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An Updated Typology of Causative Constructions: Form-Function Mappings in
Hupa (California Athabaskan), Chungli Ao (Tibeto-Burman) and Beyond

By

Ramón Matthew Escamilla, Jr.

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Linguistics

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Eve Sweetser, Chair

Professor Richard A. Rhodes

Professor Johanna Nichols

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Abstract

An Updated Typology of Causative Constructions: Form-Function Mappings in Hupa (California Athabaskan), Chungli Ao (Tibeto-Burman) and Beyond

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Ramón Matthew Escamilla, Jr.

Doctor of Philosophy in Linguistics

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Taking up analytical issues raised primarily in Dixon (2000) and Dixon & Aikhenvald (2000), this dissertation combines descriptive work with a medium-sized (50-language) typological study.

Chapter 1 situates the dissertation against a concise survey of typological-functional work on causative constructions from the last few decades, and outlines the major research questions.

Chapter 2 presents a case study of causative encoding in Hupa (California Athabaskan). I describe the morphosyntax and semantics of the Hupa syntactic causative construction, and analyze its distribution with respect to Dixon's (2000) proposals for a typology of causative constructions. I demonstrate that causee control (Dixon's parameter 3) over the caused microevent is a significant semantic factor in licensing this construction. I show that Næss' (2007) model of transitivity as a set of semantic prototypes, as applied to causative event participants, nicely accounts for other aspects of the distribution--particularly, why some events can be encoded in a causative construction, while other, quite similar, events must be encoded in a result clause or purpose clause. I end with an examination of how Hupa encodes causal chains within single lexical items, bringing together a small corpus study and a case study of Hupa encoding of cutting and breaking events.

Chapter 3 presents a case study of causative encoding in Chungli Ao (Tibeto-Burman). I offer a description of Chungli Ao's morphological and periphrastic causative constructions, and analyze their distribution with respect to Dixon's (2000) model, showing that directness of causer action (Dixon's parameter 6) can determine the choice between a lexical causative (where one is available), and a non-lexical causative construction. I present an in-depth case study of Chungli Ao encoding of cutting and breaking events, including a discussion of the semantics and distribution of several lexical suffixes and the elements of the causal chain they encode. Also discussed are syntactic alternations systematically available to CUT-class verbs and BREAK-class verbs, respectively.

Chapter 4 moves away from language-specific case studies, and turns to crosslinguistic research in order to address some broader research questions about universal tendencies in the encoding of causative relationships. I bring a new, larger body of empirical evidence to bear specifically on

Dixon's (2000) account of the formal and semantic factors influencing (or forcing) a speaker's choice of one causative construction over another. Dixon's (2000) claims about prototypical patternings of compact vs. less compact constructions are not well-supported: in order for the claims to be well-supported, the values of Dixon's nine parameters would have to be correlated in individual languages at a statistically significant frequency. Parameter 5 (partially versus completely affected causee) was not found to be crucially encoded at all in a sample of 114 constructions from 50 languages. Parameters 7 (causer intentionality), 8 (naturalness of causer action) and 9 (causer accompanying or not accompanying causee) nearly always occur in isolation. The one instance of a solid correlation among parameter values (with a sample of more than 10 relevant pairing events) was that between parameters 3 (causee control) and 4 (causee willingness). These two parameters were correlated: they were encoded together at particular values (both low or both high), or were both systematically absent, at a statistically significant frequency. Since, in general, Dixon's proposed semantic parameters tend not to co-occur, the study shows that it is not feasible to model the distribution of causative constructions around notions of semantic prototypicality. A much larger sample may show Dixon to be correct in his proposal regarding correlations between values of semantic parameters, but the current findings suggest that his nine parameters are not likely to pattern together in subgroups. I conclude the chapter by presenting a series of constructions, encountered in the course of compiling the typological sample, that obligatorily encode other semantic information along with causativity. I note potential patterns and propose questions for research to build on my typological study.

Chapter 5 summarizes the contributions of the dissertation, and recapitulates various proposals for further study.

To rational thought, and linguistic diversity.

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Abbreviations

1	first person
2	second person
3	third person
ADV	adverbial
AGENT	agent
AGT	agentive
ANIM	animate
ASP	aspectual
CAUS	causative
CAUSE	cause or causing event
CLASS	[verb] class
CLS	classifier
COMP	complementizer (Assiniboine)
COND	conditional
CONV	converb
CORE	core argument marker (Tukang Besi)
DECL	declarative (Assiniboine)
DEM	demonstrative
DIMIN	diminutive
DIR	directional [motion]
DISTRIB	distributive
EXCL	exclusive
EVID	evidential
FACT	factitive
FEM	feminine
FUT	future
GEN	genitive (Puyuma)
HORT	hortative
IMPER	imperative
INCEP	inceptive
INCL	inclusive
INDEF	indefinite
INDIC	indicative (Makah)
INSTR	instrument
LOC	locative
LOW	low animacy
MA?	Chungli Ao lexical suffix <i>-ma?</i>
MAL	malefactive
MASC	masculine
NEG	negation
NEUT	neuter
NMLZ	nominalizer
NONDIR	non-directional motion
OF	‘of’ (genitive; Kolyma Yukaghir)
OBJ	object

OPT	optative
PASS	passive
PERF	perfective
PL	plural
POSS	possessive (Tukang Besi)
PRED	predicator
PROHIB	prohibitive
PSF	present stem formant (Molalla)
PST	past [tense]
RECENT	recent [past tense]
RECIP	reciprocal
RED	reduplication
REFLEX	reflexive
REP	repetitive
SA?	Chungli Ao lexical suffix <i>-sa?</i>
SASA	Chungli Ao anaphoric <i>sasa</i>
SEQ	sequential
SG	singular
SUBJ	subject
TEMP	temporal specifier (Makah)
THANG	Chungli Ao lexical suffix <i>-thang</i>
THEME	theme argument or participant
THM	thematic [material in a Hupa verb]
TRANS	transitive
TUK	Chungli Ao lexical suffix <i>-tuk</i>
VOL	volitional

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Chapter 1

Situating the dissertation:

Issues in the linguistic encoding of causal relations, past and present

0. Introduction & preliminaries

To propose a dissertation on causative constructions is to willingly wade into some crowded and contentious territory. Causatives have received so much attention in the past three to four decades, and in such a wide variety of research paradigms, that another dissertation-length study may at first glance seem like just one more on the heap.

However, work from functional-typological approaches has, in the past 10 to 15 years alone, raised a variety of fascinating issues. Some of these issues concern crosslinguistic patterns in how formal and semantic information is encoded in and licenses the use of causative constructions. Other issues include broader questions into the relationships between causativity and such central concepts as transitivity and event structure. Some of the most interesting questions, in my opinion, have not yet been approached in the literature. Furthermore, my typological work has shown me that we have a real, ongoing need for high-quality descriptions of causative constructions. The current work aims to contribute in both areas: I present two chapter-length descriptions of causative constructions in two understudied languages, followed by an empirical investigation into some of the broader crosslinguistic issues using my own medium-sized typological sample.

In proposing a typological study of causative constructions, I am taking for granted the idea that causation is something that humans—all humans—can conceive of, which is of course a necessary prerequisite for encoding such a relation. In other words, I assume that causal relationships are a universal conceptual-semantic concept (term from Haspelmath 2008a), a semantic relationship that “presumably any human being can conceive of” (13). I am willing to go further, and assume that humans *must* both conceive of and encode causal relations in order to interact with other humans in anything we would recognize as a social relationship, so central is the general notion of acting in order to effect change or incite action in other entities or humans. The validity of this underlying assumption is, in a practical sense, supported by the fact that each of the 50 languages sampled did, in fact, possess one or more formal means of encoding causal relations. While these issues are important to a thorough understanding of human cognition and behavior (including language), defending their validity beyond the level of practical applicability is not within the scope of this dissertation.

I begin the discussion with a survey of major works from the literature on the form and semantics of causal relations (chiefly causative constructions). After discussing six of these, I situate the current work, which, as stated above, comprises two chapter-length case studies and a chapter-length, medium-sized typological survey. These three subprojects are drawn together by their common intellectual origin in the issues summarized by and elaborated in Dixon (2000) and Dixon and Aikhenvald (2000), whose analyses and suggestions for future research have heavily influenced the planning of this dissertation.

What is ‘causation,’ as encoded linguistically? One early characterization, with which Comrie (1981), Dixon (2000) and Talmy (2000)’s characterizations largely overlap, is that of Shibatani (1976a). This working definition models ‘causation’ as consisting minimally of a causing event and a caused event, and a dependency relation between these two events believed by the speaker/encoder to hold. I repeat Shibatani’s three original points here:

(a) An agent causing or forcing another participant to perform an action, or to be in a certain condition[:]

(b) The relation between [the] two events [=the causing event, and the caused performing/being event] is such that the speaker believes that the occurrence of one event, the “caused event,” has been realized at t_2 , which is after t_1 , the time of the “causing event”[:]

(c) The relation between the causing event and the caused event is such that the speaker believes that the occurrence of the caused event is wholly dependent on the occurrence of the causing event; the dependency of the two events here must be to the extent that it allows the speaker to entertain a counterfactual inference that the caused event would not have taken place at a particular time if the causing event had not taken place, provided that all else had remained the same. (1976a: 1-2)

This set of definitional prerequisites allows for a broad set of types of relationships based, at least, on the lexical verb, the semantics of the causer, the semantics of the causee and the semantics of the construction explicitly encoding the causal relationship. Many analysts have worked to tease apart what factors (semantic or otherwise) account for the distribution of causative constructions, as well as to document what patterns actually occur.

Causation and causality have been well discussed in the linguistics literature in recent decades, primarily in the realm of formal syntax. I want to begin by stating explicitly that I will not be concerned with formalisms, or in advancing any formalist theory of syntax or semantics. Rather, my larger dissertation project will be concerned with collecting empirical data and offering detailed descriptions of constructions which encode causal relations (here, chiefly in Hupa and Chungli Ao), and discussing typological patterns in mappings between surface structure and semantics, based on those data. I aim to have a foothold firmly in the functional-typological approach, which, to cite Croft (1990: 246-247), “uses an empiricist method to answer the question of ‘what is possible in a human language’ by determining what is an attested human language.” I begin here by surveying some of the most important functional-typological literature on the encoding of causation.

1. Situating the dissertation: a literature review

1.1 Comrie (1981)

Comrie (1981: 158-177) focuses on the typology of the syntax and semantics of causative constructions proper. Crucially, Comrie (and others to be discussed here) distinguishes between the linguistic encoding of causal relations and other, extra-linguistic concerns, such as the nature of causation itself and how humans perceive causal relations. While certainly not irrelevant, these extra-linguistic questions will, for now, be set aside. Comrie usefully characterizes causative events in terms of two (or more) microevents perceived as comprising a macroevent, encoded in a single expression (of varying size and form). Formally, he categorizes causatives into three types, depending on the contiguity of the material encoding the causing event and that encoding the caused event. These are: 1) lexical causatives, in which the two events are expressed in a single lexical item, as in the well-discussed case of English *kill*; 2) morphological causatives, in which the causing event and the caused event are encoded in a single verbal complex via causative morphology, and, prototypically, morphological marking showing the status of affected

arguments. Finally, Comrie discusses 3) analytic causatives, in which the causing event and the caused event are encoded in separate clauses; these will be discussed in more detail below.

Comrie's work is especially noteworthy for having brought the notion of syntactic hierarchy to bear on the typology of causative constructions. A hierarchy of grammatical relations had already been formulated to help explain possibilities for relative clause formation (first presented as Keenan and Comrie's (1972) *NP accessibility hierarchy*; see Croft 1990: 147). Comrie argued that a similar hierarchy was in play, at least in some constructions, in the marking of the original (old) A argument (that is, the subject of the matrix clause before causativizing) when a base transitive clause is causativized. The hierarchy is as follows:

- (1) *subject > direct object > indirect object > oblique > genitive*

Comrie's argument was, in short, that many causativized base-transitive constructions will mark the new A as belonging to the leftmost available slot in the hierarchy. The marking of the new A argument can thus, to a certain degree, be predicted (crosslinguistically), by the markings of the core arguments in the non-causativized counterpart of the same clause. Dixon (2000) fleshes out this analysis in more detail. In my typological pilot study, I will be primarily concerned with the form and semantics of the causative construction itself, rather than with grammatical relations, or with the agreement required on arguments in the clause. Nonetheless, I do touch on related issues in my discussions of Hupa and Chungli Ao, so Comrie's work has deserved mention here.

1.2 Comrie & Polinsky, eds. (1993)

This book-length compilation of studies deserves mention, as it is the first such work I have found that explicitly tackles relationships between causative constructions and crosslinguistic notions of transitivity. My own decision to address transitivity in Hupa (using Næss' (2007) model of prototypical transitivity) stems largely from two studies in this volume, which are outlined here.

The first is Nichols (1993), in which the author investigates the evolution of the lexicon relative to productive grammatical constructions, here constructions that change the valency of a predicate. Nichols (70) notes that modern Slavic lacks a morphological causative, and, in general, these languages have no valency-increasing morphological process at all. This contrasts with Proto-Slavic, which had a productive morphological causative according to the evidence presented. The author hypothesizes that:

A language for which the only derivational valence-changing device is a causative, and for which this situation has obtained for a long time, can reasonably be expected to display some lexical properties that reflect long and gradual adaptation of the lexicon to the grammar and the result of lexicalization of grammatically-derived forms. (74)

Based on investigations of the relative frequencies of verbs of different valencies in a corpus of modern and pre-modern Russian texts, the author demonstrates that the Russian system does not conform to her hypothesis, but rather follows the pan-Indo-European pattern, in that transitives are synchronically unmarked, "derivationally underlying or basic." The system is thus "fully consistent with the typical Indo-European morphosyntax in which there are only valence-increasing devices and no valence-decreasing devices." (84)

While my project does not focus on Slavic, comparing frequencies of verbs of different base valencies in the wild (in a text corpus) and comparing such with productive grammatical

processes has proven to be a useful way to investigate patterns of encoding causativity in Hupa. For my investigation and findings, see Chapter 2, section 3.0.

The second influential paper in Comrie & Polinsky, eds. (1993) is by Kibrik. An important contribution to the understanding of valency-changing operations across the Athabaskan family, Kibrik's paper also discusses Hupa causatives in some depth. Kibrik was perhaps the first to explicitly note that in Hupa (as elsewhere in the family), base transitive verbs are nearly always incompatible with morphological causativization. He claims, based on data from Golla (1970; see Chapter 2, section 2.2) that [morphological] causatives can only be formed from "dynamic verbs (processes and achievements)" (52). The major shortcoming of this claim is that, as Kibrik himself quickly admits, it does not account for the compatibility of the morphological causative with descriptive neuters, most of which are unequivocally stative. Much of Chapter 2 (in this dissertation) is devoted to providing an improved analysis of Hupa causative constructions.

1.3 Song (1996)

Presenting a typology of causatives and causation based on a database of a staggering 600 languages, Song is very critical of typological work that depends on statistical inference, citing data from the Niger-Congo family that contradicts some earlier claims that "languages within genera are generally fairly similar typologically" (Dryer 1989: 267)(19). Song therefore includes data from every language for which adequate documentation was available to him, and categorizes the various causative constructions gleaned therefrom into 3 classes: COMPACT, AND and PURP. Before discussing these, I introduce Song's terminology briefly:

- | | | |
|-----|---------------|---|
| (2) | S | a clause |
| | V | some sub-clausal verbal material |
| | <i>cause</i> | the material encoding the <i>causing</i> microevent |
| | <i>effect</i> | the material encoding the <i>caused</i> microevent |

These are combined in the following ways:

- | | | | |
|-----|--------------------|---|------|
| (3) | [<i>Scause</i>] | the clause which denotes a causing event | |
| | [<i>Seffect</i>] | the clause which denotes the caused event | |
| | [<i>Vcause</i>] | verbal elements of [<i>Scause</i>] | |
| | [<i>Veffect</i>] | verbal elements of [<i>Veffect</i>] | (20) |

The major differences between Song's analysis and Comrie (1981) and Dixon (2000) is that Song lumps the range of lexical and morphological causatives together under the label COMPACT (20), in which [*Vcause*] can be "less than a free morpheme" (e.g., bound morpheme [prefix, suffix, infix, circumfix, reduplication], zero-derivation, suppletion); or "a free morpheme" (28), in which [*Vcause*] and [*Veffect*] form a single grammatical unit. I note that most of the examples given look like serial verb constructions, and no in-depth analysis is undertaken for some of the constructions in which [*Vcause*] and [*Veffect*] are less formally contiguous. Song notes this non-contiguity, but does not undertake to explain why it might be important.

The AND causative, for Song, is any construction with a separate [*Scause*] and [*Seffect*] i.e., in which "two clauses [are] involved" (35). This, in theory could include larger, multi-clausal expressions of causal relations which many analysts probably would not label a 'causative construction', e.g.: 'It rained yesterday, so they stayed home,' but the boundaries of the AND causative category are not discussed.

One of Song's major agenda points is fleshing out an analysis of his PURP causative. These are constructions which encode intended causation on the part of the causer, but which do not encode any outcome: i.e., the speaker encodes [Vcause] and causer intentionality, but remains agnostic as to whether [Veffect] was felicitously effected. Clear examples of these occur sporadically in my data set, and will be discussed where appropriate. Furthermore, I do probe the 'outer limits' of the compatibility of certain types of events with the Hupa causative construction in Chapter 2 - some events which in other languages may be encoded in a causation construction must, in Hupa, be encoded in one of several types of purpose or result clauses. I show that the compatibility can be accounted for based on the semantics of the participants: their affectedness, the degree to which they instigate the action in question, and their volition. I leave to future research the questions of 1) how prototypical these constructions are as encoders of causal relations, and 2) how widespread PURP constructions are in the world's languages.

1.4 Dixon (2000)

Dixon (2000), in his authoritative typology of causatives, discusses the syntax and semantics of all types of causative constructions, in much more detail than can be recounted here. One research question he begins to tackle is the following: Many languages, as he and many others have documented and attempted to categorize, have at least two causative constructions. Leaving aside for now the issue of lexical causatives (except where zero-derivation has been demonstrated to be a productive morphological process), these are usually broadly divided into 'more compact' and 'less compact', with labels, differing by analyst, indicative of relative length of the forms in question (e.g., Comrie's straightforward 'morphological'/'syntactic', or Song's (1996) 'COMPACT'/'AND'). Earlier works had attempted to summarize the semantic differences under the vague (though preliminarily useful) rubric of the "Iconicity Principle" (see Huang and Su (2005) for a succinct discussion), which basically posits a correlation between the degree of formal compactness of the linguistic material encoding the causative macroevent and the perceived directness of the relationship between causing event and caused event: i.e., shorter forms, on the whole, were posited to encode more direct causation than longer forms, as in the classic English examples *I killed him*. [direct causation] vs. *I caused him to die*. [less direct causation].

The Iconicity Principle is a good first step, but does not really explain any fine-grained semantic distinctions that may be in play. The first attempt to take the analysis further, to my knowledge, was Comrie's (1981:164-7) discussion of directness and control, which began looking at the semantics of the causer and causee as possible semantic factors influencing the distribution of different causative constructions. Dixon (2000), however, goes several steps further, identifying and fleshing out a system of nine scalar parameters along which causative constructions tend to vary, supported by data from his typological survey. I summarize these here:

(4) *Relating to the lexical verb involved in the construction:*

1. stative vs. active
2. intransitive vs. transitive vs. ditransitive

Relating to the causee:

3. having vs. lacking control [over the caused microevent]
4. acting willingly vs. unwillingly
5. partially affected vs. completely affected

Relating to the causer:

6. acting directly vs. indirectly
7. acting accidentally vs. intentionally

8. acting naturally vs. with effort [i.e., initiation of the caused microevent takes less or more effort]
9. involved vs. not involved in the activity [=the caused microevent]

This set of parameters is useful in and of itself, but, importantly, Dixon applies it to all causative constructions in a sample of around 25 languages, and notes that more formally compact causative constructions prototypically tend toward the following values on the above nine parameters:

Causer acts naturally [8], intentionally [7] and directly [6]; the causee either lacks control [3] or has control but is willing [3 & 4], and is only partially affected [5]. May apply only to active intransitive verbs [or may include some small subclass or transitives] [1 & 2], or to state verbs alone [1]. (Summarized from Dixon (2001:77).)

Dixon provides a data-driven account of the prototypical ‘more compact’ and ‘less compact’ causatives, though noting that these prototypes are somewhat artificial, chiefly in that many causative constructions in the languages surveyed will involve only some subset of the criteria above.

As for the syntax of causatives, Dixon notes that for causativized intransitives, the overwhelming tendency is for the old S argument to be marked as O, with the introduced argument functioning as the new A. More interestingly, Dixon posits six typological classes based on how languages (constructions?) treat arguments after a new argument has been introduced via the causativization of a base transitive verb.

Table 1.1. Patterns of argument marking in causative clauses derived from base transitive verbs; summarized from Dixon (2000: 48-56)

type	causer [new]	original A [causee]	original O
(i)	A	‘special marking’	O
(ii)	A	retains A-marking	O
(iii)	A	has O-marking	has O-marking
(iv)	A	O	non-core
(v)-A	A	non-core: marked as left-most empty slot on Comrie’s hierarchy	O
(v)-B	A	non-core: gets some fixed, construction-specific marking.	O

Languages in my typological survey exhibited only constructions categorizable into the above types, though it should be emphasized that the categorization is construction-specific, and not language-specific: a given language can employ more than one of the types, with each doing different semantic work. It is well-known that in Japanese, for example, the original A can be marked either as O or as non-core, depending on causee willingness.

Dixon’s analysis and discussion was the core impetus for constructing my own typological sample. Dixon calls for broader typological surveys to test his proposed model, and I take up this call in Chapter 4, empirically testing these parameters and Dixon’s claims about their patterning against a new, medium-sized typological sample (section 2.2, below), a sample that overlaps with Dixon’s only minimally. I also review and discuss crosslinguistic patterns that Dixon’s model cannot account for, and I end Chapter 4 by laying out research questions for the future.

1.5 Shibatani & Pardeshi (2002)

Shibatani and Pardeshi (2002) have written the most recent comprehensive treatment of the issue of direct vs. indirect causation. This distinction is subsumed in Dixon's (2000) parameter #6, and will be discussed at length below. As one may expect from the terminology, in cases of direct causation, the causer has a direct effect on the causee, directly bringing about a change of state in or action on the part of the causee, with minimal spatial or temporal removal. Conversely, in indirect causation events, the causing microevent and the caused microevent are less contiguous, the causer having a less direct effect on the state/action of the causee.

This work builds on Shibatani's (2002) account of a hierarchy of susceptibility; in what can be seen as a re-characterization of Dixon's (2000) parameters 2 (transitive/intransitive/ditransitive), ; 6 'directness of causer action') and 8 ('causer effort'), Shibatani had argued that a hierarchy of susceptibility to (morphological) causativization can be characterized in terms of the semantic role of the *causer*. He characterized this continuum, in turn, in terms of the difficulty the causer experiences in bringing about the caused event. He had argued [in terms reminiscent of Talmy's (2000) force dynamics] that a patientive causee [S, who prototypically is formally reassigned to being marked as O] poses less resistance than an agentive causee; in the former case, the only counterforce to overcome is the causee's inertia, either in continuing to be at rest or in continuing to undergo a change. In the latter case (some kind of caused agency), however, causation requires the participation of another entity: in force-dynamic terms, the potential resistance is greater [and, I note, causer control over the realization of [Veffect] is lower], hence the hierarchy:

- (5) *inactive intransitives* > *active intransitives* > *transitives*
(portions not in brackets summarized from Shibatani 2002: 8-9).

Building on this account, one of the main contributions of Shibatani & Pardeshi is to attempt to model the distinction between direct and indirect causation in terms of construal of event structure, rather than in terms of the semantics of causee versus causer control. This is claimed to correlate more cleanly with Haiman's (1983) iconicity principle: it is compact event structure that correlates with (or perhaps motivates) a more compact linguistic form, and less compact event structure that holds the same relationship to less compact linguistic form. Shibatani & Pardeshi (90) illustrate this analysis with event structure diagrams, and I reproduce these here¹:

¹ Martin (2009:10) also contains a nice summary of Shibatani & Pardeshi's argument.

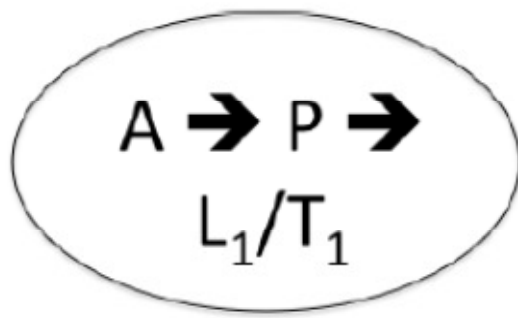


Figure 1. The event structure of prototypical direct causation (reproduced from Shibatani & Pardeshi (2002:90))

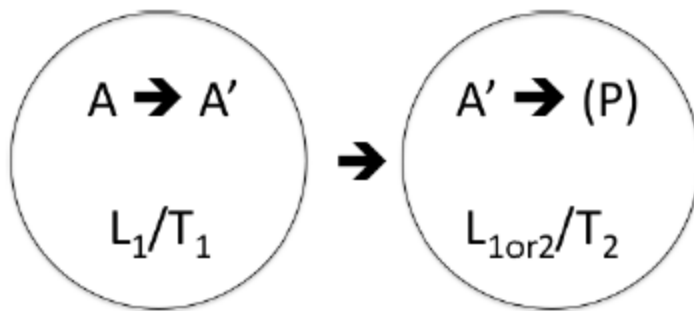


Figure 2. The event structure of prototypical *indirect* causation (reproduced from Shibatani & Pardeshi (2002:90))

In these diagrams, A is an agentive causer; A' is an agentive causee; P is a patientive causee; L is a location; T is a time. As the reader will see, the causee in a prototypical direct causation event is claimed to be patientive, as opposed to the agentive causee in a set of prototypical indirect causation events. While it may indeed be the event structure that motivates the iconic crosslinguistic pattern of less versus more compact formal constructions, the semantics of causer and causee control cannot be divorced from discussions of direct versus indirect causation, as shown in the above diagrams. I return to the issue of direct versus less direct causation in chapter 4.

1.6 Talmy (2000)

Talmy's (2000) milestone work contains an in-depth investigation of different types of causal relations (v.2: 67-101). Talmy refers to these as "lexicalization patterns," a term which in itself remains unclear to me, given that few of the examples given in his discussion are lexical items, and most interpretations of "different types of causation incorporated in the verb root" are in fact wholly dependent on other morphosyntactic material in the clause. Nonetheless, his discussion of types of causative situations is very useful. Below is his list of possible (semantic) causative types (69-70), with examples:

• autonomous events (non-causative)	<i>The vase broke.</i>
• resulting-event causation	<i>The vase broke from a ball's rolling into it.</i>
• causing-event causation	<i>A ball's rolling into it broke the vase.</i>
• instrument causation	<i>A ball broke the vase.</i>
• author causation (unintended)	<i>I broke the vase in rolling a ball into it.</i>
• agent causation (intended)	<i>I broke the vase by rolling a ball into it.</i>
• undergoer situation (non-causative)	<i>My arm broke (on me) when I fell.</i>
• self-agentive causation	<i>I walked to the store.</i>
• caused agency (inductive causation)	<i>I sent him to the store.</i>

The first question to ask is how this set of divisions usefully differs from other analysts' typologies of the semantics of encoding causal relations. Some overlap in the types of semantic information in play is immediately apparent. However: in cases of instrument causation ('the hammer broke the cup'), we would certainly expect the 'causer' to be acting directly [Dixon's parameter 6] and to be involved in the activity [parameter 9. Likewise, we would expect instances of caused agency to include more information on causee control on willingness [parameters 3 & 4]. The description of causal relations in most grammars surveyed is simply not adequate for the purposes of determining how many/which of Talmy's categories are instantiated, and how these are encoded. For the purposes of the current study, Dixon's parameters have proven a more useful model; focusing on the formal and semantic factors underlying the licensing/distribution of constructions, rather than on the naming and categorization of the constructions themselves. Nonetheless, I have included Talmy here, because his cline of causativity has served as useful background for my in-depth analyses of expressions of causal relations in Hupa and Chungli Ao. I have analyzed the relationship between the syntactic causative construction and result clause constructions in Hupa as falling out from differences in parameters related to semantic transitivity (see Chapter 2, sections 1.3 and 2.6). Several of what Talmy categorizes as types of causative, above, must be expressed in Hupa with result clauses or purpose clauses. However, Talmy's account of the semantics of causative events may be equally capable of accounting for the data. Bringing together Talmy's account with broader discussions of transitivity, e.g., Næss (2007), may be a fruitful line of inquiry for future research. I take up Talmy's account of lexicalization patterns again in more depth in Chapter 4, section 3.

2. The big questions

The foregoing subsections have outlined previous research and attempted to situate subparts of the current work with respect to them. Hereafter I will succinctly list my major research questions and motivations.

2.1 Dixon & Aikhenvald's (2000) suggestions

Dixon & Aikhenvald's (2000) calls for specific research projects to test and expand upon their claims were a major driving force in my choice of research questions and in the organization of this dissertation as a whole. Based on Dixon's (2000) typology of prototypical causative constructions (same volume, discussed above), the authors outline a number of exciting avenues for further research; those relevant to this dissertation are (with original numbering) recapitulated here, with commentary as to the role of this project in advancing knowledge in these areas:

2.1.1 Descriptive work on causative derivations

(1) *Needed are “[s]tud[ies] of the types of...causative ...derivations in individual languages and cross-linguistically. How these differ from the prototypes given here.” (2000: 26)*

I have undertaken a typological sample of 50 areally and genetically diverse languages, many under-documented, with the intention of empirically testing Dixon’s (2000) claims. This sample is discussed further in section 2.2 below, and in Chapter 4. In addition, I present an in-depth study of causative constructions in Hupa, whose syntactic causative has never before been described. Chapter 2 presents an analysis of the syntax and semantics of Hupa causative constructions, and includes a preliminary study of the encoding of causal relations *outside* causative constructions, at the level of the lexical item, beginning with Hupa descriptions of cutting and breaking events. Chapter 3 presents a similar descriptive account of causative constructions in Chungli Ao. Both systems are compared to Dixon’s (2000) and Song’s (1996) models, and situated with respect to crosslinguistic patterns.

2.1.2 Combinations of and dependencies between causativity and other semantic categories

(7) *“There is real need for study of the possible combinations of derivational processes in individual languages.” Are cross-linguistic generalizations possible? (27)*

(10) *“There may be a dependency relation between the application of a valency-changing operation and some category in the grammar.” (27)*

A great deal of attention has been given to specific combinations of derivational processes: for example, Pederson (1991) gives a very detailed account of formal overlap between causatives and reflexives. Many descriptive grammars contain good discussions of language-specific combinations: in Wardaman, for example, the causative and inchoative are not formally distinct, and a speaker’s meaning target must be inferred from context. (See Merlan 1994.)

I consider issues (7) and (10) together. While not a central line of inquiry in this dissertation, my literature review and typological study have uncovered a variety of examples of interactions between different derivational processes (including causative, of course) and between processes and certain categories in the grammar of a given language, some of which cannot be accounted for by explanatory models of causative encoding, such as Song’s (1996) or Dixon’s (2000). For example, in *Tukang Besi* (Austronesian; Indonesia), the *permanency* of the caused state (or result of the caused action)—that is, its permanency after the causal macroevent proper ends—is crucial to the choice of causative construction (Donohue 1999:205). *Kolya Yukaghir* (Yukaghir; Siberia) has a “resultative causative” construction which encodes a situation in which the causer must continue to expend effort after the original causative macroevent in order to keep the causee in the new, caused state (Masolva 2003:223-224). In *Koyra Chiini* (Songhay; Mali), transitive verbs that are causativized with the morphological causative *-ndi* may be interpreted as simple transitives (Health 1999: 134-135).

In addition to my descriptive work on Hupa and Chungli Ao, and my major questions regarding Dixon’s parameters (see section 2.2.2, below), which I will attempt to answer

empirically to a reasonable degree of satisfaction, I have collected data that will allow me to offer preliminary answers to the following questions:

- (6) What other types of semantic information do we find packaged together with causative constructions? What kind of *CAUS + α* portmanteau morphemes do we encounter?
- (7) Are there crosslinguistic patterns in the other types of semantic information we find obligatorily encoded together with the causative?

I will not be able to provide an account for all such interactions, but I do (in Chapter 4, section 3.1) list all such obligatory interactions encountered in the construction of the typological sample, and engage in some hypothesis-generating speculation about the relationship between such cases and more typical semantic and formal factors related to the encoding of causative events.

2.1.3 Causativity and transitivity

(8) “[I]nvestigate the varying transitivity profiles of languages.” How prominent is transitivity as a category? (27)

In much of the Athabaskanist literature (see Jette & Jones (2000:777) on Koyukon; Hargus (2007:343) on Witsuwit'en; Rice (1989:20-21) on Slave; Young & Morgan (1980:102) on Navajo), “transitivity” is a formal term, denoting only the compatibility (“transitive”) or non-compatibility (“intransitive”) of a verb theme with overt morphosyntactic marking of a direct object. One major aim of Chapter 2, in addition to providing an account of the syntax, semantics and distribution of a heretofore-undescribed causative construction in Hupa, is to demonstrate the relevance of semantic transitivity to the licensing of the formal encoding of causal relations in Hupa. Specifically, I argue that differences in semantic transitivity, vis-à-vis the relations of clause participants, neatly account for why some causal events are compatible with the Hupa syntactic causative construction, and why some must be encoded with result clause constructions.

2.2 An overview of the typological survey

2.2.1 Languages and methodology

I return here to a discussion of my typological study, which has the intention of empirically testing Dixon’s (2000) claims. As noted above, my sample contains 50 areally and genetically diverse languages, many under-documented. The languages under investigation² are as follows, listed with primary data source(s):

² For details on genetic affiliation, location spoken, etc., see Chapter 4.

Table 1.2: Languages sampled

language	source(s)
Lezgian	Haspelmath (1993)
Japanese	Kuno (1973); Harley (1995); author's fieldnotes
Armenian [Eastern]	Hagopian (2005), Megerdumian (2001), (2005)
Balochi	Axenov (2006)
Betta Kurumba	Coelho (2003)
Chungli Ao	author's fieldnotes
Kolya Yukaghir	Maslova (2003)
Lao	Enfield (2007)
Maithili	Yadav (1996)
Udihe	Nikolaeva & Tolskaya (2001)
Eton	Van de Velde (2008)
Kunuz Nubian	Abdel-Hafiz (1988)
Oromo	Dubinsky et al. (1988)
Jamsay	Heath (2008)
Kisi	Childs (1995)
Korya Chiini	Heath (1999)
Fongbe	Lefebvre & Brousseau (2001)
Lavukaleve	Terrill (2003)
Palauan	Flora (1974)
Madurese	Davies (2010)
Teiwa	Klamer (2010)
Tukang Besi	Donohue (1999)
Toqabaqita	Lichtenberk (2008)
Kambera	Klamer (1998)
Puyuma	Teng (2008)
Ternate	Hayami-Allen (2001)
Nhanda	Blevins (2001)
Gaagudju	Harvey (2002)
Kayardild	Evans (1995)
Wardaman	Merlan (1995)
Assiniboine	Cumberland (2005)
Choctaw	Ulrich (1986)
Molalla	Pharris (2006)
Makah	Davidson (2002)
Comanche	Charney (1989)
Halkomelem	Galloway (1977), Gerdts (2003)
Wyandot	Kopris (2001)
Hupa	Golla (1970) and author's fieldnotes
Chimalapa Zoque	Johnson (2000)
Ika	Frank (1985)
Waimiri Atroari	Bruno (2003)
Lokono Dian	Pet (1987)
Kwaza	Van der Voort (2000)

Urarina	Olawsky (2006)
Hup	Epps (2008)
Cavineña	Guillaume (2008)
Mosetén	Sakel (2004)
Tsafiki	Dickinson (2002)
Yagua	Payne (1985)
Bororo	Crowell (1979)

Looking to both this project and continuing research, I have begun a database of typologically interesting (see below) information from the above set of languages. In addition to standard genetic and geographic considerations in sample design (see Nichols (1994)), I have also aimed for minimal overlap with Dixon's (2000) smaller sample. Though J. J. Song and I are interested in quite different typological research questions, it is worth noting that I also selected many of the languages here because they were not covered in his otherwise comprehensive (1996) study.

For this set of languages, the following types of information have been gleaned from the sources listed:

- All verbs of translative motion, plus the language's formal means of expressing Manner of motion and Path where available.
- All available descriptions of posture verbs (principally *sit*, *stand* and *lie*).
- All verbs used in descriptions of cutting and breaking (C&B) events, where possible, and whether each obligatorily encodes agent, endstate and instrument.
- Morphological and syntactic causative constructions
- Morphological and syntactic means of encoding major transitivity alternations

Some of this data collection was undertaken for exploratory (and, accordingly somewhat 'high risk') reasons, as follows: information on translative motion and posture verbs is being collected primarily in order to facilitate future comparisons among these categories (whose typological interest has been discussed at length in Talmy's work). Posture verbs, in particular, have been argued by Talmy (2003:78-82) to be a useful laboratory for examining interactions between aspect and causation, all languages' posture verbs being categorizable as either stative (being in a state), inchoative (entering into state), or agentive (putting into a state). It remains to be seen, in future research, whether a given language's tendencies for lexicalizing posture verbs (which may, arguably, be seen as a very basic-level encoding of causal relations) is correlated with any of the other typological patternings of causativity which I undertake to research here.

C&B verbs have been collected firstly because this semantic field (if it can be taken as such) is of independent ongoing research interest. Secondly, the data may turn out to be useful in comparisons of different systems of transitivity: *cut*-class verbs and *break*-class verbs have already been shown to pattern differently syntactically. I refer principally to Guerssel et al.'s (1985) core claims, namely:

- (9) *Break* verbs participate in a **causative/inchoative alternation** (*Janet broke the cup./The cup broke.*), while *cut* verbs do not (*Justin cut the cake./*The cake cut.*);

- (10) *Cut* verbs participate in the **conative alternation** (*John cut at the stick.*); *break* verbs do not (**I broke at the computer.*);
- (11) *Cut* and *break* verbs may both participate in a **middle voice alternation** (*Bread cuts easily./Ceramic breaks easily.*).

These patterns have been demonstrated to hold across languages; see the original Guerssel et al. (1985) paper for a discussion of English, Winnebago (Siouan), Warlpiri (Pama-Nyungan), and Berber; Gaby (2007) on Kuuk Thayorre (Pama-Nyungan); Escamilla (2010) on Chungli Ao (Tibeto-Burman). It is hoped that these claims can be tested on a larger sample of languages pending future research. Furthermore, C&B verbs may prove to be fertile ground for other typological work on transitivity, in light of Hopper and Thompson's (1980) arguments for correlations between transitivity and (with 7 other criteria) telicity, affectedness of O and individuation of O all of which are arguably central to the lexical semantics of at least some C&B verbs. In this dissertation, I present in-depth case studies of C&B verbs in both Hupa and Chungli Ao; in Chapter 2, section 3.1, and Chapter 3, sections 3.1 and 3.2, respectively.

A systematic analysis of the constructions used for encoding transitivity was discontinued, as terms like 'transitivity' are used with a staggering variety of meanings, varying by author. A common convention within syntactic typology to denote the participants of a clause is to use the S/A/O system, with S the subject of an intransitive verb, A the subject of a transitive clause, and O the object of a transitive clause. It has been noted that distinguishing between S and A facilitates discussions of ergative languages and accusative languages without favoring either type of system (claim summarized from the introduction to Lobben (2010)). While many analysts adhere to this system, some also include more fine-grained semantic considerations in discussing how 'transitivity' works in a given language, such as those put forth in Hopper & Thompson (1980): kinesis, volitionality, affectedness of O, etc. Standardizing the analysis presented in each primary source to ensure that the transitivity-related phenomena were in fact directly comparable proved to be simply beyond the range of this project. In order to lead a useful discussion of interactions between causation and transitivity with data in which I have confidence, I limit in-depth description and analysis to Hupa and Chungli Ao. I do, however, make reference to interactions between transitivity and causative constructions within certain languages (other than these two) in Chapter 4, so it has been appropriate to explain the provenance of these data here.

2.2.2 Bringing new data to bear on Dixon's (2000) model

Against this backdrop, I now introduce the major typological questions to be tackled in this dissertation, based on the above sample:

- (12) Of Dixon's nine parameters, do some subsets of parameters tend to pattern together more than others?
- (13) Each of Dixon's parameters, if relevant, has a certain value: for example, parameter #3, "having vs. lacking control [over the caused microevent]," will have a value somewhere along a continuum of low degree of control to high degree of control. Given that, I ask, do certain values on certain parameters tend to cluster together?
- (14) Do these subsets (if any) in turn correlate with relative formal construction length, that is, with "less compact" or "more compact"?

The answers to these questions, as the reader will have foreseen, will constitute empirical evidence for or against Dixon's (2000) claims about how the parameters pattern (see discussion in section 1.4, above). Dixon stops just short of proposing that encoding of causal relations can be modeled as a radial category (in any given language, or crosslinguistically), with a prototypical case and variations from it. In fact, my study has shown that such an analysis is not cleanly supported. In fact, support for Dixon's (2000) claims about prototypical patternings of compact vs. less compact constructions has been found equally lacking. For a full discussion of the statistical analyses and results, see Chapter 4, sections 2.1~2.3.

2.2.3 Examining the co-encoding of causativity with other semantic information

In the course of gleaning data for the typological sample, it has become clear that many languages employ causative constructions that cannot be adequately accounted for by Dixon's (2000) model (nor by the other models discussed in Chapter 1); these constructions obligatorily encode other semantic information along with causativity. Typological work on causative constructions has not systematically tried to account for such patterns of obligatory co-encoding. I do not attempt a full account here, but I do present some data and speculate about the categories of semantic information that may be frequent crosslinguistically. I suggest that Talmy's (2000) account of lexicalization patterns is a useful type of account to work towards.

3. Conclusion

This dissertation touches on a variety of issues that should interest linguists from various subfields. For better or worse, it has (in my mind) raised far more interesting questions than it has neatly answered. While I am not a construction grammarian per se, one major thread winding through this work is the integration of verbs with non-lexical constructions. As construction grammar continues to develop as a paradigm, I look forward to seeing its contributions to typology, and perhaps its application to Athabaskan and Chungli Ao systems. As noted in chapter 4, as we move forward with a systematic Talmyian analysis of the 'other' information co-encoded with causativity, there will be a real need to tease apart the semantic contributions of the lexical verbs versus those of the construction, and the theoretical assumptions of CG make it ideal for these tasks.

Other issues here will be relevant to any linguist working on the lexical semantics of verbs: questions of transitivity, stative vs. active, and the semantics of clausal participants naturally extend far beyond causative constructions alone. I am able to fruitfully apply contemporary ideas about semantic transitivity to certain constructions in Hupa, but "transitivity" remains a theoretical and descriptive mire, with varying definitions and applications. I make a number of simplifying assumptions about the transitivity of verbs in Chungli Ao based on the semantic role marking of their arguments, but rampant pro-drop combined with the lack of a sizeable corpus made it infeasible to take on transitivity per se for this language. No one can have it all.

With theoretical preliminaries in place and the major research questions outlined, we are ready to proceed to the case studies on Hupa and Chungli Ao.

Chapter 2

Causativity in Hupa (California Athabaskan)

1. Introduction

1.0 Background

No detailed description and discussion of the various types of formal expressions of causal relations in Hupa has yet been undertaken in the literature. Golla's (1970) descriptive grammar provides an explanation of how the basic causative morphology operates, which is recapitulated in Golla & O'Neill (2001). Some type of causative notion is claimed to be basic to some themes [see below for discussion of the Athabaskan theme], but how this is instantiated within the larger verb word is not explored. Rice's (2000) survey of voice and valency marking in the greater Dene family provides an excellent general overview of several phenomena, including the encoding of causativity, but a detailed discussion of periphrastic and other syntactic causative constructions—let alone specifics on the Hupa construction(s)—would have been beyond the scope of that survey, and at any rate was not undertaken.

This paper puts forth a systematic account of the Hupa syntactic causative construction, with a focus on distribution (i.e., compatibility with different classes of lexical verbs) and semantics. In addition to this full descriptive account, I argue, following Rice (2000) and drawing on Dixon's (2000) account on the semantic typology of causative constructions, that causee control over the effecting of the caused microevent is a major factor in licensing the Hupa syntactic causative construction. I also present evidence that certain features related to semantic transitivity (specifically, volitionality, affectedness and the degree to which a participant is construed as instigating a certain event, process or state; following Næss (2007)) can account for whether an event is compatible with the (monoclausal) syntactic causative construction, or whether it must be encoded in a less compact form, such as a result clause. Following this account, I begin to explore mappings between form and causal relations at the level of the lexical item, drawing on Smith's (1991) causal chain schema. A preliminary corpus study has shown that lexical causatives may be rare in the wild. I suggest that this may be related to the fact that the endstate of the undergoer/theme-change of state's being crucial to the notion of causative—is often not encoded in the Hupa theme (\approx verb root) itself, but rather tends to show up in incorporated adverbials. I bolster this argument with a case study on the semantic domain of cutting and breaking events. I begin here with background information on the language and its structure.

1.1 The language

Hupa is a critically endangered language belonging to the California (Pacific Coast) branch of the Athabaskan family. Documentation was first undertaken by P. E. Goddard and E. Sapir in the early twentieth century. Victor Golla produced a descriptive grammar in 1970 and Golla and Sean O'Neill annotated and translated a corpus of over 1000 pages of Sapir's texts in 2001, along with a morphological outline of the language and an "element list" containing every lexical item and morpheme found in said texts, with commentary. It is these (1970) and (2001) publications whose accounts of expressions of causation I will summarize and expand on. The data I present here, unless stated otherwise, were collected primarily through work with consultant Verdena Parker, a female native speaker of Hupa in her mid-seventies, resident in Winston, Oregon, USA.

1.2 The Hupa verb

Hupa is a head-marking, nominative-accusative language with exceptionally complicated verbal morphology. The Hupa verb, as with those of other Athabaskan languages, has been analyzed as being organized according to a template containing a verbal root preceded by a sequence of prefix slots; in Hupa's case, 11 slots. The following schematic template is adapted from Golla (1970):

Table 2.1: The Hupa Verb

Category:	ADV	Iter	PL	3SUBJ	OBJ	THM	ADV	Distr	Mode/aspect	1/2SUBJ	Voice/valency	ROOT
Position #:	11	10	9	8	7	6	5	4	3	2	1	0

Athabaskan scholars have long debated whether such templates have a formal status in a grammar (i.e., whether they are psychologically real to native speakers; see e.g., Rice 2000). My analysis does not depend upon any particular view of templates, and my aim is not take a position on them here. For convenience, however, I refer to certain template positions in the course of the following discussion, where appropriate.

Relevant to this chapter, I note that “subject” is not a single formal category as far as template position is concerned. Template position 2 comprises 1st and 2nd persons, singular and plural, whether subject or object. Template position 8 includes a 3rd person “topical” or “deictic” subject (the terminology is not crucial here), as well as an “indefinite” or 4th person subject. Plurality of subject or object, or both, is marked in template position 9. The grammatical relations A and S are marked in the same way, as “subject,” in the same template position (8 or 2, depending on grammatical number, as above).

The “theme,” as discussed in the Athabaskanist literature, is an abstract (often discontinuous) structure containing the verbal root, often a voice/valency marker and perhaps other “thematic” prefixes. The theme is, in the words of Axelrod:

[T]he underlying skeleton of the verb to which prefixes or strings of prefixes or suffixal elements are added in producing an utterance. The theme itself has a meaning and is the basic unit of the Athabaskan verbal lexicon.” (1993:17)

A given verbal root may participate in any number of themes with different meanings and syntactic requirements. Some themes can be derived as members of any of a number of “theme systems” (Golla 1970), or may be idiosyncratic in form and/or meaning. At any rate, in surveying the relative prevalence of lexicalized causation below, it is individual verbal themes that I will be counting and considering.

Hupa verbs may, of course, be subcategorized in any number of ways, depending on one’s analytical aims. For the purposes on comparing changes in valency across the Athabaskan family, Rice (2000: 176-177), for example, lumps all lexical verb themes into the following three types, based on argument structure and the morphosyntactic marking of arguments:

- (1) lexical intransitive;
- (2) lexical transitive;
- (3) bivalent verbs requiring an agent and an undergoer, for which the undergoer is marked as an oblique rather than as a direct object.

While I do discuss the role of semantic transitivity in causative marking, in this chapter, I will need to appeal to a system with more fine-grained subcategorizations; to this end, I have followed Golla's (in Sapir & Golla 2001) eight-way categorization scheme. According to Golla's analysis, Hupa verb themes fall into 8 basic classes, according to:

- (4) whether they inflect for aspect/mode
(‘active’ themes do; ‘neuter’ themes do not);
- (5) whether they are explicitly marked for direct object
(‘transitive’ themes are; ‘intransitive’ themes are not);
- (6) whether they are explicitly marked for subject
(‘personal’ themes are; ‘impersonal’ themes are not).

I will proceed in section 2.4 by giving an example of a theme from each of Golla's eight classes. I will not be appealing specifically to Rice's simplified three types of argument structures, but examples of each will appear in the discussion of Golla's system. I then backtrack a bit in the interest of thoroughness, proceeding through Golla's (1970) in-depth treatise on the system of the Hupa verb, which goes beyond the eight basic classes, and offering causativized examples of each subtype of verb listed. I use Golla's original terminology, though I caution the reader that these terms are not all still in current use, and I offer notes on, e.g., the transitivity status of each subtype, when unclear from the original terminology.

1.3 On “transitivity”

As stated above, in much of the Athabaskanist literature (see Jette & Jones (2000:777) on Koyukon; Hargus (2007:343) on Witsuwit'en; Rice (1989:20-21) on Slave; Young & Morgan (1980:102) on Navajo), “transitivity” is a formal term, denoting only the compatibility (“transitive”) or non-compatibility (“intransitive”) of a verb theme with overt morphosyntactic marking of a direct object. One major aim of this chapter, in addition to providing an account of the syntax, semantics and distribution of a heretofore-undescribed causative construction in Hupa, is to demonstrate the relevance of semantic transitivity to the licensing of the formal encoding of causal relations. Specifically, I will use Næss' (2007) analysis of transitivity as a radical category showing prototype effects, which models prototypical Agent and Patient roles in terms of the features $[\pm VOL]$, or volitionality vis-à-vis participation in the event (encoded in the lexical verb); $[\pm INST]$, or the degree to which an entity's actions serve to initiate the event; and $[\pm AFF]$, or the degree to which an entity is affected by the effecting of the event. I use the term “degree” following Næss' own explanation that while the features are presented as binary for ease of presentation, each feature should be understood as a radial category unto itself, with a range of many possible (more typical and less typical) values.

In Næss' account (2007: 27-29), following Kemmer (1993), and to some degree Hopper & Thompson's original (1980:252-253); account of semantic transitivity, high transitivity is characterized by the maximal distinctiveness of two arguments, and maximal distinctiveness can be modeled, crosslinguistically, in terms of the three features given above (see also my account in Chapter 1 of this work). The prototypical feature values for Agent and Patient participating in a high(er)-transitivity predicate is as follows:

Table 2.2 Prototypical feature values for Agent and Patient

Agent	Patient
+VOL	-VOL
+INST	-INST
-AFF	+AFF

Næss (2007:44-45) argues that deviations from these values correlate with lower transitivity, and that different combinations of feature values are a large part of what: 1) determines compatibility with certain two-argument predicates and 2) motivates different traditional semantic roles. For example: the prototypical agent acts with volition, does instigate the event in question and is not highly affected (i.e., [+VOL][+INST][-AFF]), and entities meeting these feature values are highly likely, crosslinguistically, to be compatible with subjecthood or agentive marking, and will readily occupy the appropriate position in a given language's prototypical transitive syntax. Conversely, deviations from this semantic prototype will occur with different formal marking. Entities that can be construed as instigating an event and yet cannot act of their own volition (i.e., [-VOL][+INST][-AFF]) are prototypical Instruments, and will be less likely, crosslinguistically, to be compatible with subjecthood³, etc. A discussion of the relevance of these notions to the distribution of causative constructions in Hupa is undertaken in section 2.6.

Let us begin first, however, with a survey of the literature on Hupa expressions of causal relations.

2. Causative constructions in Hupa

In this section, I first summarize some earlier contributions, then proceed with an account of the Hupa syntactic causative construction.

2.0 Rice's (2001) contribution to an account of morphological causatives in Athabaskan

Rice (2000) makes the following points about morphological causatives in Athabaskan:

- (7) In all Athabaskan languages surveyed [including Hupa, for which an ample data set is presented], the causativizing morphology can causativize at least some intransitive verbs with patientive subjects. (200-202)
- (8) For intransitive verbs with agentive patients, the family shows a split: only some languages allow morphological causativization in this case. (208)
- (9) Koyukon (Northern Athabaskan; Alaska) was found to be the only language in the survey allowing productive morphological causativization of transitive verbs. (211)
- (10) “[P]erhaps the presence of the direct object pronoun in the causative construction has something to do with whether the causee is human or animate, or capable of being regarded as such. When the causee or the verb cannot be or is not perceived as a potential controller, then the pronoun is not found [in the Athabaskan languages surveyed].” (212)

³ We know, of course, that this is also dependent on the construal of the speaker doing the encoding. A principled discussion of such issues is beyond the scope of the present chapter.

The semantic factor of causee control; that is, the degree of control that that causee wields over the effecting of the caused microevent (also discussed as parameter #3 on Dixon's (2000:62) list), and which Rice finds to be a major factor in other Athabaskan causatives, helps account for quite a bit of the distribution of the Hupa syntactic causative, as we will see.

2.1 Kibrik's (1993) contribution to an account of morphological causatives in Hupa

Kibrik (1993) had already noted that, across the family, base transitive verbs are nearly always incompatible with morphological causativization. He claims, based on data from Golla (1970; see section 2.2 below) that [morphological] causatives can only be formed from "dynamic verbs (processes and achievements)" (52). This is not entirely useful, because, as Kibrik himself admits, it does not account for the compatibility of the morphological causative with descriptive neuters, most of which are clearly stative. Kibrik's (1993) paper is an important contribution to the understanding of valency-changing operations across the family, but his insights on Hupa causatives end here.

2.2 Golla's accounts of morphological causatives in Hupa

Golla, in his (1970) descriptive grammar (summarized in Sapir and Golla (2001)), describes three classes of morphologically-derived causatives:

- (11) causatives from descriptive neuters with 1-classifier (176)
ni-whon 'be good, beautiful' > *O ni-(w)-1-whon* 'cause O to be beautiful'
- (12) causatives from primary extension neuters with 1-classifier (76-77, 201)
na-... 'a 'O hangs' > *na-O-1- 'a* 'hang O up'
- (13) causatives from primary intransitive action themes (76-77, 204)
ti-ch'id 'grow tired' > *O-ti-1-ch'id* 'tire O out'

While Golla does not generalize about the semantics of verb themes that are compatible with causative 1-, we can make several preliminary generalizations to test based on the examples presented in Golla (1970) and Rice's (2001) suggestions. First of all, in the three cases described by Golla, O⁴ [the undergoer; I reserve the term 'causee' for cases of caused agency, to be discussed below] is neither controlling (that is, necessarily in control of the caused microevent) nor agentive: The causative morpheme is never used to encode caused agency. O is highly patientive in all cases. Second, the causer appears to be acting directly on O. Third, none of the examples given (including the examples above, of course) involve the causativization of a base-transitive theme, and attempts to elicit such forms have been roundly unsuccessful. We will keep these parameters in mind as we examine the structure and distribution of the Hupa syntactic causative.

2.3 [Absence of] other causative constructions

On a typological note, Hupa does not appear to have a construction analogous to the English 'let' causative: In all cases, the consultant rendered indirect 'let' causatives with a periphrastic construction involving the theme (*a:-di-(w)-ne*: 'say', translating "X let Y do Z" as "X said it was ok for Y to do Z."

⁴ Note that in citations of Athabaskan themes, *O* refers to incorporated direct object, and not (necessarily) *O* argument.

Note also that no PURP causative construction, in Song's (1996) terms, was found. PURP causatives are those which prototypically express the 'causing' microevent and the causer's intention for the causing microevent to initiate a second, caused microevent, but remains agnostic as to whether the caused microevent actually happens or not.

Other types of causal relations, such as Talmy's (2000) event causation, must be expressed in 2 conjoined clauses; for example (gloss abbreviated):

- (14) [Lindsey *yantah* *xosehłchwe'n*] *mich'in-ding* [*xoje:'-e:ndin'*]
 L surprised I.made(.her) because.of.it (s)he.fainted
 “My surprising Lindsey made her faint./I surprised Lindsey and made her faint.”

This type of result clause is crucially different from the syntactic causative construction I describe here, which requires no conjunctions and which, I argue below, consists of 2 verb words in a single clause. Semantic distinctions between the syntactic causative construction and result clauses are fleshed out in section 2.6.

2.4 The Hupa syntactic causative construction

The Hupa syntactic causative construction is regular and productive. I style this construction 'syntactic' rather than 'analytic' or 'periphrastic' primarily because these latter two terms are usually, in the literature on causation, reserved for constructions that contain two or more clauses, which the Hupa construction does not. This construction consists of two verb words: The first verb word encodes the caused microevent (Song's (1996) [Veffect]), and is subject-marked for the person and number of the undergoer or causee (in cases of caused agency; old A → A in the first verb word); the second verb word encodes the causing microevent (Song's [Vcause]) and is always a form of the theme *O-(s)-ł-chwen* 'make'. The second verb introduces a second set of morphosyntactic arguments: the introduced agent (causer) is marked as A on [Vcause]; the subject (old A) of the first verb ([Veffect]) is always co-marked as the direct object theme of [Vcause] (i.e., old A > new O). [Vcause] is always the lexical theme *O-(s)-ł-chwen* 'make'.

As noted above, I begin by giving examples of verbs in each of Golla's eight classes. These eight classes, given with bare theme and causativized examples, are:

1. active transitive personal

- (15a) *O-ł-me-n* 'fill O'

- (15b) *Lindsey* *Justin* *k'iwa:d* *ta'na:n-mil*
 L J bucket water-with.it
 ch'i-deh-ł-min *ch'i-xo-s-chwe'n*
 3.ANIM.SUBJ-THM-CLS-fill 3.ANIM.SUBJ-3.ANIM.SUBJ-PERF-make.PERF
 “Lindsey made Justin fill a bucket with water.” [8/11/11]

2. active transitive impersonal

- (16a) *P-ł-di-ni-(w)-ł-ła-/ła?* 'it (knowledge/technique) is understood by P'

- (16b) *noho-l-di-ni-l-'a'* *ch'i-s-chwe'n*
 1.PL.OBJ-with-THM-THM-CLS-round.object 3.ANIM.SUBJ-PERF-make. PERF
 “She made us learn [it].” [8/11/11]

3. active intransitive personal

- (17a) *na:=(w)-ne-l* ‘play, be playful (as a child with toys)’

- (17b) *Justin na:=nehł* *xo-s-eh-l-chwe'n*
 J THM=play 3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-make.PERF
 “I made Justin play”

4. active intransitive impersonal

- (18a) *l-we?* ‘(grease, snow) melts’

- (18b) *Lindsey ningxostin ti-l-we' ch'i-s-chwe'n*
 L ice INCEP-CLS-melt 3.ANIM.SUBJ-PERF-make. PERF
 “Lindsey melted the ice.” [8/11/11]

5. neuter transitive personal

- (19a) *O-si-l-ʔa-n* ‘have (a round object) lying’

- (19b) *Lindsey Justin e:bilos ch'i-l-'a:n*
 L J apple 3.ANIM.SUBJ-CLS-have.round.object
ch'i-xo-s-chwe'n
 3.ANIM.SUBJ-3.ANIM.SUBJ-PERF-make.PERF
 “Lindsey made Justin have/hang onto an apple.” [8/11/11]

6. neuter transitive impersonal

- (20a) *O-wi-l-č^we-n* ‘O has been made, created’

- (20b) *ningxosting-k'iya:wh tsamehstł'o:n*
 ice-bird [penguin] woman
xo-wi-l-chwe:n *xo-s-eh-l-chwe'n*
 3.ANIM.OBJ-THM-CLS-make 3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-make.PERF
 “I made the penguin be (made) like a woman.” [said by the producer of a cartoon]
 [10/1/11]

7. neuter intransitive personal

- (21a) *di-n-č'a-d* ‘ache, be sick’

- (21b) *LindseyJustin ch'i-di-n-ch'ah ch'i-xo-s-chwe'n*
 L J 3.ANIM.SUBJ-INCEP-THM-sick 3.ANIM.SUBJ-3.ANIM.SUBJ-PERF-make. PERF
 “Lindsey made Justin sick.” [8/11/11]

8. neuter intransitive impersonal

- (22a) *l-č'ič'* ‘have a boil’

- (22b) *'i-t-ch'ich'* *xo-s-eh-t-chwe'n*
 Ø-CLS-have.boils 3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-make.PERF
 "I made [someone] get boils." [10/1/11]

In order to test the distribution of this construction more thoroughly, I now backtrack and systematically proceed through Golla's (1970: 156-208) full treatise on the system of the Hupa verb and present a causativized form for each subtype of verb discussed (i.e., some subtypes within the eight principal classes outlined above). Let us examine the distribution, i.e., which theme types are compatible with the syntactic causative, and attempt to make generalizations where possible.

In the literature on Hupa, and in much of the Athabaskanist literature, "impersonal" simply refers to lack of overt morphological marking of the subject in the verb complex. , Most impersonal themes in Hupa are compatible with the syntactic causative construction.

Subtype (i): "inherently impersonal" verbs (Golla 1970: 158):

- (23a) *Justin xo-k'iwan*
 J 3.ANIM.OBJ-sleep
 "Justin sleeps/is sleeping."
 [lit. "There is sleep for Justin." See Sapir & Golla (2001:792)]
- (23b) *Justin_j xo_j-k'iwan* *xo_j-s-eh-t-chwe'n*
 J 3.ANIM.OBJ -sleep 3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-make.PERF
 "I made Justin sleep." [lit. "I made there be sleep for Justin."]

Subtype (ii): "descriptive themes that describe qualities and motions appropriate only to inanimate nature" (Golla 1970: 158):

- (24a) *hi-qoch'*
 NEUT-be.a.gap
 "There is a gap."
- (24b) *hi-qoch'* *s-eh-t-chwe'n*
 NEUT-be.a.gap PERF-1.SG.SUBJ-CLS-make.PERF
 "I caused there to be a gap."

Subtype (iii): extension themes with *s*-perfective (Golla 1970: 167-8) [mostly impersonal or agentless verbs, or passive intransitives]:

- (25a) *te:-n-ch'e'*
 INCEP-PERF-wind.blows
 "The wind blew."
- (25b) *Justin_j teh-s-ch'e'* *ch'i_j-s-chwe'n*
 J INCEP-PERF-wind.blows 3.ANIM.SUBJ-PERF-make.PERF
 "Justin made the wind blow."
 [as in a story in which Justin has supernatural powers]

Subtypes (i-iii) involve themes unmarked for subject - note also that in the themes themselves (pre-causativization), semantically, there is no volition on the part of any entity. We will return to this point below.

The following subtypes of verbs (verbs of transitive motion or posture verbs encoding a change of state) must employ the syntactic causative construction *if* the causee is perceived as having control over the caused microevent [Song's (1996) Veffect], but otherwise mark that entity (which some analysts may still label 'causee') as the direct object of the single verb, as in the following sets of examples:

Subtype (iv): "primary stative motion"⁵ verbs [that occur with *si-* neuter perfective] (Golla 1970: 168)

(26a) *Justin ch'i-s-te:n*
J 3.ANIM.SUBJ-NEUT-living.being.lies
"Justin is lying there."

(26b) *Justin_j no:-xo_j-n-eh-t-te:n*
J to.a.point-3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-handle.living.being
"I laid Justin down." [1st-person causer and agent; 1 VP]

(26c) *Justin_j ch'i_j-s-ten*
J 3.ANIM.SUBJ-NEUT-living.being.lies

xo_j-s-eh-t-chwe'n
3.ANIM.OBJ-PERF-1.sg.subj-CLS-make. PERF
"I made Justin lie down." [1st-person causer, 3rd-person self-agentive agent; i.e., it is Justin's own effort that gets him to lie down; 2 VPs]

Subtype (v): "reflexives" (in non-Athabaskanist terms, these are also verbs of translative motion) (Golla 1970: 181):

(27a) *Justin xontah-me'-ch'ing'* *yeh-ch'i-wi-l-whot'*
J house-in.it-towards into.enclosure-3.ANIM.SUBJ-PERF-CLS-slide.PERF
"Justin slid into the house."

(27b) *Lindsey Justin_k yeh-ch'i_j-xo_k-wi-l-whot'*
L J into.enclosure-3.ANIM.SUBJ-3.ANIM.OBJ-PERF-CLS-slide.PERF
"L slid J in[to the house]."

(27c) *Lindsey_j Justin yeh-'i_k-l-whot'*
L J into.enclosure-3.ANIM.SUBJ-CLS-slide

⁵"Stative motion" may sound contradictory, but I choose to maintain the terminology from the literature. Verbs in this class refer to an entity being at rest.

ch'i_j-xo_k-s-chwe'n
 3.ANIM.SUBJ-3.ANIM.SUBJ-PERF-make.PERF
 “L made J slide in[to the house].”

Subtype (vi): “progressive neuter” verbs [with agentive subjects] (Golla 1970: 175), which, in non-Athabaskan terms, are all typical intransitives, mostly active intransitives; “neuter” indicates that a theme is not inflected for aspect-mode categories:

(28a) *Justin ch'i-wi-l-da:l*
 J 3.ANIM.SUBJ-THM-CLS-run
 “Justin is running.”

(28b) *Lindsey_j Justin_k dah-ch'i_k-di-n-la'*
 L J up/away-3.ANIM.SUBJ-THM-THM-run
ch'i_j-xo_k-s-chwe'n
 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
 “Lindsey made Justin run [away].”

Subtype (vii): “non-directional” [motion] verbs (Golla 1970: 185) [active intransitives]:

(29a) *Justin na-'i-s-[l]-qol*
 J NONDIR-3.ANIM.SUBJ-THM-[CLS]-crawl.PERF
 “Justin crawled around.”

(29b) *Lindsey_j Justin_k na-'i_k-l-qol*
 L J NONDIR-3.ANIM.SUBJ-CLS-crawl
ch'i_j-xo_k-s-chwe'n
 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
 “L made Justin crawl around.”

All transitive verbs (those which must take an overt direct object) causativize with the syntactic construction. Many subtypes of intransitive verbs (other than verbs of translative motion and extension, discussed above) occur with the syntactic construction, as well. Note in the following examples that the causee (the A argument of the second, caused microevent) has a high degree of control/agency, and perfective aspect is marked only on the second VP. Glosses are abbreviated in this section:

Subtype (viii) “basic transitive” verbs (Golla 1970: 163):

(30a) *Justin Lindsey ch'i-xo-seh-l-we:n*
 J L 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-CLS-kill.PERF
 “Justin killed Lindsey.”

- (30b) *Justin Lindsey* *ch'i-xo-seh-t-we:*
 J L 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-CLS-kill
xo-s-eh-t-chwe'n
 3.ANIM.SUBJ-PERF-1.SUBJ-CLS-make.PERF [s-PERF]
 "I made Justin kill Lindsey." [caused agency]

Subtype (xi): "personal plural theme" (Golla 1970: 162), used for plural subject only:

- (31a) *k'ilaxan* *na:-di-gyit*
 deer NONDIR-THM-many.run
 "Deer are running in a herd."
- (31b) *Justin_j k'ilaxan* *ti-d-gyit* *ch'i-ø-s-chwe'n.*
 J deer INCEP-THM-many.run 3.ANIM.SUBJ-LOW.OBJ-PERF-make.PERF
 "Justin made the deer run in a herd."

Subtype (x): "semitransitive" verbs [N.B., now usually referred to as 'directive' in the Athabaskanist literature; often discussed as 'conative' elsewhere] (Golla 1970: 163):

- (32a) *J* *k'ilaxan* *ch'-o:-wing-'its*
 J deer 3.ANIM.SUBJ-OPT-PERF-shoot.PERF
 "Justin shot at the deer."
- (32b) *Lindsey_k* *Justin_j k'ilaxan* *ch'-o:-'its*
 L J deer 3.ANIM.SUBJ-OPT-shoot

ch'ik-xo_j-s-chwe'n
 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
 "L made Justin shoot at the deer [and he missed]." [caused agency]

Classificatory verbs were not found to behave differently from other theme classes: any theme built on a classificatory stem can participate in the syntactic causative construction to encode caused agency. Examples (26b-26c) are in fact examples of themes built on the classificatory stem *-te:n* 'living being (lies),' but I present a second mini-paradigm here:

Subtype (xi): classificatory verbs (Golla 1970: 196):

- (33a) *Justin dah=ch'i-win-ta:n*
 J up=3.ANIM.SUBJ-PERF-handle.sticklike.PERF
 "J laid [a pencil] up [on a surface]."
- (33b) *Justin_j dah=ch'i-tiwh*
 J up=3.ANIM.SUBJ-PERF-handle.sticklike
xo_j-s-eh-t-chwe'n
 3.ANIM.OBJ- PERF-1.SG.SUBJ-CLS-make.PERF
 "I made J lay [a pencil] up [on a surface]."

(33c) *Justin kin na-'-tin*
 J stick NONDIR-3.ANIM.SUBJ-handle.sticklike.PERF
 “Justin carried a stick around.”

(33d) *Justin_j kin na-'-tin*
 J stick NONDIR-3.ANIM.SUBJ-handle.sticklike
xo_j-s-eh-~~t~~-chwe'n
 3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-make.PERF
 “I made Justin carry a stick around.”

Other data show that it is *perceived* causee control/agency—and not actual, literal control over the caused event—that may be licensing the syntactic construction. For example, we see pairs such as the following:

(34a) *na:ne:l nah-~~t~~-to'n*
 doll NONDIR-THM-dance.PERF
 “The doll danced.”

(34b) *na:ne:l_j nah-~~t~~-to'n*
 doll NONDIR-THM-dance

Ø_j-s-eh-~~t~~-chwe'n
 LOW.OBJ-PERF-1.SG.SUBJ-THM-make.PERF
 “I made the doll dance.”

In these examples, it is clear that the doll, being inanimate, cannot literally be in control; that is, this is not a case of self-agency and caused self-agency, as in many of the above pairs. The doll is attributed agency in (35a), the non-causative autonomous event: given this fact, it is not surprising to see the speaker attributing agency to the doll in the causative sentence. Our Hupa consultant exhibits no reservations in attributing agency and grammatical subjecthood to other inanimate objects as well, as past research on descriptions of cutting and breaking events has shown. In the terms of Næss (2007), an entity's being the instigator of an event ([+INST]) is, in itself, sufficient to license marking of that entity as grammatical subject, regardless of volition on the part of that entity ([±VOL]). For example, we find utterances such as:

(35a) *mi~~t~~-na'xode:s_j yi_j-xo-n-de:s*
 scissors LOW.SUBJ-3.ANIM.OBJ-THM-cut.hair
 “The scissors cut [somebody's] hair on their own.”

(35b) *mi~~t~~-k'ilt_j me'tawna'n_k Ø_k-yi_j-s-k'il.*
 hammer cup LOW.OBJ-LOW.SUBJ-PERF-break
 “The hammer broke the cup.”

However, certain passives have also been found to occur with the syntactic causative; in these cases, the subject of the caused event *cannot* be controlling⁶.

Subtype (xii): “passive neuter” verbs

(36a) *Justin xo-wi-l-tsa:n*

Justin 3.ANIM.OBJ-PASS-CLS-see.PERF

“Justin is seen.”

(36b) *Lindsey Justin xo-wi-l-tsa:n*

L_k J_j 3.ANIM.OBJ-PASS-CLS-see

ch'ik-xo-s-chwe'n

3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF

“Lindsey made Justin been seen [e.g., by pushing him out from his hiding place].”

2.4.1 Serial causation: caused agency

Derived “causatives” (discussed above in 5.1.0) behave as transitives, and may, in turn, participate in the syntactic causative construction. Morphological causativization introduces an additional morphosyntactic argument (an A argument in the original microevent), and the syntactic causative construction introduces yet another set of arguments (marked as O in the causing-event verb, and marked as A in the caused-event verb), analogous to the English glosses. In examples 37 a-c, we observe a simple unaccusative construction, its morphological causative, and the syntactic causative of the morphological causative.

Subtype (xiii): “impersonal with deictic subject markers”

(37a) *ta'na:n k'i-d-mat*

water THM-THM-boil

“Water boils.”

(37b) *ta'na:n k'i-s-eh-t-me:ch*

water THM-THM-1.SG.SUBJ-CLS-boil.TRANS [suppletive stem?]

“I boiled the water [=made the water boil].”

(37c) *ta'na:n_k k'i-Ø_k-t-mech*

water THM-LOW.OBJ-CLS-boil.TRANS

xo-s-eh-t-chwe'n Lindsey.

3.ANIM.OBJ-PERF-1.SG.SUBJ-CLS-make L

“I made Lindsey boil the water.”

2.4.2 One VP or two?

It is now time to address the question of whether the two verbs in the syntactic causative construction constitute two VPs, or whether they are a single VP in the manner of a serial verb construction (hereafter SVC). Analysts do not agree, however, on what constitutes an SVC. Some definitions, such as that Huang and Su (2005), whose criteria⁷ follow, are purely formal:

⁶ I hope to address interactions between causativization and valence-decreasing operations such as passivization in future work; however, it is beyond the scope of this paper.

⁷ The provenance of these criteria is not discussed.

- (38) The verbs agree with each other in focus marking.
- (39) The verbs agree with each other in tense/aspect marking.
- (40) A negation marker simultaneously negates all verbs in the construction.

Other analysts, such as Forman (1993), neglect altogether to lay out criteria for SVC-hood, and seem to count any series of verbs which occur together in an utterance as an SVC. Take for example, this utterance from Zamboangueno, in which the verbs in question are not contiguous and each bear different aspectual marking, yet which is, for unexplained reasons, called a serial verb construction:

- (41) *ya-bolbe_{V1} le na kasa ta-kohre_{V2}*
 ASP-return 3.SG LOC house ASP-run
 “He returned to the house (and was) running.” (172)

One of the most thoroughly fleshed-out sets of criteria for SVC-hood, brought to my attention by Bratkievich (2010 and personal communication), is that of Schultze-Berndt (2000) (Chapter 7, “Simple and Complex Predicates in a Cross-Linguistic Perspective”), which combines both formal and functional considerations. It is this set which I will use in my analysis of the Hupa data at hand. Let us proceed through the five criteria one by one:

a. [A]ll constituents of a complex predicate are recruited from the same, open, lexical class. All verbs may, in principle, occur as independent predicates and take verbal inflections (if the language has verbal inflections at all), as well as forming part of a serial verb construction. (548)

This criterion is met for Hupa. The theme *O-(s)-I-chwen* ‘make’, which encodes the causing event, is a productive lexical theme used to encode prototypical events of making/creating outside of the causative construction, e.g.:

- (42) *k’ita:ltsit chischwe’n*
 leaching.pit she.made.it
 “She dug/made a leaching pit.”

[from text 59, sentence 9, Sapir & Golla 2001:158]

As has already been shown above, the caused event can be a verb from any number of semantic/syntactic classes.

b. Serial verb constructions are usually semantically transparent and have “iconicity restrictions.” (Schultze-Berndt 2000: 123, citing Lane & Pawley 1992: 3, Lord 1993: 237, and Durie 1997)

In Hupa, the verb that encodes the caused event [Vcause] always comes before the verb encoding the causing event [Veffect], which is the opposite of what the ‘iconicity restriction’ would predict. Some languages have been argued to have strict iconicity restrictions (cf. Huang and Su (2005) on

Sasiyat, Austronesian). However, Song (1996) argues that the order of [Vcause] and [Veffect] in COMPACT causatives (a class which lumps lexical, morphological and serial-verb causatives together explicitly) is entirely language- [and probably, I note, construction-] dependent. Interestingly, Song argues that in AND causatives (in which there are two separate clauses), the clauses *must* be strictly ordered, with [Scause] preceding [Seffect]. I am arguing here that the Hupa construction is a single clause. However, the case is admittedly not clear-cut; if the opposite were argued, it would pose an interesting counterexample to Song's claim.

*c. The constituents of a complex verb cannot be negated individually
(Schultze-Berndt 2000: 124).*

This appears to be true for Hupa. It is possible to negate the whole construction, but not a subconstituent thereof, as shown in examples (43 a and b).

- (43a) *Lindsey_j Justin_kdo: na-'i_k-t-qoɬ*
L J NEG NONDIR-3.ANIM.SUBJ-CLS-crawl

ch'i_j-xo_k-s-chwe'n
3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
"Lindsey didn't make Justin crawl around."

- (43b) **L_j J_k na-'i_k-t-qoɬ do:*
L J NONDIR-3.ANIM.SUBJ-CLS-crawl NEG

ch'i_j-xo_k-s-chwe'n
3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
[Intended: "Lindsey didn't make Justin crawl around" OR "Justin crawled around, but it's not the case that Lindsey made him do so."]

It may be relevant to note that clitics such as evidentials and tense markers, which cliticize to a complete verb word, only cliticize to [Vcause].

- (44a) *Lindsey_j Justin_k na-'i_k-t-qoɬ*
L J NONDIR-3.ANIM.SUBJ-CLS-crawl

ch'i_j-xo_k-s-chwe'n=e:
3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF=EVID
"[I can see that] Lindsey made Justin crawl around."

- (44b) **Lindsey_j Justin_k na-'i_k-t-qoɬ=e:*
L J NONDIR-3.ANIM.SUBJ-CLS-crawl=EVID

ch'i_j-xo_k-s-chwe'n
3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
[Intended: "[I can see that] Lindsey made Justin crawl around."]

d. [I]n serial verb constructions, regularly either only one verb inflects, or all verbs take the same morphology under agreement, even though all verbs have the potential of taking their own inflections when used outside the serial construction (Schultze-Berndt 2000: 124).

In every Hupa form elicited (and found in the Sapir & Golla (2001) texts) only one verb word in the syntactic causative construction is inflected with perfective morphology, even though the entire macroevent (i.e., [Vcause] + [Veffect]) is perfective. For example:

- (45) *Justin k'ilaxan ch'-o-wing-'its*
 J deer 3.ANIM.SUBJ-OPT-PERF-shoot
 "Justin shot at the deer."

Here, the perfective *-win(g)* occurs on the main verb of the clause. From this, it is clear that this verb "ha[s] the potential of taking [its] own inflections when used outside the serial construction". In the syntactic causative construction, however, perfective marking is only found on [Vcause], as here:

- (46) *Lindsey_k Justin_j k'ilaxan ch'-o:-'its*
 L J deer 3.ANIM.SUBJ-OPT-shoot
ch'ik-xoj-s-chwe'n
 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make
 "Lindsey made Justin shoot at the deer [and he missed]."

e. Each of the constituents of a complex predicate may contribute semantic participants and play a role in determining the argument structure of the complex predicate. Syntactically, on the other hand, the complex predicate functions like a simple predicate, in that it allows only one set of morpho-syntactic arguments. This difference in semantic and syntactic properties gives rise to the concept of argument fusion or argument sharing... One syntactic argument slot may be 'shared' by the semantic arguments of more than one predicative element (Schultze-Berndt 2000: 125).

This criterion was not found to hold for the Hupa data. Let us return to a previous example above to illustrate:

- (47) *Lindsey_k Justin_j k'ilaxan_m [ch'-o:-Ø_m-its]_{V1}*
 L J deer 3.ANIM.SUBJ-OPT-LOW.OBJ-shoot

[ch'ik-xoj-s-chwe'n]_{V2}
 3.ANIM.SUBJ-3.ANIM.OBJ-PERF-make.PERF
 "L made Justin shoot at the deer [and he missed]."

This example nicely illustrates that each verb in the syntactic causative construction introduces its own morphosyntactic arguments. In V1, translatable as "he shot at it," "Justin" is the Agent (A) and the grammatical subject; *k'ilaxan* ('deer') is the zero-marked low-animacy direct object and undergoer (O) of that microevent. "Lindsey" is the Agent (A) and the grammatical subject of V2,

and the causer (in the causative macroevent); *Justin* is the Undergoer (O) of both V2, translatable as “s/he made him/her”, and of the causative macroevent V1, being the causee.

The Hupa syntactic causative construction appears to meet four of Schultze-Berndt’s five criteria for SVC-hood. However, functionally, criterion (e) would appear to be the most crucial to deciding the one-VP-or-two question: if each verbal complex (V1 and V2, in example (45)) is making demands on the argument structure by introducing its own morphosyntactic arguments and marking the semantic roles⁸ of said arguments, then an analysis of the two verb-word-complex as comprising a single VP seems unwarranted. On these bases, I hesitate to classify the construction as a serial verb construction, and will continue to treat it as two separate VPs where relevant to the discussion.

2.5 Summary to this point

Hupa has at least two causative constructions: morphological and syntactic. As Golla (1970) explains, the morphological causative is applicable to the following verb classes:

- descriptive neuters with 1-classifier (176)
- primary extension neuters with 1- classifier (76-77, 201)
- primary intransitive action themes (76-77, 204)

I have described the form of the Hupa syntactic causative construction, and have shown it to be compatible with a number of other types of verb themes described in Golla (1970) and Sapir & Golla (2001). In many cases, the semantic factor of undergoer or causee control (Dixon’s criterion #3) seems to be playing a prominent role: Where caused agency is encoded (i.e., an agent [causer] causes another agent [causee] to perform an action), if the causee is perceived as having control over the performance of the caused event, then the syntactic causative construction is employed.

2.6 The outer limits of compatibility: the syntactic causative construction, result clauses and transitivity

With a preliminary description of the syntactic causative construction completed, and a tentative idea of the semantic and syntactic factors that govern susceptibility to the morphological and syntactic causatives, respectively; we are now in a position to turn to the question of what kinds of causal relations *cannot* be encoded by the syntactic causative construction. Some causative situations can be encoded by the syntactic causative construction, and some need to be encoded in less formally compact constructions, such as result clauses. Result clauses are not the focus of this chapter; however, any account of the causative constructions needs to account for the ‘outer’ limits of applicability as well. As Talmy (2000) has perhaps most recently described, English allows a wide range of causes to be encoded as *causers* in caused-agency constructions; this range includes instrument constructions (ex. *The hammer broke the window.*) and causing-event causation (ex. *That accident really gave me whiplash.*). Hupa sometimes allows instruments to be encoded as subjects, as we have seen; however, Hupa does *not* typically allow non-animate, non-volitional entities or events to be encoded as agents when the predicate (which need not be a verb, as it happens) encodes a sensory change of state in an undergoer. Rather, when asked to produce utterances of this type, the consultant consistently encodes the undergoer as the grammatical subject, which is necessarily an affected agent ([+AFF] in Naess’ terms), and expresses the “cause”

⁸I am not in a position to analyze, nor am I interested in discussing at this point, within any specific theoretical framework, how the semantic roles are assigned.

in a postpositional phrase. Interestingly, this configuration is employed even when the causation is physical and direct, as in examples (49) and (50); glosses simplified here). Observe:

- (48) *na-'e:-'i-ya'-mit* *ni-chwon'-xw* *'a:ne'iwht'e'* [neuter]
habitually.rains-with.it NEUT-bad-ADV I.habitually.become
lit. "With the rain, I feel lonely." [Produced for "Rain makes me sad."]
- (49) *xosawliniwhin-mit* *whi-sa:sta:n* *xe'exe:s* [neuter]
coffee-with.it 1.SG-tongue it.habitually.tingles
lit. "My tongue tingles with coffee." ["The coffee makes my tongue tingle."]
- (50) *le:nawlay-mit* *w-e:-se:l* [neuter]
fire-with.it PERF-1.SG.SUBJ-be.warm
lit. "I became hot with the fire." ["The fire made me feel hot."]
- (51) *xong'ta'na:n-mit* *w-e:-se:l* [neuter]
alcohol-with.it PERF-1.SG.SUBJ-be.warm
lit. "I became hot with the alcohol." ["The alcohol made me feel warm."]

What we see is that when a sensory change of state in a [+AFF] undergoer is brought about by an inanimate, necessarily volitionless ([-VOL]) 'cause(r),' then this cause(r) is marked with *-mit* 'with it'. This stands in contrast to the final strategy for encoding causation: a full result clause with *-mich'in-ding* or *-xoch'in'-ding* ('because of it'), an example of which was given above in (14). The example is repeated here for convenience, with others:

- (52) [Lindsey *yanlah* *xosehichwe'n* *mich'in'ding*
Lindsey she.was.surprised I.made(.her) because.of.it
[xoje:-'e:ndin']
(s)he.fainted
"My surprising Lindsey made her faint./I surprised Lindsey and made her faint."
- (53) *Lindsey-xoch'in'ding* *Justin xa:n-lo'*
Lindsey-because.of.her Justin for.him-laughter
"Lindsey made Justin **laugh**."
(lit: Because of L, J laughed.)
- (54) *Lindsey-xoch'in'ding* *Justin na'wiltsit'*
Lindsey-because.of.her Justin he.fell
"Lindsey made Justin **fall**."
- (55) *<accident>-mich'in'ding* *whi-q'os* *diwincha:t*
accident-because.of.it my-neck it.hurt
"The accident made my neck **hurt**."

The generalization here may be that a clause with an affected agent (Næss' [+AFF]) results in lower transitivity for the clause, which correlates with different formal encoding of causal relations; indeed, these situations cannot be encoded in a causative construction at all.

Among these, the postpositional *-mił* is employed where the affected entity likely had a high degree of instigatory participation [+INST] (e.g., sitting too close to the fire in (50), choosing to drink coffee in (49)), and is thus an atypical “causee”/undergoer. Every other type of situation employs *-mich’in’ding* or *-xoch’in’ding*.

Interestingly, the division in compatibility with certain constructions encoding causation/purpose is not spilt between active intransitive and passive intransitive; rather, it is a more fine-grained distinction within passive intransitives which depends *both* on the semantics of the NP participants and the predicate. Within [Vcause], the verb word encoding the causing microevent, the agent, and the patient are in a typical transitive relationship according to Næss’ semantic criteria. It is likely that semantic deviation from this relationship is the key factor that renders these two subtypes of passive intransitive verbs incompatible with the syntactic causative construction.

We have now seen at least four linguistic strategies for encoding causal relations in Hupa:

- (56) The morphological causative;
- (57) The syntactic causative;
- (58) Periphrastic expressions with the inanimate, non-volitional cause(r) in a postpositional phrase with *-mił* ‘with it’;
- (59) A full result clause with the animate causer of causing event marked with [*mi-/xo-/ch’in’-ding* ‘because of [it/her]’];

In this subsection, I have proposed distributional restrictions for (58) and (59) on the grounds on semantic transitivity. In many (but not all) cases, the semantic factor of undergoer or causee control (Dixon’s criterion #3) seems to be playing a prominent role in the distribution of (II): where caused agency is encoded (i.e., an agent [causer] causes another agent [causee] to perform an action), and the causee is perceived as having control over the performance of the caused event, the syntactic causative construction is employed. A small subset of data admittedly remains recalcitrant: If causee control were the only factor, we would expect certain verb classes (such as subtype (ii) above, “descriptive themes that describe qualities and motions appropriate only to inanimate nature,” in which the undergoer is non-sentient and perceived as such, and has no control) to be compatible with the morphological causative, when in fact they are not.

3. Other types of causal relations in Hupa

3.0 Lexicalized causativity

In this section, I step back from the notion of caused agency, which has been my focus for most of the chapter, and begin to take a broader look at ‘causativity,’ broadly defined as any macroevent in which one entity effects a change of state in another (here excluding caused motion/caused change in location). I continue using the term ‘macroevent,’ because even in the cases of morphologically non-transparent causatives (e.g., the classic *kill*) and cases of zero-derivation (e.g., *clean*; again, no overt surface morphology), many theories of syntax and semantics (e.g., GB, some applications of Minimalism, Role and Reference Grammar) posit a complex underlying structure. In this structure, the causing and caused microevents originate in different positions and somehow (e.g., via Movement) come together in a single surface form. The notion of the

prevalence of the lexical encoding of causation, along with surveys of which kinds of causative macroevents tend to lexicalize, has, for at least the past decade, been a fruitful line of inquiry among analysts working on causation.

Shibatani (2002:1-9) offers a brief summary of this work, starting with Haspelmath (1987 and 1993), and continuing through (2002) work by Zavala and Vasquez Soto on Olutec and Cora, respectively. I need not summarize the details of these specific contributions here, because the main insight that I will discuss is simply the notion that events are more likely to lexicalize into a single ‘causative’ if they “could occur with or without an external causer” (Shibatani 2002:3, commenting on Zavala (2002) and Vasquez Soto (2002)), as in the case of “breaking”. Conversely, events that are likely to be able to happen without the presence of any causing agent tend, crosslinguistically, to be coded as simple inchoatives, as in the case of “decaying” (Shibatani 2002:3).

In order to contribute another data set to this discussion, I have surveyed every documented lexical verb theme in Hupa. Among Sapir & Golla (2001), including Golla’s Element List (a dictionary of every morpheme occurring in the Sapir & Golla (2001) text corpus), the Hupa Language Dictionary and my own field notes, I found a total of 708 lexical verb themes. In this section, I present a list of all themes, 73 in all, that can be argued to lexically encode some notion of causation in terms of what Talmy (1985; 2003: 69-70) refers to as ‘agent causation’ and ‘author causation’: situations in which an actor intentionally (‘agent’) or unintentionally (‘author’) (cf. Dixon’s criterion #7) acts to bring about a change of state in a Theme entity. I then briefly discuss these with respect to the insights summarized by Shibatani (above).

Table 2.3 Hupa lexical causatives

verb theme	gloss	classification	verb theme	gloss	classification
<i>nin=(k'i)-t-al/a:tl'</i>	butcher (game), cut up (a fish, for drying)	active	<i>O-tsit</i>	pound O	active
<i>ta:=(k'i)-(s)-t-a:l</i>	cut up (a salmon) for drying	active	<i>k'i-ta:=(w)-t-tsit</i>	leach acorn meal	active
<i>P-no:-(w)-'aw</i>	fool, deceive P	active	<i>O-tsil/tse:tl'</i>	pound O	active
<i>na:=ti-(s)-ce:</i>	open a door	active	<i>na:=O-(s)-t-tsis</i>	hang O up	active
<i>no:-na:=(n)-ce:</i>	close a door	active	<i>k'i-ni-(s)-t-tsis</i>	put a fire out	active
<i>tseh=tl'o:wh/tl'on'</i>	braid hair	active?	<i>A-O-t-tsit'</i>	unravel O	dir. active
<i>O-t-tse:l</i>	heat O	active caus.	<i>A-O-t-tsow</i>	bend, crush O	dir. active
<i>O-t-chwan'</i>	squeeze O	dir. active	<i>O-(s)-t-das/da-ts'</i>	break O off by pulling	active
<i>O-(s)-t-chwe:/chwin'</i>	make O	active	<i>O-o:-(w)-t-da:s</i>	singe O	active
<i>A-l-chwe:n</i>	grow (human, animal, etc.)	dir. active	<i>O-t-daw</i>	melt O off	active

<i>chwin' + da = O-(w)-t-tiwh/te:n</i>	ruin the world	active?	<i>O-(w)-de:s</i>	singe P's hair off	active
<i>A-O-t-chwo:k</i>	sweep O away	dir. active	<i>(k'i)-t-dik'</i>	crack by pecking	active
<i>wa:n=di-(w)-t-ch'a:t'</i>	peel bark off	active	<i>na:=k'i-(w)-t-diw</i>	wash something	active
<i>k'i-(w)-ch'a:wh</i>	tie a knot to hold dress at the hip	active?	<i>O-t-dow</i>	cut O	active
<i>O-ti-(s)-t-ch'it</i>	exhaust O	active	<i>O-(s)-t-gya:s</i>	break O off	active
<i>O-t-ch'i:w</i>	peel O off	active	<i>O-ge:s</i>	scrape O	active
<i>A-O-qits'</i>	twist O	dir. active	<i>O-liw</i>	paint O	active
<i>na:=(k'i)-(s)-t-qich</i>	roast (seeds)	active	<i>O-t't'o:wh/t't'on'</i>	braid O	active
<i>k'il</i>	break, split, tear open	active	<i>k'i-(s)-t't'o:/t't'on'</i>	weave a basket	active
<i>O-t-k'il</i>	rip, split O	active	<i>tseh=t't'o:wh/t't'on'</i>	braid hair	active?
<i>O-t-ky'o:ts'</i>	stretch O (something gummy)	active	<i>t-e:=O-(n)-t-mat'</i>	bend O in	active caus.
<i>O-(w)-la:wh</i>	break O off	active	<i>O-t-me:n</i>	fill O	active
<i>O-lit</i>	burn O	active	<i>O-mich</i>	snap O off	active
<i>le:=O-di-(w)-liw</i>	murder O	active	<i>k'i-d-mo:t'</i>	(gopher) mounds up earth	active
<i>P-e:=(w)-t-na:/na'</i>	cook P	active	<i>O-q'a: (q'ay)</i>	grind O	active
<i>O-xi-t-na'</i>	save O	active caus.	<i>(k'i)-q'e:n</i>	twist a hazel with	active
<i>P-na:=(s)-t-niw/ne:q'</i>	forget P	active	<i>O-si-(s)-t-we:/we:n</i>	kill (1)	active
<i>nin=(k'i)-t-?al/?a:t't'</i>	butcher (animal)	active	<i>A-O-t-sits'</i>	peel O off	dir. active
<i>A-O-sow</i>	scratch O with an instrument	dir. active	<i>O-wa:n</i>	kill (2+)	active
<i>O-(s)-t-tach'</i>	tattoo O	active	<i>O-wa:s</i>	whittle O	active
<i>dah + k'i-we: + tiwh/ta:n</i>	build a fishing platform	active	<i>na:=(k'i)-(s)-t-we:l</i>	fill a pack	active
<i>O-t'as/t'a:ts'</i>	cut O	active	<i>O-t-wis</i>	drill a hole into O	active
<i>(k'i)-ni-(s)-t-t'as/t'a:ts'</i>	cut up venison for drying	active	<i>na:=O-(w)-t-whe:n/whin'</i>	melt O	active
<i>k'i-(s)-t-t'e:ts'</i>	roast seeds	active	<i>(k'i)-(s)-t-xa:l</i>	stretch hide on a	active

				frame	
<i>O-(w)-wa:t</i>	sift O	active	<i>O-(s)-t-xa:ch</i>	break O off	active
<i>O-xi-t-na:</i>	cure O	active caus.	<i>O-ni-(s)-yiw</i>	raise O (a plant)	active
<i>A-O-t-ye:ts'</i>	tie O with a knot	dir. active	<i>O-je:w</i>	glue O	active
<i>O-ye:wh</i>	crush O	active	<i>A-O-t-je:w</i>	pile O up	dir. active

Even at a glance, it is clear that the Hupa data largely bear out the insights discussed by Shibatani (2002). Hupa lexical causatives are overwhelmingly likely to encode events and processes that are likely to happen with the participation of an animate, volitional agent. This is likely due to the fact that, with a handful of exceptions (such as ‘open (door)’ ‘close (door)’, ‘heat X’, and ‘raise (a plant)’), many of the themes listed above prototypically encode an instrument or manner that is likely to need to involve an animate, volitional agent: ‘sift,’ ‘braid,’ ‘weave,’ ‘tattoo,’ ‘tie a knot,’ ‘crack by pecking,’ ‘sweep,’ etc.

At this point, the reader may well be wondering about the incidence of causative verb themes and causativized derivations of other verb themes. This certainly is a question that deserves critical inquiry, and I offer a preliminary look at the issue in this subsection. We know that Hupa verb themes fall into one of at least eight classes (following Golla (1970) and (2001): see section 2.2), there have been found 708 unique verb themes, largely thanks to Golla (as above), and I have asserted that at least 73 of these can be argued to encode a basic causative notion. What I will now probe is the relative frequency⁹ with which lexically causative themes and causative constructions occur in the wild. To this end, I have compiled a small corpus (622 tokens) of verbs from 12 different Hupa texts. These texts represent a number of genres, including medicine formulae, traditional narratives, a conversation (albeit likely scripted), narrated stories (which the speaker narrated while watching cartoon videos with no dialogue) and some personal narratives. The corpus also spans several generations of speakers, from texts collected with Emma Frank, Jake Hostler and others by Sapir nearly a century ago; to texts from Ned and Louise Jackson and Minnie Reeves, who worked with Golla in Hoopa in the 1960s; and finally texts from Verdena Parker, collected by the author and others between September 2007 and the present (October 2011).

Note that the actual number of verbs surveyed was nearly twice the number presented here (just over 1100 tokens): by far the most commonly-occurring themes were *(?a=)di-(w)-ne/-ne?* ‘to say’ [active, personal, intransitive] and *A-n-ha:wh/ya:* ‘one person goes’ [active, personal, intransitive], and these were excluded from the counts. A theme was also excluded from counting if it was repeated within two clauses, repetition being extremely common in narrative.

⁹ I have also tabulated the number of verbs that fall into each of Golla’s eight classes, should it be useful for future research, and I report these numbers here.

Table 2.4 Causatives in the Hupa text corpus

text ¹⁰	number of verb words gleaned	number of causative themes (from Table 1)	number of syntactic causative constructions
SG37	48	3	0
SG38	32	1	1
SG62	179	10	1
SG63	21	0	0
SG57	76	5	0
SG76	36	2	0
Cat story	87	3	2
Dog story	6		
‘Pingu helps deliver mail’ narration	42	1	0
‘Pingu in the ice cave’ narration	34	1	0
HSAC4	41	3	0
HSAC9	20	2	0
TOTAL	622	31	4

In this preliminary corpus, the rates of incidence for lexical causative themes and for the syntactic causative construction are very low. In section 3.1, below, I will suggest that the reason for this is that causativity may typically be expressed not in themes themselves, but in incorporated adverbs.

Table 2.5 Verb themes by subtype (transitive/intransitive, active/neuter, personal/impersonal)

subtype	number in corpus
TR,ACT,PERS	252
TR,ACT,IMPERS	6
TR,NEUT,PERS	0
TR,NEUT,IMPERS	1
INTR,ACT,PERS	170
INTR,ACT,IMPERS	52
INTR,NEUT,PERS	34
INTR,NEUT,IMPERS	94
Total	609

* A small handful of unclear cases was excluded from the count.

This preliminary corpus shows that Hupa clearly prefers active, personal verbs (422/609, or ~69%). As far as transitivity (used here in the Athabaskanist sense of compatibility with

¹⁰ Texts with labels beginning with *SG* are from Sapir & Golla (2001); the following four are from Verdena Parker, stored in the Survey of California and Other Indian Languages under the following filenames: ‘Cat story’ (VP-230711-01) ‘Dog story’ (VP-300307-12), ‘Pingu helps deliver mail’ narration (VP-091010-05), ‘Pingu in the ice cave’ narration (VP-181008-04); texts with labels beginning with *HSAC* are from Golla (1984).

morphosyntactic marking of a direct object) is concerned, intransitive verbs comprise the majority, constituting 350 of 609 tokens, or 57%. I merely report on these figures here; neither of these tendencies should, theoretically, make a difference to the distribution of lexical causatives or of causative constructions. Limited causative morphology aside, almost any of the verbs from this corpus, as discussed at length in section 2, would be compatible with the syntactic causative construction. I note that this *includes* ‘go’ and ‘say,’ for which no causativized tokens were found.

3.1 Causal relations within the lexical item: the case of cutting and breaking verbs

This section will branch out from the previous discussion, continuing to deal chiefly with what Talmy (1985; 2003: 69-70) refers to as ‘agent causation’ and ‘author causation’: situations in which an actor intentionally (‘agent’) or unintentionally (‘author’) (cf. Dixon’s parameter #7) acts to bring about a change of state in a Theme¹¹ entity, and examining these concepts within the semantic field of cutting and breaking. It is well accepted in the literature on causation that causative events of all kinds consist of ‘microevents’ (cf. Comrie (1981), Song (1996), Dixon (2000), Shibatani & Pardeshi (2002), Talmy (2000) and others). Of primary interest in this section will be fleshing out how much of this ‘microevent’ complex is encoded in a single Hupa verb word, and, where possible, fleshing out which semantic work is done by (in this case, how much of the microevent complex is encoded in) which surface structures. To this end, I will borrow the model of the causal chain, which attempts to atomize the different subevents and participants in a ‘single’ event. I adapt Smith’s (1991:34-36) general causal chain schema, itself adapted from Croft (1987); I summarize Smith’s schema in the following table:

¹¹ In this section, “Theme” refers to the semantic role; Athabaskan verb themes, as discussed in section 1.2 will be referred to as “Athabaskan theme,” for clarity.

Table 2.6 The causal chain schema, adapted from Smith (1991) and Croft (1987)

element	description	example
CAUSE	the causing event (internal structure unanalyzed, sometimes not explicitly mentioned)	I broke the vase with a hammer. [microactions subsumed in <i>break</i>]
SUBJ	the entity in the <i>caused</i> microevent	...
ACT	the action involved in the <i>caused</i> microevent	I <i>broke</i> the vase with a hammer.
INSTR	instrument involved	I broke the vase <i>with a hammer</i> .
THEME	the theme argument; object/entity affected	I broke <i>the vase</i> with a hammer.
RESULT	the endstate of the theme	I broke the vase with a hammer. [=> <i>broken</i>]

Note that, for clarity, I have chosen the label ‘THEME’ for the fifth element in the chain, to replace Smith’s ‘OBJECT.’ In her treatment of causal chains, Smith appears to be claiming that every predicate can be characterized as being located somewhere on or encompassing some span of the causal chain (or more than one chain, of course, though this is not discussed). Semelfactives (‘knock’, ‘punch’), for example, encompass only ACTION; statives only RESULT; and accomplishments (like ‘climb a tree’) SUBJECT – ACTION – INSTRUMENT – OBJECT[/THEME]. Importantly, note that this causal chain remains agnostic as to certain aspects of the causal macroevent (e.g., intentions of the causer).

3.1.1 C&B verbs that profile the beginning of a causal chain OR an entire causal chain

Let us begin the discussion with a look at those C&B verbs which may encode an entire causal chain, but which must minimally encode the inception of the chain. The bipartite labels with the form “CB##” refer to clip number in the Bohnemeyer et al. (2001) series of video clips. All data was elicited from Verdena Parker on August 8, 2009, unless otherwise stated. I begin with a table summarizing some of this data:

Table 2.7 Causal chains and Hupa C&B events

[An ‘x’ means that that link in the causal chain is encoded.]

clip	theme	(gloss)	CAUS	SUBJ	ACTION	INSTR	THEME	RESULT
CB03	(w)-l-wa:tl’	chop up, chop off	x	x	x	x	?	?
CB06	[ya]-(s)-wa:tl’	chop up	x	x	x	x	encoded in prefix ya- ‘apart’	encoded in prefix ya- ‘apart’
CB04,12, 24,26,28	dahk’int’ats’	cut in 2	x	x	x	x	encoded in prefix dah- ‘away’	encoded in prefix dah- ‘away’
CB09	je-(w)-t’ats’	cut apart, cut in 2	x	x	x	x	encoded in prefix je- ‘apart’	encoded in prefix je- ‘apart’
CB10	[ya]-(s)-t’ats’	cut up/apart	x	x	x	x	encoded in prefix ya- ‘apart’	encoded in prefix ya- ‘apart’
CB27	dah-k’i-l-tsit’	cut off	x	x	x	x	encoded in prefix dah- ‘away’	encoded in prefix dah- ‘away’
CB35	ya-(s)-mich	break up flexible 2D object	x	x	x	x	encoded in prefix ya- ‘apart’	encoded in prefix ya- ‘apart’
CB 15	l-t’a:ts’	saw, cut	x	x	x	x	NO	NO

Before discussing the overall results, I offer a fully fleshed out example of several of the above verbs in the context of an utterance:

- (60) *hay kin ch’i-di-wi-l-wa:tl’* [CB03]
 DET tree/branch 3.ANIM.SUBJ-THM-PERF-CLS-cut.PERF
 “He hacked a branch off [a tree].”

- (61) *je=’-win-t’a:ts’=e:* [CB09]
 apart=3.ANIM.SUBJ-PERF-cut.PERF=EVID
 “I see that he cut it in two lengthwise.”

- (62) *ts’e:χch’e’ de:diwiliq’ ya=’i-s-t’a:ts* [CB10]
 knife bread apart=3.ANIM.SUBJ-PERF-cut.PERF
 “The knife cut the bread.”

- (63) *do: ya:=d=mich heh!* [CB35]
 NEG apart=THM=pull.apart PROHIB
 “Don’t pull it apart!”

- (64) *ts'i-s-t'a:ts'*, *haya:t* *dah=k'i-n-t'a:ts's* [CB15]
 3.ANIM.SUBJ-PERF-cut.PERF and.then apart=INDEF.SUBJ-PERF-cut.PERF
 “He sawed at it, and then it came apart.”
 [Note: -s- perfective in first VP blocks -t valence marker.]

CB15 provides clear evidence that RESULT must, at least in some cases, be encoded in the affixes rather than in the lexical verbal root itself: The same verb theme used with no affix makes no claims as to RESULT, e.g., *ts'ist'a:ts'* “he’s sawing at it”. In Golla (1970) and Sapir and Golla’s (2001) element list, affixes are taken to work in concert with the verbal root—it is not uncommon to find citations such as:

*ya:=(s)*¹² “adv. pfx. into bits, pieces
 Used with themes that imply cutting, tearing, or similar actions

In CB15, however, we see that without the prefix *ya:*, the verbal complex does not encode the endstate of the theme object at all. This was confirmed by attempts to elicit other descriptions without *ya:-*, *dah=* and *je:=*; these were judged grammatical, but were, crucially, also judged to be agnostic as to the endstate of the theme argument. Our preliminary conclusion may therefore be that prefixes such as *ya:=*¹³ are not simply “used with” verbal themes that already mean ‘cut,’ ‘break’ or similar, but that these prefixes encode one chunk of the causal chain while the theme encodes another.

3.1.2 The causal chain divided between two VPs

Of the C&B verbs, those which profile the end of a causal chain are overwhelmingly *break*-class verbs. These must be paired with another verb word in order to encode an entire causal chain. I present a number of examples, with some glosses simplified:

- (65) *na-'neh-t-goch'* *je:=d-mil* [CB02, 42]
 DIR-3.ANIM.SUBJ- DIR-CLS-poke.with.sticklike apart=THM-several.scatter
 [V1: CAUSE, SUBJ, ACTION, INSTR] [V2: THEME, RESULT]
 “He hit it and it broke apart.”
- (66) *'itiwa:=na:'isq'its'* *dahk'indimil=e:* [CB05]
 against.each.other=he.twists it.broke.apart=EVID
 [V1:CAUS,SUBJ,ACTION,INSTR] [V2: THEME, RESULT]
 “He twisted it and it broke.”

We can confidently say that OBJ is encoded in the *second* verb word in these examples, because the theme *A-d-mil* ‘several scatter’ requires a multiplex subject—i.e., the OBJ is not the original theme object, but the post-breaking pieces of said object, whose plurality is encoded in the lexical verb.

¹² The (s) here indicates that *ya:=* can only occur with the *s*-perfective (one of 4 possibilities in Hupa).

¹³ At this point, it is admittedly unclear whether *ya:=* is part of the theme, or whether speakers elect to affix *ya:=* to an existing theme in order to encode endstate.

It is of course perfectly possible *not* to encode the entire causal chain: in the following examples, only THEME and RESULT are encoded:

- (67) <carrot> *la'* *di-wi-d-qowh=e:*
 carrots one INCEP-PERF-REFLEX-poke.with.sticklike=EVID
 “I guess one of the carrots broke.” [CB17]
- (68) *je:=n-k'il*
 apart=PERF-k'il
 ‘it rips in 2’[Of cloth tearing in 2 with no visible agent] [CB08]
- (69) *kin-ji* *si-gyas=xola:n*
 stick-DIMIN NEUT-long.object.breaks=EVID
 “I see that the stick breaks/has broken.” [CB16]
- (70) *na-'-neh-t-wat'*=e: *k'i-wi-mat'*=e:
 DIR-3.ANIM.SUBJ-DIR-CLS-strike=EVID 3.LOW.SUBJ-PERF-explode/pop=EVID
 [V1: CAUSE, SUBJ, ACTION, INSTR] [V2: OBJ, RESULT]
 “S/he struck it and it broke into pieces [with a loud noise].” [CB39]
- (71) *tsamaehst'*on *diywho'owh* *dah=ch'i-wi-t-kyo:s-il=e:*
 woman something up=3.ANIM.SUBJ-PERF-CLS-handle.clothlike-PROG=EVID

ch'i-teh-t-k'il=e:
 3.ANIM.SUBJ-INCEP-CLS-break/tear=EVID
 “The woman was holding up a cloth sort of thing, and she tore it a little.” [CB35]

In an attempt to gather more data relevant to form-function mapping vis-à-vis C&B verbs in Hupa, I did a corpus study of many of the Hupa C&B verbs. Though intended to shed light on the distribution and context-specific meanings of these verbs, unfortunately only the verbal root - *k'il* ‘break, tear’ returned more than one hit in 1000 pages of texts; this is the only one which will be presented here. Two themes for this root are listed in the Sapir & Golla (2001) element list:

- k'il* v. *break, split open; tear* (active)
O-t-k'il v. *rip, tear, split O (with one's hands)* (active)

Let me first present the data, beginning with that gleaned from Sapir’s Hupa texts in Golla & O’Neill (2001):

- (72) *?o-·k'il-n*
 OPT-k'il-HORT
 ‘it [abalone pieces] might break!’ [Text 61:22]
- (73) *xona-?ne?in* *na-·di-te-k'il=xola·n*
 his eyes=PST THM-INCEP-DISTRIB-k'il=EVID
 ‘his eyes looked like they were bursting’ [Text 64:12]

(74) *kʷi-W-kʷili-mil*
 INDEF.SUBJ-1.SG.SUBJ-kʷil-with.it
 ‘from my taking the (birds) open (to take out guts)’ [Text 67:7]

(75) *me·ycahs=cʷeh* *kʷi-t-kʷil*
 lazy=EVID INDEF.SUBJ-CLS-kʷil
 ‘I’ve gotten tired of ripping up the birds’ [Text 67:27]

Next, from fieldwork on Hupa C&B verbs using the Bohnemeyer et al. (2001) set of C&B video clips. Some glosses have been simplified where appropriate:

(76) *je:=n-kʷil*
 apart=PERF-kʷil
 ‘it rips in 2’ [Of cloth tearing in 2 with no visible agent] [CB08]

(77) *na-ʹ-neh-t-wa:tʰ* *dah=si-ta:n-neʹin*
 REP-3.ANIM.SUBJ-CLS-strike.with.handled.tool up=NEUT-stick.sits=PST

kin. *ʹahting-xw* *si-kʷil*
 stick all-ADV NEUT-kʷil
 “She hammered it, the stick that was there. It completely broke up.” [CB31]

(78) *chʹeʹwilwa:tʰ* *je:-n-kʷil=e:*
 she.hit.it.with.a.handled.instrument apart=PERF -kʷil-EVID
 [of chopping apart a piece of cloth strung between 2 tables]
 “She chopped it apart.” [CB34]

(79) *chʹi-teh-t-kʷil*
 3.ANIM.SUBJ-INCEP-CLS-kʷil
 “She ripped it a little.” [CB36]

Even with such a limited amount of data, some salient features of the distribution and semantics of the verb are observable. First, *-kʷil* can apply to different types of objects, including cloth (two-dimensional flexible; in (75) and (76)) with the interpretation ‘tear’, ‘rip’; and abalone shells (two- [or three-] dimensional brittle; in (72)) with the interpretation ‘break.’ This is surprising in light of typological patterning of C&B verbs in human languages: *tear*-type verbs tend to lexicalize separately from and to not conflate with other C&B verbs (cf. Majid et al. 2008).

Secondly, it is expected that non-successful tearing/breaking is expressed with the adverb *xoh* ‘in vain,’ which does not get incorporated into the verb word. Rather, the inceptive *ti-* (here *teh-*) seems to successfully encode not just the idea that tearing began, but also that it did not proceed much further than the beginning; the inceptive profiles the beginning of the causal chain and nothing else (cf., for example, the main verb in (77), with neither *xoh* nor *-ti*, for which only a successful, complete ‘broken’ interpretation is possible).

Finally, (76) and (79) show that the default interpretation of *-kʷil*, when used in transitive themes with no other mentioned instrument, may be something like *tear*, and that in order to get the ‘break’ reading, as in (77) and (78), we need a second, preceding VP that specifies an instrument or class of instruments. This hypothesis will be re-tested as more data (from both

elicitation and recently-collected texts, currently being compiled by our working group) become available.

4. Chapter summary and future work

The previous sections have given a preliminary picture of form-function mappings vis-à-vis causality, in Hupa, at the level of the lexical item. Vis-à-vis the causal chain schema, I have attempted to show that for *cut*-class verbs, the Hupa verb theme itself encodes CAUS through INSTR, the speaker must employ an affix in order to encode RESULT (endstate), and these are expressed together in a single verb word. Conversely, for *break*-type verbs, we have seen that properties of the theme object (OBJ) are often encoded in the verb theme itself, and endstate (RESULT), in the examples we have, is *always* encoded.

To repeat the main point: For at least some ‘causative’ Hupa verb themes, therefore, the entire causal chain (or causative macroevent, causing microevent + caused microevent, or however we may choose to categorize it) is clearly not encoded. This raises questions about my earlier inquiry into the distribution and frequency of ‘causative’ themes in the wild: while it is certainly useful to have these preliminary figures nailed down, they are perhaps best taken as fodder for generating a new set of research questions. Further work—currently underway—on causal chains within fully inflected verb words but beyond the lexical theme itself (which was the focus of this section) will begin by cataloguing all relevant incorporable adverbial material and examining the role that each morpheme (or, often, discontinuous-dependency pair) plays in encoding portions of the causal chain. A fuller corpus study can then proceed, involving a larger corpus and attempting to account for the distribution not only of lexical causatives themselves, but of these incorporable strings.

Chapter 3

Topics in the syntax, semantics and typology of causativity in Chungli Ao (Tibeto-Burman)

0. Introduction

0.1 The language and the data

Chungli Ao is a member of the Kuki-Chin-Naga group within Tibeto-Burman, spoken in Nagaland, India. A 2001 Ethnologue estimate lists 232,000 speakers for ‘Ao,’ admitting that “Chongli [Chungli] and Mongsen border on mutual unintelligibility,” a statement with which my observations are certainly consistent. Chungli Ao is the prestige dialect of Ao, and Coupe (2008) estimates the number of speakers at around 90,000 (Coupe 2008). Although the genetic classification of the Naga languages is not well-understood, Burling (2003) groups Mongsen and Chungli with the languages of Yacham-Tengsa, Sangtam, Yimchungrü, and Lotha to form the “Ao Group”¹⁴.

Most of the linguistic work on Chungli Ao is from the late 19th and early 20th centuries, and includes a grammar (Clark 1893) and an enormous Ao-English dictionary (Clark 1911). The data reported here do not come from earlier documentation, but rather were collected in the course of work with a consultant (a male speaker in his early 40s) that was carried out at U.C. Berkeley in a course between August 2008 and July 2009. For most examples, date of elicitation and/or position in an audio file (filename + timestamp) have been provided in square brackets. The bulk of the data consists either of material directly elicited, or texts more or less spontaneously produced by the consultant. Data on Chungli Ao descriptions of cutting and breaking were elicited by showing the consultant the full set of ‘Cut and break clips’ (Bohnenmeyer, Bowerman & Brown 2001).

0.2 The speaker

I wish to be forthright about the fact that the consultant’s L1 is not, in fact, Chungli Ao. For political reasons, the consultant has asked that I not disclose his native language or village of origin in writing. By his own account, the consultant began learning Chungli Ao at the age of eight or nine, immediately upon leaving his native village for formal schooling.

In my view, collecting data on causation from a speaker with not-quite-native intuition may be just as informative as collecting data from a native speaker. The contribution of this dissertation notwithstanding, we already know a great deal about the types of distinctions human languages are likely to make with respect to the patterning of causative constructions. While irregularities may creep in, unnoticed, due to L1 interference—unknown because the consultant’s L1 is not well described and therefore a comparative analysis unfeasible—it is overwhelmingly likely that the causative constructions produced, as a system, will vary only within certain broad parameters. Indeed, if we found something far outside these parameters (which did not, in fact, happen), that would be all the more interesting a phenomenon to describe. I offer a thorough descriptive account here: perhaps future scholars will be in a position to compare causative constructions in the Chungli Ao of an L1 speaker, the current consultant’s L1 and the current consultant’s Chungli Ao, described here.

¹⁴ I credit Bruhn (2010) for drawing my attention to Burling (2003).

0.3 Relevant aspects of Chungli Ao grammar

As observed by Bratkievich (2010:4) the default word order in Ao appears to be SOV, as evidenced by the sentences in (1) to (3), below (examples mine).

- (1) *keji-i kari fituk-tsi-pa*
 my.sister-AGT car wash-FUT-NMLZ [12/5/08]
 “My sister was going to wash the car, ...”
- (2) *nisung-tem-i tserapur akemtsipu-er*
 person-PL-AGT parents respect-SEQ [12/5/08]
 “People respect their [own] parents.”
- (3) *pa-i la mene-taktsi*
 3.MASC-AGT 3.FEM laugh-CAUS.PERF
 “He made her laugh.” (Ao_MI_31Oct08_1_LN.wav, 26:34)

This is the word order used in “neutral” contexts: it is the word order used by the consultant in most of the sentences elicited without a specific context. OSV word order is also allowable, and is occasionally produced by the consultant to translate certain English constructions, especially clefts and other constructions that involve focus of the O argument. A good working hypothesis, therefore, may be that focused information is preposed; however, the specific mechanisms underlying the interactions among word order and topichood, focus, definiteness, old vs. new information, etc., still need to be fully determined. As they are not crucial to a fruitful discussion of causative constructions, they will not be discussed further here.

0.3.1 The structure of the Chungli Ao verb

Chungli Ao verbal morphology is predominantly suffixing. Tense/aspect/mood categories, including future, perfective, distant past perfect, potential and others are marked on the verb. Grammatical person and number are not marked in the verb word, except arguably in peripheral cases such as the employment of lexical suffixes such as *-tep* ‘[reciprocal],’ which of course are only interpretable as involving two or more participants.

The only verbal prefixes found are 1) *a-*, a verb class marker whose synchronic semantics, if any, are not well understood; 2) negative *me-* (which serves as both a constituent and clause-level operator); and 3) prohibitive *te-*. It is rare for every possible morphological slot to be filled in any given naturally-produced verb word. Observe the following example, giving a possible—if low-frequency—fully fleshed-out verb word. The top row lists other types of morphemes they may occupy each slot of the verbal template:

- (4) *mezikteptaktsiner*¹⁵
 /me-zik-tep-taktsi-ne-er/
 NEG-hit-RECIP-CAUS-VOL-SEQ
 “I don’t want to make them hit each other, so...”

¹⁵ Orthographic ‘e’ is /ə/; ‘r’ is /ɾ/ or syllabic /ʁ/ depending on position within the syllable, remarkably similar to American English. Chungli Ao is a tone language; tone will not be consistently marked here, as it is not directly relevant to causativity.

Table 3.1: A fully-inflected Chungli Ao verb

	<ul style="list-style-type: none"> • NEGation • verb CLASS marker <i>a-</i> • PROHIBitive 	√VERB	lexical suffixes ¹⁶	CAUSATIVE	VOLITIONAL T/A/M	CONVerb: SEQuential, ADVerbial, etc.
form	<i>me-</i>	<i>zik</i>	<i>-tep</i>	<i>-taktsi</i>	<i>-ne</i>	<i>-er</i>
gloss	NEG	hit	RECIP	CAUS	VOL	SEQ

When a verb is bare (i.e., not inflected), the default interpretation is perfective. My convention here will be to include *PERF* in the linear gloss for verbs when bare, and omit it when the *PERF* interpretation is overridden by other overt morphology, as in:

(5a) *Moa-pa* *pela*
Moa-MASC **be.happy.PERF**
“Moa was/became happy.”

(5b) *Moa-pa* *pela-r*
Moa-MASC **be.happy-SEQ**
“Moa is happy.”

The default interpretation of *-taktsi*, the causative morpheme, includes a notion of perfective aspect. *-taktsi* may here be considered a portmanteau morpheme, glossed *CAUS.PERF*, until further evidence appears.

0.3.2 Transitivity and (lack of) grammatical relations

Chungli Ao is a typical Tibeto-Burman language in that boasts a large inventory of lexical ambitransitive verbs (see Coupe (2007) and (2008) on Mongsen Ao; Schikowski (2010) on Chintang; LaPolla (2008) on Rawang; LaPolla (2011) on Qiang), which can behave as either transitive or intransitive with no overt morphological marking (examples include all *break*-class verbs, discussed below). Chungli Ao, like Mongsen Ao (cf. Coupe 2007: 165-169), appears to be a clause-chaining language, with phenomena similar to those described in Bradshaw (1999) for Jabêm and Numbami, with topic-tracking across clauses (and of course predicate elements like converbs, in the case of serial verb constructions, which can be argued to be monoclausal) and clauses ordered chronologically. The language demonstrates semantic role marking (discussed in Coupe (2007) as ‘semantically-motivated case-marking’), which I describe in detail in sections 0.3.4.1 and 0.3.4.2, below.

As may be expected of a Tibeto-Burman language with the above characteristics, the language lacks a syntactic pivot (as per Dixon (1979)): It does not target a specific grammatical function or semantic role for feeding syntactic operations such as passivization. In fact, research on Chungli Ao has, to date, not found a syntactic passive construction at all; the consultant, when asked to produce passives, simply produces an ambitransitive verb in a patientive intransitive construction. To illustrate, when asked to produce “The cup was broken” or “The cup got broken [by an unknown agent],” the consultant produces:

¹⁶Lexical suffixes, following Coupe’s (2007) use, includes categories such as reciprocal and potential, as well as morphemes with narrower “lexical” meanings, often indicating an adversely affected undergoer, a completely affected undergoer, neat division into two equal parts, etc. For a more detailed discussion of several of these suffixes, see Escamilla (2010), part of which is recapitulated in sections 3.1 and 3.2.

- (6) *maruk tfakma*
 cup break. PERF
 “The cup broke” or “Somebody broke the cup” or “The cup got broken [by X]”

Due to rampant argument-drop and the crucial role of contextual pragmatics, this utterance, in isolation, is both grammatical and completely ambiguous vis-à-vis the semantic relationships of the participants. As Coupe has described for Mongsen Ao, it is nearly always possible to simply omit a so-called A argument that is recoverable from contextual pragmatics [or unimportant to the discourse, I note] in order to focus [again, I note that there is perhaps no structural reason to claim that this is ‘promotion’] an O argument in the same clause (2007:169). The above utterance, with its possible interpretation of “[Somebody] broke the cup,” exemplifies this phenomenon. However, as *tfakma* ‘break’ is an ambitransitive verb, with no disambiguating pragmatic context, the interpretation “The cup broke” is also perfectly possible. This observation holds even when an Agent is absolutely required semantically. When asked to produce a passive construction such as “Carrots were cut up” or “The carrots got cut up,” the consultant will produce:

- (7) Ø <carrot> *rang-sa?*
 [null.AGT] carrot cut-into.pieces [RE: 3/23/2009]

Semantically, an Agent is absolutely required for the verb *arang* ‘cut’; CUT-class verbs do not participate in middle-voice constructions, though such constructions are attested in the language (Escamilla 2010: 20). However, as noted above, in this case, the Agent (and would-be A argument) is omitted. Note that, counter to Coupe’s analysis, the argument is not recoverable “from contextual pragmatics” here: World knowledge dictates that that must be an Agent, but her identity simply is not relevant to the discourse and is thus able to be suppressed. Note also that a better literal translation of the sentence would be “[Somebody] cut the carrots up.”

I claim that for ambitransitive verbs it is simply not useful to specify, outside of a specific context, a minimal valence higher than zero. Even for fully transitive verbs, in fact, the syntax—at the sentence/single utterance level—simply does not require the overt expression of a given number of arguments.

Causativization of ambitransitive verbs is not discussed separately below; rather, I cover both possible patterns in separate, detailed descriptions of the behavior of passive intransitives, active intransitives and base transitives.

0.3.3 Topics in co-reference and anaphora at the level of the sentence/adjacency pair

0.3.3.1. Pronouns and so-called R-expressions

I briefly describe a variety of phenomena related to NPs, pronouns and coreference phenomena. These phenomena figure prominently in the data on CUT- and BREAK-class verbs below, and are included in order to forestall confusion on the part of the reader.

Ao has a full system of lexical pronouns. These are as follows:

Table 3.2: Chungli Ao lexical pronouns

Ao form	gloss
<i>ni</i> [accusative: <i>ke</i> ('me')]	I
<i>na</i> [accusative: <i>ne</i>]	you (sg.)
<i>la</i>	she
<i>pa</i>	he
<i>asenuk</i>	we (inclusive)
<i>unuk</i>	we (exclusive)
<i>nenā</i>	you (2)
<i>ner</i> (+numeral)	you (number [for 3+])
<i>parnuk</i>	they (collective)

As expected, these lexical items may be coreferential with another NP in the sentence, or get their meaning from elsewhere (discourse context, world knowledge), as in the following example:

- (8) *keji_m-i* *kari* *fituk-tsi-pa* *asi,* *saaka* *la_m*
 my.sister-AGT car wash-FUT-NMLZ happen but 3.SG.FEM
- m-azing-pa* *aki,* *ni-i* *fituk.*
 NEG-be.free-NMLZ because 1. SG-AGT wash
- “My sister was going to wash the car, but she was busy, so I washed it.”
 [Ao MI 05Dec08 4 RE: 2:45]

As we see, *la* ‘she’ in the second clause is interpretable via co-reference with *keji* ‘my sister’ in the first clause; *ni* ‘I’ is interpretable, presumably, though world knowledge vis-à-vis conversational roles. Ao is, however (as noted), a pro-drop language: While verbs are not inflected for agreement with respect to grammatical person/number/gender, arguments of the verb need not be overt if the information can be recovered from discourse structure or background knowledge. Observe the following utterance, the response in a question-response adjacency pair, in which the referent is recoverable from discourse structure and therefore need not be represented by a pronoun:

- (9) [Given in response to “Where’s your mother?”:]
u-tar
 go-PERF.present_relevance
 “She went/is on her way [and you can catch up to her if you walk quickly].”
 [Ao MI 07Nov08 10 RE-RE: 4:55]

Cataphoric use of pronouns is also allowed; that is, a pronoun may intrasententially precede an NP with which it co-refers, as in the following example:

- (10) *pa* <homework> *ngu-li* *ipa* <student>-i
3.SG.MASC homework get-upon that student-AGT

injak-a tenzik
do-CONV begin.PERF
“As soon as he got his homework, the student started working on it.”
[11/23/08]

Furthermore, two identical NPs within a sentence may co-refer given the proper pragmatic context, as in the following adjacency pair:

(11a) A: *Moa-pa teputsi-i tfipa? mejim-er?*
 Moa-MASC wife-AGT who love-SEQ
 “Who does Moa’s wife love?”

(11b) B: *Moa-pa teputsi-i Moa-pa mejim-er*
 Moa-MASC wife-AGT Moa-MASC love-SEQ
 “Moa’s wife loves Moa.”

[Ao_MI_26Nov08_1_RE: 30:00]

Note also the following:

(11c) *Moa-pa_k teputsi-i pa_m (*pa_k) mejim-er*
 Moa-MASC wife- AGT 3.SG.MASC love-SEQ
 “Moa_k’s wife loves him_m.”

[Ao_MI_26Nov08_1_RE: 30:30]

As the co-indexing indicates, when a pronoun is used in such a context as above, only a non-coreferential interpretation has proven possible. Note also that the R-expression and pronoun intended to corefer in (11c) (namely, *Moa* and *pa*) are not in a c-command relationship; attempts have not yet been made to elicit utterances such as ‘Moa_k likes him_k’.

A pronoun may occur as the only element in an utterance in cases in which verb phrase ellipsis has occurred but pro-drop has not. In the following example, such a case has occurred presumably because verbal element is already shared knowledge, and the nominal referent, as the sought-after information, is salient in the discourse (and therefore not a candidate to be pro-dropped):

[Seeing that the car has been washed:]

(12a) A: *fipa-i kari fituk?*
 who-AGT car wash.PERF
 “Who washed the car?”

(12b) B: *ni-i*
 1.SG -AGT
 “Me.”

[Ao_MI_26Nov08_1_RE: 22:32]

A note on possession: Later, I will discuss, in the context of anaphora, some constructions that have inherently reflexive interpretations. Here, I offer just a pair of examples related to pro-drop. Observe:

[As a general statement:]

- (13) *nisung-tem-i* *tserapur* *akemtsipu-er*
 person-PL-AGT parents respect-SEQ
 “People respect their [own] parents.”

[Ao_MI_05Dec08_9_RE: 4:03]

In utterances such as this, no possessive pronoun (‘their,’ ‘their own’) is required. Of course, it could be argued that this is because the intended interpretation is clear: ‘For every person x, x respects x’s own parents.’ However, observe the following:

- (14) *Moa-pa-i* *tfung-a* *injak-tang* *par* *tserapur* *pela*
 Moa-MASC-AGT good-CONV do-upon his parents be.happy.PERF
 “Moa’s parents were happy when he did well [e.g., in school].”

[Ao_MI_05Dec08_9_RE: 6:21]

In cases such as (10) that is, when possessor and possessed occupy separate clauses—even though the interpretation (i.e., ‘parents’ = ‘Moa’s own parents’) is certainly just as clear as the intended interpretation in (9) above—the consultant produces an overt possessive pronoun. This suggests that the presence or absence of an overt pronoun may depend on clause structure—syntax—as well as semantics/pragmatics. This, naturally, is an enormous can of worms that will be set aside for further research.

0.3.3.2. Anaphora: the status of PRONOUN-*sasa*

The suffix *-sasa* may be added to any of the pronouns in Table 3.2 in order to form anaphors with corresponding person/number features. Note that in the case of the first and second person singular forms, *-sasa* affixes to what has been glossed as the accusative form of the pronouns, yielding *kesasa* ‘myself’ and *nesasa* ‘yourself’. Observe the following data:

- (15) *ni-i* *ke-sasa* *ke-tak* *tfafi-r*
 1.SG-AGT 1.SG-SASA 1.SG-upon be.angry-SEQ
 “I’m angry with myself.”

[Ao_MI_26Nov08_1_RE: 5:48]

These forms rely for interpretation not only on coreference with a pronoun or R-expression, but also on the intrasentential co-occurrence of a pronoun or R-expression. This may be related to the observation that these anaphors may not host clitics (including semantic case-marking, discussed elsewhere in this chapter); furthermore, they appear to be unable to occur with postpositions. Attempts to elicit forms such as **pa-i-sasa* or **pa-sasa-i* (that is, an anaphor with the agentive clitic *-i*) have been roundly rejected by the consultant, as have constructed postpositional phrases such as *pa-sasa-tak* (him-SELF-on; intended “on/at himself”). Therefore, in example (11) above, nominative *ni* ‘I’ must be present both to act as the subject and to give interpretation to (and, in some theories, bind) the anaphor *ke-sasa*. The seemingly “extra” instantiation of first personhood *ke* must surface in order to form a felicitous postpositional phrase with *tak* (which the data collected thus far suggest is required with the matrix verb *tfafi* ‘get angry [at/with]’).

Some constructions, many involving an animate agent with his/her body part(s) as the direct object, have inherently reflexive interpretations. In these cases, pronoun-*sasa* is marked and must be pragmatically licensed. In example (16), the pronoun does not appear:

- (16) *Russell-i pangsim aung*
 Russell-AGT beard shave.PERF
 “Russell shaved.” [=Russell shaved his own facial hair] [Ao_MI_26Nov08_1_RE: 2:54]

But in examples (17) and (18), it is licensed by the expressions translated as *all by himself* and *all by ourselves*:

- (17) *Russell-i pa-sasa tukulak aung*
 Russell-AGT 3.SG.MASC-SASA head shave.PERF
 “Russell shaved his head *all by himself*.”
 [even though that’s difficult and you’d expect him to have had help]
 [Ao_MI_26Nov08_1_RE: 1:34]

- (18) *unuk-sasa unuk taka fituk*
 1.PL.EXCL-SASA 1.PL.EXCL hands wash.PERF
 “We washed our hands *all by ourselves*.” [though normally we would need help]
 (as for small children) [notes from 12/5/2008]

Note that when the agent and object are given information in the discourse, utterances such as the following are possible:

[Response to, ‘Who did you say was washing Russell’s hands?’]

- (19) *pa-sasa fi.tuk-er*
 3.SG.MASC-SASA wash-SEQ
 “He’s washing [his hands] [all by himself].” [notes from 12/5/2008]

In this sentence, the consultant insists that *pa-i* (3.SG.MASC-AGT) is understood as preceding *pa-sasa*, whether or not it actually surfaces. That is, as may perhaps be expected, the data suggest that anaphors must be bound (in the Government & Binding sense) by a pronoun or R-expression in order to be interpreted.

0.3.4 Semantic role marking

Chungli Ao lacks case marking; that is, as noted above, grammatical relations such as ‘subject’ and ‘object’ are not encoded. Certain semantic relations are encoded, however, and these are, I argue, relevant to semantic transitivity (as discussed by Hopper & Thompson (1980), Næss (2007) and others). Two of these are especially relevant to the discussion, and these will be discussed here.

0.3.4.1 The agentive marker *-i*

The suffix *-i* prototypically marks an animate, volitional agent, affecting an undergoer or theme; it occurs mainly, therefore, only on active intransitive and transitive verbs, and derived forms with a valency of at least two (e.g., causativized passive intransitives).

- (20) *pa-i* *pensil* *pen-er* *aru*
 3.SG.MASC-AGT pencil carry-SEQ come.PERF
 “He brought the pencil.”

- (21) *pa* *tfuka* *nungi* *aru.*
 3.SG.MASC kitchen from come. PERF
 “He came out from the kitchen.”

This marker frequently co-occurs with affective marking on the verb word, principally *-tsi*, which is interpretable as either benefactive or malefactive, depending on context (in ways that are not yet fully understood). Observe:

- (22) *tane-i* *aru-r* *raksa-tsi*
 cat-AGT come-SEQ destroy-MAL
 “Cats came and destroyed them [=the clay bullets].”

Minimal pairs such as the following demonstrate the relevance of agent volitionality, and illustrate that agentive marking may be used on more passive intransitive verbs if agent volitionality is being highlighted:

- (23a) *la* *a-lang-uku*
 3.SG.FEM CLASS-fall-PST
 “She fell down.” [9/26/08]

- (23b) *la-i* *a-lang-uku*
 3.SG.FEM-AGT CLASS-fall-PST
 “She fell down.” [on purpose, as of an actor in a play] [9/26/08]

Also indicative of the role of volitionality is the fact that the agents of necessarily volitional actions do not take agentive marking under negation:

- (24a) *pa-i* *tiazi* *tfimpi-uku*
 3.SG.MASC- AGT lie say-PST
 “He just told a lie.” [11/7/08]

- (24b) *ni* *tiazi* *me-tfimpi*
 1.SG lie NEG-say.PERF
 “I didn't lie.” [11/7/08]

Chungli Ao does not typically allow two arguments with agentive marking in a single utterance, even in embedded clauses and clauses in which the valency of the predicate has been increased

via some productive means, including, of course, morphological causativization. The only exception found is the ditransitive:

- (25) *Alex-i Russell-nem Lindsey-i kakat akhatsi-taktsi*
 Alex-AGT Russell-DAT Lindsey-AGT book give-CAUS.PERF
 “Alex made Lindsey give a book to Russell.”

0.3.4.2 Animate patient/causee marker *-nem*

The suffix *-nem* marks an animate, agentive causee who acts, in turn, on another theme. Newbold (2008: 1) has suggested that *-nem* may be marking a demoted argument—the argument cannot be a subject, because, as above, there is no evidence for the existence of the grammatical relations “subject and “object” as such. However, *-nem* may indeed be marking the fact that an argument is still agentive, but not the agent associated with the causing microevent. *-nem* requires a semantic O argument for the *caused* microevent; following this, we see *-nem* occurring with unergatives like ‘cook’, but not unaccusatives like ‘laugh’. In example (26), *-nem* does not occur because the verb is unaccusative:

- (26) *ni-i la tfip-taktsi*
 1.SG-AGT 3.SG.FEM cry-CAUS.PERF
 “I made her cry.” [Ao_MI_07Nov08_8_LN.wav, 24:04]

But in example (27), *-nem* occurs because the verb is unergative:

- (27) *pa-i la-nem mapa injak-taktsi*
 3.SG.MASC-AGT 3.SG.FEM-NEM chore do/work-CAUS.PERF
 “He made her work.” [Ao_MI_31Oct08_1_LN.wav, 26:00]

Note that there must be an undergoer or theme subject to the actions of the agentive causee; caused motion, for example, while arguably requiring more effort and volition on the part of the caused agent, is not sufficient to license *-nem*:

- (28) *Alex-i Daniel tukan-i u-taktsi.*
 Alex- AGT Daniel store-to go-CAUS.PERF
 “Alex made Daniel go to the store.” [11/8/2008]

This analysis is not exhaustive; Newbold (2008:4) noted , even in her relatively small sample of verbs, noted at least two (*firang* ‘be sick’ and *semzik* ‘shed clothing’) that were recalcitrant. My survey of 100 verbs has not uncovered any more examples, but these two remain unaccounted for. I adapt Newbold’s table here, with a handful of additions from my own data:

Table 3.3 -nem licensing

Causativized verbs that license <i>-nem</i>		Causativized verbs that do not license <i>-nem</i>	
<i>injak</i>	'work'	<i>mene</i>	'laugh'
<i>jari</i>	'help'	<i>tfip</i>	'cry'
<i>surutfiuk</i>	'cook a meal'	<i>semzik</i>	'shed (clothing)'
<i>sarasatem</i>	'pray'	<i>mitfang</i>	'sleep'
<i>tfiung</i>	'eat'	<i>tsik</i>	'fall'
<i>pilem</i>	'think about'	<i>akem</i>	'become'
<i>atakatem</i>	'curse'	<i>ajazuka au</i>	'move out'
<i>metet</i>	'know'	<i>pela</i>	'be happy'
<i>firang</i>	'be sick'		

1. Causatives

In this description of causative constructions, I begin by discussing examples from different subclasses of verbs, organized by valence, and proceed to examine the semantics and distribution of these constructions with respect to Dixon's (2000) account of relevant syntactic and semantic parameters.

1.0 Causativization in Chungli Ao

1.1 Periphrastic causatives: adjectives and nouns

Formally, the major split between the morphological and the syntactic causatives is seen in *CAUS-do* (caused agency) predicates vs. *CAUS-become* (caused change of state) predicates. Chungli Ao has a periphrastic causative with *yanglu* 'make'; it has a very limited distribution, occurring only with stative verbs and some adjectives. Observe:

- (29) *Russell-i* <coffee> *nangnang-a* *yanglu*
 Russell-AGT coffee sweet.REDUP-ADV make.PERF
 "Russell made the coffee sweet."
- (30) *ni-i* *lemang* *ulu-a* *yanglu*
 1.SG-AGT road big-ADV make.PERF
 "I made the road wide/big."
- (31) *tsingrem-i* *azi* *kar* *t-ulu* *yanglu*
 god-AGT dog some NMLZ-big make.PERF

azi *kar* *t-ila* *yanglu*
 dog some NMLZ-small make.PERF
 "God made some dogs big, and some small."

Note that we do not see arguments marked with *-nem* here, because the affected participants lack agency and volition.

The causative suffix licensed by all non-stative verbs, *-taktsi*, can also be used in a construction with an adjective + *akem*, 'become' (a full verb), to indicate an agent's causing another entity to enter the state labeled by the adjective. The causer argument is always marked with agentive *-i*. Observe:

- (32a) *t-ulu-pa* *a-kem-er*
 NMLZ-big-COMP CLASS-become-SEQ
 “It is becoming bigger.” (Ao_MI_07Nov08_1_LN.wav, 13:26)
- (32b) *parnuk-i* *t-ulu-pa* *kem-taktsi*
 3.PL-AGT NMLZ-big- COMP become-CAUS.PERF
 “They made it bigger.” [lit. “They made it so it became a bigger one.”]
 (Ao_MI_07Nov08_1_LN.wav, 14:13)

The causative morpheme may be used, analogously, with nouns + *akem*:

- (33) *ane-i* *retfip* *tsi* *kem-taktsi*
 sun-AGT ice water become-CAUS.PERF
 “The sun made the ice into water.” (Ao_MI_07Nov08_8_LN.wav, 5:01)

In these sentences, as with the periphrastic causative, we do not see the suffix *-nem* on the affected participants, because the affected participants are neither animate nor agentive.

Example (32) is one of two pieces of data encountered that my analysis cannot account for. The agentive marking of *ane* ‘the sun’ appears to be totally anomalous; this issue will be discussed further in section 2.

The semantic difference underlying the selection of one of these constructions over the other—where there is a choice, such as the case of adjectives—can be attributed to a version the Iconicity Principle, discussed elsewhere. The more formally complex construction indexes less direct causation, i.e., more metaphorical distance between the causing microevent and the caused microevent, as construed by the speaker. By contrast, the formally simpler construction encodes more direct causation. In this case, in (30), the speaker may have widened a dirt road by using a tractor or other tools. In (31b), if the theme is again understood to be the road, it may be the case that people started driving or walking on the shoulder, thus causing the road to become wider, *de facto*, over the course of many uses. The structure of (31b) is formally analogous to other embedded clause constructions, with an overt nominalizer (the suffix *-pa*) on the first predicate element (here an adjective), and are therefore taken to be biclausal.

1.2 The morphological causative

Morphological causative derivations can be formed on all verb stems, including intransitive (passive and agentive), ambitransitive, transitive and ditransitive. As in Mongsen Ao, the causative suffix, here *-taktsi*, attaches to the stem in the penultimate slot of the verb template, and increases the syntactic valency by one. Also, as expected, the introduced core argument is the causer (new A) that makes a causee (old A) perform the microaction encoded by the lexical verb. In all cases, the introduced argument (CAUSER) is obligatorily marked with the agentive suffix *-i*. In these sentences, the causer argument (new A) comes first, followed by the agent of the causativized verb (old A), the object of the causative verb (O; if present), and then the verb, suffixed with *-taktsi*. The causativization of each transitivity class will be briefly discussed in turn, below.

1.2.1 Causative of stative

Chungli Ao has a class of stative (and intransitive) verbs, which are formally distinguishable from adjectives in their morphosyntactic behavior. Adjectives do not take verbal morphology such as

1.2.2 Causative of unaccusative/passive intransitive or ambitransitive

So-called ‘passive’ intransitives (unaccusatives) and ‘agentive’ intransitives (unergatives) will be recapped together in this section. I begin by giving two examples of causatives derived from unaccusative (passive intransitive) verbs *mene* ‘laugh’ and *atfip* ‘cry’:

- (40) *pa-i* *la* *mene-taktsi*
 3.SG.MASC-AGT 3.SG.FEM laugh-CAUS.PERF
 “He made her laugh.” (Ao_MI_31Oct08_1_LN.wav, 26:34)
- (41) *ni-i* *la* *tfip-taktsi*
 1.SG-AGT 3.SG.FEM cry-CAUS.PERF
 “I made her cry.” (Ao_MI_07Nov08_8_LN.wav, 24:04)
- (42) *ni-i* *Lindsey* *tsisang-taktsi*
 1.SG-AGT Lindsey dance-CAUS.PERF
 “I made Lindsey dance.” [1/11/2009]

As noted above, the causer always receives agentive marking.

1.2.3 Causative of unergative/agentive intransitive or ambitransitive

The crucial formal difference between causativized unaccusatives and causativized unergatives is that the ‘old A’ arguments of the latter, as shown here, are marked with *-nem*, as described above. Observe:

- (43) *pa-i* *la-nem* *mapa injak-taktsi*
 3.SG.MASC-AGT 3.SG.FEM-NEM chore work-CAUS.PERF
 “He made her work.” (Ao_MI_31Oct08_1_LN.wav, 26:00)
- (44) *pa-i* *la-nem* *surutfiuk-taktsi*
 3.SG.MASC-AGT 3.SG.FEM-NEM cook.meal-CAUS.PERF
 “He made her cook.” (Ao_MI_31Oct08_1_LN.wav, 24:55)

1.2.4 Causative of transitive

I give only one example here to illustrate the morphosyntactic structure; note again that the ‘old A’ argument is marked with *-nem*:

- (45) *Alex-i* *Lindsey-nem* *ki ka si-taktsi*
 Alex-AGT Lindsey-DAT house one construct-CAUS.PERF
 “Alex had/made Lindsey build a house.”

This difference in argument marking follows the above description; the old A (newly-introduced causee argument) is necessarily agentive and animate, so it must be marked as such with *-nem*.

1.2.5 Causative of ditransitive

In the case of causativized ditransitives, here exemplified with *akhatsi* ‘give,’ both the causer (new A) and the ‘giver’ (old A; causee) receive agentive marking. The recipient receives affected animate *-nem* marking.

- (46) *Alex-i* *Russell-nem* *Lindsey-i* *kakat* *akhatsi-taktsi*
 Alex-AGT Russell-NEM Lindsey-AGT book give-CAUS.PERF
 “Alex made Lindsey give a book to Russell.”

As mentioned above, Chungli Ao does not often allow more than one agentive-marked argument in a single clause. However, this “restriction” may simply fall out from statistical frequency: The ditransitive construction is the only mechanism I have encountered that can license semantic-role marking for three participants (which we might therefore consider ‘core’ participants) in a single clause. Both the causer and the ‘giver,’ here, must necessarily be agentive and animate in order for a giving event to felicitously occur, and they are accordingly obligatorily marked with the agentive *-i*.

2. Chungli Ao causatives and Dixon’s parameters¹⁷

Now that we have examined the basic descriptive facts about the formation of causatives in Chungli Ao for each of several subtypes of verb, we are in a position to systematically proceed through Dixon’s list of semantic parameters. As the reader will already have noticed, many semantic distinctions, including agentivity, volition and animacy, are encoded by case-marking on the arguments, and not on the lexical verb.

For the reader’s convenience, I repeat Dixon’s (2000) list of nine parameters along which causative constructions tend to vary:

(47)

Relating to the lexical verb involved in the construction:

1. stative vs. active
2. intransitive vs. transitive vs. ditransitive

Relating to the causee:

3. having vs. lacking control [over the caused microevent]
4. acting willingly vs. unwillingly
5. partially affected vs. completely affected

Relating to the causer:

6. acting directly vs. indirectly
7. acting accidentally vs. intentionally
8. acting naturally vs. with effort [i.e., initiation of the caused microevent takes less or more effort]
9. involved vs. not involved in the activity [=the caused microevent]

I have already demonstrated that parameter (1) is important in the Chungli Ao system: Stative vs. active is the main criterion governing the distribution of the periphrastic and

¹⁷Parts of this section were modified after writing and presented with Lindsey Newbold at a poster session at the 8th Workshop on East Asian Linguistics, at the University of California, Santa Barbara on March 3, 2012. I thank Lindsey Newbold, Bernard Comrie and the workshop participants for their helpful insights.

morphological causative constructions. Likewise, we have demonstrated that (2) is *not* relevant, as all non-stative verbs, regardless of transitivity, are compatible with the morphological causative only.

The ambiguity of the following sentence demonstrates that parameters (3) and (4) are likewise not relevant:

- (48) *ni-i* *Lindsey* *nuktak-taktsi*
 1.SG-AGT Lindesy be.standing-CAUS.PERF
 “I made Lindsey stand up [via exertion of her own effort].”
 OR
 “I made Lindsey stand up [via my pulling her up].”
 OR
 “I let Lindsey stand up [because she wanted to].”
 OR
 “I helped Lindsey stand [herself] up.”

Also:

- (49a) *ni-i* *Daniel-nem* *fi* *tfi-taktsi*.
 1.SG-AGT Daniel-NEM meat eat- CAUS.PERF
 “I made Daniel eat the meat.”
- (49b) *Daniel-i* *fi* *me-tfi-ne* *saaka, ni-i* *tfi-taktsi*.
 Daniel-AGT meat NEG-eat-VOL but 1.SG-AGT eat- CAUS.PERF
 “Daniel did not want to eat the meat, but I made him.”
- (49c) *Daniel-i* *fi* *tfi-ne, anungtfi,* *ni-i* *pa[-nem] tfi-taktsi*
 Daniel-AGT meat eat-VOL so/then 1.SG-AGT him-NEM eat- CAUS.PERF
 “Daniel wanted to eat the meat, so I let him.”

Sentences such as the following provide evidence that parameter (7) is irrelevant; the wine clearly cannot be acting volitionally, yet fits in the same morphological causative construction:

- (50) *i-i* *ni* *singtfim-taktsi*.
 wine-AGT 1.SG become.calm-CAUS.PERF
 “The wine made me relax.”

Interestingly, despite the necessary lack of volitionality on the part of the wine, *i* ‘wine’ is still marked with the agentive *-i*. I have not yet been able to explain this anomaly, analogous to example (33), above, in which *ane* ‘the sun’ is marked with *-i*. While the data do not yet allow us to ferret out the correct explanation, we may entertain several hypotheses, including:

- (A) The speaker treats $[[X]-i \ [Y] \ [VERB]-taktsi]$ as a construction. Examples such as (32) and (48) are overextensions of this construction. We might understand this as a preference for the cooccurrence of the linguistic forms *-i* ‘[agentive]’ and *-taktsi* ‘[causative]’ overriding the preference for [X] and [Y] to map onto an Agent and an Undergoer, respectively.

(B) The agentive marking is an effect of interference from English. English clearly allows utterances like “The wine made me relax.” I note that the consultant does disprefer utterances like (32) and (48), and this seems to be precisely because of the lack of volitionality and agentivity on the part of the arguments (inanimate objects) marked as agents. When asked to produce a form such as “The wine made me relax,” he often produces a purpose clause (e.g., in translation, “I relaxed thanks to drinking the wine.”)

Observe a second example. In (51), the researcher-generated morphological causative is judged marginally possible:

- (51) *?tsinglu-i* *ni* *pela-taktsi-r*
 rain-AGT 1.SG be.happy-CAUS-SEQ
 Intended: “The rain makes me happy”

The bi-clausal construction in (52) is preferred:

- (52) *tsinglu* *aru-pa-aki* *pela-r*
 rain come-NMLZ-with be.happy-SEQ
 Lit. ‘With the coming of the rain, I’m happy’ [11/8/2008]

When later asked to judge utterances with an inanimate object bearing agentive marking (such as (51)), he does not judge them ungrammatical, but he has noted more than once that “people wouldn’t really say” them. It is possible that the consultant is simply translating English into Chungli Ao while attempting to retain the same kind of construction.

(C) The agentive marking is an effect of interference from L1. It is possible that the speaker’s L1 is completely comfortable, as is English, with having a non-volitional, non-agentive subject in an analogous construction.

(D) Some combination of these.

Attempts to elicit utterances to test the possible relevance of variations in parameters (5), (8) and (9) have so far shown no effect. Examples of these attempts are given below:

Partial vs. complete affectedness (parameter 5)

- (53a) *na-i* *tanur* *kar* *mapa* *injak-taktsi-er*.
 2.SG-AGT child some work do-CAUS-SEQ
 “You make some of the children work.” [N.B., *mapa* is a noun]

- (53b) *na-i* *tanur* *atfak* *mapa* *injak-taktsi-er*.
 2.SG-AGT child all work do-CAUS-SEQ
 “You made all of the children work.”

- (54a) *na-i* [*nisung* *kar*]-*nem* *aak* *tepset-taktsi*.
 2.SG-AGT man some-NEM pig kill-CAUS.PERF
 “You made some of the men kill pigs.”

- (54b) *na-i* [*nisung atfak*]-*nem* *aak* *tepset-taktsi*
 2.SG-AGT man all-NEM pig kill-CAUS.PERF
 “You made all of the men kill pigs.”

Naturalness vs. effort of causer action (parameter 8)

- (55) *Russell-i* *talang ka* *merang* *tatem-nung* *Alex* *mapa* *injak-taktsi*
 Russell-AGT long 1 try end-LOC Alex work do-CAUS.PERF
 “Russell tried and tried and finally got Alex to work.”

Parameter (6), as will not have escaped the reader’s notice, is the parameter most similar to the aforementioned Iconicity Principle. Where there is a lexical verb for causative and non-causative versions of a single type of event (as in the classic *die/kill* pair), it is directness of causer action that motivates the choice (of lexical item vs. construction). In the (a) examples, the action is more direct, while in the (b) examples, it is less direct:

- (57a) *Alex-i* *Daniel* *tepset.*
 Alex-AGT Daniel kill.PERF
 “Alex killed Daniel.”

- (57b) *Alex-i* *Daniel* *si-taktsi.*
 Alex-AGT Daniel die-CAUS.PERF
 “Alex let/made Daniel die.”
 [inadvertently poisoned, riled up an old man with heart problems, didn’t save someone who was drowning...]

- (58a) *Alex-i* *Daniel* *tukan-i* *juuk.*
 Alex-AGT D store-to send.PERF
 “Alex sent Daniel to the store.”

- (58b) *Alex-i* *Daniel* *tukan-i* *u-taktsi.*
 Alex-AGT D store-to go-CAUS.PERF
 “Alex made Daniel go to the store.”

- (59a) *Alex-i* *ni* *mesu.*
 Alex-AGT 1.SG wake.up
 “Alex woke/got me up (e.g., by shaking me or pulling me up out of bed).”

- (59b) *Alex-i* *ni* *saak-taktsi*
 Alex-AGT 1.SG wake.up-CAUS.PERF
 “Alex made me wake/get up (e.g., by calling me).”

3. Causativity in the lexical item, lexical suffixes

I wish to enhance the discussion of causativity with a case study into the encoding of causal relations in the lexical item, with a brief foray into how some of the work in the causal chain is borne by the class of ‘lexical suffixes’ (discussed further below). I again refer to the basic causal chain schema, proposed by Croft (1987) and refined by Smith (1991):

Table 3.4 The causal chain schema, adapted from Smith (1991) and Croft (1987)

element	description	example
CAUSE	the causing event (internal structure unanalyzed, sometimes not explicitly mentioned)	I broke the vase with a hammer. [microactions subsumed in <i>break</i>]
SUBJ	the entity in the <i>caused</i> microevent [if a caused agency construction]	...
ACT	the action involved in the <i>caused</i> microevent	I <i>broke</i> the vase with a hammer.
INSTR	instrument involved	I broke the vase <i>with a hammer</i> .
THEME	the theme argument; object/entity affected	I broke <i>the vase</i> with a hammer.
RESULT	the endstate of the theme	I broke the vase with a hammer. [= > <i>broken</i>]

This case study will cover Chungli Ao's wide range of cutting and breaking verbs. Like Hupa verbs with *ya*= 'apart', *je*= 'apart' and *dah*= 'away', endstate (RESULT) in Chungli Ao CUT-class and other (non-BREAK-class) events is encoded not in the lexical verb, but in lexical suffixes, which occur directly adjacent to the verb root and become part of a single verbal complex, as argued in Escamilla (2010). This section will be devoted to describing the system of C&B verbs, and presenting evidence that the full causal chain is not instantiated in lexical CUT-class and other (non-BREAK) verbs of material destruction. Many Chungli Ao verbs analyzed as C&B verbs in Escamilla (2010), in fact, are likely actually not C&B verbs at all, but verbs whose encoded action prototypically may be used (by humans, etc.) to effect a rendering non-integral of a theme object (e.g., 'pound' 'hit' 'poke'); the actual "becoming non-integral" event plus the new non-integral state itself is in fact encoded in the lexical suffixes, and not the verbs themselves.

The data reported here were collected in the course of work with a consultant at U.C. Berkeley between August 2008 and May 2009. The bulk of the data was elicited by showing the consultant a set of 61 video clips¹⁸ depicting events of cutting and breaking, as well as a handful of opening, peeling and tearing events. All video clips depicting a cut- or break-type event were described with an utterance containing a verb+lexical suffix3 combination. In the following subsections, I present a description of the semantics of four lexical suffixes and 14 lexical verbs commonly used in the description of C&B events in Chungli Ao.

¹⁸ The set of videos used was Bohnemeyer, J. Bowerman, M. & Brown P. (2001), the same set used for elicitation by Gaby (2007) and Majid et al. (2008). The author wishes to thank Alice Gaby (U.C. Berkeley) and Asifa Majid (Max Planck Institute for Psycholinguistics) for furnishing the video clips.

3.0 Lexical suffixes¹⁹

Lexical suffixes encode information about the result state of the affected theme (and therefore are crucial to a discussion about causal chains), and there is some evidence that some lexical suffixes simultaneously contain information about event structure (Aktionsart), as discussed in section 3.0.5 below. The following is a list of all of the Chungli Ao lexical suffixes encountered in the course of elicitation, along with notes on possible cognates in Mongsen Ao. Suffixes whose semantics are treated in detail in this section are given in bold:

Table 3.5 List of Chungli Ao lexical suffixes and possible cognates in Mongsen Ao

Lexical suffix	Semantics	Mongsen Ao cognates?
-sa?	a) ‘VERB THM to pieces’, ‘VERBed such that functionality was lost’; b) ‘VERB undesirably’	-sa? ‘separate, reduce to many pieces by VERB-ing’
-ma?	‘VERB completely’	-ma ‘split open by verbing’
-tuk	‘part severed from whole by VERBing’ {N.B.: Part must have been a recognizable part prior to separation.}	No similar suffix noted in Coupe’s (2007) grammar of Mongsen Ao; not noted in Clark’s 1893 (Chungli) Ao-Naga grammar.
-thang	‘divided [in 2] by VERBing’	-than ‘reduce to 2 pieces by VERB- ing’
-tet	‘VERB completely’	--
-phet	‘VERB with accidentally undesirable outcome’	Likely cognate to Mongsen Ao ‘frustrative modality suffix’ - phət (Coupe 2007: 330).
-zik	‘prepare by VERBing’	‘VERB for a purpose’
-ten	‘VERB to and fro’	-tən ‘VERB together’
-sa	‘scatter by verbing’	-sa ‘distribute by VERBing’
-set	‘VERB to death’	-sət ‘VERB to death’.
-tʃem	‘VERB in addition [to other agents’ VERBing]’	-tʃəm ‘VERB in addition’.
-phang	‘cover by VERBing’	- phan ‘cover by VERBing’

¹⁹ “Lexical suffix” is a term of convenience borrowed from Coupe’s (2007) grammar of Mongsen Ao, in which Coupe uses the term to denote “suffixes expressing lexically-oriented adverbial meanings...found to occur...adjacent to the [lexical verb] root.”

In the following subsections, I present a summary of the semantics of four lexical suffixes commonly used in the description of C&B events in Chungli Ao (the first four appearing in bold in the table above). Table 3.5 demonstrates that these four are by no means the exhaustive set of lexical suffixes in Chungli Ao; they are merely the four commonly used in the description of C&B events. For a summary of co-occurrence patterns (that is, all permissible verb + lexical suffix combinations), see Table 3.7, below.

3.0.1 *-sa?* ‘into pieces’

The central meaning of this suffix is:

(a) ‘into pieces’, i.e., the affected theme ends up in pieces as a result of the action encoded by the verb, as in:

- (60) *lep-sa?*
 cut.with.machete-SA?
 “[I] cut it [e.g., a rope] into pieces with a machete.”
 [Ao_MI_18Feb09_4_RE-RE: 10:05]

Contrast this with the following, which makes no claims about the endstate of the rope, and need not even entail that the cutting was successful:

- (61) *a-lep*
 CLASS-cut.with.machete
 “[I] cut [it] with a machete.” [04/09/09]

The suffix *-sa?* can be employed when the action is deliberate, controlled, and well-intentioned. However, the suffix can also be used to denote:

(b) that the action or the result of said action was undesirable, or that the action was performed in anger or without a productive goal in mind and/or was performed with unnecessary force as in the following utterance:

- (62) *<table> ana zingta-nung sitfen kha a-len-er a-li-pa*
 table two between- LOC cloth 1 CLASS-hang-SEQ CLASS -be-NMLZ

tetserla-i sing tila kha pen-er aru-r thu-sa?
 woman-AGT stick piece 1 carry-SEQ come-SEQ poke-SA?
 “After the piece of cloth had been hung between the 2 tables, the woman, bringing over a stick, poked a hole in it.”
 [Ao_MI_04Mar09_4_RE 26:50]

Crucially, this use is possible even if the theme is not in pieces as a result of the action. This is the case in the above example, in which the speaker uses *-sa?* to indicate that he has judged the event to be undesirable: It results in destruction of the physical integrity of the cloth, but with no constructive purpose.

- (66) *takem li-saʔ-dang a-li-r*
 life live- SAʔ-LOC CLASS-live-SEQ
 “He’s living his life badly.” [e.g., has been blowing off school and drinking away his stipend] [4/22/09]

3.0.2 -*maʔ* ‘completely affected’

Likely cognate to Mongsen Ao -*ma* ‘split open by VERB-ing’ (Coupe 2007: 308), -*maʔ* denotes exhaustive completion of an action which brings about a change of state; this suffix:

- (a) requires a theme/undergoer construable as comprising many individual wholes,
- (b) encodes the information that every relevant whole (i.e., part or piece of the theme) must have undergone the action in question, and that
- (c) a change of state has been effected in the theme/undergoer.

In example (67), the meaning of the sentence includes the three meanings (a), (b), and (c):

- (67) *na-i <bamboo> atfak lep-maʔ*
 2.SG-AGT bamboo all cut.with.machete-MAʔ
 “You cut down all the bamboo!” [=there’s no more standing]
 [Ao_MI_18Feb09_11_RE 9:10]

The suffix -*maʔ* occurs with CUT-class verbs and is fossilized in the stems of many BREAK-class verbs, and also occurs productively with a variety of non-C&B verbs, provided that the semantics of the lexical verb allow for a multipartite theme or undergoer and state-changing event according to the above. In example (68), -*ma* is used with a non C&B verb:

- (68) *parnuk-i tʃi-maʔ*
 3.PL-AGT eat-MAʔ
 “They ate [them] all up.” [=and now there are no more]
 [Ao_MI_22Apr09_04_RE-RE: 20:35]

The theme in question need not be a physical object:

- (69) *ni-i item atfak injak-ma-uku*
 1.SG-AGT DEM all do- MAʔ-RECENT.PERF
 “I’ve finished doing these [tasks].” [=and now I have no more obligations]
 [Ao_MI_22Apr09_04_RE-RE]

3.0.3 -*tuk* ‘part removed from whole’

The suffix -*tuk* does not occur with break-class verbs. It encodes the removal of part from whole, as in the following utterance:

- (70) *tepursang-i nuk kha pen-er aru-r*
 man-AGT machete one carry-SEQ come-SEQ

singtung *nungi* *singsang* *lep-tuk*
 tree from branch/stick cut.with.machete-TUK
 “The man, bringing over a machete, cut a branch off a tree.”

[Ao_MI_18Feb09_4_RE]

Prototypical events encoded with *-tuk* involve removal of a part from a biologically occurring whole, as the removal of a branch from a tree, as in (70), or the severing of a body part, as in circumcision, a haircut or the accidental loss of a finger while working with a machete. Note the following example, the Chungli Ao translation of the first two clauses of Mark 9:43 [Bible orthography preserved]:

- (71) *Ne ket agi na metsu-daktsu-ra, aji lep-tok-ang*
 2.POSS hand by 2.AGT sin-CAUS-COND this cut.with.machete-TUK-IMPER
 “If your hand causes you to sin, cut it off.”

Careful investigation has revealed that the part-whole relationship need not *always* be a biologically occurring one. In Chungli Ao, we find two verbs which translate to ‘put, place.’ The first is *aju*, which typically refers to placing an object on a surface (such as a book on a shelf). The second is *inuk*, which typically refers to placing object X on object/entity Y such that the resulting combination moves together as a single unit, such as placing a ring on a finger, or securely placing a load into a truckbed. What is interesting for our purposes is that it appears that removal of an object whose initial placement (i.e., the genesis of the physical part-whole relationship) could be described by *inuk* must be described by a VERB-*tuk* combination: for example, ‘cut’+*-tuk* must be used to describe the cutting off of a ring from a finger (e.g., with wire-cutters).

While not compatible with BREAK-class verbs, *-tuk* can be licensed by certain other verbs which result in separation of part from whole. In example (72), it is used with a verb meaning ‘pull’:

- (72) *te-phu* *luk-tuk*
 1.SG.POSS-tooth pull/yank-TUK
 “[Someone] pulled my tooth out.”

Possible motivations for this distribution are under investigation. Note, again, that in all data collected so far, the ‘part’ is an identifiable portion of the whole prior to separation.

3.0.4 *-thang* ‘in half’

This suffix is likely cognate to Mongsen Ao *-than* ‘reduce to 2 pieces by VERB-ing’ (Coupe 2007: 307), and carries (in its prototypical use) the same meaning, as in snapping a carrot in two with one’s hands, or snipping a rope in two with scissors. Example (73) shows that it can also be used for flat objects such as cloth, as long as the resulting state is two pieces:

- (73) *tetser-kati-i* *sitfen kha ana kem-a rang-thang*
 woman-one-AGT cloth one two become-ADV cut.with.small.blade-THANG
 “The woman cut the piece of cloth in two [with a small knife].”

[Ao_MI_18Feb09_4_RE-RE: 29:55]

Note that this suffix has so far proven compatible with any verb involving division into two equal parts:

3.0.5 Lexical suffixes and Aktionsart

CUT-class events described with a CUT-class verb + *-saʔ* or *-maʔ* (sections 3.0.1 and 3.0.2 above) combinations *always* meet Van Valin's (2005: 33-36) criteria for Accomplishment events, even if removing the suffix excludes the event from the Accomplishment category. Before proceeding, let us examine Van Valin's (2005) list of tests for identifying Accomplishment and Active Accomplishment events:

criteria	accomplishment	active accomplishment
Occurs with progressive	Y	Y
Occurs with adverbs like <i>vigorously, actively</i>	N	Y
Occurs with adverbs like <i>quickly, slowly</i>	Y	Y
Occurs with [X <i>for an hour</i>], [<i>spend an hour</i> Xing]	Irrelevant	Irrelevant
Occurs with [X <i>in a hour</i>]	Y	Y
Can be used as a stative modifier	Y	Y

3.1 Cutting and breaking (C&B) verbs

- (a) the instrument employed;

- (b) the physical properties of the entity cut or broken;
- (c) the degree of control over the locus of separation/lesion (hereafter ‘control’);
- (d) the manner in which cutting or breaking is accomplished (e.g., steadily applied pressure vs. single blow)

3.1.0 CUT-class verbs

[a]rang ‘cut [typically with small blade or saw]’

The meaning of *rang* is very close to English ‘cut’; prototypically it denotes the use of a small blade, saw, or other instrument extended saliently in one dimension (which is sharp along the length of the extended dimension), used with a high degree of control. The action typically involves lengthwise movement along the extended dimension and a degree of pressure applied into the object in the theme role.

[a]lep ‘cut [typically with machete]’

lep prototypically denotes the use of a machete, extended saliently in one dimension and sharp along the length of the extended dimension, but longer, heftier and able to cut larger objects than instruments prototypically used with *rang*. The agent has a high degree of control, and manner is likely to be a blow or chop (though a combination of lengthwise movement and downward pressure is still possible). That the manner may be a blow is supported by a common extension of this verb to describe karate chopping an object with one’s hand.

[a]lang ‘cut in two’

lang is unusual among the CUT verbs in that it specifically encodes information about the resulting state of the theme: in halves, cut across the grain (as it were). The two prototypical examples provided by the consultant were: 1) cutting a log across the grain (crosswise) and 2) cutting the head off a pig (i.e., cutting the neck crosswise across the grain). It is pleasing that among the lexical suffixes, this verb only co-occurs with *-thang* ‘in half’, which clearly has the most compatible semantics.

metfip ‘cut with scissors’

metfip is the most specific of the CUT-class verbs, denoting cutting with scissors or shears. Note that the original meaning of the verb was not related to a cutting event, but rather denoted immobilizing the theme with pressure exerted from either side by two independently-moving agentive entities, such as holding a pig’s head in a scissor-hold between one’s legs—still a felicitous usage.

3.1.1 BREAK-class verbs

The roots of all break-type verbs appear to have lexicalized with their lexical suffixes; they do not occur independently. This working hypothesis is supported by the fact that BREAK-class verbs include the semantics of the lexical suffix that appears to be lexicalized: *tfaksa*, *siksa*, and *phaksa*, for example, appear to have come about from a root + *-saʔ*, discussed in 3.0.1, above; as predicted, these verbs prototypically contain sense (a) of *-saʔ*: i.e., the theme entity prototypically ends up in several pieces as a result of the action. Descriptions below will deal only with deviations from this pattern.

raksa 'break'

(75) *ni-i* *ne* *<laptop>* *raksa-tsi*
 1.SG-AGT 2.SG.POSS laptop break-MAL
 “I broke your laptop.” [=laptop appears physically unharmed; functionality lost]
[Ao MI 11Mar09 4 RE-RE: 22:05]

(76)	<i>maruk</i>	<i>pasasa</i>	<i>tsʰik-er</i>	<i>tʃakma</i>
	cup	3.SG.MASC-SASA	fall-SEQ	break.into.pieces
	‘The cup fell and broke.’ [3/26/2009]			

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in descriptions of C&B events, these verbs, with the exception of *[a]fi* ‘tear’ do not necessarily encode information about the physical properties of the theme cut or broken, nor, when used without a lexical suffix, do they require that a change in the material integrity of the theme have been felicitously effected: *[a]nen* may, for example, simply mean ‘apply pressure’; *[a]thu* ‘poke’; and *[a]thep* and *[a]khu*, ‘pound’--that is, they may be used to encode only the manner and type of action (and sometimes the instrument), without making claims about the physical properties of the theme, nor about its end-state. Nonetheless, as they were frequently produced by our consultant, it is important to give a description of the semantics of each here:

[a]thep ‘pound [with hammer], *[a]khu*

These verbs denote pounding with a blunt object (stick, hammer, fist, club, etc.). These verbs encode no information about the characteristics of the theme, which have been shown to include rope, carrots, clay pots and piñatas.

[a]nen ‘smoosh’

This verb denotes the smashing of a soft theme via pressure applied evenly from above, as a strawberry with one’s hand, or a block of tofu by placing a large rock atop it.

[a]fi ‘tear’

This verb denotes the tearing of a soft or pliable theme extended in 2 dimensions (prototypically cloth) with the hands.

[a]thu ‘spear, pierce [with spear]’

This verb denotes the piercing of a theme object (most typically a pig) with an instrument saliently extended in one dimension with a point on the end which is brought into contact with the theme, such as a spear, pointed stick or needle.

Let us sum up the discussion to this point with a table showing all attested combinations of C&B verbs and lexical suffixes:

Table 3.7: Attested combinations of lexical C&B verbs and lexical suffixes

	Lexical suffix:	<i>-sa?</i>	<i>-ma?</i>	<i>-tuk</i>	<i>-thang</i>
Verbal root:		‘THM in pieces’, ‘functionality lost’, ‘undesirable’	‘completely’	‘part severed from whole’	‘split [in 2]’
CUT					
<i>[a]rang</i>	‘cut with small blade or saw’	○	○	○	○
<i>[a]lep</i>	‘cut with large blade’	○	○	○	○
<i>[a]lang</i>	‘cut in 2 [with any blade]’	*	*	*	○
<i>metʃip</i>	‘cut with scissors’	○	*	○	○
BREAK					
	‘break, <u>make afunctional</u> ’	<i>raksa?</i>	*	*	*
	‘break’	<i>tfaksa?</i>	<i>tfakma?</i>	*	<i>tfakthang</i>
	‘break, snap [twig/stick]’	<i>siksa?</i>	*	*	<i>sikthang</i>
	‘break/ snap brittle obj.’	<i>phaksa?</i>	<i>phakma?</i>	*	<i>phakthang</i>
	‘break/snap/pull apart rope, thread’	*	*	*	<i>thukthang</i>
POUND, SMASH, TEAR, PIERCE					
<i>[a]thep</i>	‘pound [with blunt object]’	○	*	*	○
<i>[a]khu</i>	‘pound’, ‘breaking [twig]’	○	*	*	○
<i>[a]nen</i>	‘smash’	○	*	*	*
<i>[a]fi</i>	‘tear [cloth, with hands]’	○	○	*	*
<i>[a]thu</i>	‘spear, pierce [with spear, needle]’	○	*	*	*

[○ = attested; * = ungrammatical]

3.2 C&B verb classes and typology: Differences in syntactic behavior

Guerssel et al. (1985) argue that CUT and BREAK verbs form distinct classes, crosslinguistically, partially on the basis of the different argument-structure alternations in which verbs of each class can participate. I have evaluated the three main claims (following) against the Chungli Ao C&B data:

- (a) BREAK verbs participate in a causative/inchoative alternation (*Janet broke the cup./The cup broke.*), while CUT verbs do not (*Justin cut the cake./*The cake cut.*);
- (b) CUT verbs participate in the conative alternation (*John cut at the stick.*); BREAK verbs do not (**I broke at the window.*);
- (c) CUT and BREAK verbs may both participate in a middle voice alternation (*Bread cuts easily./Ceramic breaks easily.*).

There exists a lexical semantic basis for hypothesizing that (b) and (c), at least, will hold for Chungli Ao; namely, for (b) conative constructions like *John cut at the stick* do not encode a strong claim about the endstate of the undergoer: rather, they explicitly leave the interpretation open. We know that the same is true for CUT-class verbs in Ao, which, in their uninflected forms, make no claim about endstate; the converse is true of BREAK-class verbs, which have lexical ‘suffixes’ (encoding endstate) lexicalized into them. We would not, therefore, expect BREAK-class verbs to be compatible with any construction that requires that endstate not be encoded. I examine the evidence by class, below. Likewise, for (c), middle voice alternations are, arguably, primarily concerned with the non-expression of an agent argument, and often take for granted the felicitous effecting of the event encoded in the verb.

3.2.0 The causative/inchoative alternation

Chungli Ao has been shown to have a construction analogous to the causative/inchoative alternation of English. As predicted, inchoatives, in which no agent is understood, are possible with BREAK-class verbs and [*a*]/*i* (‘tear’); not with CUT-class verbs. Observe:

- (77a) *maruk pasasa tfakma*
cup self break.PERF
“The cup broke [on its own].” [RE: 3/23/2009]

- (77b) # <carrot> *pasasa rang-sa?*
carrot self cut-SA?
Intended: “The carrot cut.” [RE: 3/23/2009]

Note that (77a) is interpretable, but in the possible interpretation, *pa-sasa* (‘him-self’) must corefer with a non-surfacing (=dropped) argument; that is, while (77a) cannot get an inchoative reading, it is interpretable as shown in (78):

- (78) *Øj <carrot> pasasaj rang-sa?*
[null.AGT] carrot self cut-SA?
“[Somebody] cut the carrot himself/herself.” [RE: 3/23/2009]

3.2.1 ‘Middle voice’ alternation

An utterance containing a middle voice alternation is defined here as one which an agent is unequivocally understood to be involved, but is not expressed by a surface argument. Chungli Ao cannot, perhaps, be claimed to have a true middle voice construction as such, but in form and function, the alternation examined by Guerssel et al. is analogous to a passive use of an ambitransitive verb. As is compatible with the claims of Guerssel et al. (1985), this use is possible for both CUT- and BREAK-class verbs. Observe:

- (79a) *au tʃi melamela a-lep-er*
bamboo DEM easy:RED CLASS-cut.with.machete-SEQ
“Bamboo cuts easily.” [Ao_MI_08Apr09_12_RE]
- (79b) *maruk tʃi melamela tʃakma-r*
cup DEM easy:RED break-SEQ
“Cups break easily.” [Ao_MI_08Apr09_12_RE]
- (79c) *<cookie> tʃi melamela phakma-r*
cookie DEM easy:RED break.brittle-SEQ
“Cookies break easily.” [Ao_MI_08Apr09_12_RE]
- (79d) *sing melamela sikthang-er*
stick easy:RED break.long-SEQ
“Sticks break easily.” [Ao_MI_08Apr09_12_RE]

3.2.2 Conative alternation

As predicted, Chungli Ao’s equivalent of the conative alternation is possible with CUT-class verbs (and SMASH, and POKE), but NOT with BREAK-class verbs:

Examples using CUT-type verbs are given in (80):

- (80a) *ni-i <carrot> nung rang-er tuktsi*
1.SG-AGT carrot upon cut-SEQ leave/put.down.PERF
“I cut at the carrot [but I couldn’t cut through it], so I left it.” [Ao_MI_08Apr09_04_RE]
- (80b) *ni-i singtung nung lep-er tuktsi*
1. SG-AGT tree upon cut.with.machete-SEQ leave/put.down.PERF
“I cut at the tree (w/machete) [but it wouldn’t cut], so I left it.” [Ao_MI_08Apr09_04_RE]

Examples using BREAK-type verbs are given in (81):

- (81a) *#ni-i <cookie> nung phakma-r tuktsi*
1.SG-AGT cookie upon break.brittle-SEQ leave/put.down.PERF
Intended: “I broke at the cookie [but it didn’t break], so I left it.” [Ao_MI_08Apr09_04_RE]

- (81b) #*ni-i* *sing* *nung* *sikthang-er3* *tuktsi*
 1.SG-AGT stick upon break.stick-SEQ leave/put.down.PERF
 Intended: “I broke at the stick [but it didn’t break], so I left it.”
[Ao MI 08Apr09 04 RE]

4.0 Summary, conclusions, future research

In this chapter, I have given thorough descriptive accounts of the morphosyntax and semantics of causative constructions in Chungli Ao, and compared this system of causative constructions to current accounts of the typology of causative constructions. The data show that Chungli Ao is sensitive to the Iconicity Principle; that is, my consultant consistently encodes differences in direct vs. less direct causative situations—parameter (6) in Dixon’s (2000) account. The only criterion related to the lexical predicate itself that proved to be relevant to the compatibility of causative construction was a formal one, *not* captured by Dixon’s account. All verbs are compatible only with the morphological causative. However, adjectives and nominals, which can serve as predicate heads in declarative utterances, are only compatible with a periphrastic causative construction. This pattern will be discussed further in Chapter 4, in which I propose an updated version of Dixon’s account.

I expanded upon the discussion of causativity via a case study of cutting and breaking verbs, and found that the full causal chain is not fully encoded in CUT-class verbs. Information about the endstate of the theme or undergoer entity must be encoded in a lexical suffix. By contrast, BREAK-class verbs seem to have lexicalized from [verb + lexical suffix] compounds, and as such, all verbs in this class encode endstate, obligatorily and unequivocally. I argue that this accounts for certain syntactic alternations available to each class of verb, and compare the Chungli Ao system to previous typological work by Guerssel et al. (1985).

These descriptive accounts have served to pave the way for future corpus work. Constructing a corpus of Ao texts was beyond the scope of this chapter. However, the compilation of such a corpus is, perhaps, the next logical step. With such a corpus, we could proceed to probe the relative frequency of lexical suffixes and causative constructions, and to examine each in a natural, un-elicited environment. A text corpus would also allow similar research on relative frequencies of verbs of different transitivity classes, analyses of transitivity being arguably more difficult to carry out based on elicited data alone.

Chapter 4

Prototypical causative constructions?

An empirical investigation of Dixon's (2000) model

0. Introduction & aims

This chapter moves away from language-specific case studies, and turns to crosslinguistic research in order to address some broader research questions about universal tendencies in the encoding of causative relationships. Chapter 1 included a literature review, discussing past approaches to causative constructions in the functional-typological and cognitive traditions, including Comrie (1981), Song (1996), Dixon (2000) and Talmy (2000). Chapters 2 and 3 presented in-depth case studies of the encoding of causation at the level of the lexical item, the morphological construction, and the syntactic construction, with reference to typological analyses as appropriate. The aim of the current chapter is to bring a new, larger body of empirical evidence to bear specifically on Dixon's (2000) account of the formal and semantic factors influencing (or forcing) a speaker's use of one causative construction over another, and the details of Dixon's account will therefore be recapitulated.

Linguistic typology in the Greenbergian tradition concerns itself with empirical data, focusing on the observable ("surface") forms that humans actually produce in language. I continue to orient myself firmly within this tradition, and will present the empirical results of my research. Grammatical encoding is "subject to vast, but structured (non-random) variation across the world's languages" (Schmidtke-Bode 2009: 7), and it is this variation itself that is the object of research. Crucially, while the latter part of the chapter does contain speculation as to the reasons for the distributions found, I do not have preconceived notions of how the distributions "should" look based on any assumed formal grammar, and will have nothing to say about genetically programmed universals (what we know as Universal Grammar; see Chomsky 2000).

Schmidtke-Bode (2009) contains a masterful overview of the theoretical and methodological underpinnings of contemporary typological research, and I will echo and briefly comment on two of his observations here. Schmidtke-Bode characterizes typological distributions as "geographical objects" and "historical objects" (8). What this boils down to is a concise explanation of the ways in which they are non-random: geography (for example, patterns of contact with unrelated languages) and diachronic development have significant, measurable effects on such distributions. While of course cognizant of the fact that linguistic forms change over time, this study not be able to present a principled diachronic account for why the distributional skewings are as they are, nor is that the intent. Likewise, it is not my aim to systematically describe effects related to contact. What the study *does* aim to do is to extrapolate a careful account of synchronic patterns from a geographically balanced statistical sample.

0.1 The research questions

In his (2000) account, Dixon offers a typology of causative constructions. I recapitulate an introduction to his study here. Many languages, as Dixon and many others have documented, have at least two causative constructions. Leaving aside for now the issue of lexical causatives (except where zero-derivation has been demonstrated to be a productive morphological process), these are usually broadly divided into 'more compact' and 'less compact', with labels, differing by analyst, indicative of relative length of the forms in question (e.g., Comrie's (1983) straightforward 'morphological'/'syntactic', or Song's (1996) 'COMPACT'/'AND'). Many analysts have attempted to summarize the semantic differences under the vague (but preliminarily useful)

rubric of the “Iconicity Principle” (Haiman (1983); see Huang and Su (2005) for a succinct discussion), which basically posits a correlation between the degree of formal compactness of the linguistic material encoding the causative macroevent and the perceived directness of the relationship between causing event and caused event: i.e., shorter forms, on the whole, were posited to encode more direct causation than longer forms, as in the classic English *I killed him*. (direct causation) vs. *I caused him to die*.(less direct causation) examples.

As I note in Chapter 1, the Iconicity Principle is sometimes useful, but fails to capture any fine-grained semantic distinctions that may be in play. The first attempt to take the analysis further, to my knowledge, was Comrie’s (1981:164-7) discussion of directness and control, which began looking at the semantics of the causer and causee as possible semantic factors influencing the distribution of different causative constructions. Dixon (2000), however, goes several steps further, identifying and fleshing out a system of nine (largely scalar) parameters along which causative constructions tend to vary, supported by data from his small typological survey. I recapitulate these here, with notes [in square brackets]:

(1) *Relating to the lexical verb involved in the construction:*

1. stative vs. active
2. intransitive vs. transitive vs. ditransitive

Relating to the causee:

3. having vs. lacking control [over the caused microevent]
4. acting willingly vs. unwillingly
5. partially affected vs. completely affected

Relating to the causer:

6. acting directly vs. indirectly
7. acting accidentally vs. intentionally
8. acting naturally vs. with effort [i.e., initiation of the caused microevent takes less or more effort]
9. involved vs. not involved in the activity [=the caused microevent]

This set of parameters is useful in and of itself, but, importantly, Dixon applies it to all causative constructions in a sample of around 25 languages. He stops just short of suggesting that causative constructions be modeled as radial categories, but he does present a set of sophisticated suggestions, noting that *more* formally compact causative constructions prototypically tend toward the following values on the above nine parameters:

Causer acts naturally [8], intentionally [7] and directly [6]; the causee either lacks control [3] or has control but is willing [3 & 4], and is only partially affected [5]. May apply only to active intransitive verbs [or may include some small subclass or transitives] [1 & 2], or to state verbs alone [1]. (Summarized from Dixon (2001:77).)

Less formally compact causative constructions, correspondingly, are said to tend toward the converse or opposing values with respect to each of the nine parameters above. Dixon thus provides a data-driven account of the prototypical ‘more compact’ and ‘less compact’ constructions, and calls for broader typological surveys to test his model. I take up this call: I have tested the above model against a larger typological sample, a sample whose overlap with Dixon’s model is minimal, and report my findings and their implications here.

With this background in place, the specific research questions under investigation here are as follows:

- (2) Of Dixon's nine parameters, do some subsets of parameters (or values of parameters) tend to pattern together more than others?
- (3) If so, do certain values on certain parameters tend to value together?
- (4) Do these subsets (if any) in turn correlate with relative formal construction compactness, that is, with "less compact" or "more compact"?

In the course of compiling my database, I have also, naturally, encountered information on causative constructions that cannot be adequately accounted for by Dixon's (2000) model (nor by the other models discussed in Chapter 1). In addition to the three main research questions above, which I will attempt to answer empirically to a reasonable degree of satisfaction, I have systematically collected data relevant to the following questions:

- (5) What other types of semantic information do we find packaged together with causative constructions? What kind of *CAUS* + α portmanteau morphemes do we encounter?
- (6) Are there crosslinguistic patterns in the other types of semantic information we find obligatorily encoded together with the causative?

In the sample here, certain obligatory combinations (causative + other semantic information) were shown to be more frequent than certain of Dixon's nine parameters, and this fact alone is sufficient to at least suggest the relevance of considering these obligatory combinations further. I do not expect to be able to answer questions (4) and (5) fully here, but in section 3.1 I will present some of the data, and use the findings to generate hypotheses for future research.

1. Methodology

In the construction of my typological sample, I have relied heavily on Nichols' (2004) guide to sampling. Nichols places a "medium" sample size at ~50 languages, and argues that such a sample size, if genealogically and geographically balanced, is adequate for searching for universals and generating hypotheses, making it a good fit for this project. I have chosen to do a family-based sample, with no more than one language from each major sub-branch of a stock (stock definition following Nichols' (2004: 10-14) list), although I do violate this with one pair of languages from Austronesian in order to ensure a sufficiently broad geographical sampling. For the final sample, for the purposes of statistical calculations, I have narrowed the sample to an even 50 languages. Note that in section 3.1, I refer to data from outside this sample, as noted.

1.0 The sample

In constructing the sample, I have aimed at very low overlap with Song (1996) and Dixon (2000), and for the inclusion of less-studied languages. The languages under investigation are as follows, listed with genetic affiliation, major region(s) spoken and primary data source(s):

Table 4.1: Languages sampled

[EUR = Eurasia; AF = Africa; OC = Oceania and Papua New Guinea; AUS = Continental Australia; N. AM = North America; MESO = Mesoamerica; S. AM = South America]

language	genetic affiliation	location spoken	region code	source(s)
Lezgi	Nakh-Daghestanian: Lezgian	Azerbaijan, Daghestan	EUR	Haspelmath (1993)
Japanese	Japonic	Japan	EUR	Kuno (1973); Harley (1995); author's fieldnotes
Armenian [Eastern]	IE (Armenian)	Armenia	EUR	Hagopian (2005), Megerdumian (2001), (2005)
Balochi	IE (Iranian)	Turkmenistan	EUR	Axenov (2006)
Betta Kurumba	Dravidian	India (Tamil Nadu)	EUR	Coelho (2003)
Chungli Ao	TB	India (Nagaland)	EUR	author's fieldnotes
Kolyma Yukaghir	Yukaghir	Russia	EUR	Maslova (2003)
Lao	Tai-Kadai	Laos	EUR	Enfield (2007)
Maithili	IE (Indo-Aryan)	India (Bihar)	EUR	Yadav (1996)
Udihe	Tungusic	Russia	EUR	Nikolaeva & Tolskaya (2001)
Eton	NC (Bantu)	Cameroon	AF	Van de Velde (2008)
Kunuz Nubian	E. Sudanic	Southern Egypt	AF	Abdel-Hafiz (1988)
Oromo	Cushitic	Ethiopia	AF	Dubinsky et al. (1988)
Jamsay	Niger-Congo (Dogon)	Mali	AF	Heath (2008)
Kisi	Niger-Congo (Atlantic, Atlantic)	Liberia	AF	Childs (1995)
Korya Chiini	Nilo-Saharan, Songhai	Mali	AF	Heath (1999)
Fongbe	Niger-Congo (Atlantic, Volta-Congo)	Benin	AF	Lefebvre & Brousseau (2001)
Lavukaleve	Papuan (non-Austronesian)	Solomon Is.	OC	Terrill (2003)
Palauan	Austronesian (Malayo-Polynesian, Palauan)	Palau	OC	Flora (1974)
Madurese	Austronesian (Malayo-Polynesian)	Indonesia	OC	Davies (2010)
Teiwa	Papuan (non-Austronesian)	Indonesia	OC	Klamer (2010)
Tukang Besi	Austronesian (Malayo-Polynesian, Celebic)	Indonesia	OC	Donohue (1999)
Toqabaqita	Austronesian (Malayo-Polynesian, Central-Eastern)	Solomon Is.	OC	Lichtenberk (2008)
Kambera	Austronesian (Malayo-Polynesian, Central-Eastern)	Indonesia	OC	Klamer (1998)
Puyuma	Austronesian (Puyuma)	Taiwan	OC	Teng (2008)
Ternate	West Papuan (non-Austronesian)	Indonesian	OC	Hayami-Allen (2001)
Nhanda	Pama-Nyungan	Australia (WA)	AUS	Blevins (2001)
Gaagudju	Gagudjuan (<i>non</i> -Pama-Nyungan)	Australia (NT)	AUS	Harvey (2002)

Kayardild	Tangkic	Australia (QLD)	AUS	Evans (1995)
Wardaman	<i>non</i> -Pama-Nyungan	Australia (NT)	AUS	Merlan (1995)
Assiniboine	Siouan	Canada, USA	N.AM	Cumberland (2005)
Choctaw	Muskogean	USA (MS, others)	N.AM	Ulrich (1986)
Molalla	isolate? Penutian?	USA (OR)	N.AM	Pharris (2006)
Makah	Wakashan	USA (WA)	N.AM	Davidson (2002)
Comanche	Uto-Aztecan	USA (OK, others)	N.AM	Charney (1989)
Halkomelem	Salishan	Canada (BC)	N.AM	Galloway (1977), Gerdts (2003)
Wyandot	Iroquois (Huron)	USA (OK)	N.AM	Kopris (2001)
Hupa	California Athabaskan	USA (CA)	N.AM	Golla (1970) and author's fieldnotes
Chimalapa Zoque	Mixe-Zoquean	Mexico	MESO	Johnson (2000)
Ika	Chibchan	Colombia	MESO	Frank (1985)
Waimiri Atroari	Carib	Brazil	S.AM	Bruno (2003)
Lokono Dian	Arawakan	Suriname	S.AM	Pet (1987)
Kwaza	<i>unknown</i>	Brazil	S.AM	Van der Voort (2000)
Urarina	<i>isolate</i>	Peru	S.AM	Olawsky (2006)
Hup	Maku/Macu (Nadahup)	Amazonia (various)	S.AM	Epps (2008)
Cavineña	Tacanan	Bolivia	S. AM	Guillaume (2008)
Mosetén	<i>isolate</i>	Bolivia	S.AM	Sakel (2004)
Tsafiki	Barbacoan	Ecuador	S.AM	Dickinson (2002)
Yagua	Yagua	Peru	S.AM	Payne (1985)
Bororo	Macro-Gê(?)	Brazil	S.AM	Crowell (1979)

Table 4.2. The sample by region

region	number	% of total
Eurasia	10	20%
Africa	7	14%
Oceania and PNG	9	18%
Australia	4	8%
North America	8	16%
Mesoamerica	2	4%
South America	10	20%
TOTALS	50	100%

1.1 Potential limitations

Some potential limitations of the sample itself are as follows: First, Austronesian may be oversampled; the current set was kept, however, in order to ensure a geographically and genetically broad sampling within Austronesian as a family. Second, Eurasia is slightly oversampled as a region; this skewing is due to the ready availability of high-quality descriptive grammars of languages from this region. Neither of these sampling-related limitations should have an appreciable effect on the results of this pilot study.

In collecting data for this project, much information had to be extrapolated from bodies of example utterances, rather than from any direct statement by the authors of the grammars I consulted. Rare is the descriptive grammar that makes a direct statement such as ‘Causee willingness motivates the choice of this construction over construction Y’. Therefore, for most languages, in order to decide which of Dixon’s criteria were crucially encoded in or crucial to the

distribution of a given construction, I compared example utterances from the resources available. I was conservative in these decisions: for example, Choctaw has a periphrastic causative construction with the full verb *tohno* ‘hire’ (as in ‘hire X to do Y’; Ulrich (1986: 137)) that appears to be compatible only with transitive (and therefore also active) verbs. The handful of examples given appears to confirm the author’s descriptive statement, showing the construction occurring only with transitive verbs. From this, we can clearly see that parameters 1 (stative vs. active) and 2 (transitivity) are crucial to the distribution of the construction. However, it does *not* follow that other parameters (or indeed, some other unconsidered formal or semantic factor) are irrelevant. As careful analysts, the most we can do in such cases is to avoid making a strong claim about the relevance of other parameters, which is what I have done in each such case, leaving all other cells blank. In terms of careful data collection, this is a plus, but it must be listed along with the limitations, because this conservative coding—refusing to make claims about non-relevance without exceptionally good evidence—led to smaller sample sizes for individual parameters than I would have liked. The implication for the analyses, however, is that the trends reported on are likely to be even more salient than the numbers here show: had I coded unclear cases as categorically irrelevant (see section 1.2), the vastly larger number of [0] values would have produced far more [0]-[0] correspondences between columns in my database.

In general, I have counted only those constructions that morphosyntactically affect the verb word or core predicate. As a well-known example of a construction which does not fit this criterion, consider two causative constructions from Japanese:

- (7a) NP_{causer}-NOM [[NP_{causee}-ACC] [VERB-(s)*ase*...]]
Also known as the *o*-causative, after the accusative case marker *o*.

Ex. *Alex-ga* *Ramon-o* *ik-ase-ta*
 Alex-NOM Ramon-ACC go- CAUS-PERF
 “Alex made Ramon go [somewhere].”

- (7b) NP_{causer}-NOM [[NP_{causee}-OBL] [VERB-(s)*ase*...]]
Also known as the *ni*-causative, after the oblique case marker *ni*.

Ex. *Alex-ga* *Ramon-ni* *ik-ase-ta*
 Alex-NOM Ramon-OBL go-CAUS-PERF
 “Alex let Ramon go [somewhere].”

In this construction, the causative morpheme *-(s)ase* is affixed to the verb, and increases the valency by one. (7a) and (7b) differ in that the causee has high degrees of control and willingness in (7b) (a ‘let’ causative), and lower degrees of control and willingness in (7a) (a ‘make’ causative). However, note that the semantic differences are marked only on the arguments; the verb word itself gives no indication, and the marker of causativity itself (the morpheme *-sase*) is identical. In cases like the above, the construction was added to the sample only if a direct statement was made regarding the parameters in question, or if the parameter was directly and clearly exemplified in the data at hand. While I take responsibility for the quality of data collected from available sources, I mention this as a potential limitation—typological work is, in a very real sense, limited by the thoroughness of available descriptive sources.

1.2 Simplifying assumptions and conventions

Transitivity (vis-à-vis parameter 2) is taken as a purely structural consideration: “intransitive” is one-argument, “transitive” is two-argument. (No constructions were found that were compatible

only with base ditransitive verbs.) This formal simplification was necessary because of the wildly different meanings of “transitivity” in different descriptive works/traditions: producing a descriptive account of the transitivity profile for each of the 50 languages in the sample was simply infeasible.

An attempt was made to record a value for each of parameters 3-9. In reality, each parameter is more accurately conceptualized as a cline, with a range of possible values, specific relevant values in turn being language-specific. For the purposes of enabling a crosslinguistic comparison, I have reduced the questions of relevance and value, respectively, to binary values. If a parameter is relevant to the licensing of a given construction, then that parameter is assigned a value of [1] in the spreadsheet; if irrelevant, a value of [0]. If no data were available, the cell in question was left blank and excluded from the calculation. Relevant parameters are then assigned a value in the adjacent column, as follows:

Relating to the causee:

3. having vs. lacking control [over the caused microevent]

A higher degree of control was assigned a value of [1]; lower degree of control, [0]

4. acting willingly vs. unwillingly

More willing, [1]; less willing, [0].

5. partially affected vs. completely affected

Completely affected, [1]; partially affected, [0].

Relating to the causer:

6. acting directly vs. indirectly

Acting directly, [1]; acting indirectly, [0].

7. acting accidentally vs. intentionally

Acting intentionally, [1]; acting indirectly, [0].

8. acting naturally vs. with effort

[i.e., initiation of the caused microevent takes less or more effort]

Acting naturally, [1]; acting with effort, [0].

9. involved vs. not involved in the activity [=the caused microevent]

Necessarily physically involved, [1]; otherwise, [0].

In addition to the nine parameters, compactness of construction was also encoded for each token, with “more compact” given a value of [0], “less compact” a value of [1]. Morphological causatives were typically assigned [0], syntactic and other periphrastic causatives [1]. In languages with only one formal type of construction, formal length of construction was of course the deciding factor taken into account. For example, Kolyma Yukaghir has only morphological constructions, but one of the constructions (*-š-čil’e*) is technically a synchronically decomposable compound, so it received a value of [1]. Lao has little (if any) morphology and only has syntactic causative constructions, as we might expect. However, one of these (*het-haj5* ‘make-give’) contains two verb words and is markedly longer, formally, than the other two (*het* ‘make’ and *haj5* ‘give,’ respectively), so *het-haj5* received a value of [1].

Chi-squared analyses²⁰ were run on every logically possible pair of parameters²¹, every pair of parameter values, and also on each parameter/construction length pairing. The null hypotheses are as follows:

- (8) Every pair or subset of parameters is equally likely to co-occur (i.e., be encoded together in or be crucial to the licensing of a single formal construction) with every other.
- (9) For constructions in which two or more parameters are encoded or crucially implicated, every pair of values for said parameters is equally likely to co-occur.
- (10) Every parameter has an equal likelihood of being relevant/crucial to constructions of either size value (“less compact vs. “more compact”).

In the next subsection, I report and discuss the outcomes of these calculations, and demonstrate that while the encoding of subsets of three or more parameters is exceedingly rare, pairs (of exactly two parameters) are not absent, and all of the above null hypotheses can be roundly rejected.

2. Findings

2.1 Parameter pairings

I examine each parameter in turn. In the following tables, the pair of parameters being compared occupy the leftmost columns. The value in ‘valid objects’ is the number of constructions in the sample for which both parameters named in that row have a value; the value in ‘events’ is the number of constructions for which both parameters have been assigned the identical, positive value. For example, observe the following abridged table:

Table 4.3. Example: inverse correlation between parameters 1 and 4

parameter	parameter	valid objects	events	χ^2	p
1	4 (willing)	37	9	9.756756757	<0.01

Table 4.3 shows the inverse correlation of parameters 1 and 4. Parameters 1 and 4 have both been assigned values in 37 constructions from the sample (‘valid objects’), and for only 9 of those constructions (‘events’) does parameter 4 have a value of [1] when parameter 1 has a value of [1]. Simply put, the relevance of parameter 1 is correlated with the absence/non-relevance of parameter 4, and the rightmost column shows that this correlation is statistically significant. I have abridged the raw counts below and presented only the total number of valid objects and events, and noted any correlations. However, as an example, I offer the raw numbers behind Table 4.3 here: Table 4.4 shows the number of outcomes for each of the four pairing possibilities available for each of Table 4.3’s 37 valid objects. Observe:

²⁰My sincere thanks to Dr. Youngung Shon, for running the statistical calculations for me. (Research design, data collection, data coding and analysis are my own, as are, of course, any remaining errors.)

²¹ The degrees of freedom for each calculation in this section is 1.

Table 4.4: Pairings within Table 4.3's 37 valid objects

parameter 4	parameter 1	
	1	0
	1	8
	0	20

I now present the following, fuller table:

Table 4.5. Negative correlations with parameter 1 - stative vs. active main verb

parameter	parameter	valid objects	events	χ^2	p
1	(compactness)	41	12	7.04	<0.03
1	3 (causee control)	35	11	4.82	<0.03
1	4 (willing)	37	9	9.75	<0.01
1	5 (affected)	35	0	35.00	<0.01
1	6 (direct)	36	9	9.00	<0.01
1	7 (intentional)	38	5	20.63	<0.01
1	8 (natural)	37	3	25.97	<0.01
1	9 (accompanied)	35	2	27.45	<0.01

Chi-squared analyses demonstrate that if parameter 1 (stative vs. active verb) is crucial to the distribution of a given construction, then parameters 3, 4, 5, 6, 7, 8, and 9 are overwhelmingly likely to *not* be crucially implicated. The only positive correlation present (not shown in Table 4.5; shown below, Table 4.6) is between parameter 2 and parameter 1, in that direction: if parameter 2 (transitivity) is crucial, then parameter 1 (stative vs. active) is also crucially implicated. This, however, is likely not due to any interesting phenomenon specific to causative constructions themselves, but rather may simply fall out from the fact that, in many languages, the distributions of transitivity and stative vs. active semantics are not independent of each other. To give perhaps the most basic example, transitive predicates are prototypically active rather than stative. (For a more detailed discussion, I refer the reader to Hopper and Thompson (1980) and Næss (2007), Chapter 2.) What is perhaps more interesting is the fact that parameter 2 almost never pairs with parameters 4, 5, 6, 7, 8, 9, as the following table shows:

Table 4.6. Correlations with parameter 2 (transitivity of main verb): parameter 1 positive, all others negative

parameter	parameter	valid objects	events	χ^2	p
2	1 (stative/active)	25	19	6.76	<0.01
2	4 (willing)	29	5	12.44	<0.01
2	5 (affected)	29	0	29.00	<0.01
2	6 (direct)	30	9	4.80	<0.03
2	7 (intentional)	33	5	16.03	<0.01
2	8 (natural)	31	4	17.06	<0.01
2	9 (accompanied)	29	3	18.241	<0.01

No significant correlation was found between parameters 2 and 3. Similarly to parameter 2, however, parameter 3 (causee control) is overwhelmingly likely to be relevant for constructions in which parameters 5, 6, 7, 8, and 9 are *not* relevant. Observe:

Table 4.7. Correlations with parameter 3 (causee control over caused microevent) positive and other parameter negative

parameter	parameter	valid objects	events	χ^2	p
3	5 (affected)	20	0	20.00	<0.05
3	6 (direct)	21	6	3.85	<0.05
3	7 (intentional)	22	6	4.54	<0.05
3	8 (natural)	22	2	14.72	<0.01
3	9 (accompanied)	20	2	12.80	<0.01

The relevance of parameter 4 (causee willingness) was shown to be a good predictor of the relevance of parameters 1 and 3, though the converse is not true. This correlation may not be entirely unexpected, as, if a causee has control (parameter 3) over his/her own participation in a caused microevent and does, in fact, participate in said event, we may infer something about his/her willingness to participate (parameter 4). As a crucial parameter, however, 4 is relatively rare, occurring in only 13 of 114 constructions.

Parameter 5 (partially vs. completely affected causee) was the rarest of all: in fact, it was never crucial in any of the 114 constructions.

Parameter 6 (directness of causer action) was found, unpredictably, to have no significant correlation with construction compactness: in other words, the Iconicity Principle was not found to hold. Parameter 6 showed a significant correlation with the *absence* of parameters 3, 4, 5, 7, 8, or 9. Observe:

Table 4.8. Correlations with parameter 6 (directness of causer action) positive and other parameter negative

parameter	parameter	valid objects	events	χ^2	p
6	3 (causee control)	24	6	6.00	<0.02
6	4 (willing)	23	3	12.56	<0.01
6	5 (affected)	24	0	24.00	<0.01
6	7 (intentional)	25	4	11.56	<0.01
6	8 (natural)	25	2	17.64	<0.01
6	9 (accompanied)	23	2	15.69	<0.01

Parameters 7 (causer intention), 8 (causer acting naturally), and 9 (causer accompanying causee) are each most likely to occur alone - that is, if 7, 8, or 9 is relevant to a given construction, then it is overwhelmingly likely to be the major factor (of Dixon's nine) influencing the choice of the construction in question. No significant correlations were found with construction compactness, nor with other parameters.

To summarize, I present the following table, showing relationships found among all parameters. [+] indicates a positive correlation; [-], a negative correlation. A blank cell indicates that no correlation was found. The table generalizes about predictive power and should be read directionally: basically, a [+] indicates that the relevance of the parameter in the left column

predicts the relevance of a parameter in the top row. Parameters 5, 7, 8, and 9 were not good predictors of any other parameter and are therefore excluded from the left column:

Table 4.9. Summary of statistically significant correlations

	compactness	1	2	3	4	5	6	7	8	9
compactness										
1	-			-	-	-	-	-	-	-
2		+			-	-	-	-	-	-
3					-	-	-	-	-	-
4		+		+						
6				-	-	-		-	-	-

2.2 Parameter value pairings

Two-way chi-squared analyses were run on every possible pairing of parameter values, generating a three-level, nine cell matrix showing correlations between parameter relevance ([0] or [1] for each) and values ([Y] or [N] for each relevant parameter). The only unequivocally strong, significant set of correlations involving more than 10 events was between parameters 3 and 4. Observe the following matrix:

Table 4.10. Correlations between causee control (3) and causee willingness (4)

3 \ 4	0 (not encoded)	N (encoded; low value)	Y (encoded; high value)
4			
0 (not encoded)	36	0	0
N (encoded; low value)	3	5	0
Y (encoded; high value)	0	0	6

As Table 4.8 shows, there are a total of 14 events (3+5+6) in which either parameter 3, parameter 4 or both are relevant. In 11 of these 14 events, not only were the parameters both crucial to a given construction, but the assigned value ([N] or [Y]) was identical, indicating a correlation between (1) a low degree of causee control with less direct causer action, and (2) a high degree of causee control with more direct causer action. This is in line with Dixon's prediction: however, we must keep in mind my above caveat: in order for this correlation to be of any real interest, I would propose that we first need to empirically demonstrate that causee willingness is able to license a causative construction independently of causee control, at all. As noted above, causee willingness (parameter 4) is an excellent predictor of causee control (3), but not vice versa. The current data set, in other words, does not support the treatment of 3 and 4 as independently conceptually useful in categorizing causative constructions.

The parameter pairs {3,6} and {3,7} also have 5 or more events each, but each exhibits a weaker (though significant) correlation; the significance almost certainly comes from the fact that the pairs are unlikely to occur together at all (that is, that the absence of one is a good predictor of the absence of the other), but I present the relevant matrices here for completeness:

Table 4.11. Correlations between causee control (3) and causer control (6)

3 \ 6	0 (not encoded)	N (encoded; low value)	Y (encoded; high value)
0 (not encoded)	21	3	2
N (encoded; low value)	4	0	1
Y (encoded; high value)	1	3	3

Table 4.12. Correlations between causee control (3) and causer intent (7)

3 \ 7	0 (not encoded)	N (encoded; low value)	Y (encoded; high value)
0 (not encoded)	21	2	2
N (encoded; low value)	4	0	1
Y (encoded; high value)	2	0	5

2.3 Correlations with construction compactness

Overall, less compact constructions are significantly correlated with the *non-relevance* of parameters 3, 4, 5, 7, 8, 9 ($p < 0.01$ for each pairing). No correlation was found to hold between construction compactness and transitivity (parameter 2).

Oddly, compactness was not at all correlated with parameter 6 (directness of causer control). Observe:

Table 4.13. Parameter 6 not correlated with construction compactness

parameter	parameter	valid objects	events	χ^2	p
(compactness)	6 (direct)	34	18	0.11	0.73

In other words, this data set failed to produce empirical support for the Iconicity Principle: low compactness is claimed, crosslinguistically, to correlate with less direct causative action (as in the now-famous *I killed him* vs. *I let him die*; also cf. my findings for Chungli Ao, Chapter 3, section 2.). This claim has been found to hold for other sets of languages, and I do not suggest that it is not a valid generalization; however, I also have no good explanation for the fact of the near-random patterning we see here.

When parameter 9 (causer accompanies causee) is relevant in a formally less compact construction, it will have a value of [Y] --that is, the causer will always accompany the causee in the effecting of the “caused” microevent. Interestingly, Dixon did not make any prediction about parameter 9’s relationship to formal compactness, perhaps out of recognition that it is extremely infrequent in the wild (occurring in only 4 of 114, or ~3.5% of the constructions in my sample). Perhaps this point can be added to his model as a proposed extension.

2.4 Summary to this point; discussion

To review, Dixon’s proposal, for formally less compact (smaller) constructions, is that the following parameter values will typically hold:

Causer acts naturally [8], intentionally [7] and directly [6]; the causee either lacks control [3] or has control but is willing [3 & 4], and is only partially affected [5].
May apply only to active intransitive verbs [or may include some small subclass

or transitives] [1 & 2], or to state verbs alone [1]. (Summarized from Dixon (2001:77).)

As the results in this section suggest, Dixon's (2000) claims about prototypical patternings of compact vs. less compact constructions are not well-supported. Parameter 5 was not found to be crucially encoded at all in a sample of 114 constructions from 50 languages, and parameters 7, 8 and 9 (causer accompanies causee) seem to nearly always occur in isolation. The one instance of a solid correlation among parameter values (with a sample of more than 10 relevant pairing events) was that between parameters 3 (causee control) and 4 (causee willingness). These two parameters were correlated: they were encoded together, at particular values (both low or both high), or were both systematically absent, at a statistically significant frequency. However, the correlation of these two alone is not, in and of itself, very analytically interesting, as discussed above. Since, in general, Dixon's parameters tend not to co-occur, an idea of modeling causative constructions around notions of semantic or formal prototypicality is not cleanly supported. A much larger sample may show Dixon to be correct in his proposal regarding correlations between values of semantic parameter, but my study has supported his caveat, which is that his proposal should certainly not be taken to suggest that the parameters are likely to pair together in subgroups. As shown here, if a semantic parameter is crucial, it is as likely as not to be the *only* relevant semantic factor present.

The formal factors, related to the lexical verb in the construction (i.e., parameters 1 and 2; stative vs. active verb, and transitivity of verb, respectively), were in fact the most frequently implicated of Dixon's nine. Given the infrequent occurrence of the semantic factors, however, in order to test certain pairings, we would need a sample sufficiently large to in turn provide a significantly large sample of data on the specific parameters to test. In this sample of 114 constructions from 50 languages, for example, Dixon's parameter 5 (causee partially affected vs. completely affected) was not instantiated even once. While this does tell us something about this parameter's frequency of occurrence in the wild, it does not tell us anything about its patterns of co-occurrence with other specific formal or parameters. In order to test such correlations, it may be fruitful to organize specific future research projects around geographically and genetically balanced samples which have also been specifically assembled to include languages with constructions that specifically encode certain values for specific parameters.

3. CAUS + α : constructions that obligatorily encode causativity and other semantic information

3.0 What gets encoded with causativity?

In the course of gleaning data for this chapter's typological sample, it has become clear that many languages employ causative constructions that cannot be adequately accounted for by Dixon's (2000) model (nor by the other models discussed in Chapter 1); these constructions obligatorily encode other semantic information along with causativity. Patterns of obligatory co-encoding is an understudied gap in research on causative constructions, ripe for future research (though see Pederson's (1991) dissertation for a masterful treatment of causativity and reflexivity, and Comrie & Polinsky, eds. (1993) for work on causativity and transitivity). Here I present 11 examples, (noting that some languages mentioned were not included in the main sample), and engage in an informed discussion about co-occurrence patterns, outlining specific avenues for future research.

The following patterns of obligatory co-encoding were noted, organized here by language:

- **Assiniboine** (Siouan; MT, USA; SK, Canada)

Manner is obligatorily encoded; causation is expressed via instrumental prefixes (which are in turn obligatory) such as *ma-* ‘X with a knife’ or *na-* ‘X by action of the foot or leg’. (Cumberland 2005: 227) Two of these can, however, sometimes be used with a generalized causative meaning -- distribution (that is, compatibility with lexical verbs) appears to be lexically specified. Observe:

- (11) *wókma-pi* *wa-ká-úspe-c*
 write-COMP AGT.1.SG-CAUS-learn-DECL
 “I taught him to write.” (Cumberland 2005: 227, footnote 1)

This *ká* usually means ‘by force of wind,’ but, as in example (11), is sometimes interpretable as a general causative. The general causative interpretation is thought to be lexically specified.

While they are not part of the sample, this phenomenon, in which causative is obligatorily always bound up in instrumental or manner suffixes, is known to hold in many Algonquian languages, as well. Consider **Ojibwe**’s large number of finals; for example - *ishk-aw* ‘X by action of body or foot,’ or *ibij-* ‘X by pushing or pulling,’ as in the following partially-inflected verb:

- (12) *daashkikamigibijige-*
daashk-ikamig-ibij-ige-
 tear-ground-push/pull-INDEF.OBJ-
 ‘plow’ (Rhodes, in press: 2)

Also consider the crucial contribution of the matrix verbs in constructions that encode causation even in languages like English (consider the classic *I sneezed the napkin off the table*). The issue of lexical verb vs. construction vis-à-vis semantic contributions will be discussed further below.

- **Puyuma:**

The periphrastic causative obligatorily encodes manner of causation. This construction is a serial verb construction in which the first verb slot is obligatory filled with a lexical verb contributing manner information. Observe:

- (13) *tu=gingaging-aw* *mu-trereb*
 3.GEN=shake-TR CAUS-fall
 “It [wind] shook [the tree] down.” (Teng 2008:245)

- **Ternate:**

The morphological causative sometimes encodes instrumentality, manner, or benefactive plus causative (that is, causing X to do Y for Z’s benefit). Consider the following pairs of examples:

- (14a) *ngori tola gumi*
 1.SG cut rope
 “I cut the rope (by hand).”

- (15b) *ngori si-tola gumi*
 1.SG CAUS-cut rope
 “I cut the rope (with an instrument).” (Hayami-Allen 2001:133)
 [Hayami-Allen indicates that this is a true causative, meaning something like “I caused an unspecified object to cut the rope.”]

- (16a) *mina hoi ngara*
 3.SG.FEM open door
 “She opened the door.”

- (16b) *mina si-hoi ngara*
 3.SG.FEM open door
 “She opened the door [for me].” (adapted from Hayami-Allen 2001:132)

- **Tukang Besi:**

Permanency of caused state (or length of continuing relevance of caused event?) is obligatorily encoded.

- (17) *no-hoko-leama-ngkene te ikaka-su*
 3R-FACT-good-COM CORE elder.sibling-1.SG.POSS
 “They improved it with my elder brother.”
 [The fixed object is now perfect, and can be expected to remain so.]

- (18) *no-pa-leama-ngkene te ikaka-su*
 3R-CAUS-good-COM CORE elder.sibling-1.SG.POSS
 “They fixed it up with my elder brother.”
 [It’s better, but not perfect; the fix-up may be only a temporary job.]
 (Donohue 1999: 207)

- **Kolya Yukaghir:**

Exhibits separate portmanteau morphemes for causative + distributive (-*t*) and causative + resultative (-*ie*). The ‘resultative’ causative, similar to *Tukang Besi -hoko*, indicates the causer’s bringing about a caused state that has a high degree of permanency. Observe:

- (19) *tī mod-ie-t tet-in tī miestelek ā-te-me*
 here sit-CAUS-SS:IPPV you-DAT here place make-FUT-OF:1.SG
 “I will keep you here and make a place for you here.”

mied’i-ge anil-ek im-ie-l’el-mele
 sledge-LOC fish-PRED be.in-CAUS-INFR
 “He had fish in his sledge (he put it there, and kept it there).” (Maslova 2003:224)

In other words, as in *Tukang Besi*, we see a focus on the semantics of the caused state or event.

- **Eton:**

Causative morphology can apply to base transitive verbs, but contributes an intensive or distributive meaning, rather than a causative meaning. Observe:

- (20) *sàŋ*
cut.TR
'cut, groove [something]'

- (21) *sàŋ-là*
cut.TR-CAUS
'cut in pieces'

(adapted from Van de Velde 2008:122)

- **Kayardild:**

Exhibits a construction in which causer sets causative macroevent in motion, but is described as semantically "removed from effect". Observe an example:

- (22) *dula-lutha*
grow.fat-FACT²²
"make [someone] fat" (adapted from Evans 1995:355)
[becoming fat does not happen near/immediately after the causing microevent(s)]

- **Molalla (isolate, OR, USA):**

Morphological causatives obligatorily encode translative motion; separate morphemes for allative and ablative (motion toward and from speaker). Molalla *-i:w* requires that the causee be moving away from the causer. Observe:

- (23) *psí:wlapaʔsk*
m-s-i:w-lap-ha-ʔs-k
2.SG.OBJ-MASC-CAUS-get.in-PSF-PRES-1.SG
"I made you go." (Pharris 2006:106)

The converse of an accompanying causer (Dixon's parameter 9), this utterance necessitates that the causer *not* accompany the causee, but that the causee move away from the causer.

- **Makah (Wakashan, WA, USA):**

Morphological causatives obligatorily encode aspect, prototypically perfective, as in the following:

- (24) *ʔackatsa:ʔaʔits*
ʔackat-sa·p=ʔaʔ=(b)it=s
jump-CAUS.PERF=TEMP=PAST=INDIC1.SG
"I made him/her/it jump." (Davidson 2002:227)

²²The factitive suffix is one major strategy for encoding causality.

If the situation calls for aspectual marking other than perfective, a different morpheme must be used. Note, crucially, that *sa:p* is not compositional: that is, it is a portmanteau morpheme not formally separable into CAUS + PERF.

In the following section, I discuss the above examples by semantic category, and examine their significance for future typological work.

3.1 Discussion; categories to explore in future research

I propose based on the above attested examples (section 3.0), that the following broad categories of information are likely to be co-encoded with causativity, and therefore need to be explicitly included in future typological work:

- (25) Causer's relationship (real or perceived) to the caused microevent

Four of Dixon's nine parameters relate to the semantics of the causer, but only parameter 9 (whether or not the causer accompanies the causee) has anything to do with the relationship of the causer to the *caused* event or state. In languages like Kolyma Yukaghir and Tukang Besi, above, there is an emphasis on the semantics of the caused microevent (using 'microevent' here to cover both events and states). Also crucial, however, is the notion of causer control: in order to employ the morphemes exemplified above, the causer must have a large degree of control over the caused state (or event), and this must be conceptually distinguished from causer control over the causee's actions. However, the extent that the causer needs to participate with the causee in such a caused agency construction, or maintain physical contact with the theme argument in a cause-become construction, is not clear, so such semantic requirements cannot neatly be subsumed into parameter 9.

I discuss the next two categories together:

- (26) Co-events, particularly translative motion events that accompany causation itself;
 (27) Manner or use of instrument;

Any consideration of co-encoding patterns in which these semantic factors are implicated is strongly reminiscent of Talmy's (2000) discussion of lexicalization patterns. The major contribution of this discussion was his incredibly thorough treatment of motion verbs, culminating in a proposed typology of such verbs, centered around types of semantic information obligatorily co-encoded, including combinations of a central event with other cognitively basic notions, such as FIGURE, PATH GROUND, and co-EVENT. I offer a number of specific examples from Talmy and from my own data, and then discuss their importance:

- (28) MOVE + co-EVENT (manner)
*The rock **slid** down the hill.* [Rock moves by rolling.]
- (29) MOVE + co-EVENT (cause)
*The napkin **blew** off the table.* [Napkin begins moving due to blowing.]
 (summarized from Talmy 2003: 28-29)

(30) MOVE + PATH

*La botella **entró** a la cueva.* (Spanish)

“The bottle went into [entered] the cave.” [MOVE + ‘in’ (PATH) encoded together]

Within systems in which MOVE + PATH is the central pattern, MANNER often must be encoded separately:

(31) *La botella **entró** a la cueva flotando.* (Spanish)

[lit. “The bottle **entered** the cave floating.”]

“The bottle **floated into** the cave.”

(Talmy 2003: 49-50)

Japanese is another well-known example of a language in which MOVE + PATH is encoded in most (perhaps all) motion verbs, and manner must be encoded separately. Note:

- (32a) *heya no naka e hair-ta* [MOVE + PATH]
room POSS inside to enter-PERF
“[I] entered/went into the room.”

- (32b) *heya no naka e hashir-te hair-ta* [‘run’ (MANNER) in second V]
room POSS inside to run-CONV enter-PERF
“[I] ran into the room.” [lit. “entered the room running”]

- (32c) **heya no naka e hashir-ta* [attempting to encode manner in the main verb fails]
Intended: “I ran into the room.”

(33) MOVE + FIGURE

It rained in through the bedroom window. [‘Rain’ is the object doing the moving.]

(Talmy 2003: 57)

Many Native American languages have such verbs. Consider the following from Atsugewi (Hokan, California):

- (34) *c’wast’aq’íc’ta*
‘-w-ca-*st’aq’*-ic’t-^a
AFF_j-AFF_j-CAUS.wind-runny.icky.material.moves-into.liquid-AFF_j
[N.B.: ‘-w-^a form a discontinuous dependency indicating 3rd-person subject, factive mood.]
[lit. “Runny icky material moved into liquid from the wind blowing on it.”]
“The guts blew into the creek.” (Talmy 2003:59)

The following examples are from Hupa:

- (35) *te:digit*
ø-ti-di-git
LOW.SUBJ-INCEP-THM-group.moves
“A herd [of deer] takes off running.” (author’s fieldnotes)

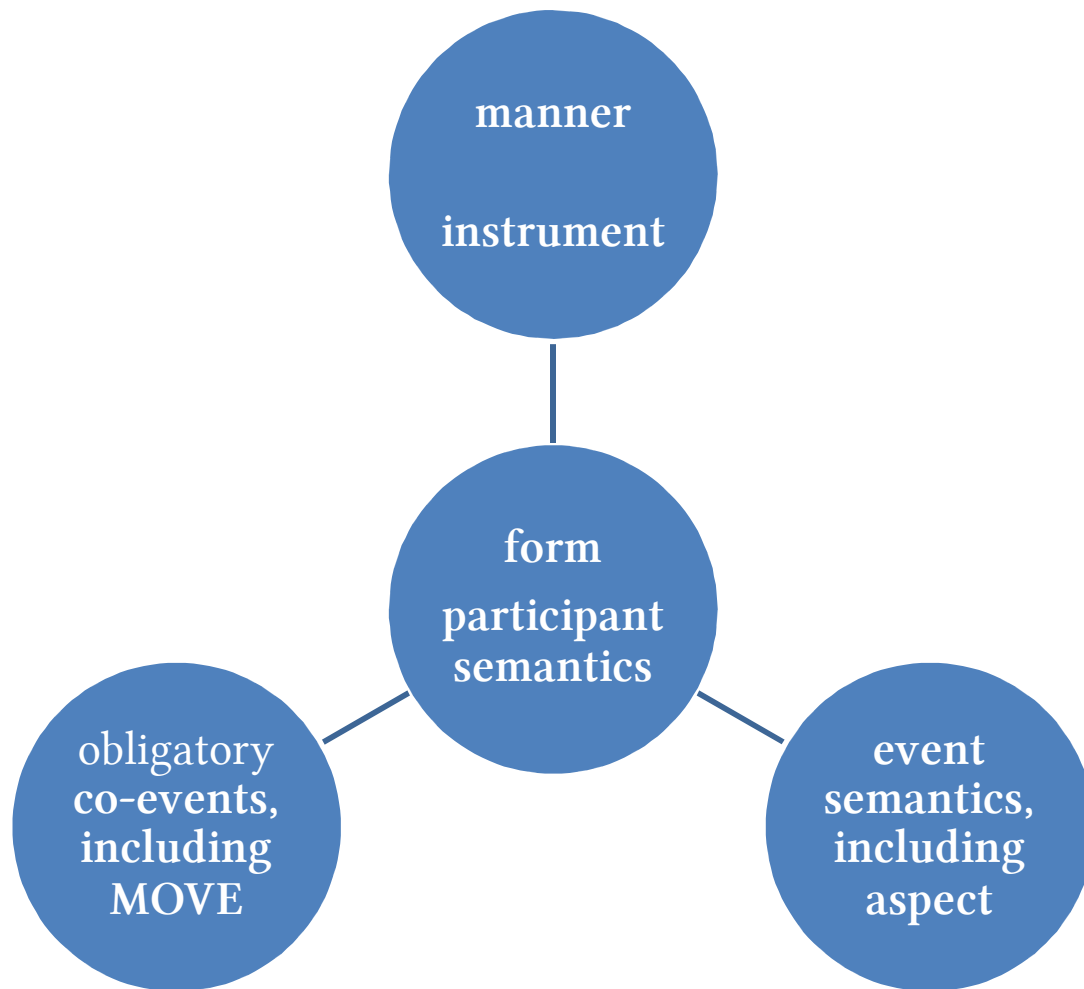
- (36) *dah=yi-wi-t-kit* *?ah*
above=natural.force-PERF-CLS-cloud.moves cloud
“the floating cloud” (from “Origin of the Ch’idilye”)

Talmy notes that MOVE may also be encoded with two or more other categories of semantic information, as in the following English example conflating MOVE, GROUND and PATH:

- (37) *I shelved the books.* [Books (FIGURE) MOVE onto (PATH) a shelf.]
(2003:62)

Future typological research on causative constructions will need to offer an account (based on a larger, more systematic sampling than can be provided here) that includes the types of co-encoding patterns I have brought together in this section. I summarize these visually in the following schematic table. We are not yet in a position to make a strong claims about the relative centrality, or even likelihood of co-occurrence with the causative, of the non-central concepts listed. We can say, based on my pilot study, that the factor related to the verb (stative/active and transitivity) are more frequently crucial than any specific semantic factor, but frequency alone may not be enough to bolster an argument about their relative centrality to causative constructions crosslinguistically. Further work that incorporates the other semantic information as I propose here may indeed find that certain co-encoded concepts, such as manner or instrumentality, are more central (or, minimally, more frequently obligatory to causative construction licensing) than are certain of Dixon's parameters: my placement of *participant semantics* (encapsulating Dixon's criteria 3-9, plus a more nuanced consideration of the relationship between causer and caused state or event, as above) is tentative, and should be read with the detailed findings of section 2 in mind.

Figure 4.14. A new integrative view for future research



I propose that Talmy’s otherwise excellent account of motion verbs, categorized in terms of other salient, cognitively basic concepts they obligatory encode, is a useful *type* of account to aim for as we move forward, with the following caveat: such an account is not uncontested. Goldberg (1995, 1997, 2006) has analyzed Talmy’s MOVE + co-EVENT, for instance, as a composite, an integration of a lexical verb (and other lexical material, but let that pass) and a construction. A prototypical example might be the English caused motion construction ([NP VP NP PP] with the relations [SUBJ V OBJ OBL], as in *I rolled the ball into the slot*, in which the manner is contributed by the lexical verb, a great number of which are likely to integrate with the construction felicitously. This relationship is equally well-exemplified by nearly any of the English constructions described in Goldberg (1995), including the ditransitive construction [Subj V OBJ OBJ₂, ex. *I punted you the ball*] and the resultative [SUBJ V OBJ X_{comp}, ex. *I shot him dead*].

Goldberg would surely oppose Talmy’s stance of putting the burden of manner or cause (as in examples (28) and (29) on the lexical item in such cases: indeed, Goldberg touts this separability (“implausible verb senses are avoided”; 1995:9) as one of the key advantages of a construction grammar approach to argument structure. I find that I agree with Goldberg, and therefore suggest that constructions conflating, e.g., manner with causation in a truly non-

compositional way (a non-decomposable unit) must be distinguished from cases in which a lexical verb simply adds the manner component to a (general) causative construction. This may rule out examples such as (13), from Puyuma, pending future research.

Such caveats notwithstanding, we can expand Dixon's account with a Talmyian understanding of conceptual pairings. Consider again Molalla's *-i:w*, which obligatorily encodes :

- (38) *psí:wlapaʔsk*
m-s-i:w-lap-ha-ʔs-k
2.SG.OBJ-MASC-CAUS-get.in-PSF-PRES-1.SG
"I made you go." (Pharris 2006:106)

Dixon and Talmy together allow us to give a reasonable picture of the formal and semantic factors encoded in and crucial to licensing the affix. We can say:

- causative + co-EVENT (MOVE);
- the affix applies to any lexical verb, so Dixon's parameters 1 and 2 are emphatically irrelevant;
- The causer must *not* accompany the causee, so Dixon's parameter 9 is relevant, and has a low value.

The following issues are the next in line to be tackled:

- The relative frequencies of co-occurrence of these 'peripheral' concepts with causativity;
- Ranges of inter-category variation (e.g., what types of MANNER or MOTION are found to be co-encoded with causativity);
- Whether some of these more 'peripheral' concepts are more or less likely to co-occur with certain specific formal and 'core' semantic parameters, and if so, which.

I leave these to the post-dissertation stage.

Chapter 5

Summary and directions for future work

0. Summary and recap

This dissertation has brought together descriptive work on causative constructions in two understudied languages with a typological pilot study based on a medium-sized typological sample. The descriptive case studies touched on causativity at the level of syntactic constructions, morphology, and the lexical item, and branched into other areas of theoretical interest, such as semantic transitivity. In this chapter, I briefly recapitulate the findings and contribution of each chapter, and lay out questions for extending

0.1 Hupa

Chapter 2 presented an account of the formal and semantic aspects of the Hupa syntactic causative construction, and analyzed its distribution with respect to Dixon's (2000) typological proposal. I demonstrate that causee control (Dixon's parameter 3) over the caused microevent is a significant semantic factor in licensing this construction. I also show that Næss' (2007) model of transitivity as a set of semantic prototypes, as applied to causative event participants, nicely accounts for other aspects of the distribution--particularly, why some events can be encoded with in causative construction, and other, quite similar, events must be encoded in a result clause or purpose clause.

The next reasonable step in this vein should be to work toward a description of result clauses and purpose clauses, which have never been described for Hupa. This dissertation touches on only a handful of forms, and the variety of such constructions, let alone the details underlying their distribution, remain largely unknown.

It was also demonstrated that for at least some 'causative' Hupa verb themes, the entire causal chain (or causative macroevent, causing microevent + caused microevent, or however we may choose to categorize it) is clearly not encoded in the verb word alone. This raises questions about my inquiry (Chapter 2, section 3.0) into the distribution and frequency of 'causative' themes in the wild: While it is certainly useful to have these preliminary figures nailed down, they are perhaps best taken as fodder for generating a new set of research questions. Future work on causal chains within fully inflected verb words but beyond the bare lexical theme itself (which was the focus of this section) will begin by cataloguing all relevant incorporable adverbial material and examining the role that each morpheme (or, often, discontinuous dependency) plays in encoding portions of the causal chain. A fuller corpus study can then proceed, drawing on a larger corpus (currently under compilation) and attempting to account for the distribution not only of lexical causatives themselves, but of these incorporable strings.

0.2 Chungli Ao & other Kuki-Chin-Naga languages

Chapter 3 presented an analogous case study of various causative constructions in Chungli Ao, characterizing their distribution with respect to Dixon's (2000) model. I presented an in-depth case study on Chungli Ao encoding of cutting and breaking (C&B) events, including a discussion of the semantics and distribution of several lexical suffixes, and the elements of the causal chain they encode. Building on Escamilla (2010), I also discussed syntactic alternations systematically available to CUT-class verbs and BREAK-class verbs, respectively.

One major step forward for research on Chungli Ao would be the construction of a corpus. My descriptive accounts have served to pave the way for future corpus work, and I have referred

to a handful of texts collected in the course of elicitation work, but constructing a sizeable text corpus was beyond the scope of this chapter. With such a corpus, we could proceed to probe the relative frequency of lexical suffixes and causative constructions, and to examine each in its natural, un-elicited environment. A text corpus would also allow similar research on relative frequencies of verbs of different transitivity classes, analyses of transitivity being arguably more difficult to carry out based on elicited data alone.

Being able to make a more detailed comparative study, including languages known to be closely related to Chungli Ao, might allow us to investigate issues related to the origins of the synchronic systems. As mentioned, the only comprehensive description to date is Coupe's (2007) grammar of Mongsen Ao. However, as of the time of writing, I am beginning elicitation work on Lotha (Lhota) with a native speaker in Berkeley, California. Only minimal descriptions of causatives and potentially related clause types (e.g., purpose clauses) in Lotha have been attempted in the literature, e.g., Acharya's (1983) *Lotha grammar*, and ongoing student work at Nanyang Technological University in Singapore, so new work on Lotha should, over time, help us understand Chungli Ao's system in its geographical and genetic context.

0.3 Typological work

Chapter 4 moved away from language-specific case studies, turning to crosslinguistic research in order to address some broader research questions about tendencies in the encoding of causative relationships. I brought a new, larger body of empirical evidence to bear specifically on Dixon's (2000) account of the formal and semantic factors influencing a speaker's use of one causative construction over another. Dixon's (2000) claims about prototypical patternings of compact vs. less compact constructions were found to not be well-supported. Parameter 5 (partially versus completely affected causee) was not found to be crucially encoded at all in a sample of 114 constructions from 50 languages, and parameters 7 (causer intentionality), 8 (naturalness of causer action) and 9 (causer accompanying or not accompanying causee) nearly always occur in isolation. The one instance of a solid correlation among parameter values (with a sample of more than 10 relevant pairing events) was that between parameters 3 (causee control) and 4 (causee willingness). These two parameters were correlated: they were encoded together, at particular values (both low or both high), or were both systematically absent, at a statistically significant frequency. Since, in general, Dixon's proposed semantic parameters tend not to co-occur, modeling the distribution of causative constructions around notions of semantic prototypicality is not shown to be cleanly feasible.

After presenting the results of my typological pilot study, I presented a variety of causative constructions that obligatorily encode other conceptual information along with a notion of causativity, and grouped these into a few broad groups, including:

- Relationship of causer to caused microevent;
- Manner of causation, or use of instrument in effecting the caused microevent;
- Co-events, such as translative motion.

I note that functional-typological work on causative constructions to date has failed to account for this variety, and I propose that a model akin to Talmy's (2000) account of lexicalization patterns in systems of motion verbs may be a useful way forward. Of course, the variety and distribution of such co-obligatory material remains to be probed. Some pressing questions include:

- What, in the wild, are the relative frequencies of co-occurrence of these ‘peripheral’ concepts with causativity?
- Are some of these more ‘peripheral’ concepts more or less likely to co-occur with certain specific formal and ‘core’ semantic parameters? If so, in which combinations?
- What ranges of inter-category variation do we find? What types of MANNER or MOTION are found to be co-encoded with causativity? We know from Talmy’s work, for example, that MOVE (basic translative motion) verbs themselves commonly co-encode concepts like PATH or FIGURE. Are certain complex types of motion found to co-encode with causativity?

1. Concluding comments

This dissertation has touched on a variety of issues that should interest linguists from various subfields. I have already aired my hopes that construction grammarians will bring their expertise to bear on future typological work on causative constructions. Though it was beyond the scope of this dissertation, it occurs to me that force dynamics (as conceptualized and applied by Sweetser 1990, Talmy 2000, Langacker 1991 and others) would be a useful tool for characterizing a number of the specific semantic parameters related to participants in causative constructions: Talmy 2000 (vol 2) in fact began a similar analysis for basic causative situations, and this could be easily extended to the wide variety of constructions touched on in this dissertation. I look forward to seeing future research expand on the account given here.

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