit argument indicating the extent to which a particular property applies. Gradable predicates involve a particular scale—of prettiness, in (52)—and are understood in relation to a pragmatically determined standard of comparison (cf. Sapir 1944, Klein 1980, for example). For example, evaluating a sentence like *Jack is tall* depends on whether what we know about Jack is that he is a professional basketball player or that he is a three year

old. If Jack is being discussed in the context of professional basketball players, then *Jack is tall* might mean he is at least 6'9", for example. A range of values could qualify him as *tall* (say, 6'9" to 7'). A higher range of values, perhaps 7' to 7'5" might qualify him as being *very tall*—in other words, the standard is raised by some amount (cf. Kennedy & McNally 2005:369). If a pluractional instead of pluralising an event argument pluralises the implicit standard or lower boundary of the *tall* range, the effect is one of intensification.

The emotion verbs are a possible bridging context to get from plural event meaning to intensification. Any action which when repeated has a cumulative effect could possibly lead to an intensification meaning. In Yurok the emotion verbs seem to be the most robust class of genuinely intensive meanings for the Iterative infix. Good thoughts or bad thoughts can be cumulative (as pointed out in Wood & Garrett 2002): thinking something bad about someone once may mean one does not like them very much; but thinking bad things about them repeatedly, i.e. having a lot of bad thoughts about them, might correspond to hating them.

- (53) kaamoksim- think badly of something
kegaamoksim- (1) repeatedly think badly of something
→(2) think really badly of something

The proposals in this section can only be tentative, since the range of verbs with which the intensification meaning is attested is small and almost all examples are from archival material. One of the two speakers with whom I have consulted has on occasion produced

or recognised sentences in which the Iterative is combined with an emotion verb to produce a meaning of intensification. However, with many verbs with which an intensive meaning is plausible, including the small class with which such a meaning is attested in earlier texts, both speakers have rejected Iterative forms, interpreted the Iterative as indicating repetition, or interpreted it as having the same meaning as the non-Iterative.

4.6. Conclusions

I have presented a detailed discussion of the Repetitive and Iterative pluractionals in Yurok, which supports the proposal in Garrett (2001a) that the two categories have event-internal and event-external meaning, respectively. I have also examined how the two categories interact differently with arguments and with verbs of various lexical classes, and have argued that the analysis proposed in chapter 3 based on a distinction between grouped and ungrouped pluralities of events can account for the major characteristics of the Yurok data.

The apparent problems for this analysis discussed in section 4.5 all concern patterns which seem to occur in pluractionals in other languages: in particular, the existence of habitual and intensive readings for pluractionals has been noted in previous studies (cf. Dressler 1968, Xrakovskij 1997). Therefore, the proposals made here for Yurok may well have a wider application.

Chapter 5

Pluractionality in Chechen

5.1 Introduction

5.1.1 Goals of the chapter

The discussion in chapter 4 focused on the distinction between event-internal and event-external repetition, and the two affixes which express these respective meanings in Yurok. The pluractional system in Chechen is quite different: a system of verb stem alternations, found in a subset of verbs and with no grammatical distinction between different types of pluractional meaning. However, the functions of pluractional verbs include both event-internal and event-external repetition meanings. The type of interpretation produced is determined to a large degree by the event structure of the (nonpluractional) predicate. A major focus of this chapter is to determine how the different pluractional readings are obtained, and whether this is consistent with the view of pluractional meaning proposed in chapters 3 and 4.

The remainder of section 5.1 provides general information about Chechen, and a description of the formation of pluractional verbs and their basic meanings. Section 5.2 addresses the role of verb meaning and specifically event structure in determining the possible interpretations of a pluractional verb and in 5.3 I examine the interaction of pluractional meaning with tense-aspect. In 5.4, the use and interpretations of pluractional verbs in Chechen are considered in light of the proposals in chapter 3, and compared to the behaviour of pluractionals in Yurok described in chapter 4.

5.1.2 Background on Chechen

Chechen belongs to the Nakh branch of the Nakh-Daghestanian language family. It is closely related to the immediately neighbouring language Ingush and slightly more distantly related to Batsbi (or Tsova Tush), the third member of the Nakh group. Chechen is morphologically ergative and its basic word order is SOV. In comparing Chechen to Yurok, several other characteristics are relevant to the discussion. Chechen has nominal number distinctions (singular/plural) across nouns and pronouns; nominal quantification; and ten basic tense-aspect categories (Nichols 1996:22), which can be divided into perfective and imperfective tenses—significantly different from the approximately fifty preverbal particles (plus their various combinations) in Yurok. Pluractionality in Chechen has been discussed in detail by Yu (2003), and I will refer to his analysis throughout this chapter.

5.1.3 Chechen plural verb morphology

Verbal number distinctions are present in a significant minority of Chechen verbs, and similar distinctions are found in the other Nakh languages (cf. Nichols 1994b, Holisky 1985). Number distinctions are of two types: argument-number and event-number distinctions. Verbs which distinguish argument number come in pairs, one of which requires a singular absolutive argument and the other a plural one. Verbs distinguishing event number come in pairs of what Nichols & Vagapov in appendices to their Chechen-English dictionary (2004:688) term *simulfactive* and *iterative* forms. I will refer to them as *simulfactive* (SIM) and *pluractional* (PLL), since I will adopt the term *iterative* to describe one particular interpretation of pluractional verbs. A maximum of four number

distinctions is thus coded: singularity or plurality of the event and singularity or plurality of the absolutive participant, as in the following examples).¹

(1)			Simulfactive		Pluractional
	Sg. ABS argument	hwazha~	(hwozhu)	hwiezha~	(hwoezhu)
	Pl. ABS argument	hwousa~	(hwousu)	hwiisa~	(hwyysu)
(2)	a.	So	syrtie	hwaezhira	
		1SG.ABS	.picture.ALL	look-at.WP	
		I glanced at the picture.			[10/26/06]
	b.	So	syrtie	pxinna	minuotiahw hwiizhira
		1SG.ABS	picture.ALL	five.OBL	minute.LOC look-at.PLL.WP
		I looked at the picture for five minutes.			[10/26/06]

¹ Citation forms are from Nichols & Vagapov (2004), except as otherwise noted. I provide the infinitive and (in parentheses) the simple present forms. The infinitive is the reference form in dictionaries, and the simple present is used as the citation form in Yu (2003). All dated examples are from my fieldnotes. Examples are in the Latin orthography used in the Chechen-English dictionary of Nichols & Vagapov (2004) and discussed in detail by them (ibid:11-37). A consequence of this is that some examples cited from Yu (2003) do not exactly match their form in that article. Some of the less obvious orthographic conventions are the following: <w> represents a pharyngeal sound /ʕ/ (phonetically a pharyngealized glottal stop, according to Nichols 1996:4), or pharyngealization of an immediately preceding consonant, while <hw> is a voiceless pharyngeal fricative /h/; digraphs <zh>, <ch>, <sh> and <gh> represent /ʒ/, /tʃ/, /ʃ/ and /ɣ/ respectively. The first consonant of some verbs varies between /d, v, j, b/ depending on the grammatical gender of the absolutive argument. These gender markers are noted in glosses (e.g. *vaxara* is glossed as v.go.WP) and in citation forms such verbs are written with an initial *d* followed by a period, e.g. *d.axa~* 'to go'.

- c. Beerash syrtie hwoeusira
 child.PL picture.ALL look-at.PL.WP

The children glanced at the picture. [10/26/06]

- d. Beerash syrtie hwiisira
 child.PL picture.ALL look-at.PL-PLL.WP

The children looked at the picture (for a while). [10/26/06]

The singular absolutive argument *so* (1st person singular) in (2a-b) requires different verb forms from the plural absolutive *beerash* ‘children’ in (2c-d). In addition, (2a) and (2c) are simulfactive, referring to a single short glance, whereas (2b) and (2d) use pluractional verbs, which in this case create durative meaning: ‘to look at (for some duration)’.

Nichols & Vagapov (2004:688-690) list twenty verbs with plural and singular forms and eighty-six stems with simulfactive and pluractional forms. Nine of the twenty argument-numbered verb pairs are either simulfactive or pluractional verbs (i.e. four simulfactive-pluractional pairs also distinguish argument number, and one verb distinguishes argument number only in its simulfactive form). There is thus a significant overlap between the two systems.

These two types of number distinction are clearly lexicalised with specific verbs and their formation does not follow a fully regular pattern. Plural-argument verbs are formed by changes to the stem of one of two types (cf. Nichols 1994:39). If the (singular) stem contains *-ll-* it becomes *-xk-* in the plural (e.g. *d.aalla~ (doallu)* ‘be contained’ >

d.aaxka~ (d.oaxku) ‘be contained, pl. S’); in other cases the stem vowel changes to *-ou-* (e.g. *saca~ (socu)* ‘to stop’ > *souca~ (soucu)* ‘to stop, pl. S’).

Most pluractional verbs are related to their simulfactive counterparts by ablaut. They typically have a stem vowel which is raised and fronted relative to the vowel of the simulfactive form, as in the following example pairs (from Nichols & Vagapov 2004:688-689):

(3)	Simulfactive		Pluractional		
	<i>ghaatta~</i>	(ghoattu)	<i>ghitta~</i>	(ghyttu)	get up
	<i>hwasha~</i>	(hwoshu)	<i>hwiesha~</i>	(hwoeshu)	crush
	<i>hwasta~</i>	(hwostu)	<i>hwiasta~</i>	(hwiasta)	caress
	<i>mala~</i>	(molu)	<i>miila~</i>	(myylu)	drink
	<i>saga~</i>	(sega)	<i>siega~</i>	(siega)	flash

However, the pluractional form cannot always be predicted from the simulfactive (as the comparison of *hwasha~/hwiesha~* and *hwasta~/hwiasta~* above suggests), and as Yu (2003:292) notes, a high front stem vowel is not predictive of pluractional meaning.

There are also a few suppletive simulfactive-pluractional verb pairs. The following list is from Nichols & Vagapov (2004:690):

(4) Simulfactive		Pluractional		
aala~	(oolu)	baaxa~	(booxu)	say
d.aa~	(d.ahwa)	qiehwa~	(qoehwu)	deliver
d.aat'a~	(d.eet'a)	iet'a~	(iet'a)	tear
d.ada~	(d.odu)	ida~	(ydu)	run
d.axa~	(d.oedu)	iaxa~	(oexu)	go
d.uozha~	(d.uuzhu)	iega~	(oegu)	fall, go down
iaqqa~	(iaqqa/oeqqu)	lialxa~	(lialxa)	burst
ieca~	(oecu)	iid.a~	(iid.o)	take
tuoxa~	(tuuxu)	d.iatta~	(d.iatta)	hit

5.1.4 Basic meanings of pluractional verbs

This section briefly describes the main interpretations of pluractional verbs in Chechen. Following Yu (2003), I initially distinguish three types of pluractional interpretation which I will refer to as *iterative*, *distributive*, and *durative*.

The iterative interpretation indicates repetition of an event, as illustrated by the following pairs of simulfactive (5a, 6a) and pluractional (5b, 6b) forms.

- (5) a. Ahwmad chai molush vu
 Ahmed tea drink.CVsim V.COP.PRS
 Ahmed is drinking tea. [10/14/06]

- b. Ahwmad chai myylush vu
 Ahmed tea drink.PLL.CVsim V.COP.PRS
 Ahmed keeps drinking tea (repeatedly or for a long time). [10/14/06]

- (6) a. So ohwa-vyyzhira
 1SG.ABS down-V.fall.WP
 I fell down (once). [10/26/06]

- b. So ohwa-iigira
 1SG.ABS down- fall.PLL.WP
 I fell down (repeatedly). [10/26/06]

The iterative interpretation corresponds to what Yu (2003) calls *frequentative-habitual*, though as I will show in section 5.2, pluractionals in Chechen in fact do not permit habitual interpretations.

The distributive interpretation depends on argument number. Yu (2003:295) notes that for certain simulfactive-pluractional verb pairs, the pluractional form is used when the absolutive argument (transitive object or intransitive subject) is plural. The distinction is exemplified in (7):

(7) a. Beer zudachunna mara'iqqira
 child woman.DAT run.into.arms.WP²
 The child ran into the woman's arms. [10/14/06]

b. Beerash zudachunna maralixira
 child.PL woman.DAT run.into.arms.PLL.WP
 The children ran into the woman's arms. [10/14/06]

(cf. Yu 2003:297 examples 12c-d)

Example (7b) does not suggest repeated action by the subject. Instead, the use of the pluractional verb is preferred due to the plurality of the absolutive argument *beerash*.

Finally, a durative reading occurs with certain verbs (as already seen in 2b,d and in 5b). For example, the simulfactive form *q'ezhira* ('smirk') in (8a) suggests a fleeting expression, such as might occur when seeing something amusing for a moment. The pluractional form in (8b) suggests an expression which lasts for a while. Note in (8c) that the pluractional can also receive an iterative interpretation:

(8) a. Zuda q'ezhira
 woman smirk.WP
 The woman gave a smirk. [10/14/06]

² The verb is morphologically complex, consisting of *mara* 'in arms.ADV' plus *iaqqa/lialxa* 'burst, explode' and suggests a rapid action, running into someone's embrace.

- b. Zuda q'iizhira
 woman smirk.PLL.WP

The woman smirked for a while. [10/14/06]

- c. Zuda jux-juxa *q'ezhira / q'iizhira
 woman again.and.again smirk.WP / smirk.PLL.WP

The woman gave a smirk again and again. [10/14/06]

The availability of these three interpretations depends on verb meaning and context, and this is examined in section 5.2.

5.2 Verb lexical semantics and pluractional interpretation

No pluractional verb, as far as I have been able to ascertain, permits all three types of interpretation (iterative, distributive and durative). The available interpretations in any given instance depend on the particular verb, along with tense-aspect, time or repetition adverbials, and contextual information. In this section I examine each of the three types of interpretation in turn, considering the lexical semantics of verbs and the characteristics of their use which determine the interpretations they permit. I will argue that only the iterative and durative interpretations are regular interpretations of pluractional verbs.

5.2.1 Iterative interpretations

The iterative meaning appears to be available with every pluractional verb (though it may not be the typical or default interpretation). The iterative meaning indicates repetition of a

complete event in time. In chapters 3 and 4 I argued that in principle this type of repetition meaning can combine with verbs of any Aktionsart type (activity, state, accomplishment, achievement or semelfactive).

In Chechen, pluractional forms of accomplishment, achievement and semelfactive predicates are all frequently attested with iterative interpretations:

(9) Achievements

- a. Mush jux-juxa xiidira
rope again.and.again break.PLL.WP

The rope broke again and again. [10/14/06]

- b. So hoora wyyrana sama-vyylu
1SG.ABS every morning.DAT wake-V.arrive.PLL.PRS

Every morning I wake up again and again (i.e. wake and fall asleep again several times before getting up). [10/26/06]

(10) Accomplishments

- a. Cuo eeshar loequ
3SG.ERG song sing.PLL.PRS

He sings a song again and again. [10/14/06]

- b. Hoorā wyyrana so tykana ydu
 every morning.DAT 1SG.ABS store.DAT run.PLL.PRS

Every morning I run to the store again and again. [10/14/06]

(11) Semelfactives

- a. Zuda jux-juxa q'iizhira
 woman again.and.again smirk.PLL.WP

The woman gave a smirk again and again. [10/14/06]

- b. As stuolax p'ialg bittira
 1SG.ERG table.LAT finger B.hit.PLL.WP

I was tapping my finger on the table (tapped repeatedly). [10/26/06]

Activity predicates have some unusual properties (namely that in their simulfactive form they appear not to be true activities), which are addressed in section 5.2.3. However, for now it is sufficient to note that the pluractional forms of such verbs can indeed indicate iterative events, though this interpretation may alternative with a durative one, as in (12):

(12) Activity

- a. Ahw hara mashian cq'a'a xixknii?
 2SG.ERG this car ever drive.PLL.PP.INTERR

Have you driven this car repeatedly (*or* for a while)? [12/1/06]

- b. Sialxana beer jux-juxa tiiqira
 yesterday baby again.and.again crawl.PLL.WP

The baby crawled over and over again yesterday. [10/26/06]

Example (12a) also permits a durative interpretation, which is excluded in (12b) by the presence of the adverb *jux-juxa*.

The pluractional form of temporary-state verbs is also expected to permit an iterative interpretation. However, I have not confirmed definitively that any of the simulfactive-pluractional pairs is stative.³ One of the most likely candidates is *hwaga~/hwiega~* ‘to envy’. However, I have not yet been able to clearly distinguish an iterative interpretation from a durative one (as example 13 illustrates). I leave open for now the questions of whether any pluractional verbs are truly stative and, if so, whether they permit iterative interpretations.

³ The main issue here is what counts as a diagnostic of stativity. For example, though the simple present in Chechen has many similarities to the simple present in English, even verbs with typically stative meanings such as ‘to live’ (Chechen *d.aaxa~*) receive a habitual (i.e. noncontinuous) interpretation in the simple present:

So Moskva^hw veexa
 1SG.ABS Moscow.LOC V.live.PRS
 I live in Moscow (from time to time, intermittently). [12/1/06]

So Moskva^hw veexash vu
 1SG.ABS Moscow.LOC V.live.CVsim V.COP.PRS
 I live in Moscow (now or in general), I am living in Moscow. [12/1/06]

- (13) Vai beerash dolchu xeenahw, so hwox hwiegara
 1PLincl.ABS child.PL D.be.PPL.OBL time.LOC 1SG.ABS 2SG.LAT envy.PLL.IMPF
 When we were children, I envied you (for a long time; continuously or repeatedly)
 [10/14/06]

One question about the use of pluractionals to express iterativity is whether repetitions can be interpreted as having habitual recurrence (as opposed to a simple iterative interpretation). Habitual meaning in Chechen is most often created by the use of the simple present and past imperfect tenses, sometimes in combination with adverbial expressions (such as *hoora dienahw* ‘every day’ and *kest-kesta* ‘often). Habitual or multiple occasion interpretations are never created by pluractional verbs in the absence of one of these other mechanisms. However, it seems quite plausible that in an already habitual context, a pluractional would indicate repetitions distributed over habitual occasions. This is essentially the argument made for Yurok in chapter 4, where I suggested that the Iterative pluractional does not create habitual meaning by itself, but rather emphasises repetitions distributed across occasions in habitual contexts. I assume this is the type of situation Yu had in mind when selecting the term “frequentative-habitual”. However, I will show that multiple-occasion interpretations of Chechen pluractional verbs are in fact very restricted and that habitual interpretations never occur. In most habitual contexts, the use of a pluractional verb can only indicate iterative repetition *on each occasion*, not simple habituality of an event, as illustrated by examples (14) and (15).

(14) a. Wyyrana Ahwmads chai molu.
 morning.DAT Ahmed.ERG tea drink.PRS

In the morning Ahmed drinks tea. [10/14/06]

b. Wyyrana Ahwmads chai myylu.
 morning.DAT Ahmed.ERG tea drink.PLL.PRS

In the morning Ahmed drinks tea (repeatedly or for a while).

[10/14/06]

(15) a. Hoorā wyyrana so tykana vodu
 every morning.DAT 1SG.ERG store.DAT V.run.PRS

Every morning I run to the store (once each day). [10/14/06]

b. Hoorā wyyrana so tykana ydu
 every morning.DAT 1SG.ERG store.DAT run.PLL.PRS

Every morning I run to the store (more than once each day). [10/14/06]

While the pluractional verb *myylu* in (14b) might be expected to indicate that Ahmed habitually drinks tea in the morning, this is not in fact the case. Habituality in these examples is indicated by the simple present tense. The pluractional form *Ahwmads chai myylu* is understood to mean that Ahmed drinks many cups of tea or drinks for a long time every morning, while the nonpluractional *Ahwmads chai molu* simply indicates that Ahmed drinks tea in the morning (with no indication of how much or for how long he

drinks). Thus, instead of indicating repetitions distributed over multiple occasions, the pluractional in a habitual context quantifies the event on each occasion. Similarly, in (15b) the pluractional verb can only refer to multiple instances of running to the store on each morning.

However, in certain cases the pluractional does appear to indicate a single repetition on each of multiple occasions:

- (16) a. Dwadaxanchu k'irnahw, as hoora dienahw chai
 last.OBL week.LOC 1SG.ERG every day.LOC tea
 miilira / *melira
 drink.PLL.WP drink.WP
 Last week, I drank tea every day. [12/1/06]

- b. Hooraa wyyrana so cunna
 every morning.DAT 1SG.ABS 3SG.DAT
 maralixira / *mara'iqqira
 run.into.arms.PLL.WP / run.into.arms.WP
 Every morning I hugged him (ran into his arms). [10/26/06]

In both examples in (16), the pluractional is judged to be obligatory and (unlike in 14 and 15) does not indicate multiple repetitions on each occasion. For example, (16b) indicates that there is (at least) one hug on each morning. This difference results from a difference

in tense-aspect: only in certain tenses, specifically perfective tenses, can a pluractional verb indicate repetitions distributed across occasions. The reason for this is explored in section 5.3 on the interaction of pluractionality with tense-aspect categories.

To summarise, iterative interpretations appear to be possible for most or all pluractionals (though they have not been confirmed with a few stative verbs) and I take the iterative interpretation to be the basic interpretation of pluractional verbs in Chechen. Habitual interpretations of pluractionals are excluded, and pluractional verbs in habitual contexts generally indicate iteration (or duration or distribution over participants) on each individual occasion.

5.2.2 Distributive interpretations

As seen in 5.1, in some cases a pluractional verb indicates distribution over a plural absolutive argument. However, I will show that the distributive reading is in fact restricted to a very small number of verbs. Many cases in which a pluractional verb appears to “agree” with a plural argument are in fact a result of atelicity and thus only indirectly due to the plurality of the absolutive argument (where it functions as an incremental theme).

The verbs that permit distributive pluractional meanings when their absolutive argument is plural produce iterative interpretations when their absolutive argument is singular, as in example (17):

- (17) a. Bomba iqqira
 bomb explode.WP
 The bomb exploded. [10/14/06]
- b. Bombanash lilxira
 bomb.PL explode.PLL.WP
 The bombs exploded. [10/14/06]
- c. Bomba lilxira
 bomb explode.PLL.WP
 The bomb exploded again and again (one bomb produces several
 explosions). [10/14/06]

The existence of the iterative reading distinguishes these verbs from the argument-numbered verb pairs discussed in 5.1.

While Yu (2003:295) lists a number of pairs of verbs which permit the distributive interpretation, I have so far been able to elicit only the three in (18), the last of which is a compound formed from one of the others.

(18)	<i>hotta~</i>	(<i>huttu</i>)	<i>hitta~</i>	(<i>hyttu</i>)	to stand (assume position) (sg./pl. S)
	<i>iaqqa~</i>	(<i>iaqqa</i>)	<i>lialxa~</i>	(<i>lialxa</i>)	to burst, explode
	<i>mara'iaqqa~</i>	(<i>mara'iaqqa</i>)	<i>maralialxa~</i>	(<i>maralialxa</i>)	to run into an embrace (sg./pl. S) ⁴

Two other likely pairs, at least for some speakers, are *ghaatta~/ghitta~* ‘to get up, get out of bed’ (cf. examples in Yu 2003:296) and *waaxka~/wiaxka~* ‘to lie’ (Yu 2003:295). However, the speaker who provided most of the data for this chapter uses three distinct verb forms in both cases: a simulfactive singular-argument verb, a simulfactive plural-argument verb, and a pluractional verb. The pluractional verb only has iterative meaning. I currently do not have enough evidence to determine whether this variation is due to a difference in dialect, a change in progress, or some other discrepancy between the speakers or the elicited examples.

Many other verbs with which a distributive interpretation is highly plausible do not permit one. For instance, in the examples in (19), the pluractional form is used only when a single box or each one of a group of boxes is lifted multiple times. It is never used to indicate that a group of objects was lifted one after another (as opposed to all at once).

⁴ As seen in (7), *mara'iaqqa/maralialxa* has absolutive-dative argument structure, and the pluractional occurs with a plural absolutive argument.

(19) a. As jashchik hwala- ai'ira / ii'ira
 1SG.ERG box(Russ.)⁵ up- lift.WP / lift.PLL.WP

I lifted the box once / repeatedly.

b. As duqa jashchikash hwala- ai'ira / ii'ira
 1SG.ERG many box(Russ.).PL up- lift.WP / lift.PLL.WP

I lifted many boxes once / repeatedly (either together or separately).

In examples (19a-b), the choice of *ai'ira* or *ii'ira* depends on whether each box is lifted once or more than once, regardless of whether the boxes are lifted together as a stack or one after another. In (19b), the simulfactive form *ai'ira* can be used to refer to a single lifting of a stack of many boxes or to separate liftings of individual boxes. The pluractional refers to repeated liftings of a stack or repeated liftings of individual boxes, not to sequential lifting of a series of boxes. This is clearly different from the effect of the pluractional form in (17b).

As mentioned at the beginning of this section, there is a class of examples in which the verb appears to take its pluractional form when an absolutive argument is plural, but which are not truly distributive. For example, Yu (2003) lists *laqa~/lieqa~* 'to sing' as a verb permitting a distributive interpretation based on the following example.

⁵ While other examples may contain Russian borrowings, this word is labeled because it was explicitly identified by the speaker as a non-Chechen word.

- (20) Eexa sohwtiahw Maliikas jish leqira / eesharsh liiqira
 half hour.LOC Maliika.ERG song sing.WP song.PL sing.PLL.WP
 Maliika sang a song / songs for half an hour. (Yu 2003:297)

Yu observes with respect to this example that “a simple [i.e. simulfactive] verb, crucially, cannot appear with a plural object here” (ibid.:297). The following pair of examples shows the same contrast:

- (21) a. As hoora byysanna sai~ joewana
 1SG.ERG every night.DAT 1SG.GENrf daughter.DAT
 noxchii~ eeshar loqu
 Chechen.GENpl song sing.PRS
 Every night I sing a Chechen song to my daughter. [10/26/06]

- b. As hoora byysanna sai~ joewana
 1SG.ERG every night.DAT 1SG.GENrf daughter.DAT
 noxchii~ eesharsh loequ
 Chechen.GENpl song.PL sing.PLL.PRS
 Every night I sing Chechen songs to my daughter. [10/26/06]

However, when a slightly wider range of examples is considered, it becomes clear that this is in fact an effect of the difference in telicity between ‘sing a song’ (an

accomplishment) and ‘sing songs’ (an activity).⁶ If the plural noun *eesharsh* is preceded by the demonstrative *hara*, suggesting some specific set of songs, the predicate is again telic. As a result, there is no longer a difference between singular and plural noun (*jish/eeshar* and *eesharsh*) in their preference for a simulfactive or pluractional verb:

(22) As {hara eeshar / hara eesharsh} cwana sohwtiahw loqu
 1SG.ERG DEM song / DEM song.PL one.OBL hour.LOC sing.PRS
 I sing {this song/these songs} in (within) an hour. [12/1/06]

(23) As {hara eeshar / hara eesharsh} jux-juxa liiqira
 1SG.ERG DEM song / DEM song.PL again.and.again sing.PLL.WP
 I sang {this song / these songs} again and again. [10/26/06]

In Yu’s example (20), then, the function of the pluractional is not distributive but rather durative. This is a normal interpretation for atelic predicates, as will be demonstrated in 5.2.3.

Many similar examples can be found. The two sentences in (24) initially appear to involve a collective and distributive interpretation of the absolutive argument, respectively: in (24a) it is understood that many criminals were caught together whereas in (24b) they were caught separately.

⁶ Note also that Yu’s example in (20) includes a time adverbial. However, according to my consultant, only the pluractional form can be used with a time adverbial if the intended interpretation is durative. Otherwise the resulting interpretation is that the event was completed within that period of time, regardless of whether the predicate is inherently telic or atelic or the absolutive argument singular or plural, as in example (22). The time adverbial itself is a locative phrase and is used for the equivalent of both English *for*-PPs and *in*-PPs, with the distinction between these two interpretations entirely due to the telicity of the event.

- (24) a. Sialxana milcuos tykan chohw duqqa
 yesterday police.officer.ERG store.GEN inside many
 zulamxoi leecira
 criminal.PL catch.WP

Yesterday the police officer caught a lot of criminals (together) in the store.

[10/14/06]

- b. Sialxana milcuos ghaalahw duqqa
 yesterday police.officer.ERG city.LOC many
 zulamxoi liicira
 criminal.PL catch.PLL.WP

Yesterday the police officer caught many criminals in the city (separately).

[10/14/06]

The different location expressions in the two sentences were provided spontaneously by a native speaker in order to make the relevant (simulfactive or pluractional) verb form sound natural and appropriate. The non-pluractional verb in (24a) suggests multiple criminals were caught together, in one place and at the same time. The pluractional verb in (24b) suggests rather that the police officer went around catching criminals sequentially. However, as (25a-b) shows, when the absolutive argument refers to a

specific (and therefore bounded) set of criminals, this distinction disappears and the pluractional *liicira* can only mean that the same criminals were caught repeatedly:

- (25) a. Sialxana milcuos hara zulamxoi leecira
 yesterday police.officer.ERG DEM criminal.PL catch.WP
 Yesterday the police officer caught these criminals (together or separately).
 [12/1/06]

- b. As ysh sialxana liicira
 1SG.ERG 3PL.ABS yesterday catch.PLL.WP
 I caught them again and again yesterday. [12/1/06]

Since the number of verbs with a genuine distributive interpretation appears to be so small, and given the partial overlap between a number of singular-plural and simulfactive-pluractional stem pairs noted above, I suggest that these isolated cases can be treated as instances in which there is a complete overlap between simulfactive-pluractional and singular-plural verb pairs, rather than treating the distributive interpretation as one possible interpretation of pluractional verbs. This suggestion is supported by the particular verbs which have distributive meanings, which are semantically similar to verbs which have singular-plural pairs. The singular-plural pairs include verbs which have typically animate (often human) absolute participants, such as posture verbs and verbs of motion, departure and arrival (Nichols & Vagapov 2004:687). The meanings of verbs with distributive interpretations, such as *hotta~/huttu~* ‘to stand’, *mara’iaqqa~/maralialxa~* ‘to run into someone’s arms’, fit naturally into this group.

Having made this proposal, I will leave aside distributive interpretations in the remaining discussion of pluractionality in this chapter.

5.2.3 Durative interpretations

The durative interpretation, if it is truly pluractional in nature, seems to be an event-internal interpretation: the pluractional verb refers to a single event which is extended in time. How (and whether) the durative interpretation arises from a plurality of events is addressed in section 5.4. This section focuses on characterising the verbs with which a durative interpretation occurs, and argues that the durative interpretation is available with atelic predicates (and predicates which can be coerced into an atelic interpretation). Yu (2003) makes a similar proposal but with quite different assumptions about the event-structure of the predicates concerned, and I address these differences in detail, identifying two classes of atelic predicates which do not easily conform to standard Aktionsart/event-structure classifications.

As is true for distributive verbs, verbs which permit a durative interpretation generally also permit an iterative one. Example (26a) can describe either taking hold of the rope and pulling continuously for five minutes, or repeated tugs on the rope over the same period. However, iterative interpretations can be distinguished by an adverb of repetition, as in (26b).

- (26) a. As mush pxi' minuotiahw iizira
 1sg.ERG rope five minute.LOC pull.PLL.WP
 I pulled on the rope for five minutes (either continuously or repeatedly).
 [10/26/06]
- b. As mush pxi' minuotiahw jux-juxa iizira
 1SG.ERG rope five minute.LOC repeatedly pull.PLL.WP
 I pulled on the rope again and again for five minutes. [10/26/06]

A list of verbs known to permit the durative interpretation is given in (27):

(27)	q'azha~	(q'ezha)	q'iezha~	(q'iezha)	smirk
	d.ielad.ala~	(d.ielalo)	d.iela~	(d.oelu)	smile
	c'ouza~	(c'euza)	c'iiza~	(c'iiza)	whine
	uoza~	(uuzu)	iiza~	(yyzu)	pull
	q'aaga~	(q'eega)	q'iega~	(q'iega)	gleam, glitter
	hwazha~	(hwozhu)	hwiezha~	(hwoezhu)	glance, look (sg. ABS)
	wouzha~ ⁷	(wouzhu)	wiizha~	(wiizha)	ache (hurt, sting)
	xaaxka~	(xoaxku)	xiexka~	(xoexku)	drive
	d.axa~	(d.oedu)	liela~	(liela)	walk
	hwaga~	(hwaega)	hwiega~	(hwoegu)	envy

⁷ Simulfactive forms for this verb are from my fieldnotes (the verb is not included in Nichols & Vagapov 2004).

d.ada~	(d.odu)	ida~	(ydu)	run
taqa~	(teqa)	tieqa~	(tieqa)	crawl
xaarzha~	(xoarzhu)	xiazha~	(xoerzhu)	choose, elect

The English counterparts of the verbs above are mainly activity predicates (e.g. run, drive, smile) or semelfactives (e.g. gleam, pull) and some possible states (envy, avoid). Pluractionals formed from accomplishment and achievement predicates (such as *eeshar laqa~/lieqa~* ‘sing a song’ or *laaca~/lieca~* ‘catch’) typically produce iterative, not durative, interpretations. Recall that these are exactly the classes of verbs which are generally incompatible with event-internal meaning across languages, as addressed in chapters 3 and 4 (though at least in some languages, certain types of achievements *are* possible with event-internal pluractional meaning, such as ‘break’ verbs in Yurok—it is specifically ‘run-up’ achievements with meanings like ‘die’ and ‘arrive’ which do not combine with event-internal pluractional meaning). This pattern suggests that the durative reading is created by the interaction of pluractional meaning with atelic predicates (cf. Yu 2003:311). The one verb which does not appear to fit the pattern is *xaarzha~/xiazha~* ‘to choose, elect’, which is telic. However, I note that in its pluractional (durative) form it is atelic:⁸

⁸ This is similar to the behaviour of the Latin event-internal pluractional when combined with accomplishment verbs, which indicates a process without completion (i.e. an accomplishment is coerced into an activity reading).

(28) As jiesha kniga sawhtiahw xirzhira,
 1SG.ERG J.read.INF book hour.LOC choose.PLL.WP

amma suuna oeshu kniga ca karira.
 but 1SG.DAT need.PPL book NEG turn.up.WP

I was choosing a book to read for an hour, but I didn't find the one I needed.

[12/1/06]

While the rest of the verbs appear to be atelic, their Aktionsart cannot be concluded from their English counterparts. This can be seen, for instance, in the inclusion of basic activities in the class of durative pluractionals. If the base verb describes an activity, why should the pluractional be required in a durative context? Activities are generally defined as being unbounded and extended in time. In some other languages, such as Wichita in example (29), when an event-internal pluractional applies to an activity verb it creates a meaning of continued, extended (beyond normal), excessive, or otherwise augmented activity.

(29) Wichita iterative hí:riks or iki (Rood 1976:21, 75)

(a) ni:ya:ʔicá:rikskih

‘They kept fighting’

(na-iy ‘participle indefinite subject’; a: ‘preverb’; ʔica:ri ‘fight’;

iki ‘iterative’; skih ‘subord. impf.’)

(b) ke:kakiciriki

‘He will keep drying them’

(ke: ‘future 3rd person’; kakic ‘dry’; iri ‘make’; iki ‘iterative’)

This is not the case in Chechen: with verbs such as *xaaxka~/xiexka~* ‘drive’ and *laxa~/liexa~* ‘look for’, the simulfactive form either cannot be used with a durative time expression at all, as in (30a), or is understood to refer to a short action completed within the specified time (30b).⁹

(30) a. Beer pxinna minuotiahw c’iizira / *c’euzira
baby five.OBL minute.LOC whine.PLL.WP / whine.WP

The baby whined for five minutes. [10/14/06]

b. Sa~ chou cwana minuotiahw wiizhira / woeuzhira
1SG.GEN cut one.OBL minute.LOC hurt.PLL.WP / hurt.WP

My cut hurt for a minute (PLL) /finished hurting in a minute (SIM).

[12/1/06]

In other words, the simulfactive forms of these verbs do not refer to an activity but to some momentary event. The simulfactive form is used, for instance, to enquire whether the event has ever occurred at all (31), or to indicate an instantaneous occurrence (32).

⁹ There is apparently some speaker variation here. According to data provided by Alan Yu, p.c., some speakers reject examples such as (30b) and any sentence containing an adverbial expressing duration in combination with the simulfactive form of a verb whose pluractional receives a durative interpretation.

- (31) Ahw hara mashian cq'a'a xiaknii?
 2SG.ERG DEM car ever drive.PP.INTERROG

Have you ever driven this car? [10/26/06]

- (32) As deshina t'iera kyg dwa-daeqqicha, i q'eegira
 1SG.ERG gold.DAT on.ABL hand DX-take.CVtemp 3SG.ABS gleam.WP

When I removed my hand, the gold gleamed (for an instant, and I covered it again). [10/14/06]

I suggest that the simulfactive forms of verbs such as these denote a 'minimal unit' of action. Repeating such a minimal unit produces an ongoing activity interpretation.

Some manner of motion verbs such as *d.ada~*, *ida~* 'run' behave slightly differently: the simulfactive form does not indicate instantaneous action but rather motion either bounded by a source or goal, or completed within a particular time period. In (33a-b), motion is bounded by an explicit goal. In (33c), motion is completed within the specified time, and in (33d) the simulfactive is used to indicate motion away from a source. The pluractional, on the other hand, is used to indicate either unbounded motion (34a) or an iterative interpretation, referring to the repetition of bounded motion (running to the store repeatedly as in 34b).

- (33) a. So tykana vedira.
 1SG.ABS store.DAT V.run.WP
 I ran to the store. [10/14/06]
- b. Hoorā wyyrana so tykana vodu
 every morning.DAT 1SG.ABS store.DAT V.run.PRS
 Every morning I run to the store. [10/14/06]
- c. So cwana sahwtiaw vedira
 1SG.ABS one.OBL hour.LOC V.run.WP
 I finished my running in an hour. [10/14/06]
- d. So dwa-vedira
 1SG.ABS DX-V.run.WP
 I took off running. [10/14/06]
- (34) a. So cwana sahwtiaw idira
 1SG.ABS one.OBL hour.LOC run.PLL.WP
 I ran (went running) for one hour. [10/14/06]

b. Hoorā wyyrana so tykana ydu
 every morning 1SG.ABS store.DAT run.PLL.PRS

Every morning I run to the store repeatedly (more than once per day).

[10/14/06]

The simulfactive is used even in contexts in which a sequence of motion verbs shares a single ultimate boundary, as in (35):

(35) So pxinna minuotiahw vaxara, cul t'aehwa so pxinna
 1SG.ABS five.OBL minute.LOC v.go.WP and after 1SG.ABS five.OBL

minuotiahw vedira, cul t'aehwa so tykana dwa-qeechira
 minute.LOC v.run.WP and after 1SG.ABS store.DAT DX-reach.WP

I walked for five minutes, then I ran for five minutes, and then I reached the store.

[10/26/06]

If the last clause of this sentence (*so tykana dwa-qeechira*, 'I reached the store') is removed, the pluractional verb *idira* (run.PLL.WP) is preferred in the second clause, and the non-pluractional *liilira*, (walk.WP) rather than the purely simulfactive *vaxara* in the first.¹⁰

The identification of these two main types of atelic predicates is different from the classification provided by Yu (2003:310-312), though the general claim about how these

¹⁰ By non-pluractional here I mean a verb which does not have a pluractional counterpart, as opposed to the simulfactive member of a pair.

predicates interact with pluractional meaning is similar. Yu claims that verbs which produce durative interpretations include inceptive/inchoative events, activities and states. ‘Inceptive’ and ‘inchoative’ verbs for Yu include *d.ada~*, ‘to run’ (SIM) as well as various verbs which I have treated as minimal unit verbs, e.g. *q’aga~* ‘to gleam, shine’. ‘Activities’ include *taqa~* ‘crawl’, and *d.ielad.ala~* ‘smile’, for instance. The basis of this classification is not discussed. Yu’s treatment of the verbs he classifies as activities is highly similar to the proposal made here for bounded motion predicates: “[A]s we have seen, the simple activity verb in Chechen implies the definite cessation of the activity. Thus, we propose to represent the simple activity verb in Chechen as having a definite endpoint.... The fact that verbal pluralization produces an event that is prolonged instead of repeated, with or without interruption, can be understood as the byproduct of the event structure of the activity situation type.” (ibid.:312-313) Basically, the endpoint, though definite, is arbitrary. The activity is internally homogeneous (though it may contain identifiable phases of the same type). Thus the transition from one period of activity to another is indistinguishable if there is no temporal discontinuity (ibid.:313).

In the case of inceptive and inchoative verbs, Yu proposes that a pluractional form specifically pluralises the end state of an inceptive event, thus producing a durative interpretation (ibid:311). I have not found any evidence to suggest that these verbs specifically refer to the inception of an activity or state, rather than a minimal unit of the event, and the assumption that pluractionals must specifically select the phase following the inception seems to add an unnecessary element of complexity to the account of pluractional meaning. Additionally, Yu’s classification does not address the behaviour of the bounded motion predicates. These verbs are unusual in that the simulfactive form

always refers to motion bounded either by a specific spatial source/goal or arbitrarily bounded in time.

The main claims that have been outlined in this section are as follows. First, verbs with durative pluractional interpretations are atelic (in the sense that they have no inherent boundary) or an atelic interpretation is coerced. Second, none of the simulfactive verbs (i.e. verbs which have a pluractional counterpart) in Chechen truly indicates an activity. Non-motion verbs like *q'aaga~/q'iega~* 'gleam' and *c'ouza~/c'iiza~* 'whine' are essentially instantaneous, refusing adverbials expressing anything more than very brief duration. Simulfactive motion verbs such as *d.ada~* 'run' are neither instantaneous nor telic in the normal sense (since they have no inherent boundary), but require an explicit or implied boundary.

As a final note, the importance of atelicity in creating the durative interpretation of pluractionals is supported by examples such as those in (36).

(36) a. As hara eeshar cwana minuotiahw leqira
 1SG.ERG DEM song one.OBL minute.LOC sing.WP
 I sang this song in one minute (I finished the song). [10/26/06]

b. As hara eeshar cwana sohwtiahw liiqira
 1SG.ERG DEM song one.OBL hour.LOC sing.PLL.WP
 I sang this song for an hour (over and over). [10/26/06]

c. As hara eeshar shina minuotiahw liiqira
 1SG.ERG DEM song two.OBL minute.loc sing.PLL.WP

I sang this song for two minutes (the song may not have been completed).

[10/26/06]

Pluractional forms of telic predicates such as *eeshar laqa~/lieqa~* ‘sing a song’ can be interpreted duratively if context suggests the final boundary is not reached. In the witnessed past tense, the simulfactive form of a verb generally indicates that the event was completed (36a). The pluractional form of the verb indicates repetition (36b). However, with a duration which is too short for repetition to be plausible, an atelic durative interpretation arises (36c).

Telicity plays a central role in determining the interpretation of pluractional verbs. However, in addition to the inherent event structure of predicates, the interpretation of pluractionals depends on the choice of tense-aspect marking, as is shown in section 5.3.

5.3 The interaction of pluractionals with tense-aspect

Pluractional meaning, specifically the iterative interpretation, interacts with tense-aspect markers and with adverbs of repetition, frequency and habituality. In this section, the behaviour of three tense-aspect categories in combination with pluractionals will be compared. These are the simple present, witnessed past, and past imperfect. Though referred to simply as tenses, all include aspectual meaning in addition to past, present or future time. I address only these three here because they are frequent and because

c. Dwadaxanchu k'irnahw as hara mashian hoora
 last.OBL week.LOC 1SG.ERG DEM car every

dienahw xixkira / *xiaxkira
 day.LOC drive.PLL.WP / drive.WP

I drove this car every day last week. [12/1/06]

The sentence in (37a) shows the habitual interpretation of a simple present tense verb. (37b) is identical except for the fact that a pluractional verb is used in the simple present tense to indicate either repetition or durative action on each individual day. Example (37c) contrasts with (37a-b) in that only the pluractional verb is possible. The pluractional does not indicate durative or multiple action on each occasion but one instance of action on each day. In other words, the repetition indicated by the pluractional in (37c) is distributed over multiple occasions. The main difference between (37a-b) and (37c) is tense. In the simple present tense the pluractional indicates repetition or duration on each occasion, whereas a pluractional in the witnessed past tense indicates (at least) one iteration on each occasion. The same behaviour with the witnessed past tense is seen in (38):

(38) Hoorā wyyrana so cunna maralixira / *mara'iqqira
 every morning.DAT 1SG.ABS 3SG.DAT run.into.arms.PLL.WP / run.into.arms.WP

Every morning I ran into his arms. [10/26/06]

What is the difference between these tenses that causes their different interaction with pluractionality? The simple present is a “generic or timeless present tense” (Nichols 1996:22) and commonly has a habitual interpretation. Either a pluractional or a simulfactive verb is acceptable with the simple present tense. The simulfactive refers to a single (or non-durative) event on each occasion, while the pluractional refers to an iterated (or durative) event on each occasion:

- (39) a. As hoora byysanna sai~ joewana
 1SG.ERG every night.DAT 1SG.GENrf daughter.DAT
 noxchii~ eeshar loqu / loequ
 Chechen.GENpl song sing.PRS / sing.PLL.PRS

Every night I sing a Chechen song (once each night / repeatedly each night)
 to my daughter. [10/26/06]

- b. Mush six-sixa xeeda / xieda
 rope often break.PRS break.PLL.PRS

The rope often breaks (once on each occasion / repeatedly on each occasion).
 [10/26/06]

- c. As chai molu / myylu
 1SG.ERG tea drink.PRS drink.PLL.PRS

I drink tea (once / more than one cup or for a while). [10/26/06]

d. So pxi sahwt dealcha c'eera aara
 1SG.ABS five o'clock home.ABL out

voolu / ??vuelu
 V.leave.PRS V.leave.PLL.PRS

I leave home at five o'clock (once / ??repeatedly). [10/26/06]

In examples (39a-c), the only possible interpretation of the pluractional is to indicate multiple repetitions of the action on each occasion. In (39d) the pluractional is not acceptable because, given the nature of the event, repetition on a single occasion at the same moment in time (five o'clock) is pragmatically highly odd, if not impossible. The pluractional in the present tense cannot indicate repetitions distributed across occasions, even when the single-occasion interpretation is blocked.

The imperfect tense behaves like the simple present in this respect. The imperfect consists of the simple present form plus the ending *-ra*. According to Nichols (1996:22), the imperfect indicates “past tense where the action or state was of some duration and inherent endpoints of semantically telic verbs are not realized”. One of the most frequent interpretations is past habitual meaning (‘used to do’, ‘would do’). The examples in (40) illustrate these functions.

(40) a. Isa kyygan gouza volush
 Isa hand.GEN skillful v.be.CVsim

loorura zhima volush
 consider.IMPF young v.be.CVsim

When he was young, Isa was considered skillful in handcraft. (Alan Yu, p.c.)

b. So pxi sahwt dealcha c'a vooghura
 1SG.ABS five o'clock home v.come.IMPF

I used to come home at five o'clock. [10/26/06]

(40a) illustrates the use of the Imperfect to indicate a state which continued in the past. Simulfactive telic predicates, as in (40b), generally indicate past habitual repetition when used in the imperfect tense. Pluractional verbs in such past habitual contexts indicate action repeated multiple times on each occasion (41a), or (depending on context) action which is continued and/or incomplete (41b-d).

(41) a. Sa~ jow beer dolush xeenahw,
 1SG.GEN daughter baby D.be.CVsim time.LOC

as kest-kesta hara eeshar luequra
 1SG.ERG often DEM song sing.PLL.IMPF

When my daughter was a baby, I often used to sing this song

(repeatedly or with completion unspecified). [10/26/06]

b. As cwa taka chai~ pxinna
 1SG.ERG one cup tea.GEN five.OBL

sahwtiahw molura / myylura
 hour.LOC drink.IMPF / drink.PLL.IMPF

I would drink a cup of tea in five hours / for five hours. [10/26/06]

c. Shi sho hwaalxa, so futbolie
 two year ago 1SG.ABS soccer.ALL

vuedura / oexura
 V.GO.IMPF go.PLL.IMPF

Two years ago, I used to attend soccer classes (once in a while / continually, e.g. professionally). [12/1/06]

d. Kest-kesta Maliikas shiena tyknahw
 often Malika.ERG 3SG.DATRf store.LOC

koch xorzhura / xoerzhura
 dress choose.IMP / choose.PLL.IMP

Malika used to choose / look for a dress often. (Alan Yu, p.c.)

Pluractional forms of basic atelic predicates in the imperfect generally produce durative interpretations, as in the following example:

(42)	Vai	beerash	dolchu	xeenahw,
	1PLincl.ABS	child.PL	D.be.PPL.OBL	time.LOC
	so	hwox	hwiegara	
	1SG.ABS	2SG.LAT	envy.PLL.IMPF	

When we were children, I envied you (persistently, for a long time). [10/14/06]

From these examples it can be seen that the imperfect (as Nichols' description states) always refers to an unbounded situation, whether an ongoing state, an incomplete event or an iterated one (especially where the iteration is habitual). As a result of this, in many cases a repeated interpretation exists even with a simulfactive verb, and the use of a pluractional verb with the Imperfect tense indicates either continued or incomplete action, or repetition on each occasion.¹¹

The witnessed past tense behaves differently from the imperfect and simple present tenses in its interaction with pluractionality. The witnessed past, according to Nichols (1996:22), indicates that "inherent endpoints of a telic verb are realized".¹² In many cases, the use of a pluractional in the witnessed past tense describes simple iteration of an event.

¹¹ The use of the term 'incomplete' may be slightly misleading. The action could in fact be completed, but the pluractional form highlights a process of action without specifying its completion.

¹² The name 'witnessed past' is a direct translation of the term used in Chechen to describe this tense, and refers to an evidential function. According to Nichols (1996:22), the use of this tense requires that the speaker saw the action take place. For the purposes of this chapter, the evidential character of the witnessed past is not relevant.

(43) a. As hara eeshar jux-juxa liiqira
 1SG.ERG DEM song again.and.again sing.PLL.WP

I sang this song again and again. [10/26/06]

b. So ohwa-iigira
 1SG.ABS down-fall.PLL.WP

I fell down repeatedly. [10/26/06]

In the absence of any frequency adverb or other expression suggesting repetition on multiple occasions, the witnessed past tense interacts straightforwardly with pluractionality: a simulfactive verb indicates a single action on a single occasion in the past, which is completed (if telic); a pluractional verb indicates either a series of iterations on some occasion in the past or a durative period of some activity or state (depending on the base verb). However, when frequency adverbs are used, the situation changes slightly. Compare the witnessed past in (44) to the imperfect in (45):

(44) Hoorā wyyrana i k'ant suuna maralixira / *mara'iqqira
 every morning.DAT that boy 1SG.DAT hug.PLL.WP / hug.WP

Every morning the boy ran into my arms (once or more). [10/26/06]

(45) a. Iza cunna hoora wyyrana mara'iaqqara
 3SG.ABS 3SG.DAT every morning.dat hug.IMPF
 He (the child) used to run into his arms every morning (once). [10/26/06]

b. Hooraa wyyrana i k'ant suuna maralialxara
 every morning.DAT that boy 1SG.DAT hug.PLL.IMPF
 Every morning the boy would keep running into my arms. [10/26/06]

In the presence of the adverbial *hoora wyyrana* in (44-45), the simulfactive form of the verb in the witnessed past tense is ungrammatical, but the same simulfactive verb is acceptable in the imperfect (45a-b). The simulfactive witnessed past in (44) cannot mean 'once on each occasion'. The examples in (46) show the use of several other verbs in the witnessed past in combination with the frequency adverb *kest-kesta* 'often, frequently'.

(46) a. As kest-kesta xaza mashian xixkira / *xiaxkira
 1SG.ERG often beautiful car drive.PLL.WP drive.WP
 I often used to drive the beautiful car. (Alan Yu, p.c.)

b. As hara knishka kest-kesta xirzhira / *xaerzhira
 1SG.ERG DEM book often choose.PLL.WP choose.WP
 I often chose this book. [12/1/06]

- c. Beer *kest-kesta* ?teqira / tiiqira
 baby often crawl.WP / crawl.PLL.WP

The baby often crawled. [10/26/02 & 12/1/06]

- d. As *kest-kesta* hara eeshar ?leqira / liiqira
 1SG.ERG often DEM song sing.WP / sing.PLL.WP

I often sang this song. [12/1/06]

The examples in (46) show that a pluractional verb in the witnessed past is co-distributed with a frequency adverbial (i.e. each of the repetitions indicated by the pluractional corresponds to one of the repetitions indicated by the frequency adverb). The pluractional is also obligatory (e.g. 46a-b) in many such examples. The cases where the simulfactive verb may also be acceptable involve simulfactives which typically express bounded action of some duration, as is the case with ‘bounded motion’ verbs like *taqa~* ‘crawl’ and with accomplishments such as *eeshar laqa~* ‘sing a song’. While judgements as to the acceptability of these verbs with *kest-kesta* seem to vary (even for a single speaker), the use of the simulfactive forms seems to emphasise completion of (each repetition of) the event. For instance, the simulfactive in (46d), if accepted at all, is described as emphasising repeated completion of the song, as opposed to the process of singing.

I propose the following explanation for this pattern. The witnessed past tense generally refers to a completed event on a single occasion in the past. The adverb *kest-kesta* (or other frequency adverbs like *hoora wyyrana* ‘every morning’), when combined with simulfactive verbs in the simple present or imperfect, produces a co-distributed

interpretation similar to the one seen in (46) with pluractional verbs in the witnessed past. From this evidence we can hypothesize that *kest-kesta* by itself does not create an iterative or habitual interpretation, it simply identifies the frequency of repetitions already indicated by the verb. When *kest-kesta* occurs with the witnessed past tense it therefore requires pluractional verbs to be used in order to produce the repetitions whose frequency it indicates.

However, with verbs which (in their simulfactive form) are both bounded and extended in time, a pluractional interpretation of the event is possible without repeated completion. For instance, in (46d) the pluractional does not specify completion of the song (and can in fact be used to indicate a single durative, incomplete singing of the song as seen in example 36c). In order to specify the completion of the song, the simulfactive form may be acceptable.

Finally, note that while the presence of *kest-kesta* in the examples in (46) may seem to imply a habitual interpretation (as it does in the English translations), in fact it does not. The following example shows that the witnessed past is not compatible with a true unbounded habitual interpretation:

- (47) Sa~ jow beer dolush xeenahw, as
 1SG.GEN daughter baby D.be.CVsim time.LOC 1SG.ERG
- kest-kesta hara eeshar loqura / luequra / *liiqira
 often DEM song sing.IMPF sing.PLL.IMPF sing.PLL.WP
- When my daughter was a baby, I often sang this song (once each time /repeatedly each time).

Either the simulfactive or pluractional form is acceptable in the imperfect: the simulfactive *loqura* suggests the song was sung once on each occasion, whereas *luequra* suggests multiple repetitions. However, neither the simulfactive nor the pluractional verb is acceptable in the witnessed past tense—even though the pluractional form *liiqira* can be used with *kest-kesta*, as in example (46d). This is because the first clause enforces a genuinely habitual interpretation of regular repetition with which the witnessed past is not compatible. In examples such as those in (46), *kest-kesta* must be taken to indicate the distribution of repetitions within a single short period. For example, the pluractional witnessed past is judged to sound natural in contexts such as (48), in which repetition takes place during some particular limited period:

- (48) Dwadaxanchu k'irnahw, as hara mashian
 last.OBL week.LOC 1SG.ERG DEM car
 hoora dienahw xixkira
 every day.LOC drive.PLL.WP
 Last week I drove this car every day [12/1/06]

This use of the witnessed past tense to indicate repetition distributed across occasions is limited to verbs which have pluractional forms. Verbs which do not have a simulfactive-pluractional contrast, when used to describe repetition in the past (even within a limited time period as in 48) must be used in the imperfect. The witnessed past *shiald.elira* would be unacceptable in (49).

- (49) Dwadaxanchu k'irnahw, hoora byysanna so shial-loora
 last.OBL week.LOC every evening.DAT 1SG.ABS get.cold.IMPF
 Every evening last week I was cold. [12/1/06]

While I have focused exclusively on the present, imperfect and witnessed past tenses in this section, the examples I have elicited of other tenses support the claim that the difference in interaction with pluractionality is due to a perfective/imperfective split. The examples in (50)-(52) briefly illustrate the behaviour of simulfactive and pluractional verbs in the past perfect (perfective) and present progressive (imperfective) tenses. In the past perfect tense in (50), the pluractional form is required with a repetitive adverb such as *kest-kesta*.

- (50) So ciga kest-kesta ixna / *vaxna
 1SG.ABS there often go.PLL.PP / *v.go.PP

 hinca'a ciga oexush vu.
 now=& there go.PLL.CVsim V.COP.PRS

 I have gone there often, and I'm still going there (regularly).¹³

The progressive tenses in Chechen are imperfective and can be interpreted generically as well as referring to ongoing action, as (51) shows.

- (51) So cigaerka uuzush vaac
 1SG.ABS cigarette smoke.CVsim V.COP.NEG

 I'm not smoking (right now) / I don't smoke (in general). [12/1/06]

Based on the example in (52), the progressive seems to follow the expected pattern of interaction with *kest-kesta*. Both simulfactive and pluractional verbs are judged to be acceptable and the pluractional indicates repetition on each occasion.

¹³ As in the witnessed past, the (un)acceptability of the simulfactive form of accomplishments (or other events which are extended in time) is less clear. The following sentence was produced by a speaker and then 'corrected' to the pluractional form *lieqna* after the elicitation of the example in (50):

As kest-kesta hara eeshar liaqna
 1SG.ERG often DEM song sing.PP
 I have often sung this song (sing.SIM.PP). [12/1/06]

- (52) So kest-kesta hara eeshar loqush / loeqush ju
 1SG.ABS often DEM song sing.CVsim / sing.PLL.CVsim J.COP.PRS
 I'm often singing this song/I am in the habit of singing it once (SIM) / more than
 once (PLL) [1/17/07]

While further elicitation is needed to determine the behaviour of other tenses, the proposed generalisation seems quite strong.

5.4. Event-internal and event-external pluractional meanings in Chechen

I have shown that the availability of the different interpretations for Chechen pluractional verbs is partly, though not solely, determined by Aktionsart/telicity. In 5.4.1 I will argue that Chechen does (as has already been implied) have both event-internal and event-external interpretations of pluractional verbs, and in 5.4.2 that they can be characterised in terms of the plural/group distinction proposed in chapter 3. Finally, in 5.4.3 I compare the pattern of event-internal and event-external interpretations to the behaviour of the Yurok pluractionals presented in chapter 4.

5.4.1 Distinguishing event-external and event-internal interpretations

The durative interpretations seen in 5.2.3 must involve event-internal pluractionality (if they are pluractional in any sense). Repetition of an atelic event (without pauses or change in participants) creates a “plural” event with no non-arbitrary subevents, and thus no basis for identifying multiple distinct events. Iterative interpretations, especially where they are distributed across occasions, seem to involve event-external pluractionality:

distinct events are separated in time. However, there are some cases which are less clearcut. Consider the examples in (53):¹⁴

- (53) a. As hara eeshar liiqira
 1SG.ERG DEM song sing.PLL.WP
 I sang this song (repeatedly or continuously). [10/26/06]
- b. As hara eeshar kest-kesta liiqira
 1SG.ERG DEM song often sing.PLL.WP
 I often sang this song. [12/1/06]
- c. As hara eeshar shina minuotiahw liiqira
 1SG.ERG DEM song two.OBL minute.loc sing.PLL.WP
 I sang this song for two minutes (the song may not have been completed).
 [10/26/06]
- d. As hara eeshar cwana sohwtiahw liiqira
 1SG.ERG DEM song one.OBL hour.LOC sing.PLL.WP
 I sang this song for an hour (over and over). [10/26/06]

The unmarked example in (53a) has been classed as iterative here, and is translated simply as “I sang this song repeatedly”. However this sentence could either indicate

¹⁴ (53c) & (53d) are repeated from (36c) & (36b)

repeated, distinct renditions of the song or a single process of singing the song which lasted for some time, including either multiple repetitions of the song or a single incomplete singing of the song. These interpretations are distinguished by the adverbials in (53b-d). Example (53b) clearly involves separate repetitions whose frequency can be described (and therefore which are easily distinguished from one another, at least in time). This is an instance of event-external repetition. Example (53c) on the other hand, has no distinguishable subparts. While in an actual instance of singing there may be perceptually distinct subparts, such as verses of the song or iterations of parts of the song, the pluractional indicates a single process consisting of multiple subparts, each of which is “song-singing” in character but none of which is necessarily a distinct single complete rendition of the song. Example (53d) is only slightly different. While the translation appears to be iterative (because it may typically involve repetitions of the song as its subparts), the pluractional again denotes a continuous process of singing. In other words, the form *liiqira* is compatible with either repeated distinct events of singing, or a continuous process of singing over a single time period, or a continuous process of repeated singing over a single time period. The discontinuous interpretation in (53b) fits the profile of event-external pluractionality. The interpretations in (53c) and (53d) are both, I claim, instances of event-internal pluractionality.

In 5.4.2, I consider how this pattern of interpretations can be accounted for in the context of the semantics of pluractionals proposed in chapter 3, and compare it to the account of the Yurok iterative and repetitive categories described in chapter 4.

5.4.2 Event-internal and event-external semantics in Chechen

As outlined in chapter 3, I assume that both event-internal and event-external pluractionals involve the pluralisation of an event. In the case of event-internal pluractional meaning, the pluralities are grouped (by means of a group operator ↑), producing a singular, internally complex event. In Yurok the grouping operator was argued to be introduced by a specific grammatical marker (the Repetitive prefix). Is the distinction between grouped and ungrouped pluralities relevant in Chechen, where there is only one pluractional form for any given verb and the meaning of the verb seems to play a major role in determining its interpretation?

As noted, it is frequently the case that repetition of a telic event produces an event-external repetition interpretation, where repetition of an atelic event (whether inherently atelic or coerced into an atelic reading) produces an event-internal one, since there are no non-arbitrary boundaries between “repetitions”. Looking only at the most prototypical iterative and durative examples, it might seem that no extra mechanism is needed to account for the different interpretations. However, this cannot be the case. First, atelic predicates in their pluractional form can refer to either durative or iterative repetition (as in example 12a, repeated as 54). Second, as seen in (53a), the pluractional of a basic telic predicate can permit both event-internal and event-external interpretations.

- (54) Ahw hara mashian cq'a'a xixknii?
2SG.ERG this car ever drive.PLL.PP.INTERROG

Have you driven this car repeatedly *or* for a while? [12/1/06]

Therefore I assume that there must be something like the grouping operation proposed in chapter 3, and that predicates can shift between a grouped and an ungrouped interpretation (and the context may select one or the other, e.g. with durative or frequentative adverbials). This is much like the contrast between collective and distributive interpretations of plural NPs (as analysed in Landman 1996), which formed the basis of the analysis of pluractionals in chapter 3.

5.4.3 Comparison to Yurok

There are a number of issues to consider in comparing Chechen pluractionals to the behaviour of the Yurok Iterative and Repetitive pluractionals, including: the availability of the distinction between event-internal and event-external interpretations; the relationship of Aktionsart to pluractional meaning in both cases; and the event-structure of pluractional predicates.

First, the Chechen data show that a distinction between event-internal and event-external meaning can be present in a consistent and grammatically determined way, even when not grammaticalized as a distinction between two pluractional markers. However, while in Chechen there are clearcut cases of both types of meaning, there are also examples of pluractional predicates which are open to both interpretations (as in 52), a situation which (almost) never arises in Yurok.¹⁵ Based on the analysis here, such sentences are taken to be ambiguous in the same way that *Bill and Fred lifted the piano* is potentially ambiguous between a collective and distributive interpretation in English.

¹⁵ The exceptions to this are the verbs discussed in 4.3.3 which for phonological reasons do not form Repetitives and therefore use the Iterative with event-internal meaning. However, as noted in chapter 4, those verbs with which the Iterative regularly takes on the function of the Repetitive often seem to appear in the double Iterative form in order to distinguish event-external from event-internal interpretations.

Second, as shown in chapters 2-4, event-internal pluractional interpretations are often restricted to particular types of events and contexts, and so comparing the nature of such restrictions in Chechen and Yurok may shed some light on the similarities or differences. In Yurok, the event-internal pluractional marker is clearly not productive and is restricted to an established class of verbs which includes some, but not all, Aktionsart types. In chapter 4 I argued that the event-types which never occur with the event-internal pluractional are those which are already internally complex: activities, accomplishments and run-up achievements. In Chechen, all types of pluractional verb permit an event-external iterative interpretation (with the possible exception of states). However, event-internal interpretations appear to be restricted to predicates which are atelic (inherently or by coercion) and can be extended in time. This primarily excludes achievement verbs (such as *iaqqa~/lialxa~* ‘explode’). Thus the typical examples of event-internal repetition in the two languages are noticeably different: in Yurok, event-internal pluractionals commonly describe rapid, continuous iteration of brief events; in Chechen, event-internal pluractionality is durative, often without non-arbitrarily distinguished subparts. In both cases, the repetition is continuous.

While event-internal pluractionals in the two languages seem quite different, their differences for the most part do not appear to be reflections of a contrast between types of pluractional category meaning. What seems unusual in Chechen, and what is in large part responsible for the durative event-internal pluractional interpretations, is the specific nature of simulfactive atelic verbs (the minimal unit and bounded motion verbs). The minimal unit verbs are in many respects like ordinary semelfactive verbs: they indicate an event which is brief but not inherently bounded. In Yurok, event-internal pluractionality

typically applies to semelfactive verbs such as *(prkw)prkwr* ‘to knock’ and indicates a continuous series of repetitions. The only difference in Chechen is that the minimal unit verbs can be extended in time without any discernible subparts. Thus, the pluractional verb *diela~* ‘to smile’ can indicate either durative continuous smiling or repeated brief smiles.

Finally, there appears to be a difference between Chechen and Yurok with respect to the structure of the pluractional event. In Yurok, as noted in chapter 4, the complex event produced by an event-internal pluractional can have a single goal or completion, in which case its interpretation is much like an accomplishment (extended in time but with a final boundary). This was one of the pieces of evidence supporting the claim that the Repetitive denotes a single internally complex event. However, the same is not true in Chechen (regardless of whether a pluractional verb has an event-internal or event-external interpretation). Chechen pluractional verbs necessarily denote an unbounded period of repetition (or ongoing activity). This can be seen very clearly with respect to motion verbs, where both simulfactive and pluractional motion verbs refer to motion over time but simulfactive verbs indicate bounded motion and pluractional verbs unbounded motion. Compare the bounded motion interpretation of the first two clauses of (55), repeated from (35), to the unbounded version in (56):

(55) So pxinna minuotiahw vaxara, cul t'aehwa so pxinna
 1SG.ABS five.OBL minute.LOC V.go.WP and after 1SG.ABS five.OBL
 minuotiahw vedira, cul t'aehwa so tykana dwa-qeechira
 minute.LOC V.run.WP and after 1SG.ABS store.DAT DX-reach.WP
 I walked for five minutes, then I ran for five minutes, and then I reached the store.
 [10/26/06]

(56) So pxinna minuotiahw liilira, cul t'aehwa so pxinna
 1SG.ABS five.OBL minute.LOC V.walk.WP and after 1SG.ABS five.OBL
 minuotiahw idira
 minute.LOC run.PLL.WP
 I walked for five minutes, then I ran for five minutes. [10/26/06]

The first two clauses of (55) and the sentence in (56) can describe exactly the same sequence of perceived occurrences. However, the final clause in (55) requires the use of a simulfactive verb in the earlier clauses, where in (56) the preferred form is with a pluractional verb in the second clause and the non-pluractional (but not simulfactive) verb *liela~* 'walk' in the first. In (55) there is some boundary (albeit unspecified) on the way to the store. The boundary may be at a spatially arbitrary point on the journey (however far the subject is able to travel in five minutes), but the motion is directed and this arbitrary point therefore constitutes a nonarbitrary boundary.

Yu (2003) and Xrakovskij (1997:60) take this inherent unboundedness to be a necessary property of pluractionality. While it may be a common characteristic of pluractional use, the Yurok data have shown that it is not a necessary one, and the comparison between Chechen and Yurok suggests a potentially interesting crosslinguistic distinction.

5.5. Conclusions

Chechen has a system of simulfactive-pluractional pairs which includes many frequent and frequently-compounded verbs in the lexicon. Chechen pluractionals permit two types of interpretation which I have argued are event-internal and event-external meanings. The semantic distinction between event-internal and event-external pluractionality is very similar to that seen in Yurok, with the most obvious differences being attributable to differences in the event-structure of the nonpluractional/simulfactive verbs in the two languages. Additionally, Aktionsart—in Chechen, specifically telicity—has been shown to be crucial to the interpretation of pluractionality (as predicted, based on chapters 3 and 4).

The data also raise some interesting typological questions. The tense-aspect system in Chechen shows a significant interaction with pluractionality: the perfective tenses permit pluractional repetitions to be distributed over occasions, whereas the imperfective tenses do not. At the same time, pluractionals in Chechen never permit a habitual interpretation (unlike in Yurok). This fact is closely related to the interaction with tense-aspect, since habitual meaning is established by imperfective tenses. These two characteristics may be common patterns in languages with a perfective/imperfective

aspectual distinction, or may be idiosyncratic, and this is an open question for future research.

Chapter 6

Conclusions

6.1 Introduction

This study has examined the use and meaning of grammaticalised pluractionals across languages, bringing together crosslinguistic data with existing psychological findings and semantic theories of plurality and events. In particular, I have focused on a recurrent contrast in the meaning of pluractionals—between event-internal and event-external plurality—and have arrived at a model of the semantics of pluractionals which I suggest accounts for many of their properties across languages. In this final chapter I will first review the main findings from chapters 2 to 5 and then turn to some issues which deserve further investigation.

6.2 Results

The crosslinguistic survey in chapter 2 examined the forms and common meanings of grammaticalised pluractionals. One of the most basic and striking results was the high frequency of pluractionals across the surveyed languages, though their apparent productivity varies widely. I examined variation in meaning on a number of parameters, and ultimately argued that the most fundamental distinction is between event-internal and event-external repetition (Cusic 1981)—that is, between repetitions which constitute the phases of a single complex event and those which form a series of independent events. A common set of characteristics can be identified which occur with event-internal repetition: continuity, typical multiplicity, singularity or collectivity of arguments, the

presence of a single goal or completion, and a restriction on certain Aktionsart types (primarily excluding repetition of accomplishment predicates).

The contrast between these two types of meaning, and specifically the cluster of characteristics common to event-internal pluractionality, formed the basis for the discussion in chapter 3. I argued that the contrast between event-internal and event-external interpretations has its basis in a conceptual distinction between grouped and ungrouped pluralities. This distinction can also be observed in object and event perception, as seen in work in Gestalt psychology (e.g. Wertheimer 1923, Koffka 1935) and in studies on event-segmentation (cf. the summary in Zacks & Tversky 2001). The parallels observed between the factors which favour grouping in visual perception and which correlate with event-internal pluractional interpretations of repetition may be taken as a specific example of the claims made by cognitive linguists and psychologists (e.g. Langacker 1991, Talmy 2000, Gibbs 2006, Barsalou 1999, Barsalou et al. 2003) that linguistic and conceptual structure are at least partly based on perceptual experience.

Building on this distinction, I proposed a semantics for pluractionals based on Landman (1996, 2000). Landman's analysis was originally intended to account for the behaviour of collective and distributive plural NPs, and incorporates a group-forming operation which applies to plurals and forms atomic (effectively singular, though internally complex) entities. I propose that this group-forming operation can apply to plural events. Thus, group plural events behave as singular, for example, in combining with their arguments. This analysis predicts at least one important property of event-internal pluractionals, namely that their external arguments must be singular or collective.

Chapters 4 and 5, the case studies of Yurok and Chechen, provide detailed descriptions of the functions of pluractionals in these languages and consider how they fit with the proposals of chapter 3.

Yurok has two distinct pluractionals, referred to as the Repetitive and the Iterative, which indicate event-internal and event-external repetition, respectively. Their behaviour differs in various ways and I have shown that their differences are consistent with the distinction between event-internal and event-external pluractionality as analysed in chapters 2 and 3. For instance, the Repetitive (event-internal) prefix refers to repetitions which are closely-spaced in time on a single occasion, which may indicate plurality of a transitive object or an intransitive subject (with unaccusative and stative verbs), and which commonly have an implied completion or result. The Iterative (event-external) pluractional, in contrast, can refer to repetition on one or more occasions, including habitual repetition, and can indicate distributive plurality of any argument. An interesting additional property of the Iterative is that it has an apparent intensification meaning in certain cases. I have suggested that such uses be analysed as instances in which a standard of comparison or lower bound of a gradable predicate is pluralised by the pluractional, rather than an event argument.

The distinction between the Yurok Repetitive and Iterative obviously supports the proposed crosslinguistic significance of the contrast between phase-level and event-level repetition. The case study of Chechen offers an interesting comparison. Chechen has a single set of pluractional verbs, many of which may produce both event-internal and event-external interpretations, depending primarily on telicity.

All pluractional verbs in Chechen can have iterative, event-external interpretations. A particular class of pluractional verbs permits a durative, event-internal meaning in addition. The verbs which permit durative interpretations are primarily those whose simulfactive (nonpluractional) form is atelic. In appropriate contexts, accomplishment predicates may also receive a durative reading, though they are coerced into an atelic interpretation, and this is consistent with the restrictions on event-internal plurality noted in chapters 2 and 3.

Pluractional meaning in Chechen also interacts with aspect. Chechen has a system of tenses which can be divided into perfective and imperfective. The imperfective tenses (including progressive tenses) can indicate habitual repetition. When a pluractional verb is used in a habitual context, it indicates repetition or duration on each of the occasions. Perfective tenses do not permit habitual interpretations, but when combined with a pluractional can indicate a single repetition occurring on each of multiple occasions. This is unlike Yurok, where the Iterative pluractional can occur in sentences with habitual meaning and, I argued in chapter 4, simply emphasises the repetition rather than contributing habitual meaning itself or indicating multiple repetitions on each occasion. This argument is based on the fact that sentences containing the Iterative are often interpreted habitually, but unmarked nonpluractional sentences can also receive a habitual interpretation. The relationships between imperfectivity, habituality and pluractionality deserve further consideration, as I point out in 6.3.

I take the Yurok and Chechen case studies to confirm the centrality of the contrast between event-internal and event-external meaning. While the availability of event-internal pluractional meaning and its relationship to aspect and Aktionsart is significantly

different in the two languages, both languages instantiate some of the crosslinguistic constraints on event-internal pluractional meaning proposed in chapters 2 and 3—for example, the coercion of accomplishment verbs into an atelic reading in Chechen (much like the Latin examples discussed in chapter 3, cf. Garrett 2001b) and the absence of activity and accomplishment verbs with the Yurok Repetitive. Such constraints may differ from language to language, but appear to share a consistent underlying principle: complex event structures do not make good candidates for phase-level repetition.

A more general outcome of this research concerns its methodology, and specifically the crosslinguistic survey in chapter 2. As noted in chapter 1, an undoubtedly valid complaint is that a study of semantics based on existing descriptions is superficial at best, if not inherently unreliable. A complete crosslinguistic portrait of pluractionality would require extensive fieldwork on a large number of languages and would surely provide a much more complete and conclusive picture of pluractional variation. However, the results in chapter 2 were sufficient to constitute the basis for an analysis of pluractional meaning across languages developed in chapter 3, and this analysis is for the most part consistent with the Yurok and Chechen data in chapters 4 and 5. To respond (again) to Levinson & Wilson's (2006:513) statement that semantic typology cannot simply follow the established methods of morphosyntactic typology, I argue that while new methods may be required, semantic typology may also incorporate old methods but with new goals and new constraints.

6.3 Questions for future research

A number of unanswered questions have been raised by the data presented in this dissertation, and I will discuss two such issues here.

First, the studies of Yurok and Chechen, while supporting the general model outlined in chapters 2 and 3, brought to the fore questions concerning the relationship of pluractionality to habitual meanings and aspect, specifically imperfectivity.

As noted above, the Yurok Iterative pluractional is compatible with habitual meaning, whereas Chechen pluractional verbs are specifically excluded from receiving a habitual interpretation. One obvious and potentially related difference between the two languages is in their aspect systems. Chechen has a system of twelve basic tenses which can be divided into perfective and imperfective, and all of the imperfective tenses can be interpreted habitually. Yurok has around fifty preverbal particles which can combine in various ways, providing a more loosely organised set of distinctions in tense, aspect, and other features. Sentences can also be completely unmarked by preverbal particles (or pluractionals), including certain habitual sentences.

This difference raises crosslinguistic questions about the source of habitual meaning and about the function of pluractionals in languages with different kinds of aspectual distinctions. A compatibility between habituality and pluractionals is apparently not restricted to Yurok: Bybee, Perkins & Pagliuca (1994:166) propose that habitual markers in at least some languages originate as pluractionals. However, there is an obvious relationship between habituality and imperfectivity, and it may be that languages with a general contrast between perfective and imperfective do not permit pluractionals to have habitual meaning. The reasons for and consequences of this difference need to be

addressed by studying the relationship between pluractionals and habitual meaning in languages with different systems of aspectual meaning.

Second, the intensifying use of the Yurok Iterative is a phenomenon requiring further investigation. The presence of an intensification meaning is not entirely out of keeping with the general character of pluractionality: as noted in previous studies, pluractionals commonly have augmentative and diminutive meanings, including meanings of intensification and attenuation. Moreover, intensification is one of the four types of verbal plurality identified by Dressler (1968). I argued in the introduction that simple intensification (without any repetition interpretation) is a distinct phenomenon from pluractionality and that in the case of pluractionals with intensive-repetition meanings (such as ‘do repeatedly to excess’), intensification be regarded as a secondary semantic component, in addition to the basic plural-event meaning. However, the intensive interpretation of the Yurok Iterative is neither an additional element in a basic repetition interpretation, nor a ‘basic’ intensification meaning. The intensive uses of the Iterative appear to be extensions of its basic pluractional meaning, and in chapter 4 I suggested a bridge between these two types of interpretations in the form of predicates (e.g. emotion verbs) with potentially cumulative effects.

Intensification meanings of pluractionals are noted in descriptions of several other languages examined in the crosslinguistic survey (e.g. the iterative/intensive suffix in Thompson River Salish, described by Thompson & Thompson 1992:131). There are also instances in which an apparent pluractional meaning seems to be secondary to an intensification meaning, as in Korean (Sohn 1999:255). Despite the initial hypothesis I adopted which separated intensification from plurality, there appears to be recurrent

evidence of a connection between them. Some issues to consider include the types of pluractional meaning which produce intensification (and vice versa) and the types of verbs with which both pluractional and intensive meaning arise, as well as whether the relationship between the two constitutes a possible counterexample to unidirectionality.

Clearly there are still interesting questions to be addressed about the meaning of pluractionality and its interactions with other phenomena. Although pluractionals are often treated as a peripheral feature of grammar, their relationship to aspect, nominal number and intensification and the proposed parallel of event-internal and event-external meanings to the collective-distributive distinction in plural NPs all suggest that they are worthy of more serious attention.

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Appendix A

Data and coding summary for chapter 2

1. Languages and references

Amele	Roberts (1987)	Lango	Noonan (1992)
Basque	Saltarelli (1988), King (1994)	Luvale	Horton (1949)
Burushaski	Lorimer (1935), Berger (1998), Tiffou & Patry (1995)	Mandarin Chinese	Li & Thomspen (1981), Lin (2001)
Central Alaskan Yup'ik	Jacobson (1984, 1995)	Nunggubuyu	Heath (1980, 1982, 1984)
Chalcatongo Mixtec	Macaulay (1996)	Russian	Forbes (1964), Wade (1992), Knjazev (1997)
Chechen	Nichols (1994), Nichols (1996), Nichols & Vagapov (2004), Yu (2003)	Slave	Rice (1989)
Daga	Murane (1974)	Southern Paiute	Sapir (1930)
Evenki	Nedjalkov (1997)	Southern Sierra Miwok	Broadbent (1964)
Ewe	Duthie (1996), Pasch (1995), Westermann (1930), Kofi & Litvinov (1997)	Syrian Arabic	Cowell (1964) Ambros (1977)
Fijian	Milner (1990), Dixon (1988), Schütz (1985)	Thai	Noss (1964), Campbell & Shaweevongsee (1957), Higbie & Thinsan (2002)
Finnish	Sulkala & Karjalainen (1992), Karlsson (1999)	Thompson River Salish	Thompson & Thompson (1992, 1996)
Georgian	Hewitt (1995), Aronson (1990)	Turkmen	Clark (1998)
Guaraní	Gregores & Suárez (1967), de Canese & Alcaraz (2001)	Tuscarora	Mithun Williams (1976)
Hausa	Newman (2000), Smirnova (1982)	Tzutujil	Dayley (1985)
Hixkaryana	Derbyshire (1979)	Vietnamese	Nguyen (1997), Thompson (1965)
Imbabura Quechua	Cole (1985)	Wardaman	Merlan (1994)
Kannada	Sridhar (1989), Andronov (1969)	Wichita	Rood (1976)
Kayardild	Evans (1992), Evans (1995)	Yagua	Payne & Payne (1990)
Kiowa	Watkins (1984)	Yimas	Foley (1991)
Koasati	Kimball (1991)	Yurok	Robins (1958), Garrett (2001a)
Kobon	Davies (1989)	Ɂoan	Gruber (1975), Collins (2001)
Korean	Chang (1996), Lee		

	(1989), Sohn (1999)		
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2. Coding of data

The table on the following pages provides a summary of the coded features in each of the languages surveyed. The column headings and possible values are as follows:

(1) N-PL: Nominal number distinctions

- 1 Most nouns distinguish number.
- 2 Some classes of nouns do not distinguish number, or number distinctions are optional or absent in a significant set environments.
- 3 A limited set of nouns distinguishes number, e.g. human nouns only, plus personal pronouns.
- 4 Almost no nouns distinguish number, other than (in most cases) personal pronouns

(2) Pl-arg verbs

If a language has plural argument verbs, their forms are noted (e.g. Suppl. = suppletion; Nonrdp. = nonreduplicative affixation)

(3) VPL: Pluractional categories

Names of pluractional categories are based on the terms used in grammatical descriptions.

(4) Form

For each pluractional, the type of form it takes is noted: full/partial reduplication; nonreduplicative affixation; or other forms (auxiliary, verb particle, etc.)

(5) Productivity

This column contains information about frequency or productivity, where such information is provided by grammars or inferable from examples or discussion.

(6) CONT: Continuity of repetitions

- explicitly discontinuous repetitions
- + repetition is not explicitly discontinuous (this is the default, and does not imply fully continuous repetition)
- +/- interpretations are discontinuous only in a subclass of examples
- NA not applicable, e.g. for categories which have only a (nontemporal) participant distributive meaning

(7) INS: Number of instances

- 2 duplicative or reversative
- * multiple repetitions

(8) SEQ: Sequentiality (vs. simultaneity) of repetitions

- + most examples appear to be sequential (e.g. again and again, one after another); interpretations with plural arguments are typically glossed 'one after another'
- simultaneous instances seem to be possible, e.g. with plural arguments

(9) SP: Spatial distribution

- + the pluractional can have spatial distribution interpretations; where the only examples of this type involve motion 'around' or in different directions, this is noted
- no evidence of spatial interpretations

(10) ARG-PL: Argument plurality

- S/O/A the pluractional can imply the plurality of an S, O or A argument, or distribute repetitions over a plural argument

- no evidence of argument plurality or distribution

(11) DISTR: Distributivity

- SD The pluractional is a spatial distributive, having only interpretations which involve distribution in space
- PD the pluractional is a participant distributive, with all interpretations involving distribution over an argument
- SP, PD The distributive has both spatial and participant interpretations

(12) OCC: Occasions

- + The pluractional can indicate repetition distributed across multiple occasions
- No examples suggest distribution over occasions
- (+) This indicates a third class of pluractional which seemed likely to indicate repetition on multiple occasions but for which the examples or glosses did not illustrate this clearly.

Language	N-PL	Pl arg verbs (one suppl. pair)	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
1. Amele	3		i. Iterative aspect ii Distributive action suffix	Full rdp Nonrdp. suffix		+	*	+	-	-		-
2. Basque	2											
3. Burushaski	2	Nonrdp. suffixes, Suppl										
4. Central Alaskan Yup'ik	1		Repeatedly postbase 'V purposely by several actions' postbase Distributive postbase Intermittent postbase Reversative/intermittent postbase 'V by repeated actions' postbase 'V a little at a time' postbase Repetitive prefix	Nonrdp. suffix Nonrdp. suffix Nonrdp. suffix Nonrdp. suffix Nonrdp. suffix Nonrdp. suffix Nonrdp. prefix	Partially productive Nonproductive	+	*	+	+	S/O S/O S/O S/O S/O S/O S/O ⁵	- - - - - - +	
5. Chalcatongo Mixtec	4					+/- ³	*	+	-	-		-
6. Chechen	1	Internal change	Pluractional verbs	Ablaut/Suppl.	Productive only through compounding	+/- ⁴	2/*	+	-	-		-

¹ There is no example with clear object plurality, but the distributive intransitive subject and other examples suggest its availability.

² Spatial distribution only with one verb, meaning 'spill out over an area'

³ This categorisation is tentative, since the small number of examples seem compatible with either intermittent or continuous repetition.

⁴ Discontinuous in the duplicative use only.

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
7. Daga	2	Suppl (four pairs); Nonred. prefix ⁶	Distributive repetition	Partial Rdp.		+	*	-	-	S/O		-
8. Evenki	2	----	Iterative aspect	Nonrdp. suffix	Productive except for negative modals and some state verbs	+/- ⁷	*	+	-	O		(+)
			Distributive aspect	Nonrdp. suffix	at most 100 verbs	+	*	+/- ⁸	+ (motion and position)	O		-
			Dispersive / repetitive aspect	Nonrdp. suffix	Repetitive meaning with restricted class of verbs; otherwise dispersive	+	*	+/- ⁹	+ (motion)	O		-
			Iterative / multiplicative suffixes	Nonrdp. affix	Nonproductive	+	*	+	-	-		-
9. Ewe	1	----	Duplicative / repetitive auxiliary	Auxiliary		+/-	2/* ¹⁰	+	-	-		+
			Exhaustive/distributive construction	Serial verbs with verb indicating cessation		+	*	+	-	+	PD (S/O)	-

⁵ The plural argument reading is included based on the sources used for the survey; however, I question its validity in chapter 5.

⁶ Daga is unusual in that it appears to have a prefix which marks singular objects, the unmarked verb stem indicating plural objects.

⁷ Intermittent interpretations have to be assumed for certain examples.

⁸ Spatial distribution reading does not seem to require sequentiality.

⁹ Spatial distribution and plural O meanings do not seem to require sequentiality

¹⁰ The auxiliary (Westermann 1930) is referred to as 'repetitive'; however, the examples in the grammars suggest it has duplicative meaning in many cases, but indicates multiple repetitions when occurring in the progressive (cf. Pasch 1995:45).

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
10. Fijian	4	----	Verb reduplication	Partial rdp., prefix		+/-	*	+	-	-		+
(Fijian, cont.)			Distributive <i>dui-</i>	Nonrdp. prefix		NA	*	-	-	S/A	PD(S/A)	-
11. Finnish	1	----	Frequentative verbs	Nonrdp. suffixes		+	*	+	(motion)	-		-
12. Georgian	1	Suppl	Iterative preverb	Nonrdp. prefix		+	*	-	(motion)	S/O		-
13. Guaraní	2	----	----	----								
14. Hausa	1	----	Pluractional verbs	Partial rdp.	Very productive	+/-	*	+/- ¹¹	+	S/O		(+)
			Iterative <i>ta</i>	Particle		+	*	+	-	-		-
15.	4	----	----	----								
Hixkaryana			----	----								
16. Imbabura Quechua	1	----	----	----								
17. Kannada	2	----	Iterative aspect	Nonrdp. suffix		-	*	+	-	-		+
18. Kayardild	2	----	Iterative/plural reduplication	Full (stem) rdp.		+	*	-(with pl arg)	-	S/A		-
19. Kiowa	1	Suppl S/O	Active distributive inflection	Nonrdp. suffix		+	*	+	(motion)	-	SD	-
			Stative distributive inflection	Nonrdp. suffix		NA	*	-	+	S	PD(S)+ SD ¹³	-
20. Koasali	3	Suppletive S/O; Formative replacement (S/O)	Multiple verb construction	verb repetition		? ¹⁴	*	+	-	-		?
			Iterative prefix	Nonrdp. prefix	Rare	-	*	+	-	-		+

¹¹ Examples include explicitly sequential repetition with plural arguments *and* nonsequential with spatial distribution or plural arguments (Newman 2000:423).

¹² However, there is a 'collective' stem-forming suffix which may be similar.

¹³ Participant and spatial distribution co-occur.

¹⁴ Examples are few and too ambiguous to fill in a value; meaning could be continuous or frequentative.

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
(Koasati, cont.)			Punctual reduplication	Partial rdp.	Restricted	+	*	+(except states)	-	S		-
			Multiplicative suffix	Nonrdp. suffix	Pluractional meaning with only a small set of verbs	+	*	+(except spatial interp)	+	S (stative)		-
			Repetitive / iterative reduplication	Partial rdp.	Nonproductive and emphatic	+/-	*	+(except states)	-	-		-
21. Kobon	3	----	Iterative aspect	Nonrdp. suffix and/or stem repetition		+	*	+	-	-		-
22. Korean	2	----	Distributive plural	Nonrdp. suffix		NA	*	-	-	S/A/O	PD (S/A/O)	-
23. Lango	2	----	----	----	----	----	----	----	----	----	----	----
24. Luvale	1	----	Repetitive/separative	Nonrdp. suffixes		+	2/*	+(except pl. arg)	-	O		-
			Frequentative	Full (stem) rdp.		+/- ¹⁵	*	+(except pl. arg)	-	S/A		-
			Extensive	Nonrdp. suffixes		+	*	+(except spatial/state meaning)	+(states or motion)	-		-
			Persistent	Nonrdp. infix		+	*	+	+(motion)	-		-
25. Mandarin Chinese	3	----	----	----	----	----	----	----	----	----	----	----
26. Nunggubuyu	3	Prefixes for S, S/O	Iterative	Full rdp.	Productive	+/- ¹⁶	*	+	-	O		+(with neg.)
			Punctual series	Verb repetition		-	*	+	-	-		-
27. Russian	1	----	Multidirectional motion verbs	Internal change; Suppletion	Nonproductive (small class)	+/-	2/*	+	+(motion)	-	SD (motion)	+

¹⁵ Most examples seem to be continuous; however, a habitual/frequentative meaning is also possible

¹⁶ Discontinuous with negation, which produces a multiple occasion interpretation.

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
			po- + -va imperfectives	Nonrdp. prefix+suffix		-	*	+	-	-		+
(Russian, cont.)			Prefixed distributives	Nonrdp. prefix	restricted/emphatic	-	*	+	-	S/O distrib.	PD(S/O)	+
28. Slave	3	Multiple aspect (nonred) S/A/O; Suppletive verbs S/O	Frequentative	Nonrdp. prefix		+/- ¹⁷	*	+	-	-		+
			Seriative	Nonrdp. prefix		+	*	+	-	S/A	PD(S/A)	-
			Durative	Conjugation marking		+	*	+	-	O		-
			Distributive (yá-)	Nonrdp. prefix		+	*	+/- ¹⁸	+	S/A/O		-
			Repetitive	Nonrdp. prefix		+	*	+	+	-		-
			Duplicative/reversative	Nonrdp. prefix		-	2	+	-	-		(+)
29. Southern Paiute	2	Supp S/O Nonred affixes. S/A+O	Iterative redup	Partial Rdp. prefix		+	*	+	-	-		-
			Durative/iterative	Nonrdp. suffix		+	*	+	-	-		-
			Distributive reduplication	Partial rdp. prefix		NA	*	-	-	S/A/O	PD (S/A/O)	-
30. Southern Sierra Miwok	2	----	Iterative -j-	Nonrdp. suffix	Not productive	+/-	*	+	-	-		-
			Iterative wa	Nonrdp. suffix	Not productive	+	*	+ (except spatial)	+ ¹⁹	-		-

¹⁷ Many examples are frequentative/habitual, but not all.

¹⁸ This form can refer to "actions performed separately or sequentially" by subjects, or repetition by one subject.

¹⁹ Only one potentially spatial interpretation, involving action 'all over' an object

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
			Repetitive	Nonrdp. suffix	Productive	+/-	*	+/- (spatial and pl. arg. are nonseq.)	+	O		²⁰
(Southern Sierra Miwok, cont.)			Discontinuous iterative -e:nY- ²¹	Nonrdp. suffix		-	*	+	-	-		-
			Discontinuous iterative -je:nY-	Nonrdp. suffix		+	*	-	+	-		-
31. Synian Arabic	1	----	Augmentative	Medial C gemination	Unproductive, emphatic	+	*	+/-	-	O		-
32. Thai	2	----	Repetitive redup	Full rdp.	(Few examples)	+	*	+	-	-		-
33. Thompson River Salish	4	Nonrdp. infixes S/A; Suppl. S/O	Augmentative	Partial rdp. prefix	Productive	+	*	+/- (pl arg can be nonseq)	+	S/O		-
			Repetitive infix	Nonrdp. infix		-	*	+	-	-		-
			Iterative suffix	Nonrdp. suffix	Rare	+	*	²²	-	-		-
34. Turkmen	1	----	Repetitive suffixes	Nonrdp. suffixes	Rare	+	*	+	-	-		-
			Continuous/repeated suffix	Nonrdp. suffix	(More productive than repetitive)	+	*	+	-	-		-
35. Tuscarora	3	----	Iterative	Nonrdp. prefix		²³	2	+	-	-		(+)
			Distributive	Nonrdp. stem suffix		+	*	+/-	+	S/O	PD(O) SD	-

²⁰ Only one frequentative example

²¹ While this suffix and the next appear to contain repetitive -nY-, I treat these separately since (a) they seem to have different meanings, and (b) the -nY- suffix also is part of other combinations which do not have pluralational meaning, e.g. -j-nY- 'volitional', suggesting 'to want to, to be about to' (Broadbent 1964:80).

²² Sequential in all repetition examples; however, the suffix also has an intensive meaning.

²³ Duplicative examples are likely to be intermittent, though this is not explicit.

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
36. Tzutujil	2	----	Lenitive/repetitive	Partial rdp. suffix	Monosyllabic roots	+	*	+	-	-		-
37. Vietnamese	4	----	Verb reduplication	Full rdp.	Emphatic, used for stylistic effect	+/-	*	+	-	-		(+)
38. Wardaman	2	----	Iterative	Vowel lengthening	Common	+	*	+	-	-		-
			Verb reduplication	Full or partial rdp. (varies by verb/verb particle)		+	*	+	-	-		-
(Wardaman, cont.)			Iterative <i>-marla</i>	Nonrdp. suffix		+/-	*	+	-	-		+
39. Wichita	4	Suppletive	Iterative	Nonrdp. suffix	Occurs regularly in multiple text examples	+	*	+	-	-		-
			Distrib activity	Nonrdp. infix	Occurs in text examples	+	*	- not essential for pl. arg	+	+	S/O	+
40. Yagua	2	----	Iterative motion suffix	Nonrdp. suffix		-	*	+	-	-		+
			General iterative	Nonrdp. suffix		-	*	+	-	-		+
			Derivational iterative	Nonrdp. suffix	Highly derivational, used with limited class of roots	+	*	?	-	0		-
41. Yimas	1	----	Iterative	Full or partial redup		+	*	+	-	-		-

Language	N-PL	Pl arg verbs	VPL	Form	Productivity	CONT	INS	SEQ	SP	ARG-PL	DISTR	OCC
42. Yurok	4	Suppletive Infixation, internal change, suffixation S/O	Iterative	Nonrdp. infix		+/-	*	+/- (pl. arg. need not be seq)	-	S/A/O		+
			Repetitive	Partial rdp. prefix		+	*	+/- (pl. arg. need not be seq)	+ ²⁴	S/O		-
43. #Hoan	1?	Suppl. S/O	V-ing around	Nonrdp. suffix (+ pl agreement)		+	*	+	+ (motion around, action in several places)	-	SD	-
			Repeated action	Nonred suffix (+ pl agreement marker)		+	*	+/-	-	S/A/O		-
(#Hoan, cont.)			Distributive	Nonred suffix		NA	*	-/NA	+	O	PD(O) SD	-

²⁴ A few examples suggest distribution with the bounds of a single object; these examples are discussed in chapter 4.

Appendix B

Sources for Yurok examples

Yurok examples are cited with the following abbreviations to indicate their origins. Numbers refer to page numbers in published sources, line numbers in most unpublished sources (those which can be accessed via the Berkeley Yurok Project website at <http://linguistics.berkeley.edu/~yurok>). Kroeber and Waterman's fieldnotes are cited by notebook number and page, as are my (EW) fieldnotes. Fieldnotes and recordings made by Andrew Garrett and Juliette Blevins are cited by date or recording number.

- AG Andrew Garrett, field recordings and fieldnotes
- ALK AL Kroeber (1869-1972), fieldnotes (by not
- AS1 Alice Spott, Ethnobiology, 1962 or 1963. Collected by William Bright.
- ES Mary Marshall, Sentences (1927). Edward Sapir, Yurok field notebook, American Philosophical Society.
- EW Esther Wood, fieldnotes
- RHR Florence Shaughnessy, Sentences collected by RH Robins, 1951. Unpublished edition, Andrew Garrett. Reference by line number
- I4 Domingo of Weitchpec, "Buzzard's Medicine" (recorded June 3 1907), transcribed by A.L. Kroeber (ALK75:19-31), translated in Kroeber (1976) Yurok Myths p.313-314
- JB Juliette Blevins, field recordings and fieldnotes

- JE Jessie Exline (n.d.)
- KFD Waterman & Kroeber (1938)
- LA16-2 Bessie Fleischman, “The Story of the Klamath River Song”, 1951 (LA16-2:6)
- LA16-5 Florence Shaughnessy, “The Fox and the Coon”. In Robins (1958), pp. 164-165
- LA16-7 Florence Shaughnessy, “The Young Man from Serper”, 1951
- P Paul Proulx (1985)
- R R.H. Robins (1958)
- RHR Florence Shaughnessy, Sentences collected by RH Robins, 1951. Unpublished edition, Andrew Garrett. Referenced by line number
- RS1 Robert Spott, “The First Salmon Rite at Wehkwew”, appearing in Robins (1958) pp 172-183.
- TTW T T Waterman (ms.) fieldnotes
- YLCB Georgiana Trull, Yurok Language Conversation Book, 2003