

THE INVERSE CONTINUUM

by

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Abstract

The majority of languages in the world encode participants in a clause according to the well-known concepts of subject and object. However, a small number of languages make use instead of the semantically based ‘direction’ system known as the inverse construction. A direction system is determined by two separate phenomena: a semantic hierarchy (the ranking of participants based largely on semantic features like person or animacy), obviation (the relative discourse prominence of two third persons), or both, impose an alternation between a direct clause and an inverse clause. A canonical example comes from Plains Cree, where first person outranks third person in the semantic hierarchy:

- | | | | |
|-----|---------------------------|-----|---|
| (a) | ni-pamih-âw | (b) | ni-pamih-ik |
| | 1-take.care.of-3DIR | | 1-take.care.of-3INV |
| | ‘I take care of him/her.’ | | ‘S/he takes care of me.’ |
| | | | (Literally: ‘I take care of him/her’ inverted). |

Both clauses are transitive, and both have identical person agreement. But the two clauses have different verbal morphology. Example (a) is direct, as indicated by the DIR suffix, and the flow of action goes from a higher ranking participant, the first person singular, to a lower ranking participant, the third person singular. Example (b) is inverse, as indicated by the INV suffix, and the flow of action goes from a lower ranking third person to a higher ranking first person. The direction system allows the grammar to produce transitive clauses in which the actor ranks semantically lower than the undergoer without actually having a means for expressing this within the agreement system, thereby saving on the number of person forms in the paradigm.

This thesis is a survey of inverse constructions in the world's languages. First, I develop a set of formal and functional criteria of inverse constructions based on Algonquian languages, like Cree, which are agreed to have canonical inverse constructions. Then I survey eleven languages from various language families that have been claimed to exhibit inverse systems. Using these criteria, I determine how strong or weak the inverse construction in each language is. This leads to a typology of inverse systems. The Total Inverse constructions (found in Cree, Sahaptin, Mapudungan, and Navajo) are shown to have all grammatical properties associated with Inverse systems. The Obviation Inverse constructions (found in Kutenai and Tzotzil) have almost all the features associated with inverse constructions. The Weak Inverse constructions (found in Carib, Chukchee, and Chepang) lack a number of inverse features. Based on their individual characteristics, the languages make up an inverse continuum. Furthermore, I identify three languages (Korean, Picuris, and Lummi) that have been given inverse analyses but which do not meet the criteria for the range of systems that I propose. I therefore conclude that these do not actually contain inverse constructions. Rather the passive voice is at work in these languages in which the actor is demoted to oblique status.

The primary contribution of this thesis is typological. I provide a detailed analysis of three types or degrees of inverse systems. In so doing, I propose tighter constraints for differentiating direct-inverse from active-passive alternations thereby providing cross-linguistically valid criteria that can be used by researchers in the analysis of unclear cases.

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Abbreviations

1	first person	OBV	obviative
2	second person	PASS	passive
3	third person	PAST	past tense
3'	third person obviative	PF	perfective
A	ergative agreement	PL	plural
ABS	absolutive	PLECX	plural exclusive
ACC	accusative	PLINC	plural inclusive
AF	agent focus	POSS	possessive
AGT	agent	PRED	predicative
B	absolutive agreement	PREF	prefix
CAUS	causative	PROG	progressive
CONJ	conjunct	PROX	proximate
COP	copula	PS	propositional structure
CP	complementizer phrase	REFL	reflexive
CPL	collective plural	SAP	speech act participant
DAT	dative	SG	singular
DECL	declarative	STAT	stative
DEF	deferential particle	SUBOR	subordinate
DET	determiner	TA	transitive animate
DIR	direct	TERM	terminal
DO	direct object	TI'	transitivity decrease
DU	dual	TNS	tense
ENC	enclitic	TOP	topic
ERG	ergative	TR	transitive
EVID	evidential	V	verb
FUT	future tense	WH	wh-marker
GL	goal		
ICP	incompletive aspect		
IMPF	imperfective		
IND	indicative		
INDEF	indefinite		
INST	instrumental		
INV	inverse		
IO	indirect object		
MD	mode		
MID	middle voice		
MOM	momentaneous		
NEG	negative		
NMLZR	nominalizer		
NOM	nominative		
OBJ	object		

Chapter One: The Inverse Prototype

Inverse constructions in a wide range of languages have garnered considerable attention in the past two decades. They are often compared or confused with passives. While a number of languages have been given inverse analyses, no cross-linguistic typology has previously been put forth. The primary purpose of this thesis is to identify the properties of inverse constructions in order to constrain the inverse type, so that it is clear when a system is inverse and when it is passive. Languages vary with respect to how many inverse properties they exhibit. Those that have all of the properties are Strong Inverse languages. Those that have few properties are Weak Inverse languages. The range of strong to weak forms the Inverse Continuum.

Generally, inverse systems in various languages are compared to the system found in the Algonquian languages, which is traditionally considered a prototypical inverse. The following examples from Plains Cree (Dalhstrom 1991) illustrate a prototypical direct and inverse pair.

- (1) *ni-wâpam-âw*
1SG-see-3DIR
'I see him/her.'
- (2) *ni-wâpam-ik*
1SG-see-3INV
'S/he sees me.'

In (1) and (2), the verb takes the first person singular prefix *ni-*. The suffixes *-âw* and *-ik* indicate whether a first person singular is acting on a third person or a third person is acting on a first person. In (1), the flow of action is from the first person to the third person; it is direct. In (2) the flow of action is from the third person to the first; it is inverse. This introduction provides a sketch of Cree morphosyntax in order to illustrate

the properties of the inverse system and how it functions. These properties are then used in subsequent chapters to rank other inverse systems. The following sections will introduce the five properties of the Cree inverse system.

1.1 Ranking Clause Participants

Languages of the world rank clause participants in a number of different ways. In some cases, they are ranked semantically by person. Usually, first person outranks second person, which outranks third person. This is known as a person hierarchy. In general, Speech Act Participants (SAPs) i.e. first or second persons, outrank third persons cross-linguistically. Other languages may semantically rank participants according to an animacy hierarchy. In this case, animate nominals out rank inanimate nominals.

Many languages rank participants according to how prominent they are in the narrative or discourse. In some languages this is a formally marked obviation system. Typically, an obviation system ranks two third persons that co-occur in a clause. The proximate participant is more central to the discourse by virtue of being introduced first or being more topical. The obviative participant has a peripheral role in the clause. It is not the central character in the discourse. Sections 1.1.1 and 1.1.2 show how Cree uses both semantic hierarchies and obviation to determine whether clauses will be direct or inverse.

1.1.1 Semantic Hierarchies

Cree and the majority of Algonquian languages use a person hierarchy that ranks participants in the following order:

(3) 2nd person > 1st person > 3rd person

This hierarchy is responsible for whether the verb will be in the direct form (1) or the inverse form (2). If the flow of action from one participant to another moves from left to right on the hierarchy in (3), the verb is direct. If it flows from right to left, then the verb is inverse. The clauses in the left hand column below are direct; a participant higher on the hierarchy is acting on a participant lower on the hierarchy. In the right hand column, the flow of action on the hierarchy is reversed and the clauses are inverse:

- | | | | | | |
|-----|-----|---|-----|--|------------------------------------|
| (4) | (a) | 2→1
ki-pakamah-on
2-hit-1DIR
'You hit me.' | (b) | 1→2
ki-pakamah-otin
2-hit-1INV
'I hit you.' | (Fadden: fieldnotes.) ¹ |
| | (c) | 2→3
ki-pakamahw-âw
2-hit-3DIR
'You hit him/her.' | (d) | 3→2
ki-pakamh-ok ²
2-hit-3INV
'S/he hits you.' | |
| | (d) | 1→3
ni-pakamahw-âw
1-hit-3DIR
'I hit him/her.' | | 3→1
ni-pakamahw-ok
1-hit-3INV
'S/he hits me.' | |

When SAPs interact with each other and with third persons, the choice between direct and inverse is grammatically obligatory. For example, in Cree, there is only one grammatical direct clause for a combination involving an SAP and a third person.

- | | | |
|-----|--|------------------|
| (5) | ni-wâpâm-âw
1-see-3
'I see him/her.' | (Dalhstrom 1991) |
|-----|--|------------------|

Conversely, the only grammatical way to express a third person acting on an SAP results is with an inverse verb form.

¹ Many thanks go to Mrs. Pauline Christiansen for her assistance and clarification of Cree data.

² The INV suffix, which regularly appears as *-ik*, becomes *-ok* following verb stems with underlying /w/. ni-pakamahw+ik → ni-pakamah-ok.

- (6) ki-pêkiskwât-ik
 2-talks.to-3INV
 'S/he talks to you.'

There is no grammatical direct form in which a lower-ranking participant can act on a higher-ranking one. Similarly, it is impossible to have an inverse form when a higher-ranking participant acts on a lower-ranking one.

- (7) *Ø-wâpâm-n/-âw/ê (Fadden: fieldnotes)
 3-see-1(variable 1SG suffixes)
 'S/he sees me.'

As we will see in Chapter Two, languages such as Mapudungun and Sahaptin have similar hierarchies involving person. Some languages, such as Chukchee, have a simpler person hierarchy, in which Speech Act Participants (SAPs) outrank third person, (SAP > 3) but SAPs are not ranked amongst themselves as they are in Cree. In still other languages, such as Navajo, participants are ranked not along the lines of person, but rather according to whether they are animate or inanimate. In whichever manner a language ranks its participants, semantic hierarchies are one of five properties of inverse systems. In my survey, semantic hierarchies based on person are more common than hierarchies based on animacy.

1.1.2 Discourse Prominence

In Cree, we see direct and inverse clauses where two third persons interact. The third person participants are ranked according to their prominence in the discourse and labeled proximate and obviative. The proximate participant is the one that is central to the discourse or narrative due to being introduced earliest or being focussed. Secondary third

person participants, generally introduced later, are obviative. Just as SAPs outrank third persons, proximate third persons outrank obviatives.

(8) prox > obv

Direct clauses are those in which a proximate acts on an obviative, and inverse clauses are those in which an obviative acts on a proximate.

(9) Ø-pakamahw-êw awasis-a (Fadden: fieldnotes)
3-hit-3'DIR child-OBV
'S/he [prox] hit the child[obv].'

(10) Ø-pakamahw-ik awasis-a
3'-hit-3INV child-OBV
'The child [obv] hit him/her[prox]'

Either direct or inverse is possible. The choice does not result in ungrammaticality as it does in the case of SAP/3 interaction (e.g. (7)). However, attaching an obviative morpheme to a proximate participant, or inverse morphology where direct belongs, would result in confusion between the two nominals. The listener would not judge the clause ungrammatical, but s/he would think that a shift in topic has taken place or that the hittee was the hitter.

Cree and a number of other languages in this survey have an obviation system that is overtly marked, but other languages in this survey do not. Languages that do not overtly mark obviation may still have direct and inverse alternations. Clause participants in these languages are often referred to as proximate and obviative despite the non-overt marking (Aissen 1997, Arnold 1994, Thompson 1990).

1.1.3 Hierarchy Inverse and Discourse Inverse

Throughout the survey, a distinction is made between the inverse that arises from the person ranking (see §1.1.1) and the inverse that arises from discourse prominence (see §1.1.2). The former will be called the Hierarchy Inverse and the latter the Discourse Inverse. I distinguish these for two reasons. First, they differ in grammaticality. Interactions involving SAPs with each other, and SAPs with third persons³ are obligatorily direct or inverse. A violation of this hierarchy results in an ungrammatical clause. Interactions involving proximate and obviative participants select direct or inverse not according to structural constraints, but rather discourse constraints. Changing of direct or inverse marking on a clause with two third persons does not result in an ungrammatical clause, just one which is different in meaning. Second, some languages rank participants semantically (i.e. by person or animacy) and pragmatically (i.e. proximate-obviative), while others rank only persons, and still others make only the proximate-obviative distinction.

Both semantic hierarchies and discourse prominence are phenomena that can cause a language to make a direct-inverse alternation, but it will be shown that the inclusion of one in the language does not necessarily entail the inclusion of the other. A language can have Hierarchy Inverse without Discourse Inverse and vice versa.

1.2 Head-Marking

Cree is a head-marking language rich in verbal inflection. The NPs are unmarked for case and there is free word order within the clause. The verb takes person and number

³ In some languages SAPs are not ranked against each other as in Cree. Rather, the hierarchy is SAP > 3 (see §2.3.1 on Carib).

agreement, and also encodes other information, including transitivity, animacy of participants, and obviation. The following two clauses demonstrate all of these characteristics.

- (11) Ø-pamih-êw-ak awâsis-ak okimâw-a (Fadden: fieldnotes)
 3-take.care.of(TA)-3'DIR-PL child-PL chief-OBV
 'The children take care of the chief.'
- (12) Ø-pamih-ik-wak awâsis-ak okimâw-a
 3'-take.care.of(TA)-3INV-PL child-PL chief-OBV
 'The chief [obv] takes care of the children [prox].'

The verb in (11) has a null third person singular prefix. The verb root belongs to the Transitive Animate verb class, which means that the verb is transitive and the object is animate.⁴ The *-êw* suffix appears when a proximate third person acts on an obviative. The high-ranking participant (proximate 'children') takes the third person plural suffix *-ak*. The *-ik* suffix appears when an obviative third person acts on a proximate third person, as in (12). The non-topical third person, 'chief,' takes the obviative suffix *-a*. There is no confusion as to which participant takes care of whom in the clauses above, because of the distinction between *-ew* and *-ik*. Person and direction, as well as verb classification, demonstrate that Cree is a head-marking language. Head marking is a feature shared by most of the other languages in the survey.

1.3 Transitivity

The Cree inverse clause is transitive; like the direct clause it has two arguments, a subject and an object. In this respect, it contrasts with the passive, which has one

⁴ The Algonquian languages have four verb classes: Transitive Animate, Transitive Inanimate, in which the object is inanimate, Intransitive Animate, in which the subject is animate, and Intransitive Inanimate, in which the subject is inanimate. The inverse only occurs in the Transitive Animate set. The verb class will not be shown in the gloss throughout the remainder of this work.

argument, the subject. Dahlstrom (1991) summarizes grammatical relations and thematic roles in three clause types:

Table 1: Cree Thematic Roles and Grammatical Relations

	Thematic role	Grammatical Relation
Direct	Actor	Subject
	Undergoer	Object
Inverse	Actor	Subject
	Undergoer	Object
Passive	Undergoer	Subject

Dahlstrom (1991) uses a syntactic test based on the copy-to-object construction to identify subject and objects in inverse clauses. All data in this section is taken from Dahlstrom (1991) unless otherwise stated. In a copy-to-object clause, the subject of the lower clause is coreferential with the object of the matrix clause.

- (13) ni-kiskêyim-âw ê=nôhtê-sipwêhtê-t
 1-know-3DIR CONJ=want-leave-3/CONJ⁵
 'I know that he wants to leave.' (lit: 'I know him that he wants to leave.')

The matrix clause verb in (13) has a transitive animate stem. The lower clause subject (3 in the conjunct form) is coreferential with the matrix clause object. This demonstrates that the upper clause does have an object and is in fact transitive. Another example illustrates copying with a proximate-obviative pair:

- (14) ni-kiskêyim-âw George ê=sâkih-ât o-kosis-a
 1-know-3DIR George CONJ=love-3 3POSS-son-OBV
 'I know that George loves his sons.'

In (14), the subject of the lower clause, proximate 'George', is copied as the object of the direct upper clause. Trying to match a lower clause object to an upper clause object results in an ungrammatical sentence.

⁵The conjunct form in Cree and other Algonquian languages is used in dependent clauses.

- (15) *ni-kiskêyim-âw George ê=sâkih-ikot o-kosis-a
 1-know-3DIR George CONJ=love-3INV 3POSS-son-OBV
 'I know that his sons love George.'

In (15), the proximate third person object of the lower clause is coreferential with the third person object of the upper clause, and the sentence is ungrammatical. The problem in (15) is due to the fact that the lower clause subject, the actor 'his sons', does not match person features with the upper clause object. Instead, the upper clause object is matching in person features for 'George,' the single third person proximate undergoer of the lower clause.

When the lower clause is inverse, note that it is the lower-ranking actor that copies as the upper clause object:

- (16) ni-kiskêyim-âw John ê=ki-wâpam-isk
 1-know-3DIR John conj=saw-2INV
 'I know that John saw you.' (Lit: 'I know John that he saw you.')

The upper clause has a first person acting on a third person. The lower clause third person copies as the upper clause object.⁶ The lower clause SAP cannot copy despite its being higher ranking. In other words, even though 'John' is a third person and ranks lower than its second person clausemate, it is the subject because it is allowed to copy as the upper clause object.

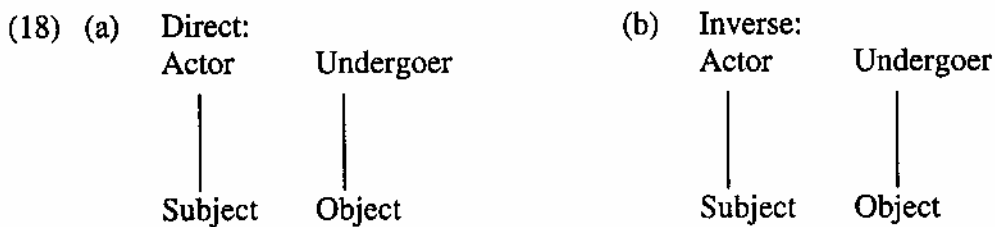
When the upper clause is inverse, the higher-ranking participant of the inverse clause is the object.

- (17) namoya Ø-kiskêym-ik ô-htâ-wiya
 not 3'-know-3INV 3POSS-father-OBV
 ê=sipwêh-êt (Bloomfield 1934)
 CONJ-leave-3/CONJ
 'His father[obv] did not know that he[prox] had gone off.'

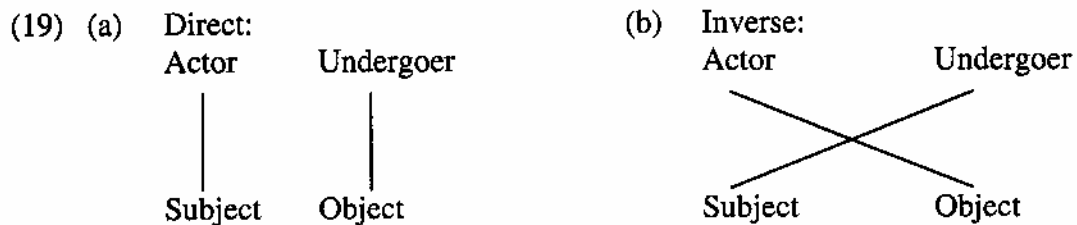
⁶ Dahlstrom does not give the parallel ungrammatical data that would illustrate the lower clause object SAP copying to the upper clause object.

The third person proximate argument in the lower clause is the subject. It is coreferential with the upper clause object, which is the third person proximate of the inverse clause. The clause in (16) gives evidence for the object status of the higher-ranking undergoer of the inverse clause.

The copy-to-object construction tells us two important things about transitive clauses in Cree. According to Dalhstrom only subjects are copied.⁷ Actors in direct and inverse constructions can copy, therefore they both test to be subjects. Thus, there is no difference in the alignment of actors and undergoers to thematic relations in direct and inverse clauses:



Dalhstrom posits a straight alignment of thematic roles to grammatical relations. Other researchers, including Perlmutter and Rhodes (1989) and Arnold (1994) posit an analysis involving a reversal in alignment of thematic roles to grammatical relations, represented as follows:



In the works cited herein, the issue of whether the inverse in a language should be analysed as in (18) or (19) is usually not addressed. It is outside the scope of this thesis to

⁷ Unfortunately, Dahlstrom does not give data testing passive subjects. This would verify if the rule should be stated in terms of surface subject and not actor.

develop tests and provide data to determine alignment. However, the crucial characteristic for my purposes is the final transitivity of the inverse clause. The inverses in (18) and (19) are both surface transitives. Transitivity is a key property in an inverse construction, and it will be shown that inverse constructions are separated from non-inverse voice marking systems, such as passives, by this feature.

1.4 Contrastive Passive

In older works on Cree and other Algonquian languages, the inverse was analyzed as a passive (Jolley 1982, Rhodes 1976). More recently, however, Cree is shown to have a passive construction in addition to the inverse. The following two clauses are passives:

(20) awa nâpêsis êkwah aw ôskinîkiw mawîhkât-âwak
 this boy and this young.man mourn-3PL/PASS
 'This boy and this young man are being mourned.' (Dahlstrom 1991)

(21) awîna ê=sâkih-iht
 who CONJ=love-3/PASS/CONJ
 'Who is loved?'

The passive in Cree, and in the majority of the other languages in this survey, is agentless. That is, there is not an oblique actor or 'by-phrase' of any sort in the passive construction in many inverse languages. Putting an agent in the clause in (19) results in an ungrammatical clause:

(22) *awîna ê=sâkih-iht o-mâmâ-wa
 who CONJ=love-3/PASS/CONJ his-mother-OBV
 'Who is loved by his mother?'

That a language has a contrastive passive is a very different criterion from the other four named in this chapter. Semantic hierarchies, obviation, transitivity, and head-marking are all structurally tied to the inverse construction itself. Inverse is a system that

is often confused for a passive and the confusion is lessened if they co-occur in a language. The functional differences between passive and inverse are captured in the valence of clauses. Three clause types are defined by Givón (1994):

- a) Inverse: The undergoer is more topical than the actor, but the actor retains considerable topicality (with no change in valence from direct form).
- b) Passive: The undergoer is more topical than the actor, and the actor is extremely non-topical ('suppressed', 'demoted').
- c) Antipassive: The actor is more topical than the undergoer, and the undergoer is extremely non-topical ('suppressed', 'demoted').⁸

Typologically, the inverse, in which the actor retains its full argument status, should be distinct from the passive, in which the actor is demoted or not present. That a language will have a passive construction in addition to, and distinct from, its inverse will be an important indicator of an inverse system.

1.5 Summary

The purpose of this chapter has been to illustrate the properties of Cree morphosyntax that are pertinent to its inverse system. In summary, these are:

- (23) semantic hierarchies
- discourse prominence
- head-marking
- transitivity
- contrastive passive

Chapter Two identifies eight languages that have been reported to have inverse systems. I sketch each one, giving its inverse properties. Depending on which of the five

⁸ Givón's notions of 'suppressed' and 'demoted' have both semantic and syntactic meaning. First, semantic demotion is determined using a number of referent tracking tools, such as referential distance (between a nominal and its recurrences in the text) and topic persistence (how frequently it occurs in a given span). Second, syntactic demotion has to do with syntactic behaviour of a demoted nominal, as typically seen in a passive clause, in which the initial subject is reduced to an oblique. See Givón (1983, 1994).

properties described for Cree that each language has, I determine how strong of an inverse system it has. In Chapter Three, I discuss three languages that have been said to have inverse systems (Klaiman 1991, 1992, 1993). But when compared to Cree and the languages in Chapter Two, they have too few inverse properties to be considered to have inverse constructions. Most notably, these three so-called inverse constructions cannot be argued to be transitive and therefore are best regarded as passive constructions, as previously analyzed. Chapter Four highlights some typological features of the form and function of inverse constructions and concludes the thesis.

Chapter Two: Survey of Inverse Systems

Several languages have an inverse construction. This chapter surveys eight inverse constructions, selected from a number of geographically and genetically diverse languages. Based on the presence or absence of five grammatical properties—semantic hierarchies, discourse prominence, head-marking, transitivity, and contrastive passive—the strength of each inverse construction is assessed. I divide the inverse constructions into two types—Strong Inverse and Weak Inverse. The Weak Inverse constructions have the least number of inverse properties. In particular, they all lack a contrastive passive. Furthermore, I divide the Strong Inverse constructions into two types depending on how many of the inverse properties they have. First, the Total Inverse languages attest all five properties. Second, the Obviation Inverse constructions have four of the five inverse properties: they have Discourse Inverse, but they lack the Hierarchy Inverse (see §1.1.3).

In §2.1, I discuss three Total Inverse languages, Mapudungun, Sahaptin, and Navajo. In §2.2, I discuss two Obviation Inverse languages, Kutenai and Tzotzil. In §2.3, I examine four Weak Inverse languages, Carib of Surinam, Chukchee, and Chepang and show that they lack a contrastive passive. These eight languages and Cree are then ranked on a strength continuum in §2.4.

2.1 Total Inverse

The languages in this section share all five grammatical properties. They have both Hierarchy Inverse and Discourse Inverse, they are all head-marking, their inverse clauses are transitive, and they have a passive construction in addition to the inverse.

2.1.1 Mapudungun

Mapudungun (Grimes 1985, Arnold 1994, Thompson 1994), an Araucanian language spoken in central Chile, has a Strong Inverse system. In this head-marking language, the verb can agree with up to two nominals, and inverse marking appears when a third person acts on a SAP. The Hierarchy Inverse in which $1 > 2 > 3^9$ is indicated by morphemes that encode person and direction simultaneously. All data are taken from Grimes (1985) except where otherwise noted.

(24) ngilla-fi-n (Arnold 1994)
buy-OBJ-1SG
'I bought it/him/her/it.'

(25) ngilla-fi-imu
buy-OBJ-2DU
'You two bought it/him/her/them.'

In the direct clause in (24), the verb stem takes two suffixes: *-fi* indicates a third person undergoer, and *-n* a first person actor. In (25), also a direct clause in which a second person acts on a third person, the same third person suffix is found along with the second person dual actor, *-imu*. In the inverse clause in (26) there is an inverse marker, *-e*, that occurs when a lower-ranking participant (a second person) acts on a higher-ranking participant (a first person).

(26) pe-e-n-Ø
see-INV-1SG-2
'You saw me.'

Two third persons co-occurring in a direct clause appear in (27) and (28), in which a proximate third person acts on an obviative third person:

⁹ A person hierarchy where $1 > 2 > 3$ is probably more common in the world's languages than the person hierarchy shown in Chapter One for Cree which is $2 > 1 > 3$. See Silverstein (1976).

- (27) ngilla-fi-y
 buy-OBJ-3
 'S/he/they bought it/him/her/them.'
- (28) feimochi ngiri feipi-fi-i chi kuse pankill...
 then the fox say-OBJ-3 the old puma
 'Then the fox said to the old lioness...'

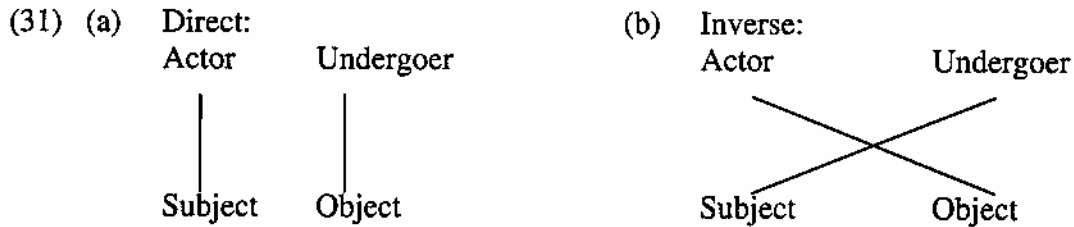
In the inverse examples in (29) and (30), both actor and undergoer take agreement markers on the verb and the inverse marker *-e* appears.

- (29) pe-e-y-ew
 see-INV-3-3
 'S/he/it/them saw him/her/it/them.'
- (30) feimofeipi-e-y-ew kuse pankill...
 then say-INV-3-3 old puma
 'Then the old lioness said to him...'

The direct-inverse pairs in (27) to (30) show examples of Discourse Inverse. When two third persons are involved, one is proximate and the other is obviative. The clause will be either direct, as in (27) and (28), or inverse, as in (29) and (30). The third person undergoer is marked with *-e*, just as it is in the Hierarchy Inverse, and the third person actor is marked with *-ew*. The obviation system is not overt, unlike Cree, where obviative nouns are marked. But obviation does occur in the sense that a more topical third person actor (proximate) acting on a non-topical one (obviative) results in direct verbal morphology (see (27) and (28)) (Arnold 1994). Conversely, when a non-topical actor (obviative) acts on a topical undergoer (proximate), inverse morphology appears (see (29) and (30)).

Both the direct and inverse forms of the verb are transitive (Arnold 1994), as shown by the two-way agreement system in which the verb agrees with the subject and

the object. Furthermore, Arnold (1994) argues that thematic roles align with subject and object differently for direct and inverse.



One argument for this alignment comes from word order. When NPs are overt, Mapudungun has three possible word orders for both direct and inverse: SVO, SOV and VOS.

- (32) Direct:
- | | | |
|-----|---------------------------|---------------------------|
| SVO | domo langüm-fi-i wentro | |
| | Woman kill-OBJ-3/SUBJ man | |
| | The woman killed the man. | |
| | wentro langüm-fi-i domo | |
| | man kill-OBJ-3/SUBJ woman | |
| | The man killed the woman. | |
| SOV | domo wentro langüm-fi-i | The woman killed the man |
| | wentro domo langüm-fi-i | The man killed the woman. |
| VOS | langüm-fi-i domo wentro | The woman killed the man. |
| | langüm-fi-i wentro domo | The man killed the woman |
- (33) Inverse:
- | | | |
|-----|-----------------------------|---------------------------|
| SVO | domo langüm-e-y-ew wentro | |
| | woman kill-INV-3/SUBJ-3/OBJ | man |
| | 'The man killed the woman.' | |
| | wentro langüm-e-y-ew domo | |
| | man kill-INV-3/SUBJ-3/OBJ | woman |
| | 'The woman killed the man.' | |
| SOV | domo wentro langüm-e-y-ew | The man killed the woman. |
| | wentro domo langüm-e-y-ew | The woman killed the man. |
| VOS | langüm-e-y-ew domo wentro | The woman killed the man. |
| | langüm-e-y-ew wentro domo | The man killed the woman. |

If thematic roles and grammatical relations were to align vertically as they do in Cree (see (18)), then Mapudungun would have six possible word orders. Rivano (1988) takes this approach and shows the resulting six clausal word orders.

(34) Direct:		Inverse:	
Woman killed man.	SVO	Woman[obv] killed man.	OVS
Woman man killed.	SOV	Woman[obv] man killed.	OSV
Killed man woman.	VOS	Killed man woman[obv].	VSO

Arnold argues that the reversal analysis provides a unified account requiring only three word orders—SVO, SOV, and VOS.¹⁰ Arnold suggests her analysis would allow the verb and the object to form a constituent in all surface word orders.¹¹ Whichever view of Mapudungun inverse is ultimately adopted, either is compatible with the criterion of surface transitivity.

Mapudungun has a passive construction that contrasts with the inverse shown below:

- (#) pe-nge-i
 see-INDEF-IND
 'He was seen.'

Where the inverse attests two-way agreement and the actor is obligatory, the passive verb does not have an overt actor. Thus, the Mapudungun facts mirror Cree, in that the inverse has two participants, but the passive has only an undergoer.

¹⁰ If the clausemates in the six word orders outlined by Rivano were described in terms of proximate and obviative, we arrive at three word orders also. The set of clauses below parallels those in (34):

(i) Direct:	(ii) Inverse:
prox V obv	obv V prox
prox obv V	obv prox V
V obv prox	V prox obv

¹¹ Arnold (1994) gives one other piece of evidence in support of the unified word orders that comes from subordinate clauses. She notes that the possessive pronoun that appears in subordinate clauses marks the structural subject.

The Mapudungun inverse exhibits all five inverse properties. This head-marking language has both a person hierarchy and (non-overt) obviation to determine the Hierarchy Inverse and the Discourse Inverse respectively. The inverse construction is transitive, and there is a distinct passive construction. Therefore, Mapudungun belongs to the Total Inverse type.

2.1.2 Sahaptin

Sahaptin (Rude 1994), a Penutian language spoken in central Washington State, has a Strong Inverse system in with all five of the grammatical properties outlined above. Like Cree and Mapudungun, Sahaptin has both Hierarchy Inverse and Discourse Inverse. The Hierarchy Inverse involves SAPs interacting with each other and SAPs interacting with third persons. First person outranks second person, which outranks third person. There is a set of person agreement markers used to represent different person combinations. Some person combinations have separate markers for person and direction.

(35) túk'wash-mash ní-ta (Rude 1994)
 cane-2SG/1SG DIR/give-FUT
 'I shall give you a cane.'

(36) níipt-nam pá-yk-sha
 two-2SG INV-give-FUT
 'You will give me two.'

Inverse morphology varies in Sahaptin. In some cases, such as (36), the verbal prefix *pa-* indicates a low-ranking actant acting on a high-ranking one. Other person combinations appear as portmanteaus with a direction marker, as seen in (37) in which *i-* indicates an inverse interaction where as third person acts on a SAP.

Sahaptin, a Total Inverse language like Mapudungun and Cree, also displays all five inverse properties. There are both Hierarchy and Discourse Inverses, the language is head-marking, the inverse is transitive, and there is a passive that is distinct from the inverse.

2.1.3 Navajo

Navajo (Hale 1973, Witherspoon 1977, 1980, Jelinek 1990, Kibrik 1996, Thompson 1996), the most widely spoken Athabaskan language, has a Strong Inverse system. In this head-marking language, the direct-inverse alternation takes place only in interactions involving two third persons. However, not all interactions are between proximate and obviative pairs. The direct and inverse selection will also be shown to arise from the hierarchy animate > inanimate. Examples (42) and (43) illustrate inverse clauses for a proximate and obviative pair.

(42) *łíí dzaanééz yi-ztał* (Hale 1973)
 horse mule him-kicked
 'The horse kicked the mule.'

(43) *dzaanééz łíí bi-ztał*
 mule horse him-kicked
 'The mule was kicked by the horse.'¹²

The object prefix on the verb stem always agrees with the undergoer. When the clause is direct, as in (42) *yi-* signals the lower-ranking undergoer. When the clause is inverse, *bi-* appears and agrees with the higher-ranking undergoer as in (43) (Hale 1973).

Navajo differs somewhat from the other languages in this section with regards to how the direct and inverse alternates are driven. Rather than the direct-inverse alternation

¹² In the Navajo literature, it is standard to gloss the inverse with an English passive (cf. Hale 1973, Witherspoon 1977, 1980, Jelinek 1990, Kibrik 1996, Thompson 1996).

arising from a person hierarchy (1 > 2 > 3), it is based on semantic control.¹³ The hierarchy behind the Navajo inverse is based on animacy and works on third person combinations. A clause in which an animate affects an inanimate is direct. A clause in which an inanimate affects an animate is inverse. Which participant has more control over the event will determine whether *yi-* or *bi-* is affixed to the verb. If the actor is more capable of exhibiting control, the clause is direct and *yi-* occurs.

- (44) lééchąą'í leets'aa yi-maad (Hale 1973)
 dog plate yi-licking
 'The dog is licking the plate.'

The inverse form of (45) is ungrammatical:

- (45) *leets'ąą' lééchąą'í bi-maad
 plate dog bi-licking
 'The plate is being licked by the dog.'

The clause in (45) is ungrammatical because in the Navajo universe, according to Witherspoon (1980), the plate would have to exhibit volition, 'allowing' itself to be licked by the dog. The dog outranks the plate in animacy, and, as a result, no *bi-* form can occur in which the plate is the actor, or even the subject. However, in a clause in which the undergoer has more control over the event, then *bi-* will occur.

- (46) dine awee'ch'í bi-ztał (Witherspoon 1980)
 man baby bi-kicked
 'The man was kicked by the baby.'

In (46), the man, the recipient of the kick, must be in control over the situation, and therefore would 'allow' himself to be kicked by the baby. A man has inherently more control over any event than a baby (Witherspoon 1980). The *yi-* form of this sentence,

¹³ The semantic hierarchy of Navajo is essentially human > animate > inanimate. However, there is some discretion on the part of the speaker and, in a few cases, native speakers disagree on grammaticality judgements (Thompson 1996).

which would indicate that the man is the undergoer and object while the baby is actor and subject, is ungrammatical:

- (47) *awee'chi'i diné yi-tzał
 baby man yi-kicked
 'The baby kicked the man.'

If the amount of control can be considered equal, i.e. both participants are of the same physical and intellectual capacity, then discourse prominence factors govern the choice between *yi-* and *bi-*, as in the first examples in the section repeated below:

- (48) łíí dzaanééz yi-ztał
 horse mule him-kicked
 'The horse kicked the mule.'
- (49) dzaanééz łíí bi-ztał
 mule horse him-kicked
 'The mule was kicked by the horse.'

In the direct clause (48) the obviative, lower-ranking undergoer ('mule') triggers the *yi-* marker. In (49), the proximate, higher-ranking undergoer ('mule') triggers the *bi-* marker on the verb. Navajo experts generally agree that the verb is transitive and *yi-* and *bi-* markers occur as agreement prefixes.¹⁴

Navajo has a passive that looks markedly different from the inverse construction described above. Kibrik (1996:265) sums up the Navajo passive concisely:

"Passives are those verb forms in Navajo that result from the propositional derivation of Actor suppression. Under passive, the Actor is removed from the PS (proposition structure) and the corresponding form both referentially and morphosyntactically, with Undergoer remaining the only core argument of the verb. There is no way to mention any Actor overtly in passive clauses."

Active and passive counterparts are shown in pairs (50), (51), and (52), (53):

¹⁴ The *yi-/bi-* alternation is found in numerous Athabascan languages, including San Carlos Apache (Shayne 1982), Koyukon (Thompson 1996), and Gwich'in (Thompson 1996). Minor phonological differences occur.

- (50) 'asdzáá' chidí tá-né-(y)i-giz (Kibrik 1996)
 woman car PREF-PREF-3ACC-wring¹⁵
 'The woman washed the car.'
- (51) chidí tá-né-s-d-giz
 car PREF-PREF-MD-TI'-wring
 'The car has been washed [by someone].'
- (52) 'asdzáá ʔashkii tá-né-(y)i-giz
 woman boy PREF-PREF-3ACC-wring
 'The woman washed the boy.'
- (53) ʔashkii tá-ná-s-d-giz
 boy PREF-PREF-MD-TI'-wring
 'The boy was washed.'

The object marker *bi-* the signals the proximate undergoer does not appear in the passive examples in (51) and (53), showing a morphological contrast between passive and inverse. In addition, passives in which the undergoer is animate, such as (53), are very uncommon in Navajo. This feature is also in sharp contrast with the inverse, or *bi-* clauses, which readily take both animate and inanimate undergoers.

In sum, Navajo is a head-marking language. It uses a semantic hierarchy although this does not involve SAPs, and it has obviation. It has a passive that contrasts with the inverse as in the other languages discussed so far. Thus, like Cree, Mapudungan, and Sahaptin, Navajo is classified as a Total Inverse language.

2.2 Obviation Inverse

The two languages discussed in this section, Kutenai and Tzotzil, have four of the five key grammatical inverse properties. Both languages have Discourse Inverses, the

¹⁵ Kibrik's interlinear gloss labels the *yi-* inverse undergoer morphemes as 3ACC. He labels other morphemes not directly related to his discussion PREF for prefix.

(56) wûkat-i
see-IND
'He/she/it/they [prox] saw him/her/it/them [obv].'

(57) wûkat-aps- i
see-INV-IND
'He/she/it/they [obv] saw him/her/it/they [prox].'

When a SAP and a third person interact, there is no direct-inverse distinction. First and second person subjects appear as proclitics (58).¹⁶

(58) hu wûkat-i
1 see-IND
'I see him/her/it/them.'

First and second person objects appear as suffixes:

(59) wûkat-aps-ni (Dryer 1991)
see-1SG/OBJ-IND
'He/she/it/they saw me.'

(60) wûkat-is-ni
see-2SG/OBJ-IND
'He/she/it/they saw you.'

The inverse marker *-aps* that appears in clauses (55), (57), and (59) does not appear in clauses containing SAPs, and there is no evidence for a Hierarchy Inverse involving SAPs in Kutenai.

Kutenai possesses a passive construction very much like the passives shown for Cree, Mapudungun, and Sahaptin. The Kutenai passive also lacks an actor.

(61) wûkat-ił-ni
see-PASS-IND
'He/she/it/they was/were seen.'

¹⁶ Plural first and second persons appear as proclitics plus suffixes.

Hu ɬxa-nała-ni
1SUBJ talk-1PL-IND
'We talked.'

Dryer (1994:69) notes, “In sharp contrast to the inverse construction, the actor is never expressed in passive clauses.” The agentless passive is the only passive that occurs in Kutenai, just as the other languages in the survey so far.

One point that helps to differentiate the inverse from the passive is that passive can occur with SAPs.

- (62) hu/hin wûkat-ił-ni
 1SUBJ/2SUBJ see-PASS-INDIC
 I/you was/were seen.

The inverse in Kutenai does not involve SAPs, only third person participants.

Claiming that the inverse in Kutenai is transitive is not without controversy. Dryer examines the occurrence of the obviative suffix *-s* on verbs, marked below as OBV:

- (63) watak-s łatiqanmitak-s-i
 frog-OBV busy.do.something-OBV-INDIC
 ‘Frog[obv] was busy doing something.’
- (64) qaki?-ni k-?umaç-s ni?-s pałkiy-s
 say-INDIC SUBOR-laugh-OBV the-OBV woman-OBV
 ‘He[prox] said that the woman[obv] laughed.’

In (63) and (64), the verb agrees with the obviative subject.

- (65) n-?uwi-s-i xałçin-?is
 PRED-bark-OBV-IND dog-3/POSS
 His[prox] dog [obv] barked.
- (66) małi ma-?is wûkat-s-i misáł-s
 Mary mother-3/POSS see-OBV-INDIC Mike-OBV
 Mary’s[prox] mother[obv] saw Mike[obv].

In (65), the obviative subject is a possessed noun.¹⁷ In (66), the obviative suffix on the verb agrees with the obviative subject, which is also a possessed noun. In all cases so far,

¹⁷ In Kutenai, possessed nouns, not possessors, cue agreement and obviation.

the obviative subject suffix on verbs refers to the subject in both intransitive (63) and transitive (64) clauses, and in clauses involving possessed nouns.

In inverse clauses like the ones shown at the beginning of this section, Dryer notes that a notional subject, the obviative actor, does not trigger the obviative subject suffix on the verb:

(67) misaʔ wúkat-aps-i maʔi-s
 Mike see-INV-IND Mary-OBV
 'Mary[obv] sees Mike[prox].'

He suggests that it is possible that the obviative actor may not actually be the subject, but rather that the undergoer may be, in which case it is more likely that the Kutenai inverse would be more adequately labeled a passive. This is, however, inconclusive, and he points out that there is nothing in these clauses that would point to detransitivization, or decrease in valence, as is typical in a passive construction.

There is no evidence thus far that the Kutenai inverse is not transitive nor are there known tests that distinguish an object from an oblique. If there were such tests, it would be clear whether the actor is in fact an argument or not. Dryer makes one final point that the Kutenai inverse and the passive have one major difference that cannot be overlooked. While the inverse requires that the actor be expressed, the passive requires that the actor not be expressed.

In summary, Kutenai is a head-marking language. It has Discourse Inverse but no Hierarchy Inverse. The inverse construction appears to be transitive. There is a passive construction in addition to the inverse, and like all other languages discussed so far, this is an agentless passive. Therefore, Kutenai is classified as an Obviation Inverse language.

2.2.2 Tzotzil

Aissen (1999) describes a restricted inverse system that works for third person interactions in agent extraction clauses in the Mayan language Tzotzil. An agent can be extracted via a direct construction, i.e. a standard transitive clause:

- (68) Buch'u i-s-kolta li tzeb-e (Haviland 1981)
WH CP-A3-help the girl-ENC
'Who helped the girl.'

Alternatively, an agent can be extracted via an Agent Focus (AF) construction, which Aissen analyzes as an inverse:

- (69) Buch'u i-kolta-on li tzeb-e
WH CP-help-AF the girl-ENC
'Who helped the girl?'

The verb in (68) has no special marking and takes ergative agreement (the A3 prefix). In contrast, the verb in (69) is marked for agent focus and has no agreement.

While either direct or inverse are possible in the above examples, Aissen (1999) shows that the direct-inverse alternation in Tzotzil is driven by discourse prominence.

She posits the following principles:

- (70) human > non-human
definite > indefinite
individualized > non-individualized

Furthermore, she suggests that this is an obviation system, even though there is no overt marking for obviation on the NPs. Direct clauses are selected when the actor ranks higher than the undergoer in discourse prominence. Inverse clauses are selected when the undergoer ranks higher than the actor in discourse prominence. When neither NP outranks the other, either direct or inverse is possible.

As seen in the second reading of the following example, a direct construction is not possible when the undergoer (a human) outranks the actor (a non-human).

- (71) K'usi i-a-ti'?
 WH CP-A3-eat
 'What did he eat?'/*'What bit him?'

Rather, an inverse form (the AF construction) would be used:

- (72) K'usi ti'-on?
 WH eat-AF
 'What bit him?'

Aissen offers two arguments for the surface transitivity for AF verbs despite the lack of ergative agreement. First, both the actor and the undergoer can occur without special marking. They occur without prepositions or relational nouns (Aissen 1999), as seen in (69). Second, the plural agreement suffix *-ik* can be found on both transitive and intransitive predicates, marking any argument. Plural agreement can be controlled by either the actor or the undergoer in AF constructions. In (73) and (74), the plural agreement is controlled by the actor:

- (73) S-kremotik ch-'ik'-b-on-ik ech'el
 A3-boys ICP-take-IO-AF-PL DIRECTION
 'It's his sons who are taking him to him [e.g. to the doctor].'

- (74) S-vixtak i-kolta-on-ik
 A3-sisters CP-help-AF-PL
 'It was her_i sisters who helped her_i.'

In the clauses in (75) and (76), the plural agreement is controlled by the undergoer:

- (75) Li kremotik-e_i mu s-na'-ik much'u ik'-on-ik (pro_i)
 the boys-ENC NEG A3-know-PL who take-AF-PL
 ech'el
 DIRECTION
 'The boys_i don't know who took them_i away.'

- (76) A li tzebetik-e_i mu s-na' much'u i-kolta-on-ik (pro_i)
 TOP the girls-ENC NEG A3-know WH CP-help-AF-PL
 'The girls don't know who rescued them.'

That both actor and undergoer can control plural agreement leads Aissen to conclude that they are in fact core syntactic relations and therefore that the direct-inverse AF forms are transitive.

Tzotzil, like other Strong Inverse languages in this survey, has a passive construction that contrasts with the inverse. Below is an active-passive pair; the active is in (77) and the passive follows in (78):

- (77) i-s-mil Xun li Petul-e (Haviland 1981)
 CP-A3-kill Juan the Pedro-ENC
 'Pedro killed Juan.'

- (78) i-mil-e yu'un Petul li Xun-e (Aissen 1999)
 CP-kill-PASS by Pedro the Juan-ENC
 'Juan was killed by Pedro.'

Another passive construction can be seen in (79):

- (79) i-vok'-at ta ton li ventana-e (Aissen 1997)
 CP-break-PSV by rock the window-e
 'The window was broken by the rock.'

Passive constructions such as (78) and (79) differ from the inverse in a number of ways. First, the verb takes an actual passive marker, *-e* or *-at*, unlike the inverse forms above. Second, the actor may be governed by prepositions *yu'un*, or *ta*. This is not the case any other language in the survey thus far. Tzotzil is, however, the only language in my discussion so far in which the actor may be overt in the passive. In all other languages considered, the passive actor is indefinite or excluded altogether.

The inverse system in Tzotzil operates only in an AF construction where both actor and undergoer are third persons. The direct/inverse alternation is governed by a

discourse prominence hierarchy. Thus, Tzotzil has Discourse Inverse, but no Hierarchy Inverse. Aissen (1997, 1999) claims that this is, in fact, a covert obviation system. Tzotzil is a head-marking language. Evidence from plural agreement shows that the inverse is syntactically transitive. Finally, Tzotzil has a passive that clearly contrasts with the inverse. I conclude that Tzotzil is an Obviation Inverse language.

2.3 Weak Inverse

The Inverse systems in the previous sections show two subtypes. The Total Inverse, which has all five inverse properties and the Obviation Inverse which has all properties except Hierarchy Inverse. The remainder of this chapter is devoted to an examination of languages with inverse systems that possess fewer inverse properties. The most significant characteristic of the languages in this section is that they lack a passive construction that contrasts with their inverse.

2.3.1 Carib of Surinam

Carib of Surinam (Gildea 1994), a Cariban language, has a Weak Inverse system. In the Carib inverse, interactions between SAPs and third persons determine direct-inverse selection. There are two sets of pronouns used when SAPs interact with third persons.

Table 2: First and Second Person Prefixes for Direct and Inverse (Gildea 1994)

Person	Direct		Inverse	
	C-initial	V-initial	C-initial	V-initial
1	si-	s-	∅-	y-
2	mi-	m-	a-	ay-
1+2	kīsi-	kīs-	kī-	k-

The direct prefixes mark the SAP actor, and the inverse prefixes mark the SAP object.

In the examples below, we see that the SAP acts on the third person when the direct form of the SAP pronoun is used:

- (80) si-kuupi-ya (Gildea 1994)
1DIR-bathe-TNS
'I bathe him.'
- (81) mi-kuupi-ya
2DIR-bathe-TNS
'You bathe him.'

When the third person acts on the SAP, the inverse form of the SAP pronoun is used, as in

(82) and (83).

- (82) Ø-kuupi-ya-ñ
1INV-bathe-TNS-EVID
'He bathes me.'
- (83) a-kuupi-ya-ñ
2INV-bathes-TNS-EVID
'He bathes you.'

Thus, when interaction is between an SAP and a third person, the SAP controls agreement regardless of whether it is the actor, as in (80) and (81), or the undergoer, as in (82) and (83).

Carib lacks a Discourse Inverse. When two participants are both third person, the language has three ways of dealing with the participants. First, the verb can be prefixless, and the clause has an antipassive-like function that marks a decrease in the topicality of the undergoer and consequentially a rise in the actor's topicality (Gildea 1994).¹⁸

- (84) t-i'me Ø-kuupi-ya-ñ
3-REFL-child 3-bathe-TNS-EVID
'He bathes his own child.'

¹⁸ Gildea appeals to topic persistence and referential distance to support claims of the functions of various morphosyntactic structures. Methods used come from Givón (1983). See footnote 6 Chapter One.

The second way of dealing with two third persons is to use the prefix *n-* (*ni-/nii-*) in the same position as the SAP prefixes:

- (85) *kī-nii-kuupi-ya-ñ*
 EVID-3DIR-bathe-TNS-EVID
 'He bathes him.'

This manner of handling two third persons only results in direct clauses. No inverse clauses are formed in this manner. In order to form a clause in which a non-topical third person acts on a topical one, a combination of absolutive and dative case is invoked:

- (86) *am yaako poore, tī-emuʔmáá-ma*
 some then very ABS.NMLZR-fool-completely

i-ʔwa-ne mañ
 3-DAT-PL 3.COP
 'At last at some time he was fooled by them.'

In (86), the verb appears in an adjectival form, which occurs with the copula (much like that of English and Sahaptin). The overtly-occurring actor receives dative case marking, and the undergoer, absolutive case marking. This type of intransitive clause structure with a DAT/NOM case pattern does not fit with the sort of transitive inverse structures shown thus far.

The second reason for classifying Carib as a Weak Inverse language is because of the lack of a passive construction that contrasts with the inverse clauses exemplified in (82) and (83). Note that the Strong Inverse languages all have passive clauses in addition to the inverse. Carib does not. There is no Carib equivalent to passives like 'I was bathed (by him/her)' or 'You were bathed by (him/her).' These person combinations are only found in the inverse forms shown in (82) and (83).

Carib possesses three of the five properties diagnostic of inverse systems. It has the Hierarchy Inverse, but no Discourse Inverse. The few inverse cases that it does have

are transitive and it is a head-marking language. There is no passive that contrasts with the limited inverse system based only on SAP/3 interactions that Carib displays. I therefore conclude that Carib is a Weak Inverse language.

2.3.2 Chukchee

The Chukotko-Kamchatkan language Chukchee (Comrie 1980), spoken in the far east of Siberia, has a Weak Inverse system that is based on the following person hierarchy:

(87) 1st person > 2nd person > 3rd person singular > 3rd plural

Direct and inverse verb forms are selected for SAP/SAP interactions, SAP/3 interactions, and interactions involving 3PL. The following clauses form a direct-inverse pair involving an SAP/3 interaction:

(88) lʔu- tkə
see-2/3
'You see him/her.'

(89) ne-lʔu-tək
INV-see-3/2
'S/he sees you.'

The inverse marker *ne-* appears when a lower-ranking participant acts on a higher-ranking one. This is the case in (89), where third person acts on a second. (90) and (91) below involve interaction between a third person singular and a third person plural.

(90) lʔu-ninet
see-3/3PL
'S/he sees them.'

(91) ne-lʔu-gʔen
INV-see-3PL/3
'They see him/her.'

The first clause in this pair is direct because a third person singular acts on a third person plural. The second is inverse because the third person plural acts on the third person singular. This is not a case of obviation, although both participants are third person.

There is no grammatical direct clause in which a third person plural acts on any of the other persons, whether they are third persons or SAPs. Furthermore, Chukchee does not appear to have an obviation system.

Table 3 gives a verb paradigm of all possible person combinations, excluding reflexives and reciprocals:

Table 3: Chukchee Verb Paradigm (Comrie 1980)

you→me	ine-lʔu-gʔi
→us	lʔu-tku-gʔi
→him/her	lʔu-gʔen
→them	lʔu-net
you pl→me	ine-lʔu-tək
→us	lʔu-tku-tək
→him/her	lʔu-tkə
→them	lʔu-tkə
s/he→me	ine-lʔu-gʔi
→us	ne-lʔu-mək
→thee	ne-lʔu-gət
→you	ne-lʔu-tək
→him/her	lʔu-nin
→them	lʔu-ninet
they→me	ne-lʔu-gəm
→us	ne-lʔu-mək
→thee	ne-lu-gət
→you	ne-lʔu-tək
→him/her	ne-lʔu-gʔen
→them	ne-lʔu-net

The verb paradigm above shows the forms for the verb stem *-lʔu-* 'see' that arise from the person hierarchy in (87). All forms not in shaded fields are transitive (Comrie 1980). The shaded fields containing forms for third person singular or second persons acting on a first person singular take the *ine-* detransitivizer prefix. The remaining two intransitive forms occur when a second person acts on a first person plural. In this case the suffix *-tku* is used as a detransitivizer.

The detransitivizers, according to Comrie, may appear to be inverse person markers or even general SAP person affixes. However, they are found as derived intransitive markers elsewhere in the language. He presents verb forms in other tenses revealing that *ine-* and *-tku* do not occur in the same position as person-markers. *ine-*, for example comes next to the verb stem, following person, number, and tense prefixes. To demonstrate, he uses a comparison of the positions of *ine-* relative to a tense prefix in (92) and (93):

(92) r-ine-lʔu-gʔi
 FUT-*ine*-see-2/1
 'Thou shalt see me.'

(93) ne-re-lʔu-gəm
 ne-FUT-see-me
 'They will see me.'

In (92), the future tense prefix is followed by *ine-*. In (93), the inverse person marker *ne-* is actually followed by the tense prefix. The position of the tense prefix in relation to the inverse prefix provides a clue to their different functions. Furthermore, the prefix *ine-* may be found in combination with person and number affixes; *ne-* is a person affix and cannot appear with other person and number affixes. Therefore, *ine-* is not a member of the set of person affixes.

The fact that the inverse paradigm is not pervasive throughout all person combinations as it is in the Total Inverse languages helps to categorize Chukchee as having a Weak Inverse. However, the primary reason for its inclusion in the Weak category is that it lacks a passive construction for the forms that have inverse structures. Recall that the Strong Inverse languages show passive forms in addition to inverse forms; however Chukchee, like Carib, does not.

Another notable point about the Chukchee data is the absence of Discourse Inverse. Like Carib, there appears to be no means of backgrounding or foregrounding third person participants by way of the inverse structure, even in the case of the 3/3PL interactions. Third person singular outranks third person plural, which means that when third person plural acts on third person singular the clause must inverse. But this is not a matter of obviation. It is rather a semantic hierarchy in which third person singular outranks third person plural.

Chukchee belongs to the Weak Inverse type. It has Hierarchy Inverse based on a person hierarchy (1 > 2 > 3) much like others in the survey, but it also includes 3 > 3PL. It lacks obviation, and has no Discourse Inverse. It is a head-marking language, and the inverse forms, like their direct counterparts, are transitive. Chukchee also lacks a passive in contrast with the inverse.

2.3.3 Chepang

The Tibeto-Burman language Chepang (Thompson 1990, 1994) has a Weak Inverse system that is quite different from the others in the survey. Chepang has Discourse Inverse that operates in all person combinations. In addition, Chepang is the

only language among the nine considered that has free-standing pronouns and exhibits case-marking on subjects and direct objects. Thus, it is the only dependent-marking language so far in this sample.

Actors take an agent suffix; direct objects take the suffix *-kay*.¹⁹

(94) gopal-kay ram-'i si-tak-'aka-n (Thompson 1990)
 Gopal-GL Ram-AG die-CAUS-TNS-DIR
 'Ram caused Gopal to die.'

(95) gopal-kay ram-'i si-tak-'aka-thəy
 gopal-GL ram-AG die-CAUS-TNS-INV
 'Ram caused Gopal to die.'

According to Thompson (1990), *-kay* marks the syntactic case of the direct object. The verb takes one of two suffixes that point to who is topical in the clause. In (96), the suffix *-u* indicates that the verb is agreeing with the actor (Thompson marks this DIR), and in (97) the suffix *-thəy* marks agreement with the direct object.

(96) Pu'-nis-'i bəh-kay həw dak-'aka-c-u
 older.brother-DU-AGT uncle-GL younger.brother deliver-TNS-DU-DIR
 'The two older brothers delivered their younger brother to their uncle.'
 (Thompson 1990)

(97) Pu'-nis-'i bəh-kay həw dak-'a-thəy
 older.brother-DU-AGT uncle-GL younger.brother deliver-TNS-INV
 'The two older brothers delivered their younger brother to their uncle.'

The direct example in (96) and the inverse example in (97) illustrate an alternation based on discourse prominence. The clause in (96) is direct because the actor is topical, while the clause in (97) is inverse because the undergoer is topical.

One very curious point about the inverse system in Chepang is the behaviour of the interactions between SAPs and third persons. Either SAP or third person can be topical—

¹⁹ A large number of semantic roles can appear as direct objects, including undergoer, goal, allative, and temporal. Any of these can be marked with *-kay*, and any of them can become topical.

there is no person hierarchy to force the direct-inverse selection. In other words, the inverse is not obligatory whenever a third person acts on an SAP. This particular aspect of Chepang sets it apart from the other languages in the sample. This feature is illustrated in (98) and (99):

(98) 'i siŋ-'i ŋa-kay li'-na'-ta-ŋ' (Thompson 1990)
 DEM wood-AG 1SG-DO weigh-TNS-INV-[classifier]
 'This wood weighs me down.'

(99) ŋaa-kaay laan-i je'-khe'-taan
 1SG-DO demon-ERG eat-have-[classifier]
 'A demon is going to eat me.'

In the pair above it is shown that a 3/SAP interaction can occur in either the direct or inverse form. This is because the language lacks a person hierarchy that is capable of guiding direct-inverse selection, even among interactions in which a third person acts on an SAP. There is also no obligatory inverse for SAP/SAP interactions. In other words, in any person combination, any participant can be topical.

(100) ŋa-'i niŋ-ji- kay tunguliŋ bəy'- ne' -na -ŋ -jə
 1SG-AG 2SG-2DU-GL drink give-TNS-2-1SG-2DU
 'I will give you two a drink.'

(101) naŋ-'i ŋa- kay ŋa prek -'a- ci
 2SG-AG 1SG-GL fish split-TNS-2SG
 'You split a fish for me.'

One other curious point about Chepang is the rare but possible occurrence of both direct and inverse markers on the same verb:

(102) 'i-nis-kay 'ow'-məy'-'i ghan-na'-s-u-na'-tha-cə
 this-DL-DO that-CPL-ERG beat-TNS-PL-DIR-TNS-INV-[classifier]
 'They beat these two.'

In (102) both direct and inverse morphemes are present and the tense marker is repeated.

If we appeal to the Mirror Principle (Baker 1985) or the Satellite Principle (Gerdt 1988),

then the clause is ultimately inverse since inner verbal morphemes indicate the earlier levels and outer verbal morphemes indicate later levels of structure. The construction exemplified in (102), in which the opposing direction morphology is stacked, is the only example of this occurrence in my survey. Notably, however, it has yet to be uncovered in texts or unelicited speech (Thompson 1990, 1994, Caughley 1982) and little is known about it.

The inverse, like the direct in Chepang, is transitive, and the subject and the object both receive case-marking (Bauman 1979). Delancey (1999) claims that there is no evidence of detransitivization among the inverse forms in Chepang. There appears to be no passive construction that contrasts with the inverse.

Chepang is markedly different from the other systems exemplified here. It is the only dependent-marking system in the survey. It has no Hierarchy Inverse, since direct and inverse can be invoked for any person combination. It is perhaps more appropriate then to say that third persons and SAPs alike can be topical or non-topical in any person combination in Chepang. Inverse clauses are transitive, as evidenced by subject and object case marking. There is no passive construction in Chepang that can be distinguished from the inverse. Overall, Chepang appears to have the fewest inverse properties, and it is the weakest member of the Weak Inverse class.

2.4 The Inverse Continuum

The languages described in §2.2, §2.3 and §2.4 have Total Inverse, Obviation Inverse, and Weak Inverse constructions respectively. They are plotted below on the Inverse Continuum:

Although these languages differ in various respects, the one unifying feature is that the inverse is transitive in surface structure. I take this to be the defining characteristic of the inverse that separates it from other constructions, such as passive.

Chapter Three: Non-Inverse Constructions

Chapter Two surveyed several languages with respect to inverse systems. I categorized their inverse systems as strong or weak based on how many of the five defining properties they have. In Chapter Three, I turn to a discussion of several additional languages that have been described as having inverse systems. Although Klaiman (1991, 1992, 1993) claims that each has an inverse based on her criteria, I claim that in each case they do not possess enough of the crucial properties that I use to define inverse systems.

Klaiman identifies two properties that she considers definitive. She claims first that inverse systems mark ontological salience and second that they must exhibit head-marking (see §3.1). She surveys the Algonquian family, addressing Cree and Ojibwa, the Apachean family, addressing Navajo and San Carlos Apache, and the Tanoan family, addressing Southern Tiwa, Arizona Tiwa, Towa, and Picurís. She also looks at the Altaic language Korean and the Salish language Lummi. I have described Cree and Navajo in terms of the properties I claim are inverse and in previous chapters, therefore the languages from her study that I address in this chapter are Korean, Lummi, and Picurís. In §2.2, I discuss Klaiman's analysis of these remaining languages, arguing that they do not exhibit enough of my defining criteria to be considered to have inverse systems.

3.1 Klaiman's Criteria

Ontological salience is a term introduced by Klaiman (1991). It describes the perspective of a nominal by referring to its proximity to the speech act and to the speech act participants themselves. SAPs are inherently close to the speech act and are thus

ontologically salient. Third persons and especially obviatives are remote from the speech act and therefore are ontologically non-salient. She illustrates the difference using Cree data:

(104) ni-sêkih-â-nân atim (Henderson 1971)
 1-scare-DIR-1PL/3 dog
 ‘We scare the dog.’

In (104), the first person plural and the nominal ‘dog’ go along with the direct flow of the action—from an ontologically salient nominal (higher-ranking) to an ontologically non-salient nominal (lower-ranking). The inverse of (104), given in (105), requires an inverse marker because now a less ontologically salient participant acts on a more ontologically salient participant.

(105) ni-sêkih-iko-nân atim
 1-scare-INV-3/1PL dog
 ‘The dog scares us.’

The first person plural inclusive patient is more closely related to the speech act and therefore is more salient to the discourse than the dog, hence the inverse marker. She explains that the direct and inverse person markers *-âw* and *-ik*, for example, ‘encode alternations in the logical subject’s and logical object’s assignments to statuses of ontological salience and non-salience’ (p. 163). Ontological salience is a phenomenon that most other authors have described in terms of semantic hierarchies and obviation. (See Dahlstrom (1991) for Cree, Perlmutter and Rhodes (1989) for Ojibwa, and Rude (1994) for Sahaptin.)

(106) SAP > 3 > 3'
 ontologically salient > ontologically non-salient

Ontological salience as Klaiman describes it, however, is a useful term to capture the role played by both semantic hierarchies and obviation in inverse systems.

The second property Klaiman ascribes to inverse systems is head marking. Inverse languages tend to have some verbal morphology related to the direct-inverse distinction. A typical inverse language encodes its core nominals on the predicate. This is clearly the case for any language using two-way agreement, such as Cree. Some languages use a direction indicator (theme sign) to mark the inverse, as in Mapudungun. In some cases, both agreement and direction marking may occur, as is the case in Sahaptin. There is a tendency for inverse languages not to be case-marking. Of the nine languages in Chapter One and Chapter Two, eight are head-marking. Chepang is the only language that shows dependent-marking, but it also has some subject agreement (see §1.4.4).

According to Klaiman, head-marking and semantic hierarchies go hand in hand. Klaiman (1993) notes that languages that have semantic hierarchies are typically head-marking languages and with logical reason. The typical head-marking language exhibits agreement with one or more nominals, and often the nominals themselves are bare of morphosyntactic trappings such as case to indicate grammatical relations. Because these nominals are generally bare of such morphosyntactic marking, they have to be ranked in some language-specific fashion. Typically, the language will turn to semantic hierarchies to dictate which is the subject and which is the object. The connection between semantic hierarchies and head-marking is confirmed by the languages in my survey. Chepang provides the only example of an inverse language that exhibits dependent marking.

However, I depart from Klaiman when she concludes that the presence of a semantic hierarchy is enough to indicate that a language has an inverse system. In addition, she does not feel that transitivity need necessarily be a characteristic of inverse, whereas in my survey, transitivity is a strong indicator that an inverse is not a passive.

The languages shown in §3.2 lack at least two features: transitivity and the contrastive passive.

3.2 Klaiman's Survey

In her survey, Klaiman (1991) names several languages and claims they have inverse systems based on the properties of person hierarchies and head marking. In §3.2.1 to §3.2.3, I review three of those languages, Korean, Picuris, and Lummi, and show that they do not meet the criteria outlined in my survey in Chapter One. I conclude that person hierarchies and head-marking are insufficient in defining inverse systems.

3.2.1 Korean

Klaiman (1991:171) claims that Korean has “the simplest sort of direct-inverse system,” which works only in predicates involving third persons. The inverse clauses she describes are traditionally called lexical passives. These are formed with the suffix *-hi* or one of its allomorphs. Kwak (1994) notes that the *-hi* morpheme (and *-hi* allomorphs, *-i*, *-ki*, and *-li*) applied to transitive verbs result in intransitive passive verbs:

(107) po-ta	‘to see’	po-i-ta	‘to be seen’
cap-ta	‘to catch’	cap-hi-ta	‘to be caught’
an-ta	‘to hug’	an-ki-ta	‘to be hugged’
phal-ta	‘to sell’	phal-li-ta	‘to be sold’

In this construction, the suffix *-hi* appears on the verb in clauses in which a less animate or non-topical participant acts on an animate or more topical participant. In this type of clause, the patient is marked nominative or topic, and the agent is oblique and appears with dative case.

(108) pemin-in kot kyengchal-eykey cap-hi-ilkes-ita

criminal-TOP soon policeman-DAT catch-PASS-FUT-DECL
'The criminal will soon be caught by the policeman.'

- (109) cimsin-i talin cimsing-eykey capa-mek-hi-ess-ta
animal-NOM different animal-DAT catch-eat-PASS-PST-DECL
'An animal was killed by another animal.'

According to Klaiman, the lexical passive appears in instances when a participant capable of control undergoes some action, as in (110):

- (110) Na-nun sikan-ey ccoch-ki-ko-iss-(e)yo.²⁰ (Klaiman 1991)
I-TOP time-DAT chase-hi-PROG-DEF
'I am being chased by time (feel pressured by lack of time).'

Klaiman believes that control semantics and animacy hierarchies determine the active or *-hi* form. In (111), the entity incapable of control takes nominative case, and the other entity, which is in fact capable of control, is accusative, resulting in an ungrammatical clause.

- (111) *Sikan-i na-lul ccoch-ko iss-(e)yo.
time-NOM I-ACC chase-PROG-DEF
'Time is chasing me.'

A similar situation is found in the following alternates:

- (112) Namca-ka kong-ul ccoch-ko iss-(e)yo.
man-NOM ball-ACC chase-PROG-DEF
'The man is chasing the ball.'

- (113) *Kong-i namca-eykey ccoch-ki-ko iss-(e)yo.
ball-NOM man-DAT chase-hi-PROG-DEF
'A/the ball is being chased by a/the man.'

In (112), the higher-ranking participant, 'the man,' can only be the logical subject. It is the only one capable of control, and therefore must be the subject in an active transitive clause. In (113), the presence of the *-hi* morpheme results in an ungrammatical clause.

²⁰ Klaiman's Korean data has been converted into Yale orthography and given a standard interlinear gloss. Thanks go to Kyung Sook Chung for assistance with this.

Logically only a man can chase a ball, a ball cannot voluntarily undergo being chased by a man.

If neither participant has control over the event, then both active and *-hi* constructions are possible:

(114) Ku-nun ku kes-ul ic-ci mos-ha-n-ta.
he-TOP the/that thing-ACC forget-nominalizer (can)not-do-PRES-DECL
'He is not forgetting that thing.'

(115) Ku kes-un ku-eykey ic-hi-ci anh-nun-ta.
the/that thing-TOP he-DAT forget-hi-nominalizer not-PRES-DECL
'That thing is not being forgotten by him.'

In (114) and (115), the act of forgetting is not an act of control, just as the thing itself is not capable of having control over whether or not it is forgotten. There is no difference in the level of control by either participant, so both alternates are attested.

Klaiman considers Korean to have an inverse system because a semantic hierarchy, in this case a hierarchy based on animacy, determines whether the clause is active or 'inverse.' She recognizes, however, that speakers' judgments on these data vary. This variation means that Korean has a system that is left up to speakers' discretion—a situation quite unlike the systems in Chapter One where cases of speakers' discretion are uncommon.²¹ This suggests that the inverse is not a matter of style or context, but of grammar. In Cree, there is only one correct way to say 'I saw him' or 'he saw me.' The Korean system therefore departs markedly from the other systems described in my survey.

The semantic control that is shown to determine *-hi* and non-*hi* clauses in Korean is similar to the semantic control determining the *yi-/bi-* alternation in Navajo. However,

²¹ Recall that in Navajo, Thompson (1996) notes that there is speaker discretion in some cases though the general hierarchy is animate > inanimate. (Chapter Two, footnote 10.)

I would not classify Korean as either a Strong Inverse or Weak Inverse for three reasons. First, the *-hi* clause is intransitive. Second, the actor appears as an oblique taking dative case. Third, Korean cannot be considered a head-marking language. Chepang is dependent-marking as well, but the inverse clauses show no signs of detransitivity.

There is definitely a semantic hierarchy at work guiding whether the verb will be active or take *-hi*. However, if we were to call Korean an inverse language, English could, by extension, be considered as one as well. For example, it is more likely that the clause in (116) would occur than the clause in (117) due simply to animacy and affectedness.

(116) 'I was hit by a bus on St. Johns Street.'

(117) 'A bus hit me on St. Johns Street.'

Both clauses are grammatical, but, unless focus is being put on the bus, we are more likely to hear (116). There are in fact many occasions that call almost exclusively for the passive voice. Some examples are found in Celce-Murcia and Larsen-Freeman (1983).

(118) 'Oranges are grown in California.'

(119) 'Six people were killed in the tornado.'

In these clauses, the passive form of the verb is preferred over the active. The active is not ungrammatical, but it is highly uncommon because it makes more sense for the undergoer to be focused, especially if the actor is generic, irrelevant, or inanimate.

To sum up, there is a semantic hierarchy based animacy at work in Korean. Although there is an animacy hierarchy, the would-be Hierarchy Inverse is intransitive.

Korean is a dependent-marking²² language like Chepang, but it has no contrastive passive construction. What Klaiman describes as an inverse has elsewhere been described as a lexical passive. I therefore conclude that the Korean data do not meet the criteria for an inverse system.

3.2.2 Picurís

Picurís is a head-marking Tanoan language spoken in New Mexico. Zaharlick (1982) demonstrates that active clauses arise when an SAP acts on a third person and when a more prominent third person acts on a less prominent third person. Passive clauses occur when a third person acts on a SAP or a less prominent third person acts on a more prominent one. Based on data from Zaharlick (1982), Klaiman (1991, 1993) argues that Picurís and other languages in the Tanoan family have an inverse system motivated by person hierarchies and discourse prominence. Klaiman states that the Picurís verbal suffix *-mia* is not a passive marker but an inverse marker.²³

Picurís and the other Tanoan languages have a three-way agreement system. The verb can agree with the subject, direct object, and indirect object. Generally, for transitive and ditransitive clauses an agreement marker identifies both or all three arguments in a clause at once. The primary concern here is with transitive clauses.

At this point a word on the agreement pattern itself is in order to illustrate the difference in agreement in transitive and intransitive clauses. A single person affix in

²² Klaiman (1991) described the Korean system two years prior to saying that head-marking is a property consistently found in inverse systems. The first mention of head marking as a relevant inverse property is in Klaiman (1993).

²³ Klaiman glosses the *-mia* suffix as inverse. However, I retain Zaharlick's passive gloss.

Picurís encodes person and number of the subject, and person, number, and animacy of the object. The agreement pattern SAPs and third persons in Picurís is shown in Table 5:

Table 5: Picurís Agreement Prefixes

Subject person and number	1SG	1DU	1PL	2SG	2DU	2PL	3SG	3DU	3PL
Set I	ta-	'an-	i-	'a-	m̄an-	m̄a-	∅-	an-	'i-
Set II									
• obj class A	ti-	'an-	j-	'a-	m̄an-	ma-	∅-	an-	'i-
• obj class B	pi-	p̄an-	pi-	'i-	p̄an-	pi-	'i-	p̄an-	'i-
• obj class C	ta-	ko-	'o-	k̄am-	mam-	'am-	ku-	mu-	'u-

The first column is organized in two sets. Set I is for intransitive predications, showing only person and number agreement with the subject. Set II is for transitive predications and has three subsets: Class A is for animate objects, showing person and number, and Classes B and C are for two different types of inanimate objects.²⁴ Set II objects are third persons. They are combinations of whichever actor along the top row, (i.e. 1SG, 1DU, and so on) and the appropriate object class. For example, a first person acting on a third person Class A object takes the prefix *ti-*, a second person plural acting on a Class B object takes the prefix *pi-*.

This agreement pattern works in conjunction with person hierarchies, resulting in transitive and intransitive clauses for different person combinations. As with most other languages in this survey, SAPs outrank third persons in Picurís. The active transitive clause in (120) involves an SAP/3 interaction in which the SAP acts on the third person.

²⁴ Because the alternation that Klaiman describes as direct-inverse concerns transitive clauses with animate objects only, classes B and C do not enter the discussion. Recall that Cree has four verb classes and the inverse occurs only in the transitive animate class. In fact, there are few direct-inverse examples in the survey that involve inanimate participants.

(123) (sənene) Ø-mɔn-ʔan
(man) 3SG:IIA see-PAST
'He (the man) saw him.'

If the clause is passive, or inverse according to Klaiman, then the more topical third person gets the single, intransitive agreement slot. The less topical agent takes oblique marking, as is shown in (124).

(124) Ø-mɔn-mia-ʔan sənene-pa
3SG:I see-PASS-PAST man-OBL
'He was seen by the man.'

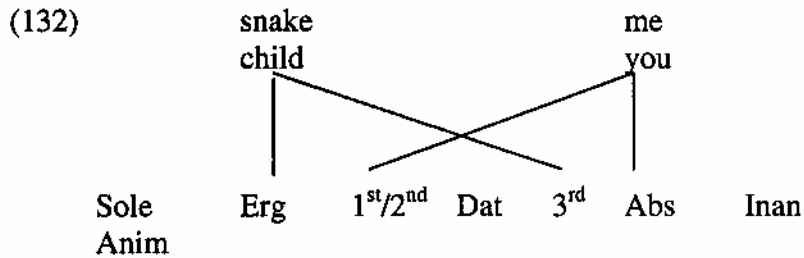
In (123) the clause is active and transitive. (124) is passive because the third person pronominal patient is more topical than 'the man' which appears with oblique marking.

Klaiman (1993) identifies an agentless clause which she also calls inverse.

(125) Ø-mɔn-mia-ʔan
3SG:I see-PASS-PAST
'He was seen.'

The verb above is morphologically the same as the one in (124). What makes this clause suspicious as an inverse is that the agent is not present and the agreement belongs to the intransitive set. Furthermore, in all of the inverse languages in Chapter Two, not one is shown to have an inverse example which appears without the agent. Dryer (1991) claims this point is a pertinent difference between the passive and inverse of Kutenai.

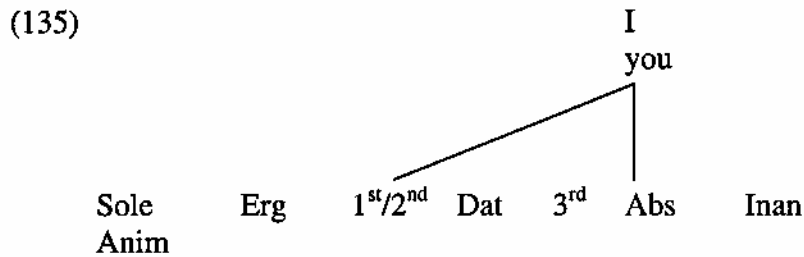
Rosen (1990) devises an elegant means to represent person hierarchies and their syntactic case assignments in active-passive selection in Southern Tiwa, a closely related Tanoan language also spoken in New Mexico. On her scale, person and case selections



Because certain transitive predications with their particular person and case combinations are prohibited in Tanoan languages, the only grammatical way to express (130) and (131) is in passive forms (133) and (134), represented by the scale in (135).

(133) Pirude-ba te-khoake-ban
 snake-INST 1SG-bite.PASS-PAST
 'I was bitten by the snake.'

(134) Uide-ba ma-mu-che-ban
 child-INST 2PL-see-PASS-PAST
 'You were seen by the child.'



Because only a single argument is linked in a passive, there can be no crossed lines. With few modifications, this same hierarchy can be applied to Picurís, which shares many essential properties with Southern Tiwa, including the two and three-way agreement and the obligatory passive for certain person combinations. In addition, Picurís and Southern Tiwa have similar syntax for active and passive clauses.

I conclude that Picurís has an obligatory passive resulting from person combinations in which a third person acts on an SAP or a non-topical third person acts on a topical one. Thus the language has hierarchies based on person and non-overt obviation.

However, Klaiman gives no evidence for transitivity. In fact, agentless passives are possible. Furthermore, there is no distinct passive construction that would contrast with the alleged inverse. This lack of typical inverse characteristics excludes Picurís as an inverse language.

3.3.3 Lummi

Lummi (Cinchor 1975, Jelinek and Demers 1983, Jelinek 1990), a Salishan language spoken in Washington, disallows certain person combinations in transitive clauses. When an SAP acts on a third person, the clause is active and transitive.

(136) xč̥i-t-sən cə swəyʔqəʔ (Jelinek & Demers 1983)
 know-TR-1SG the man
 'I know the man.'

When a third person acts on an SAP, an active transitive clause is not possible. Instead a clause type generally referred to as passive is used:

(137) xč̥i-t-ŋ-sən ə cə swəyʔqəʔ
 know-TR-ŋ-1SG by the man²⁷
 'I am/you are known by the man.'

In this clause, the intransitive suffix, -ŋ, referred to as the 'middle' in Salishan literature, is added to the verb, following the transitive suffix. The middle suffix is used in passives, antipassives, some reflexives, and intransitives expressing inherently reflexive actions like movement and personal grooming. The third-person nominal agent appears as an oblique in (137), governed by the preposition ə. I am informed by Eloise Jelinek (p.c.)

²⁷ The -ŋ suffix is labeled as such in Klaiman (1991, 1992). In Jelinek and Demers (1983) it is analyzed as and glossed as 'passive.'

that the agent of a passive is not an argument, as evidenced by its inability to undergo extraction. Therefore, she concludes that the construction in question is intransitive.²⁸

Paralleling many of the Strong and Weak Inverses in Chapter One, the person hierarchy in Lummi does not extend into SAP/SAP interactions. There are restrictions on what person combinations may appear as transitives. In (138) and (139), first person acting on second person and second person acting on first person form transitive clauses.

(138) xč̥i-t-oŋəs-sən (Jelinek & Demers 1983)
know-TR-1/2-1
'I know you.'

(139) xč̥i-t-oŋəs-sx^w
know-TR-1/2-2
'You know me.'

Passive counterparts of (138) and (139) are banned. 'You are known by me' and 'I am known by you' cannot be expressed in the passive in Lummi.

The restrictions on transitive clause in Lummi and other Coast Salish languages are noted in the literature. Jelinek and Demers (1983) lay out all the possible person combinations and the clause types that result for Lummi, Lushootseed, and Squamish.²⁹ In each language, first and second person may act upon each other freely in transitive clauses but not in passive clauses. Variation arises when third persons are introduced. A third person acting on a first person in a transitive clause is acceptable in Squamish and Lushootseed but must be passive in Lummi. A third person acting on a second person in a transitive clause is acceptable in Lummi and Squamish, but not Lushootseed. While the restrictions on person combinations varies from language to language, the differences are

²⁸ Gerdts (1988) shows a similar ban on extracted agents in Halkomelem, another Salish language.

²⁹ Jacobs (1994:127) addresses the active-passive clause distinction for certain person combinations in Squamish. He suggests that the restrictions on particular pronoun combinations for the transitive clause "probably reflect the residual presence of an obligatory semantic inversion in Squamish, a common correlate of inverse clauses in Algonquian, Athabascan and elsewhere."

minimal and all three circumvent a person hierarchy violation with passive.³⁰ Table 6 lists person combinations and the transitive or intransitive clauses in which they appear in the three Salish languages mentioned in this section:

Table 6: Person Combinations in Transitive and Intransitive Clauses (Jelinek and Demers 1983)

Lummi		Squamish		Lushootseed	
trans	intrans	trans	intrans	trans	intrans
1 V 2	*2 is V by 1	1 V 2	*2 is V by 1	1 V 2	*2 is V by 1
1 V 3	*3 is V by 1	1 V 3	*3 is V by 1	1 V 3	*3 is V by 1
1 V N	*N is V by 1	1 V N	*N is V by 1	1 V N	*N is V by 1
2 V 1	*1 is V by 2	2 V 1	*1 is V by 2	2 V 1	*1 is V by 2
2 V 3	*3 is V by 2	2 V 3	*3 is V by 2	2 V 3	*3 is V by 2
2 V N	*N is V by 2	2 V N	*N is V by 2	2 V N	*N is V by 2
*3 V 1	1 is V by 3	3 V 1	1 is V by 3	3 V 1	1 is V by 3
*3 V 2	2 is V by 3	*3 V 2	2 is V by 3	3 V 2	2 is V by 3
3 V 3	3 is V by 3	3 V 3	3 is V by 3	3 V 3	3 is V by 3
3 V N	N is V by 3	3 V N	N is V by 3	3 V N	N is V by 3
*N V 1	1 is V by N	N V 1	1 is V by N	N V 1	1 is V by N
*N V 2	2 is V by N	*N V 2	2 is V by N	N V 2	2 is V by N
*N V 3	3 is V by N	*N V 3	3 is V by N	*N V 3	3 is V by N
N V N	N is V by N	N V N	N is V by N	*N V N	N is V by N

The table above summarizes the transitive and intransitive clauses that may express the various person combinations in three Coast Salish languages. Like many of the other languages in this survey, there is generally a different type of clause, or different verbal morphology for each SAP/3 and 3/SAP interactions.³¹ Minor language-specific variation occurs for pronominal third persons and nominal third persons interacting with SAPs.

Klaiman (1991, 1992), however, noting the presence of hierarchies, suggests that Lummi has a direct-inverse distinction. When two third persons interact, Klaiman gives

³⁰ Gerds (1987) addresses semantic hierarchies in Halkomelem, another Coast Salish language. The hierarchy in Halkomelem is as follows:

2 > 1 > 3 animate common > 3animate proper > 3 inanimate

SAP interaction works the same way in Halkomelem as it does in the other Coast Salish languages. There can be no oblique first or second person in passives in Halkomelem. Gerds arrives at the 2 > 1 ranking by the fact that a third person can act on a first person in a transitive predication, but not on a second person.

³¹ Lummi, Squamish and Lushootseed are the only languages in the survey that make a distinction between pronominal third person ('3' in table 6) and nominal third persons ('N' in table 6). Pronominal third persons and nominal third persons behave slightly differently. For example, in Lummi a nominal cannot act on a first person in an active, transitive clause, it must be passive. Whereas in Lushootseed, the same combination is possible in both active and passive.

an inverse analysis based on discourse prominence. The clause (140) is direct, while the clause in (141) is ‘inverse.’

(138) xči-t-s cə swəyʔqəʔ cə swiʔqoʔət
know-TR-3DET man DET boy
‘The man knows the boy.’

(139) xči-t-ŋ cə swiʔqoʔət ə cə swəyʔqəʔ
know-TR-ŋ DET boy by DET man
‘The boy is known by the man.’

Lummi does not have an overt obviation system, although the motivation for the *-ŋ* suffix is discourse driven, much like Picurís. In (138) ‘the man’ is the subject, more topical, and therefore a direct transitive clause appears. In (139), the subject is ‘the boy.’ It is less topical than ‘the man’ appears as an oblique. The clause in (138) is unusual however, because Coast Salish languages tend not to have clauses with two non-oblique nominals.

Lummi falls short of an inverse analysis for several reasons. While it is a head-marking language and does have a person hierarchy governing clause types, it does not have a distinct passive construction that contrasts with the so-called inverse. There is no evidence in Lummi for transitivity. In fact, Jelinek claims that the actor lacks argument properties. The Semantic Hierarchy is not enough to warrant the claim that Lummi or other Salish languages have an inverse system.

3.3 Summary

In this chapter, I have reviewed constructions appearing in Korean, Picurís, and Lummi. They were originally analyzed as passives but reanalyzed by Klaiman (1991, 1993) as inverses. It is true that all three constructions make use of the type of semantic hierarchies generally associated with inverse systems. However, based on the criteria outlined in Chapter One, they are best analyzed as passives.

Table 7 summarizes the five crucial inverse properties for the languages in this chapter compared with languages that I take to be inverse.

Table 7: Summary of Inverse Types and Properties: All Languages

		Transitive	Head-Marking	Discourse Inverse	Hierarchy Inverse	Contrastive Passive
Strong: Total	Cree	✓	✓	✓	✓	✓
	Mapudungun	✓	✓	✓	✓	✓
	Sahaptin	✓	✓	✓	✓	✓
	Navajo	✓	✓	✓	✓	✓
Obviation	Kutenai	✓	✓	✓	✗	✓
	Tzotzil	✓	✓	✓	✗	✓
Weak:	Carib	✓	✓	✗	✓	✗
	Chukchee	✓	✓	✗	✓	✗
	Chebang	✓	✗	✓	✗	✗
Non-inverse:	Korean	✗	✗	✗	✓	✗
	Picurís	✗	✓	✓	✓	✗
	Lummi	✗	✓	✓	✓	✗

The Weak and Non-inverse languages show some variation in their values for head-marking, semantic hierarchies, and discourse prominence. This leads me to suggest that they are less relevant than Klaiman suggests for diagnosing inverse systems. For an inverse system to occur, there needs to be more than a person hierarchy and a tendency for head marking.

Table 8 below summarizes the key features as they apply to Strong and Weak Inverse languages and Non-Inverse languages.

Table 8: Summary of Key Properties for all Inverse Types

	Transitive	Contrastive Passive
Strong Inverse	✓	✓
Weak Inverse	✓	✗
Non-Inverse	✗	✗

Strong Inverse systems have both transitivity and contrastive passive. Weak Inverse systems have transitivity but lack the contrastive passive. Non-Inverse systems have neither transitivity nor contrastive passive.³²

The intransitivity of the so-called inverse in Korean, Picuris, and Lummi leads me to conclude that they are not really inverse constructions.

³² Klaiman does not, in any of her studies, suggest that there are grades of inverse systems. An intransitive 'inverse' such as Lummi is just as inverse as a fully transitive one as in Cree or Navajo according to her work.

Chapter Four: Inverse Form and Function

The purpose of this thesis has been to examine a number of inverse constructions and identify their functional and formal properties. In §4.1, I briefly discuss the function of participant ranking and clause distinction. In § 4.2, I discuss the markedness of forms and how the inverse can be marked or unmarked. In §4.3, I discuss some of the functional implications of a language having an inverse construction and a passive, and why the passive in the inverse language may be agentless.

4.1 Participant Ranking

Semantic hierarchies and discourse prominence both serve to rank participants. This is a functional characteristic of both inverse and passive constructions. Each language in the survey has been shown to rank its nominals either by semantic hierarchies, discourse prominence, or both, regardless of whether the construction in question is inverse (see Chapter Two) or passive (see Chapter Three). Passive and inverse provide languages with a means to realize hierarchical order among persons, animates and inanimates, and proximate and obviative.

Klaiman (1991, 1992, 1993) recognizes hierarchical ordering of participants and describes a system of ontological salience. Participants that are ontologically salient include SAPs and animates. Participants that are ontologically non-salient include third persons and inanimates. In this system of ontological salience, she introduces concepts of logical subject and logical object, and ontological subject and ontological object. In a direct clause, the logical subject aligns with the ontological subject, and the logical object aligns with the ontological object. In an inverse or passive clause, the logical subject

aligns with the ontological object, and the logical object aligns with the ontological subject. She does not make a distinction between semantic hierarchies and discourse prominence.

While both serve to rank participants ontologically, semantic hierarchies and discourse prominence are quite separate phenomena. Discourse prominence cannot be considered a part of semantic hierarchies, nor can semantic hierarchies be considered a part of discourse prominence. The languages in this survey are shown to have both semantic hierarchies and discourse prominence, or one or the other (see Table 9). This demonstrates that Discourse Inverse can occur without Semantic Hierarchy Inverse and vice versa:

Table 9: Hierarchy Inverse and Discourse Inverse by Language

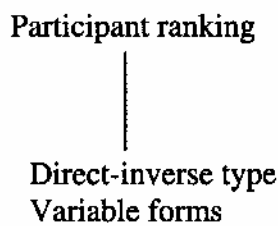
	Hierarchy Inverse	Discourse Inverse
Cree	✓	✓
Mapudungun	✓	✓
Sahaptin	✓	✓
Navajo	✓	✓
Kutenai	×	✓
Tzotzil	×	✓
Carib	✓	✓
Chukchee	✓	×
Chebang	×	✓

Recall that Chebang provides an unusual discourse-driven inverse and seems to lack a rigid semantic hierarchy. Any person combination is possible in either direct or inverse. This suggests that the selection of direct or inverse is based solely on discourse. I am unaware of other languages that behave in this manner.

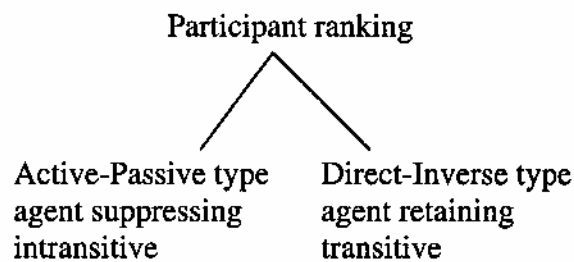
Klaiman (1991, 1992, 1993) notes the functional property of participant ranking in her study of inverse constructions. Where we diverge, however, is in arriving at a set of constructions that the languages use to mark the hierarchical ranking of person and

number, animates and inanimates, and proximate and obviative. Her survey shows that clause differentiation results from participant ranking, but she gives less consideration to whether the clause is transitive or not. In my survey, I agree that participant ranking can drive clause distinction. However, inverse and passive are indeed separate constructions that need not be described under the cover term of inverse. The diagram in (142) shows the different approaches taken by Klaiman and this work.

(142) Klaiman's Approach:



Fadden's approach:



Since a functional property can give rise to more than one construction, we see that there is no one-to-one match between form and function.

The functional properties of semantic hierarchies and discourse prominence, whether the construction in question is passive or inverse, are noted by other authors (e.g., Aissen 1997, Jelinek and Demers 1983, Klaiman 1991, 1992, 1993). Not all languages exploit both to drive a direct-inverse alternation or an active-passive alternation. While they are distinct phenomena, semantic hierarchies and discourse prominence are part of the same functional system.

4.2 Marking the Inverse

In this section I discuss the markedness of the inverse. It is well documented that the passive is more marked than the active. Based on the languages in my survey, I

suggest that the inverse tends to be a marked form and relative to the direct, just as the passive tends to be a marked form relative to the active. I will discuss this further after a brief summary of Comrie's (1988) universals of passive. He identifies three major characteristics of passives:

- (143) (a) Assignment of some subject properties to the patient.
- (b) Less integration of the agent into clause syntax.
- (c) Markedness of passive forms.

The characteristics in points (a) and (b) are relatively clear. A patient is given the syntactic privileges of the subject and the agent is usually reduced to a lower-ranking, non-core case with the relational status of oblique.³³ I will address point (c). In discussing markedness, Comrie highlights the formal difference between active and passive and notes that passive clauses are marked by virtue of the simple fact that they often have more morphemes.

A set of characteristics for inverse is given, parallel to those Comrie outlines for passive:

- (144) (a) Assignment of some subject properties to the lower ranking participant.
- (b) Full integration of the actor into clause syntax.
- (c) Markedness of inverse forms.

Unlike the passive, which universally is a marked clause type, the inverse may or may not be. Based on the data in my survey, it is possible to claim that the inverse clause is a marked structure, just like the passive, but that markedness is by no means a universal characteristic of inverse constructions. Five of the languages in my survey—Mapudungun, Sahaptin, Kutenai, Tzotzil, and Chepang—mark the inverse with verbal morphology. Four languages—Cree, Navajo, Carib, and Chukchee—use the distinctions within person indexing to mark the inverse.

³³ Comrie's notions of agent and patient correspond to my notions of actor and undergoer.

That the inverse does not have a unified morphosyntactic construction, suggests that it is not possible to characterize the inverse in formal, structural terms alone. In order to characterize the inverse, it is necessary to use a set of formal and functional properties.

4.3 Passive and Inverse

That a language has a passive in addition to the inverse generally means that it shows most if not all other inverse properties. In fact, the contrastive passive is the property that separates Strong Inverse and Weak Inverse and, interestingly, the passives in inverse languages tend to be agentless.

The primary difference between the inverse and the passive, especially the agentless passive, is that in the inverse both participants are always represented, either pronominally or lexically. The passive has at most one core argument, the patient, and the agent need not be represented. While the survey of nine languages is not exhaustive enough to make any strong claims, it is tempting to suggest that it is more natural for Inverse languages to have an agentless passive. This is the case reported in the literature for Cree (and other Algonquian languages), Mapudungun, Sahaptin, Navajo, and Kutenai. Tzotzil provides the only exception in the Obviation Inverse, but bear in mind that its inverse is highly restricted and occurs within another grammatical construction, the Agent Focus.

We can speculate as to why these languages may have an agentless passive and not a passive with an oblique actor. In Total Inverse languages, the inverse is pervasive: it takes place in all person combinations. (Navajo is the noted exception, owing to its being motivated by animacy involving third persons.) Relative topicality of clause participants

may provide an explanation for why languages with strong systems are most likely to have agentless passives.

Relative topicality pertains to how topical the participants are to one another based on the voice of the clause. Givón (1994) employs the relative topicality scale devised by Coorman (1982, 1985) in discussing the pragmatics of voice and de-transitivity.

Table 10: Relative Topicality (Coorman 1982, 1985)

Voice	Relative Topicality
Direct	actor > undergoer
Inverse	actor < undergoer
Passive	actor << undergoer
Antipassive	actor >> undergoer

In the direct (active) clause, the actor is more topical than the undergoer. In the inverse, the undergoer is more topical than the actor. In the passive, the undergoer is considerably more topical than the actor. Finally, in the antipassive, the actor is considerably more topical than the undergoer.

A language can reduce the topicality of an actor by passivizing. But some languages can also reduce topicality of an actor with the inverse. It may be then that the inverse language, already having one means of shifting topicality off an actor with the inverse clause in which both participants are pronominally or lexically realized, does not require another—the passive in which the actor is oblique. Instead, it has only an agentless passive and, when it is necessary to mention the actor, the inverse is used.

There is a possible implication to this claim that is a stumbling block. It might be suggested, then, that a language uses the passive if and only if the actor need not be mentioned. If that is the case, then should the passive not be considered more primitive than the inverse? Jacobs (1994) claims that the Squamish passive contains ‘residues’ of a

semantic inverse. However, Gildea (1994) claims that the inverse can evolve from a passive. The only way to test my hypothesis then would be to have a much larger corpus of inverse languages. What should not be overlooked, however, is that the agentless passive tends to be an inherent characteristic of inverse languages.

4.5 Conclusion

In the four previous chapters, I examined twelve inverse constructions from a variety of unrelated languages. The purpose of this thesis has been to identify key properties of inverse constructions and rank the constructions according to strength or weakness. The properties I use as criteria to assess inverse constructions are the following:

- (145) semantic hierarchies
- discourse prominence
- head-marking
- transitivity
- contrastive passive

Plains Cree, often held to have a prototypical inverse, has five properties listed in (145). When these properties are checked against the eleven other languages in my survey, three groups of constructions emerged. First, there are languages that possess all five properties: Mapudungun, Sahaptin, and Navajo. These are classified as Total Inverse constructions. Second, two languages have four inverse properties but lack Hierarchy Inverse: Kutenai and Tzotzil. They are classified as Obviation Inverse. Total and Obviation Inverse together form a larger category called Strong Inverse. Third, some languages lack a passive in contrast with the inverse: Carib, Chukchee, and Chepang. They are classified as Weak Inverse. The non-inverse constructions in Korean, Picuris,

and Lummi (in Chapter Three) are a re-analysis of passive constructions by Klaiman (1991, 1992, 1993). Noting that these languages rank clause participants according to semantic hierarchies or discourse prominence, she claims that they have inverse constructions comparable to Plains Cree. When examined in light of the properties I ascribe to inverse constructions, they are shown to lack one crucial feature. They are all intransitive, and hence, best described as passives. The languages and the properties of their inverse systems are given in Table 7 and repeated below:

Table 11: Summary of Inverse Types and Properties: Conclusion

		Transitive	Head Marking	Discourse Inverse	Hierarchy Inverse	Contrastive Passive
Strong: Total	Cree	✓	✓	✓	✓	✓
	Mapudungun	✓	✓	✓	✓	✓
	Sahaptin	✓	✓	✓	✓	✓
	Navajo	✓	✓	✓	✓	✓
Obviation	Kutenai	✓	✓	✓	✗	✓
	Tzotzil	✓	✓	✓	✗	✓
Weak:	Carib	✓	✓	✗	✓	✗
	Chukchee	✓	✓	✗	✓	✗
	Chepang	✓	✗	✓	✗	✗
Non-inverse:	Korean	✗	✗	✗	✓	✗
	Picuris	✗	✓	✓	✓	✗
	Lummi	✗	✓	✓	✓	✗

This survey has led to a continuum of languages, with Strong Inverse constructions mirroring the prototypical system of Cree at one extreme, and Non-Inverse constructions such as Korean at the opposite extreme.

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