Case and the syntax of argument indexation

An analysis of Sorani Kurdish

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Draft Version: July 18, 2023

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Abbreviations

*	ungrammatical construction
?	grammatical, but slightly dispreferred
%	speaker variation
-	morpheme boundary
=	clitic boundary
#	semantic anomaly
()	optional
1, 2, 3	1st, 2nd, 3rd person
A	Set A in Mayan (ergative/possessive)
B	Set B in Mayan (absolutive)
ABS	absolutive
ACC	accusative
ADD	additive
ASP	aspect
AUG	augmentative
AUX	auxiliary
CL	clitic
CLF	classifier
COM / COMPL	completive aspect
COP	copula
DAT	dative
DEF	definite
DEM	demonstrative
DESID	desiderative
DFLT	default
DIR	direct
DIST	distal
DISTR	distributive
DUR	durative
ERG	ergative
EV	evidential
EZ	ezafe
F / FEM	feminine
FOC	focus
FUT	future
GEN	genitive
H	honorific
HAB	habitual
IND	indicative
INDF	indefinite
INFL	inflection

INST	instrumental
INVOL	involuntive
IPFV	imperfective
IRR	irrealis
ITR	iterative
L	L-suffix (in Aramaic)
LOC	locative
M/MASC	masculine
MID	middle
MP	morpho-phonological
MS	morpho-syntactic
NEG	negation
NOM	nominative
NON.FUT	non-future
NON.NOM	non-nominative
OBL / $\mathscr{O}$	oblique
PASS	passive
PERF	perfect
PFV	perfective
PL	plural
POSS	possessive
PREP	preposition
pro	pronoun
PROG	progressive
PROX	proximal/proximate
PRS	present
PST	past
PTCP	participle
PVB	preverbal
REM	remote
S	S-suffix (in Aramaic)
SBJV	subjunctive
SG	singular
SUF	suffix
T	tense
TEL	telic

Preface

[Preface and acknowledgments coming in a subsequent version]

NOTES TO THE READER

- This is our first complete draft of this material. While we expect the core of the analysis to remain the same in revisions, some of the details are likely to be unstable relatively speaking. Feel free to consult with us about any questions concerning specific proposals.
- We are most likely not completely consistent with respect to capitalization conventions and related matters; apologies in advance.
- Comments are welcomed!

1
Introduction

Case and agreement comprise the core of morphosyntax, and how these aspects of the grammar interact continues to be a question of central importance in syntactic theory. This book contributes to this discussion with a detailed analysis of the morphosyntax of Sorani Kurdish, an Iranian language spoken in Iraq and Iran by ∼5 million speakers (Ethnologue). The specific focus of the work is on *argument indexation*: the manner in which **clitics** and **agreement affixes** relate to arguments in the clause. The body of the book is a worked out analysis of Sorani indexation that assumes the theoretical apparatus of the Minimalist Program and Distributed Morphology. Though many of our primary foci are on theoretical implications that are native to a certain type of contemporary syntactic theory, most of the Sorani data that we provide is novel, as are many of the generalizations that we uncover; we are therefore hopeful that the work will be of interest to researchers from a variety of theoretical perspectives.

The Sorani indexation system involves two types of elements that are essentially bundles of grammatical features: features related to person, number, and case. In a way that we will be at pains to explain throughout the initial sections of this study, the terms we used for indexers immediately above– *agreement affix* and *pronominal clitic*– combine both morphosyntactic and morphophonological behaviors in a way that is not entirely helpful; precisely what is at issue is whether the morphosyntactic behavior of an element determines its morphophonological properties. For this reason, when we are attempting to be somewhat neutral on this matter, we will employ the cover terms *argument indexers* or *φ-elements* for the morphemes whose status is at issue. We will use the abbreviation 'MS' for morphosyntactic operations, the relevant ones for us being Agree and Move. We assume that these operations apply in the narrow syntax. Correspondingly, we use the abbreviation *MP* (MorphoPhonological) when we refer to an indexer's morphophonological status.

1.1 The primary arguments in outline

One of the central points of interest in Sorani concerns the ways in which MS operations and their MP realizations are connected. Sorani shows a system of argument indexation in which an aspect-driven **alignment split** (conventionally called a *tense/stem*-based split) interacts with agreement and movement to produce complex distributions of MP clitics and affixes. The alignment split pairs Nominative/Accusative imperfectives with Ergative/Objective perfectives (the use of *Objective* rather than *Absolutive* is justified later in

the discussion). Or, in terms more familiar from the literature on Iranian languages, the imperfective is Direct/Oblique, while the perfective is Oblique/Direct.

In transitive clauses, the split alignment manifests itself in a striking 'mirror-image' effect, which is illustrated in (1). In the imperfective (1a), the transitive Subject is indexed by the italicized agreement morpheme *-în* on the verb, while the Direct Object is indexed by the boldfaced clitic *=yan*. In perfective (1b), the indexation pattern is the reverse: the clitic *=man* indexes the transitive Subject, while the agreement morpheme *-in* indexes the Direct Object:

(1) a. (ême) de**=yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

b. (ême) de**=man** dît-*in*.
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'[1]

The book analyzes transitive clauses like these, as well as other aspects of Sorani indexation that are often not examined in theoretical discussions; including but not limited to intransitives, ditransitives, possessors and arguments of prepositions that enter the alignment system, non-canonical subject constructions, and passives. The main findings that emerge from the study can be placed under three large headings. The first two (1.1.1-1.1.2) concern how morphosyntactic (MS) operations apply, and how their output is interpreted morphophonologically (MP). The third (1.1.3) centers on comparative matters: that is, the extension of our analysis of Sorani to a number of other languages, both within Iranian and beyond.

1.1.1 Case features and *Case Targeting*

We analyze the indexation system of Sorani with two MS operations; Agreement and Clitic Movement:

> **MS Agreement** We assume that a syntactic agreement operation (e.g., a form of "AGREE") applies so that the φ features of an argument appear on a head that agrees with it. In Sorani, Agreement probes are specified to apply once per clause.

> **MS Clitic Movement:** The movement operation that we employ is one that is often called *clitic movement*. It applies to D(P) pronouns of a particular type– i.e. those that are represented as clitics, unlike e.g. full pronouns– and moves them to a higher head. In Sorani, Clitic movement can apply to multiple arguments per clause.

We argue that these operations must be specified to target arguments with specific case features. It has been proposed in the literature that MS probes can be specified to distinguish between arguments with different cases: cf. *Case Discrimination* in Bobaljik (2008);

[1] The past stem of the verb 'see' can also be *bînî*. We alternate between *bînî* and the suppletive *dît*.

Preminger (2014), where the idea is that certain arguments do not count as accessible for a particular MS operation. We adapt this idea in a way that involves **positive** statements, what we call *Case Targeting*: a probe on a particular head may target nominals with a specific case feature (or set of case features), ignoring nominals while doing so. This is in essence a version for case features of what Deal (2021) has motivated in the domain of person and number to account for Person Case Constraint effects.

Regarding the case features themselves, we motivate a decompositional approach, in which case labels like 'Ergative' are replaced with features like [+oblique,+subject]. This aspect of the proposal extends ideas about case that play a role in theories of case spell-out (e.g. Halle and Vaux 1998; Calabrese 2008, and ultimately Jakobson 1936/1984, 1958/1984). This type of decomposition allows for analyses in which cases are grouped one way for the purposes of **syntactic**, but another way for morphological realization.

This aspect of the approach is illustrated in a number of case studies that are presented in the main body of the book; we will see some initial illustrations of how it functions in Sorani below in 1.2.

1.1.2 MS Operations and MP Packaging

On the morphophonological (MP) side, there are some different ways of identifying differences between φ elements that make them more or less clitic- or agreement-like. One of these is part of what could be called phonology proper, and involves the types of interactions that these elements engage in with their hosts; for example, whether they are part of the same stress domain, or vowel harmony domain, or interact with word-level phonological processes.

A second sense is distributional, and concerns the position in which the φ element is found. While typical agreement morphemes show a relatively 'fixed' distribution– occurring, for example, as affixes on e.g. Tense or some other functional head– MP clitics often display more complex distributions. These include types of *second position* effects, which are what we will encounter in the analysis of Sorani below.

In this book, our primary focus will be on the distributional part of the MP 'clitic versus agreement' distinction. While we will offer a few suggestions concerning phonology proper in the pages to come, as well as returning to it in our general discussion, our primary focus is on two types of φ elements in Sorani that can be clearly distinguished MP-wise on the basis of their distributions. One of these is clearly an MP clitic, and occurs on various hosts; and the other is agreement (i.e. affix)-like, and occurs only on the verb. We refer to these as *MP Clitics* and *MP Agreement* respectively.

A key question that is addressed is how the MS operations of 1.1.1 (Agreement and Clitic Movement) relate to MP Agreement and MP Clitics. We argue that the Sorani system requires a theory that allows *mismatches* between MS Operations and their MP form. This is best illustrated in contrast to a *direct* view of these relations of the type stated in (2):

(2) Direct MS/MP relations (to be argued against)

a. Clitic-movement applies to $\varphi \Rightarrow \varphi$ is realized as an MP *clitic*;

b. Agreement operation produces $\varphi \Rightarrow \varphi$ is realized as an MP *agreement affix*.

In short form, (2) expresses the widely-held view that the MP status of an indexer is determined by the MS operation that it is connected to.

In spite of the continued popularity of the view summarized in (2), different lines of research have arrived at the conclusion that it does not hold across the board. For example, works on the more MS side like Preminger (2009) and Kramer (2014) argue that certain instances of what appears to be object agreement morphology are in fact pronominal clitics. On the MP side, similar arguments have been made as well, with the usual one being that an MS clitic can interact with its host phonologically in a way that is typical of MP affixes.

Our Sorani case study brings both lines of argument together in the same system: as will be seen below, both MS Agreement and MS Clitic Movement are indexed with MP Agreement and MP clitics.

1.1.3 Alignment and indexation: beyond NOM/ACC versus ERG/ABS

At the center of this work are two distinct varieties of Sorani: Standard Sorani Kurdish (SSK) and Garmiani Kurdish (GK). Garmiani differs minimally from Standard Sorani Kurdish (SSK) in that its perfective is Ergative/Accusative, not Ergative/Objective. It represents a situation that goes beyond a simple 'Nominative/Accusative' versus 'Ergative/Absolutive' dichotomy, with a typologically unusual double oblique pattern that has been reported elsewhere in Iranian (see Akkuş 2020 and references cited there).[2] As we will see, analyzing SSK and GK together provides an important illustration of how our approach works: in particular, it will be shown that while the two differ in case assignment in the way described above, the mechanics of MS Agreement and Clitic Movement are identical in the two languages.

Besides Sorani, several other languages are analysed in this book with an eye towards (i) strengthening our understanding of cross-linguistic variation in alignment, and (ii) illustrating the possible loci of variation that our theoretical proposals posit. In addition to working through the details of Garmiani Kurdish we present analyses of several other languages, both within Iranian (Laki, Kurmanji Kurdish, Zazaki, Persian, Rushani, Shughni) and more broadly; on the latter front, this includes analyses of Hindi, Nepali, Gujarati, and Maithili (Indo-Aryan), Nukuoro (Polynesian), as well as Arabic and Neo-Aramaic varieties (Semitic).

* * *

The implications of these arguments are examined in the concluding chapter, where we also compare our main claims against plausible alternatives (and show why we believe things work in the manner outlined immediately above). Along the way, we will identify a number of further topics of theoretical interest. In this initial chapter, we will provide an overview of our main results in outline form. This is intended to serve both as a summary of the work's primary contributions, and as a foundation for the more detailed chapters to come.

[2] This pattern is described as 'hardly attested' (Haspelmath 2008) and 'exceedingly rare' (Velupillai 2012).

1.2 The analysis of Sorani indexation: Transitive clauses

The primary case study in our work is Standard Sorani Kurdish (SSK), a variety associated with the city of Sulaymaniyah in Iraq; as noted earlier we also analyze the closely related Garmiani variety (GK). Throughout this work we will use *Sorani (Kurdish)* as a cover term to refer to properties found in both varieties. It bears noting at the outset that a great deal of the data that we present is novel; co-author M. Salih is a native speaker of both SSK and GK, and our examples have been checked with a number of additional speakers.

The aspect-based alignment split seen in Sorani has its origins in ancient Iranian (Old Persian, or before); see Haig (2008) and references cited there.On our analysis, the split is determined by the presence or absence of a perfective head Asp[perf]: transitive clauses without this head are Nominative/Accusative; when it is present, they are Ergative/Objective.[3]

A point worth emphasizing is that the manifestation of the split is seen exclusively in the system of argument indexation: Sorani lacks overt case morphology on noun phrases. Argument indexation differs in the two aspects as initially illustrated in (3), repeated here:

(3) a. (ême) de**=yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

b. (ême) de**=man** bînî-*n*
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'

Transitive clauses always contain both an MP clitic and an MP agreement marker; the arguments these correspond to is reversed across aspects, as summarized in (4):

(4) Sorani transitive indexation

	MP-CLITIC		MP-AGREEMENT
IMPERFECTIVE	DO		Subject
		×	
PERFECTIVE	Subject		DO

One of the many analytical challenges posed by this pattern concerns how probes are structured. It appears that there are two heads that are active in the Sorani system: one that interacts with oblique arguments (Accusative Objects in the imperfective; Ergative Subjects in the perfective) and one with direct arguments (Nominative Subjects in the imperfective; Objective Objects in the perfective). We refer to the first of these heads as $\mathscr{O}$, signalling its interaction with obliques; the second of the heads bearing probes is T(ense).

The question to be addressed is how the probes on these heads must function in order to produce the alignment pattern summarized in (4)– and (crucially) the alignment found in other types of clauses (intransitive, possessive, ditransitive) as well. At a minimum, a

[3] It is more common to see the split referred to as *tense-based*; we analyze it in terms of Aspect for reasons that are discussed in Chapter 3

worked-out analysis must specify (i) how a probe interacts with a particular argument; and (ii) how these interactions correspond to realization as MP clitics or agreement morphemes.

Our analysis involves the sequence of steps that are given in (5):

(5) *Order*:

a. Creation of basic clause (perfective or not) >

b. case assignment >

c. MS (clitic-) Movement and Agreement operations >

d. PF-realization of φ bundles.

We will elaborate on each of these steps in turn. Before doing this, it is crucial to clarify a further point about the indexation pattern seen in (3). This concerns the way in which MS operations interact with Subjects and Direct Objects. While the indexation pattern is reversed in the way shown in (4), the syntactic relationship between an argument and its indexer is constant throughout the system. In particular, Subjects are targets of MS Agreement, and (when overt) always co-occur with an indexer in both aspects. Overt Direct Objects (and Indirect Objects), on the other hand, are in complementary distribution with indexers in both aspects. These facts are illustrated in (6-7): the A argument is obligatorily indexed, be it in the form of MP-Agreement (6a) or MP-Clitic (7a). On the other hand, the O argument cannot be indexed, irrespective of the MP-Agreement (6b) or MP-Clitic (7b). The same facts about the O argument are shown in (6c)-(7c) with a common object as well.

(6) a. to de=**man** bîn-**(ît)* → *the A MP-Agr must appear*
2SG.pro IND=1PL.CL see.PRS-2SG
'You see us.'

b. to ême=**t** de-bînî-*(*[î]n)* → *the O MP-Agr can't appear*
2SG.pro 1PL.pro=2SG.CL PROG-see.PST-1PL
'You were seeing us.'

c. min sêw-ek-an=**im** bînî-*(*n)* → *(same as b)*
1SG.pro apple-the-PL-1SG.CL see.PST-PL
'I saw the apples.'

(7) a. to de=***(t)** bînî-*[î]n* → *the A MP-clitic must appear*
2SG.pro PROG=2SG.CL see.PST-1PL
'You were seeing us.'

b. ême ewan=**(*yan)** de-bîn-*în* → *the O MP-clitic can't appear*
1PL.pro 3PL.pro=3PL.CL IND-see.PRS-1PL
'We see them.'

c. min hemu roj-êk John=**(*î)** de-bîn-*im*. → *(same as b)*
1SG.pro every day-a John=3SG.CL IND-see.PRS-1SG
'I see John every day.'

On the basis of this and further arguments we conclude that Subject indexers are produced by MS Agreement, while Object indexers are the product of MS Clitic Movement:

(8) a. Overt DP arguments always co-occur with subject indexers.
⇒ Subject φ indexers are the product of MS Agreement.
b. DO/IO indexers never co-occur with an overt DP argument.
⇒ DO/IO φ indexers are MS clitic pronouns.

Case assignment Case assignment in Sorani transitive clauses differs in an aspect-sensitive way. Our analysis requires that case features be assigned prior to MS Agreement and Clitic Movement (cp. Bobaljik 2008; Preminger 2009; Akkuş 2020). In this work we do not rely on a specific theory of case assignment. Rather, the premise is that cases can be identified on the basis of distinctions made in the indexation system (and in the realization of φ elements).[4] Based on these factors, we treat the Sorani system with the four cases shown in (9); these are defined by crossing the features [±subject] and [±oblique]:

(9) Sorani cases

	'Nominative'	'Ergative'	'Accusative'	'Objective'
subj(ect)	+	+	-	-
obl(ique)	-	+	+	-

The aspect-determined alignment split is then as in (10):

(10) Sorani cases by aspect
a. *Imperfective:*
i. Subject [+subj,-obl] = Nominative
ii. Object [-subj,+obl] = Accusative
b. *Perfective:*
i. Subject [+subj,-obl] = Ergative
ii. Object [-subj,-obl] = Objective

Although we do not develop a theory of how case features are assigned, this work contains numerous observations and analyses that provide important insight into how this part of the theory must work. These appear throughout the book and are brought together in the concluding chapter.

Probes As noted earlier, our analysis is based on the idea that there are two heads that possess probes in Sorani: Tense and $\mathscr{O}$. Each of these heads has two MS probes: one for Agreement, and one for Clitic Movement. These target cases in the ways stated in (11):

(11) Properties of heads

[4] And, of course, in terms of overt case-marking on DPs, in languages that (unlike Sorani) have this.

a. T $\left\{ \begin{array}{ll} \textsc{Agrees} \text{ with [+subj, -obl] arguments} & \text{(Target: Nominative)} \\ \textsc{Moves} \text{ [-subj, -obl] clitics} & \text{(Target: Objective)} \end{array} \right.$

b. $\mathscr{O}$ $\left\{ \begin{array}{ll} \textsc{Agrees} \text{ with [+subj, +obl] arguments} & \text{(Target: Ergative)} \\ \textsc{Moves} \text{ [-subj, +obl] clitics} & \text{(Target: Accusative)} \end{array} \right.$

It is the fact that each of these heads possesses two probes that provides the basis for the mirror-image effect seen in imperfective and perfective transitive clauses. T interacts with Subjects in the perfective, and Objects in the imperfective. $\mathscr{O}$, conversely, operates with Subjects in the perfective, and Objects in the imperfective.

MP Realization The final step concerns how φ elements are realized. As summarized in (11), each of T and $\mathscr{O}$ probe for arguments with two different cases. Though distinct, the targeted cases share a feature: both of those targeted by T are [-obl], while those interacting with $\mathscr{O}$ are [+obl]. Crucially, morphological realization of φ bundles is sensitive to case features; and– due to the underspecification of the relevant Vocabulary Items– it produces a situation in which each φ element realizes more than one case. In particular, the Vocabulary is sensitive to the [$\pm$obl] distinction, and produces the following syncretisms:

(12) a. [+obl] φ bundles are realized as MP Clitics (Ergative, Accusative)

b. [-obl] φ bundles are realized as MP Agreement (Nominative, Objective)

So, for example, in imperfective (3a) MS Agreement puts the Subjects' [+1,-2,-obl] features on T; the [-1,-2,+obj] Object is MS Clitic moved to $\mathscr{O}$. By (12) these morphemes are realized as the MP Agreement *-în* and the MP Clitic *=yan* respectively. In perfective (3b) MS Agreement produces a φ bundle with [+1,-2,+pl,+obl] on $\mathscr{O}$, while MS Clitic Movement places a φ bundle with [-1,-2,+pl,-obl] on T. The former is realized as the MP Clitic *=man*, and the latter as the MS Agreement marker *-n*.

* * *

To summarize, our analysis is centered on three components which (though connected) function independently of one another:

- Case assignment, which in Sorani is sensitive to Aspect in the alignment system;
- probes that effect MS operations, which target specific case features; and
- morphological realization of φ bundles, which makes reference to case features.

This analysis, which we show to be superior to alternatives, requires that MS Operations do not have a single MP realization: both MS Agreement and MS Clitic Movement may produce MP Agreement and MP Clitics:

(13) MS/MP mismatch

a. MS Agreement is indexed as

i. MP Agreement (Imperfective Subject)

ii. MP Clitic (Ergative Subject)

b. MS Clitic Movement is indexed as

i. MP Agreement (Perfective Object)

ii. MP Clitic (Imperfective Object)

Chapter 4 of this book works through the steps summarized in this section in detail; Chapter 6 discusses pertinent alterantives to our primary claims, and shows why we take the evidence to support our approach.

1.3 Further components of the analysis

An important aspect of the present work is that it extends the analysis of indexation to clauses beyond typical transitives. Although analyses in the literature do not always do this, it turns out to be quite important. For one, many conceivable approaches to the indexation in split-alignment systems make correct predictions concerning transitives, but are unable to account for the indexation of **in**transitives. In addition to this basic (and in our opinion underappreciated) point, broadening the investigation to further clause types reveals a number of phenomena of interest. For Sorani in particular, we have identified cases in which (i) arguments of prepositions and possessors enter the indexation system; (ii) certain predicates show Ergative subjects in a way that is not sensitive to aspect; and (iii) one type of passivization of a ditransitive produces a derived Ergative Subject. We outline each of these points in turn.

1.3.1 Possessors and arguments of prepositions

Possessors and the arguments of prepositions can also enter the indexation system of Sorani. Such arguments can be realized in expected positions: for example, in possessive (14a), the clitic *=man* is internal to the possessed DP, while in ditransitive (15a) the IO is the clitic *=yan* attached to the preposition that precedes it. But Sorani also allows for further possibilities. In perfective clauses, for example, these arguments can be realized as MP Agreement on the verb, as shown in (14b)-(15b):

(14) a. Otombîl-eke=**man** de-be-*n*
car-the=1PL.CL IND-take.PRS-PL
'They take our car away.'

b. Otombîl-eke**=yan** bird-*în*
car-the=3PL.CL take.PST-1PL
'They took our car away.'

(15) a. ew ême**=y** bo=**yan** nard
s/he us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême**=y** bo nard-*in*
s/he us=3SG.CL to send.PST-3PL
'S/he sent us to them.'

This effect is restricted to the perfective; the imperfectives corresponding to these examples are ungrammatical:

(16) a. *Otombîl-eke de-be{-n-*în*/-*yn*-in}
car-the IND-take-PL-1PL/-1PL-PL
'They take our car away.'

b. *ew ême bo de-nêrê{-t-*in*/-*in*-it}
s/he us to IND-send-3SG-3PL/3PL-3SG
'S/he sends us to them.'

The pattern of indexation seen in (14b)-(15b) is that displayed by arguments with Objective case: it is the way in which Direct Objects are indexed in the perfective. Like with DOs, possessor indexation also behaves like an instance of MS Clitic Movement– realization of the Possessor or Prepositional argument as MP Agreement on the verb is complementary to any coindexed argument.

Our proposal is that this effect happens only in the perfective because it is **case-driven**. When there is an Objective case DO in the clause, Possessors and Prepositional complements may also be assigned Objective. This is essentially a kind of case attraction effect. The realization of the Clitic-moved Objective pronoun as MP Agreement then follows from the same mechanisms that are posited for transitive clauses.

Further evidence that the effect arises from these arguments matching the case of the DO can be seen in the imperfective, where DOs have Accusative case. When objects of Prepositions are displaced in this aspect, they are realized as MP Clitics as shown in (17b):

(17) a. ew ême bo**=yan** e-nêr-ê(t)
3SG.pro us to=3PL.CL IND-send-3SG
'S/he sends us to them.'

b. ew ême**=yan** bo e-nêr-ê(t).
3SG.pro us=3PL.CL to IND-send-3SG
'S/he sends us to them.' (GK/SSK)

That is, they behave exactly as expected if they have Accusative case like the DO.

Continuing with this line of reasoning, recall that in Garmiani Kurdish (GK) DOs have Accusative case in both aspects. In this variety the effect illustrated in (17b) can also take place in the perfective, as shown in (18b); cp. SSK (15b):

(18) a. ew ême=y bo**=yan** nard
3SG.pro us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême**=yan**=î bo nard
3SG.pro us=3PL.CL=3SG.CL to send.PST
'S/he sent us to them.' (GK/*SSK)

To summarize, the extension of the analysis of indexation to P-arguments reveals several new aspects of Case Targeting, and shows sensitivity to what appears to be a contextual effect on case assignment.

1.3.2 Non-canonical subjects

As we saw earlier, the aspectual split between imperfective and perfective plays a central role in the Sorani indexation system. It is for this reason that we examine closely two further types of construction in the language in which there are **Ergative Subjects in both** aspects. These correspond to what are often referred to as *Non-Canonical Subject* constructions (NCSs). These are lexically restricted, and fall under two distinct types which are exemplified by *want* in (19) and what we refer to as *clausal possession* in (20):[5]

(19) a. min kitêb**=im** de-wê.
1SG.pro book=1SG.CL IND-want.PRS
'I want book/books.'
b. min kitêb**=im** wîst.
1SG.pro book=1SG.CL want.PST
'I wanted book/books.'

(20) a. ême kitêb**=man** he-(y)e.
1PL.pro book=1PL.CL exist-COP.PRS
'We have books.' (Kareem 2016:137, (55))
b. ême qalam-an**=man** ha-bû.
1PL.pro pen-PL=1PL.CL exist-COP.PST
'We had some pens.' (Thackston 2006b: 26)

In both of these constructions, we demonstrate that the Ergative argument has the properties of a typical Subject. The two constructions differ from each other in other ways, though. On our analysis, in the *want* type, the Subject is assigned Ergative by virtue of being introduced in the specifier of an Applicative head. In the clausal possession construction, on the other hand, the Subject there originates inside the possessed DP, where it is licensed by a functional head. From this position, it is moved out of the possessed DP, and functions as the subject of the clause. Strikingly, clausal possession shows 'double subject' properties: the possessor agrees in the way typical of Ergative arguments, and the possessum agrees (optionally) in the way expected of Nominative arguments.

Aspect-insensitive ergativity has important implications for how the indexation system is analyzed. In the view we develop, it arises through how case is assigned to the arguments in question: that is, in an aspect-insensitive way. Once this takes place, the mechanics of indexation behaves as expected given the probes we motivated in our analysis of transitives.

[5] There is also a monoargumental type, for predicates like 'be cold.'

1.3.3 Passivization of ditransitives

The passivization of transitives in Sorani produces Nominative subjects in both aspects. This is expected under the relatively standard scenario in which the typical case borne by a DO is not assigned in passive clauses. Passivization on Direct Objects of ditransitives is also unexceptional; the DO becomes the Subject, and, as expected, is Nominative. However, ditransitives also allow a second passive option; and this one has some very unusual properties. It is shown in (21) in imperfective and perfective aspects, respectively:

(21) a. ême dyarî-ek-an**=man** pê-de-d-rê-(n).
1PL.pro gift-the-PL=1PL.CL to-IND-give.PRS-PASS.PRS-PL
'We will be given the gifts.'

b. ême dyarî-ek-an**=man** pê-di-ra-(n).
1PL.pro gift-the-PL=1SG.CL to-give.PRS-PASS.PST-PL
'We were given the gifts.'

In short form, the surface subject in the IO passive shows the indexation pattern typical of Ergatives, in a way that is not sensitive to aspect. In addition, the DO is indexed (optionally) with MP Agreement, in a way that is typical of Nominative case. The resulting pattern– a derived Ergative subject– is typologically unusual to say the least.

We hypothesize that the IO passive patterns arise for essentially the same reasons that they do in clausal possession; that is, that these two configurations share a structural property, a lower argument (in IO passives, the patient) being moved over a higher one. If this analysis of the IO passive is correct, then there are two configurations in Sorani with derived Ergatives, and with dual-subject properties (i.e. agreement with a Nominative argument as well).

1.4 Theoretical conclusions and implications

After working through the details of Sorani indexation in Chapters 4 and 5 we present a theoretical discussion in Chapter 6 that compares pertinent alternatives to the positions we develop and assesses the implications of our analyses. The three major headings in this discussion are as follows.

1.4.1 Case features

We argue both for Sorani and in other case studies that case labels like *Nominative, Ergative*, etc. should be taken as short hand for sets of binary features. The kind of representation that we employ is 'flat'; as shown in (22), the features are simply cross-classified:

(22) Sorani cases

	'Nominative'	'Ergative'	'Accusative'	'Objective'
subj(ect)	+	+	-	-
obl(ique)	-	+	+	-

Breaking down case labels in this way is a return to a view that is advanced in Neidle (1982a,b), and which otherwise has been employed in analyses of case forms; cf. Halle (1997) and Halle and Vaux (1998). Ultimately this type of approach as its roots in the work of Jakobson (1936/1984, 1958/1984), and many accounts have used representations that go beyond what we have in (22), often in ways that are influenced by theories of markedness. With this in mind, our theoretical discussion concentrates on two alternatives to the (22)-style representation of case features.

The first– perhaps better viewed as a point of reference rather than an alternative– appeals to hierarchies of the type *unmarked* > *dependent* > *lexical*, and play a prominent role in the literature on case-agreement interactions (cf. Bobaljik 2008, 2017). We examine the this kind of hierarchy in the context of the Sorani system, and show how our feature system accounts for the generalizations that this hierarchy is intended to explain. The major questions here are what role (if any) hierarchies like this play a role in grammatical operations; and whether it is indeed possible for grammatical operations that are case-targeting to group cases in an 'unnatural' way.

We consider in addition a second type of case representation that differs substantially from ours in taking cases to be in a markedness-determined containment relation. In this type of approach, hierarchies of another type are employed: more marked cases a built on top of less marked ones, so that a case like e.g. Accusative structurally contains Nominative (cf. Caha 2009). We demonstrate that this type of representation produces difficulties when employed in a system with Case Targeting. In short form, the kinds of classes that need to be referred to in accounting for indexation can be produced only by stipulation.

To summarize, what our approach requires that the syntax distinguish a certain number of abstract cases (for Sorani three or four, depending on the variety), and that these distinctions be referred to by the agreement and clitic movement operations. Though case features are necessary to the approach in this way, it is not our intention to give a theory of how the arguments in question come to be assigned the features that they wind up with. Rather, we will posit features on the basis of the partitions in MS behavior that they produce in the indexation system. In this way, this aspect of the approach is abstract– an abstraction on an abstraction, in a sense, since the question of how case feaetures are 'grounded' is a difficult one. At the same time, we believe that the analyses developed here will contribute to these lines of research, in addition to speaking to the theoretical discussions referred to above.

1.4.2 Case targeting

A central claim in our work is that MS operations may target specific case features in the ways illustrated above. As part of the argument that the grammar works in this way, we consider alternative proposals, and show where they have difficulties in accounting for the facts of Sorani.

To take one example, one way to eliminate case from the equation is to have heads target only the highest argument that has not been targeted by another operation. This kind of 'height only' approach is motivated by the fact that it appeals to a kind of locality that clearly plays a role in morphosyntax. In the case of alignment splits, Kalin and van Urk (2015), for example, employ this kind of system to analyze indexation in certain Neo-Aramaic vari-

eties. We show that while height only may work for certain systems, it cannot be extended to systems like Sorani, where it makes incorrect predictions; Subjects of intransitives, for example, should be Ergative in the perfective, contrary to fact. Solutions to this problem make reference to transitivity, which effectively introduces an argument's case into the picture: precisely the position we have adopted. To drive these points home, we make the same points in an examination of additional varieties of Neo-Aramaic that show indexation patterns beyond those analyzed in Kalin and van Urk (2015).

Another type of analysis that does not employ case targeting to produce the alignment split manipulates either (i) probe structure, or (ii) the relative height of the Subject and Direct Object when MS operations apply. For the former, it might be held, for example, that there are two probes in Sorani responsible for indexation– P_1 and P_2, and that the height of these probes differs by aspect: in the imperfective P_1 is higher than P_2, while in the perfective the reverse situation obtains. While it looks intuitively like this might produce the mirror-image effect seen in Sorani indexation, this account fails to make correct predictions for relatively simple cases– for the way in which the Subjects of intransitives are indexed, for example.

A second type of alternative to consider posits a difference in argument height in the two aspects. Stated abstractly, the idea is that probe structure is the same in both imperfective and perfective clauses, but the relative height of the Subject and Direct Object differ when MS operations apply. Schematically, this option is as follows:

(23) Manipulating argument height

When probes P_1 ("Direct") and P_2 ("Oblique") apply....

a. IMPERFECTIVE: S $>$ DO; P_1 finds the Subject, and P_2 the Direct Object.

b. PERFECTIVE: DO $>$ S; P_1 finds the Direct Object, and P_2 the Subject.

The intuition at play here is that the alignment split can be derived by having the probes find different arguments in each aspect. With P_1 linked to direct (=MP affix) realization, and P_2 to oblique (=MP clitic) form, the indexation should flip across aspects.

In order to function properly, this type of account requires that probes apply in sequence: in particular, P_1 must seek a goal prior to P_2. P_2 must then apply in a way that ignores the argument that P_1 finds. In the imperfective, this means that P_2 ignores the Subject, and finds the Direct Object. In the perfective, P_2 ignores the Direct Object, which is inactive due to having been found by P_1; similarly, in the imperfective P_2 must ignore the Subject and find the Direct Object.

This account has some advantages over the probe reversal one, but still is inferior to Case Targeting. It predicts, for example, that in clauses with two DPs (i.e., non clitics) that there should always be double agreement, since T and $\mathscr{O}$ should always agree with the Subject or the Direct Object (in a way that depends on argument height). In addition, there is no evidence for positing a difference in argument height in the two aspects.

We conclude from these comparisons that case-sensitivity is required in some form in order to account for the full range of facts that comprise the Sorani indexation system.

1.4.3 MS/MP mismatches

As we noted at the beginning of this chapter, a widely-held view connects a φ element's morphophonological behavior to is morphosyntactic provenance. On this kind of *Direct* view, the relations are predicted to be as follows:

(24) Direct MS/MP relations

a. Clitic-movement applies to $\varphi \Rightarrow \varphi$ is realized as an MP *clitic*;

b. Agreement operation produces $\varphi \Rightarrow \varphi$ is realized as an MP *agreement affix*.

The indexation patterns in Sorani involve argument indexers that can be neatly divided into MP Agreement and MP Clitics based on their forms and their distributions. But this realization does not correlate with how a φ element receives its features. On our analysis, MS Agreement produces both MP clitics and MP agreement; and, similarly, MS Clitic Movement produces both MP clitics and MP agreement. That is, in contrast to what is expected given (24), our analysis of Sorani posits two mismatches between MS operations and their MP realization:

- **Mismatch 1** Our analysis holds that MS Clitic Movement attaches [-subj,-obl] pronouns to Tense, where they are realized as MP Agreement morphemes.
- **Mismatch 2** Our analysis holds that an MS Agreement probe on $\mathscr{O}$ targets [+obl,+subj] arguments, and realizes their features as MP Clitics.

We consider two alternatives that do not generate these mismatches in Chapter 6.

First, it is possible that what we treat as MS Clitic Movement being realized as an MP agreement affix could be analyzed as MS Agreement with an obligatorily null pronominal (cf. Taghipour and Kahnemuyipour 2021; Nabors et al. 2019). Second, what we treat as MS Agreement being realized with an MP Clitic could instead be *clitic doubling*. We demonstrate that the facts of Sorani are better treated in the way that we have outlined above, rather than with one of these approaches; in particular, these alternatives require a number of unmotivated stipulations to get off of the ground, and fail to account for several basic generalizations in the Sorani system.

The upshot of this line of argument is that MS/MP relations are potentially indirect– a conclusion that has been reached in both more syntactically oriented work, and work focusing on morphophonology.

1.5 Plan

Having outlined the main positions that are defended in this book, we will now move on to develop them in detail.

We start with two chapters of an introductory nature. First, Chapter 2 presents the architectural assumptions and theoretical tools that we will make use of throughout the book. This chapter frames our Case Targeting approach with reference to the literature on

case/agreement interactions, and provides four case studies from Indo-Aryan showing Case Targeting works, and how it interacts with other aspects of the theory.

Chapter 3 is an introduction to Sorani Kurdish. It concentrates on the basic syntactic properties– clause structure and word order– along with the important question of how subjecthood diagnostics work in this language.

The core of the analysis is developed in Chapters 4 and 5. Chapter 4 concentrates on transitive clauses, while Chapter 5 extends the analysis to possessors and prepositional arguments, Non Canonical Subjects, and passives of ditransitives. Each of these two chapters also contains a section that makes comparative observations, with discussion of languages both inside the Iranian family and outside of it.

Finally, Chapter 6 is oriented towards theoretical alternatives, and to the implications of what we have argued for. Our three main positions are those in 1.4: the decomposition of syntactic cases into features; the idea that MS operations can be Case Targeting; and the potential indirectness of MS/MP relations. We identify and develop alternatives to each of these claims, and show why we believe our positions to be best supported by the evidence.

یاڵڵا، با دەست پێبکەین!

Yalla, ba dest pêbikeyn!

[Let's do this!]

2
Theoretical Background and Preliminaries

The core of this book, consisting of Chapters 4 and 5, develops an analysis of the argument indexing patterns found in Sorani Kurdish. The key interactions there involve morphosyntactic (MS) operations– Agreement and Clitic Movement, in particular– and their interactions with the case system.

In this chapter we provide theoretical context for this analysis. Our initial goal is to highlight some general assumptions about how the MS part of our approach operates; specific proposals are then introduced and adopted when there are substantial reasons for doing so. In these scenarios, we will try to be explicit as to why we are adopting certain proposals and not others. After these assumptions are outlined, the second part of the chapter looks at the conception of *case features* that is employed in this work, and shows in a general way and in the context of some case studies how case is involved in argument indexation.

We take both agreement and clitic movement to interact with *phi-features*, whether these are packaged as agreement morphemes or clitics; as a cover term we employ φ-bundles to refer to these:

φ-bundles: Collection of *phi-features* that are possessed by DPs inherently, and which enter into the system of argument indexation.

One of the larger set of assumptions that we will make, which warrants some discussion before we get into the details, concerns the relation in the grammar between MS operations like Agreement and clitic movement on the one hand, and the morphophonological (MP) reflexes of these operations on the other.[1] The MS/MP split we have in mind is as follows:

Morphosyntax (MS) of indexation: The syntactic operations that comprise the system of φ-indexation in a language. We will see two types of operations like this below. One, *Agreement*, results in a head ("probe") bearing features of a local DP ("goal"). The other, *Clitic-Movement*, displaces a particular type of φ-bundle.

Morphophonology (MP) of indexation: The realization of φ-bundles often shows differences that are taken to identify a set of *clitics* that are distinct from *affixes*. These differences might be distributional (e.g., clitics occur on a wider variety of "hosts"

[1] We refer to the *morphosyntax* of indexation in this way since we assume that the relevant operations are part of the (narrow) syntax, not part of PF; on the general theme of how to divide labor between these parts of the grammar see Embick (to appearb).

than affixes do), or more phonological in nature (the typical case involves clitics being less phonologically involved with their hosts than affixes are).

Separating the MS and MP components of indexation in this way can be implemented in different ways. We will outline some of our assumptions concerning the basics of indexation in the next section. For the moment, the key point is how MS and MP connect with one another. As we noted in Chapter 1, in the typical way of viewing the MS/MP relation – usually tacitly assumed and sometimes explicitly noted (see e.g., Zwicky and Pullum 1983; Nevins 2011; Compton 2016 and references therein), the two are directly correlated in the way that is stated in (1):

(1) Direct MS/MP relations (to be rejected)

a. (Clitic)-movement applies to $\varphi \Rightarrow \varphi$ is realized as a *clitic*;

b. Agreement operation produces $\varphi \Rightarrow \varphi$ is realized as an *affix*.

As we will see in chapter 4, Sorani provides striking evidence that MS operations can be 'mismatched' with their manner of MP realization. In particular, both MS agreement and MS clitic movement can produce φ bundles that are MP affixes or MP clitics, thus calling for an *indirect* MS/MP relation, in that there is no necessary correlation between MS mechanism and MP realization of the output of that mechanism. Part of our goal for this chapter, then, is to outline the theoretical assumptions that make this analytical option possible, along with a working set of assumptions about how indexation interacts with case.

* * *

We outline the general framework that we assume and provide a basic outline of what we have in mind for MS operations in §2.1. A basic assumption there is that agreement and clitic movement take place in the syntax. This architectural assumption has some connections with other components of our analysis: those that involve *case* (and how it is assigned) in particular. Case plays a central role in Sorani indexation, as the language displays an Aspect-determined alignment split of a type that is introduced in §2.2.

The alignment split in Sorani is manifested in the system of argument-indexation– i.e., in a system of agreement morphemes and clitics– and not, like in many other languages, in overt case morphology on nouns. One of the central claims of this work is that MS operations make direct reference to case features. Accordingly, §2.3 introduces our assumptions about these, and the further idea that MS operations can be specified to target DPs with particular combinations of case features. This idea, which we call *Case Targeting*, has clear affinities with the notion of *Case Discrimination* that has been discussed in the literature.

If even the broad outlines of this analysis are on the right track– that is, if MS agreement and clitic movement are sensitive to case features **in some form**– it follows that the case features themselves must be present and visible when these operations apply (cf. Bobaljik 2008). The latter point– concerning what is visible when, is the crucial one. As we noted above, we will assume that agreement and clitic movement are syntactic, since we have no reasons within the context of the present discussion to think otherwise. However, it would

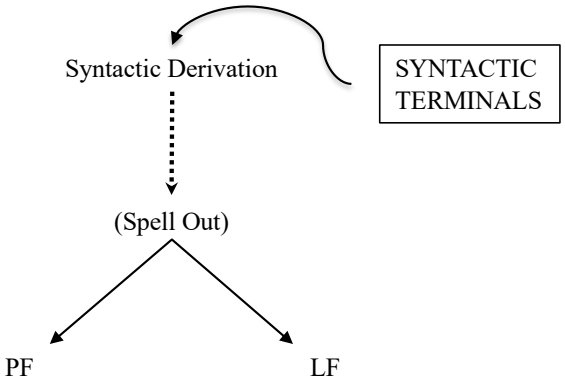
in principle be possible to investigate the view that all of the action takes place at PF, rather than in the syntax; as long as case features are visible to agreement and clitic movement, it would be compatible with our approach.

After outlining our assumptions on MS operations and case, §2.4 provides some key illustrations of how Case Targeting works, concentrating on some frequently-discussed (and thus relatively familiar) examples from Indo-Aryan. While many of the same principles involved in case-sensitive indexing behavior are also found in Sorani Kurdish, many of these surface in distinct ways in Indo-Aryan and in Iranian, due to the specific ways in which alignment splits are manifested in the relevant languages. This discussion thus paves the way for Chapters 3-5, where the focus is on Iranian, and Sorani in particular. §2.5 summarizes key points.

2.1 General framework

We will assume a grammar of the type associated with the Minimalist Program and Distributed Morphology, schematized in (2). Syntactic derivations operate on a set of *syntactic terminals* (also called *morphemes*) to create hierarchical structures. These syntactic objects must ultimately connect with form and (certain types of meaning); the PF (="phonological form") and LF (="Logical form") interfaces perform these roles.

(2) the grammar



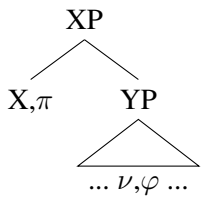
As noted in our introductory section, we will be assuming that the syntax contains agreement and clitic movement operations. These have the following properties:

MS Agreement: We assume that a syntactic agreement operation (that is, a form of "AGREE") applies so that the φ features of an argument appear on a head that agrees with it. The view of MS Agreement that our approach requires can be formulated in a relatively generic way. A probe π on a head X is specified to find a nominal goal ν in its domain;

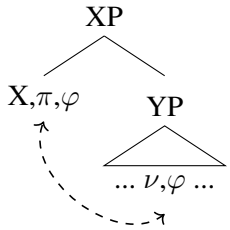
when an agreement relation is established between the two, features of ν– abbreviated here as φ– are transferred to the head with π (indicated via *dashed lines* in (3b)):

(3) MS Agreement, abstractly

a. before Agreement



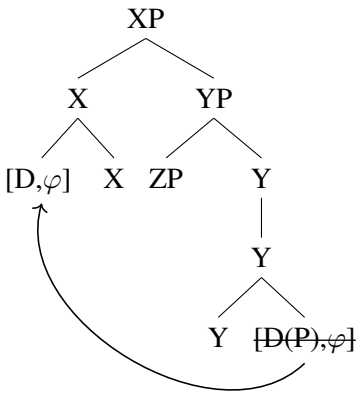
b. after Agreement



Many different approaches to the details of this operation are compatible with the role that it plays in our analysis. The primary addition that we make to this basic picture is that in our approach, probes are specified to target specific values of case features. We will discuss this view below in 2.3.2, after discussing our view of case.

MS clitic movement: The movement operation that we will employ is one that is often called *clitic movement*. It applies to D(P) pronouns of a particular type– i.e. those that are represented as clitics, unlike e.g. full pronouns– and moves them to a higher head. Schematically, this is shown in (4), with **solid lines** used to indicate **movement**, where by assumption the moving clitic is both minimal (a head) and maximal (a phrase) in the sense of Chomsky (1994):

(4) Clitic movement, abstractly

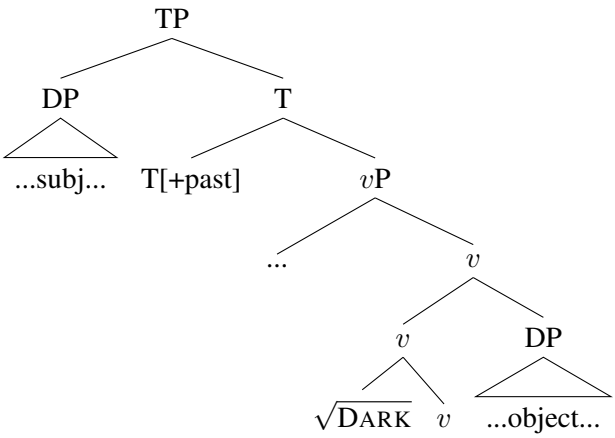


This operation could be treated in different ways that are compatible with what we will need it for. As with agreement, though, this process needs to be able to target arguments with specific case features. A second point is that throughout the Sorani varieties we have investigated, we do not find what is referred to as *clitic doubling*. Instead, moved clitics occur in complementary distribution with overt coindexed arguments. We will develop this idea at various points in the discussion to come.

We noted earlier that one of the key questions addressed in this book concerns how *direct* the connections between MS operations and their MP correlates are. On this theme, an important assumption about the grammar in (2) is that the morphemes (i.e. the terminals of syntactic derivations) are *abstract*: that is, they consist of bundles of features that are interpreted contextually at the PF and LF interfaces (cf. Embick to appear-a). So, for example, the syntactic structure of a clause like *The clouds darkened the sky* would be as in (5) (we leave out some additional heads– e.g. Voice– as well as the contents of the DP in order to focus on the verb and Tense):[2]

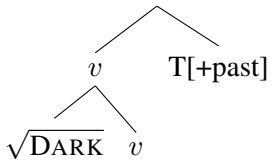
(5) structure

[2]We assume that in addition to functional heads functional heads like v, T, D, C, etc. the grammar contains Roots like $\sqrt{\text{DARK}}$, $\sqrt{\text{CAT}}$, $\sqrt{\text{BALL}}$, and so on. For background and motivation of this view see Embick (2021); Embick (2015) provides an introduction.



Affixation of Tense to the verb produces the following representation:

(6) verb with Tense affixed



The emphasis on the "abstract" nature of morphemes above can be seen in the fact that neither v nor the T[+past] morpheme have a phonological representation.[3] An important part of what happens to such morphemes at PF involves their phonological realization. Specifically, it will be assumed that an operation called *Vocabulary Insertion* provides functional morphemes with phonological content. The *Vocabulary* consists of individual *Vocabulary Items* (VIs) that pair a phonological representation with a set of syntactic features. In the example in (6), one of these Vocabulary Items realizes the v morpheme as *-en*; another realizes T[+past] as *-ed*:

(7) Some Vocabulary Items

a. $v \leftrightarrow$ -en/$\{\sqrt{\text{DARK}}, \sqrt{\text{BLACK}}, \sqrt{\text{RED}}, ...\}$___

b. T[+past] $\leftrightarrow$ -ed

The Vocabulary Insertion process makes reference both to features that are on the morpheme to be realized, and to elements in the local context of that morpheme. This latter point is clear in the VI in (7a), which shows the verbalizer v realized as *-en* when it is local to $\sqrt{\text{DARK}}$ and certain other Roots. This same effect, called *contextual allomorphy*, is found with T[+past] as well. While T[+past] defaults to *-ed* in English, with other verbs it is realized as *-t* or as *-Ø* (no overt realization), as shown in (8):

[3] Whether Roots like $\sqrt{\text{DARK}}$ have phonology "inherently" is contentious; we put this question to the side.

(8) Vocabulary Items for English T[+past]

a. T[+past] ↔ -t/{$\sqrt{\text{BEND}}$, $\sqrt{\text{LEAVE}}$,...}_

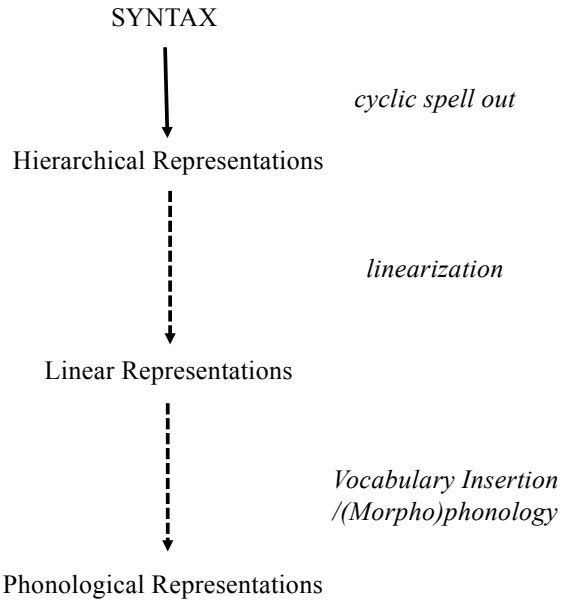
b. T[+past] ↔ -Ø/{$\sqrt{\text{HIT}}$, $\sqrt{\text{QUIT}}$,...}_

c. T[+past] ↔ -ed

In addition to encoding the contextual conditions on the application of the first two VIs, (8) illustrates another important aspect of the approach. The VIs in (8) are competing for application to the given morpheme, with the winner being the one that is the most specific that can apply. So, for instance, when $\sqrt{\text{LEAVE}}$ is present, both the first and third VIs could in principle apply, since they both have feature specifications compatible with the morpheme to be realized. However, the first VI, with the contextual condition referring to $\sqrt{\text{LEAVE}}$, is more specific than the third. It therefore wins the competition, with the result that *-t* is inserted, not *-ed*.

The idea that morphemes have their form determined at PF is part of a larger conception according to which this interface is internally complex, in a way that is schematized in (9):

(9) PF branch with stages



As discussed earlier, one of the theoretical implications of our analysis of Sorani is that MS/MP relations may sometimes be indirect in the domain of φ indexation, in contrast to the expectations produced by the 'direct' view in (1) above. The view of PF that is embodied in (2) and (9) plays a crucial role in understanding why such indirect connections

might be found. This is because PF is able to perform various operations on the output of the syntactic derivation. As such, there are circumstances under which the syntax does not fully determine the morphophonological behavior of an item it has created. Somewhat abstractly, the idea is that rather than being determined "at the beginning"– that is, by virtue of being involved in MS agreement or MS clitic movement– the ultimate MP behavior of a φ marker is determined in a derivation that takes into account both the syntax and what happens to that element at different stages of PF.

2.2 Alignment: An introduction

The (informal) notion of *alignment* refers to the ways in which– to a first approximation– languages group arguments in a clause into morphosyntactically-defined classes. The most obvious way of detecting the classes in an alignment system is with **overt case marking**, where the morphology on arguments themselves shows how they are grouped. A second way, which is at the heart of the present work, in terms of *indexation behavior*: classes are detectable in terms of how arguments participate in the agreement system (and in Iranian, in terms of clitic movement).[4] We will illustrate alignment patterns involving both case-marking and indexation below, working forward through various details to an initial sampling of the Sorani Kurdish data that is the main topic of this book.

As an initial step, it is useful to start with some shorthand that is adapted from the typological literature (e.g., Dixon 1994), and which has become a standard way of presenting alignment systems. This notation recognizes three categories: A, S, and O, defined as follows:

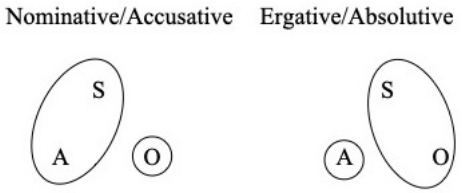
(10) S(ubject): Subject of an intransitive verb.
A(gent): Subject of a transitive verb.
O(bject): Object of a transitive verb.

We will conform with the categories in (10) in most of this introductory section, to make our outline fit with the existing literature. In later parts of the book we will employ other terms; in particular, 'Subject of a transitive' for what is given as A here; and DO for what is given as O.

As we noted above, the key question at hand is which arguments are grouped together (*aligned*) in detectable ways. The most familiar distinction in the literature on alignment starts with the groupings that are illustrated in (11). Note that this classification employs case labels ('Nominative', 'Accusative', 'Ergative', 'Absolutive') whose status in our theory is addressed in the next section.

(11) Nom/Acc and Erg/Abs schematized

[4] An ongoing discussion concerns the nature of what has been called *syntactic ergativity* as well; see Bittner and Hale 1996; Aldridge 2004; Coon et al. 2014; Deal 2016; Polinsky 2017 for discussion.



The basic difference between the two systems concerns which argument 'stands out' from the others: in Nom/Acc systems it is the Accusative Object that is marked differently from the Nominative Subject and Agent; in Erg/Abs, the Ergative Agent behaves differently from Absolutive Subjects and Objects.

To illustrate, in German the S of intransitive (12a) bears Nominative case, as does the A of transitive (12b). The O of transitive (12b) stands out, in taking Accusative, as seen on the article:

(12) a. Der Spieler hat gelacht.
the.NOM player have.3S laugh.PST.PTCP
'The player laughed.'

b. Der Spieler hat den Fußball gesehen.
the.NOM player have.3S the.ACC football see.PST.PTCP
'The player saw the football.'

The language Dyirbal, on the other hand, shows Erg/Abs alignment. The S of intransitive (13a) is Absolutive, as is the O of transitive (13b); the argument that stands out is the A of the transitive, which is marked with Ergative case:

(13) Dyirbal (Dixon 1994:10)

a. ŋuma banaga-n^{y}u.
father-ABS return-NON.FUT
'Father returned.'

b. ŋuma yabu-ŋgu bura-n.
father-ABS mother-ERG see-NON.FUT
'Mother saw father.'

While Dyirbal and other languages reveal their indexation systems through overt case-marking, this is not the only way in which alignment is manifested cross-linguistically. As we noted above, many languages reveal alignment patterns in their system of φ-indexation–understood as earlier to include MS Agreement and Clitic Movement. For example, the languages of the Mayan family mark the grammatical relations on the predicate in this way. In the Mayanist literature, the term *Set A* is used for φ markers that co-index transitive

subjects and possessives, whereas *Set B* markers co-index transitive objects and intransitive subjects. Accordingly, both the intransitive subject in (14a) and the transitive object in (14b) are marked with Set B. On the other hand, the transitive subject in (14b) is indexed by the Set A marker:

(14) K'ichean (Coon 2013:4,(7))

a. x-**at**-war-ik.
COM-B2-sleep-SUF
'You slept.'

b. x-**at**-*u*-chay-oh.
COM-B2-A3-hit-SUF
'He hit you.'

This indexation pattern is thus like the Dyirbal one, in that it groups the S and O together, with the transitive A behaving differently.[5]

As part of an introduction to the alignment patterns of Sorani Kurdish, two other observations concerning alignment systems are worthy of attention.

Alignment splits. The first concerns the fact that many languages display a mix of properties; what is referred to as an *alignment split*, with part of the language displaying Nominative/Accusative alignment, and another part Ergative/Absolutive. The factors that condition such splits include properties of the arguments in the clause (e.g., person features), mood, aspect, and other factors (see e.g., Woolford 2017 for an overview). For example, K'ichean shows an aspect-based split: an ergative-absolutive pattern is found in the perfective or completive aspects, while nonergative patterns are found in (some) nonperfective or noncompletive aspects (Coon 2013:58).

The Sorani Kurdish varieties that we examine in this book also show an alignment split that is conditioned by aspect. In Standard Sorani Kurdish, for example, the imperfective aspect is Nominative/Accusative, while the perfective is not; in terms of (11) it is Ergative/Absolutive, but we will introduce different terms for referring to it below. Standard Sorani is similar to the Mayan languages in cross-referencing arguments not via overt case marking on noun phrases, but via head-marking on the verb and also mobile morphophonological clitics.

The alignment split and its reflexes in the indexation system are illustrated in (15).

(15) Sorani Kurdish

a. imperfective

i. (ême) de-kok-*în*
1PL.pro IND-cough.PRS-1PL
'We cough.'

[5] We put to the side the question of how possessor marking fits into the basic typology schematized in (11).

ii. (ême) de**=yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

b. perfective

i. (ême) kokî-[î]*n*
1PL.pro cough.PST-1PL
'We coughed.'

ii. (ême) de**=man** bînî-*n*
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'

In the imperfectives in (15a), the intransitive S is indexed by italicized agreement on the verb, as is the A of the transitive; the O argument in the latter is indexed by the boldfaced clitic. This is typical Nom/Acc behavior. In the perfectives in (15b), though, the alignment is different. Intransitives show agreement with the S, as they do in the imperfective; but in transitives, the indexation of arguments basically flips what is seen in the imperfective, to produce Erg/Abs alignment. In particular, the A is indexed by the boldfaced clitic, while the O is indexed by italicized agreement on the verb.

As we will see in the core chapters of this book, analyzing this and related effects requires a distinction between MS operations and their MP reflexes, in the way that is outlined at the beginning of this chapter. For now, these examples suffice to show how one language may show different kinds of alignment, in a way that is grammatically conditioned.

Beyond Nom/Acc and Erg/Abs. The second facet of alignment systems to be emphasized is that while (11) provides a familiar way of introducing alignment, it does not cover the full variety of alignment types seen cross-linguistically.

One type that is of particular relevance in this work is an alignment pattern in which both A and O are Oblique– what could be thought of as Ergative/Accusative, bearing in mind that we will replace these labels with something more precise below. For example, Garmiani Kurdish, which we analyze in later chapters, shows this type of alignment in perfective clauses. Comparing (16b) with the Standard Sorani transitive in (15b) reveals that in Garmiani, both the A and the O are indexed by clitics (the imperfectives in Garmiani behave the same as their Standard Sorani counterparts in (15a)):

(16) Garmiani Kurdish

a. (ême) de**=yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

b. (ême) de**=yan=man** bînî
1PL.pro PROG=3PL.CL=1PL.CL see.PST
'We were seeing them.'

As even this brief comparison with Garmiani makes clear, the analysis of alignment systems must operate at a finer grain than that provided by (11). Our take on this is that patterns of indexation result from MS operations (agreement, clitic movement) being driven by case features; not by labels like 'Nominative', 'Ergative', etc., which instead are simply shorthand ways of referring to specific combinations of features that do the important work in the grammar. We turn to this particular set of assumptions concerning case next.

2.3 Case and *Case Targeting*

A central line of argument in this work is that the analysis of Sorani indexation patterns requires a particular view of case in the grammar: one in which case features are targeted by the operations (Agreement, clitic-movement) that comprise the indexation system. In this section we outline the assumptions about case that play a role in our implementation of this idea.

An important initial point is to clarify the scope of our claims; we are going to make assumptions about the role that case features play in derivations, but will remain neutral with respect to how such features are assigned; that is:

- On one hand, our approach requires that case labels ('Nominative', 'Ergative', etc.) be short hand for bundles of features; but
- at the same time, we do not commit to any particular view (procedure) that specifies how these case features are assigned to nominals.

What we mean by this is the following. In ways that we will begin to illustrate immediately below, the view we advance is that indexation operations can be sensitive to (=target) specific case features. Moreover, it is important for us that cases be treated in a 'fine-grained' way, i.e. as consisting of features that are more abstract than labels like 'Nominative' etc.. But there is nothing in our approach as developed to this point that requires a specific view of how these features are assigned. As is well-known, there is a large and active literature debating the mechanics of case-assignment, often opposing *Case-by-functional heads* (Chomsky 2000, 2001; Legate 2008; Woolford 2006b) and *Dependent-Case* (Marantz 1991; McFadden 2004; Baker 2015) views (for overviews, see e.g., Pesetsky and Torrego 2011; Andrews 2017; Baker and Bobaljik 2017). It is possible that some aspects of our analyses in the pages to come might be brought to bear on questions of this type– in particular, some of the phenomena studied in Chapter 5 have this property, and are flagged as such. In Chapter 6 we will comment further on this opposition, and suggest that even within one language– which is to say, Sorani– the same case features may be assigned in more than one way.

For these reasons, we will for the most part abstract away from the details of case assignment in the pages to come. It suffices for our analysis of Sorani to demonstrate why a particular grain of case features is needed, and how this approach to features interacts with indexation operations to produce the surface manifestation of an alignment split.

2.3.1 Case features

As we noted immediately above, an important aspect of our approach is that familiar names for cases ('Nominative', 'Accusative', etc.) are shorthand labels for feature combinations.

The idea that cases are internally complex in this way plays an important role in theories of how case is realized in the morphology; most typically, in discussions of syncretism. For example, the line of research exemplified by Halle (1997), Halle and Vaux (1998), Calabrese (2008), and related work makes this kind of assumption. To take a concrete example, Halle and Vaux (1998) hypothesize that cases are defined by the four features shown in (17):

(17) Case features from Halle and Vaux (1998)

	Nom	Acc	Gen	Dat	Loc	Inst	Abl	Erg
oblique	-	-	+	+	+	+	+	-
structural	+	+	+	+	-	-	-	+
superior	+	-	-	+	-	+	+	+
free	+	-	+	+	-	-	+	-

The idea at play in (17) is that patterns of syncretism have the potential to reveal natural classes which are then defined in terms of feature decompositions.

The question of what to make of the feature labels *oblique*, *structural*, *superior*, and *free* is a complex one, particularly as it concerns the syntax. The view associated with (17) takes the features to be somewhat abstract and encapsulated– posited to account for syncretisms– with the idea being that later stages of research will provide linking hypotheses between the feature system motivated by consideration of form, and one that is motivated on a syntactic basis.[6]

Our approach to indexation implements the idea that MS operations are sensitive to case features, and as such has much in common with research programs investigating systems like (17). For example, for Standard Sorani Kurdish, our analysis in Chapter 4 posits four cases, which are derived from two features that we all [±subject] and [±oblique]. These combine to form the four cases shown in (18):

(18) Case features: Standard Sorani Kurdish

[6]For example, the following passage from Halle and Vaux give some indication of what they have in mind with respect to the features in (17):

> The feature specification [-oblique] is assigned to nominals that are arguments of the verb; [+oblique] is assigned to nominals that are not arguments of the verb. The feature [-structural] is assigned to nominals on non-structural, semantic grounds; [+structural] is assigned to nominals on the basis of their position in syntactic structure, exclusively. The feature [-superior] is assigned to nominals in governed positions in the syntactic structure; [+superior] is assigned to nominals in non-governed positions. [-free] is assigned to nominals with a consistent role in argument structure; [+free] is assigned to nominals whose role in argument structure varies. (1998:225)

The variety of notions that are employed here (semantic, argument structure, government) highlights the complexity of the task of linking this kind of approach with a syntactic theory of case.

	‘Nominative’	‘Ergative’	‘Accusative’	‘Objective’
subj(ect)	+	+	-	-
obl(ique)	-	+	+	-

Our argument is that a four-way distinction of the type in (18) is required to analyze the patterns of indexation seen in Sorani. That is, arguments in Sorani show four distinct types of indexation behavior, and these are produced by MS operations that make reference to the four cases in (18).

As we will see below, features like [±subj] and [±obl] are familiar in the sense that they point to notions that are employed in standard discussions of case.[7] However, since we do not commit to a view on how the assignment process works, they must be understood relatively abstractly: which is to say, what is important for us in this work is how case features produce **distinctions** that are referred to in the indexation system, not the features themselves. For this reason, we do not expect that some other language that is described as having Nominative or Accusative or Ergative case should necessarily employ the features in (18).[8]

As we noted above, one of the pressing questions in theories that look at both the syntax and morphology of case concerns how to relate the syntactic and morphological notions of case. Are they distinct, so that an argument labelled with something like ‘Ergative’ in the syntax is then provided with a featural decomposition at PF? Or are the syntactic and morphological features systems one and the same? The analyses that we develop in this book instantiate the latter view: syntactic case features must be ‘decomposed’– i.e. of the grain in (18)– because of how MS operations are driven– and this same decomposition plays a role in the morphological realization of φ-indexers.

We note by way of conclusion that there is a sense in which, viewed against recent analyses of case, our approach appears to be putting the type of decomposition that has recently been motivated mostly in morphology into the syntax. In the broader historical context, though, it is a return to the original insights behind decomposing case labels into primitives. Jakobson (1936/1984) is the first to do this, offering an analysis of the Russian case system that employs three features that together make up the case labels like ‘Nominative’ ‘Accusative’, and so on. He presents this analysis as *semantic*, but (with the benefit of hindsight) it is at least partially syntactic in orientation when viewed from the perspective of current theories (something that Halle knew, and which is reflected in (17); see Fn. 6). In later work, Jakobson (1958/1984) turns to the kind of morphologically-oriented decomposition that is typically associated with (17), and asks to what extent the three feature ‘semantic’ system provides a basis for the morphological patterns of syncretism that are found in Russian.[9]

[7] This can be seen in the fact that certain systems of such features resemble (at least in name) those that we employ; e.g. Alexiadou and Müller (2008).

[8] For that matter, beyond how to connect our approach to case assignment, the question of the inventory of possible case features is a further possible line of investigation, as is the question of how to relate syntactic case decomposition to markedness and related notions. See Chapter 6 for some comments.

[9] The short answer is that it does not, such that additional features are required; see Chvany (1986). For a recent take on the implications of this argument, see Embick and Marantz (in prep.)

In summary form, the approach that we adopt here is a syntactic implementation that connects closely to Jakobson's original insights: it holds that case features are decomposed, and that the decomposed syntactic features are visible to the morphology as well.[10] On this last point, it is important to note that the syntactic and morphological patterns produced by reference to case features may sometimes be misaligned, as will be seen in section 4 below.

2.3.2 Case discrimination ⇒ Case targeting

The next theoretical step to be taken concerns how Case features interact with indexation operations. The connection between case and agreement has been long noted. While some interactions appear to involve the overtness of case morphology (in some languages, e.g. Hindi, Turkish, Tsez, it appears that overtly case-marked nominals do not participate in agreement relations), the more general observation is that agreement appears to be sensitive to the particular abstract cases that nominals bear. For example, in many languages, nominals bearing oblique cases are invisible for agreement purposes.

The literature contains some different proposals that implement case-sensitivity. Chomsky (2000) proposes that for a nominal to be available for agreement, it needs to have an uninterpretable case feature that has not been valued. This kind of restriction is intended (given certain other assumptions) to rule out agreement with nominals that are lexically/inherently case-marked (e.g. Icelandic quirky-dative subjects, or Hindi ergative subjects). Another perspective on sensitivity is provided by Bobaljik (2008), who argues that all forms of morphological case are assigned before agreement takes place. This approach employs something that is later called *Case Discrimination* in Preminger (2014), where the targets of agreement are subject to conditions on *Accessibility*. In particular, an agreeing element will target the most local (=structurally highest) Accessible nominal in its domain, as stated in (19):

(19) The controller of agreement on the finite verbal complex (Infl+V) is the highest accessible NP in the domain of Infl+V. (Bobaljik 2008:296,(3))

The notion of Accessibility is in turn defined in terms of (morphological) case, in a way that is adapted from the crosslinguistic typology of agreement targets originally due to Moravcsik 1974, 1978. It involves the hierarchy in (20):

(20) Implicational hierarchy

Unmarked case > Dependent case > Lexical/Oblique case

The idea is that agreement may be specified to ignore certain types of case-marked arguments, but can target arguments that are lower (i.e. to the left) in terms of (20).[11] So, for example, if the verb in some language (e.g. Icelandic) fails to agree with Dative subjects,

[10] On this way of treating case, see Neidle (1982a,b) who argues that Jakobson's (1936) features should be treated as syntactic, and employs the important assumption that morphological case forms can be underspecified with respect to these features.

[11] The assumption is that case-marked arguments are indeed DPs, and not PPs. See Řezač (2008); Polinsky (2016); Baker (2015) for examination of various cases (e.g., ergative, dative), which are shown to correspond to DPs in some instances, and to PPs with a silent P in some other instances.

and instead agrees with Nominative objects, this is statable in terms of (20): arguments with unmarked case are accessible, while more marked cases in the hierarchy are not. What this means is that the structurally highest argument in DAT-NOM clauses, the Dative subject, is not accessible, and is thus ignored for agreement, which then finds the accessible Nominative object. For Bobaljik the important thing is that (in contrast to certain alternatives) accessibility is defined in terms of case, not in terms of grammatical relations like Subject, Object, and so on.[12]

Preminger (2014) incorporates Case Discrimination into his treatment of agreement, which differs from Bobaljik's in taking the case/agreement action to be in the syntax, not in the morphology. In line with other aspects of his approach, Case Discrimination functions as a kind of 'go/no-go' for establishing agreement relations: a probe finds the closest argument bearing valued features of a particular type, and then checks that argument's case properties. If it is acceptable with respect to Case Discrimination, agreement results; if it is not, then the search is terminated.[13]

We will make crucial use of the idea that MS agreement is case-sensitive in the way that Preminger discusses. On our approach, however, differs in terms of how this sensitivity may be manifested. Case Discrimination effectively makes a particular type of argument inert for certain operations. We propose that instead of being specified negatively to ignore certain arguments, operations can be *Case Targeting*, so that they seek the most local argument with particular case feature:[14]

Case Targeting: Probe X seeks a Goal with a specific case feature specification (i.e. at least one case feature and possibly more). A single head may probe for arguments with different cases and perform different operations (agreement, or clitic movement) on them.

The first clause is the basic one and will be compared with Case Discrimination immediately below. The second clause specifies that it is not just that a particular head does not always simply probe for a specific case; rather, a single head may specify particular cases for particular operations, in a way that is illustrated further along in this section.

[12] See Deal (2017b), who argues that ergative extraction restrictions (e.g. the ban on Ā-extraction of ergative subjects) in many ergative systems also arise from Case Discrimination.

[13] The appearance of agreement with a lower argument in cases where the search terminates is attributed to the morphology, which interprets a probe that lacks person and number values as identical to successful agreement with a 3rd person singular argument.

[14] A consequence of stating selectivity positively, as in our Case Targeting, is that probes do not stop searching when they encounter an argument with incompatible features. Instead, they continue to probe. On this latter point, we do not have evidence that failed probing produces default morphology. This means that probes on our view are persistent– they apply when they can, but there are no visible consequences of their having failed to find an appropriately specified goal. See Chapter 6 for some additional discussion.

For an analogue to this kind of targeting in another domain see the literature on PCC (Anagnostopoulou 2006; Preminger 2014), where probes are specified to positively target certain person features (and ignore others). Our approach has clear affinities to Deal's (2021) interaction/satisfaction model of Agree. In Deal's system, a probe's particular interaction condition specifies that a probe interacts with the ϕ-features of the goals in its agreement domain. The satisfaction condition adds a restriction that the probe will halt the search when it encounters a goal with the satisfaction feature the probe is specified with.

On the first of these points, how different Case Discrimination and Case Targeting are depends to a large extent on how case features are represented. If they are binary, as they are in 2.3.1, then there are certain circumstances under which Discrimination and Targeting can do essentially the same things. This is especially clear in simple cases when only one feature is involved, since ignoring a positive feature value [+x] and targeting the same negative feature value [-x] (and vice versa) are indistinguishable. Suppose, for example, that a probe X in some language ignores Oblique arguments (we will present and analyze actual examples of this in the next section). An approach with a (negatively) Discriminating probe would account for this as follows:

(21) X targets the closest DP, ignoring DP[+obl]

With binary features, a Case Targeting account can be framed by simply changing the value of the feature, i.e.:

(22) X targets the closest [-obl] DP.

While in examples of this type the orientation (ignoring versus specifically seeking) does not appear to be important, this might not always be the case. For example, in Chapter 4 we will analyze part of the Sorani indexing system with a Tense probe that targets Objective [-subj,-obl] arguments (recall (18) above) for clitic movement; that is:

(23) T clitic moves [-subj,-obl] pronominals.

A Case Targeting perspective allows for the relevant type of argument to be identified directly (even if the features referred to are negative). Producing the same results with Discrimination is not so straightforward. The T probe needs to be specified to ignore the other three cases in (18); with that specification, any DP that has a positive + value for either [±subj] or [±obl]. This can be encoded disjunctively, but doing so would be going out of the way to miss a generalization, viz. that is, it is a specific combination of features that the T probe is positively specified for.

To drive home this point, a further facet of our analysis of Sorani is that T is specified to Agree with Nominative [+subj,-obl] arguments. Again, this is (obviously) something that Targeting states directly:

(24) T agrees with [+subj,-obl] arguments.

Stated negatively, T would ignore (for agreement) arguments that bear any other combination of values; i.e., [-subj,-obl], [+subj,+obl], [-subj,-obl], everything but Nominative. Rather than dwelling on what it might mean to ignore unnatural classes of the type just identified, we will encode this kind of effect directly, with Targeting.

The considerations immediately above are meant as suggestions, and (we believe) provide a motivation for employing Case Targeting. We do not wish to imply that our conclusions suggest a definitive conclusion about Targeting being superior to Discrimination in all cases. It is not our intention to engage in this kind of comparison; in part, this is because the

choice between these two will depend to some degree on the details of how case features are represented.[15]

2.4 Case and indexation: Initial illustrations from Indo-Aryan

One of the central theses of this work is that indexation operations are tied to case features in the way that is encapsulated in *Case Targeting* in the last section. To provide a foundation for the central chapters of the book, we will look now at case/agreement interactions in four different Indo-Aryan languages. This choice of case-studies is motivated by the role that case/agreement interactions in these languages has played in arguments for case-sensitive operations (recall 2.3.2 above). In addition, we are able to illustrate the further point that MS operations can target case features in a way that is distinct from how features are referred to in MP realization, resulting in certain types of MS/MP mismatches.[16]

First, we will look at the case/agreement system of Hindi, which will be used to illustrate three basic points. The first is the way in which an MS operation can target a specific case feature– i.e., the basic point of Case Targeting. Second, targeted agreement is subject to locality: it finds the highest argument with the desired case feature. Finally, Hindi shows a further effect of note. While Hindi Ergative and Dative case behave the same way with respect to Agreement (they are not targeted by it), they nevertheless differ in their morphological realization. This observation highlights the grain of the analysis, which involves Cases analyzed as complexes of features along the lines of §2.3.1: this decomposition allows for Cases that share a feature to behave the same way in the syntax, but nevertheless be distinguished in the morphology.

Next, a look at Nepali provides an interesting contrast with Hindi, since both Nominative and Ergative subjects are agreed with in this language. Like Hindi, Nepali provides

[15]For example, if case features are treated as unary, and not binary, then things change. The simple illustration in the text shows Discrimination ignoring Case 1 [+x] and Targeting seeking Case 2 [-x]. Suppose with unary features that:

(i) Case 1 = [x]
Case 2 = [x,y]
Case 3 = [x,y,z]

A few examples– Suppose there is an operation that applies to Case 1 but not Cases 2 or 3. A negative restriction would encode this as "ignore [y]"; a positive one, specified to target [x], cannot achieve this result: since Cases 2 and 3 contain [x], they would be included along with Case 1. For singling out Case 2 to the exclusion of Cases 1 and 3, "ignore [y]" will incorrectly apply to Case 3 in addition to Case 2. A positive statement, "target [x,y]", also groups Case 3 with Case 2. A conjoined statement like "target [x,y] and ignore [z]" is required to fix this problem. Finally, for picking out Case 3, a negative restriction will not work. A positive restriction like "target [x,y,z]" will, though (as long as there are no further cases).

Note that these illustrations assume that there are phenomena that require e.g. targeting Case 2 to the exclusion of Cases 1 and 3. It would be possible to argue that this kind of 'intermediate' targeting should be impossible. The hierarchy in (20) encodes this kind of effect, since it makes it impossible for an operation to apply to Dependent Cases while excluding unmarked case. For further discussion of related points concerning case containment see Chapter 6.

[16]On both of these points see in particular Bobaljik (2017) and references cited there.

a clear indication of why both reference to case features and a locality condition identifying the closest relevant argument play a role in the analysis of case-sensitive indexation patterns. It also illustrates a point about MS operations and morphological form that is the inverse of what is seen in Hindi: in particular, an example of how two cases that are treated differently in the indexation system (Ergative and Instrumental) are realized identically in the morphology.

Our third case study is based on Gujarati, which provides another interesting point of contrast with Hindi; this time with respect to how object-marking works. In Hindi, Direct Object DPs showing Differential Object Marking (DOM) are affixed with *-ko*, which is also found on Datives. Such arguments are not targets of agreement. In Gujarati, DOM and Dative are also identical in form. Unlike in Hindi though, DOs with DOM are targets of agreement; identically marked 'true' Datives are not. This pattern raises the question of how 'deep' the identity between DOM and Dative is, since arguments that are realized with the same morphology behave differently with respect to indexation.

Finally, we take a brief look at the complex indexation patterns of Maithili. The point here is to suggest that an argument's case features may be transmitted to a probe that agrees with it, in a way that is detectable in the morphology: an idea that will play a role in our analysis of Sorani.

2.4.1 Hindi: Agreement targeting a specific feature

The agreement system of Hindi (Indo-Aryan) has attracted a great deal of theoretical attention (e.g., Mahajan 1989; Butt 1993; Bhatt 2005; Bobaljik 2008; Keine 2016) due to the ways in which its case-marking and agreement interact. As typically described, Hindi agreement is sensitive to whether or not there is **overt** case-marking on a potential target of agreement. Specifically, agreement appears to target the structurally most prominent (=highest) argument that does not bear overt case marking.

The relevant facts are shown in (25). In (25a), neither the subject nor the object are overtly case-marked with the result that the participial verb and the auxiliary agree with the subject, which is the higher of the two arguments in the clause. In (25b), the subject is overtly case-marked with Ergative, which leaves the object as the structurally most prominent non-overtly case-marked argument. As such, the participial verb and the auxiliary agree with the object and not the subject.

(25) a. Rahul kitaab paṛh-taa thaa
Rahul.M book.F read-HAB.M.SG be.PST.M.SG
'Rahul used to read (a/the) book.' (with F agreement: *)

b. Rahul-ne kitaab paṛh-ii thii
Rahul-ERG book.F read-PFV.F be.PST.F.SG
'Rahul had read the book.' (with M agreement: *) (Bhatt 2005:2)

In the analysis of this effect that we will use to illustrate case-discriminating indexation, it is not overt case-marking per se that is at issue. Rather, the arguments that bear overt case marking– Ergatives and 'differentially object marked' direct objects– share the feature

[+oblique]. A further feature [±subject] distinguishes Ergatives from Datives in the way that is shown in (26), which crosses these two features:

(26) Case features: Hindi

	'Ergative'	'Dative'	'Nominative'	'Accusative'
subject	+	-	+	-
oblique	+	+	-	-

While (26) provides an approximation of what we will need for analysis, it can be further reduced. Hindi does not appear to distinguish between the [-oblique] arguments in any meaningful way; i.e., it does not appear to distinguish Nominative from Accusative. We can therefore replace (26) with (27), where the (+/-) specification for subject in [-oblique] arguments indicates that it could be either, or that [-oblique] arguments are simply not specified for two features (see Bhatia and Bhatt (2023) for an approach along these lines to Hindi case system):[17]

(27) Hindi case features

	'Ergative'	'Dative'	'Direct'
subject	+	-	(+/-)
oblique	+	+	-

The generalization that Hindi agreement is sensitive to overt case-marking can now be recast in terms of the features in (27). Rather than making reference to the presence (or absence) of an overt case marker, the agreement probe is specified to target the feature [-oblique]; case morphology happens to be null with such argument, but this fact is not

[17] If this view is correct, i.e., if Hindi has **only** the cases in (27), there are implications for the analysis of Differential Object Marking (DOM), where DOM arguments bear case morphology that is identical to the Dative.

There are at least two ways in principle that this effect can be analyzed. One would be to take the DOM objects to be assigned a case that is distinct from both Accusative and Dative, but which is syncretic with the latter. A second option is that DOM is essentially assignment of Dative to certain objects. If (27) defines the full range of cases in the language, arguments with DOM receive the same features as typical Datives do (see e.g., Bickel and Yādava (2000), Kalin (2017) and references therein). That is:

(i) Object case marking in Hindi

a. Assign Dative to arguments that meet the conditions for Differential Object Marking; else

b. assign Direct case.

See also our discussion of Gujarati below, which behaves differently from Hindi with respect to how DOM functions.

A similar MS/MP mismatch situation can be seen in Georgian, where accusative and dative marking are morphologically identical, with both typically called 'dative' in the literature. However, they exhibit different alternations in the different tense/aspect series. The 'accusative' datives become absolutive (i.e., nominative) in the aorist and optative, while true datives remain dative (McGinnis 2008:158).

referred to by the agreement operation:[18]

(28) T- (and Asp-) probes in Hindi: Agree with the highest [-oblique] argument.

This accounts for the facts in (25): [-obl] arguments, i.e. those that are 'Direct' in (27) are targets of Agree, while [+obl] Ergative and Dative arguments are not.

One aspect of (28) that calls for further comment is that it involves two components: a case specification, along with a statement of locality. Both of these are required for Hindi: if there were only a case specification, application in Direct/Direct clauses like (25a) is underdetermined: does T agree with the subject, the object, or both? On the point of how targeting and locality may work together, a locality statement by itself is also insufficient. Something along the lines of 'agree with the highest argument' is clearly not able to account for the facts in (25b).

It is important that the specification of Case-targeting in (28) make reference only to the feature [-oblique], as both Ergative and Dative share the [+obl] feature. At the same time, Ergative and Dative are indeed distinct cases: as shown in (27) they differ with respect to the value of [±subj]. One consequence of this difference can be seen in the fact that Ergative and Dative are realized different morphologically. To complete this part of the analysis, we give Vocabulary Items in (29) that spell out this part of Hindi:

(29) [+obl,+subj] ↔ -ne
[+obl,-subj] ↔ -ko

The account we have outlined is able to (i) encode why Ergative and Dative behave identically for one property, viz. being invisible for agreement, while (ii) nevertheless being realized distinctly in the morphology. That is, while one operation treats [+obl] Ergative and Dative as a natural class, another part of the system reveals that these arguments are in fact distinct featurally. This will be a recurring theme in the pages to come.

2.4.2 Nepali: Case features and syncretisms

Another pattern of case-sensitive agreement is found in Nepali (cf. Bickel and Yādava 2000; Bobaljik 2008). Unlike what was seen in Hindi above, in Nepali Agreement targets both Nominative and Ergative arguments:

(30) Nepali agreement

a. ma yas pasal-mā patrikā kin-ch-u.
1S.NOM DEM.OBL store-LOC newspaper.NOM buy-NON.PST-1S
'I buy the newspaper in this store.'

b. mai-le yas pasal-mā patrikā kin-ẽ.
1S.ERG DEM.OBL store-LOC newspaper.NOM buy-PST.1S
'I bought the newspaper in this store.'

[18] If Long Distance Agreement is brought into the picture, it might be necessary to modify (28) slightly, in ways that depend on which analysis of that phenomenon is adopted.

Other arguments are not agreed with. A case of interest involves Datives in 'Non-Canonical Subject' verbs; in examples of this type, the verb agrees with the Nominative object:

(31) malāī timī man par-ch-au.
1S.DAT 2M.H.NOM liking occur-NON.PST-2M.H
'I like you.'

The fact that Datives are not agreed with, while Nominatives are, also surfaces elsewhere in the system. In passives, for example, there is optionality: subjects can be either Nominative or Dative; only the former trigger agreement:

(32) a. ma ṭhag-ī-ẽ
1S.NOM cheat-PASS-PST.1S
'I got cheated.'

b. malāī ṭhag-ī-yo
1S.DAT cheat-PASS-PST.3S.M
'I got cheated.'

The facts that have been examined to this point can be accounted for in a way that differs minimally from the Hindi system seen above. In particular, and assuming that (as we did earlier) Nominatives are [+subj,-obl] while Ergatives are [+subj,+obl], the Nepali agreement pattern is derived via (33):

(33) T-probe in Nepali: Agree with the highest [+subj] argument.

That is, whereas the Hindi system is centered on [±obl], Nepali agreement makes reference to the value of [±subj].

It can be seen in Nepali (like in Hindi) that both locality and a case specification together define how agreement targets are found. A locality restriction alone– e.g. agreement with the highest (i.e. most local) argument– makes incorrect predictions for the examples with Dative subjects. In the other direction, targeting only the case feature [+subj], with no reference to locality, does not specify what should happen in ERG/NOM examples like (30), where it is the structurally higher Ergative that is agreed with.

In addition to providing a useful point of comparison with Hindi on this dimension, Nepali also further illustrates the fact that case-discriminating operations are driven by features in a way that is independent of morphological realization.

We saw above in the Hindi section that MS Agreement is not sensitive as to whether something is overtly realized or not (rather, it just targets features that may or may not end up getting realized as -Ø); now we will see that syntax also does not make reference to the form of an overtly realized case marker, completing the paradigm. In (34) we illustrate a further case employed in Nepali, Instrumental, which is syncretic with Ergative (example from Lindemann 2019):

(34) mai-le **camcā-le** bhāt khā-ẽ
1S.ERG spoon-INST rice eat-PST.1S
'I ate the rice with a spoon.'

Nepali thus (i) has three oblique cases– Ergative, Dative, and Instrumental– meaning that a further case feature is required, and (ii) realizes Ergative and Instrumental identically, in spite of their syntactic differences. On the former point, (35) shows an additional feature [±alpha], whose role is to make distinctions among the oblique cases; in doing so, it also makes Ergative and Instrumental share more feature content with each other than they do with Dative:[19]

(35) Case features: Nepali

	'Nominative'	'Ergative'	'Instrumental'	'Dative'
subject	+	+	-	-
oblique	-	+	+	+
α	-	+	+	-

The realization of Ergative and Instrumental together (and to the exclusion of Dative) can then be accomplished with the two Vocabulary Items in (36):

(36) [+oblique,+α] ↔ -le *Ergative, Instrumental*
[+oblique] ↔ -lāī *Dative*

Whereas Hindi shows Ergative and Dative behaving the same for indexation, and differing in the morphology, Nepali provides a kind of inverse of this. Ergative and Instrumental behave differently in that the former is an agreement target, while the latter is not; but these two cases nevertheless have shared feature content, as can be seen in their identical surface realization in the morphology.[20]

2.4.3 Gujarati: More features vs. further action in the morphology

We noted above that Hindi shows an interesting effect in how Differential Object Marking (DOM) relates to Dative case. DOs marked with *-ko* in Hindi, the morphological reflex of DOM, are not targets of MS Agreement. They thus behave the same as 'true' Datives with *-ko*, which are similarly excluded from entering into MS Agreement.

The behavior of DOM in the Indo-Aryan language Gujarati in this domain provides a point of contrast with Hindi: Gujarati DOM is morphologically identical to Dative marking; but in Gujarati, DOM-marked DOs are targets of MS Agreement, while 'true' Datives are not. The main point of illustration is that there appear to be arguments that are identical in terms of their syntactic case features, but which differ in their morphological realization.

[19] Nepali also has Genitive, Locative, and Ablative cases. However, as these do not enter the indexation system or syncretize with cases that do, we do not consider them here.

[20] On this theme, one of the main goals of Akkuş (2020) is to demonstrate that the label *Oblique* in Northern Kurdish (including Zazaki) actually covers arguments that bear distinct cases for morphosyntactic purposes; at the same time, these are realized with the same form– a syncretism of the type seen in Nepali.

This raises the question of whether the latter effect is due to the operation of postsyntactic morphological processes, or something else.

In Gujarati, like in Hindi, Ergative subjects (which are found in the perfective) are not targets of MS agreement. In perfective transitive clauses it is therefore the Object that is agreed with, as seen in (37) where the verb agrees with the masculine Object, not the feminine Subject:[21]

(37) sita-e kāgal vāc-yo
sita(FEM)-ERG letter(MASC) read-PFV.MASC.SG
'Sita read the letter.'

DOM in Gujarati is signalled by the suffix *-ne* on the DO; this is identical to the suffix that surfaces with typical Datives. Crucially, though, DOM Objects continue to show agreement on the verb, as can be seen in the pair of examples in (38):

(38) a. sita-e raj-ne payav-yo
Sita(FEM) Raj(MASC) harass-PFV.MASC.SG
'Sita harassed Raj.'

b. raj-e sita-ne payav-i
Raj(MASC) Sita(FEM) harass-PFV.FEM.SG
'Raj harassed Sita.'

DOM DOs in Gujarati thus differ from their Hindi counterparts in this respect. They also differ from 'true' Datives affixed with *-ne*: these do not agree, whether they are Subjects (39a) or selected by the verb (39b):[22]

(39) 'True' Datives: no agreement

a. Kišor-ne chemistry bhaṇ-v-i ha-t-i
Kišor-DAT chemistry(F) study-DESID-MASC.SG be-PFV-FEM.SG
'Kišor wished to study chemistry.'[23]

b. šilaa-thi raaj-ne (naa) maL-aa-y-ũ
Sheela-INST Raj-DAT (not) meet-ABIL-PFV-DFLT
'Shee could (not) meet Raj. (Mistry 2004:23a)

(40) šilaa-thi raaj-ne (naa) jagaaD-aa-y-o.
Sheela-INST Raj.(M)-ne (not) awake-ABIL-PF-M
'Sheela could (not) awaken Raj.' (Mistry 2004:27a)

Taken at face value, this looks like a situation in which distinct syntactic cases are realized with the same exponent in the morphology; we saw something like this in the analysis of Ergative/Instrumental syncretism in Nepali immediately above. In a nutshell, the problem is as follows:

[21] Examples here are drawn from Bobaljik 2017, which is based on Mistry (1976, 1997).
[22] The subject is an Instrumental in (39b), hence not a possible agreement target.
[23] Translation taken from Mistry (1997).

(41) DOM DOs in Gujarati behave ...

a. as [-obl] for the purposes of MS Agreement (by virtue of being a target); but

b. as [+obl] for the purposes of morphological realization (by virtue of syncretizing with the Dative).

The question of how to resolve this tension begins with the question of which syntactic case features are assigned to DOM-marked arguments. As we noted in 2.4.1 above, such arguments in Hindi appear to possess the same features as real Datives. As shown in this section, this cannot be the case for Gujarati, since DOM-marked objects and real Datives behave differently for indexation.

With this in mind, there are a few different ways to analyze this part of Gujarati. One path to take would be to treat the system in terms of the case features shown in (32), which combines elements of the analyses of Hindi and Nepali above. Where it is not clear what value might fill a particular cell, we have acknowledged this with a question mark:

(42) Cases: Gujarati

	'Ergative'	'Dative'	'Direct'	'DOM'
subject	+	-	?	-
oblique	+	+	-	-
α	?	+	?	+

On this approach, DOM involves assignment of features that differ from those comprising the Dative:

(43) Gujarati DOM: Assign [-obl,+α] to the DO (under the relevant conditions).

The idea then is that MS Agreement in the language is sensitive to the feature [-obl], much as in Hindi:

(44) MS Agreement: Agree with the highest [-oblique] argument.

Morphological realization, however, is sensitive to the feature [±alpha], in the way that is shown in (45):

(45) [+obl,+subj] ↔ -e *Ergative*
[+α] ↔ -ne *Dative, DOM*

This analysis produces the correct results; before assessing how it does this, we will consider an alternative to compare it with.

Another possible way of treating Gujarati, which has been mentioned in the literature, departs from (43), and treats DOM-Objects are bearing the same case features as other DOs. In the abstract, this type of analysis provides another way of thinking about the 'split behavior' summarized in (41). Rather than reducing it to a difference in case assignment in the way we did above, it relies on ordering: DOM DOs are the same as other DOs for

MS Agreement, but different for morphological realization, which comes later, due to an operation (or operations) that take place in the PF component. Such an analysis is suggested in Bobaljik (2017), although the specific mechanism(s) responsible for producing DOM are not examined. Bobaljik points to Kalin and Weisser's (2019) more general discussion of why DOM in certain languages does not appear to implicate movement of the argument marked in this way. This paper hypothesizes that DOM might be produced by post-syntactic mechanisms, but does not provide a worked out analysis.

To be more precise about what is at issue, it is necessary once again to consider what kinds of case features are involved. In (46) we have modified (32) above by eliminating [±alpha] (this is essentially the same as what we used for Hindi above):

(46) Cases 2: Gujarati

	'Ergative'	'Dative'	'Direct'
subject	+	-	?
oblique	+	+	-

DOs (like Subjects) are assigned the feature [-obl]. Something further is needed to encode DOM. Given the case system in (46), this could be a feature of another type; for the purposes of this discussion, we will assume that this is the feature [+specific].[24] Thus, for the purposes of the syntax DOM arguments have [-obl,+spec], while true Datives have [-subj,+obl,+spec].

The difference in case features explains why Datives and DOM are treated differently for Agreement. The question then is what happens in the morphology. If we assume something like the Vocabulary Items in (45), then the DOM [-obl,+spec] needs to become [+obl] before Vocabulary Insertion occurs; schematically:

(47) [-obl,+spec] —?⟶ [+obl...]

What is at issue is what the operation doing this might be. Since [+obl] is a marked value, it is not clear that the standard device for manipulating features– Impoverishment, which deletes them– could perform the work that is required.[25] We will not dwell on the details of (47) here, because for our purposes the main point to consider is what it would mean to put DOM case effects at PF, rather than in the syntax as on the first account we sketched.

The comparisons of the syntactic and PF approaches leads in some interesting directions. In particular:

[24] We posit [+specific] rather than features related to humanness/animacy because Gujarati DOM is reported as applying to inanimates; see Mistry (1997) for discussion.

[25] Though see Keine and Müller (2015), who make some assumptions that are different from ours.

One possibility would be to assume that (i) case assignment can leave values underspecified, with (ii) feature-filling operations that apply at PF prior to Vocabulary Insertion. The idea would be to make the feature-filling sensitive to context, such that [+spec] causes the value of [±obl] to become positive. Cf. Neidle (1982b), who analyzes the Genitive of negation in Russian in this way. See also Noyer (1998) for pertinent discussion.

- The case assignment approach accounts for the facts by positing the feature [$\pm\alpha$], whose only role as the analysis stands is to relate Dative and DOM. Whether this feature could be motivated depends on how case assignment works– and, in particular, what it might say about what Datives and DOM have in common.[26]

- A morphological account– sketched abstractly in (47)– requires concrete proposals concerning how a feature like [+spec] effectively converts Direct case features into Dative. Crucially, the action here is at PF, raising the question of what kinds of cross-linguistic generalizations could be derived from this approach.

Continuing on the last point, the identity in form at issue, between true Datives and DOM, is not uncommon cross-linguistically. To us this suggests that (all else equal) it would be desirable to try to explain it as a deep property; in terms of the options outlined above, as part of how case features are assigned in the syntax.[27]

While we will not examine DOM further here, the main points of this look at Gujarati are a clear extension of ideas that we illustrated above. In particular, the indexation of arguments (MS Agreement) is sensitive to features in a way that is not directly reflected in the surface realization of case: both DOM arguments and Dative are marked with *-ne*, but only the former agree. Once again this shows the independence of case features (and their interaction with MS operations) on the one hand, and their morphological realizations on the other.

2.4.4 Maithili: The transmission of case features

Our fourth example, also discussed in Bickel and Yādava 2000, is a bit more speculative. It involves the idea that a φ marker itself– in this particular case, an MP Agreement morpheme– may possess case features that are transferred to a probe via MS agreement.

[26] As far as this goes, the same kind of questions could be asked for the analysis of Nepali, where a [$\pm\alpha$] is used to relate Ergative and Instrumental cases.

[27] Some evidence from Gujarati appears to support the idea that the DOM effect is syntactic. As we noted earlier, Kalin and Weisser (2019) discuss action in the morphology as one possible way of dealing with languages that allow asymmetric coordination with DOM. However, Gujarati (like Hindi) disallows coordination of this type.

(i) a. sita-e māṇas-ne ʤo-j-o
Sita(FEM) man(MASC) see-PFV.MASC.SG
'Sita saw the man.'

b. sita-e kāgal ʤo-j-o
Sita(FEM) letter(MASC) see-PFV.MASC.SG
'Sita saw the/a letter.'

c. *sita-e kāgal anē māṇas-ne ʤo-j-aa
Sita(FEM) letter(MASC) and man(MASC) see-PFV.MASC.PL
Intended: 'Sita saw a letter and the man.'

Data here are from the field notes of Monica Alexandrina Irimia (pers. comm.), who also reports that if 'letter' is interpreted as a definite, as if it were differentially marked, this sentence is acceptable (although not all speakers allow the differential marker on inanimates; cf. Fn. 24).

Since we will make use of this idea in our analysis of Sorani later (see also Akkuş 2020:25 for this view in Northern Kurdish languages), we provide a preliminary look at this kind of effect here in the Indo-Aryan context.

The example is drawn from Maithili, which is spoken in India and Nepal. The targeting part of Maithili is quite complex. What is important for our purposes is that MP agreement morphemes make a distinction between Nominative and Non-Nominative arguments, suggesting the transfer of an argument's case features along the lines noted above.

One contrast illustrating this point is seen in (48), where the difference between Nominative and Dative subjects has an interpretive correlate (cf. the 'INVOL(untary) morpheme in (48b)), and where the form of agreement is changed as well; that is, NOM in (48a), and NON.NOM in (48b):

(48) a. o hãs-l-*aith*
3H.REM.NOM laugh-PST-3H.NOM
'He (honorific, remote) laughed.'

b. hunkā hãs-ā-ge-l-*ainh*
3H.REM.DAT laugh-INVOL-TEL-PST-3H.NON.NOM
'He (honorific, remote) burst into laughing.' (Bickel and Yādava 2000:346)

In transitive clauses (and clauses with more than one argument more generally), NOM and NON.NOM can cooccur, as shown in (49):

(49) u hunkā māra-l-k-ainh.
3NH.REM.NOM 3H.REM.DAT beat-PST-3.NOM-3H.NON.NOM
'S/he (non-honorific, remote) beat him/her (honorific, remote).' (Bickel and Yādava 2000:11a)

This suggests that there might be two distinct heads probing for arguments to agree with in such clauses, one targeting Nominatives, the other Non-Nominatives (NON.NOM).

As we noted above, the condition under which arguments come to be agreed with is not our primary focus here. Instead, we wish to highlight the idea that the realization of agreement is sensitive to case features. There are in principle at least two ways in which this sensitivity could be analyzed, one of which is more relevant to our purposes than the other. Beginning with that, the idea would be that (abstractly), the Vocabulary Items realizing agreement morphemes make reference to case features; in this case, whatever feature (or features) distinguishes Nominative from the other cases. Using $[\pm\alpha]$ for this, the morphological difference can then be stated as in (50):[28]

(50) Reference to case features (abstract)

a. $[+1,-2,+\alpha] \leftrightarrow$ -x -x for 'NOM agreement'

b. $[+1,-2,-\alpha] \leftrightarrow$ -y -y for 'NON.NOM agreement'

[28] We represent NOM and NON.NOM abstractly with *-x* and *-y* to avoid getting into the fine-grained details of agreement realization in Maithili.

On this type of analysis, it is assumed that case features of the goal are transferred to the probe when agreement occurs, along with the goal's φ-features.

Another possibility is that the realization of agreement morphemes is not sensitive to case features directly, but indirectly, due to there being two distinct probes involved. If, for example, there is a probe X targeting Nominatives, and a probe Y that targets Non-Nominatives, then the spell-out of agreement could be made sensitive to the presence of the heads X and Y. The precise analysis of this effect in Maithili would require a number of additional assumptions (concerning both the morphosyntax of agreement, and the segmentation of Tense and person-number/case morphemes) that would take us too far afield for the purposes of this chapter. Our purpose here, in any case, is not to exhaustively explore options, but instead to illustrate the general nature of a type of analysis; this suffices to set the stage for later chapters, in which we will make use of something along the lines of (50) in our analysis of Sorani.

2.5 Summary

This chapter has outlined some of the theoretical assumptions that will play a role in the analysis of Sorani varieties later in the book. The three most important points are the following:

Architecture: MS and MP We assume an approach in which MS agreement and clitic movement operations play a central role in indexation. The MP status of a particular φ bundle that is involved in this system is determined in a derivation that includes an articulated PF component with Late Insertion, as schematized in (9).

Case features Case labels like 'Nominative', 'Accusative', and so on are shorthand for combinations of case features. The decomposition at the heart of this approach is essential in accounting for both MS behavior (indexation) and for morphological realization.

Case Targeting MS operations (agreement, clitic movement) may be specified to apply to arguments with certain case features. This view of case sensitivity relates directly to the notion of *Case Discrimination* that has been discussed in the literature.

Morphological realization The classes of case features referred to by MS case-targeting indexation operations need not be the same as those that play a role in MP realization. Thus, the architecture we assume, in which MS operations precede the realization of case morphemes through Vocabulary Insertion, admits situations in which MS case patterns and MP case patterns are mismatched.

Having outlined these components of our approach, and illustrated some aspects of them in the case-studies immediately above, we turn in the next chapter to Sorani Kurdish, which will take center stage in the remainder of the book.

3

Sorani Kurdish: The Basics

The core chapters of this book present an analysis of the argument indexation patterns of Sorani Kurdish, with a particular focus on how these interact with an alignment split that distinguishes perfective from imperfective clauses. As we saw in Chapter 2, the basic way of describing this system pairs Direct/Oblique imperfectives with Oblique/Direct perfectives, as shown in (1)-(2):

(1) (ême) de**=yan** bîn-*în*.
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

(2) (ême) de=**man** dît-*in*.
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'

The basic observation here is that in the imperfective (1), the subject is indexed by an agreement morpheme on the verb, while the object is indexed by a pronominal clitic. On the other hand, in the past progressive (2) (which is aspectually perfective), the situation is reversed: agreement goes with the object, while the clitic indexes the subject.

Alignment splits of this type arise early in the history of Iranian languages, and are the subject of an extensive literature. Haig (2008) provides one detailed discussion that also provides a focus on the details of alignment in different Kurdish varieties. For relevant perspectives see also Jügel 2009; Jügel and Samvelian 2020; Mohammadirad 2020b; Karimi 2012; Benveniste 1952/1966; Samvelian 2007a; Bynon 1979; Dorleijn 1996; Gharib and Pye 2018; Haig 2017.

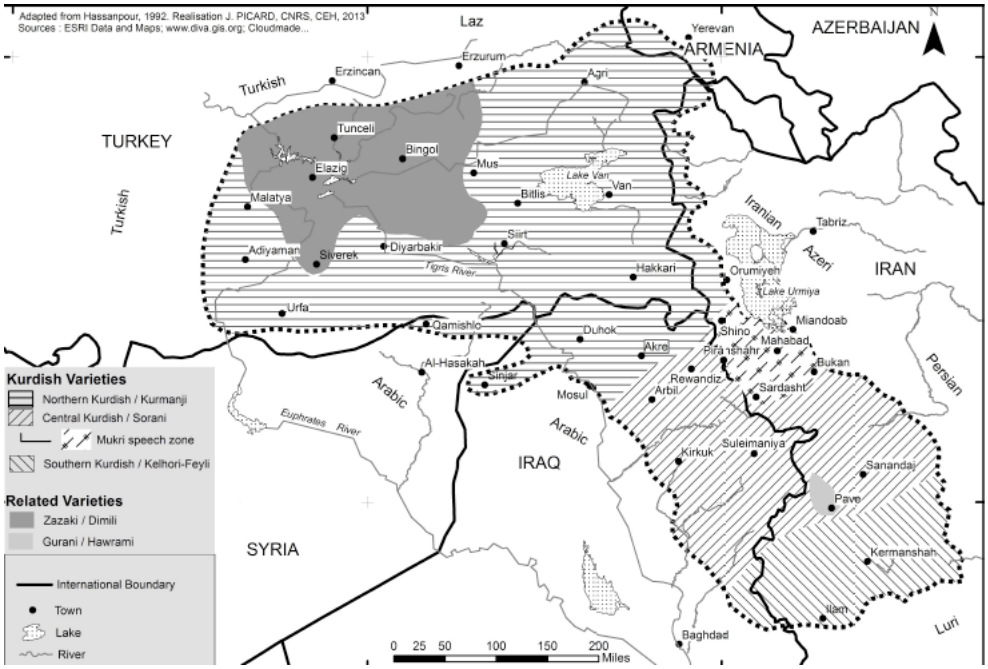
This chapter provides the syntactic and morphological foundations for the analysis of Sorani alignment that begins with Chapter 3. After presenting some general aspects of Sorani Kurdish in 3.1, we look in 3.2 at the basic clausal syntax of the language; the focus in this section is on the heads that comprise the clausal spine, and on some basic facts about word order. Following this, we review the notion of *Subjecthood* in Sorani. This notion (or more precisely, the set of properties that comprise it) will play a role at many points later in this work, as it will be important to identify which argument in the clause exhibits the properties that are associated with typical subjects. Section 3.4 provides a summary of key ideas.

3.1 Sorani Kurdish: Some basics

Kurdish belongs to the Western branch of Iranian languages, where it is typically placed into the Northwest Iranian subgroup (there are debates about the details; see e.g. Paul 2016; Haig 2008; Jügel 2009; Korn 2019). The three major varieties of Kurdish are: (i) Southern Kurdish, spoken under various names near the city of Kermanshah in Iran and across the border in Iraq; (ii) Central Kurdish (also known as Sorani, the name that we employ here), and (iii) Northern Kurdish (also called Kurmanjî). Northern Kurdish refers to a group of Kurdish dialects spoken primarily in southeastern Turkey, the north of Iraq and parts of Syria, the northwestern Iranian province of West Azerbaijan, and in pockets in the west of Armenia.

Sorani Kurdish is one of the official languages of the autonomous Kurdish region in Iraq (e.g. Sulaymaniyah and Erbil provinces), and is also spoken by a large population in western Iran along the Iraqi border (cf. and Haig 2014 for a discussion on defining "Kurdish"). In this book, we will use the term *Sorani Kurdish* to refer to two varieties spoken in various parts of Iran and Iraq. These are "Standard" Sorani Kurdish (SSK): to a first approximation, the variety spoken in the city of Sulaymaniyah;[1] and Garmiani Kurdish (GK), which is spoken in a region south of Sulaymaniyah, in parts of Kalar, Bawanour, and Chamchamal, around Lake Darbandikhan.

(3) map of Kurdish varieties (Öpengin 2016:2)



[1] Although this is a standard, and hence familiar to many speakers, it is nevertheless not a monolithic entity; we have encountered speakers from Sulaymaniyah who have differences from the patterns reported in the literature.

SSK has been studied and analyzed in a number of works, including Thackston 2006b, Samvelian 2007a, Haig 2008, Karimi 2013, Kareem 2016, and Öpengin 2016, among others. Garmiani has not been analyzed as such in the literature, that we are aware of.

The data in this book come from various sources. The SSK data is drawn from published works as well as from our work with speakers of this variety. For GK, one of the authors is a native speaker, and his judgments have been confirmed with a further set of native speakers. In cases where there is a variation among our consultants, or a variation between the literature and our consultants, we noted these as such. As far as the relation between SSK and GK is concerned, it should be noted that GK speakers are also familiar with SSK. Although this might not be their native variety, they also typically accept SSK forms/data, citing the influence of media and education in the propagation of the SSK variety. We have therefore been careful throughout our investigation to determine whether particular examples are grammatical in one or the other variety, or both.

The two varieties examined in this book share certain key properties. Both lack overt case marking on nouns, and rely solely upon person/number markers to express the grammatical relations of the arguments in a clause. Importantly, both display the alignment split in which transitive subjects in the perfective aspect receive Ergative case (though they differ in terms of how they treat objects in the perfective, as we will see in Chapter 4). As far as we have been able to determine, the basic clausal syntax of SSK and GK is identical; we have not identified any important differences between the varieties. While there are some lexical and morphophonological differences between them, these will not play a significant role in our discussion. With this in mind, we will use the general term *Sorani Kurdish* (SK) when speaking of properties that are common to both. This is a convenience we allow ourselves in this work, based on having looked at both varieties in detail; we do not necessarily expect all of the properties that we identify here to be found in other varieties of Kurdish that could be identified as Sorani.

3.2 Basic syntax

In this section, we provide a basic structure for Sorani Kurdish clauses. In the course of doing this, we will introduce the (functional) heads that play a defining role in the system of alignment and argument indexation that is our main focus in later chapters.

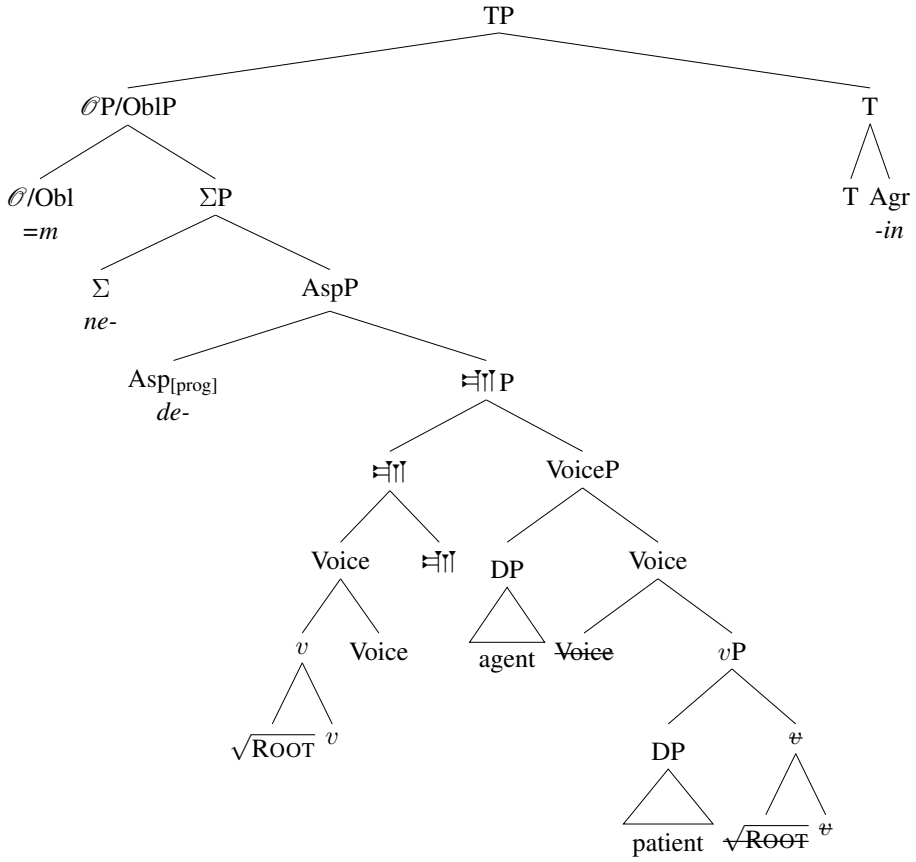
Even basic aspects of Sorani Kurdish clausal syntax present numerous challenges, especially in the domain of word order. In terms of major constituents, Sorani Kurdish is an SOV language (in line with what has been reported for other Iranian languages; Karimi 2013; Atlamaz 2012; Gündoğdu 2011; Karimi 2019, i.a.), but is predominantly head-initial in many other parts of its syntax. Our initial pass through Sorani clause structure will provide enough of a scaffold to support our analysis of the alignment and indexation system in Chapters 4-5. Some additional phenomena of interest will be pointed to along the way, but these will not be treated in detail so that we can maintain our primary focus.

3.2.1 Clause structure

As a working hypothesis, we adopt the structure in (4b) for a negated past progressive clause like (4a); this form is chosen for expository purposes because it displays a large number of overt morphemes:

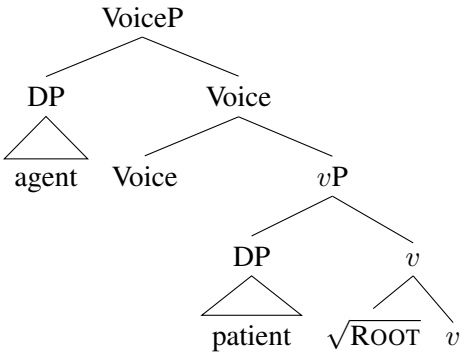
(4) a. ne=**m** de-xward-*in*
NEG=1SG.CL PROG-eat.PST-PL
'I was not eating them.'

b. Structure



Starting from the bottom of the structure, the verbalizer v categorizes the root (and is realized as the "causative morpheme" when it is present). Voice is above this:

(5) VoiceP



Note that we show the vP to be head-final (in line with the standard assumption about Iranian languages; Karimi 2013; Atlamaz 2012; Gündoğdu 2011; Karimi 2019, i.a.). However there seems to be object shift (see below), making this and some other points about word order and headedness difficult to determine.

Voice is realized overtly in the form of the passive exponents-*rê/-ra*, which can be seen in the following examples:[2]

(6) a. (ewan) de=m kuj-in.
3PL.pro IND=1SG.CL kill.PRS-3PL
'They will kill me.'

b. (min) de-kuj-**rê**-m.
1SG.pro IND-kill.PRS-PASS.PRS-1SG
'I will be killed.'

(7) a. (ême) kuşt=man-in.
1PL.pro kill.PST=1PL.CL-3PL
'We killed them.'

b. (ewan) kuj-**ra**-n.
3PL.pro kill.PRS-PASS.PST-3PL
'They were killed.'

The head above Voice is perfective Aspect (Asp[+perfective]) and plays a crucial role in Sorani syntax (and that of most other Iranian languages). In what has become a standard description in the literature on Iranian, the verbal system in Sorani Kurdish is spoken of as being based on two so-called verb "stems", traditionally referred to as "present stem" and "past stem." In morphosyntactic terms, this distinction reflects the locus of an alignment split: imperfective clauses are Direct/Oblique, while perfective clauses are Oblique/Direct. We will replace these labels with Nominative/Accusative and Ergative/Objective in Chapter 4, for reasons that are specified there.

[2]In presenting Sorani examples we gloss over many details of phonetic realization. In addition, we will alternate between IPA and Latin orthography depending on what our primary concerns are. Concerning transcription, our examples contain more than one convention, partly reflecting this variation in original sources. For example, the IPA /ʃ/ sound is represented as *š*, *ş* or *sh*, or a long vowel can be marked with either ˆ or ¯.

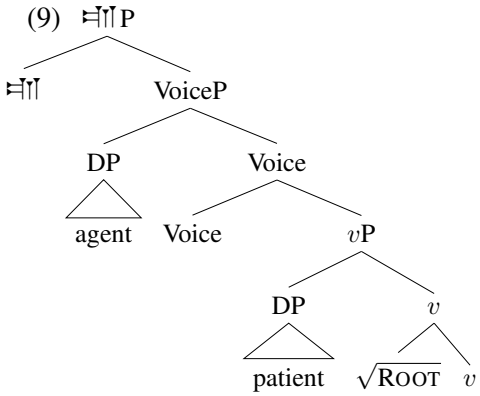
In taking the alignment split to be defined by Aspect (and not clausal Tense), we follow Akkuş (2020) and Baker and Atlamaz (2014) (see also Haig (2008, 2017), Kalin and Atlamaz (2018), Legate (2017) for the same view). This Aspectual head (called *Stem* in Akkuş (2020)) is derived historically from the Old Iranian perfect participle, and is represented as 𐎲𐎹𐎢 (Old Persian *-ta*) in (4b) to distinguish it from another Aspectual head that appears in Sorani clauses. Semantically, the 𐎲𐎹𐎢 (=Asp[+perf]) head defines completed actions. Its morphological realization defaults to *-d* in the Sorani varieties we examine here (it has other forms in other varieties). In many cases it interacts allomorphically with the verbal Root, such that the realization of these two heads is closely intertwined (hence the typical description in terms of "stems"). (8) provides some Sorani verbs in the perfective and imperfective, with the infinitive providing a basis for comparison; to keep things simple, we have not segmented morphemes here, as this is orthogonal to our primary concerns:

(8)

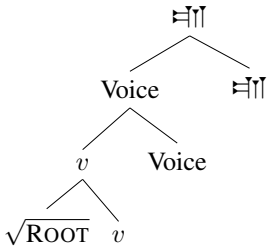
Infinitive	**Perfective Stem**	**Imperfective Stem**	**Verb Root**
mirdin 'to die'	mird-	mir-	mir-
kuştin 'kill'	kuşt-	kuş-/kuj-	kuş-/kuj-
kewtin 'fall'	kewt-	kew-	kew-
kêşan 'to weigh'	kêşa-	kêş-	kêş-
çûn 'to go'	çû-	ç-	ç-
kirrîn 'to buy'	kirrî-	kirr-	kirr-
dirûn 'to sew'	dirû-	dir-	dir-
royştin 'to leave'	royşt-	ro-	ro-

In terms of what his realized as the "past-stem"– for us a perfective form of the verb– we have the configuration shown in (9), and we assume that the verb moves up to 𐎲𐎹𐎢 (at least), to create the complex head shown in (10):

(9)



(10) complex head



As noted above, ⊨ is central to the alignment splits seen in SK. More specifically, we assume (see Akkuş 2020) that ⊨ plays a role in making transitive Agents Oblique when it is present; in short form, the heads ⊨ and Voice together license the Ergative case features on transitive subjects, in a way that could be made precise in different ways depending on what assumptions about how case assignment are adopted.[3] We take it that the aspectual head ⊨ is present only in perfectives; in basic imperfectives, it is absent. This analysis of split ergativity is based in part on a structural asymmetry, specifically with the perfective containing more structure than the non-perfective; this has been also argued to be the case for Indo-Aryan languages (see e.g., Grosz and Patel-Grosz 2014).

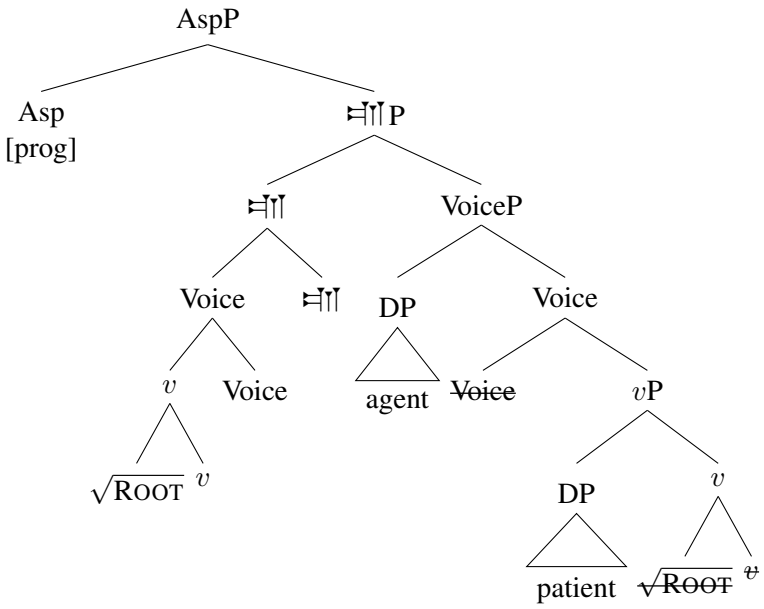
There is a second kind of morpheme that appears higher than ⊨, which introduces a progressive interpretation. This type of clause is imperfective above the level at which perfectivity is introduced; a kind of 'secondary' imperfective. This head, Asp[prog], is realized as *de-*, as shown in (11):

(11) (to) de**=t** dît-*în*
2SG.pro PROG=2SG.CL see.PST-PL
'You were seeing us.'

We take this *de-* to realize a "progressive" Aspect head Asp[prog], which is immediately above ⊨:

(12) Past progressive

[3]For some specifics, see Akkuş (2020); cp. also Clem (2019) for a similar approach to ergative case in Amahuaca (Panoan, spoken in Peru).



In addition to these heads, we posit a head Σ for affirmation/negation (cf. Laka 1990, or Pol(arity)P in the sense of Iatridou 1990). The head Σ has an overt realization in both the affirmative and the negative. Imperfective verb forms obligatorily show a *de-* prefix (glossed IND for 'indicative' – see Haig 2008 for the use of this label) that is in complementary distribution with *ne-/na-*, the negative morpheme:[4]

(13) a. (min) de=**î** škên-*im*.
1SG.pro IND=3SG.CL break.PRS-1SG
'I (will) break it.'

b. (min) na=**î** škên-*im*.
1SG.pro NEG=3SG.CL break.PRS-1SG
'I (will) not break it.'

There is also a subjunctive prefix *be-* that is realized in what appears to be the Σ head; hence 'indicative' for *de-*. Note that indicative *de-* is found only in the imperfective system, and is distinct from the progressive *de-* shown in (4b) that is found in the perfective system as the realization of the Asp[prog] head. The latter may cooccur with negation, (14), while the former is in complementary distribution with it, as such any combination of the negation and the indicative leads to ungrammaticality, as in (15). Nor are other combinations possible.[5]

[4] Of course, it is a puzzle why there is no realization of Σ in perfectives in many languages. For example, Armenian has the same property as Kurdish varieties, in which the indicative head is overtly visible only in the non-past/non-perfectives (Bezrukov 2022).

[5] Shuan Karim, p.c., suggests that *na-* could be a contraction of *ne-* and *de-*, with the loss of postvocalic [d] sound.

(14) ne=**m** de-xward-*in*
NEG=1SG.CL PROG-eat.PST-3PL
'I was not eating them.'

(15) a. *min na=**î** de=škên-*im*.
1SG.pro NEG=3SG.CL IND=break.PRS-1SG
'I (will) not break it.'

b. *min ne-de=**î** škên-*im*.
1SG.pro NEG-IND=3SG.CL break.PRS-1SG

The next heads in (4b) play an important role in the indexation system of Sorani. First, above Σ we posit a head $\mathscr{O}$, informally $\mathscr{O}$(blique). This head serves multiple functions. First, on our analysis it is the locus of oblique clitics– and hence central to the indexation system of Sorani– in a way that is explained in the next section. Second, it appears to be the target of "Object Shift", an obligatory movement of vP internal DPs (see below). These DPs are the clitic hosts exemplified in (19), which, according to our view, precede the clitic, (i.e. appear higher than the $\mathscr{O}$ to which the clitic attaches). We interpret this showing that (most) objects move out of the vP to Spec, $\mathscr{O}$P.[6]

Finally, the highest head in (4b) is Tense, which like $\mathscr{O}$ is implicated in agreement and clitic movement operations. The only overt realization of finite Tense that we are aware of is found in perfects, as in (16), where there is an alternation between *-û* in present perfect versus *-bû* in past perfect; both perfects cooccur with perfective ⊨⍱:

(16) perfects (present and plusquam)

a. xward-**û**=m-in
eat.PST-PERF=1SG.CL-3PL
'I have eaten them'

b. xward-**bû**=m-in
eat.PST-be.PST=1SG.CL-3PL
'I had eaten them'

We place Tense as head-final, for reasons having to do with clitic placement and word order that go beyond the scope of the current discussion. As we noted earlier, we believe that the working analysis of the clause embodied in (4b) is a first approximation; while it could be elaborated on in various ways, these do not bear directly on how indexation works, and we will therefore put them to the side.

3.2.2 Word order

The basic word SOV word order of Sorani can be seen in the examples in (17). These show a full DP subject and object, for the imperfective and perfective aspects respectively. Implementing a convention that we introduced in the first chapter of this book for φ elements,

[6] A topic for future work on Sorani syntax would involve comparing these effects to others seen crosslinguistically, in which it has been argued that arguments leave the vP; see e.g. Wood (2017) for Icelandic, Shibata (2015a,b) for Japanese.

we use *italics* for morphophonological (MP) agreement morphemes, and **boldface** for MP clitics:

(17) a. ewan sêw-ek-an de-bîn-*in*.
3PL.pro apple-the-PL IND-see.PRS-3PL
'They see the apples.'

b. ewan sêw-ek-an=**yan** bînî.
3PL.pro apple-the-PL=3PL.CL see.PST
'They saw the apples.'

The imperfective (17a) shows MP Agreement *-in* with the subject of the clause. The perfective (17b) shows an MP clitic ***=yan*** that indexes the transitive subject.

The same set of clitic forms is used for objects in transitive clauses; compare (18), where in the imperfective, MP clitic ***=yan*** indexes the transitive object, whereas MP agreement *-in* is the indexer for the same argument in the perfective:

(18) a. min de=**yan** bîn-im.
1SG.pro IND=3PL.CL see.PRS-1SG
'I see them.'

b. min de=m bînî-*[i]n*.
1SG.pro PROG=1SG.CL see.PST-3PL
'I was seeing them.'[7]

These clitics play an important role in our discussion of alignment and indexation, and are treated in detail starting in Chapter 4. Another aspect of their behavior, viz. their distribution, is also complex, and interacts with other aspects of SK word order. To a first approximation, this clitic is attached to an internal argument (DO or IO) if an overt one of these appears in the clause. Various other hosts are possible as well, as shown in (19):

(19) a. (ew) sêw-ek-an=**î** xward
3SG.pro apple-the-PL=3SG.CL eat.PST
'S/he ate the apples.' (standard DO)

b. name-(e)k(e)-an=**î** bo ewan ne-nard.
letter-the-PL=3SG.CL to them NEG-send.PST
'He did not send the letters to them.' (DO in a ditransitive)

c. çî=**î** xward?
what=3SG.CL eat.PST
'What did he eat?' (*wh*-phrase)

[7]The ***=yan*** form in (17b) and (18a) thus realizes Ergative and Accusative, respectively, in more familiar terms. Haig (2008:13) notes this and comments: "... what is found in Iranian, namely formal identity between an Ergative marker and an Accusative marker is, as Bossong (1985: 118121) points out, a genuine typological rarity." and goes on to explain there is no unique Ergative marker. See also fn. 2 in Chapter 1.

d. bo ewan**=î** ne-nard-*in*.
to them=3SG.CL NEG-send.PST-PL
'He did not send them to them.' (IO in a ditransitive, Kareem 2016:102, (13b))

e. (to) bo Nermîn=**it** kirrî.
2SG.pro for Nermîn=2SG.CL buy.PST.3SG
'You bought it for Nermîn.' (applied argument)

f. (min) naxoš-ek-an**=im** çareser kird.
1SG.pro patient-the-PL-1SG.CL treatment do.PST
'I treated the patients.' (DO in a light verb situation)

g. (min) çareser**=im** kird-*in*.
1SG.pro treatment-1SG.CL do.PST-PL
'I treated them.' (nominal part of the light verb)

In contrast to what is shown in (19), subjects do not host the clitic (20a); the same is true of adverbs and depictives (20b-d):

(20) a. ewan=(***yan**) sêw-eke=*(**yan**) xward
3PL.pro=3PL.CL apple-the=3PL.CL eat.PST
'They ate the apple.' (subject)

b. ewan dwênê=(***yan**) sêw-eke=*(**yan**) xward
3PL.pro yesterday=3PL.CL apple-the=3PL.CL eat.PST
'They ate the apple yesterday.' (temporal adverb)

c. ewan xêra=(***yan**) sêw=*(**yan**) xward
3PL.pro fast=3PL.CL apple=3PL.CL eat.PST
'They did apple-eating fast.' (manner adverb)

d. ême be serxošî=(***man**) bînî=*(**man**)-*in*
1PL.pro in drunk=1PL.CL see.PST=1PL.CL-PL
'We saw them drunk.' (depictive)

If none of the possible hosts in (19) is present in a clause containing a clitic, it attaches to the verb. In doing this, it displays a type of second-position effect: if the verb has a prefix, it attaches after the prefix (i.e. between the prefix and the verb), (21a); if there are two prefixes, it appears after the first of these, (21b); and finally, if there are no prefixes, it attaches at the end of the verbal complex, (21c):[8]

(21) a. ême de=**man** bînî-*n*
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'

[8]This aspect of MP-clitic placement shows considerable variation across varieties. For example, in some Western Iranian languages (e.g., Laki dialects, Gorani, Luri-type dialects), prefixes in the verbal complex do not serve as licit clitic hosts. In others, MP-clitics appear to be re-ordered with respect to MP-Agreement markers that appear on the verb; see e.g., Haig (2008); Mohammadirad (2020b).

b. ême ne=**man** de-bînî-*n*
1PL.pro NEG=1PL.CL PROG-see.PST-PL
'We were not seeing them.'

c. ême bînî=**man**-*in*
1PL.pro see.PST=1PL.CL-PL
'We saw them.'

This distribution poses a number of challenges for theories of clitic placement; see e.g. Haig 2008; Öpengin 2016, 2019; Samvelian 2007a, 2008; Mohammadirad 2020b. For our purposes, however, it suffices to note that the distribution of this MP-clitic is different from that displayed by what is called MP-agreement; the latter elements are found only on the verb.

As illustrated in various examples above, the standard SK clause is SOV, with prefixal elements realizing Σ and Asp[prog] attached to the verb. Whether or not the verb actually moves all the way to Tense in (4b) is a complex question, one that interacts with clitic placement, as well as other aspects of Sorani syntax.

On the latter point, an examination of basic word-order effects in conjunction with pseudo-incorporation illustrates what appears to be a type of object shift (see also Kareem 2016). Bare objects follow manner adverbs such as *xêra* 'fast' or *šipirzeyi* 'messily', as in (22)-(24), which we take provisionally to mark the left edge of vP.[9]

(22) min šipirzeyi sêw=**im** xward
1SG.pro messily apple=1SG.CL eat.PST
'I did apple-eating messily.'

Similarly, the nominal part of a light verb construction has to follow the manner adverb, thus showing the same restriction in terms of adverb positioning.

(23) a. Azad Sasan=**î** xrap siza da.
Azad Sasan=3SG.CL badly punishment give.PST
'Azad punished Sasan badly.'

b. *Azad Sasan=**î** siza xrap da.
Azad Sasan=3SG.CL punishment badly give.PST
'Azad punished Sasan badly.' (Kareem 2016:153)

On the other hand, typical DP arguments of the verb surface to the left of the manner adverbial, as shown in (24):

[9]The possibility of modification of these bare nouns, as in (i), suggests that the effect in (22) is pseudo-incorporation, and not noun incorporation (Massam 2001; Kornfilt 2003; Öztürk 2005).

(i) min šipirzeyi sêw-î gewre=**m** xward
1SG.pro messily apple-EZ big=1SG.CL eat.PST
'I ate big apple(s) messily.' (I did big-apple eating messily.)

See also Baker (2015: p. 148, fn.36), who reports something similar for Adıyaman Kurdish.

(24) a. min sêw-ek=**im** šipirzeyi xward
1SG.pro apple-a=1SG.CL messily eat.PST
'I ate an apple messily.'

b. min sêw-eke=**m** šipirzeyi xward
1SG.pro apple-the=1SG.CL messily eat.PST
'I ate the apple messily.'

The precise landing site of this DP movement remains an open issue. It depends in part on what is done with the relative height of certain heads in the clause; while (4b) represents one possibility, crucial evidence for evaluating that particular sequence of heads versus alternatives is difficult to come by. For example, putting $\mathscr{O}$ in a high position would require object shift target a position above Tense (cf. Kareem 2016). Since the central claims of this book do not hinge on the exact positioning of these projections we will leave these questions open.[10]

3.3 Subjecthood

The informal notion of *subject* is typically associated with a cluster of properties in Kurdish.[11] We focus on these here to pave the way for discussions in the next two chapters (Chapter 5 in particular), where diagnostics are needed to determine whether a particular argument behaves like a typical subject or not.

Most of the relevant diagnostics have been identified and tested in Central and Northern Kurdish varieties (e.g., Matras 1992, 1997; Haig 1998, 2008; Akkuş 2020). The four we will outline here (cf. Haig (2008)) are (i) constituent order, (ii) control of corefential deletion, (iii) binding of reflexives, and (iv) passivization.[12]

In all tenses, the pragmatically neutral order of constituents is SV, or SOV. This is shown for a transitive clause in (25) and (26) (note that the indexation in the perfective is also indicative of grammatical relations).

(25) a. minal-ek-an kiç-ek-an de-bîn-*in*.
child-the-PL girl-the-PL IND-see.PRS-PL
'The children see the girls.'

b. kiç-ek-an minal-ek-an de-bîn-*in*.
girl-the-PL child-the-PL IND-see.PRS-PL
'The girls see the children.'

[10] What is important is that the positioning of these functional heads, $\mathscr{O}$ and T, relative to each other is fixed in both aspects/stems, as evinced by the clitic placement and second-position effects. Anticipating the discussion in Chapter 6, this argues against an approach in which probes are located in different positions in the different aspects.

[11] Here and below we will sometimes depart from the typological classification of roles (S, A, O) and typically use terms like *Subject*, *Direct Object*, and so on. When more detailed breakdowns are required, we will be more precise about this and use *A* for *Agent*, or *Subject of a transitive* etc.

[12] See also Sedighi (2010); Jügel and Samvelian (2020) for similar tests applied to Persian.

(26) a. minal-ek-an kiç-ek-an**=yan** bînî.
child-the-PL girl-the-PL=3PL.CL see.PST
'The children saw the girls.'

b. kiç-ek-an minal-ek-an**=yan** bînî.
girl-the-PL child-the-PL=3PL.CL see.PST
'The girls saw the children.'

Which is to say, the highest argument in the clause is expected to behave as a typical subject.

Northern Kurdish and Zazaki varieties have subject-oriented invariable reflexive, *xwe*, *xu*, *xo*, 'self' depending on the language. This is illustrated in (27) for Northern Kurdish, which illustrates that in those varieties the reflexive is sensitive to the syntactic relations A, O and S, not to the surface case.

(27) Northern Kurdish

a. cotkar kur-î di-şîn-e mal-a xwe.
farmer.DIR boy-OBL DUR-send.PRS-3SG house-EZ.F self
'The farmer$_i$ is sending the boy$_k$ to *his*$_{i/*k}$ house.' (Haig 1998:29)

b. cotkar-î kur şand mal-a xwe.
farmer-OBL boy.DIR send.PST.3SG house-EZ.F self
'The farmer$_i$ sent the boy$_k$ to *his*$_{i/*k}$ house.' (Haig 1998:30)

However, in Sorani varieties, the reflexive is not subject oriented, as shown in (28) and (29), where the reflexive and the pronoun, respectively, in the IO are bound by the direct object.[13]

(28) a. ême gişt minal-êk nîşanî bo xo=y de-de-*yn*.
1PL.pro every child-a show to self=3SG.CL IND-give.PRS.1PL
'We show every child to himself (e.g., in a mirror).'

b. ême gişt minal-êk=man nîşan bo xo=y da.
1PL.pro every child-a=1PL.CL show to self=3SG.CL give.PST
'We showed every child to himself (e.g., in a mirror).'

(29) a. ew her minal-êk nîşanî bo dayk-î xo=y de-dât.
3SG.pro every child-a show to mother-EZ self=3SG.CL IND-give.PRS.3SG
'He shows every child$_i$ to his$_i$ mother.'

b. ew her minal-êk=î nîşan bo dayk-î xo=y da.
3SG.pro every child-a=3SG.CL show to mother-EZ self=3SG.CL give.PST
'He showed every child$_i$ to his$_i$ mother.'

[13]The GK speakers prefer to use *gişt* for 'every' though they also accept the more commonly used form *her/hamu* in SSK. And some speakers also prefer the adposition *be* rather than *bo*. As usual, we abstract away such variations since the point of interest holds regardless.

Due to these properties, reflexive binding is not useful as a subjecthood diagnostic in Sorani.

Another test that has been employed is conjunction reduction (cf. *subject ellipsis* of Zaenen et al. 1985), which allows coreferential deletion across coordinate clauses. A version of the conjunction deletion is sometimes used to differentiate *syntactic* ergativity from *morphological* ergativity. For example, Doron and Khan (2012) show that in morphologically ergative languages such as Aramaic, when two clauses are coordinated, and the second clause has subject agreement but no overt subject, the argument crossreferenced by the ergative suffix of the first clause is treated as subject by the predicate of the second clause, as shown in (30a). In Aramaic, an overt pronoun must be used to allow the absolutive-marked argument to be interpreted as the subject of the same clauses, (30b). On the other hand, in syntactically ergative languages, in a configuration corresponding to (30a), the argument cross-referenced by the absolutive suffix is treated as subject of the second clause (Dixon 1994).

(30) Aramaic: Christian Barwar (Doron and Khan 2012:12)

a. ʔɛ-brata muxl-a-la ʔu zil-la.
the-girl feed.PFV-ABS.3FS-ERG.3FS and leave.PFV-ERG.3FS
'She fed the girl and left.'

b. ʔɛ-brata muxl-a-la ʔu ʔay zil-la.
the-girl feed.PFV-ABS.3FS-ERG.3FS and she leave.PFV-ERG.3FS
'She fed the girl and she (the girl) left.'

The Kurdish languages have already been demonstrated to show morphological ergativity (see e.g., Matras 1992, 1997; Haig 1998). Applying the clausal coordination diagnostic to Sorani, (31), further confirms the morphological ergativity of Kurdish and subjecthood of the oblique marked arguments or arguments indexed with an MP oblique clitic.

(31) a. ew kich-aka=**y** bînî u roysht.
3SG.pro girl-the=3SG.CL see.PST and leave.PST
'She (the mother) saw the girl and she (the mother) left.'

b. ew kich-aka=**y** bînî u ew roysht.
3SG.pro girl-the=3SG.CL see.PST and 3SG.pro leave.PST
'She (the mother) saw the girl and she (the girl) left.'

Thus, in morphologically ergative languages, this test allows the subject of a coordinated clause to be deleted under identity with the subject of a preceding clause. Examples in (32) through (34) illustrate this possibility with different combinations of intransitive and transitive predicates, in different tenses and different constructions, including non-canonical subject constructions (see chapter 5 for more discussion).

(32) a. kur-eke sêw-eke=**y** bînî û kewt.
child-the apple-the=3SG.CL see.PST.3SG and fall.PST.3SG
'The boy saw the apple and fell.'

b. kur-eke kewt û sêw-eke=**y** bînî.
child-the fall.PST.3SG and apple-the=3SG.CL see.PST.3SG
'The boy fell and saw the apple.'

(33) a. kes serêşe=y ne-bu û ne-kewt.
noone headache=3SG.CL NEG-PST.COP and NEG-fall.PST.3SG
'Noone had a headache and fell.'

b. kes ne-kewt û serêşe=y ne-bu.
noone NEG-fall.PST.3SG and headache=3SG.CL NEG-PST.COP
'Noone fell and had a headache.'

(34) a. min kewt-im û serêşe=m he-bu.
I fall.PST-1SG and headache=1SG.CL exist-PST.COP
'I fell and had a headache (afterwards).'[14]

b. min serêşe=m he-bu û kewt-im.
I headache=1SG.CL exist-PST.COP and fall.PST-1SG
'I had a headache and fell.'

c. min de-kew-im û serêşe=m he-ye.
I IND-fall.PRS-1SG and headache=1SG.CL exist-PRS.COP
'I fall and have a headache (always).'

d. min serêşe=m he-ye û de-kew-im.
I headache=1SG.CL exist-PRS.COP and IND-fall.PRS-1SG
'I (always) have a headache and fall.'

e. min serêşe=m he-ye û sêw de-xo-m.
I headache=1SG.CL exist-PRS.COP and apple IND-eat.PRS-1SG
'I (always) have a headache and eat apple(s).'

Passivization is used as another diagnostic for the subjecthood of the A argument of transitive clauses in both aspects (e.g., Matras 1997; Haig 1998; Akkuş 2020). The fact that the internal argument can be raised to become the grammatical subject is an indication that in the active counterpart, the A argument functions as a grammatical subject that (informally speaking) gets "demoted" in the passive.

(35) a. ême ewan=**man** kuşt.
1PL.pro them=1PL.CL kill.PST
'We killed them.'

b. ewan kuj-ra-*n*.
3PL.pro kill.PRS-PASS.PST-3PL
'They were killed.'

[14] For pragmatic reasons, the verb *girt* 'get, hold, take' is more preferred in the context of (34a) instead of *hebu*.

Thus, to the extent that an argument behaves like the sole argument of a passivized transitive, it is Subject-like.

Finally– and this point looks directly ahead to our analysis of indexation– the subject in a typical clause is the only element that is agreed with in the morphosyntactic sense, as in (36) (see §4.2 for more discussion):[15]

(36) a. min *chend xanu-yek*=(*__yan__) de-bîn-*im*.
1SG.pro several house-a=3PL.CL IND-see.PRS-1SG
'I see several houses.'

b. min *chend xanu-yek*=__im__ bînî-(**n*).
1SG.pro several house-a=1SG.CL see.PST-3PL
'I saw several houses.'

These examples show how an overt Direct Object may not be accompanied by a co-indexed φ element (36a); the 1s Subject, conversely must be conindexed in this way.

Our interest in diagnostics of this type is two-fold. First (as we noted above), they will allow us to examine various clauses with what are often called 'non-canonical' subjects, and determine how the syntax of these clauses compares with that of others. The second point of interest is that while the properties noted above typically are found only with a single argument in a clause, this is not always what is found. That is, in the typical case the highest argument in the clause is the one that is available for conjunction reduction, and it is also the one that enters into MS agreement. But there are some clauses in which these properties can come apart; for example, in Chapter 5 we will present clauses in which two arguments enter MS agreement. It is for this reason that we have been careful to refer 'subject' as an informal notion, and to identify the properties of typical subjects at a finer grain.[16]

3.4 Summary

In this chapter, we have introduced the syntactic and morphological foundations for the analysis of Sorani alignment in the following chapters. The key ideas are as follows:

[15] Shuan Karim, p.c.. notes that for him *chend xanu-yek* 'several houses' is semantically plural, but grammatically singular, so he would have the indexers *=î* and *-∅* instead of *=yan* and *-n*, respectively. For our consultants, it is also grammatically plural, (i), as it necessarily triggers plural agreement in the intransitive clauses as well.

(i) chend qutabîy-êk hat-*(in) bo aheng-eke.
several student-a come.PST-PL to party-the
'Several students came to the party.'

[16] Jügel and Samvelian (2020) put forth a very similar idea for Experiencer constructions in Persian, arguing that they involve two subjects (or arguments) with two realizations of agreement in the sentence. For discusion of this point in SOrani see sections 2-4 of Chapter 5; and for Persian, section 6.3 of that chapter.

Indexation The basic clausal syntax of the language involves a number of functional heads. Of those, the heads *T* and *∅*/*Obl* in particular will play an important role in the indexation mechanics, as they will interact with the arguments lower in the clause in multiple ways (Agree or Move).

Alignment split Perfective clauses– i.e. those with 𐎢𐎺𐎼 – produce case assignment differences from imperfectives.

Subjecthood A set of diagnostics for subjecthood will play a role at various points later in this work, as they will allow us to identify which argument in the clause exhibits the properties that are associated with typical subjects. These properties typically cluster together, but as we will see in Chapter 5, certain predicates and passives illustrate configurations in which these properties come apart.

Against this background, we now turn to the investigation of the indexation patterns in Sorani varieties, starting with transitive clauses and gradually extending it to other constructions.

4

Alignment and indexation in transitive clauses

In this chapter, we develop an analysis of the indexation patterns of Standard Sorani Kurdish (SSK) transitive clauses, and extend it to Garmiani Kurdish, as well as some other languages that provide pertinent points of comparison.

The basic pattern to be explained in SSK involves a mirror-image effect in how arguments are indexed. Imperfective clauses like (1a) show MP agreement on the verb that indexes the subject, and an MP clitic that indexes the object. In perfectives like (1b) the same kinds of indexers appear but their relation to arguments is reversed: the subject is indexed by the MP clitic, while the object is indexed by MP agreement:

(1) SSK Indexation

a. (ême) de**=yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

b. (ême) de**=man** dît-*in*.
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'

Our analysis of these patterns is based on the idea that MS operations (agreement, clitic movement) target specific case features in the way that is outlined in Chapter 2. In summary form, the alignment split between imperfective and perfective clauses sets things in motion, by determining a difference in case assignment. The case differences are reflected in interactions with the movement and agreement specifications on the two heads T and $\mathscr{O}$ that were introduced in the last chapter. Finally, morphological realization of φ bundles is also sensitive to case features; because forms may be underspecified with respect to the features they realize, each of the φ elements in (1) realizes more than one case.

In derivational sequence, the steps that we have just outlined are as follows:

(2) *Order*:

Creation of basic clause (perfective or not) ⇒

Case assignment ⇒

(Clitic-) Movement and Agreement operations ⇒

PF-realization of φ bundles

The different components of the analysis are introduced in the course of the next few sections. To preview this in slightly more detail, the fully fleshed-out analysis involves the following factors; these are framed with respect to SSK, our primary focus (the details differ slightly for GK, in ways that will become clear later in this chapter).

The perfective/imperfective split. Clauses is Sorani Kurdish differ in terms of whether they have a perfective head or not. The presence or absence of the head ⊨ (Asp[+perf]) determines the alignment properties of the clause through its effects on Case assignment.

Case assignment. This is affected by presence/absence of ⊨:

- In clauses without ⊨, the cases assigned in a transitive clause is Dir(ect)/Obl(ique); on our analysis, Nominative/Accusative.
- When ⊨ is present, the cases assigned are Obl(ique)/Dir(ect): on our analysis, Ergative/Objective.

For the purposes of this introduction, we are employing familiar names for the cases that are at play: *Nominative, Accusative,* and so on. As discussed in Chapter 2, these labels should be understood as shorthand for a featural decomposition that is introduced in §4.4.

Grammatical relations. Subjects behave differently from other arguments in terms of how they interact with MS operations; in particular:

- A co-indexed φ-element obligatorily cooccurs with Subjects; this is the result of MS Agreement.
- On the other hand, φ-elements and internal arguments (DOs, IOs, etc.) are in complementary distribution; these φ elements are clitics that have undergone MS Clitic Movement.

An additional difference is that Subjects can be *pro*-dropped, unlike other arguments.

In §4.4 we will suggest that reference to grammatical relations can be eliminated in defining these properties, and offer an analysis that encodes it with a case feature. If this is correct, then this factor can be merged with (i.e. subsumed under) the prior one.

Movement and Agreement. Two heads, Tense and $\mathscr{O}$, operate in ways that are sensitive to the Case features of arguments beneath them:

- The head T
  - MS Agrees with Nominative arguments; and
  - MS Clitic Moves Objective clitics.
- The head $\mathscr{O}$
  - MS Agrees with Ergative arguments; and

– MS Clitic Moves Accusative clitics.

There is a general property of this system that is important to emphasize: Agreement **occurs only once per head** with either T or $\mathcal{O}$; there are no instances in which one of these heads agrees with more than one argument. On the other hand, **multiple clitic movements** may be triggered by either of these heads.

Morphological realization. At PF, φ-elements are realized in a way that is determined by their case features:

- φ bundles that are Nominative or Objective are realized as MP agreement.
- φ bundles that are Ergative or Accusative are realized as MP clitics.

Each of these factors is elaborated on in detail in the sections to come. After looking in more detail at indexation patterns in 4.1, we look at subject/object asymmetries in 4.2; these play a key role in determining whether an argument indexer is an MS clitic or the result of MS Agreement. Section 4.3 introduces the case features that play a central role in the analysis. With these at hand, section 4.4 shows how case-targeting MS operations driven by probes on the T and $\mathcal{O}$ heads derive the SSK indexation system. Section 4.5 looks at indexation in Garmiani Kurdish, which differs from SSK in terms of how case is assigned in imperfective clauses. Section 4.6 looks at some loci of variation that are found in the system by bringing additional languages into the discussion. Finally, 4.7 turns to the realization of φ bundles, and shows how the analysis accounts for the syncretism between Direct and Oblique cases that produces the mirror-image effect that we began with. Section 4.8 offers concluding remarks.

4.1 Indexation and alignment

Starting with the form of φ elements in Sorani, (3) shows personal pronouns, along with the argument indexers that are central to much of the discussion to come. The latter are typically labelled "(oblique) clitics" and "(verbal affix) agreement" in the literature. Recalling the discussion of Chapter 2, we call these *MP clitics* and *MP agreement* respectively, to highlight the idea that this way of referring to φ elements is based on their morphophonological properties, not the MS operation (MS Agreement or MS Clitic Movement) that affects them.

In terms of clausal distribution, the MP clitics show the complex second position type of placement described in Chapter 3 (3.2) above; the MP agreements, on the other hand, are always attached to Tense. Following standard practice, the MP Agreement markers in (3) are divided into Sets 1 and 2, reflecting differences in the form that are manifested in imperfectives and perfectives, respectively:

(3) Pronouns and φ elements (SSK, based on Kareem 2016:95)

p/n	pronoun	MP Clitic	MP Agreement	
			Set 1 (imperf.)	Set 2 (perf.)
1s	min	=(i)m	-(i)m	-(i)m
2s	to	=(i)t	î(t)/-∅/-e	î(t)
3s	ew	=î	ê(t)/-a(t)/-∅	∅
1p	ême	=man	-în	-în
2p	êwe	=tan	-(i)n	-(i)n
3p	ewan	=yan	-(i)n	-(i)n

These φ elements are related to arguments in ways that are determined by the aspectually-conditioned alignment split (see Haig 2008; Legate 2017; Atlamaz and Baker 2016, 2018; Akkuş 2020) that we introduced in earlier chapters. In the imperfective, an MP clitic cross-references the O argument (direct object), while the MP agreement cross-references the A argument (subject of a transitive). On the other hand, in the perfective aspect, the MP clitic cross-references the A argument, while the MP agreement indexes the O argument, as illustrated in (4):

(4) SSK transitive patterns

	MP-CLITIC		MP-AGREEMENT
IMPERFECTIVE	DO		Subject
		×	
PERFECTIVE	Subject		DO

Some imperfective examples with transitive verbs are shown in (5). We follow the convention introduced earlier according to which MP clitics are **boldfaced** and shown attached to their hosts with =; MP agreement forms are *italicized* and shown with a hyphen -. In these examples, the clitic indexes the DO, while the Subject is cross-referenced on the verb:

(5) Imperfective

a. (min) de=**yan** be-*m*
1SG.pro IND=3PL.CL take.PRS-1SG
'I will take them.'

b. (ême) de=**yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

c. (ewan) na=**man** bîn-*in*
3PL.pro NEG=1PL.CL see.PRS-PL
'They don't see us.'

In the perfective aspect, on the other hand, the indexation pattern is reversed, such that the MP clitic goes with the Subject, while the MP agreement indexes the Object:[1]

[1]Some sources on SSK report the reverse order of MP agreement and MP clitics on the verb when both of these morphemes surface there, as in (6a). There appears to be a great deal of variation across (and possibly within) varieties on this point.

(6) Perfective

a. (ême) xward=**man**-*in*
1PL.pro eat.PST=1PL.CL-PL
'We ate them.'

b. (ême) de=**man** bînî-*n*
1PL.pro PROG=1PL.CL see.PST-PL
'We were seeing them.'

c. (ême) ne=**man** de-bînî-*n*
1PL.pro NEG=1PL.CL PROG-see.PST-PL
'We were not seeing them.'

Intransitive subjects are consistently cross-referenced by MP agreement in both aspects. This is illustrated in (7) and (8) for unaccusative and unergative predicates, respectively, in both imperfective and perfective aspects.[2]

(7) a. (ême) de-kew-*în*
1PL.pro IND-fall.PRS-1PL
'We fall.'

b. (ême) kewt-*în*
1PL.pro fall.PST-1PL
'We fell.'

(8) a. (ême) de-kok-*în*
1PL.pro IND-cough.PRS-1PL
'We cough.'

b. (ême) kok[î]-*în*
1PL.pro cough.PST-1PL
'We coughed.'

The indexation in passives patterns like intransitives, in that the underlying object raised to become the grammatical subject is co-indexed with MP agreement on the verb, as shown

[2]This property is not as strong/stable in Iranian languages with overt oblique case marking, out of which oblique clitics are considered to have grammaticalized (e.g., Holmberg and Odden 2004; Paul 2011; Kareem 2016; Jukil 2015; Gharib and Pye 2018). Don Stilo (p.c.) informs us that for example, among the younger generation of Vafsi (a variety of Tati, spoken in Iran) speakers, there is an increasing trend in using oblique subjects for intransitive verbs, especially copulas, (i), in both aspects, while direct case was the accepted form in older generations. Similar trends hold in some Wakhi and Zazaki varieties (Bashir 1986; Akkuş 2020).

(i) tawan yey dœsde=yam ke ...
we.OBL one group=COP.1PL SUB
'We are a (whole) group who...' (A10.30; Don Stilo p.c.)

As we will see in Chapter 5, intansitive predicates in Sorani have Oblique Subjects; but this is in both aspects, as these are of the *Non Canonical Subject* type.

in (9b).[3]

(9) a. (ême) ewan=**man** kuşt.
1PL.pro 3PL.pro=1PL.CL kill.PST
'We killed them.'

b. (ewan) kuj-ra-*n* (le layen ême-we).
3PL.pro kill.PRS-PASS.PST-3PL (from side 1PL.pro-ITER)
'They were killed (by us).'[4]

While SSK does not have overt case marking on DPs, the traditional analysis of Iranian morphosyntax, which is implemented and extended below, is that MP-clitics are– or are related to– Oblique arguments (Subjects in the perfective; Objects in the imperfective), while MP-agreement is related to Direct arguments (Subjects of transitive imperfectives, perfective Objects, and Subjects of typical intransitives); see e.g., Haig 2008; Holmberg and Odden 2004; Karimi 2012. We will make this point precise in 4.3, after looking first at the MS status of the φ elements in different clauses.

4.2 Argument indexers and their corresponding arguments

The discussion to this point has outlined which argument a particular indexer is related to. Moving on to *how* the indexer and the argument are related, we see a pattern– well-known in the typological literature on Iranian (e.g., Jügel 2009)– that appears to show sensitivity to grammatical relations. In particular, Subjects **require** the presence of a corresponding φ element: while there might be *pro* drop (and hence only the φ element), every overt subject is obligatorily accompanied by an indexer. Conversely, DO and IO arguments and corresponding φ elements **never** cooccur. Taken at face value, Subject indexers behave like MS Agreement, while (Indirect) Object indexers behave like MS clitics, i.e. like pronouns (see Öpengin 2019:247 for the same view). We will proceed on the assumption that this is in fact correct; that is:[5]

(9) a. Overt DP arguments always co-occur with subject indexers.

[3]The possibility of by-phrases rules out an impersonal interpretation. Thanks for Shuan Karim (p.c.) for raising this possibility. See also §5.4 for more discussion of passives.

[4]Another option for 'by'-phrase is to use the adposition *be* 'to, by', which would be realized as *pê* as an absolute adposition with a clitic pronoun as its complement (Samvelian 2008; Karim and Salehi 2022; Karim 2023), e.g.,

(i) (ewan) pê=man kuj-ra-*n*.
3PL.pro by=1PL.CL kill.PRS-PASS.PST-3PL
'They were killed (by us).'

[5] There appears to be some variation on some of these points. In the variety Samvelian (2007a:268, 12) discusses, the past transitive allows the 'direct affectee' NP to be optionally doubled by a personal verbal ending, as in (i):

⇒ Subject φ elements are the product of MS Agreement.

b. DO/IO indexers never co-occur with an overt DP argument.
⇒ DO/IO indexers are MS clitic pronouns.

An important consequence of this view is that MS operations and their MP reflexes can be *mismatched*, since the realization of φ indexers as MP agreement or MP clitic form does not correlate directly with these cooccurrence patterns. In particular, MP clitics are the result of MS Agreement in the perfective, where the agent clitic must always occur with a coindexed argument, as in (10a); in the imperfective, however, MP clitics are MS pronouns, and the object clitic may not cooccur with a DP or full pronoun (10b-10c).

To make the main points of the exposition stand out, we have put the elements to concentrate in boxes in the examples in this section (cf. also Fn. 5). In summary form, the pattern in perfective clauses is as follows:

(10) a. to de=*(**t**) bînî-*[î]n* → *the A MP-clitic must appear*
2SG.pro PROG=2SG.CL see.PST-1PL
'You were seeing us.'

b. ême ewan=**(*yan)** de-bîn-*în* → *the O MP-clitic can't appear*
1PL.pro 3PL.pro=3PL.CL IND-see.PRS-1PL
'We see them.'

c. min hemû roj-êk John=**(*î)** de-bîn-*im*. → *(same as b)*
1SG.pro every day-a John=3SG.CL IND-see.PRS-1SG
'I see John every day.'

(i) dû nâme=**t** be kurdî nûsî-(*n*)
two letter=2SG.CL in Kurdish write.PST-PL
'You wrote two letters in Kurdish.'

Based on the definitions above, this variety appears to allow clitic doubling (or object agreement). Kareem (2016) reports that in his variety, a plural object in the perfective can be doubled with an agreement marker; at the same time, it appears that speakers prefer not having the agreement marker. As these effects do not occur for the speakers we have worked with, we will not investigate them further in this book (it is worth noting that Shuan Karim, p.c., reports these as instances of hyper-correction for him).

In the Sorani varieties we have investigated, it is possible to have a full DP as a topic in the left periphery, with a prosodic break between the dislocated DP and the rest of the clause, both in the imperfective and perfective, as exemplified in (ii). This is a type of Left-dislocation that we will appear at various parts of the book.

(ii) a. kitêb-ek-an, (min) hemû roj-êk de=**yan** xwên-im.
book-the-PL 1PL.pro every day-a IND=3SG.CL read.PRS-1SG
'The books, I read them every day.'

b. kitêb-ek-an, (min) dwene xwênd-*in*=im.
book-the-PL 1PL.pro yesterday read.PST-3PL-1SG.CL
'The books, I read them yesterday.'

The same sort of mismatch is found with MP agreement, which also corresponds to either MS agreement or MS movement. It appears with a coindexed Subject in the imperfective (11a), but in complementary distribution with with an Object in the perfective (11b-11c) (cp. Samvelian 2007a; Jügel 2009). Note crucially that the imperfective (10b-10c) and the perfective (11b-11c),would be grammatical also with just the MP-clitic and MP-Agr, respectively, without the associated DP or full pronoun.

(11) a. to de=**man** bîn-*(ît) → *the A MP-Agr must appear*
2SG.pro IND=1PL.CL see.PRS-2SG
'You see us.'

b. to ême=**t** de-bînî-(*[î]n) → *the O MP-Agr can't appear*
2SG.pro 1PL.pro=2SG.CL PROG-see.PST-1PL
'You were seeing us.'

c. min sêw-ek-an=**im** bînî-(*n) → *(same as b)*
1SG.pro apple-the-PL-1SG.CL see.PST-PL
'I saw the apples.'

Among other things, the examples (10b-10c) and (11b-11c) provide evidence against the idea that we are dealing with (typical) *clitic doubling* for the object (for a recent overview, see Anagnostopoulou (2017); also Anagnostopoulou 2006; Harizanov 2014; Kramer 2014; Preminger 2019; Yuan 2021 for discussion). The pattern is in a sense the exact opposite of clitic doubling: object indexers are **never** accompanied by an overt DP.[6]

In the same way that Subjects of transitives are always indexed by an MP agreement or an MP clitic, Subjects of intransitives are invariably accompanied by an indexer as well. Because of how the alignment system works, this element is almost always an MP agreement:

(12) a. ême de-kew-*(în).
1PL.pro IND-fall.PRS-1PL
'We fall.'

b. ême kewt-*(în).
1PL.pro fall.PST-1PL
'We fell.'

[6]Generally speaking, two different approaches can be found in the literature regarding the complementarity in arguments (and in DOs in the context of Sorani Kurdish): one line of research treats such complementarity to reflect an operation (whether movement or agreement) that applies only with *pro* arguments (e.g., McCloskey and Hale 1984, Stump 1984 for Irish). A second line of approach– essentially what we propose here– takes this complementarity to be a case of incorporation of the deficient pronoun into the verb or preposition (e.g., Anderson 1982, Ackema and Neeleman 2003, Brennan 2009 for Irish, Arregi and Hanink 2022 for Washo, Yuan 2018 for Aleut). In §6.3.1, we provide a number of arguments that demonstrate that an 'agreement with *pro* arguments' analysis is problematic for the Iranian varieties that we have investigated.

The qualification to *almost* always takes into account a small set of intransitives (noted earlier in a footnote) that take Ergative subjects in both aspects; we examine these and additional non-canonical subject constructions in Chapter 5.

In summary, Subjects in Sorani are agreed with across the board. In the case of DOs (and other arguments that we will see later), there is never a DP or pronoun that cooccurs with an indexer; we thus take DO φ elements to be moved clitics. These patterns attested in SSK are summarized in (13).

(13) Summary of SSK patterns

a. Imperfective

SSK: Imperfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	NOM	MP agr on T	MS Agree
S	NOM	MP agr on T	MS Agree
O	ACC	MP clitic on $\mathscr{O}$	MS Clitic Movement

b. Perfective

SSK: Perfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	ERG	MP clitic on $\mathscr{O}$	MS Agree
S	NOM	MP agr on T	MS Agree
O	OBJ	MP agr on T	MS Clitic Movement

These patterns are derived by specifying the MS operations associated with T and $\mathscr{O}$ to target arguments with specific case features; we turn to these next.

4.3 Case features

Our analysis of argument indexation is centered on Case Targeting: as explained in Chapter 2, this is the idea that MS operations (Agree/Move) may be specified to seek arguments with particular case features. In Sorani, the heads that bear Case-Targeting probes are T and $\mathscr{O}$. Due to this case-sensitivity, whether or not a particular MS operation applies in a given clause interacts with the alignment system, which is determined lower in the clause by the presence or absence of Asp[+perf]. Importantly, it will be seen that the MS operations work in a way that does not make reference to the alignment split per se. Rather, the MS operations apply whenever an argument with the correct case specification appears in T or $\mathscr{O}$'s search domain.[7]

[7] In the case of MS Clitic Movement, the argument that is affected must also be a clitic (and not e.g. a full DP), since (by definition) it is only such arguments that are moved.

In this and the following section we will provide an analysis of Sorani transitive clauses that makes crucial use of Case Targeting. Case Targeting will also be important in Chapter 5, where we will see that several phenomena that have been described and analyzed as being determined by the imperfective/perfective split are instead driven by case features.

One aspect of the analysis that bears emphasizing is that the idea that the same morphological surface form might correspond to distinct abstract cases (Legate 2008; Akkuş 2020). In terms of how φ elements are realized, Sorani shows only two distinct forms for indexers: viz., what we have called MP Agreement and MP clitics above. If our analysis is correct, these two surface forms correspond to arguments with four distinct abstract cases. The ways in which arguments are indexed– whether they interact with T or $\mathscr{O}$, and other properties– reveal case distinctions that are not made in surface form. Along similar lines, Legate 2008 has argued that the so-called "Absolutive" in fact corresponds to distinct cases: Nominative case on an intransitive subject, but Accusative case on a transitive object. Akkuş (2020) provides a similar argument for "oblique" in several Iranian languages, and suggests that it corresponds to (at least) three distinct cases: Ergative case on the A argument in the perfective, and, in addition, structural and non-structural case on the O or S argument depending on the language.

In Chapter 2 we motivated an approach to case decomposition according to which labels like 'Nominative', 'Accusative', 'Ergative' etc. are shorthand for feature complexes. As stressed there, this kind of approach provides an explanation for why certain cases may behave in the same way for certain operations, but at the same time be distinct for others. For example, Hindi Ergative and Dative are both ignored by MS agreement, an effect that we analyzed by having these cases share the feature [+obl]. However, in spite of this similarity for the syntax, they are distinct for the purposes of morphological realization, which reflects their difference with respect to the feature [±subj].

Our look at indexation in SSK in the previous section identifies four distinct behaviors, which are defined by (i) whether an argument undergoes MS clitic movement, or is agreed with; and (ii) whether the head effecting the MS operation is T or $\mathscr{O}$. Our proposal for analyzing this system in terms of Case Targeting operations posits a feature system that is defined by these two binary possibilities. In particular, we will employ the features [±subj(ect)] and [±obl(ique)], whose correlates with (i-ii) are stated in (14):

(14) subject:

a. +: Arguments are targets of MS Agreement.

b. -: Arguments are targets of MS clitic movement.

(15) oblique:

a. +: The argument interacts with $\mathscr{O}$

b. -: The argument interacts with T

As noted in the text, MS Operations apply when they can, as determined by case features. When they do not apply– that is, when there is no feature for them to interact with– nothing happens. We discuss this view of probing in broader context in Chapter 6.

There is much that could be said about the nature of these features, both in terms of how they relate to the distinctions made in more morphologically-oriented studies of case decomposition, and in terms of how they relate to syntactic theories of case assignment more generally (and configurational theories of case in particular). Since our goal in this and the following chapter is to show how the SSK indexation system is driven by case– not how arguments are assigned case features in the first place– we will hold off on a more general discussion of what our approach entails until Chapter 6. For present purposes, we will concentrate on two aspects of (14) that provide context for the analysis of indexation, one concerning each of [±subj] and [±obl].

Subjecthood The first concerns how the [±subj] relates to subjecthood, a notion that is discussed in Chapter 2. What we have in mind here with the [±subj] feature is a way of reducing distinctions that are often described in terms of grammatical function to case features. In short form, it is only arguments that possess [+subj] that are targets of MS Agreement. In many types of clauses, this argument is the one that would be called the subject according to the kinds of diagnostics associated with grammatical function. However, this is not always the case; in Chapter 5 we will analyze certain clauses that appear to have two [+subj] arguments, and hence two arguments that can be agreed with. This type of effect provides evidence that MS agreement is driven by the feature [+subj], not grammatical function per se.[8]

Obliqueness Regarding [±obl], the idea is to take a distinction that is central to the study of Iranian languages– between Oblique and Direct arguments– and interpret it in terms of which functional head an argument interacts with. As we will see below, this feature also allows for the forms of indexers to be analyzed in a way that involves underspecification; [+oblique] φ bundles are realized as MP clitics, whether they are Ergative or Accusative; and [-oblique] φ bundles are realized as MP Agreement, whether they are Nominative or Objective. On the MS side of things, it is important to note that the oblique/direct distinction is sometimes employed in different ways in different analytical traditions and theories. For example, in case system employed by Halle and Vaux (1998), the direct cases are Nominative and Accusative (and Ergative), to the exclusion of oblique Genitive, Locative, Dative, and Instrumental. Similarly, the Hindi case system presented in Chapter 2 gives us no reason to think that Accusative behaves differently from Nominative, such that the [±obl] feature used there has a different distribution with respect to case labels than it does in SSK.

With these clarifications at hand, the four cases that we posit for SSK are shown in (16):

(16) Sorani cases

	'Nominative'	'Ergative'	'Accusative'	'Objective'
subj(ect)	+	+	-	-
obl(ique)	-	+	+	-

[8] It also follows from this that accounts in which MS operations do not make reference to case features– by e.g. targeting only the highest argument in a clause of an argument– are problematic. Recall sect 2.4, and see sect. 6.2 for additional discussion.

While there are affinities between how the case labels are used in (16) and how they are used in other descriptive and theoretical traditions, it bears repeating that it is the features that are relevant in defining MS and MP behavior, not the labels. For this reason, caution is required with labels that have attendant connotations. For example, Ergative is often associated with agentivity. However, it will become clear in the next chapter that in Sorani, an association between Ergative as defined in (16) and agentivity is untenable.[9] It will also become clear that Ergative arguments are in fact found in **both** aspects, not just the perfective; this point has several important theoretical consequences as well.

As we noted earlier, we do not have a specific theory of how case features are assigned in mind. This means that the features [±subj] and [±obl] are for us a kind of abstraction: they partition Sorani DPs in a way that is required for the patterns of indexation that they show. For present purposes, our goal is to use the four-way distinction produced by (16) works, with the idea being that it must eventually be linked to a theory of case assignment that the capacity to make at least the distinctions in (16). Since there is no such link at present, it would be compatible with our approach to rename or redefine these features, or to show that they map onto distinctions made in different theories of case; we will discuss this point in greater detail in Chapter 6.

By way of summary, our proposal is that for transitive clauses, the mechanics of case assignment produce the distribution of cases that is shown in (17):

(17) Cases by Aspect in SSK

ASPECT	**Subject**	**Direct Object**
imperfective	[+subj,-obl]	[-subj, +obl]
perfective	[+subj,+obl]	[-subj, -obl]

In short form, imperfective clauses have [+subj,-obl] Nominative subjects and [-subj,+obl] Accusative DOs. On the other hand, perfective clauses have [+subj,+obl] Ergative subjects and [-subj, -obl] Objective DOs. Typical intranstive Subjects are Nominative [+subj,-obl] in both aspects.

We will now illustrate how these case features are referred to by MS agreement and movement operations to produce the Sorani indexation system.

4.4 Mechanics of indexation in Standard Sorani Kurdish (SSK)

We are now in a position to link the different components of the analysis that are introduced above. To repeat the facts to be accounted for, SSK shows a split in which the imperfective has Nominative subjects and Accusative DOs, while perfectives show Ergative/Objective. In

[9] Some further examples; Woolford (1997) also uses the label 'Objective,' yet in a different sense, mainly as a type of structural case assigned/checked in Spec,AgrO and associated with object agreement, if a language has it. Anand and Nevins (2006) use 'Objective' case as an indicator of specificity and/or animacy. These examples help to explain why it is important to focus on features and how they are defined, not the short-hand labels for cases.

the imperfective aspect, as in (18a), an MP clitic cross-references the O argument, whereas the MP agreement cross-references the A argument. In the perfective aspect, (18b), we observe the reversal of the relations: the MP clitic cross-references the A argument, whereas the MP agreement cross-references the O argument.

(18) a. (ême) de=**yan** bîn-*în*
1PL.pro IND=3PL.CL see.PRS-1PL
'We see them.'

b. (ême) bînî=**man**-*in*
1PL.pro see.PST=1PL.CL-PL
'We saw them.'

The last section makes a four-way distinction in cases, based on [±subj] and [±obl]. As discussed there, these features are defined by whether an argument is clitic-moved or agreed with, and which head it interacts with. Stated for each of T and $\mathscr{O}$, the four indexing behaviors seen in SSK are as in (19):

(19) Properties of heads

a. T { AGREES with [+subj, -obl] arguments (Target: Nominative)
MOVES [-subj, -obl] clitics (Target: Objective) }

b. $\mathscr{O}$ { AGREES with [+subj, +obl] arguments (Target: Ergative)
MOVES [-subj, +obl] clitics (Target: Accusative) }

The realization of φ bundles is independent of MS operation; in particular:

(20) Realization of φ bundles

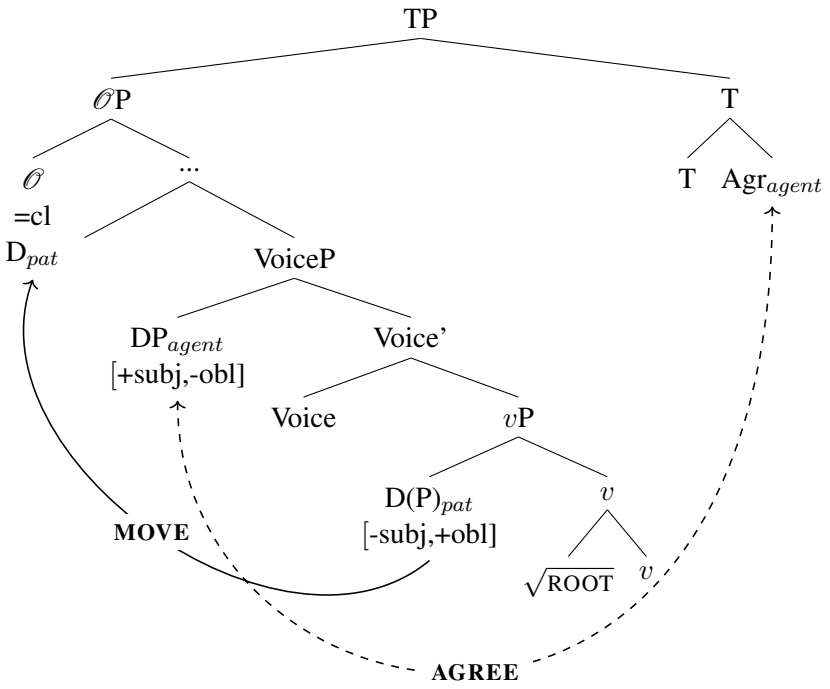
a. [+obl] bundles are realized as MP Clitics; and

b. [-obl] bundles are realized as MP Agreement.

The specifications in (19) produce the four different indexation patterns to be accounted for. We now turn to pertinent illustrations of how the analysis works. In the trees to come, we use *dashed lines* to refer to the *Agree* relation, and the **solid lines** to indicate **movement**.

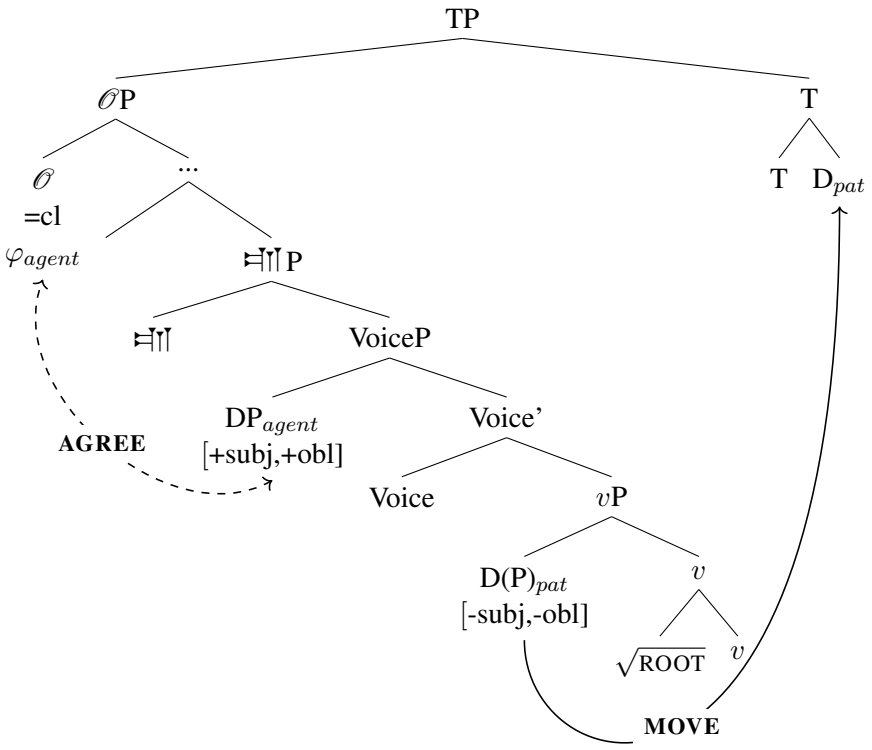
Starting with the imperfective, the A argument receives Nominative [+subj, -obl] case, while the O argument is assigned Accusative [-subj, +obl]. By (19), Tense agrees with the [+subj, -obl] Subject, whereas $\mathscr{O}$ attracts the [+obl] clitic to it. These operations are illustrated in the tree in (21):

(21)



In the perfective, the cases assigned to the Subject and DO are different. Here, the transitive subject receives Ergative [+subj,+obl] case, while the DO is assigned Objective [-subj, -obl]. Since the Subject bears [+subj,+obl] features, it is agreed with by $\mathscr{O}$; and Tense attracts the [-subj,-obl] pronominal clitic. The tree in (22) illustrates:

(22)



We show the output of MS Agreement as an MP-Agr morpheme with the features of the agreed-with argument in (21) and as a clitic in (22). While this is descriptively correct– the Subjects features are realized as an MP Agreement morpheme in the imperfective, and as an MP Clitic in the perfective– these representations are oversimplified in ways that are discussed further in 4.7.

To this point, we have a working analysis of how the arguments in transitive clauses are associated with indexers on T and 𝒪. A key aspect of the SSK system is that the imperfective and perfective aspects are mirror images with respect to how Subjects and Objects behave. In the analysis that we have developed, this pattern results from two independent factors: first, the case features that are assigned to these arguments; and second, the way in which MS operations on T and 𝒪 are specified. These factors are independent of one another. As a first illustration of this point, we turn next to Garmiani Kurdish. This variety differs in case assignment from SSK, but is identical to it in terms of how T and 𝒪 Agree with and Clitic-Move arguments.

4.5 Indexation and alignment in Garmiani Kurdish (GK)

Garmiani Kurdish (GK; introduced in Chapter 3) shows Nominative/Accusative in the imperfective paired with an Ergative/Accusative ('double oblique') perfective. Aside from this difference in case assignment from SSK, the indexation system of the language is de-

termined by the same Case Targeting analysis that we posit for SSK above. In particular, the mechanics analysis of SSK should produce *two oblique clitics* if both A and O arguments are Oblique– and this is exactly what is found in GK. In summary form:

(23) Summary of Garmiani patterns

a. Imperfective (same as SSK)

GK: Imperfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	NOM	MP agr on T	MS Agree
S	NOM	MP agr on T	MS Agree
O	ACC	MP clitic on $\mathscr{O}$	MS Clitic Movement

b. Perfective

GK: Perfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	ERG	MP clitic on $\mathscr{O}$	MS Agree
S	NOM	MP agr on T	MS Agree
O	ACC	MP clitic on $\mathscr{O}$	MS Clitic Movement

We first introduce the indexation and alignment patterns in GK and then analyze the system with the tools introduced above. For starters, Garmiani has the slightly different set of argument indexers seen in (24):[10]

(24) Forms of pronouns, argument indexers (Garmiani)

p/n	**pronoun**	**MP Clitic**	**MP Agreement**	
			Set 1 (Present)	Set 2 (Past)
1s	min	=(i)m	-(i)m	-(i)m
2s	to	=(i)t	î(t)/-y(t)	î(t)
3s	ew	=î	ê(t)	∅
1p	ême	=man	-în/yn	-în/yn
2p	êwe	=tan	-(i)n	-(i)n
3p	ewan	=yan	-(i)n	-(i)n

In the imperfective aspect, Garmiani behaves identically to SSK in showing Dir/Obl alignment, which we take to be Nominative/Accusative in terms of the case system outlined earlier:

(25) (ewan) sêw-ek-an de-bîn-*in*.
3PL.pro apple-the-PL IND-see.PRS-PL
'They see the apples.'

[10] Generally speaking, GK shows minor morphophonological and lexical differences from SSK. We put these to the side since they do not play a role in the discussion to come.

(26) (min) de=**yan** bîn-*im*.
1SG.pro IND=3PL.CL see.PRS-1SG
'I see them.'

It is in the [+perfective] system that Garmiani differs from SSK. There, instead of showing the "mirror-image" Obl/Dir that is found in SSK, Garmiani instead shows Obl/Obl alignment, with both the Subject and the Object φ-elements both realized in clitic form. This is shown for a variety of clitic hosts in (27)-(30):

(27) a. ême bînî**=yan=man**
1PL.pro see.PST=3PL.CL=1PL.CL
'We saw them.'
b. ême ne**=yan=man** bînî
1PL.pro NEG=3PL.CL=1PL.CL see.PST
'We didn't see them.'

(28) a. ême e**=tan=man** bînî
1PL.pro PROG=2PL.CL=1PL.CL see.PST
'We were seeing you.pl.'
b. ême ne**=tan=man** e-bînî
1PL.pro NEG=3PL.CL=1PL.CL PROG-see.PST
'We were not seeing you.pl.'

(29) a. (min) çareser**=iyan=im** kird
1SG.pro treatment=3PL.CL=1SG.CL do.PST
'I treated them.'
b. (ême) çareser**=iyan=man** ne-kird
1PL.pro treatment=3PL.CL=1PL.CL NEG-do.PST
'We didn't treat them.'

(30) (min) maç**=yan=im** kird
1SG.pro kiss=3PL.CL=1SG.CL do.PST
'I kissed them.'

Schematized along the lines of what we presented for SSK in (4), Garmiani shows the alignment split and φ marking pattern in (31):

(31) Garmiani alignment/indexation

	MP-CLITIC		MP-AGREEMENT
IMPERFECTIVE	DO		Subject
		×	
PERFECTIVE	DO; Subject		–

In terms of the case-feature distinctions introduced above for SSK with [±subj] and [±obl], our proposal is that GK makes the three way distinction that is shown in (32):

(32) GK cases

	'Nominative'	'Ergative'	'Accusative'
subject	+	+	-
oblique	-	+	+

Explained in terms of (32), the double-oblique pattern seen in the perfective derives from there being no distinct Objective case assigned to DOs in this variety; all DOs receive Accusative.

Although GK and SSK differ in terms of case features, they are identical with respect to how the indexation of arguments functions– with the exception that Objective indexation is simply absent in GK. For example, GK shows the same patterns of indexer/overt argument cooccurrence as SSK, which were shown in (10)-(12). Thus, the indexer of the A (and S) argument patterns like syntactic agreement, regardless of whether it is realized as MP agreement in the imperfective, (33a), or MP clitic in the perfective, (33b).

(33) a. to e=**man** bîn-*(ît) ⟶ *the A MP-Agr must appear*
2SG.pro IND=1PL.CL see.PRS-2SG
'You see us.'

b. to e=**man**=*(**it**) bînî ⟶ *the A MP-clitic must appear*
2SG.pro PROG=1PL.CL=2SG.CL see.PST
'You were seeing us.'

Also as in SSK, the indexer of the O argument in GK is realized as an MP clitic and patterns like a pronoun in both imperfective and perfective, in that it does not cooccur with an overt argument. Stated in the other direction, a DO argument cannot co-occur with the indexer, (34). (Note that the ungrammaticality is not due to e.g., the clitic being on the DO; the co-occurrence leads to ungrammaticality regardless of where the clitic appears). As with SSK, we interpret this as showing that DO indexers are themselves arguments, i.e. clitics:[11]

[11] Moreover, as in SSK, such pronominals in GK can resume a CLLD-ed object in both aspects in the form of an MP clitic, (i).

(i) a. kitêb-ek-an, (min) hemû roj-êk de=**yan** xwên-im.
book-the-PL I every day-a IND=3SG.CL read.PRS-1SG
'The books, I read them every day.'

b. kitêb-ek-an, (min) dwene xwênd=**yan**=im.
book-the-PL 1SG.pro yesterday read.PST-3PL.CL-1SG.CL
'The books, I read them yesterday.'

(34) a. to ême=(*man)=**it** e-bînî ⟶ *O MP-clitic can't appear*
2SG.pro us=1PL.CL=2SG.CL PROG-see.PST
'You were seeing us.'

b. ême ewan=(*yan) e-bîn-*în* ⟶ *O MP-clitic can't appear*
1PL.pro them=3PL.CL IND-see.PRS-1PL
'We see them.'

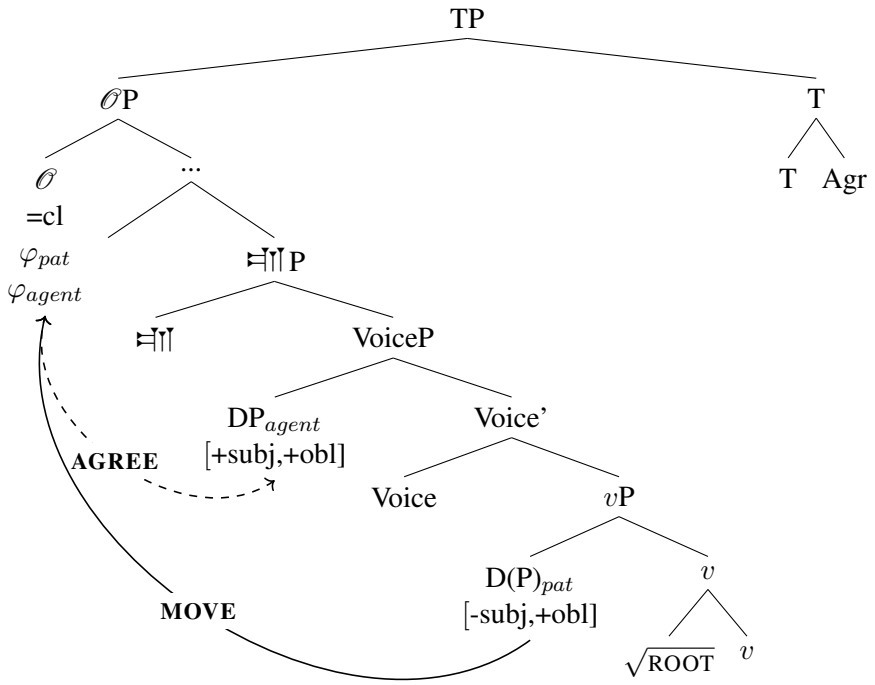
c. min sêw-ek-an=(*yan)=**im** bînî ⟶ *(same as a and b)*
1SG.pro apple-the-PL=3PL.CL=1SG.CL see.PST
Intended: 'I saw the apples.'[12]

In the imperfective, GK is identical to SSK for relevant purposes: it exhibits a Nominative/Accusative pattern, with the Subject being MS agreed with, and the Object capable of undergoing MS clitic movement. In terms of (32), the A argument receives Nominative [+subj,-obl], while the DO receives Accusative [-subj,+obl]. The MS agreement/movement operations are sensitive to the case features in the way detailed for SSK: T agrees with the Subject, while $\mathscr{O}$ attracts the [+obl] clitic to it; recall (21) above. The final step concerns the morphological realization of these φ bundles at PF. The [-obl] φ bundles are realized as MP agreement, whereas those that are [+obl] are realized as MP clitics. We will go into additional detail on the realization of MP clitic forms below.

Moving on to the perfective aspect, the basic idea is that the Subject and DO are assigned Ergative and Accusative respectively. Since the A argument bears [+subj,+obl] features, the $\mathscr{O}$ head agrees with it. Furthermore (and differently from SSK), $\mathscr{O}$ attracts the [-subj,+obl] pronominal clitic. The resulting double-oblique pattern is shown in (35).

[12]This sentence is grammatical in the reading *I saw their apples*. See §5.1.1 for an analysis of how possessives enter the indexation system.

(35)



The proposal that both the A and O arguments are [+oblique] in the perfective explains why they are both indexed in the position associated with $\mathscr{O}$, as MP clitics, although they are derived via distinct MS operations. As will be seen below in 4.7, the Vocabulary in that we employ to spell out φ markers (with minor adjustments to account for phonological differences between SSK and GK seen in (24)) accounts for the distribution of MP clitic and MP agreement without further modification.

In summary, GK differs from SSK in terms of case assignment; the rest of its properties follow from the system of probes that is operative in SSK, with a slight difference in the details of morphophonological realization being required for GK as well. In the next section, several other languages are analysed with an eye towards strengthening our understanding of cross-linguistic variation in alignment, and illustrating the possible loci of variation that our theoretical proposals posit.

4.6 Further comparative observations

The analysis of Sorani that we have developed to this point is based on an interaction between (i) the case features that are assigned to DPs, and (ii) the MS Agreement and Clitic Movement operations that are targeted at these. As we saw immediately above in our look at Garmiani, these components of the analysis operate independently of one another. In that particular case study, it was shown that Garmiani differs from Sorani in terms of case as-

signment (it has Accusative objects in both aspects). However, it is identical to Sorani in terms of how its probes operate.

In this section we generalize further on the comparative front. In principle there are several different ways in which languages could differ in their indexation systems. For example, alignment splits could be defined in different ways. In SSK and GK, the alignment split is determined by Aspect. Other splits are possible; see e.g., Woolford (2017) for review. In addition to what determines the split, languages also differ in terms of how it is manifested. As discussed in §2.2, alignment in some languages can be detected via overt case marking, while in others via indexation (how arguments participate in the indexation system); in still others both possibilities are available.

When we shift attention to the specific claims of this work, it is clear that (at least) the following two loci of variation must be taken into account:[13]

- CASE ASSIGNMENT As we saw in GK, essentially the same as SSK except for having ACC assigned in the perfective. More generally, languages may vary in their inventories of case features. The range of variation here is determined by the theory of possible case distinctions, which is a matter of ongoing discussion (see also Chapter 6).

- PROBE STRUCTURE Sorani varieties have the interesting property that each of the two heads active in the indexation– T and $\mathscr{O}$– are probes for both MS Agreement and MS Clitic Movement. The specific way in which these operations target case features is what produces the mirror image effect that makes Sorani indexation so striking. However, languages differ substantially as to how their probes operate. In principle there are several ways in which such differences are manifested: for example, languages might differ in terms of (i) which probes are active; (ii) which cases they are specified to target; or (iii) whether they effect MS agreement or MS Clitic Movement.

In the remainder of this section we will provide some case studies that illustrate some of the kinds of variation that we have identified along the lines sketched above. For convenience, the individual studies are divided into those from Iranian languages, and then those from other language families.

Within Iranian Before we look at Iranian languages beyond Sorani, we will start with the simple but sometimes overlooked point that it is also possible to look at the effects of case differences within a single language; this can be done by looking at clauses that differ from typical transitives due to another factor, such as passivization.

Passivization of transitives in Sorani produces clauses that are basically intransitive. We will examine passives here to illustrate how the change in case assignment in passivization produces predictable effects, with the T probe behaving exactly as it does in other types of

[13] Another point of variation is in the morphological realization of φ-bundles, which might involve some contextual effects that vary across varieties.

clauses. This introductory look at passivization also serves as a foundation for the look at more complex patterns in Chapter 5, which analyzes passivization of ditransitives.

The basic data are as follows:

(36) SSK

a. (min) de=**yan** kuj-*im*
1SG.pro IND=3PL.CL kill.PRS-1SG
'I will kill them.'

b. (ewan) de-kuj-rê-*n* (le layen min-ewe)
3PL.pro IND-kill.PRS-PASS.PRS-3PL (from side 1SG.pro-ITER)
'They will be killed (by me).'

(37) Garmiani

a. kûşt=**man**=**yan**
kill.PST=1PL.CL=3PL.CL
'They killed us.'

b. kuj-ra-*yn* (le layen ewan-ewe)
kill.PRS-PASS.PST-1PL (from side them-ITER)
'We were killed (by them).'

As we identified above, case assignment in Sorani produces the following features on arguments for SSK and GK:

(38) a. Cases by Aspect in SSK

ASPECT	**Subject**	**Direct Object**
imperfective	[+subj,-obl]	[-subj, +obl]
perfective	[+subj,+obl]	[-subj, -obl]

b. Cases by Aspect in GK

ASPECT	**Subject**	**Direct Object**
imperfective	[+subj,-obl]	[-subj, +obl]
perfective	[+subj,+obl]	[-subj, +obl]

In intransitives, Subjects are assigned Nominative [+subj,-obl] in both aspects. Passives behave like this as well– the sole argument of the passive of a transitive verb is assigned [+subj,-obl]. As such, it is the target of MS Agreement from T in both SSK and GK; which is to say, the mechanisms that apply in transitives produce the correct results in passives. This is a simple point but one that takes on further significance when alternatives to case targeting are assessed; see Chapter 6.

Moving on to further types of variation, a a number of Iranian languages that have been studied in the literature show interesting points of variation in comparison with Sorani. One kind of difference involves MS operations. While Central Kurdish varieties have both MS

Agreement and MS Clitic Movement, it appears that some other varieties exhibit only the former.[14] A second difference (related to this one) concerns the number of probes; unlike Sorani, where both T and $\mathscr{O}$ are active, some other languages have only the T probe. In addition, languages may differ with respect to how case marking is realized morphologically.

We illustrate with Northern Kurdish and Zazaki (Atlamaz and Baker (2018); Akkuş (2020)), which are instructive on these points.[15] These languages manifest alignment via overt case marking.

An initial observation is that the alignment patterns we have identified in Sorani based on patterns of argument indexation are evidenced in the (pronominal) case-marking patterns of Northern Kurdish varieties. For instance, Adıyaman Kurdish (Atlamaz and Baker 2018) or Standard Zazaki (Todd 2002) pattern like SSK, in that they have DIR/OBL in the imperfective, and OBL/DIR in the perfective. Consider first Adıyaman Kurdish (AK) in (39):

(39) Adıyaman Kurdish

a. ez te dı-vun-ım-e.
1SG.DIR 2SG.OBL IND-see.PRS-1SG-PRS.COP
'I see you.'

b. mı tı di-yi
1SG.OBL 2SG.DIR see.PST-2SG
'I saw you.' (AK, Baker and Atlamaz 2014:4a)

c. ez rıvi-m
1SG.DIR run.PST-1SG
'I ran.' (AK, Baker and Atlamaz 2014:3a)

d. Tı rvi-yi
2SG.DIR run.PST-2SG
'You ran.'

The alignment difference between imperfective and perfective can be seen in the forms of the pronouns. These differ in the imperfective (39a) and perfective (39b): the Subject is Direct *ez* in the former, and Oblique *mı* in the latter; the DOs change form as well, from Oblique *te* to Direct *tı*. Notably, agreement (which surfaces on the verb) is invariably with the Direct argument in the clause, just as it is in intransitives (39c,d).

The same kind of pattern is found in Standard Zazaki, as shown in (40). In imperfective (40a) there is DIR/OBL case marking, with the Subject realized as *o* and the DO as *min*. The perfective flips to OBL/DIR, with *ey/ez* realizations of the pronominals. Once again, agreement in the clause targets only Direct arguments:

(40) Standard Zazaki

[14] This state of affairs not that surprising given that the Northern varieties has retained the Old/Middle Iranian dependent-marking and lack clitics for the most part.

[15] The Zazaki languages are classified as Northwestern Iranian, and show many parallels with Kurdish.

a. {Azado / o} min vin-en-o.
Azad.DIR / 3SG.DIR 1SG.OBL see.PRS-IND-3M
'{Azad / he} sees me.' (Todd 2002:46: 90; with slight changes)

b. ey ez di-yan
3SG.OBL 1SG.DIR see.PAST-1SG
'He saw me.' (Todd 2002:62: 171)

c. o vızer ame
3SG.DIR yesterday come.PAST.3M
'He came yesterday.' (Todd 2002:62: 170)

In short form, this alignment pattern, represented in Table 4.1, is the same as that of SSK, as shown in Table 4.

	OBL	DIR
IMPERFECTIVE	DO	Subject
	×	
PERFECTIVE	Subject	DO

Table 4.1: Alignment in Adıyaman Kurdish

The realization of the alignment split is manifested in the forms of the pronominals. Also different from Sorani is the fact that there is a single active probe in these languages, T, which is specified to target Direct arguments:

(41) T-probe in AK/Standard Zazaki: Agree with [-obl] DPs.

Another type of variation is seen in Muş Kurdish (Gündoğdu 2011) and Mutki Zazaki (Akkuş 2020). These varieties are like GK; they exhibit OBL/OBL alignment in the perfective.[16] In these varieties, double oblique realization is seen in pronominal (or DP) forms, not in indexation patterns. We illustrate in (42) for Muş Kurdish (MK):

(42) Muş Kurdish

a. ez te di-bîn-im
1SG.DIR 2SG.OBL IMPF-see.PRS-1SG
'I see you' (Akkuş 2020:3a)

b. ez ket-im
1SG.DIR fall.PST-1SG
'I fell down.' (Gündoğdu 2011:77)

c. min te dît
1SG.OBL 2SG.OBL see.PST.3SG
'I saw you.' (Gündoğdu 2011:81)

[16]For more on the comparative aspect of double oblique across Iranian languages see e.g., Dorleijn 1996; Matras 1997, among others.

As can be seen in (42c), the perfective verb shows default 3rd singular agreement. We take this to indicate that these varieties have a T probe specified like that in (41). Since case assignment produces OBL/OBL alignment in the perfective, T does not find a DP to agree with and is realized in default form.

To summarize, the MK pattern, illustrated in Table 4.2 mirrors the Garmiani pattern represented in Table 31.

	OBL	DIR
IMPERFECTIVE	DO	Subject
	×	
PERFECTIVE	Subject; DO	–

Table 4.2: Alignment in Muş Kurdish

The surface patterns seen in MK differ from GK, though, due to the factors that we identified above.

A point of similarity between Sorani and Kurmanji/Zazaki is that in the latter too, passivization of transitives results in intransitive clauses, as such that T probes exactly as it does in other types of clauses, and targets the argument bearing [-obl] feature for MS Agreement. Examples are given in (43) and (44). The resulting agreement is realized on the T head, most clearly seen in (44b).

(43) Standard Zazaki

a. çenek-e non pot.
girl-OBL bread.DIR bake.PST
'The girl baked the bread.'

b. non (hete çenek-e ra) ame pot-ene.
bread (side girl-OBL from) come.PST bake-PTCP
'The bread was baked by the girl.'

(44) Muş Kurdish

a. te min kuşt
2SG.OBL 1SG.OBL kill.PST.3SG
'You killed me.'

b. ez (ji ali-ye te) hat-im kuşt-in
1SG.DIR (PREP side-EZ 2SG.OBL) come.PST-1SG kill.PST-PTCP
'I was killed (by you).'

To summarize, we find within Iranian languages that behave both like SSK and like GK with respect to how their alignment works. At the same time, the languages in question (i) have different probes from SSK and GK; and (ii) realize the alignment split in different ways– by marking it on pronouns and noun phrases. On the latter point, there is clearly a parallel to be drawn between case-marking on noun phrases and what is done with oblique

clitics in Sorani. The parallelism is not surprising given that pronominal clitics and case marking are correlated with each other. In one approach, oblique clitics are analyzed historically as the grammaticalization of the oblique cases as a result of the loss of overt case marking (Holmberg and Odden 2004; Karimi 2010; Paul 2011; Kareem 2016; Jukil 2015; Gharib and Pye 2018; a.o.). See also Coghill 2016 for another explicit parallelism between oblique clitics (known as *L-suffixes*) in Neo-Aramaic and oblique case in Northern Kurdish (see also Chapter 6 for the discussion of Neo-Aramaic). It is thus expected that we should see that oblique clitics and oblique case marking have similar morphosyntactic distributions. Most of the functions of pronominal clitics– such as possessor-marking in nominal structures, object referencing in the present tense, and subject agreement in the past transitive clause– are functions historically associated with oblique case in Middle Iranian languages (see Haig 2008; Korn 2008:159).[17]

In other languages The first set of case-studies we have adduced in this chapter come from other Iranian varieties, which provide appropriate comparisons and contrasts with our primary focus on Sorani. And, as we saw in the initial case studies that we presented in Chapter 2, a number of related points also arise in the analysis of Indo-Aryan languages. In the rest of this section we will look briefly at two additional types of languages. In the first of these, based on the Polynesian language Nukuoro, the argument for case-targeting interacts with syntactic ergativity. In addition to illustrating how case-targeting might look in a language with properties that are superficially quite distinct from Indo-Aryan and Indo-Iranian, it provides a further example of how distinct MS behaviors may be marked identically in the morphology. In the second example, drawn from Arabic varieties, we see a type of probe that is completely indifferent to case features; the head bearing it agrees with whichever DP is closest to it.

Our first review is based on the analysis of Nukuoro (Polynesian Outlier, Micronesia) developed in Drummond (2023a). This study proposes that three different probes (C, T, and *v*) are active in the language, and that they are specified to target goals with distinct case features. Crucially, these differences are not realized at the PF side: there is no case-sensitive realization in Nukuoro.

Nukuoro clauses are typically SV(O), and the language has no morphological exponence of case on core arguments: Subjects and Objects are typically unmarked, (45). In spite of this, Drummond argues that Nukuoro clause structure involves abstract ergative and absolutive Case licensing, which restricts the distribution of DPs.[18]

[17]This should not, however, mean that oblique clitics and overt case marked pronouns cannot cooccur in a single language. For instance, Hawrami has both oblique clitics and accusative case, although the latter is found only on definite singular NPs, thus functions more like a DOM marker (Holmberg and Odden 2004). It should also be noted that most researchers tend to equate clitics with ergative case, which we do not subscribe to. We follow Haig (2008:305) in taking the position that "the clitic system may in a sense be compensating for the lack of case by providing a rich system of agreement ..."

The fact that at least in some varieties both oblique clitics and case marking can co-occur has implications for an alternative approach which considers the clitics to be the inherited form, and considers their loss in Northern Kurdish to be the result of language contact, probably due to convergence with Armenian (Haig and Öpengin 2018:163).

[18]We report only the relevant parts of the study. Similarly, we represent a subset of probes and their differen-

(45) a. De gauligi ne baguu.
DET child PFV fall
'The child fell.'

b. De gauligi ne anu.
DET child PFV dance
'The child danced.'

c. De gauligi ne gai de gahudi.
DET child PFV eat DET banana
'The child ate the banana.' (Drummond 2023a: (37))

A central component of Drummond's analysis is that case features play a role in syntactic ergativity: transitive subjects in Nukuoro may not undergo Ā-movement from a regular transitive clause, (46a), while Ā-movement of intransitive subjects and transitive objects may proceed unhindered from basic clauses, (46b)-(46c).

(46) a. *Go ai ne dau de beebaa nei?
FOC who PFV read DET book PROX
'Who read this book?'

b. Go ai ne gadagada?
FOC who PFV laugh
'Who laughed?'

c. Se aha a de hine laa ne dau?
INDF.SG what GEN.A DET woman DIST PFV read
'What did the woman read?' (Drummond 2023a: (1)-(2))

Drummond proposes that Infl is the locus of ergative Case in Nukuoro, while *v* is the locus of absolutive Case.[19] On the other hand, the ergative extraction restriction, illustrated in (46), arises when the relative C head in Nukuoro carries a composite probe that carries two features, an Ā-feature and [ABS] feature. This probe targets an argument that bears both of these features (Coon and Bale 2014; Paparounas and Akkuş To appear). Abstracting away from further details (e.g., concerning the case assignment mechanism), Drummond's analysis holds that three functional heads are active probes, and they are specified differently in terms of the goal they target, as shown in (47).

(47) a. *v* is specified for [ABS]

b. T is specified for [ERG]

c. C is specified for [Ā, ABS]

tial properties, which are enough to our main point. In practical terms this means that we are putting to the side, for example, genitive case, which appears in the context of relativization. The reader is referred to Drummond (2023a) (as well as Drummond 2017, 2023b) for a fully worked out analysis of these additional phenomena.

[19] Building on a long literature, Drummond provides various pieces of evidence for these claims; see her paper for details.

The system in Nukuoro receives a straightforward explanation in terms of case-feature distinctions adopted in this study with [±subj] and [±obl]: an implementation would be that Nukuoro makes the two way distinction that is shown in (48):[20]

(48) Nukuoro cases

	'Absolutive'	'Ergative'
subject	+	+
oblique	-	+

The probe on *v* is specified for [+subj,-obl] features, and T is specified for [+subj,+obl] features. While these cases are distinct for MS purposes, on the MP side, [+subj] is realized as zero (∅). Presumably, the relative C head would be specified for [+subj,-obl] and [$\bar{A}$] features, and therefore be realized as ∅, with the $\overline{A}$ feature not being referred to in morphological realization.

This analysis of Nukuoro is a further illustration that case-targeting behavior can be revealed in a number of ways. While in Sorani (and many other languages) there are clear effects in overt morphological marking that it relates to, we were at pains above to stress that MS operations apply in a way that is blind to ultimate surface realization. Nukuoro, provides a further way of thinking about this: all of the cases in (48) are unrealized (or realized as -∅). But if Drummond's analysis is correct, these case distinctions are nevertheless required for the syntax to function as it does.[21] Nukuoro is informative also from another perspective, in showing that the height of the argument (or the probe for that matter) is not a factor in which argument will be targeted by the probe. In this regard, it parallels the pattern in Sorani Kurdish.

Moving ahead, an interesting comparison for the last case study comes from Arabic varieties (Semitic) that exhibit complementizer agreement, such as Hijazi, Jordanian and Sason Arabic. This phenomenon is instructive in showing that unlike the probes seen in the above illustrations, the C probe in these languages is not specified for certain case features. Thus, instead of targeting goals with particular case features, it interacts with the closest DP in its c-command domain.

Before we proceed with the discussion, it is important to note that in contrast to Standard Arabic, colloquial Arabic varieties lack overt case and mood markings on nouns and verbs, respectively. Only overt pronouns exhibit morphological case distinctions: nominative pronouns referring to grammatical subjects normally surface as free-standing elements, whereas those with accusative, dative and genitive surface as bound pronouns that are attached to their assigners with different realizations (see e.g., Benmamoun 2000; Aoun et al. 2010; Hallman 2018; Akkuş 2022a,b) unless they are focused.[22] This is illustrated in (49)

[20] Since we are only looking at two cases in the text, a single binary feature would suffice. We use two features here to anticipate extension of the system to other cases in the language.

[21] Genitive case, which Drummond also analyzes, is sometimes realized overtly.

[22] Following the long literature on Arabic, we take it that Nominative case is assigned by T to the grammatical subject, Dative case by an Applicative head to the indirect object, and Accusative case by Voice/*v* to the direct object.

from Sason Arabic (SA). For example, a grammatical subject bears Nominative case, (49a), while the Direct Object carries Accusative case, (49b), and the Indirect Object Dative case, (49c). The same pattern holds for Hijazi Arabic (HA), as seen in (50).[23]

(49) Sason Arabic

a. *Nominative*

iya faqaz-e.
3F.pro run.PFV-3F
'She ran.'

b. *Accusative*

iyu adaş=**a**.
3M.pro see.PFV.3M-3F.pro
'He saw her.ACC.'

c. *Dative*

iyu ada=**lla** axpeys.
3M.pro give.PFV.3M-3F.pro bread
'He gave her.DAT bread.'

(50) Hijazi Arabic

a. *Nominative, Accusative*

hiyya şaaf-at=**hum**.
3F.pro see.PFV.3F-3PL.pro
'She.NOM saw them.ACC.'

b. *Dative*

hiyya ʔaʕT-at=**(la)hum** xamsa jawaaʔiz.
3F.pro give.PFV-3F=3PL.pro five prizes
'She gave them.DAT five prizes.'

Against this backdrop, let us now turn to the discussion of complementizer agreement. The examples in (51) demonstrate that in Hijazi Arabic, the complementizer may agree with the embedded subject.[24]

(51) *C agreement with Nominative-marked subject*

a. ʔa-twaqqaʕ inna-ha (hiyya) ʔakal-at t-tuffaaħ-a.
1SG-believe.IPFV that-3SG.F she eat.PFV-3SG.F the-apple-SG.F
'I believe that she ate only the apple.'

[23] Modulo the possibility of dropping the *la-* part of the dative clitic. Our Hijazi Arabic consultants, Hassan Munshi and Muhammad Alzaidi, report that the forms with *la* feel more archaic to them, and is associated with older speakers.

[24] Hijazi allows complementizer agreement only with pronominal arguments, and not full NPs - therefore these examples involve pronominal arguments.

b. ʔa-twaqqaʕ inna-na (niħna) ʔakal-na t-tuffaaħ-a.
1SG-believe.IPFV that-1PL we eat.PFV-1PL the-apple-SG.F
'I believe that we ate the apple.'

Interestingly, the complementizer agreement is not limited to a relation between the C head and the embedded subject. When there is a DP above the embedded subject, the complementizer agrees with that argument. (52) illustrates examples in which the embedded direct object, which bears Accusative case, is fronted. In such configurations, C agrees with the fronted object (be it a CLLD-ed object, (52a), or a focused object, (52b)) rather than the subject.

(52) *C agreement with Accusative-marked direct object*

a. ʔa-twaqqaʕ {innu / inna-ha / *inna-hum} *hiyya*, shaaf-oo-*ha*
1SG-believe.IPFV {that / that-3SG.F / that-3PL} her see.PFV-3PL-it.F
humma.
they
'I believe that *her*, they saw *her*.'

b. ʔa-twaqqaʕ {innu / inna-ha / *inna-hum} BASS HIYYA, shaaf-u
1SG-believe.IPFV {that / that-3SG.F / that-3PL} only her see.PFV-3PL
humma.
they
'I believe that ONLY HER, they saw.'

A similar pattern holds when an indirect object, which bears dative case, is fronted. (53a) provides the baseline example in which a ditransitive clause, (50b), is placed in an embedded clause. In (53b), the pronominal indirect object 'them' is CLLD-ed, and may trigger agreement on the C head. Similarly, a contrastively focused IO that is fronted in (53c) also results in the corresponding agreement while an attempt to agree with the embedded subject is ungrammatical.

(53) *C agreement with Dative-marked indirect object*

a. ʔa-twaqqaʕ innu (hiyya) ʔaʕT-at=(la)hum xamsa jawaaʔiz.
1SG-believe.IPFV that 3F.pro give.PFV-3F=3PL.pro five prizes
'I believe that she gave them five prizes.'

b. ʔa-twaqqaʕ {innu / innu-(la)hum / *inna-ha} *humma*,
1SG-believe.IPFV {that / that-3PL / that-3SG.F} them
ʔaʕT-at=*(la)hum* xamsa jawaaʔiz.
give.PFV-3F=3PL.pro five prizes
'I believe that *them*, she gave *'em* five prizes.'

c. ʔa-twaqqaʕ {innu / innu-(la)hum / *inna-ha} BASS HUMMA,
1SG-believe.IPFV {that / that-3PL / that-3SG.F} only them

ʔaʕT-at xamsa jawaaʔiz.
give.PFV-3F five prizes
'I believe that ONLY THEM, she gave five prizes.'

Taken together, Nukuoro and Arabic varieties look very different from each other and also from Sorani and the other Iranian and Indo-Aryan languages we have analyzed in this book. They represent two extremes concerning the potential interaction of Case Targeting and locality. Nukuoro shows probes specified to seek certain case features in a way that does not show sensitivity to the height of the argument probed for. Arabic varieties show an extreme in the other direction: a C probe that agrees with whatever argument is closest to it, whatever case features it might have.

* * *

These case studies highlight the independence of the central components of our analysis, and illustrate some potential points of variation across dialects/languages. They show that MS operations can be associated with different heads in different languages, and that the interaction between Case Targeting and locality can sometimes lean heavily in one direction as opposed to the other. Our hope is that these initial illustrations will pave the way for further comparative studies adopting a Case Targeting, which we believe will be instructive about these and additional loci of cross-linguistic variation.

4.7 Morphophonological realization

We turn now to a more detailed examination of how φ elements are realized. As pointed out in the beginning of this chapter, we believe that Sorani provides evidence for an indirect relationship between MS operations and MP realization. The analysis we develop in this section makes this claim precise. As we will show, the distinction between MP clitics and MP agreement morphemes is determined by the [$\pm$obl] case feature, not the operation that the φ element interacts with. Whether moved or the result of agreement, φ bundles with [+obl] are realized as MP Clitics, whereas those with [-obl] are realized as MP Agreement.

There are different criteria according to which φ elements are classified as MP Agreement morphemes or MP Clitics. The one that most directly applies in Sorani is distributional: MP Agreement is invariably realized in the verbal complex, whereas MP Clitics exhibit the second-position type of effect illustrated in Chapter 3. Though clitic distribution is definitive Sorani, it is important to look at a second possible way of distinguishing between MP Agreement and MP Clitics, which is through phonological interactions. Agreement affixes are typically thought of as more closely connected to their hosts than clitics are in phonological terms, although, as we will discuss in Chapter 6, this is an oversimplification.

As it turns out, phonological diagnostics do not appear to be directly applicable to the Sorani varieties that we have investigated. There are indeed some differing behaviors exhibited by certain φ-markers, but they are confined to MP Agreement. As noted earlier in this

chapter, standard analyses of Sorani indexers make a distinction between what are called "Set 1" and "Set 2" versions of this, as shown in (54):

(54) Forms of φ elements

p/n	pronoun	MP Clitic	MP Agreement	
			Set 1 (imperfective)	Set 2 (perfective)
1s	min	=(i)m	-(i)m	-(i)m
2s	to	=(i)t	î(t)/-∅/-e	ît
3s	ew	=î	ê(t)/-a(t)/-∅	∅
1p	ême	=man	-în	-în
2p	êwe	=tan	-(i)n	-(i)n
3p	ewan	=yan	-(i)n	-(i)n

Beyond the (relatively minor) differences in form between Sets 1 and 2, there is also stress difference. As background, the unmarked lexical stress falls on the final syllable in Sorani (Thackston 2006b:3), and typical inflectional affixes fall under this pattern as well. Consider (55), adapted from Öpengin (2019:251).

(55) Sorani Stress

bāyinjān	[bā.yɨn.ˈdʒān]	'tomato'
hawīn	[ha.ˈwin]	'summer'
hawīn-eke summer-DEF	[ha.wi.ne.ˈke]	'the summer'
kē	[ˈkē]	'gravestone'
kē-lān gravestone-PL	[kē.ˈlān]	'gravestones'
mird-ū die.PST-PTCP	[mir.ˈdū]	'dead'

Öpengin (2019) draws attention to the fact that within the MP agreement forms, an asymmetry is observed in terms of stress patterns in the imperfective and perfective. Set 2 forms (i.e., MP agreement markers in the perfective) differ from the Set 1 forms (i.e., MP agreement markers in the imperfective) in that Set 2 markers do not receive the unmarked word-final lexical stress: stress occurs on the syllable immediately preceding these affixes. We provide a few illustrations in (56), taken from Öpengin (2019:252) with glosses maintained.

(56) MP agreement and stress

de-zān-ī	[de.zā.ˈnī]	IND-know.PRS-2SG	'You know (it).'
de-gir-in	[de.gi.ˈrin]	IND-keep.PRS-3PL	'They keep ...'
nūst-im	[ˈnūs.tim]	sleep.PST-1SG	'I slept'
kird-ūw-im	[kir.ˈdū.wim]	do.PST-PTCP-1SG:O	'You invited me.'

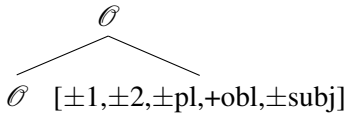
Importantly, the differences between Set 1 and Set 2 are based entirely on the imperfective/perfective split, not on the MS provenance of the φ marker. In the perfective, MP agreement can either arise via MS agreement (in intransitives), or via MS clitic movement (in the

case of moved DOs). In both cases, the MP Agreement is realized as Set 2, and behaves distinctly from MP agreement in the imperfective. We do not have a specific proposal for how the Set 1/Set 2 differences is represented in Sorani; this could be done in different ways.[25] For our purposes, what is important is the observation that MP clitics and MP Agreement behave in ways that are not defined by the MS operation that produces them.

We now turn to an analysis of the formal distinctions between MP clitics and MP Agreement, which we will undertake without further reference to the Set 1/Set 2 distinction. As we noted earlier, MP Agreement versus MP clitic realization reflects the case features that are present on the element, which in turn correlates with their distribution: the φ indexers associated with $\mathscr{O}$ bear the feature [+obl], and are realized as MP clitics; those that are attached to T have [-obl], and are realized as MP agreement (see Karimi 2021 for a similar approach as to the distribution).

The situation for $\mathscr{O}$ is illustrated in (57), where we represent the φ and case features in a morpheme attached to this head (a decomposition into smaller parts is considered below). This morpheme can be either (i) a moved pronominal clitic with Accusative case (in the imperfective), or (ii) the result of Agreement with an Ergative subject (in the perfective). In the latter case, whatever operation creates Agreement morphemes and provides them with features must apply. In both cases, the case feature [+obl] is present:

(57) φ element attached to $\mathscr{O}$



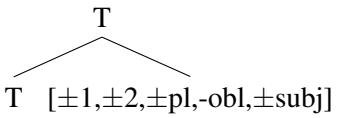
As part of a working analysis of how clitic placement works in Sorani, we assume that the $\mathscr{O}$ head is not itself realized phonologically, unlike the φ element attached to it. The φ-element that is attached to $\mathscr{O}$ has a phonological dependency to its left, and must therefore find an appropriate (=phonologically-overt) host. This is a first step towards explaining why the MP Clitic has the distribution that it shows: given its phonological dependency, it either leans to the left if there is a host in its domain; or, if no such host is present, it inverts with the first element to the right (recall the outline of possible hosts sketched in Chapter 3).[26]

The second scenario to consider involves Tense. In our look at clause structure in Chapter 2, we hypothesized that Tense is high in the clausal spine, and linearized on the right. From that position, it either leans on the verbal complex to the left, or is attached to it by head movement or whatever affixation operation(s) are used for that purpose. The φ element attached to Tense, which is either the result of an Agreement operation with a Nominative subject, or a moved Objective case pronominal clitic, has the feature [-obl]:

[25] Öpengin (2019:253) notes a historical contrast between Set 1 and Set 2 person markers in that the latter might have derived from the contraction of the verb stem *ha* 'to be' and verb agreement suffixes. For similar scenarios see Embick (1995) on Polish, and Good and Yu (2005) on Turkish.

[26] We have in mind here something like Local Dislocation (Embick and Noyer 2001; Embick 2007), although as noted in Chapter 3 the details of Sorani clitic placement present a number of challenges.

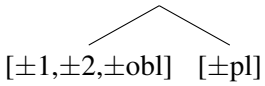
(58) φ element attached to T



This attached φ element always remains "in place", i.e., suffixed to the verb. Recall that under certain circumstances– when there is not another host available for the MP-Clitics that are associated with $\mathcal{O}$– the MP clitics wind up attached to the entire verbal complex. When this happens, it appears that different varieties of Sorani display complex interactions between the MP-Agreement φ-element associated directly with Tense and the MP-clitic, with various types of re-ordering. We put these to the side.[27]

Turning to the morphological realization of φ elements, a first point is that the MP-clitics appear to be decomposable into a Person component [±1,±2] followed by a number component [±pl] as in (59a). The [+pl] feature is realized as *-an*, the default plural in the language, while singular (i.e. [-pl]) is not realized overtly. The realization of forms is shown in (59b), which abstracts away from morphophonological details (e.g. the /i/ preceding 1s/2s; or the fact that 3pl *î-an* is realized as *-yan*):

(59) a. clitic



b. Realizations

	person	**number**
1s	(i)m	Ø
2s	(i)t	Ø
3s	î	Ø
1p	m	an
2p	t	an
3s	î	an

[27]The literature contains several different reports concerning (re-)ordering effects. For example, in SSK the MP clitic A argument typically precedes the MP agreement indexing the O argument, (cf. (18b) and other examples); when the MP clitic is 3sg, the order is reversed, thus resulting in *Host-MP agreement-MP clitic*, as in (i).

(i) bird-în=î
take.PST-1PL=3SG.CL
'He took us.'

Another point of variation among dialects is reported when two MP agreement forms are attached onto the verb. See e.g., Samvelian (2007a); Haig (2008) for perspectives on these effects.

It is also possible to split person and number for MP Agreement. One way of doing this is shown in (60), which abstracts away from the allomorphy seen in Set 1 second and third person singulars, and from the Set 1 versus Set 2 distinction more generally:[28]

(60) MP Agreement forms

	person	**number**
1s	m	Ø
2s	ît...	Ø
3s	êt...	Ø
1p	i	in
2p	–	in
3s	–	in

This way of doing things reflects some additional assumptions. While part of the MP agreement system shows forms similar to those seen in the MP clitics– e.g., realization of *m* in first person forms– there are differences as well. For example, the distinction between second and third plurals is neutralized, with both surfacing as *-in*. This suggests the deletion of the person components of [-obl] plurals when they are non-first person, which can be accomplished with an Impoverishment rule of the type that removes the person features from the representation:

(61) [-1,±2] ⟶ Ø/[_,-obl] [+pl]

The realization of φ bundles can then be brought about by the Vocabulary Items in (62), which are divided into person(/case) and number; for expository convenience we are using the feature [-part(icipant)] here to pick out third person arguments:

(62) a. Person/Case

[+1 -obl]	↔	i/_ [+pl]
[-part,+obl]	↔	î
[+1]	↔	m
[+2]	↔	-ît
[-part]	↔	-êt

b. Number

[+pl]	↔	-in/[-obl] _
[+pl]	↔	-an

There are several plausible extensions of (or alternatives to) (62), which would take into account effects like the allomorphy shown by Set 1 markers, as well as alternatives that

[28] On the latter point, the basic observation is that the Set 2 forms show less allomorphy than their Set 1 counterparts; this is consistent with the observation made above concerning their interactions with stress, with the overall picture suggesting that Set 1 affixes are 'closer' to their phonological hosts than Set 2 affixes are.

make different choices about what to attribute to the morphophonology versus Vocabulary Insertion (e.g. treating [+pl] as *-an* across the board, and attributing the *-in* realization to (morpho)phonology). We have not gone far enough into this part of Sorani to favor any specific details on these points.

According to our analysis, both the MS operations of Agree and clitic movement can produce an $\mathscr{O}$ head with the φ features of an argument on it:

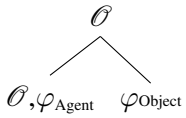
(63) Realization of MP clitics on $\mathscr{O}$

a. MP clitic from MS Agreement — *Subjects in SSK and GK*

b. MP clitic from MS Clitic Movement — *Objects in SSK and GK*

Using GK for illustration, a perfective clause in which MS Agreement and MS clitic movement applies results in the φ features of the Subject appearing on $\mathscr{O}$, and a clitic attached to this head as well:

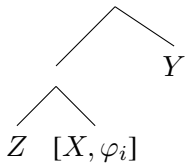
(64) $\mathscr{O}$ in GK, step 1



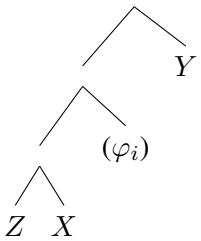
In GK, the clitics appear in the order DO-Agent. Our suggestion is that is the result of the process that realizes the φ Agent features. In short form, the idea is that features that are the result of an Agree operation can be packaged morphologically in two distinct ways.

The first possibility is that such features are packaged as typical agreement morphemes. In this case, the expectation is that this morpheme would appear locally to the head on which the features originate. Using X as that head, and with Y and Z heads included to stress the locality part, this is depicted in the two steps in (65) and (66), where φ_i stands for the features that arise from agreement:

(65) Stage 1



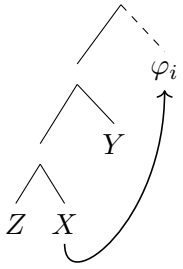
(66) Stage 2



In (65) the features are shown in their original locus: with the head that acquires them via an agreement operation. In (66) these features are shown 'packaged' as independent morphemes, in a local relation to the head X on which they originate.

The second possibility is that the Agree-derived φ_i is packaged as a 'clitic'— for this, the idea is that φ_i is realized "outermost" in a complex head; we schematize this form of attachment with a dotted line:

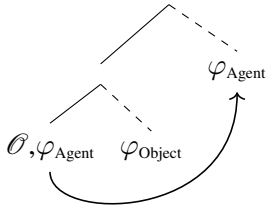
(67) Stage 2 (dashed line for "clitic attachment")



The idea behind the dotted line is that the manner in which a head attaches to another might be reflected in morphophonological closeness. Although we do not have clear (morpho)phonological diagnostics that distinguish MP clitics from MP affixes in Sorani, such differences are often found, with typical MP affixes being closer to their hosts than MP clitics are (see Chapter 6 for some discussion). The dotted line representation stands in for the aspect of clitic attachment that produces these morphophonological differences.[29]

The output of this operation in GK is shown in (68):

(68) $\mathscr{O}$ in GK, step 2



It should be noted that the attachment of the Object clitic is indicated with a dotted line as well; this is based on the assumption that moved clitics and clitics created through the Agree process have an identical MP status. This clitic cluster must then attach to something on its left, as discussed for SSK above.

In summary, the analysis developed in this section is essentially a proof-of-concept; there are several places where alternatives could be explored, and many details of the morphophonology that remain untreated. Our primary point is that however the details are ultimately fleshed out, our view is that differences between MP clitics and MP agreement will

[29] An operation of the type schematized in (67) is required in analyses of certain clitic phenomena in for e.g. Spanish (see Di Tullio et al. 2019), where the doubled clitic appears to arise via an Agree operation, not movement; and see Embick and Halle (2004/to appear) for an application in the analysis of voice morphology.

reflect the [±obl] distinction, not the MS origins of the φ element. On a more general level, the analysis illustrates one of the key points that is raised in Chapter 2: cases that behave together for morphosyntax might be different in terms of their morphophonology, and vice versa. In SSK, different morphosyntactic operations apply to Ergatives and Accusatives, and to Nominatives and Objectives. On the surface, though, Ergatives are realized in the same way as Accusatives, and Nominatives are identical to Objectives.

4.8 Summary

In this chapter we have analyzed the indexation patterns of Sorani transitive clauses. To review, the analysis is centered on proposals in the following three domains:

Clause structure/Case assignment The case features that are assigned to arguments are determined by the type clause that they are in: this alignment split is driven by the presence or absence of the Asp[+perf] head. Transitive clauses that are perfective have Ergative-Objective case assignment; those that are imperfective show Nominative-Accusative. The sole argument of intransitive clauses in both aspects (including passives) has Nominative case.

MS Operations The case labels 'Nominative', 'Ergative', etc. are shorthand for feature bundles that are derived from crossing [±subj(ect)] and [±obl(ique)]. The MS operations that Agree and Clitic-Move arguments are specified to target arguments with particular features. In particular, the T head MS Agrees with Nominative [+subj,-obl] arguments, and Clitic Moves Objective [-subj,-obl] clitic pronouns. The head $\mathscr{O}$ Agrees with [+subj,+obl] Ergatives, and Clitic Moves [-subj,+obl] Accusatives. Our argument is that Sorani indexation cannot be accounted for without decomposing case features in a way that allows particular arguments to be the targets of MS Operations.

Morphological realization The spell-out of the φ bundles that are involved in indexation is independent of the MS operation that they are involved in. The bundles called MP agreement arise both from MS Agreement (in the case of Nominatives) and MS Clitic Movement (with Objective pronouns). The MP clitics are similarly split in their MS origin: they arise in both MS Agreement (with Ergatives) and in MS Clitic Movement (with Accusatives). An important part of this facet of the analysis is that it allows for these syncretisms to be accounted for systematically. The larger point that comes out of this part of the analysis is that MS operations and their MP realizations can be *indirectly* related: a single MS operation in Sorani (Agreement or Clitic Movement) can result in either and MP Agreement morpheme or an MP clitic.

While most of our attention in the treatment of indexation is directed at transitive clauses, it is important to note that the analysis extends to **in**transitive clauses as well. As will be discussed in detail in Chapter 6, an analysis that does not make use of Case Targeting, and which appeals only to the aspectual split and locality (probing for the highest argument) has some promise for transitives, but encounters serious difficulties when intran-

sitive clauses are brought into the picture. This theme (and some related ones) also plays an important role in the next chapter, where we examine a further testing ground for our analysis: clause types that go beyond simple intransitives and transitives.

5

Alignment and indexation beyond transitives

This chapter extends the Case Targeting analysis developed in Chapter 4 to further arguments that enter the Sorani indexation system. The different clause types to be examined involve possessors and arguments of prepositions, non-canonical subject constructions, and passives of ditransitives.

The case-studies just mentioned will take us deep into a number of intricate details. With this in mind, we would like to spend some time first outlining why it is important to look beyond transitive clauses. The first and most basic answer is that the additional argument types that we examine enter the system of indexation that we are analyzing: that is, they are targets of MS Agreement and MS Clitic Movement, and realized as MP Agreement or MP Clitics. A comprehensive analysis of the indexation system therefore owes an account of them (as well as of intransitives which– as we will see in Chapter 6– are often crucial in testing the predictions of particular proposals).

As we will see, the comparative analyses of both Standard Sorani Kurdish (SSK) and Garmiani Kurdish (GK) presented in this chapter reinforce the idea that indexation is case-driven, and provide additional evidence in favor of many other proposals that are developed earlier in the book. In particular, it does not appear to be possible to state many of the generalizations that are uncovered without reference to case features. The main results also provide interesting suggestions about how these features are assigned: one of our main proposals is that a contextual case assignment process applies in certain constructions, assigning a case to an argument that is in a sense unexpected, but at the same time one that matches the case of a local argument. Once this occurs, the mechanics of indexation proposed in Chapter 4 apply without modification to yield the desired results.

* * *

To help with the navigation through the pages to come, we will begin with a brief look at each of the construction types to be considered, along with a summary of main results.

Possessors and arguments of prepositions Possessors and the arguments of prepositions (P-arguments) can also enter the indexation system of Sorani. Such arguments can be realized in their expected positions– i.e., attached to the possessed noun, or as the complement of a preposition– as shown in (1a) and (2a). In perfective clauses, these arguments can be realized as MP Agreement on the verb, as shown in (1b)-(2b):

(1) a. Otombîl-eke=**man** de-be-*n*
car-the=1PL.CL IND-take.PRS-PL
'They take our car away.'

b. Otombîl-eke=**yan** bird-*în*
car-the=3PL.CL take.PST-1PL
'They took our car away.'

(2) a. ew ême=**y** bo=**yan** nard
s/he us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême=**y** bo nard-*in*
s/he us=3SG.CL to send.PST-3PL
'S/he sent us to them.'

Our analysis shows that this kind of displacement results from MS Clitic Movement: in possession, this amounts to a kind of possessor raising. We argue that this process is restricted in a way that is defined by case: specifically, the moving Possessors and Prepositional complements are assigned Objective case, and this happens only when there is an Objective marked DO in the clause. The realization of the Clitic-Moved Objective pronoun as MP Agreement then follows from the same mechanisms that are posited for transitive clauses, where Objective case clitic pronominals are realized as MP Agreement.

Further evidence that the effect arises from the P-argument having the case of the DO can be seen in the imperfective, where DOs have Accusative case. When objects of prepositions are displaced in this aspect, they are realized as MP Clitics as shown in (3b):

(3) a. ew ême bo=**yan** e-nêr-ê(t)
3SG.pro us to=3PL.CL IND-send-3SG
'S/he sends us to them.'

b. ew ême=**yan** bo e-nêr-ê(t)
3SG.pro us=3PL.CL to IND-send-3SG
'S/he sends us to them.' (GK/SSK)

That is, they behave exactly as expected if they have Accusative case like the DO. Accordingly, in GK, where DOs have Accusatives in both aspects, this effect can also take place in the *perfective*, as shown in (4b); cp. SSK (2b):

(4) a. ew ême=y bo=**yan** nard
3SG.pro us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême=**yan**=î bo nard
3SG.pro us=3PL.CL=3SG.CL to send.PST
'S/he sent us to them.' (GK/*SSK)

The extension of the analysis of indexation to P-arguments thus reveals several new aspects of Case Targeting, and has important theoretical implications that are addressed in the theoretical discussion.

Non-canonical subjects There are certain verbal clauses in Sorani that show Ergative subjects *in both aspects*. These are lexically restricted, and fall under two distinct types which are exemplified by *want* in (5) and what we call *clausal possession* in (6):

(5) a. min kitêb=**im** de-wê.
1SG.pro book=1SG.CL IND-want.PRS
'I want book/books.'

b. min kitêb=**im** wîst.
1SG.pro book=1SG.CL want.PST
'I wanted book/books.'

(6) a. min se xushk=**im** he-ye / he-*n*.
1SG.pro three sister=1SG.CL exist-COP.PRS / exist-COP.PRS.PL
'I have three sisters.'

b. min se xushk=**im** he-bu-(*n*).
1SG.pro three sister=1SG.CL exist-COP.PST-PL
'I had three sisters.'

We propose that the *want* type has an inherently Ergative Subject: in both aspects this argument is licensed by an Applicative (Voice) head. The clausal possession construction differs syntactically from *want*. On our analysis, the Subject originates inside the possessed DP, where it is assigned Ergative by a particular functional head. From this position, it is moved out of the possessed DP, and functions as the subject of the clause. Strikingly, this construction shows 'double subject' properties: the possessor agrees in the way typical of Ergative arguments, and the possessum agrees (optionally) in the way expected of Nominative arguments.

Passivization of ditransitives The passivization of transitives in Sorani produces Nominative subjects in both aspects. Passivization on Direct Objects of ditransitives is also unexceptional; the DO becomes the Subject, and, as expected, is Nominative. Passives of ditransitives, though, display some very unusual properties. Examples are given in (7) in imperfective and perfective aspects, respectively:

(7) a. ême dyarî-ek-an=**man** pê-de-d-rê-(*n*).
1PL.pro gift-the-PL=1PL.CL to-IND-give.PRS-PASS.PRS-PL
'We will be given the gifts.'

b. ême dyarî-ek-an=**man** pê-di-ra-(*n*).
1PL.pro gift-the-PL=1SG.CL to-give.PRS-PASS.PST-PL
'We were given the gifts.'

The surface subject in the IO passive shows the indexation pattern typical of Ergatives, in a way that is not conditioned by aspect. Second, the DO is indexed (optionally) with MP Agreement, in a way that is typical of arguments with Nominative case. In addition, while standard DOs and their corresponding indexers are in complementary distribution, this is not the case in IO passives, where both arguments are apparently involved in MS Agreement. The facts point to the subject being a **derived Ergative**– something that is typologically unusual to say the least.

We hypothesize that the IO passive case patterns share crucial properties with clausal possession; that is, that these two configurations share a structural property, with a lower argument being moved over a higher argument, or out of a containing one.

After working through these details of Sorani indexation, we present three comparative case studies that put our analyses into a larger context by providing pertinent illustrations of loci of variation in different Iranian languages.

5.1 Possessors and prepositional arguments

Our starting point for this section builds on prior work on the behavior of possessors and P(repositional)-arguments in Sorani varieties, which has noted the ways in which these arguments enter the system of φ indexation.[1] As shown in (8) and (9) via the box format, both possessors and prepositional complements may be indexed as MP clitics or MP agreement morphemes:

(8) a. Otombîl-eke=**man** de-be-*n*
car-the=1PL.CL IND-take.PRS-PL
'They take our car away.'

b. Otombîl-eke**=yan** bird-*în*
car-the=3PL.CL take.PST-1PL
'They took our car away.' (SSK)

(9) a. ew ême**=y** bo=**yan** nard
s/he us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême**=y** bo nard-*in*
s/he us=3SG.CL to send.PST-3PL
'S/he sent us to them.' (SSK)

[1] See e.g. Haig (2008:293-294), Gharib and Pye (2018:63), Nabors et al. (2019) for Central Kurdish; Öpengin (2016:188, 259) for the Mukri variety of Kurdish; Holmberg and Odden (2004) for Hawrami; Kahnemuyipour and Taghipour (2020) for Laki; and Mohammadirad (2020b) for several Iranian languages). Haig (2008) uses the general term *cross-referencing* for this phenomenon, in which 'the indirect participant can be cross-referenced on the verb, in the form of verbal agreement suffix' (p. 293). Öpengin (2016) calls this phenomenon *disforming*, the intuition being that the realization of the possessor as MP-Agreement is associated with an avoidance of clitic sequences (see below).

Concentrating first on possession, the effect seen in (8b) has been referred to descriptively as "external possession" in work on Sorani (see e.g. Haig 2008). In the baseline case (8a), possession is indicated by an adnominal possessor in the form of a clitic pronoun that appears at the end of the possessed DP; what (8b) shows is that this possessor can also be indexed as MP agreement on the verb, in which case no corresponding clitic appears on the possessed DP.

Another set of examples illustrating this effect is given in (10a-b). It can be further seen in (10c) that while realizing the possessor as MP Agreement is possible in the perfective (10b), it is ungrammatical in imperfective:[2]

(10) a. Otombîl-eke**=man** de-be-*n*
car-the=1PL.CL IND-take-PL
'They take our car away.'

b. Otombîl-eke=yan bird-*în*
car-the=3PL.CL took-1PL
'They took our car away.' (SSK)

c. *Otombîl-eke de-be{-n-*în*/-*yn*-in}
car-the IND-take-PL-1PL/-1PL-PL
'They take our car away.'

As shown in (9) above, a similar pattern has been reported with ditransitives, where the argument in question is an IO originating inside of a PP. Descriptively, the argument that starts as the object of the preposition like the 3pl MP clitic =*yan* 'them' in (11a) can also be realized as MP agreement *-in*, as shown in (11b). This effect is also restricted to the perfective; the corresponding imperfective (11c) is ungrammatical, regardless of the morpheme order:

(11) a. ew ême=y bo=**yan** nard
s/he us=3SG.CL to=3PL.CL sent
'S/he sent us to them.'

b. ew ême=y bo nard-*in*
s/he us=3SG.CL to sent-3PL
'S/he sent us to them.' (SSK)

c. *ew ême bo de-nêrê{-t-*in*/-*in*-it}
s/he us to IND-send-3SG-3PL/3PL-3SG
'S/he sends us to them.'

In terms of their MS behavior, neither the possessors nor P-arguments can cooccur with an overt coindexed argument; in this regard, they behave like DOs, as we saw in Chapter 4.

[2]In this section we continue with the convention of showing MP clitics in bold and MP agreement in italics, with the restriction that this is done sometimes only for the arguments of interest (i.e. possessors and P-arguments).

Consider the possessors in (12)-(13); unlike its grammatical counterpart in (10b), an attempt to realize the possessor overtly with its MP Agreement indexer in (12) results in ungrammaticality. (13) makes the same point, with the difference that (13b) shows a possessor in the *Ezafe* construction that has been studied extensively in the literature on Iranian, which is essentially a linker morpheme that introduces dependents of the noun including attributive adjectives, possessors.[3] In this context as well, it is not possible for the possessor and the indexer to co-occur, (13c).

(12) *Otombîl-eke=**man**=yan bird-*în*
car-the=1PL.CL=3PL.CL took-1PL
Intended: 'They took our car away.'

(13) a. to name-k-an=**im**=it bird.
2SG.pro letter-the-PL=1SG.CL=2SG.CL took
'You.sg took away my letters.'[4] (GK)

b. to name-k-an-î **min**=it bird.
2SG.pro letter-the-PL-EZ my=2SG.CL took
'You.sg took away my letters.' (GK/SSK)

c. *to name-k-an-î **min**=it bird-*im*.
2SG.pro letter-the-PL-EZ my=2SG.CL took-1SG
'You.sg took away my letters.'

The same property holds for the P-arguments, as illustrated in (15)-(14): the P-argument can be realized in-situ as MP Clitic, (14a), or on the verbal complex as an MP Agreement, (14b); yet, these two cannot co-occur, as shown in (14c) and (15).

(14) a. ew name-k-an=î bo=**yan** nard
3SG.pro letter-the-PL=3SG to=3PL.CL sent
'S/he sent the letters to them.'

b. ew name-k-an=î bo nard-*in*
3SG.pro letter-the-PL=3SG to sent-PL
'S/he sent the letters to them.'

[3]For the Ezafe, see Larson and Samiian 2021; Toosarvandani and Van Urk 2014; Holmberg and Odden 2008; Ghomeshi and Ritter 1996; Kahnemuyipour 2014; Samvelian 2007b, among others. See also Chapter 5 (§5.6.2) for some discussion.

In Sorani the pronominal possessor is normally realized as the MP clitic form, unless it is (contrastively) focused or emphasized, in which case it is realized as an independent pronoun, with the possessee bearing an ezafe marker, (13b). See e.g. Öpengin (2016:211) for the same observation, who notes: "A pragmatically neutral clause is probably always marked for its possessor by a clitic PM. But in a context where the possessor is focused, in contrast to other preceding candidates, the possessor is expressed by an independent pronoun (usually a weak form) while a clitic PM in this context would not be acceptable." See also Thackston (2006b:14) for the same point, and Amin (1979: ch, 5.3.) for some examples. This alternation between an enclitic and an independent pronoun is present in Persian as well (Ghomeshi and Ritter 1996).

[4]Such a sequence of possessor MP-clitic followed by the MP clitic indexing the A argument is not possible in SSK. Accordingly, since the realization of the possessor as an MP agreement on the verb is also not available in GK, the counterpart of (13c) would be ruled out for independent reasons, so we do not illustrate it.

c. *ew name-k-an=î bo qutabiy-ek-an / bo=**yan** nard-*in*
3SG.pro letter-the-PL=3SG to student-the-PL / to=3PL.CL sent-PL
'S/he sent the letters to the students / to them.'

(15) *ew ême=y bo=**yan** nard-*in*
3SG.pro us=3SG.CL to=3PL.CL sent-PL
'S/he sent us to them.'

In addition, arguments of prepositions and possessors can resume a topicalized element, similar to the behavior of DO indexers. This is illustrated for P-arguments and possessors in (16) and (17), respectively. (The topicalized DP and the associated resumptive pronominal are underlined).

(16) a. minal-ek-an, ew ême=y bo=**yan** nard
child-DEF-PL s/he us=3SG.CL to=3PL.CL sent
'The children, s/he sent us to them.'

b. minal-ek-an, ew ême=y bo nard-*in*
child-DEF-PL s/he us=3SG.CL to sent-3PL
'The children, s/he sent us to them.' (SSK)

(17) a. minal-ek-an, to name-k-an=**it** bird-*in*.
child-DEF-PL 2SG.pro letter-the-PL=2SG.CL took-3PL
'The children, you.sg took away their letters.' (SSK)

b. minal-ek-an, to name-k-an=**yan**=it bird.
child-DEF-PL 2SG.pro letter-the-PL=3PL.CL=2SG.CL took
'The children, you.sg took away their letters.' (GK)

These effects suggest that possessors and P-arguments, like DOs, are moved pronominal clitics. With this in mind, we will use the term *displacement* below to describe the situations in which Clitic Movement has affected these arguments. More specifically:

MP-Agreement displacement: MS Clitic Movement of a possessor/object of a preposition to T, where it is realized as MP Agreement.[5]

[5]In terms of its movement properties, the position in which a displaced argument originates and the element it moves to are not necessarily linearly adjacent. This is illustrated in (i), in which the 1pl pronominal complement of the "circumposition" *basar ... dā* is MP-Agreement displaced onto the predicate, across intervening elements (The dots indicate the position in which the P-argument originates. See also fn. 13 for the same possibility in the case of MP-clitic displacement).

(i) dast=ī ba-sar-...-dâ zāł kird-*în*.
hand=3SG.CL to-on-...-postp. dominant do.PST-1PL
'He extended his dominance over us.' (Jügel 2009:154,(29))

Most prior literature on Sorani focuses on what we have just called MP Agreement displacement, where (as the name indicates) the displaced argument ends up realized as MP agreement. In some of the varieties that have been investigated in prior work, this is taken to be the only way in which possessors may be displaced. For example, Haig (2008:296) notes "when an Indirect Participant [=Possessor or P-argument] is cross-referenced on the verb, it **always** takes the form of the verbal agreement suffix rather than the (expected) pronominal clitic" [emphasis in the original work].

However, the varieties of Sorani that we have investigated also show a type of displacement in which the moved element is realized as an MP ***clitic***. An example of this is shown in (18) (= (3)), where (18a) shows an IO clitic in situ in a PP, while (18b) shows it moved as a clitic, and attached to the DO:

(18) a. ew ême bo**=yan** e-nêr-ê(t)
3SG.pro us to=3PL.CL IND-send-3SG
'S/he sends us to them.'

b. ew ême**=yan** bo e-nêr-ê(t)
3SG.pro us=3PL.CL to IND-send-3SG
'S/he sends us to them.' (SSK/GK)

To distinguish this phenomenon from MP Agreement displacement, we call it *MP-Clitic displacement*:[6]

[6]This statement does not make reference to Possessors because it is impossible to tell if they undergo this process. This requires some explanation.

As shown schematically in (i), a clitic displaced possessor would originate after the DO (i.a), and then clitic move to the $\mathcal{O}$ head (i.b). From this position, it would then be cliticized onto the host (i.c), producing a string that is identical to what would be found if no clitic movement had occurred:

(i) a. ... DO=cl.poss VERB
b. ... =cl.poss DO VERB
c. ... DO=cl.poss VERB

As it turns out, the same reasoning makes it impossible to determine whether or not the GK variety shows MP clitic displacement. If possessor raising took place, the expected realization of the possessor would be as an oblique clitic, as in (ii.a).

(ii) a. to name-k-an=**im**=it bird.
2SG.pro letter-the-PL=1SG.CL=2SG.CL took
'You.sg took away my letters.' (GK)

b. *to=**m** name-k-an=it bird.
2SG.pro=1SG.CL letter-the-PL=2SG.CL took
Intended: 'You.sg took away my letters.'

The host for this clitic would necessarily be the possessed direct object as the subject is not a licit host, (ii.b); as such, possessor raising would produce an output identical to what would happen if possessor movement did not take place.

MP-Clitic displacement: MS Movement of an object of a preposition to clitic position, where it is realized as an MP clitic.

To preview the analysis to come, we will show that MP-Agr displacement involves movement to the T head, whereas MP-Clitic displacement is to the $\mathscr{O}$ head; in this way, these operations can be reduced to the MS Clitic Movement operation that applies to Sorani DOs. Both types of displacement occur only under certain conditions, however; crucially, these require reference to case features, further illustrating the importance of Case Targeting.

On this latter point, some further background is helpful. The initial set of facts considered above for MP Agreement displacement, and in particular the ungrammaticality of MP Agreement displacement in the imperfective, seen in (10)-(11), has been taken by some researchers to indicate that P-arguments are realized as MP agreement in a way that is determined by the perfective/imperfective split: see e.g. Haig (2008:293-294), Gharib and Pye (2018:63), Öpengin (2016:188, 259), Holmberg and Odden (2004), Kahnemuyipour and Taghipour (2020), and Mohammadirad (2020b). Our analysis of this phenomenon reveals that while aspect clearly plays a role in defining the conditions under which possessors and P-arguments can be realized as MP agreement, there are further conditions restricting MP Agreement displacement that an aspect-only approach does not account for. More specifically, our analysis of SSK and GK reveals three generalizations that will be established in the pages to come. These are as follows:

(G1) First, possessors and P-arguments can be moved and realized as MP agreement, but only in the perfective.

(G2) Second, possessor realization as MP Agreement happens only when the possessor originates on a DO argument.

(G3) Finally, P-argument realization as MP Agreement happens only when there is a DO in the same clause.

In our view, taken together, (G2) and (G3) indicate that MP Agreement displacement happens only in clauses in which there is an *Objective* DO. With this in mind, it is then possible to extend the case-driven analysis of Chapter 4 to account for the attested patterns.

A key idea is that a special (=contextual) case assignment process applies to possessors and prepositional arguments in Sorani under certain circumstances. In particular, moving clitic pronouns in these configurations are assigned [-subj,-obl] Objective when they are local to an Objective Direct Object. Once this occurs, the mechanics of indexation proposed in Chapter 4 apply without modification to yield the desired results.

In the course of the discussion some further topics are addressed as well, including the status of MP Clitic displacement, as well as some differences between SSK and GK.

5.1.1 External possession

We noted above the popularity of accounts that restrict MP Agreement Displacement of possessors to perfective clauses. Our first observations center on the idea that while this

appears to be correct, an aspect-based restriction must be augmented, as there are further restrictions on this process.

An initial observation is that it is not possible to displace the possessor of the A argument, (19), even in the perfective (imperfectives like (20) are also ungrammatical).[7]

(19) a. pişîle-k-an=**im** otombîl-eke**=yan** bird.
cat-the-PL=1SG.CL car-the=3PL.CL took
'My cats took the car away.'

b. *pişîle-k-an otombîl-eke**=yan** bird-*im*.
cat-the-PL car-the=3PL.CL took-1SG
NO: 'My cats took the car away.'
YES: 'The cats took my car away.'

[7]The same facts also hold when both the O and A arguments have possessors. The O possessor can be displaced, but not the A possessor. Consider (i):

(i) a. pişîle-k-an=im otombîl-eke**=man**=yan bird
cat-the-PL=1SG.CL car-the=1PL.CL=3PL.CL took
'My cats took our car away.'

b. pişîle-k-an=im otombîl-eke=yan bird-*în*.
cat-the-PL=1SG.CL car-the=3PL.CL took-1PL
'My cats took our car away.'

c. *pişîle-k-an otombîl-eke**=man**=yan bird-*im*
cat-the-PL car-the=1PL.CL=3PL.CL took-1SG
'My cats took our car away.'

In terms of interactions with other arguments, the DO possessor can also be displaced in a configuration that involves an applied constituent. The salient interpretation is where the beneficiary is used in a contrastive sense; in terms of word-order, there is a preference for the beneficiary to appear postverbally (sentence-initial positioning is also allowed, whereas the preverbal position is dispreferred).

(ii) a. (min) xwardin-eke**=t=im** bird bo Mary/ewan.
1SG.pro food-the=2SG.CL=1SG.CL take.PST for Mary/them
'I took away your food for Mary/them.' (e.g. to give it to her/them)

b. (min) xwardin-eke**=m** bird-*ît* bo Mary/ewan.
1SG.pro food-the=1SG.CL take.PST-2SG for Mary/them
'I took away your food for Mary/them.'

The examples in (iii) show that we are not dealing with an 'ethical dative':

(iii) a. pişîle-k-an John**=yan** bird-*im*
cat-the-PL John=3PL.CL took-1SG
YES: 'The cats took my John away.'
NO: 'The cats took John away on me (i.e., it affected me).'

b. *pişîle-k-an to**=yan** bird-*im*
cat-the-PL you.pl=3PL.CL took-1SG
'The cats took you away on me.'

(20) a. pişîle-k-an**=im** otombîl-eke e-be-*n*.
cat-the-PL=1SG.CL car-the IND-take-PL
'My cats take the car away.'

b. *pişîle-k-an otombîl-eke e-be-{n-*im*/-*m*-in}.
cat-the-PL car-the IND-take-PL-1SG/-1SG-PL
'My cats take the car away.'

The aspect-based distinction also fails to explain why it is not possible to displace the possessor in (21b), which is the passive counterpart of (10b), despite being in the perfective (the corresponding imperfective (22b) is also ungrammatical):

(21) a. otombîl-ek-an**=man** be-ra-n.
car-the-PL=1PL.CL take.PRS-PASS.PST-PL
'Our cars were taken away.'

b. *otombîl-ek-an be-ra-{n-*în*/-*yn*-in}.
car-the-PL take.PRS-PASS.PST-PL-1PL/-1PL-PL
'Our cars were taken away.'

(22) a. otombîl-ek-an**=man** e-be-rê-n.
car-the-PL=1PL.CL IND-take.PRS-PASS.PRS-PL
'Our cars are taken away.'

b. *otombîl-ek-an e-be-rê{-n-*în*/-*yn*-in}.
car-the-PL IND-take.PRS-PASS.PRS-PL-1PL/-1PL-PL
'Our cars are taken away.'

As might be expected given what we have shown above, it is never possible to displace the possessor of the sole argument of an intransitive, as illustrated for unaccusatives in (23)-(24), and unergatives in (25)-(26), in both perfective/imperfective aspects:[8]

(23) a. pişîle-k-an**=man** kewt-in
cat-the-PL=1PL.CL fell-PL
'Our cats fell.'

b. *pişîle-k-an kewt{-in-*în*/-*în*-in}
cat-the-PL fell-PL-1PL/-1PL-PL
'Our cats fell.'

(24) a. pişîle-k-an**=man** de-kew-in
cat-the-PL=1PL.CL IND-fall-PL
'Our cats fall.'

b. *pişîle-k-an de-kew{-in-*în*/-*în*-in}
cat-the-PL IND-fall-PL-1PL/-1PL-PL
'Our cats fall.'

[8]The same facts also hold for nonverbal predicates, e.g. *My cats are/were nice.*

(25) a. pişîle-k-an**=im** kokî-n
cat-the-PL=1SG.CL coughed-PL
'My cats coughed.'

b. *pişîle-k-an kokî{-n-*im*/-*m*-in}
cat-the-PL coughed-PL-1SG/-PL-1SG
'My cats coughed.'

(26) a. pişîle-k-an**=im** de-kok-in
cat-the-PL=1SG.CL IND-cough-PL
'My cats cough.'

b. *pişîle-k-an de-kok{-in-*im*/-*im*-in}
cat-the-PL IND-cough-PL-1SG/-PL-1SG
'My cats cough.'

Taken together, the facts show that while the aspect split is clearly relevant to possessor displacement, this phenomenon is subject to additional restrictions as well. On the face of it, these further restrictions look very much like those found in languages that show what is described as *possessor raising*, which displays what is often described as a subject/object asymmetry (e.g., Deal 2017b). As will be shown below, though, for Sorani it is possible to derive such restrictions from case-specific factors.

The points developed above are summarized as the Generalizations (G1) and (G2):[9]

[9] Our generalization (G2) differs from another set of proposals in the literature which revolve around the avoidance of clitic-clusters or clitic-stacking. Due to the alignment patterns at play, the possible stacking scenarios would typically arise in the perfective aspect, since it is there that the Subject of a transitive is indexed by an MP Clitic.

With this in mind, Öpengin (2016:188) argues that when MP clitics would potentially occur in a sequence, one of them is 'disformed' into an MP agreement affix, and realized on the verb. This is what causes the displacement of the MP clitic =*man* onto the verb as an MP agreement -*in* in (10b), repeated here as (i).

(i) Otombîl-eke**=yan** bird-*în*
car-the=3PL.CL took-1PL
'They took our car away.' (SSK)

Kahnemuyipour and Taghipour (2020) argue for the same restriction, i.e., a prohibition on clitic-stacking, for the language Laki. Karimi (2021) proposes a more restrictive version of clitic-stacking avoidance, which allows only one (MP) clitic per clause.

Details of implementations aside, the problem for this type of account is that clitic stacking is indeed found in several varieties that show P-argument displacement, including SSK, as we will see below (cf. (33b), (34b) as well as the examples in fn. 26); Haig 2008 has additional examples; see also Holmberg and Odden 2004 on Hawrami.

Secondly, in GK, the counterpart of (i) is (ii), in which two MP clitics are able to appear in a sequence. The same pattern holds for the ditransitives. Contrast SSK (iii-a), with (iii-c) from GK, which is only slightly dispreferred for some speakers and is fully grammatical for others.

(ii) Otomobel-eke**=man=yan** bird
car-the=1PL.CL=3PL.CL took
'They took our car away.' (GK)

(G1) Possessors and P-arguments can be moved and realized as MP agreement, but only in the perfective.

(G2) Possessor realization as MP Agreement happens only when the possessor originates on a DO argument.

As we will now show, P-argument Displacement is restricted in a way that is parallel to (G2).

5.1.2 P(repositional) arguments

Above we saw initial examples of displacement affecting the objects of prepositions. In beginning our more detailed look at this phenomenon, we will look at a broader range of elements which we refer to collectively as *P-arguments*. In addition to ditransitives with an IO inside a PP introduced earlier this includes some additional types of prepositional phrases, as well as causative constructions. We note before proceeding that the discussion of this section also introduces comparisons between SSK and GK, which differ in terms of how P-arguments are displaced.

We have found (in agreement with other works cited at the beginning of this section) that MP Agreement Displacement for P-arguments is found only in the perfective in SSK. For this reason, we will present most of the examples in the perfective. As with Possessors, though, this restriction by itself does not correctly characterize when P-argument displacement can occur, as we will now show.

As a first illustration of P-argument displacement, consider the productive causative formed with *wa* ... *ka* 'such to make' (Amin 1979). Focusing on the relevant parts of the construction, we see that the causee associated with the preposition *lê* can remain in situ inside the PP, as in (27a). However, the typical (or unmarked) situation in SSK is for the pronominal complement of P to be realized on the matrix verb 'to make', as an MP agreement; see (27b). In GK, on the other hand, the typical (i.e. unmarked) scenario involves realizing the causee as an MP clitic, and attaching it to the clitic host, which is *wa* in (27c). The example in (27d) illustrates a configuration where the embedded Direct Object is pronominal as well; as such it leans onto the licit clitic host subjunctive *bi-*.

(iii) a. ew ême**=y** bo nard-*in*
3SG.pro us=3SG.CL to sent-3PL
'S/he sent us to them.' (SSK)

b. ew ême**=y** bo=yan nard
3SG.pro us=3SG.CL to=3PL.CL sent
'S/he sent us to them.' (GK)

c. ?ew ême**=yan=î** bo nard
3SG.pro us=3PL.CL=3SG.CL to sent
'S/he sent us to them.' (GK)

Taken together, these observations suggest that displacement effects in SSK and GK are not motivated by a prohibition on clitic cooccurrence.

(27) a. êwe wa=tan lê=**man** kird šerbet-ek-an bi-xo-yn-(ewe).
2PL.pro such=2PL.CL to=1PL.CL made juice-the-PL SBJV-drink-1PL-(HAB)
'You made us drink the juices.' (GK/SSK)

b. êwe wa=tan lê-kird-*în* šerbet-ek-an bi-xo-yn-(ewe).
2PL.pro such=2PL.CL to-made-1PL juice-the-PL SBJV-drink-1PL-(HAB)
'You made us drink the juices.' (SSK)

c. êwe wa=**man**=tan lê kird šerbet-ek-an bi-xo-yn-(ewe).
2PL.pro such=1PL.CL=2PL.CL to made juice-the-PL SBJV-drink-1PL-(HAB)
'You made us drink the juices.' (GK)

d. êwe wa=**man**=tan lê kird bi=yan xo-yn-(ewe).
2PL.pro such=1PL.CL=2PL.CL to made SBJV=3PL.CL drink-1PL-(HAB)
'You made us drink them (the juices).' (GK)

The same pattern is also observed in another type of causative that is available for unergative predicates. Consider the verb 'to jump', whose non-causative form is given (28a). Both in SSK and GK, it is possible (though somewhat marginally in SSK) to realize the causee on the preposition *pê* with which it is associated, (28b). In SSK, the causee is typically realized on the verb as an MP agreement, (28c). In GK, the causee can be realized as an MP clitic on the clitic host, (28d).[10]

(28) a. baz=**man** da
jump=1PL.CL did
'We jumped.' (GK/SSK)

b. baz=yan pê=**man** da
jump=3PL.CL to=1PL.CL did
'They made us jump.' (GK/SSK)

c. baz=yan pê-da-*yn*
jump=3PL.CL to-did-1PL
'They made us jump.' (SSK)

[10]It might be thought that leaving the P-argument in-situ in SSK is disallowed across the board. However, a general ban of this type is too strong. In addition to many examples we provide in this study (and two examples below), the literature contains many examples in which the P-argument remains in-situ. In fact, in certain configurations, e.g., (i) and (ii) below, it is not possible to displace the P-argument.

(i) a. lê=**man** kewt-*in*.
from=1PL.CL fall.PRS-3PL
'They fell off from us.' (i.e., we lost them)

b. *lê kewt{-*in-în/-în-in*}.
from fall.PRS-3PL-1PL/-1PL-3PL
Intended: 'They fell off from us.'

(ii) bo=**tan=î** bang e-ke-*m*.
for=2PL.CL=3SG.CL call IND-do.PRS-1SG
'I shall call him for you.' (Edmonds 1955:498)

d. baz=**man**=yan pê da
jump=1PL.CL=3PL.CL to did
'They made us jump.' (GK)

Turning to structures with complements to prepositions, we find the same patterns. The 1sg prepositional object in (29a) is realized on the verb as an MP agreement in SSK. The P-argument can be realized in situ in GK, (29b); while this is disallowed for some SSK speakers, it is acceptable for others, thus the symbol %. (29c) illustrates a configuration in GK in which the P-argument has moved onto a higher host (MP Clitic Displacement), which is fully grammatical for many, and slightly marginal for some. Finally, both varieties allow the PP to be in postverbal position (with some effects on focus); when this happens, the IO remains inside the PP, as in (29d); presumably moving out of the post-verbal PP would strand the proclitic preposition:

(29) a. xelk lê=yan de-kirrî-*m*.
people from=3PL.CL PROG-buy.PST-1SG
'People were buying from me.' (SSK; Kareem 2016:101, (11))

b. xelk lê=**m**=yan de-kirrî.
people from=1SG.CL=3PL.CL PROG-buy.PST
'People were buying from me.' (GK, and % in SSK)

c. (?)xelk ewe=**m**=yan lê de-kirrî.
people it=1SG.CL=3PL.CL from PROG-buy.PST
'People were buying it from me.' (GK)

d. xelk de=yan kirrî lê=**m**.
people PROG=3PL.CL buy.PST from=1SG.CL
'People were buying from me.' (GK/SSK)

The following ditransitives illustrate the same pattern:

(30) a. ew ême=y bo=**yan** nard
3SG.pro us=3SG to=3PL.CL send.PST
'S/he sent us to them.' (GK/?SSK)

b. ew ême=**yan**=î bo nard
3SG.pro us=3PL.CL=3SG to send.PST
'S/he sent us to them.' (GK/*SSK)

(31) a. ew bo=**yan=man** e-nêr-ê(t)
3SG.pro to=3PL.CL=1PL.CL IND-send.PRS-3SG
'S/he sends us to them.' (GK/SSK)

b. ew ême=**yan** bo e-nêr-ê(t)
3SG.pro us=3PL.CL to IND-send.PRS-3SG
'S/he sends us to them.' (GK/SSK)

To summarize, Garmiani Kurdish has MP-Clitic displacement across the board and lacks MP-Agreement displacement. On the other hand, SSK standardly has MP-Agr displacement in the perfective. Interestingly, as illustrated in (31b), which we elaborate on more below, MP-Clitic displacement is indeed possible in SSK, but only in the imperfective, and not perfectives (cf. (30b)).

Reaching back to the previous chapter, we noted in our initial discussion of MS Agreement and MS Clitic Movement that in Sorani a given head Agrees only with one argument, but may Clitic-Move more than one. Since we were dealing there only with transitives, the latter possibility was not illustrated. We now show with ditransitives why MS Clitic Movement must operate in this way.

Starting with Garmiani, both internal arguments are Accusative, and realized in clitic form. Both of these are MS Clitic Moved. When the clitic agreeing with an Ergative subject is taken into account as well, it can be seen that in certain situations, it is possible for there to be three MP Clitics on the same host, as shown in (32):

(32) a. xwâ bo**=man=yan=î** nard
God to=1PL.CL=3PL.CL=3SG.CL send.PST
'God sent them to us.'

b. ?to nîşan**=yan=man=it** da
2SG.pro show=3PL.CL=1PL.CL=2SG.CL give.PST
'You showed them to us.'

c. to nîşan**=im=yan=it** da
2SG.pro show=1SG.CL=3PL.CL=2SG.CL give.PST
'You showed me to them.'[11] (GK)

Certain discourse conditions have to be met by the referents involved in examples of this type; though grammatical, speakers report such examples to be somewhat degraded due perhaps to salience and other effects arising from the conditions regulating clitic realization (e.g. processing difficulties).

Strikingly, SSK shows the same type of effect, but in a way that involves multiple MP-agreement markers. In SSK, DOs have Objective case in the past tense, and can be realized as MP Agreement. The same is true of certain IOs, producing 'double' MP Agreement marking. For example, in (33a) and (34a), the DO is realized as an MP agreement, whereas the IO left in-situ (noting again that leaving the prepositional object in-situ is disfavored). On the other hand, in (33b) and (34b), the IO is also realized as an MP agreement on the verb.[12]

[11] Note that the order of MP clitics is different with and without a preposition host. When a preposition is the host, the prepositional argument, which is the IO, is closest to it followed by the DO, as in (32a). However, when another host is available, such as the nonverbal element in (32b) and (32c), the order is DO-IO. This might be explored in terms of the relative steps of a derivation, but we leave this and other aspects of clitic ordering for future investigation.

Moreover, while in SSK, *pîşan* would be used, which is a contraction of *pê nîşan*, in GK our consultants consistently use *nîşan*.

[12] This effect has also been noted in the descriptive literature; cf.

(33) a. pê=**man**=î dâ-*n*.
to=1PL.CL=3SG.CL gave-3PL
'S/he gave them to us.' (SSK; Samvelian 2008:47a)

b. pê=y dâ-*n*-*în*.
to=3SG.CL gave-3PL-1PL
'S/he gave them to us.' (SSK; Samvelian 2008:47b)

(34) a. xwâ bo=**man**=î nard-*in*
God to=1PL.CL=3SG.CL sent-3PL
'God sent them to us.' (SSK)

b. xwâ bo=y nard-*în*-*in*
God to=3SG.CL sent-1PL-3PL
'God sent them to us.' (SSK, cf. (32a))

As expected, this behavior has been reported to arise only in the SSK perfective system (e.g., Kareem 2016; Mohammadirad 2020b). Our SSK consultants share this intuition. In the imperfective, the P-argument can be displaced, but this time it surfaces as an oblique MP clitic, not as MP Agreement, as seen in (35-36) (these are grammatical in GK as well):[13]

(i) xwâ bo=y nard-*im*-*î(t)*.
God to=3SG.CL sent-1SG-2SG
'God sent you.sg to me.' (Edmonds 1955:502)

(ii) xwâ lê=y send-*im*-*in*
God from=3SG.CL take.PST-1SG-PL
'God took them (or you.pl) from me.' (Edmonds 1955:502)

(iii) dâ=**m**-*ît*-*in*=ê
gave=1SG.CL-2SG-3PL-DIREC
'I gave you to them.' (MacKenzie 1961: 116; as cited in Haig 2008:294, (335))

Regarding the final *ē* in the last example, Haig notes: "The final *-ē* in [335], glossed here as DIREC, is analyzed by MacKenzie (1961:123) as the 'absolute' form of the preposition a 'to'. For the present purposes it suffices to note that this clitic is regularly attached to verbs of speech and giving, although its semantic contribution to the verb remains unclear."

See also Edmonds (1955); Samvelian (2007a) for additional examples.

[13] More examples of the IO clitic moving to the $\mathscr{O}$ as a clitic in the imperfective come from other Central Kurdish varieties such as Baneh Central Kurdish or Naeini, which behave like SSK in other relevant aspects (e.g., realization of DO or P-arguments as MP agreement on the verb).

(i) a. dāstān-ēk=**tān** bo bi-gēr-*im*
story-a=2PL.CL for IRR-narrate.PRS-1SG
'That I narrate a story to you.' (BCK; Mohammadirad 2020b:351,(829))

b. dot=**om**=**oş**=ji ve ti
girl=1SG.CL=3SG.CL=ADD to give.PRS.1SG
'I will give my daughter to him as well.' (Naeini; Lecoq 2002: 502, as cited in Mohammadirad 2020b:264,(674))

(35) a. ew ême bo=**yan** e-nêr-ê(t)
3SG.pro us to=3PL.CL IND-send-3SG
'S/he sends us to them.'

b. ew ême=**yan** bo e-nêr-ê(t) (*ew ême bo e-nêr-ê(t)-*in*)
3SG.pro us=3PL.CL to IND-send-3SG
'S/he sends us to them.' (SSK/GK)

(36) dyarî-êk=**tan** bo e-hên-*în*
gift-a=2PL.CL for IND-bring-1PL
'We shall bring a gift for you.' (Edmonds 1955:498)

In fact, in some constructions, movement of a P-argument as an oblique clitic seems strongly preferred, to the extent that examples with it in situ are highly degraded. For example, in (37a), the P-argument is realized on the DO, and it is not possible for it to remain in situ, as shown in (37b).[14] As expected, given that the example is imperfective, we observe that realization of the P-argument on the verb as an MP agreement like in (37c) is also disallowed.

(37) a. Azad dyarî-eke=yan pê=de-d-*at*
Azad gift-the=3PL.CL to=IND-give.PRS-3SG
'Azad will give the gift to them.'

b. *Azad dyarî-eke pê=yan de-d-ât
Azad gift-the to=3PL.CL IND-give.PRS-3SG
'Azad will give the gift to them.'

c. *Azad dyarî-eke pê-de-d-at-*in*
Azad gift-the to-IND-give.PRS-3SG-3PL
'Azad will give the gift to them.'

(ii) nān=**mān** lagal bi-xô!
food=1PL.CL with IRR-eat.PRS.2SG
'Eat a meal with us.' (CK; Haig 2007:168,(1))

Note that the displaced clitic skips over non-licit clitic hosts, like the adverbs in (iii), as also shown with other examples in the book (e.g., (i) in Fn. 5):

(iii) a. aw qisa=**t**-a har bo nāyž-im.
that saying=2SG:R-DEM1 ever for NEG-say.PRS-1SG
'I will never tell you about that saying.' (SCK; Mohammadirad 2020b:225,(516))

b. dabē xēwat-ēk=**im** la darawa-y šār bo hal-bi-da-n
aux.3SG tent-IND=1SG.R in out=EZ city for PVB-IRR-give.PRS-3PL
'They will have to pitch a tent for me out of the city.' (Thackston 2006b:24)

Thus (cf Fn. 5) the movement of the clitic cannot be accounted for in purely linear terms.

[14] Although we have marked (37b) with an '*' we believe that its deviance is likely to be extra-syntactic (presumably pragmatic).

Moreover, it is worth noting that in SSK, the adposition *pê* is usually dispreferred with *dan* (thanks to Shuan Karim for reminding us of this), but still possible.

However, it appears that moving the clitic out of the PP is not required across the board; it can indeed remain in situ under certain circumstances. For example, in (38) PP occurs postverbally, the P-argument must be realized in situ:

(38) *Context*: Does/will Azad give the gift to them/the children?
belê, de**=y**-d-at pê**=yan**.
yes IND=3SG.CL-give.PRS-3SG to=3PL.CL
'Yes, (he) will give it to them.'

As noted earlier, moving the clitic here would strand the preposition. In any event, the grammaticality of examples like (38) establishes that the moved clitics do indeed originate as complements of P, and not elsewhere, as might have been thought given the pattern displayed in (37).

As mentioned above, several prior works have called attention to the behavior of P-arguments in different Iranian varieties. In those that have looked at restrictions on when P-arguments can be realized as MP-Agreement, the majority have arrived at the conclusion that this behavior is found in perfective clauses, but not imperfective clauses (e.g., Haig 2008, Gharib and Pye 2018, Öpengin 2016, Holmberg and Odden 2004, Kahnemuyipour and Taghipour 2020, Mohammadirad 2020b). As with the external possessors, the perfective split accounts for part of what happens with P-arguments– realization of these arguments as MP agreement does indeed happen only in the perfective– but more needs to be said about the **absence** of P-argument displacement in other configurations. For example, the P-argument cannot be MP-Agr displaced in the imperfective unergative in (39b), as is expected if aspect alone played the decisive role; but something further is required to rule out such movement in the perfective (40b) (same property holds for unaccusatives):[15]

(39) a. bo**=man** de-kok-in
for=1PL.CL IND-cough-3PL
'They cough for us.'
b. *bo de-kok{-in-*în*/-*în*-in}
for IND-cough-3PL-1PL/-1PL-3PL
'They cough for us.'

[15] We have come across a handful of examples in which the P-argument undergoes MP-Clitic displacement even in intransitives, both in other varieties and GK.

(i) čik**=î** pê a-č-ê
little=3SG.CL to IND-go.PRS-3SG
'A while passes (on it).' (Southern Central Kurdish, Mohammadirad 2020b:(866))

(ii) dyarî-eke**=yan** pê di-ra
gift-the=3PL.CL to give.PRS-PASS.PST.3SG
'The gift was given to them.' (GK)

These examples are interesting in that the clitic attaches to the subject, which is not normally a legitimate clitic host. More work is needed to determine why this is possible in this particular type of example.

(40) a. bo**=man** kokî-n
for=1PL.CL cough.PST-PL
'They coughed for us.'
b. *bo kokî{-n-*în*/-*yn*-in}
for cough.PST-PL-1PL/-1PL-PL
'They coughed for us.'

As the examples in (41) show, the same beneficiary PP does allow MP Agreement Displacement when it is used with transitives.

(41) a. (min) kitêb-êk=im bo**=yan** kirrî
1SG.pro book-a=1SG.CL for=3PL.CL buy.PST
'I bought a book for them.'
b. (min) kitêb-êk=im bo kirrî-*n*
1SG.pro book-a=1SG.CL for buy.PST-PL
'I bought a book for them.'
c. (ew) otombîl-eke=man=î bo kirrî-*n*
3SG.pro car-the=1PL.CL=3SG.CL for buy.PST-PL
'He bought our car for them.'

Passives behave in exactly the same way as intransitives; whether in the imperfective, (42), or the perfective, (43), the P-argument cannot be realized as MP Agreement:

(42) a. name-k-an bo**=man** de-nêrd-(i)rê-n
letter-the-PL to=1PL.CL IND-send.PRS-PASS.PRS-PL
'The letters are sent to us.'
b. *name-k-an bo de-nêrd-(i)rê{-n-*în*/-*yn*-in}
letter-the-PL to IND-send.PRS-PASS.PRS-PL-1PL/-1PL-PL
'The letters are sent to us.'

(43) a. name-k-an bo**=man** nêrd-(i)ra-n
letter-the-PL to=1PL.CL send.PRS-PASS.PST-PL
'The letters were sent to us.'
b. *name-k-an bo nêrd-(i)ra{-n-*în*/-*yn*-in}
letter-the-PL to send.PRS-PASS.PST-PL-1PL/-1PL-PL
'The letters were sent to us.'

Once again, it appears that while aspect is clearly involved in part of what is happening with P-argument displacement, the operation producing this effect is also restricted in other ways.

The generalization that holds concerning this additional factor is similar to what was found for possessors above: realization of a P-argument as MP Agreement happens only in clauses in which there is a DO argument. Taken together, then, (G1) from the last section and (G3) correctly state the conditions under which P-argument displacement occurs:

(G1) Possessors and P-arguments can be moved and realized as MP agreement, but only in the perfective.

(G3) P-argument realization as MP Agreement happens only when there is a DO in the same clause.

5.1.3 Synthesis

The preceding sections arrive at three generalizations that we will now explain using the tools introduced in prior chapters. An additional goal is to show that the differences between SSK and GK in terms of possessor/P-argument behavior can be derived directly from the observations made in Chapter 4 (in particular, §4.5) to the effect that GK lacks the Objective case that is found in SSK.

To review, the first generalization to be explained is that realization of possessors and P-arguments as MP Agreement in SSK is restricted to the perfective, as identified in prior work cited above. The generalizations in (G2-3) impose further restrictions on which perfective clauses allow this to happen; they both point to the presence of a DO, a shared property that calls for a unified explanation:

(G1) Possessors and P-arguments can be moved and realized as MP agreement, but only in the perfective.

(G2) Possessor realization as MP Agreement happens only when the possessor originates on a DO argument.

(G3) P-argument realization as MP Agreement happens only when there is a DO in the same clause.

There are a few components involved in explaining (G1-3). At first glance, (G2) appears (as noted above) to reflect a restriction that applies to Possessor raising in other languages, where Possessors may raise out of Objects but not Subjects. On the assumption that whatever explains this restriction in other languages applies in Sorani, there would be a plausible account of (G2). However, this explanation would be crucially incomplete– it would fail to account for why MP Agreement Displacement happens only in the perfective (G1).

In our view, it is case theory that provides a compelling and unified explanation for (G1-3). As a first step in articulating this analysis, we will focus on the pronouns that are moved and realized as MP agreement, (44b).

(44) a. ew ême**=y** bo=**yan** nard
s/he us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême**=y** bo nard-*in*
s/he us=3SG.CL to send.PST-3PL
'S/he sent us to them.' (SSK)

Whether for possessors or P-arguments, the pronouns that are targets of a movement operation, (44b), must be distinguished from those that are not, (44a), in order for the mechanics of clitic movement to function properly. We represent the targets of movement as $+m$ and the ones that stay in situ as $-m$:

(45) pronoun specifications

a. moving pronoun: [+obl...$+m$]

b. pronoun that doesn't move: [+obl...$-m$]

Since it is simply a fact that the relevant pronouns can be realized either in situ or moved, some distinction like the one presented abstractly in (45) is required (although of course the effects of [$\pm$m] could be reduced to other factors or encoded in other ways).[16]

The next step concerns the case specification of possessors and P-arguments. Recall that our approach to SSK employs the case distinctions that are schematized in (46):

(46) abstract cases

	'Nominative'	'Ergative'	'Accusative'	'Objective'
subject	+	+	-	-
oblique	-	+	+	-

When possessors and P-arguments are realized in situ, they are realized as MP clitics; on our analysis, as obliques. These arguments also undergo clitic movement; they are not agreed with. In terms of the cases in (46) and what we saw in Chapter 4, it appears that they are assigned Accusative case:

(47) CASE RULE 1: Possessors/P-arguments are assigned Accusative [-subj,+obl].

A path that suggests itself for explaining (G1-G3) is to hold that (47) applies to these arguments only under certain conditions. What we have in mind here is the following: When possessors and P-arguments are realized as MP Agreement, they exhibit the properties that are otherwise shown by clitics assigned Objective [-subj,-obl] case in transitive clauses. Strikingly, they do this only when there is another argument local to them– a DO– that is assigned Objective case: both (G2) and (G3) point to this same idea. We therefore offer the hypothesis in (48):

(48) HYPOTHESIS: Possessors/P-arguments behave as if they have Objective case only in clauses where the DO has this case.

With this in mind, consider the case rule in (49):

(49) CASE RULE 2: Assign Objective case to moving [+m] pronouns when a local argument is also assigned Objective.

[16] See Deal (2021:15) and references cited there for discussion of the same point and a few possible options, including the option that pronominals that give rise to clitics might have a different syntax than those that do not.

The intuition embodied in (49) is that while possessors and P-arguments are typically assigned Accusative, they can be assigned Objective in a way that reflects the presence of a local argument that bears this case as well. In the way that we conceive of it, (49) is part of the procedure that assigns abstract case features; it produces what is effectively a kind of case attraction or matching that requires reference to local context. The details of assignment could be explored further in a configurational theory of case assignment, a point that will be elaborated on in our discussion in Chapter 6.

With moving possessor clitics, the local argument triggering (49) is the possessed DO; in the case of P-arguments, it is the DO as well. Since DOs are assigned Objective only in the perfective, the aspectual sensitivity (G1) of possessor and P-argument displacement reduces to the operation of (49); (G2-3) are explained by (49) as well.[17] The more specific (49) takes precedence over (47) in clauses with Objective DOs and [+m] pronouns.

All other pronouns are assigned Accusative. Some such pronouns move (MP-clitic displacement), as in SSK imperfectives like those in (31), (35), (36); they are moved to $\mathcal{O}$, exactly like Accusative DO clitics are. In GK, the situation with P-arguments derives from the fact that this variety lacks the Objective case in (46). As a result, *all* P-arguments in the language are assigned Accusative. This accounts for the fact that when P-arguments in GK move, they are invariably realized as MP Clitics, (50c), and not as MP Agreement, while this latter is the option for SSK perfectives, (50b).

(50) a. baz=yan pê=**man** da
jump=3PL.CL to=1PL.CL did
'They made us jump.' (GK/SSK)

b. baz=yan pê-da-*yn*
jump=3PL.CL to-did-1PL
'They made us jump.' (SSK/*GK)

[17] For (G2), we note that possessors of IOs cannot be realized as MP Agreement, (i), or be moved onto $\mathcal{O}$ as an MP-Clitic, (ii).

(i) a. *pare-ke be qutabîy-eke de-de-{m-*in*/-*n*-im}.
money-the to student-the IND-give-1SG-3PL/-3PL-1SG
'I give the money to their student.'

b. *be qutabîy-ek**=im** da-{n-*în*/-*yn*-in}.
to student-the=1SG.CL gave-PL-1PL/-1PL-PL
'I gave them to our student.'

(ii) a. *pare-ke**=yan** be qutabîy-eke de-de-m.
money-the=3PL.CL to student-the IND-give-1SG
'I give the money to their student.'

b. *pare-ke**=yan=im** be qutabîy-eke da.
money-the=3PL.CL=1SG.CL to student-the gave
'I gave the money to their student.'

We take this to be the result of locality– potentially in two distinct ways. For one, the possessor is in the IO, and cannot move both out of the DP it originates in and the PP. In addition, it is possible to that the possessor inside of the IO is not close enough to the Objective DO to trigger (49).

c. baz=**man**=yan pê da
jump=1PL.CL=3PL.CL to did
'They made us jump.' (GK/*SSK)

We noted above that possessor raising in many languages is restricted to possessors of certain arguments (see e.g., Guéron 1985, 2006; Borer and Grodzinsky 1986, and Deal 2017a for an overview; see also section 5.6.2 below for discussion of external discussion in more Iranian languages). While whatever explains this type of restriction might be active in SSK as well (as we noted above), it is important to note that (49) accounts for it directly as well– especially when we consider that Case Rule 2 also accounts for the behavior of P-arguments, to which the restrictions on possessor raising might not be applicable.

5.2 Non-canonical subject constructions

This section focuses on what are called *non-canonical subject constructions* (NCS). These are important because of the unique case properties they display: in particular, Oblique subjects in both the perfective and imperfective aspects.

Different NCS constructions in Iranian have been examined in the prior literature.[18] As we will see below, the NCS cover term applies to what turns out to be a mixed set of verbs, including predicative expressions of possession/existence, certain expressions of sensory (visual/auditory) perception and psychological states, predicates of needing/wanting or desire, and some other uncontrolled states of affairs (e.g., 'finding something,' 'remembering,' 'forgetting'). For a more comprehensive list, see Haig (2008).[19]

Before we get into the details of NCS constructions in Sorani, a few notes are in order concerning the way in which we intend to approach them. The key theme here concerns the system of case features that we developed in Chapter 4. We showed there that the indexation system of Sorani is driven by cases that are distinguished in terms of the features [±subj] and [±obl], as shown in (51).

(51) SSK cases

	'Nominative'	'Ergative'	'Accusative'	'Objective'
subj(ect)	+	+	-	-
obl(ique)	-	+	+	-

Part of our argument was that the cases, which are identified on the basis of indexation patterns that refer to them, constitute a closed system. So, for example, the behavior of external possessors in 5.1 above illustrates this reasoning– the possessors in question, which

[18] Researchers use different terms for some related construction in Persian (see section 5.6.3), which reflect the varying formal and semantic criteria they adopt: e.g., 'compound verbs of experience' (Barjasteh 1983); 'indirect middle verbs' (Windfuhr 2011); 'subjectless constructions' (Karimi 2005); or 'experiencer construction' (Jügel and Samvelian 2020). Haig (2008:305-310) describes this class as consisting of verbs of sensory perception, desire, and obligation.

[19] In addition, which verbs take part in NCS constructions vary to some extent across languages.

behave as MS clitics that are realized as MP agreement, bear Objective case; not some further case beyond those in (51).

We stress this point because the study of NCS constructions in many language families is often essentially a study of *Dative* subjects (e.g., Belletti and Rizzi 1988; Shibatani 2001; Bhatt 2007), and we do not have a Dative case in (51). While it would certainly be possible to add an additional feature to (51) to define Dative case, we will see below that there is no motivation for this in the Sorani system. In particular, we will show that the subjects in question are (i) targeted by MS agreement, with (ii) the resulting φ-bundle realized as an MP clitic. That is to say, from the perspective of indexation, they behave exactly like the other Oblique subjects in the language, i.e. as Ergative in terms of (51).[20]

If the Ergative analysis is correct, then what sets the NCS constructions apart from what we have seen to this point in Sorani is the way in which case is **assigned** to their subjects. As we mentioned above, Oblique subjects are not limited to the perfective; they are also found in the imperfective.[21] This is shown for the two main types of constructions that we will analyze below; we call these the *want*-type (52) and the *clausal possession*-type, (53):

(52) a. min kitêb=**im** de-wê.
1SG.pro book=1SG.CL IND-want.PRS
'I want book/books.'

b. min kitêb=**im** wîst.
1SG.pro book=1SG.CL want.PST
'I wanted book/books.'

(53) a. ême kitêb=**man** he-(y)e.
1PL.pro book=1PL.CL exist-COP.PRS
'We have books.' (Kareem 2016:137, (55))

b. ême qalam-an=**man** ha-bû.
1PL.pro pen-PL=1PL.CL exist-COP.PST
'We had some pens.' (Thackston 2006b: 26)

In this regard, they contrast with the vast majority of predicates in the language, which show the aspect-based split analyzed in the previous chapter.

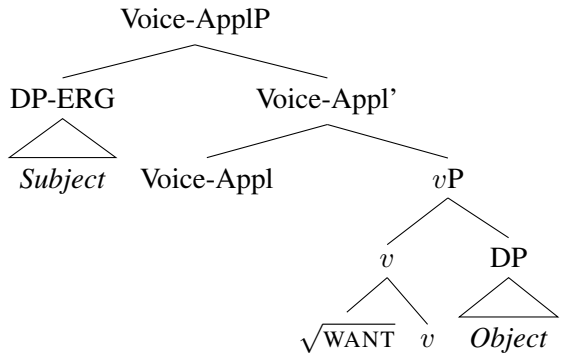
As we have noted at various points, it is not our intention to provide a theory of case assignment in this work. However, in the case at hand it is useful to be able to specify what it is about NCS constructions that differs from other verbs, at least in outline. What we have in mind is that with "typical" verbal clauses, Ergative is assigned in a way that is dependent

[20] In Chapter 6, (sect 6.1.3), we compare Sorani with other Iranian languages of the Pamiri sub-family, and show that while Dative is motivated for the Pamiri languages both in terms of morphological realization and syntactic behavior, neither of these motivations apply to Sorani.

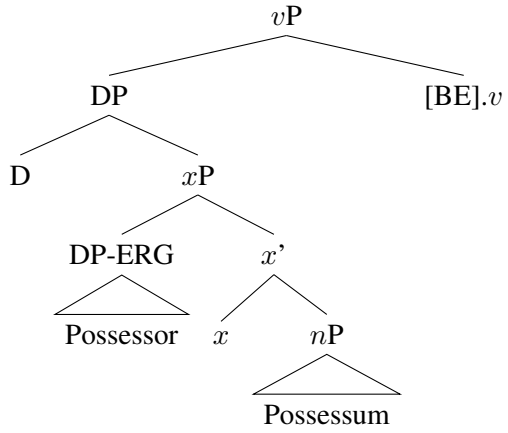
[21] Similar effects are seen in Kurdish varieties that exhibit overt case marking on DPs, in that the subject bears oblique case in both perfective and imperfective aspects. See Thackston (2006a), Haig (2008:306), Akkuş (2020). Our analysis aligns with Akkuş (2020), which takes parallel constructions in Kurmanji and Zazaki to have *inherent ergative* on the basis of the partial agreement phenomenon.

on aspect (presence or absence of Asp[perf]). On the other hand, assignment of the Ergative case features in NCS clauses is not aspect-dependent in this way; it is **inherent**. In the analysis that we will develop below, this inherent Ergative assignment is the result of the structures in which the subjects of NCS clauses are generated; in one type it is assigned to the specifier of an Applicative (Voice) head (54); while in the possessive construction (55), it is assigned by a head x that appears internally to the possessed DP:[22]

(54) Structure for *want*-type



(55) Possessive structure



While both of these structures produce inherent Ergative case, the structural differences between the *want*-type (54) and the *possessive*-type (55) have some consequences for the **non-**subject argument that they co-occur with. As we will see below, the former type is effectively a kind of transitive, whose non-subject is a DO that always receives Objective case. On the other hand, the non-subject in possessive constructions appears to have Nominative case, and can enter into MS agreement with Tense (in a way that is subject to some further complications that we will present below).

[22] Later we will consider an alternative to (55) that differs minimally with respect to how the head x functions.

In summary form, the analyses we develop are stated in (56):

(56) Case properties of NCS verbs

a. *want*-type: Transitive but with inherent (=not Aspect dependent) Ergative for the subject; the object is Objective.

b. *have*-type: The possessor has Ergative case; the possessum is Nominative.

Beyond the two types listed in (56), Ergative subjects in both aspects are also found with a small number of monadic intransitive predicates with what are typically taken to be Experiencer subjects. This is illustrated in (57).

(57) a. min serma=**m**-e.
1SG.pro cold=1SG.CL-COP.PRS
'I am cold.'

b. min serma=**m** bû.
1SG.pro cold=1SG.CL COP.PST
'I was cold.' (Kareem 2016:141, (63))

We take these to involve structures in which Ergative is an inherent case assigned to the sole argument of the clause, following Baker and Atlamaz 2014; Akkuş 2020, and will not examine them further here.[23]

To provide context for the discussion to come, it should be noted that in parts of the literature, all NCSs are sometimes treated as syntactically intransitive, (see e.g. Mohammadirad 2020b). An implication of this view is that the subject-like argument in NCSs is not a typical subject, a view also argued for in Karimi (2005: ch. 2.4.) (see Fn. 59 for more discussion). Our analysis of NCS clauses in Sorani leads to the conclusion that the oblique-marked argument in fact does uniformly exhibit the behavior of a typical grammatical subject, with the possessive structure introducing a type of dual-subject agreement (see Doron and Heycock 2010 for the notion of 'double/broad subject' argued to exist in various languages).

5.2.1 Non-canonical subjects of the *want* type

This section examines *want*-type predicates in more detail. Further examples are given in (58), both with a common object as well as when the verb embeds a subjunctive clause. More relevant for our purposes are the examples in (59), where the object is realized as

[23] Comparatively speaking, these are similar to predicates in e.g. Icelandic that require dative, (23), or genitive case (Svenonius 2006).

(i) Henni var kalt.
she.DAT was cold
'She was cold.' (Icelandic; Sigurðsson 2002:692, (711))

For how assignment might work, see Akkuş 2020 for a specific implementation.

MP Agreement in both aspects (not illustrating the examples where the DO is realized as a strong pronoun that can also function as a clitic host).[24]

(58) a. (ew) em ştâne=**y** nâ-we
3SG.pro these things=3SG.CL NEG-want.PRS
'He doesn't want these things.' (Thackston 2006b: 35; slightly modified)

b. de=**m** (e)wê(t) bi=**t** bîn-im
IND=1SG.CL want SBJV=2SG.CL see.PRS-1SG
'I want to see you.' (=I want [that I see you])

(59) a. (ewan) de=**yan** ewê-*yn*
3PL.pro IND=3PL.CL want.PRS-1PL
'They want us.'[25]

b. (ewan) wîst=**yan**-*în*.
3PL.pro want.PST-3PL.CL-1PL
'They wanted us.'

Various diagnostics demonstrate that the element co-indexed with the oblique-clitic in NCSs, e.g., *ewan* (59), indeed displays the properties typical of grammatical subjects, and that the non-subject argument that can be realized as MP agreement like *-yn* bears Objective case.

In other words, with the exception of the inherent Ergative on the subject (and corresponding Objective on the non-subject) *want*-clauses behave like typical transitives.

A first piece of evidence regarding the status of the non-subject argument comes from Garmiani Kurdish, which shows a double-oblique pattern with *want*, (60). As seen in Chapter 4, this is what is expected in typical GK transitive clauses, but not in intransitives:

(60) a. e=**man=yan** (h)ewê.
IND=1PL.CL=3PL.CL want.PRS
'They want us.' (GK; cf. (59a))

b. wîst=**man=yan**.
want.PST=1PL.CL=3PL.CL
'They wanted us.' (GK)

Second, it is possible to passivize NCS clauses, such that the underlyingly non-subject argument raises to become the grammatical subject, (61). This is again what is expected for transitive clauses.

[24] In the varieties of Sorani that we have examined, thus far only *want* shows the behavior that we analyze in this section. We speak of it as exemplifying a type because (i) it is possible that verbs we have yet to examine in Sorani pattern the same way, and (ii) it is conceivable that other Iranian varieties have larger classes of verbs of this type. See also Fn. 35.

[25] Some of our consultants, as well as Shuan Karim, p.c., dislike the forms in (59), while others are fine with them. Yet another group of speakers prefer the sequence wîst-*în*=**yan** instead of (59b). Similar considerations apply to (61) as well.

(61) ême wîst-ra-w-*în* (le layen ewan-ewe)
1PL.pro want-PASS.PST-PERF-1PL from side them-ITER)
'We have been wanted (by them).'

Third, we observe the indexer-overt argument complementarity that is typical of internal arguments bearing Objective case, suggesting again a transitive structure:

(62) *ewan ême **=yan** de-we-*yn*.
3PL.pro us=3PL.CL IND-want.PRS-1PL
'They want us.

Fourth, depictive secondary predicates point to the same conclusion. Similar to many languages, as illustrated for English in (63), depictives can modify subjects and direct objects, but not indirect objects or other oblique elements.

(63) a. I ate the meat$_1$ raw$_1$. (DO)
b. I$_1$ read the story tired$_1$. (Subject)
c. I$_1$ told John$_2$ the news drunk$_{1/*2}$. (*IO)
d. John$_2$, I$_1$ told him the news drunk$_{1/*2}$.

This is illustrated in (64) for SK:

(64) a. (ew) gošt-eke**=y** be xawî xward
3SG.pro meat-the=3SG.CL in rawness eat.PST
'He ate the meat$_1$ raw$_1$.' (DO)
b. min kitêb-eke**=m** be serxoši de-xwênd
1SG.pro book-the=1SG.CL in drunk PROG-read.PST
'I$_1$ was reading the book drunk$_1$.' (Subject)
c. min name-k-an**=im** be serxoši bo**=yan** nard
1SG.pro letter-the-PL=1SG.CL in drunk to=3PL.CL sent
'I$_1$ sent the letters to them$_2$ drunk$_{1/*2}$.' (*IO)

The oblique-clitic bearing experiencers behave like typical subjects in this regard, (65). The non-subject argument as well can also license depictives, as shown in (66).

(65) min šerbet-eke**=m** (be serxoši) de-wê-(ê)t.
1SG.pro juice-the=1SG.CL in drunk IND-want.PRS-3SG
'I$_1$ want the juice drunk$_1$.'
(e.g., when I am drunk, I crave for the juice.)

a. (ew) gošt-eke**=y** (be birsêtî) de-wê-(ê)t.
3SG.pro meat-the=3SG.CL in hunger IND-want.PRS-3SG
'S/he$_1$ wants the meat hungry$_1$.'
(e.g., when s/he is hungry, otherwise s/he doesn't like it that much).'

(66) min gošt-eke=**m** (be xawî) de-wê-(ê)t.
1SG.pro meat-the=1SG.CL in rawness IND-want.PRS-3SG
'I want the meat$_1$ raw$_1$.'

The conjunction reduction diagnostic used in chapter 3 (section §3.3) also demonstrates that experiencer subjects behave on par with canonical subjects in terms of deletion under identity in a coordinated clause. Finally, it can be observed throughout the examples above that experiencer subjects do not serve as hosts for oblique clitics, while the theme/patient argument does. This further suggests that experiencer arguments display the behavior that is typical of subjects in other types of clauses, while the non-subject argument shows the behavior that is typical of an object.

To sum up, *want*-type NCSs involve Ergative/Objective alignment in SSK, and Ergative/Accusative in GK, in both perfective and imperfective.[26] The structure for these verbs is shown in (67):

(67) Structure for *want*-type

[26] All else equal, it might be expected that SSK objects with *want* to allow possessor displacement of the type analyzed in the last section, since it bears Objective case. However, this does not seem to be possible:

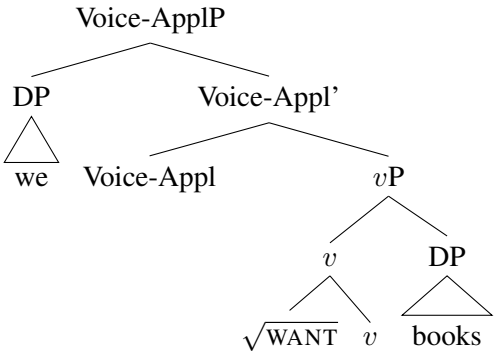
(i) a. min kitêb-eke-**yan=im** de-wê.
1SG.pro book-the-their=1SG.CL IND-want.PRS
'I want their book.'

b. *min kitêb-eke=**m** de-wê-*n*.
1SG.pro book-the=1SG.CL IND-want.PRS-PL
'I want their book.'

c. min kitêb-eke-**yan=im** wîst.
1SG.pro book-the-their=1SG.CL want.PST
'I wanted their book.'

d. *min kitêb-eke=**m** wîst-in.
1SG.pro book-the=1SG.CL want.PST-PL
'I wanted their book.'

This observation raises questions about how the lexical semantics of the verb interacts with possessor raising. Crosslinguistically, it has been shown that stative predicates are dispreferred, with acceptability in some languages can be improved depending on the context (e.g, Spanish, Tuggy (1980), as cited in Deal (2013:11)). In Sorani, asymmetries are found within eventive verbs, such that some eventive predicates (e.g., 'take away', 'tear') allow possessor raising, while some others (e.g., 'drive') are strongly dispreferred by speakers.



The generalization concerning this type is as follows:

(G4) Certain predicates have inherently oblique subjects in both aspects; the $\mathscr{O}$ head agrees with them. DOs in such clauses bear Objective case in SSK; Accusative in GK.

While the external argument in typical transitive clauses is introduced by canonical Voice, in (67) it is introduced by an Applicative (Voice) head, which assigns inherent Ergative to it. Beyond this, though, the clause is transitive in the ways shown above. On this last point, note that the possibility of Objective case on non-subject argument in the *want*-type is dependent on the Ergative case on the subject. Thus, it appears that Objective is not triggered by the aspect split per se.

5.2.2 Clausal Possession

In Sorani varieties (and in many Iranian languages more generally) possessive clauses of the type translated with English *have* show Ergative subjects in both aspects, and involve the existential particle *ha-/he-* and the copula *bûn*.[27] Illustrations of this type of clause, which we refer to as *clausal possession*, are given in (68).

(68) a. min komelek kitêb=**im** he-(y)e.
1SG.pro several book=1SG.CL exist-COP.PRS
'I have several books.'

b. ême kitêb=**man** he-(y)e.
1PL.pro book=1PL.CL exist-COP.PRS
'We have books.' (Kareem 2016:137, (55))

c. qalam-an=**man** ha-bû.
pen-PL=1PL.CL exist-COP.PST
'We had some pens.' (Thackston 2006b: 26)

The *ha/he* particle and the copula are also used in simple assertions of existence, as exemplified in (69). The obligatoriness of agreement as seen (69c) will play a role in the

[27] This seems to hark back to existential/copular stem in the Old Iranian period that was used to establish a possessive relation, which itself goes back to the Indo-European verbal stems **Hes-* and **b^heuH* (Mohammadirad 2021:504). Some examples from Old Persian can be found in 5.6.2 below.

later discussion as well, as it provides an important point of contrast with clausal possession where agreement with the corresponding argument is optional.

(69) a. mirôv-ak he-(y)e.
man-a exist-COP.PRS
'There is a man.'

b. mirôv-ak ha-bû.
man-a exist-COP.PST
'There was a man.'

c. zor qutabî le baxche-ke-da he-bu-*(n).
many student at garden-the-LOC exist-COP.PST-PL
'There were many students (in the garden).'

In terms of semantic interpretation, clausal possession is not limited to *ownership*-related possession, but can also be used for a number of other meanings of the type surveyed in Myler (2016). For the sake of completeness, we provide examples for each type in (70) through (75), with the optional agreement with the possessum illustrated when available.[28]

(70) *Ownership*

[28] In the literature, examples with only default agreement are found (Thackston 2006b; Kareem 2016). While default agreement is indeed the preferred form for the native speaker co-author and our consultants as well, the form agreeing with the possessum is also acceptable in Sorani in all configurations except for body-part and attribute. The latter is interpreted as singular generally, so it is not a candidate for optional plural agreement in the first place. The absence of plural agreement with body parts might be the manifestation of a type of alienable-inalienable distinction; we put this type of example to the side in the rest of the discussion.

For other varieties, see also Holmberg and Odden (2004) for gender agreement and Holmberg (2004) for number agreement with the possessum in a variety of Hawrami, along with the agreement with the possessor realized as MP clitic.

(i) a. Žiwa=m hæn-æ
Žiwa=1SG.CL exist-3F
'I have Zhiwa.(f)' (Hawrami, Holmberg and Odden 2004:44)

(ii) a. ktew=m hæn
book=1SG.CL exist.PRS.3SG
'I have a book.' (Hawrami, Holmberg 2004, as cited in Kareem 2016:137,(56a))

b. ktew-e=mân hæn-e
book-PL=1PL.CL exist.PRS-3PL
'We have books.' (Hawrami, Holmberg 2004, as cited in Kareem 2016:137,(56b))

Similarly, clausal possession in Southern Balochi also involves agreement both with the possessor and the possessum. Consider the 3pl agreement with the possessum in (iii) (although note that plurality is not marked on the argument). See Section 5.6.2 for more illustrations.

(iii) mæn-a ketab=on hæst-ænt
1SG.pro-OBL book=1SG.CL be-3PL
'I have the books.' (Southern Balochi, Hamo and Meihami 2023:22)

a. min se kiteb=**im** he-ye / he-n.
1SG.pro three book=1SG.CL exist-COP.PRS / exist-COP.PRS.PL
'I have three books.'

b. eme chend xanu-yek=**man** he-bu-(n)
1PL.pro several house-a=1PL.CL exist-COP.PST-PL
'We had several houses.'

(71) *Kinship*

a. min xushk-ek=im he-ye.
1SG.pro sister-a=1SG.CL exist-COP.PRS
'I have a sister.'

b. min se xushk=im he-ye / he-n.
1SG.pro three sister=1SG.CL exist-COP.PRS / exist-COP.PRS.PL
'I have three sisters.'

c. min se xushk=im he-bu-(n).
1SG.pro three sister=1SG.CL exist-COP.PST-PL
'I had three sisters.'

(72) *Part-whole*

a. em meze chwar qach-i behezi he-ye / he-n.
this table four leg-EZ sturdy exist-COP.PRS / exist-COP.PRS.PL
'This table has four sturdy legs.'

b. em meze chwar qach-i behezi he-bu-(n).
this table four leg-EZ sturdy exist-COP.PST-PL
'This table had four sturdy legs.'

(73) *Disease*

a. ême serêşe=man he-ye / he-n.
1PL.pro headache=1PL.CL exist-COP.PRS / exist-COP.PRS.PL
'We have headaches.'[29]

b. min (hemishe) serêşe=m he-bu-(n).
1SG.pro always headache=1SG.CL exist-COP.PST-PL
'I (always) had headaches.'

(74) *Body-part*

a. ême chaw-i shin=man he-ye / *he-n.
1PL.pro eye-EZ blue=1PL.CL exist-COP.PRS / exist-COP.PRS.PL
'We have blue eyes.'

[29]The plural form is realized as *he-n(e)*, and not *he-ye-n*.

b. ême chaw-i shin=man he-bu-(*n).
1PL.pro eye-EZ blue=1PL.CL exist-COP.PST-PL
'We had blue eyes.'

(75) *Attribute*

a. ême sebr-i zor=man he-ye.
1PL.pro patience-EZ much=1PL.CL exist-COP.PRS
'We have much patience.'

b. ême sebr-i zor=man he-bu.
1PL.pro patience-EZ much=1PL.CL exist-COP.PST
'We had much patience.'

Looking at the syntax of this construction, we observe that while the oblique argument shows the behavior that is typical of Ergative DPs, the non-subject argument behaves differently from that of the *want*-type predicates. Viewed together, these differences point to the conclusion that this possessum argument bears Nominative case.

First, unlike the DO of *want*, no complementarity exists between an overt argument and its indexer:[30]

(76) a. to ewan=it he-ye / he-n.
you them=2SG.CL exist-COP.PRS / exist-PL
'You have them.'

b. ême kiteb-ek-an-yan=man he-bu-(n)
we book-the-PL-3PL.CL=1PL.CL exist-COP.PST-PL
'We had their books.'

Moreover, while a double-oblique pattern is observed for *want* in Garmiani, where both arguments are realized as MP clitics, this is not possible with clausal possession. Instead, the grammatical version is identical to its SSK counterpart.[31]

(77) a. *ême he-bû=yan=man
1PL.pro exist-COP.PST=3PL.CL=1PL.CL
'We had them.' (GK)

[30]The same property also holds for Northern Kurdish dialects, as well as potential agreement with the non-oblique argument, as seen in (i). (IZP = Plural Izafe particle).

(i) te du sêv wêt he-in.
2SG.OBL two apple.PL IZP existent-COP.PL
'You have two apples.' (Northern Kurdish; Haig 2008:272, (292))

[31]As reported in Haig (2008:260), certain expressions of sensory perception, which involve a body-part term, also fall into the category of NCSs in Kurdish. The most common of them is *çav ka(f)tin* 'catch sight of' (lit: eyes fall). Looking at varieties that have overt case, this construction further confirms the subjecthood property of the oblique-case marked argument as it can bind the subject-oriented reflexive *xô* 'self', as shown in (i). Moreover, there is no complementary distribution between the overt internal argument and its indexer. In that regard, it behaves like the 'have'-predicate (perhaps unsurprisingly as it involves body-part relation).

b. *ême he=yan=man-bû
1PL.pro exist=3PL.CL=1PL.CL-COP.PST
'We had them.' (GK)

c. ême he=man bû-*n*
1PL.pro exist=1PL.CL COP.PST-3PL
'We had them.' (GK/SSK)

In addition, unlike what is seen with *want* above, the clausal possessive cannot be passivized, irrespective of the type of possession involved. Consider (78):

(78) a. qelem-an=man ha-bû.
pen-PL=1PL.CL exist-COP.PST
'We had some pens.'

b. *qelem-an ha-(di)ra-bû-(n).
pen-PL exist-PASS.PST-COP.PST-PL
Intended: 'Some pens were had (by us).'

We interpret these behaviors to mean that the non-subject in clausal possession is syntactically identical to the sole argument of the existential construction (cf. (69)), and as such bears Nominative case.[32] One difference between these constructions is that while MS Agreement with the Nominative argument is obligatory in existentials, it is optional in

(i) waxt-ē min *çav* dôtmām-ā xô kaft-*in*.
time-OBL 1SG.OBL eye.PL cousin-EZ self fall.PST-PL
'When I caught sight of my cousin.' (lit. When to-me eyes fell on my cousin)
(MacKenzie 1962:286, as cited in Haig 2008:260, (262))

This behavior is not unsurprising in that in Northern Kurdish dialects, the direct-case bearing argument governs agreement on the verb, regardless of its grammatical function (e.g., Haig 1998; Gündoğdu 2011; Atlamaz 2012; Akkuş 2020).

(ii) ta *az* na-vē-*m*.
2SG.OBL 1SG.DIR NEG-be.necessary.PRS-1SG
'You don't want/need me.' (MacKenzie 1961:192, as cited in Haig 2008:261, (268))

[32] At least on the surface, the possessor c-commands the possessee given the availability of bound pronoun interpretations, (i). In this regard, *want*-predicates also show the same behavior, (ii), thus this is not telling for our purposes.

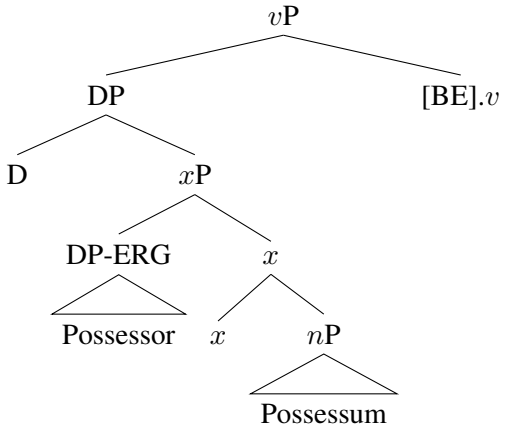
(i) hemû$_i$ qutabiye-k kiteb-ek-an-i xo=y$_i$ he-bu.
every student-a book-the-PL-EZ self=3SG.CL exist-COP.PST
'Every$_i$ student had his$_i$ books.'

(ii) hemû$_i$ qutabiye-k kiteb-ek-an-i xo=y$_i$ wîst.
every student-a book-the-PL-EZ self=3SG.CL want.PST
'Every$_i$ student wanted his$_i$ books.'

clausal possessions. While we do not have an account for this difference, we will see the same optionality in passives of ditransitives as well in §5.3.

The possessor is generated inside of the possessum, as shown in (79) (cf. Kayne 1993; Szabolcsi 1981; Deal 2013):[33]

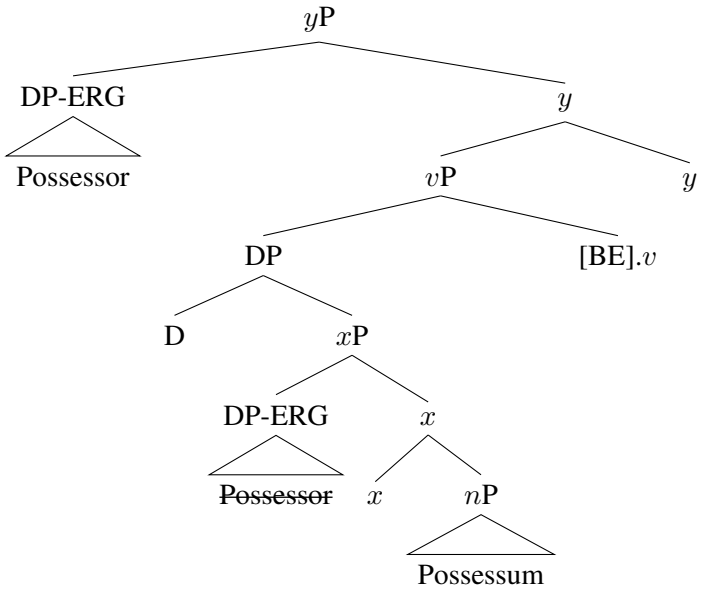
(79) Possessive structure



The possessor argument then moves out of this structure, as shown in (80); we do not have any specific claim as to where the possessor moves in this step, and represent its landing site with y:

(80) Possessive after possessor moves

[33] It is possible that the sister of v[BE] here is internally complex, with a silent element as the sister of the DP expressing its spatial-temporal location. Concerning the details of where the possessor is generated, we will explore an alternative in 5.4 below.



What is important for our purposes is that the possessor must leave the possessed DP (cf. Deal 2013 for this obligatory step in Nez Perce) and become the subject. As we will discuss in 5.4 below, there are reasons for thinking that having it move first to an intermediate site like y will help to explain some of clausal possession's similarities with IO-passivization. After this movement, MS Agreement from $\mathscr{O}$ targets the Ergative possessor, and MS Agreement from T targets the Nominative possessum. We will have more to say about the case properties of the possessor in 5.4.

Regarding the possessum, this analysis accounts for why it triggers agreement, but not for the optionality of this. Though (as noted earlier) we lack an explanation for the optionality, it is worth noting that crosslinguistically, optionality of this type is more characteristic of object-verb agreement relative to subject-verb agreement, in that if two arguments show agreement, the higher one exhibits obligatory agreement while the lower one may optionally do so in some languages.[34] For some additional comparative observations on this effect within Iranian, see 5.6.2.

5.2.3 Interim summary

For the non-canonical subjects of the *want*-type predicates, a straightforward way of viewing their case behavior is to hold that these DPs are assigned Ergative inherently, rather than structurally. The same kind of analysis could be extended to clausal possession as well, although we will return to this point in 5.4. In any case, having case assigned inherently provides an explanation for why Ergative case assignment is not sensitive to the alignment split:

[34] See e.g., Carstens 2001 or Gambarage 2021 for Nata and some other Bantu languages, Muxí 1996 for optional participial agreement with direct object clitics in Catalan, or Bickel et al. 2007 for the Kiranti language Puma (see also the next section for the same property in IO-passives of ditransitives in Kurdish). Baker 1988 reports the same property for Chichewa and many other languages.

(81) INHERENT ERGATIVE: Case is assigned to NCS arguments in a way that is independent of the aspect system; that is

a. Subjects of *want*-predicates are assigned [+subj,+obl] **inherently** by Appl.

b. Possessor arguments in clausal possession are assigned [+subj,+obl] **inherently** by x.

As we saw above, for the *want* type of clause the DO bears Objective Case in SSK and Accusative case in GK. Beyond the inherent Ergative property, then, these clauses are thus basically typical transitives.

The syntax of possession involves what appears to be an Ergative subject, and a Nominative object.[35] We posited a structure in which the Possessor originates higher than the Possessum, and moves out of the structure prior to the application of indexation operations.[36] As we will see in the next section, this case-behavior of clausal possessives has a striking parallel in the passivization of ditransitives. We will therefore look at these in detail next in 5.3 before making some proposals concerning both possession and passivization in

[35]It is worth pointing however that the structural properties of such verbs may exhibit variation among dialects, calling for potentially different analyses. Recall that we argued that in SSK and GK, the non-subject argument for *want*-type behaves like a moved clitic that is realized as MP agreement. In this regard, the non-subject in clausal possession behaves differently from other NCS non-subjects, and presumably bears Nominative case. However, *want*-type predicates in the Badīnānī variety seem to pattern more like clausal possession in Sorani (Badīnānī is part of the Northern Kurdish dialect group and has overt case marking at least on the pronouns in terms of direct-oblique). This can be seen in the fact that the non-subject argument is not in complementary distribution with the MP agreement-indexer on the verb. Consider (i) for the verb *vyān* 'be necessary, be desirable'. Note that it is the needed entity that controls the agreement on the verb. (Glosses have been slightly modified from the sources.)

(i) ta *az* na-vē-*m*.
2sg.OBL 1sg.DIR NEG-be.necessary.PRS-1SG
'You don't want/need me.' (MacKenzie 1961: 192, as cited in Haig (2008):261, (268))

The fact that the oblique-case marked element binds the subject-oriented reflexive xô 'self' confirms their status as grammatical subjects, (ii).

(ii) min$_i$ t-vē-*t* *hesp*-ē xô$_i$.
1sg.OBL IND-be.necessary.PRS-3SG horse-EZ self
'I want/need my own horse.' (and noone else's) (Haig (2008):261, (269))

Furthermore, the oblique element can also control co-referential deletion, another subjecthood property.

(iii) min$_i$ d-vē-*t* [PRO$_i$ bi-ç-im mal-ē].
1sg.OBL IND-be.necessary.PRS-3SG IRR-go.PRS-1SG house-OBL
'I want/need to go home.' (Şirin 1996: 18, as cited in Haig (2008):261, (270))

[36]The heterogeneous nature of non-canonical subject constructions is not surprising from a crosslinguistic perspective (see e.g., Belletti and Rizzi 1988; Landau 2010 for experiencers). For example, in Tsez, the experiencer construction (also known as affective construction) involves the experiencer in the lative form, and the stimulus is in the absolutive case. Polinsky (2021) argues that this construction in fact is not uniform, and consists of two subclasses, which she calls *know*-verbs and *like*-verbs.

5.4.

5.3 Ergative case in the passivization of ditransitives

As we saw above in Chapters 3 and 4 (cf. §4.1), the passivization of transitives is unremarkable in terms of alignment behavior: the internal argument is raised to become the grammatical subject as the sole remaining argument, and triggers MP Agreement on the verb, as shown in (82). The Agent can be optionally realized as a 'by'-phrase.

(82) a. (ême) ewan=**man** kuşt.
1PL.pro 3PL.pro=1PL.CL kill.PST
'We killed them.'

b. (ewan) kuj-ra-*n* (le layen ême-we).
3PL.pro kill.PRS-PASS.PST-3PL (from side 1PL.pro-ITER)
'They were killed (by us).'

This section examines the passivization patterns in ditransitives, in a way that highlights a contrast between DO-passivization versus IO-passivization. While the former behaves exactly as expected, with a Nominative patient/theme that functions as a typical subject (thus similar to transitives), the latter presents a number of intriguing properties. In particular, the 'passivized-on' goal behaves in the way typical of Ergative subjects, and appears with a co-indexed MP clitic; at the same time, the DO is indexed by optional MP Agreement. Interestingly, these two properties are also found with clausal possession, as discussed in 5.2. After analyzing IO-passives in this section, we thus turn to the properties that they share with clausal possessives in 5.4.

Before we proceed, a note is in order concerning terminology. We will continue to use the labels *DO*-passive and *IO*-passive for the two clause-types that we will analyze. One of the points that will be developed as we proceed is that the DO and IO in these passive types becomes the subject of the clause. The labels DO/IO should thus be understood as 'what would be DO/IO in an active clause.'

5.3.1 Basic facts

The examples in (83) are active ditransitive clauses in the imperfective and perfective, respectively.

(83) a. Azad dyarî-ek-an pê=man de-d-at.
Azad gift-the-PL to=1PL.CL IND-give.PRS-3SG
'Azad will give the gifts to us.'

b. Azad dyarî-ek-an=î pê=man da.
Azad gift-the-PL=3SG.CL to=1PL.CL give.PST
'Azad gave the gifts to us.'

As far as we can tell, Sorani ditransitives are formed with the DO higher than the IO; or at least, there is no evidence that we are aware of for an IO>DO underlying order.

The surface syntax of ditransitives is clearly compatible with DO being higher than IO. This can be seen in the contrast between (84) and (85), which shows that in the active ditransitive, an anaphoric object cannot be bound by an IO. On the other hand, a pronominal DO can bind the anaphoric IO.

(84) *ewan xoman=yan pê=man nîšan da.
3PL.pro ourselves=3PL.CL to=1PL.CL show give.PST
'They showed ourselves to us.'

(85) ewan ême=yan be xoman nîšan da.
3PL.pro us=3PL.CL to ourselves show give.PST
'They showed us to ourselves (in the mirror).'

Another argument comes from bound variable interpretations.

(86) a. min hemû qutabî-yek=im be dayk=î nîšan da.
1SG.pro every student-a=1SG.CL to mother=3SG.CL show give.PST
'I showed every student$_i$ to his$_{i/k}$ mother.'

b. min dayk=î=m be hemû qutabî-yek nîšan da.
1SG.pro mother=3SG.CL=1SG.CL to every student-a show give.PST
'I showed his$_{k/*i}$ mother to every student$_i$.'

c. hemû qutabî-yek dayk=î=y pê-nišan di-ra.
every student-a mother=3SG.CL=3SG.CL to-show give.PRS-PASS.PST
'Every student$_i$ was shown his$_{i/k}$ mother (in the garden).'[37]

A further diagnostic is scope. SSK is a surface-scope language, as indicated in (86a) and (86b) (see Baker and Atlamaz (2014:36) for the illustration of the same property in Northern Kurdish). Note that a lower existential can outscope a higher universal quantifier, (86c); this is a general property of existential quantifiers, thus it is not incompatible with the surface-scope property.

(86) a. qutabî-yek hemû name-yek=î bînî.
student-a every letter-a=3SG.CL see.PST
'A student saw every letter.' $\exists > \forall$; $*\forall > \exists$

[37] Anaphor binding of the type seen in (i) shows that the raised IO binds the DO reflexive. Karimi (2013) interprets this to mean that the IO is merged higher than the DO, and thus c-commands it. However, this is not necessarily the case: it only shows that the IO is on the surface in a position higher than the DO (without being informative as to its original position).

(i) ême xoman=man pe=nîšan di-ra
1PL.pro ourselves=1PL.CL to=show give.PRS-PASS.PST
'We were shown ourselves.' (Karimi 2013:25b)

Again some speakers, including Shuan Karim, disallow the form *pe=nîšan*, and only accept *pîšan*.

b. ew name-yek=î bo hemû qutabîy-ek nard.
he letter-a=3SG.CL to every student-a send.PST
'He sent a letter to every student.' $\exists > \forall$; $*\forall > \exists$

c. ew hemû name-yek=î bo qutabîy-ek nard.
he every letter-a=3SG.CL to student-a send.PST
'He sent every letter to a student.' $\forall > \exists$; $\exists > \forall$

Moving on to passivization, DO passives corresponding to (83) are illustrated in (87). The derived subject behaves as the sole argument of an intransitive clause, as such shows MP agreement with the verb:

(87) a. dyarî-ek-an pê=man de-d-rê-*n*.
gift-the-PL to=1PL.CL IND-give.PRS-PASS.PRS-PL
'The gifts are given to us.'

b. dyarî-ek-an pê=man di-ra-*n*.
gift-the-PL to=1PL.CL give.PRS-PASS.PST-PL
'The gifts were given to us.'

These passives are unremarkable, just as the passives of transitives are. However, this is not the only passive option available. It is also possible to have what appears to be IO passivization, in which the IO argument raises to become the grammatical subject. When this happens, the IO is indexed by an MP clitic, while the DO is indexed with MP agreement on the verb; this MP agreement is optional.

Both of these indexations behave like MS Agreement in cooccurring with an overt argument.[38] The IO counterparts of (83) are given in (88).

(88) a. ême dyarî-ek-an=man pê-de-d-rê-(n).
1PL.pro gift-the-PL=1PL.CL to-IND-give.PRS-PASS.PRS-PL
'We will be given the gifts.'

b. ême dyarî-ek-an=man pê-di-ra-(n).
1PL.pro gift-the-PL=1SG.CL to-give.PRS-PASS.PST-PL
'We were given the gifts.'

In (89) we provide more examples that involve various person-number combinations.

(89) a. to *ewan*=et pê-di-ra-*(n)*.
2SG.pro them=2SG.CL to-give.PRS-PASS.PST-PL
'You.sg were given them (the letters).'

[38] Some variation has been reported concerning MP agreement with the patient argument. Kareem (2016:134) suggests that co-varying agreement is always present and marks examples without the appropriate object agreement as ungrammatical (see *ibid*, fn.29, p.135), while Karimi (2013:75) suggests that only default agreement is available. However, our investigation reveals that both options are indeed possible (including for the native speaker co-author of this study), with some variation among speakers in terms of preference.

b. to *name-k-an*=it pê-de-d-rê-*(n)*.
2SG.pro letter-the-PL=2SG.CL to-IND-give.PRS-PASS.PRS-PL
'You.sg are given the letters.'

c. to *chend xanu-yek*=it pê-de-d-rê-*(n)*.
2SG.pro several house-a=2SG.CL to-IND-give.PRS-PASS.PRS-PL
'You.sg are given several houses.'

d. Mary *dyarî-eke*=y pê-de-d-rê-*(t)*.
Mary gift-the=3SG.CL to-IND-give.PRS-PASS.PRS-3SG
'Mary will be given the gift.' (adapted from Kareem 2016:133)

e. êwe aw pyaw-ane=tan wek xizmetkar pe-a-di-re-*(n)*.
2PL.pro that man-PL=2PL.CL as servant to-IND-give-PASS.PRS-PL
'You will be given those men as servants.' (adapted from Karimi 2013:25b)

f. to *ême*=t pê-di-ra-*(yn)*.
2SG.pro us=2SG.CL to-give.PRS-PASS.PST-1PL
'You.sg were given us (as partners in a game).'[39]

In short form, IO passives have the following properties. First, the surface subject passive shows the indexation pattern typical of Ergatives, in a way that is not conditioned by aspect. Second, the DO is indexed (optionally) with MP Agreement, in a way that is typical of Nominative case. In addition, while typical DOs and their corresponding indexers are in complementary distribution, this is not the case in IO passives, where both arguments are apparently involved in MS Agreement.

5.3.2 Structure of the IO passive

When we apply various diagnostics that have been used earlier in this book, it can be shown that IO passives have (i) the IO as a typical subject; while (ii) the DO remains in situ. We approach each of these points in turn, focusing on which case each argument receives.[40]

[39]This form is more readily accepted by our GK speakers, while for some of the SSK speakers find it somewhat degraded.

[40]Questions similar to the ones that we ask here have been examined in the literature on Insular Scandinavian. In Faroese, for example: the active version of the verb *giva* 'give' is presented in (i-a). In passive (i-b), the direct object moves to the subject position, where it bears nominative case and shows subject-verb agreement. On the other hand, in passives in which the IO moves to subject position rather than the DO, dative case is preserved on the derived subject. Interestingly, accusative case on the DO is also lost, (i-c). The same pattern is illustrated for the verb *sýna* 'show' in (ii), which also shows that it is the dative subject that (may) control agreement.

(i) Faroese 'give' (Thráinsson et al. 2004:270)

a. Tey góvu gentuni telduna.
they gave the.girl.DAT the.computer.ACC

b. Teldan bleiv givin gentuni.
the.computer.NOM was given the.girl.DAT
'The computer was given to the girl.'

A first question is whether the IO passive subject behaves as a typical subject, and not like e.g., an argument that has been topicalized (as assumed in Karimi 2010). This option is a plausible alternative since it has been argued in studies of the history of Iranian languages that certain grammatical subjects are the result of a reanalysis of hanging topics (see Jügel and Samvelian (2020); Bynon (1979); Jügel (2009); also see §5.6.2 for some discussion). In the case of Sorani, however, several arguments lead to the conclusion that the IO behaves like the subjects of other types of clauses.

A first piece of evidence is the possibility of quantified IOs. Quantifiers cannot be topicalized, as shown in (90):[41]

(90) *kes, min ne**=m** bînî
anybody 1SG.pro NEG=1SG.CL see.PST
'Anybody, I didn't see.'

However, IO passives are possible with quantifiers, as seen in (91), suggesting they are subjects, not topics:[42]

---

c. ?Gentuni bleiv givin ein telda.
the.girl.DAT was given a computer.NOM
'The girl was given a computer.'

(ii) Faroese 'show' (Thráinsson et al. 2004:270)

a. Tey sýndu gestunum tilfarið.
they showed the.guests.DAT the.material.ACC
'They showed the guests the material.

b. Tilfarið bleiv sýnt gestunum.
the.material.NOM was shown the.guests.DAT
'The material was shown to the guests.'

c. Gestunum bleiv sýnt {?nógv tilfar / ??tilfarið} um Heinesen.
the.guests.DAT were shown much material / the.material on Heinesen
'The guests were shown {a lot of material / the material} about Heinesen'

Tilfar and *tilfarið*,- in this example are syncretic for nominative and accusative case. Moreover, the ? versus ?? reflect the effect of definitess effect along with the dispreference of IO passivization relative to DO passivization. Einar F. Sigurðsson (p.c.) informs us that the word order is a strong indication for the subjecthood although the definiteness effect still needs to be considered.

It is also worth noting that accusative case is preserved with certain verbs, e.g., *ynskja* 'wish', when the IO is raised to the subject position. Whether this case retention is related to the fact that 'wish' disallows DO/theme passivization (which is the preferred strategy even with verbs exhibiting symmetric passivization) is an open question.

See Jónsson (2009) and F. Sigurðsson et al. (2021) for more illustrations of the case/agreement patterns in Faroese, and Insular Scandinavian more broadly.

[41] cf. footnote 5, ex. (i) for the topicalization of a definite DP (optionally associated with a resumptive pronoun within the clause).

[42] Karimi (2010:705) notes that "such passive constructions [IO passivization] in Kurdish is that they force a strongly topicalized reading of the indirect object". However, the above examples show that this cannot be the case; moreover, our consultants (as well as the native speaker co-author) report no such intuition, echoing Kareem (2016) that IO passivization is no more topical than DO passivization. See Kareem (2016:ch. 3.6.) also for more arguments against the approach of Karimi (2010).

(91) a. kes pare-ke=**y** pê-ne-di-ra
noone money-the=3SG.CL to-NEG-give.PRS-PASS.PST
'Noone was given the money.'

b. çend qutabîy-êk pare-ke=**yan** pê-di-ra
several student-a money-the=3PL.CL to-give.PRS-PASS.PST
'Several students were given the money.'

Depictive secondary predicates point to the same conclusion. As discussed earlier, depictives in Sorani cannot modify indirect objects (recall (64c)), whether they are topicalized or not. However, the raised IO can license a depictive, (92), which is expected if it has moved to the subject position.

(92) ewan gošt-eke=yan be serxoši bo nêrd-ra
3PL.pro meat-the=3PL.CL in drunk to send.PRS-PASS.PST
'They$_1$ were sent the meat drunk$_1$.'

The creation of new binding configurations rather than triggering of Weak Crossover (WCO) effects is another hallmark of A-movement, which would not be expected under a topicalization account. The binding facts, repeated here as (93), indicate that the IO passivization establishes a new binding configuration, just like the DO passivization, shown in (94).

(93) a. min dayk=î=m be hemû qutabiy-êk nîšan da.
1SG.pro mother=3SG.CL=1SG.CL to every student-a show give.PST
'I showed his$_{k/*i}$ mother to every student$_i$.'

b. hemû qutabiy-êk dayk=î=y pê-nišan di-ra.
every student-a mother=3SG.CL=3SG.CL to-show give.PRS-PASS.PST
'Every student$_i$ was shown his$_{i/k}$ mother (in the garden).'

(94) a. dayk=î hemû qutabiy-êk=î bînî.
mother=3SG.CL every student-a=3SG.CL see.PST
'His$_{k/*i}$ mother saw every student$_i$.'

b. hemû qutabiy-êk bîn-ra le layen dayk=î=yewe.
every student-a see.PRS-PASS.PST from side mother=3SG.CL-ITER
'Every student$_i$ was seen by his$_{i/k}$ mother.'

Yet another argument comes from conjunction reduction, which allows coreferential deletion across coordinate clauses (see Chapter 3). The passivized IO functions as a grammatical subject according to this diagnostic too.

(95) a. kes pare-ke=y pê-ne-di-ra û roysht.
noone money-the=3SG.CL to-NEG-give.PRS-PASS.PST and leave.PST
'Noone was given the money and left.'

b. ême dyarî-ek-an=man pê-di-ra û roysht-în.
1PL.pro gift-the-PL=1SG.CL to-give.PRS-PASS.PST and leave.PST-1PL
'We were given the gifts and (then) left.'

Finally, it is worth noting that the IO in IO passives does not serve as a clitic host. This is again what is expected from a typical subject in the language.

Moving on to the status of the DO, a first observation is that (in contrast to the IO) this argument continues to be a clitic host– see e.g. (92) and the rest of the examples above. This shows that it behaves like DOs in other clauses (minimally, that it has not been moved higher that typical DOs).

As we noted above, DOs in IO passives do not look like they possess *Accusative* (or *Objective*) case, but are instead Nominative case. First, recall that in active transitives, DOs (and other internal arguments) are in complementary distribution with their indexers in both the perfective and imperfective aspects. On the other hand, when the IO moves to the subject position, the DO may cooccur with an indexer, which in our analysis is the result of it showing agreement with T, which targets Nominative case:

(96) a. to *ewan*=et pê-di-ra-*(n)*
2SG.pro them=2SG.CL to-give.PRS-PASS.PST-PL
'You.sg were given them (the letters).'

b. to *name-k-an*=it pê-de-d-rê-*(n)*
2SG.pro letter-the-PL=2SG.CL to-IND-give.PRS-PASS.PRS-PL
'You.sg are given the letters.'

This behavior is typical of Nominative arguments in Sorani, but is not expected with Accusatives.

Garmiani is informative in this respect as well. Recall that in GK, the DO indexer is realized as an MP clitic in both aspects, as opposed to SSK, and that this holds even for the non-canonical subject constructions of the *want*-type, where we observe the so-called double-oblique pattern. With IO passivization, though, GK patterns with SSK, and the double-oblique realization is ungrammatical. This is shown in (97):

(97) a. *to pê=yan=it di-ra
2SG.pro to=3PL.CL=2SG.CL give.PRS-PASS.PST
'You.sg were given them (the letters).' (cf. (89a))

b. *to bo Narmin=yan=it pê-di-ra
2SG.pro for Narmin=3PL.CL=2SG.CL to-give.PRS-PASS.PST
'You.sg were given them (the letters) for Narmin.'

c. *to pê=man=it di-ra
2SG.pro to=1PL.CL=2SG.CL give.PRS-PASS.PST
'You.sg were given us.'

A further comparative observation pointing to the idea that DOs are Nominative in IO passives is seen in the related Hawrami variety studied in Holmberg and Odden (2004).

This language– unlike Sorani and Garmiani– displays overt case marking on noun phrases. DO passivization is illustrated in (98), where the derived subject shows MP agreement on the verb, as shown in (98b) and (98c).

(98) Hawrami (Holmberg and Odden 2004:51)

a. (að) zar-akæ-i mæ-ð-o ba žiway
3SG.pro present-the-ACC INFL-give-3SG to Žiway
'He will give the present to Zhiwa.'

b. zar-akæ mæ-ðır-y-*o* ba žiway
present-the INFL-give-PASS-3SG to Žiway
'The present will be given to Zhiwa.'

c. zar-ak-an mæ-ðır-y-*â* ba žiway
present-the-PL INFL-give-PASS-3PL to Žiway
'The presents will be given to Zhiwa.'

The IO passivization patterns are illustrated in (99). Similar to Sorani Kurdish, the raised IO is co-indexed with an MP clitic on the clitic host, while the DO is indexed by MP agreement realized on the verb:

(99) Hawrami (Holmberg and Odden 2004:52)

a. Žiwa *zar*=**iš** pænæ mæ-ðır-y-*o*.
Žiwa present=3SG.CL to INFL-give-PASS-3SG
'Zhiwa will be given a present.'

b. Žiwa *gul-e*=**š** pænæ mæ-ðır-y-*â*.
Žiwa flower-PL=3SG.CL to INFL-give-PASS-3PL
'Zhiwa will be given flowers.'

c. Zawro-k-ân *zar*=**šân** pænæ mæ-ðır-y-*o*.
child-the-PL present=3PL.CL to INFL-give-PASS-3SG
'The children will be given a present.'

Hawrami furthermore provides direct evidence concerning the case on the DO of a type that is not available in Sorani Kurdish due to an absence of case distinctions on nominals. As noted by Holmberg and Odden (2004) and shown in (98a) and (99a), the DO loses its accusative case marking when IO passivization takes place.

Finally, recall from fn. 7 example (ii), repeated here as (100), that the DO possessor can be displaced in a configuration that involves prepositional arguments, including an applied constituent (the PP is in the preferred postverbal position).

(100) a. (min) xwardin-eke**=t=im** bird bo ewan.
1SG.pro food-the=2SG.CL=1SG.CL take.PST for them
'I took away your food for them.'

b. (min) xwardin-eke**=m** bird-*ît* bo ewan.
1SG.pro food-the=1SG.CL take.PST-2SG for them
'I took away your food for them.'

When the applied constituent is passivized to become the grammatical subject, the DO possessor cannot be MP-Agr displaced onto the verb.

(101) a. ewan xwardin-eke**=t=yan** bo bi-ra.
1SG.pro food-the=2SG.CL=1SG.CL for take.PRS-PASS.PST
'They were taken your food for.'

b. *ewan xwardin-eke**=yan** bo bi-ra-*t*.
1SG.pro food-the=1SG.CL for take.PRS-PASS.PST-2SG
'They were taken your food for.'

The ungrammaticality of (101b) is expected given the arguments of this section in conjunction with the analysis of external possession in §4.3. There, we argued that realization of possessors as MP agreement happens only in clauses in which the possessed argument received Objective case. The fact that possessors cannot be realized in this way in IO passives follows if DOs in these are not assigned Objective, but instead receive Nominative.

5.3.3 Interim Summary

Taken together, these arguments lead to the conclusion that IO passives have (i) an IO subject that agrees in the way that is typical of Ergative arguments, and (ii) a DO that agrees (optionally) in a way that is typical of arguments with Nominative case:

(G5) In ditransitives, IOs can be passivized on and become subjects; the DO remains in situ; case-wise

(a) The IO is Ergative, and obligatorily MS agreed with; while

(b) The DO is Nominative, and optionally MS agreed with.

Both of these effects are of interest. Taken together, they amount to a clause in which two separate DPs show MS Agreement. MS Agreement in Sorani is typically found with with a unique Subject argument; as such, IO passives are a kind of 'double Subject' construction. Subjecthood is not a monolithic notion, but instead refers to several properties that often pattern together. What this situation shows is that sometimes two arguments bear some of the relevant properties– in this case, being agreed with, which is encoded in our case system in the feature [+subj].

5.4 Case assignment in IO passives and possessives: Some remarks

Above we examined two instances of what appears to be Ergative/Nominative clauses: clausal possession and IO passivization. In this section we offer some remarks as to why

these particular clauses behave in this way, with an eye towards the syntactic factors that they share. The discussion concentrates on (i) identifying shared properties of the two constructions, and (ii) providing a list of factors that appear to be relevant to a formal theory of case assignment.

To set the theoretical context, and beginning with IO passives, we note that the case of the DO argument does not raise new difficulties. The fact that it is Nominative is derivative of whatever makes DOs Nominative in passive clauses more generally (that is to say, in passives of transitives, or DO passives of ditransitives). The case of the IO argument, on the other hand, calls for further comment. The objects of prepositions do not behave as if they are Ergative elsewhere in the language; rather, it appears that there is something about case assignment in IO passives that produces Ergative on an argument that is otherwise assigned Accusative. In other words, it looks as if these IOs might be an instance of a **derived subject** with Ergative case.

The status (or existence) of derived Ergative arguments plays an important role in comparing theories of case assignment. This point emerges clearly in Baker and Bobaljik's (2017) review (see also Deal 2017a, with reference to the differences between two approaches to Ergative case assignment: inherent case theories, and dependent case theories. The best-case scenario for the former is that there should never be derived subjects that are assigned Ergative: the only source for this case is a specific case-assigner (i.e. a head), so that there is no way to become Ergative 'through the back door.' Dependent case approaches make a contrasting prediction. They allow derived subjects to have Ergative when two DPs are in certain kinds of structural relations, i.e. where the case assignment procedure can see both).

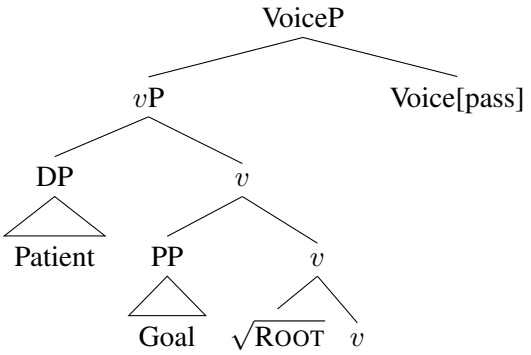
Baker and Bobaljik provide illustrations from different languages in which it appears that there are two internal arguments, e.g., applicatives of unaccusatives, the higher of which is assigned Ergative. For their purposes, this suffices to show that one of the central predictions of inherent case approaches is incorrect. Interestingly, none of their examples involve passivization of ditransitives. Deal's (2017a) discussion highlights the importance of looking at such clauses, and notes that are no languages reported as showing derived Ergative subjects in passivized ditransitives in the literature that she surveys. The Sorani IO passive thus appears to be quite unusual typologically. Further discussion of this is left to Sect. 6.1.3.

As a first step towards understanding why it might have special case properties, we begin with the ditransitive structure in (102), which is passive and hence has no external argument:[43]

[43] In line with the approaches in Embick 1997; Bruening 2013; Legate et al. 2020; Akkuş 2021. A piece of evidence for the unprojected nature of the external argument in Sorani passives comes from depictives. As shown in (i), depictives require a projected argument to be licensed, and as such may not be associated with the implicit agent of passives, (i.c), represented as *e*.

(i) a. (min) kirêmıstî$_1$-yeke=m be bestuyi$_1$ xward.
1SG.pro ice.cream-the=1SG.CL in frozen eat.PST
'I ate the ice cream$_1$ frozen$_1$.'

(102) Passive structure



We will assume that the higher subject position in Sorani simply attracts whatever DP is highest in the clause below it. This will mean that there is an additional step in IO passives relative to their DO counterparts.

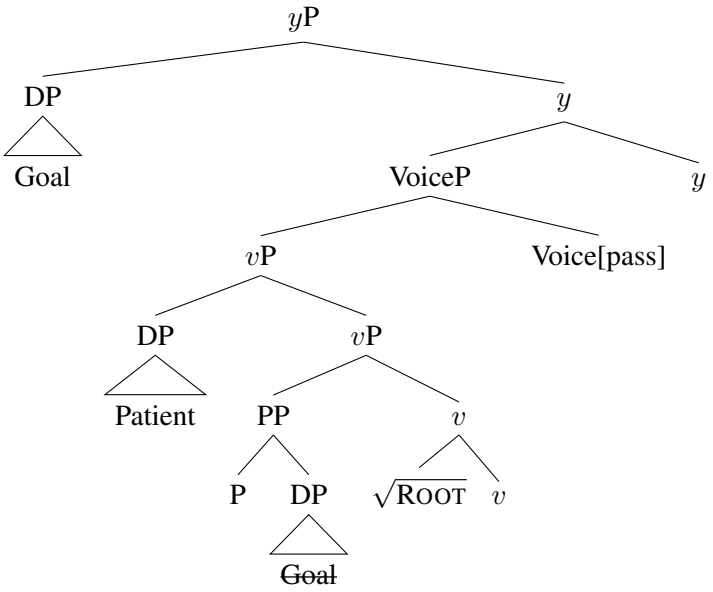
Concentrating first on the DO passives, it is important repeat the observation that DO passives **do not** involve a derived Subject with Ergative case. Rather, the DO in such passives is Nominative. Within a dependent case theory, this effect could be analyzed as the result of (102) being intransitive: that is, the IO is a PP, and there is no second DP local to the DO that would result in Ergative features being assigned.

In IO passivization, the key observation is that the IO must be moved above the DO in order to be moved later to subject position. We schematize this movement in (103), where the head triggering this movement is given as y. Note that as in other constructions seen earlier, the preposition is stranded by movement of its DP complement:

(103) Movement of IO

b. (min)$_2$ kirêmıstî-yeke=m be serxošî$_2$ xward
1SG.pro ice.cream-the=1SG.CL in drunk eat.PST.
'I$_2$ ate the ice cream drunk$_2$.'

c. kirêmıstî-yeke$_1$ e_2 {be bestuyi$_1$ / *be serxošî} xu-rā
ice.cream-the in frozen / in drunk eat.PRS-PASS.PST
'The ice cream$_1$ was eaten {*drunk$_2$ / frozen$_1$}.'



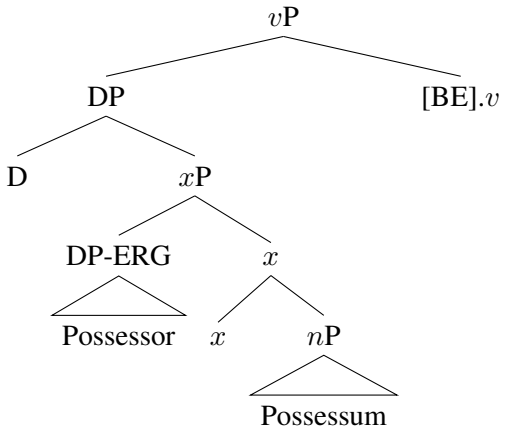
The nature of this movement raises several questions– for one, it has to specifically target the IO, and not the DO. We do not have a stance on what kind of operation this might be, although it relates to the discussion of leapfrogging movement in the literature (e.g., Bobaljik 1995; McGinnis 2001; Jeong 2007; Legate 2014; Sheehan 2017).[44]

For the purposes of this section, the important aspect of (103) is that it provides a way of thinking about why the IO bears Ergative case features. If the case-assignment procedure is (re)applied to (103), then the clause that it sees does in fact contain another DP argument that is local to the IO. The derived subject's Ergative case might then be expected along the lines outlined in our discussion of Baker and Bobaljik above. The key question, though, is how to make this behavior of the IO Aspect-insensitive; something about (103) must produce Ergative case in both the imperfective and the perfective (see below).

The next question to ask concerns whether the case-effects produced in (103) might be found in other parts of the language. In particular, we noted at the beginning of this section that it would be instructive to consider what clausal possession and IO passives have in common, since these are the only Ergative/Nominative clause types in the language. Above we analyzed clausal possession with the structure in (104), where the head x assigns inherent Ergative to the possessor:

(104) Possessive structure

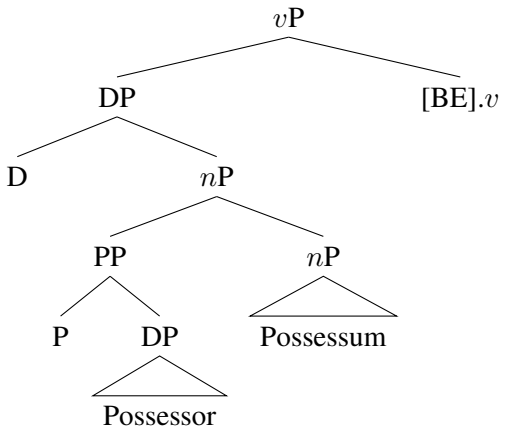
[44] A connection can also be drawn to hyperraising (A-movement of an embedded Subject over the matrix Subject, Fong 2019) or A-scrambling of an (embedded) Direct Object over Subject (Göksu in prep). Both of these operations are available in Turkish and require a lower argument to be targeted over a structurally higher one.



In the light of our treatment of IO passives, it can be seen that this structure has some important properties in common with the parts of the IO passive derivation that are presented in (102) and (103). Specifically, in both of these structures a higher head– the one presented as y– has to target a DP that is either below another DP (intervener = the DO in IO passives) or contained in another DP (container = the possessum in clausal possession).

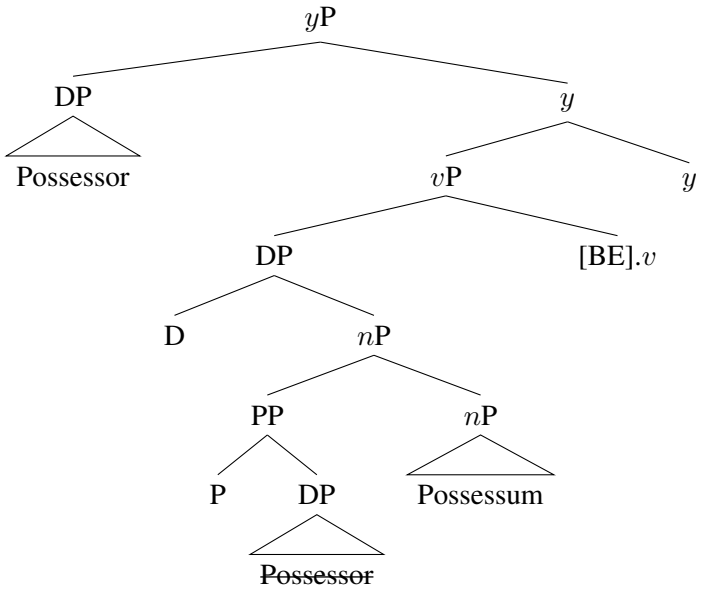
The similarities between IO passives and clausal possession raise the question of whether derived Subjects with Ergative might be a property of the latter as well. One way of approaching to this would be to consider an alternative to (104) in which the possessor is generated inside of a PP whose head is null, along the lines shown in (105).

(105) Alternative possessive structure



As we discussed in 5.2 above, it is necessary to raise the possessor out of this DP in order for it to become the subject of the clause. Recall that we schematized this with an intermediate movement to a position associated with a head y (cp. example 80) above):

(106) After possessor movement



The similarities between (103) and (106) are clear– in each case, an argument that is lower than or contained within another DP is moved higher, resulting in it becoming the subject of the clause. It appears that it is the shared immediate stages represented in (103) and (106) that are directly related to the assignment of Ergative case features to the argument that has moved in this way.

How exactly this aspect of case assignment should be handled is not something that we will dwell on here. The most obvious way would be to appeal to a configurational-case approach in which the moved argument is assigned Ergative because of the visibility of the local DP that it moves out of/over. Such an approach would need to explain why it is that case features can be re-assigned (or "overwritten") under certain circumstances. As noted at various points, objects of prepositions are typically assigned Accusative. Assuming that this happens in IO passives as it does elsewhere, this specification would need to be replaced in the intermediate movement structures (103) and (106).[45] Since this amounts to changing the [-subj] feature of the IO to [+subj], it is in essence a way of expressing the point that these arguments are derived Ergatives. Beyond the details of how this feature changing works, a

[45]The assumption that prepositions always assign case in this way could also be abandoned. Consider the examples in (i):

(i) a. Mary talked to her.
b. *Mary talked her.

Taken at face value, these facts suggest that case is assigned to *her* by the preposition *to*. However, in the passive counterpart of (i) this is clearly not what is happening, as seen in (ii):

(ii) She/*her was talked to by Mary.

Evidently there are circumstances under which prepositions that typically assign case may not do so.

further challenge is how to account for the presence of Ergative IO subjects in both aspects. There are various ways of conceiving of this abstractly (see Chapter 6 for some related points); but these go beyond the scope of this investigation.

In summary, IO passives show what appear to be derived Ergative subjects, and their behavior within the indexation follows from the mechanics described to this point for arguments that are [+subj,+obl]. It remains to be seen how several details will work out when these constructions are analyzed within explicit theories of case assignment. We hope at the least to have provided a novel analysis that can be used to explore the predictions of such theories.

5.5 Summary

The goal of this section was to look beyond standard transitive clauses at other types of indexation behavior seen in Sorani. The case-studies that we presented center on three different phenomena; to review:

Prepositional-Arguments We showed that while possessors and the arguments of prepositions can be realized in expected positions– i.e., attached to the possessed noun, or as the complement of a preposition– such arguments can also be *displaced* and realized as MP Agreement on the verb, or as an MP Clitic. Carefully delineating the circumstances under which these displacements take place reveals a contextual case assignment process in these constructions: possessors and P-arguments moving as pronominal clitics bear the same case features as DOs in the clauses in which they appear. If there is no DO, displacement is impossible. Once this type of case assignment occurs, the mechanics of indexation proposed in Chapter 4 apply without modification to yield the desired results.

Non-canonical subjects Non-canonical subject constructions (NCS) refer to verbal clauses in Sorani that show Ergative subjects in both aspects. Some of these, which we illustrated with *want* here, have their Subjects licensed in an Applicative head. Another type, clausal possession– shows 'double subject' properties: the possessor agrees in the way typical of Ergative arguments (Agreement with $\mathscr{O}$), and the possessum agrees (optionally) in the way expected of Nominative arguments (Agreement with T). We argued that these properties are produced by movement of the possessor out of the possessed DP.

Passives of ditransitives Passivized indirect objects in ditransitive verbs also show the indexation pattern typical of Ergatives, in a way that is not conditioned by aspect. Moreover, the DO is indexed (optionally) with MP Agreement, in a way that is typical of Nominative case. In addition to being typologically unusual– with what appears to be a derived Ergative Subject– these constructions provide a further instance in which Tense and $\mathscr{O}$ heads agree simultaneously. We hypothesized that these passives share structural properties with clausal possession that produce ergative subjects and dual-subject behavior in both constructions.

The results presented to this point demonstrate how the relevant generalizations can be understood in terms of the system of case-targeting indexation developed in previous

chapters. As we have seen, the behavior of these different argument types fits well within the four-case system that we motivated in Chapter 4. At the same time, various assumptions are required to make it work. For example, our analysis of P-arguments requires that possessive and prepositional argument moving clitics be assigned Objective case.

Within our system, this assumption (and related ones) are motivated by the indexation behavior of such arguments. The more general point that we develop in Chapter 6 is that assumptions like this are required because the relevant phenomena **must** be analyzed as case-driven, because alternatives fall short of explaining the full range of facts to be accounted for.

On the theme of what kinds of generalizations might be found in the phenomena we have examined, an important point is that we have found interesting variants on the Sorani patterns in other parts of Iranian. The next section looks at three of these.

5.6 Three comparative studies

This section presents comparisons with other Iranian languages centered on some of the phenomena investigated thus far in Sorani. First, examination of external possession and P-arguments in varieties of Laki illustrates further aspects of the syntax of this construction. Secondly, we situate the Sorani clausal possession pattern in the larger Iranian context, with a focus on the range of indexation patterns seen in possession of this type. Finally, we look at experiencer constructions in Modern Persian, and demonstrate that they exhibit the same behavior as the inherent oblique subjects in Sorani Kurdish.

5.6.1 Comparison: External Possession in Laki

A first comparative topic is external possession in two varieties of Laki.[46] The two Laki varieties we examine here show distinct patterns of external possession that interact with the indexation system. The patterns have parallels in the literature on possessor raising, and thus contribute to the understanding of external possession as analyzed in 5.1 above.

For the sake of exposition, we will refer to the two varieties to be examined as *Standard Laki* (SL) and *Aleshtar Laki* (AL), even though more than one variety could fall under the former label.[47] Both types of Laki are identical to SSK in terms of the major properties that we have examined above: they are described as showing a 'tense'-sensitive alignment split (an *aspectual* split in our terms), and MP clitic placement displays the kind of second-position behavior that is seen in Sorani. In addition, the indexation of Subjects and Direct Objects shows a mirror image effect in the imperfective and perfective aspects, which are Nominative/Accusative and Ergative/Objective respectively. The examples in (107) show indexation of the 3pl Agent in MP agreement form (imperfective (107a)) and MP clitic

[46] See Mohammadirad 2020b. Laki is spoken in Iran, in the north of Lorestan province up to the southeast of Kermanshah and south of Hamedan provinces, as well as in some areas in the Ilam province. The transcriptions vary among studies; we abstract away from such details here.

[47] For related effects, the variety spoken in Kakevandi has been reported to show properties that make it closer to SL or AL in different studies (Mohammadirad 2020b; Kahnemuyipour and Taghipour 2020 versus Mohammadirad 2021, respectively). We believe this to be the result of grammars of individuals involved.

form (perfective (107b)):

(107) Standard Laki

a. ali yo maryam to-na ma-šnās-*en*.
Ali and Maryam you-IND IND-know.PRS-3PL
'Ali and Maryam know you.'[48]

b. ali yo maryam to**=nān** šenāsi.
Ali and Maryam you=3PL know.PST
'Ali and Maryam knew you.'

An interesting feature that distinguishes both Laki varieties from Sorani is that even though clitic-placement is VP-based in both languages, in Laki the 3sg clitic invariably surfaces on the verb.[49] Other person-number combinations appear in the more commonly expected position, i.e., on the nonverbal element of a light verb construction, as shown for 3pl in (108).

(108) a. hord**=an**-a m-aka-*m*.
chop=3PL.CL-IND IND-do.PRS-1SG
'I chop them.' (Kahnemuyipour and Taghipour 2020:(34))

[48] What we mark as IND is glossed as SP 'specificity' in (Kahnemuyipour and Taghipour 2020). However, we take it with Mohammadirad (2020b) that it is actually part of the imperfective marker (in our terms, the indicative mood marker), which has the periphrastic form *-a ma-*. The first element always attaches to the left, while the second prefixes to the verb stem.

[49] This is illustrated for transitive agents in the past, (ia-b), and DO clitics in the present, (i.c). In the Sorani counterpart of (i.c), the 3sg clitic *ē* would be on the nonverbal element *šekār* 'hunting' (for the different forms of the 3sg clitics in these examples recall the point about transcription in fn. 46).

(i) a. ali maryam šenās=i.
Ali Maryam know.PST=3SG.A
'Ali knew Maryam.' (Kahnemuyipour and Taghipour 2020:fn4, (i))

b. tamām māhīl-ā hwārd-ē.
all fish-PL-DEF eat.PST-3SG:A
'He ate all the fish.' (Mohammadirad 2020b:379, (977))

c. xirs-a b-ā-y o *pro* šekār ka-n=ē.
bear-DEF IRR-come.PRS-3SG and hunting do.PRS-3PL.A=3SG.O
'That the bear come over and they hunt it.' (Mohammadirad 2020b:381, (988))

In the imperfective as well, the 3sg pronominal object is realized on the verb, (ii), even in cases where there is a higher potential host like in (ii.b).

(ii) a. ma-ka-ymen-ē a dī.
IND-do.PRS-come.1PL-3SG.O to see
'We will find him.' [lit. We will bring him into sight] (Mohammadirad 2020b:380, (983))

b. arān=it kil ka-m=ē.
for=2SG.CL round do.PRS-1SG-3SG.O
'That I send it over to you.' (Mohammadirad 2020b:382, (996))

b. tasmīm=**ān** girt.
decision=3PL.CL take.PST
'They made a decision.'

These initial observations indicate that (in spite of the complication with the placement of 3sg agreement) these Laki varieties are quite similar to Sorani in terms of indexation properties. However, SL and AL differ crucially from each other in terms of the conditions under which external possession and P-argument displacement are possible.

SL is subject to the same restrictions as SSK. For example, *MP-Agr displacement* is possible with the possessor object of a transitive verb, (109), but not the possessor of an unergative argument (110).

(109) a. kwil šakar-a=**m** hwārd-*īn*.
all sugar-DEF=1SG.CL eat.PST-2SG.POSS
'I ate all your sugar.'

b. keyk-a=**man** ward-*in*.
cake-DEF=3PL.CL eat.PST-3PL.POSS
'We ate their cake.'

(110) a. brā-yl-a=**m** hat-*in*.
brother-PL-DEF=1SG.POSS come.PST-3PL
'My brothers came.'

b. *brā-yl-a hat-*in-im*.
brother-PL-DEF come.PST-3PL-1SG.POSS
'My brothers came.' (Mohammadirad 2021:(8b))

Other restrictions we noted for Sorani apply to Standard Laki as well, suggesting that the analysis with four cases that we developed for SSK can be extended straightforwardly to this variety. In particular, MP-Agr Displacement is restricted to arguments that bear Objective case.[50]

Interestingly, external possession in Aleshtar Laki (AL) occurs under a set of conditions that are distinct from those found in SL (and SSK). When viewed next to SL, these differences parallel certain kinds of cross-linguistic variation reported in comparative studies of possessor raising (see e.g., Deal 2017a for an overview).

An important initial observation for AL is that– like in many other languages that show possessor raising, or something like it– external possession (with the possessor realized as MP-agreement) is not always equivalent in meaning to its internal possession counterpart. In particular, external possessors in many languages are interpreted in a way that goes beyond simple possession. This effect is found with possessor dative constructions that have been analyzed in some more well-studied languages such as French, Spanish, and Hebrew (see Guéron 1985; Borer and Grodzinsky 1986; Landau 1999; Cuervo 2003; Deal

[50] From what we can tell, Hawrami (Holmberg and Odden 2004) also behaves similarly to Sorani and SL for possession.

2017a). The additional interpretation has been typically identified as *beneficiary* or *affectee* in cross-linguistic studies, with the intuition being that the possessor must be (positively or negatively) affected for the external possession construction to be semantically appropriate.

Mohammadirad (2020b) reports that AL behaves exactly along these lines: external possession is possible only if the possessor is affected by the described situation. So, for example, the possessor is interpreted as positively affected by the washing in (111):[51]

(111) **sār**-a ma-šūr-im=**e**.
head-IND IND-wash-1SG=3SG.POSS
'I wash his head.' (inalienable) (Mohammadirad 2021:(24)) (AL)

External possession in AL is also restricted to inalienable possession; thus in (111) the possessor must be understood as the person whose head is being washed (it could not be e.g. the head of the possessor's doll).

The affectedness condition does not hold in other SSK and SL varieties. Thus, the example in (112) can be uttered even if the possessor is dead, thus cannot be affected, in Sorani (and likewise its counterpart (113) in standard Laki).

(112) [Context: the owners of the car are dead.]

Otombîl-eke=**man** bird-*in*
car-the=1PL.CL took-PL

'We took their car away.' (SSK)

(113) keyk-a=**man** ward-*en*.
cake-DEF=1PL.CL eat.PST-3PL
'We ate their cake.' (SL, Kahnemuyipour and Taghipour 2020:3a)

Examples of this type are not possible in AL, where the possessor must be alive in order to be affected in the appropriate way.

AL and SL also differ on the second point noted above, the type of possession involved. In Sorani varieties and SL, both alienable and inalienable possession are licit with external possession, as seen in (114) and (115).

(114) SSK

[51] In all Kurdish varieties, the possessor can be inanimate. This holds also for AL, as shown in (i), as long as the inanimate possessor is construed in a manner in which it gets affected by the event (which in many cases corresponds to physical affectedness or impact, but not necessarily). In (i), for example, the sale of the product positively affects the product.

(i) firūš xū bī-t-tē.
sell good COP.PST.3SG-EP=3SG.POSS
'Its sale was good.' (AL, inanimate, Mohammadirad 2021:(31))

a. dest=im girt-*î*
hand=1SG.CL grab.PST-2SG.POSS
'I grabbed your hand.' (inalienable)

b. Otombîl-eke=yan bird-*în*
car-the=3PL.CL take.PST-1PL.POSS
'They took our car away.' (alienable)

(115) SL

a. des=t-a ma-girt-*im*
hand=2SG.CL-IND IND-take.PST-1SG.POSS
'You would take my hand.' (inalienable)

b. kwil šakar-a=m hwārd-*īn*.
all sugar-DEF=1SG.CL eat.PST-2SG.POSS
'I ate all your sugar. (alienable)

In AL, as noted earlier, only inalienable possession is allowed for external possession, which primarily occurs with body parts as possessum (116a). Because alienable possession is ungrammatical with the external possession construction, (116b), they are invariably expressed with internal possession, (116c):

(116) a. **sār**-a ma-šūr-im=**e**.
head-IND IND-wash-1SG=3SG.POSS
'I wash his head.' (inalienable) (Mohammadirad 2021:(24)) (AL)

b. *mi **libās**-ēl-a ma-šūr-im=**e**.
1SG.pro clothes-PL.DEF-IND IND-wash-1SG=3SG.POSS
'I wash his clothes.' (alienable - external possession)

c. mi **libās**-ēl-a=**y**-a ma-šūr-im.
1SG.pro clothes-PL-DEF=3SG.POSS-IND IND-wash-1SG
'I wash his clothes.' (alienable - internal possession) (Mohammadirad 2021:(25)) (AL)

Another property of external possession in AL is that it is not limited to Direct Objects of transitives, as is the case in SSK and SL. Instead, it appears to be licit with a larger category of deep objects, e.g., the sole arguments of unaccusatives and nonverbal predicates, (117).

(117) a. unaccusative
pā suř-a ma-dirē-t=*ē*.
foot slip-IND IND-take.PRS-3SG=3SG.POSS
'He slips.' [lit. his feet slip] (AL, Mohammadirad 2021:(13))

b. nonverbal

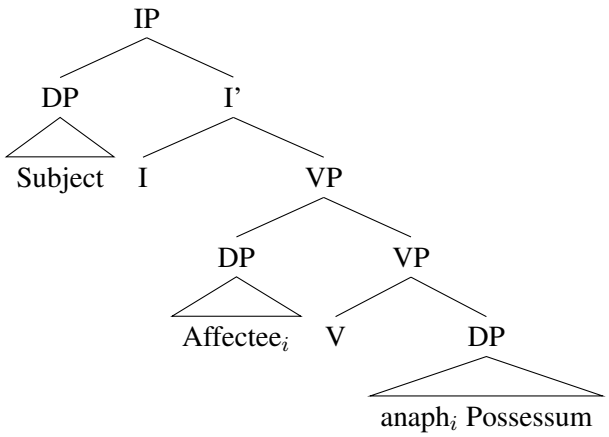
sidā bam nīya-s=*ē*.
voice rough NEG-COP.3SG=3SG.POSS
'Her voice is not harsh.' (AL, Mohammadirad 2021:(30))

To provide context for interpreting these differences, we turn now to existing proposals that have been put forth to capture the asymmetries between different types of external possession.

An early approach to external possession is centered on the idea that it is derived from internal possession via a syntactic rule, i.e., the raising of the possessor from its original position to a higher position (e.g., Keenan 1972; Kuno 1975, as well as Keach and Rochemont 1994; Landau 1999). Putting to the side for the moment details about the movement operation, a crucial component of this type of a *raising* analysis is that external and internal possession are expected to be interpreted in exactly the same way. Thus, the recognition that not all instances of external possession are semantically equivalent to their internal possession counterpart led to an alternative conception of this possessor type, according to which there is base-generation of the possessor in a configuration distinct from internal possession.

In this type of approach, an affectee argument is base-generated in position that is higher than the possessed DP, and is coreferential with a separate possessor argument in that nominal. This idea is represented somewhat abstractly in (118), adapted from Deal (2017a).

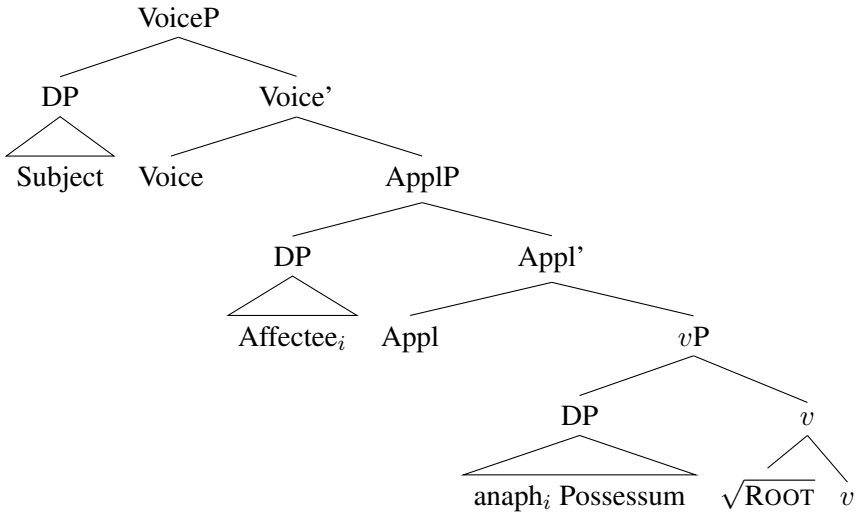
(118) affected external possession



The difference between the first type of analysis and this one is essentially that between Raising and Control: in the former, there is a single thematic relation associated with the raised argument, whereas in the latter a single DP is associated with two. For the contrast between SL/Sorani on the one hand and AL on the other, the idea would be that the former show true possessor raising (implemented on our analysis as Clitic Movement), whereas the latter has control, along the lines of (118). More specifically, the idea is that the possessor in AL is base-generated in an applicative projection, as shown in (119), whose position also

captures its restriction to deep objects. From its merge position in Spec,ApplP, the clitic moved pronoun moves to T, where it is realized as MP Agr.

(119) Possession structure: AL



The possessor in this structure is an affected argument, since it is interpreted with a thematic relation that is introduced by the Appl head. It is interpreted as a possessor as well by virtue of controlling the anaphor inside of the possessed DP. By way of contrast, the possessors in Sorani and SL are simply clitic moved out of the possessed DP. They are not interpreted as holding an additional thematic relation in the way just described for AL.

The difference in where possessors are generated (and how they relate to the possessed DP) is the main point of interest in our comparison. The other differences between AL and Sorani/SL– restriction of external possession to inalienable possession, and availability with unaccusatives– appear to be due to other factors that have been analyzed in the literature (see e.g., Guéron 1985, 2006; Borer and Grodzinsky 1986, and Deal 2017a for an overview).

Despite the difference in where the possessor is generated in Sorani/SL versus AL, it is important all of these languages behave the same way in terms of how the possessor enters the indexation system. In all three it behaves like a pronominal that moves to the T head and is realized as MP-Agreement. Taken together, the facts considered in this setion show how languages may differ in terms of the syntactico-semantic properties of a construction, but nevertheless behave similarly with when it comes to how the relevant arguments are indexed.

5.6.2 Comparison: Clausal possession across Iranian

As we saw above, clausal possession in Sorani shows special indexation properties: such clauses appear to have an Ergative possessor and Nominative possessum, with $\mathscr{O}$ and T both agreeing (though optionally for the latter):

(120) **min** *se* *xushk*=**im** he-ye / he-*n*.
1SG.pro three sister=1SG.CL exist-COP.PRS / exist-COP.PRS.PL
'I have three sisters.'

In this section, we frame our analysis of Sorani clausal possession in the larger Iranian context by examining its realizations across various languages. Our discussion adapts Mohammadirad's (2020a) typology, which makes a four-way distinction. When we concentrate on indexation properties, there appear to be two different types of languages within those surveyed by Mohammadirad: one group in which the possessum is agreed with, and one in which both the possessor and the possessum agree.

Agreement with possessum only We first show that agreement with the possessum (even though this is optional in Sorani) is well attested in two other kinds of clausal possession within Iranian. In one of these, which is attested in Old Persian, the possessor functions as a topic, and the possessum agrees with the existential/copular stem. Two examples of this are shown in (121).

(121) a. Dārayavahauš puçā aniyaiciy āhantā.
Darius.GEN.M.SG son.NOM.M.PL other.NOM.M.PL exist.3PL.IPFV.MID
'Darius had other sons.' (lit. 'Of Darius, other sons existed')
(Old Persian; Schmitt 2009:162, XPf, via Mohammadirad 2020a:4)

b. utā=taiy tauhmā vasiy biyā
and.also=2S.GEN seed much may.be
'and may you have much seed (offspring)' (DbIV, 56)

In modern Iranian languages, Mohammadirad (2020a) posits two subtypes for languages that show this kind of clausal possession. These differ in terms of whether the possessor exhibits what he calls "topic" and "goal" schemas respectively. Examples of each are given in (122) and (123). In a "topic schema" language like Badini (a dialect of Northern Kurdish), the possessor is topicalized and the possessum controls agreement, in a way that directly reflects the type of possession seen in Old Persian above:

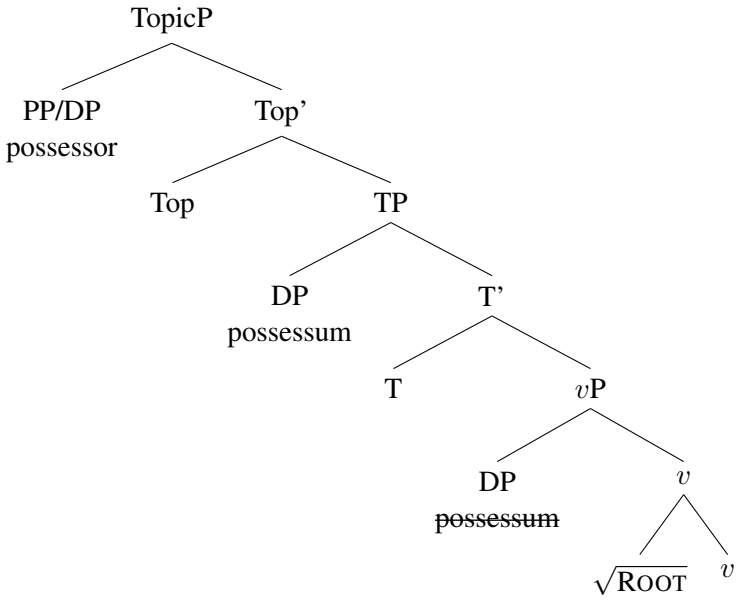
(122) naqlakē hakim-ak-ī *sē* *kur* habō-*n*.
at.a.time prince-a-OBL three son exist.PST-PL
'Once a prince had three sons.' (lit. 'once to-a-prince three sons existed') (Badini; Haig 2008: 258, citing MacKenzie 1962:320)

The "goal schema" languages are characterized by the presence of the multifunctional postposition *rā*, and the possessum is the subject, as illustrated in (123) from Central Taleshi.

(123) i-la merdi-rā karg-i hest be
a-CLF man-for hen-a exist COP.PST
'A man had a hen.' (lit. 'there existed a hen for a man') (Central Taleshi; Mohammadirad 2020a:14)

The structure of fronted possessors are roughly schematized in (124), where the possessor occupies a position in the CP domain, while only the possessum occurs clause-internally and triggers agreement. It remains to be seen whether the possessor in this group of languages originates in the left periphery or is moved there out of the phrase that also contains the possessum.

(124)



As we saw in Chapters 3 and 4, topicalized elements stand outside of the system of indexation in Sorani. The type of clausal possession with a fronting of this type has the same property.

Beyond the two types just reviewed, Mohammadirad posits a third group of languages in which "topic schema" has shifted to "genitive" schema, expressed via the *Ezafe* construction; we introduced this above in Sorani– recall that it is a linker morpheme that introduces dependents of the noun including attributive adjectives, possessors. Examples are provided in (125)-(126) from Zazaki and Kurmanji. In these dialects, the possessor is a genitival modifier of the possessum, and the verb agrees with the possessum: 3sg feminine for 'sheep' in (125a), 'rifle' in (125b), 'book' in (126b), and 3pl for 'friends' in (126a).

(125) *Zazaki*

a. yew mešnā-y mi est-ā.
   a sheep-EZ 1SG.OBL exist.PRS-3SG.F
   'I have a sheep.' (Paul 1998:270)

b. tıvıng-a Simko-y est-ā.
   rifle-EZ.F Simko-OBL exist.PRS-3SG.F
   'Simko has a rifle.' (Todd 2002:60,(164))

(126) *Kurmanji*

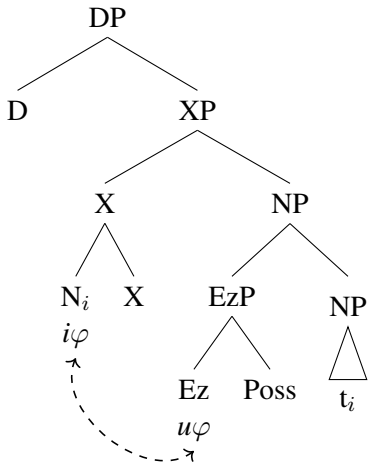
a. heval-ên me he-ne.
friend-EZ.PL 1PL.OBL exist.PRS-PL
'We have friends.' (Bedir Khan and Lescot 1970:229)

b. kitab-a Hasan/min
book-EZ.F Hasan/1SG.OBL
'Hasan's/my book'

For the purposes of indexation, this type of clause behaves just like the ones seen above, with agreement targeting only the possessum. Structurally, though, the Ezafe possession construction differs from the type schematized in (124). What is fronted in the former case is the possessor; in the Ezafe case, it is the entire possessed DP, which contains the possessor.

We adopt the syntax of Ezafe in (127), in which the Ezafe head Ez does not form a constituent with the head noun, but with the dependent.[52] To derive the linear order of the head noun relative to possessors and adjectives N moves leftward to a position where it c-commands the Ezafe: that is, to a position above the possessor and any adjectives (whether it is to D or another head makes no difference for present purposes).

(127)



In this analysis, Ezafe is a probe that searches for a suitable goal to agree with, and it always agrees in φ-features of the head-noun (see Toosarvandani and Van Urk 2014 for more details).

Possessor as subject Mohammadirad (2020a) places the majority of the Western Iranian languages, including Sorani, into this group. Similar to the languages with Ezafe seen above, those of this type show realization of the possessor with an oblique clitic. However,

[52]There is a long debate about the syntactic role of the Ezafe in the noun phrases. It has been argued to be a case assigner for nominal dependents, or the counterpart of English *'s/of*, a trigger for predicate inversion or a head marker (see e.g., Larson and Samiian 2021; Toosarvandani and Van Urk 2014; Holmberg and Odden 2008; Ghomeshi and Ritter 1996; Kahnemuyipour 2014; Samvelian 2007b). We do not take a stance on this issue, and adopt the structure given in Toosarvandani and Van Urk 2014 for exposition.

in contrast to the Ezafe type, the languages in this group have undergone a type of reanalysis in which the fronted topic possessor becomes the grammatical subject, and is obligatorily indexed by an MP clitic.[53] This reanalysis has consequences for the possessum argument. In particular, Mohammadirad reports that the possessum does not *usually* show agreement with the existential/copular verb (Mohammadirad 2020a:508).

This appears to be one instance of a more general type of reanalysis that has occurred in Iranian. For example, the developments outlined above are exactly what Jügel and Samvelian (2020) propose for experiencer constructions in Persian: the experiencer, which starts out as a hanging topic (and resumed by an enclitic pronoun) is reanalyzed as a grammatical subject (with the clitic then functioning as MS agreement). For clausal possession, the idea is that the possessum takes on a distinct set of behaviors due to the fact that the clause now contains a higher subject. In particular, the possessum now triggers optional agreement, though this may not be the first option for speakers (thus, Mohammadirad's use of 'usually').[54]

In addition to many examples provided above from Sorani, we provide more examples below from other Iranian languages of this category (see Kareem 2016 for more illustrations of this phenomenon, where the indexation of the possessum is also treated as *object-verb agreement*). Note that in these languages as well, no complementarity exists between possessum and the MP agreement, and the possessum can optionally trigger agreement on the predicate, as shown in (128)-(129).[55]

(128) bāx-ē=š ha-n.
garden-PL.DIR=3SG.CL exist.PRS-PL
'He has (some) gardens.' (Gorani Takht; Mohammadirad 2020a:17)

[53] This does not mean that the languages of the fourth group have lost the Ezafe construction; as seen in Sorani in §5.1, it is found in nominal possession.

[54] The same path has also been argued to take place for the hisotrical development of Ergative alignment as well. According to this view, the Subject originally appears as a hanging topic, resumed by an enclitic pronoun. This co-indexation is then reanalyzed as a subject-verb agreement (Bynon 1979; Jügel 2009). This view is controversial, however; see Haig (2008) and references cited there.

[55] Note that treating the possessum as a Nominative-bearing argument predicts the non-subject argument should show *pro*-drop, just like the grammatical subject, since both have the [+subj] feature. This seems to be the case, as seen in (i) (when the possessum is *pro*-dropped, the MP-clitic marking the possessor subject is moved onto the verb).

(i) a. (amin) hæn-i=m.
1SG.pro exist-2SG=1SG.CL
'I have you.' (Hawrami; Holmberg and Odden 2004:(45))

b. (min) he=m-ît.
1SG.pro exist=1SG.CL-2SG
'I have you.' (SSK/GK)

c. (ême) he=man-ît.
1PL.pro exist=1PL.CL-2SG
'We have you.' (SSK/GK)

(129) a. žiwâ=m hæn-(æ).
Zhiwa.F=1SG.CL exist.PRS-3F
'I have Zhiwa.'

b. to=m hæn-(i).
you.sg=1SG.CL exist.PRS-2SG
'I have you.' (Hawrami; Holmberg and Odden 2004:(44-45))

Patterns similar to those illustrated above can be shown to hold for Iranian languages that establish the possessive relation though the verb *dār* 'have,' or its cognates *dir/der/dar*. Specifically, some such languages show agreement only with the possessor, while others appear to show agreement with the possessum in addition to this.

For the most part, in these languages 'have' behaves like a regular transitive verb, with the possessor as the grammatical subject and the possessum as the internal argument. As such, in many varieties, the verb agrees with the possessor through inflectional morphology in the present stem, (130), or via clitic person markers in the past stem, (131). The possessum argument does not trigger agreement.

(130) ez ila ka=ni dār-m.
1SG.pro one house=also have.PRS-1SG
'I have another house.' (Southern Taleshi; Paul 2011:254)

(131) di bāxebun se tā sabad=oš dārt.
this gardener three CLF basket=3SG.CL have.PST
'This gardener had three baskets.' (Naeini; Mohammadirad 2020a:36)

Interestingly, in some dialects the possessum has also developed into another argument that may trigger agreement, as shown in (132) for Badrudi (spoken in the rural district of Natanz, central Iran). This is a further manifestation of the points of variation in clausal possession: the number of probes that are active in a given language. While many Iranian languages with "have"-possessives seem to have a single probe, languages like Badrudi have evidently incorporated another probe into their clausal spine.[56]

(132) i dune boz bo se duno bozqālu=š dard-en.
a CLF goat COP.PST.3SG three CLF goat.kid=3SG.CL have.PST-3PL
'There was a goat who had three kids.' (Badrudi; Mohammadirad 2020a:38)

In short, the situation with "have" shows points of variation similar in appearance to clausal possession with the existence predicate. Some languages show agreement only with

[56]Recall that clausal possession in Southern Balochi too involves agreement with the possessor and the possessum regardless of the aspect.

(i) mæn-a *ketab*=on hæst-*ænt*
1SG.pro-OBL book=1SG.CL be-3PL
'I have the books.' (Southern Balochi, Hamo and Meihami 2023:22)

the possessor, while in others it appears that there is agreement with the possessum as well. The underlying mechanisms involved in these scenarios appear to be quite different, though. In Sorani, double agreement arises from Ergative/Nominative, a type of double-subject clause. In Badrudi, on the other hand, the double agreement found with 'have' is in a clause that appears to have the morphosyntactic properties of typical transitive clauses. As far as this goes, double agreement is also available with canonical transitive predicates at least in the perfective, as shown in (133), where the agreement with the direct object is described as "... a reflex of the older ergative construction, [where] the verb agrees overt object NPs in past transitive constructions" in Mohammadirad (2020a: 444).

(133) axo qāyem bedon min=**eš** na-xard-*on*.
1SG.pro hidden become.PST.1SG 1SG.pro=3SG.CL NEG-eat.PST-1SG
'I hid, (so) he (The wolf) didn't eat me.' (Badrudi; Mohammadirad 2020a:167,(303))

(134) šangul o mangul=**eš** ba-xard-*en*.
Shangul and Mangul=3SG.CL PUNCT-eat.PST-3PL
'(The wolf) ate Shangul and Mangul.' (Badrudi; Mohammadirad 2020a:445,(1324))

It is an open question whether 'have' shows all properties of a canonical transitive predicate, e.g., can be passivized in Badrudi.

Summary As seen in the discussion of this section, the type of clausal possession in Sorani that we analyzed in 5.2 is one of many types of possessive construction attested in Iranian. The overview in this section points to at least two topics for further research.

The first of these is centered on the details of the different types of possession seen above. While published studies provide enough information for us to speculate about the structural properties of many of these, it remains to be seen what will be revealed when these (and other) languages are probed at the level of detail that we were able to provide in the analysis of Sorani in 5.2.

A second topic concerns the diachronic developments that produced the different clause types. A project that suggests itself given what we have seen above would be to explore the developments underlying the reanalysis of topics as subjects– and the concomitant changes that this reanalysis produces for indexation– in terms of a framework like the one employed in this book.

5.6.3 Comparison: Oblique subjects in Modern Persian

This section provides a discussion of *experiencer* constructions in Modern Persian. These show inherent oblique subjects in both tenses/aspects, similar to Kurdish varieties. However, unlike the other Iranian langauges we have seen above, Modern Persian does not have an alignment split; it is characterized as a typical Nominative/Accusative language. The examination of experiencer subjects suggests a modification to this description, with a third case being required.

Jügel and Samvelian (2020) discuss Modern Persian experiencer constructions from both a diachronic and synchronic perspective, and arrive at conclusions that are in many

ways the same as those we reached in 5.2 for non-canonical subject constructions (NCSs) in Sorani Kurdish varieties. In particular, they demonstrate that the relation between the experiencer argument and its cross-indexing enclitic is an instance as MS agreement, with the experiencer showing grammatical subject properties.[57]

As noted above, typical clauses in Persian exhibit Nominative/Accusative alignment. Subject indexation is realized as MP agreement in both present and past tenses. Consider (135) and (136).[58]

(135) a. man ruznāme-rā mi-xān-am.
1SG.pro newspaper-ACC PROG-read.PRS-1SG
'I am reading the newspaper.' (Haig 2008:7,(1))

b. man be šahr mi-rāv-am.
1SG.pro to town PROG-go.PRS-1SG
'I am going to town.' (Haig 2008:7,(2))

(136) a. man ruznāme-rā xān-d-am.
1SG.pro newspaper-ACC read-PST-1SG
'I read the newspaper.' (Zahra Mirrazi Renani, p.c.)

b. man be šahr rāf-t-am.
1SG.pro to town go-PST-1SG
'I went to town.' (Zahra Mirrazi Renani, p.c.)

The predicates falling under the 'Experiencer' label refer to a psychological, mental or physical state, implicating an Experiencer (or Beneficiary) argument. The relevant constructions are complex predicates consisting of a verb and preverbal element, generally a noun or an adjective. The latter conveys the conceptual/lexical meaning of the predicate (e.g. *qosse* 'sorrow,' *hasudi* 'jealousy'...) while the verb is a light verb (e.g. *sodan* 'become', *gereftan* 'to take', *zadan* 'to hit'...) and has little if any lexical semantic contribution. The crucial point for our purposes is how the Experiencer is indexed: this DP is co-indexed with a clitic that is attached to the nonverbal-element within the complex predicate, as shown in the following examples:[59]

[57] Although their discussion focuses on dyadic experiencer predicates, similar properties also hold for monadic intransitive predicates with experiencer subjects, e.g., 'be cold', 'be tired' (as is the case in other Iranian languages; cp. 5.2).

[58] The status of the morpheme *-rā* is a matter of debate; although we gloss it as ACC following Haig (2008:7), it is usually treated as a Differential Object Marker. See e.g., Karimi 2005; Karimi and Smith 2020 for discussion.

[59] Karimi (2005:ch. 2.4.) interprets the absence of MP agreement with the verb as an indication that the experiencer DPs are not subjects (for her, these are thus what she calls 'subjectless constructions', an umbrella term that covers both monadic and dyadic experiencer predicates). However, we believe the evidence supports the claim that the Experiencer is the subject; cf. Jügel and Samvelian (2020) (as well as Sedighi 2010).

As it turns out, Jügel and Samvelian (2020) take their discussion one step further and argue that Persian experiencer constructions exhibit agreement with two arguments: one MS agreement with the experiencer subject, as discussed above, and one MS agreement with the nonverbal Theme element. However, we believe that

(137) a. **ādam** vahšat=**eš** mi-gir-ad.
human fear=3SG.CL IPFV-take-PRS-3SG
'One is afraid.' (Jügel and Samvelian 2020:7)

b. **in pesar** be xāhar=eš hasudi=**š** mi-šod.
this boy to sister=3SG.CL jealousy=3SG.CL IPFV-become-PST.3SG
'This boy was jealous of his sister.' [lit. "this boy, jealousy of his sister was coming to him"] (Jügel and Samvelian 2020:8)

c. **to** be in badbaxt rahm=**et** ne-mi-ā-d?
2SG.pro to this miserable pity=2SG.CL NEG-IPFV-come-PRS-3SG
'Don't you have pity for this poor person?' [lit. "you, does pity for this poor person not come to you?"] (Jügel and Samvelian 2020:9)

Jügel and Samvelian (2020) give a diachronic explanation for this construction's properties. In their view, the Experiencer argument was originally a hanging topic resumed by an enclitic pronoun (recall 5.6.2 as well). Subsequently, the hanging topic was reanalyzed as a subject, and the enclitic pronouns were reanalysed as agreement markers cross-referencing it. As one part of this argument, Jügel and Samvelian (2020) demonstrate that the hanging topic construction in Modern Persian differs crucially from the experiencer construction: the experiencer passes subjecthood diagnostics, while the topic does not.

The differences between hanging topics and experiences that they point to are as follows. First, experiencers, but not hanging topics, can follow adjuncts, (138).

(138) a. diruz tu kelās ali$_1$ xāb=eš$_1$ bord
yesterday in class Ali sleep=3SG.CL take.PST.3SG
'Yesterday, in the class, Ali fell asleep.' (Sedighi 2010:114,(256))

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the claim concerning MS agreement with the Theme does not go through for Persian. The reason is that the verb always shows 3sg default agreement, and does not co-vary with the features of the Theme, with which it forms a complex predicate. This follows from a treatment of such predicates in Persian according to which the nonverbal element lacks the properties of an internal argument; it is a kind of bare nominal. Whether the bare nominal in complex predicates is of category N or NP (particularly in comparison with other types of bare objects) is a matter of debate (see e.g., Karimi 1997; Folli et al. 2005; Megerdoomian 2012).

This can be more easily illustrated with monadic experiencer predicates, as dyadic experiencers have the complication of not allowing the plural counterpart of the nonverbal element due to their status as complex predicates. An attempt to reflect the features of the sole argument as MP agreement on the verb results in ungrammaticality, as shown in (ib).

(i) a. una$_i$ xast-ašun$_i$-e.
3PL.pro tired=3PL.CL-be.PRS.3SG
'They are tired.' (Karimi 2005:78,(22))

b. *una$_i$ xast-ašun$_i$-an.
3PL.pro tired=3PL.CL-be.PRS.PL

As such, it can be concluded that the verb does not show agreement in Experiencer constructions.

b. *diruz tu kelās un zan-e$_1$ pedar=eš$_1$ umad.
yesterday in class that women-DEF father=1SG.CL come.PST-3SG
Intended: 'Yesterday, in the class, that woman, her father came.'
(Sedighi 2010:114,(257))

Second, hanging topics, unlike Experiencers, cannot occur to the right of the verb, (139).

(139) a. az in film xoš=am$_1$ mi-ād man$_1$.
from this movie pleasant=1SG.CL IPFV-come.PRS.3SG 1SG.pro
'Me, I like this movie.'

b. *pedar=am$_1$ fardā mi-ād man$_1$.
father=1SG.CL tomorrow IPFV-come.PRS.3SG 1SG.pro
Intended: 'My father will come tomorrow.' (Jügel and Samvelian 2020:17)

Third, experiencers, but not hanging topics, can be the antecedent of a subject-oriented reflexive *xod* 'self' (e.g., Karimi 2005; Sedighi 2010; Jügel and Samvelian 2020). Consider (140).

(140) a. man$_1$ xod=am$_1$ xand=am$_1$ gereft.
I self=1SG.CL laugh=1SG.CL take.PST.3SG
'I, myself, laughed.'

b. *man$_1$ xod=am pedar=am$_1$ raft.
I self=1SG.CL father=1SG.CL go.PST.3SG
Intended: 'The father of myself left.' (Jügel and Samvelian 2020:18)

c. man$_1$ æz xod=am$_1$ xosh=am$_1$ amad.
I from self=1SG.CL pleasure=1SG.CL come.PST.3SG
'I like myself.' (Sedighi 2010:114,(254))

As Jügel and Samvelian (2020) discuss, all of the properties found with experiences above are observed for typical subjects in Persian. For example, subjects in Persian can follow adverbials and occur postverbally, as well as serving as the antecedent for reflexive pronouns, as in (141)-(142).

(141) Ali$_1$ be Hasan$_2$ xod$_{1/*2}$-ra moarrefi kard.
Ali to Hasan self-RÂ introduction do.PST.3SG
'Ali introduced Hasan to himself.' (Safari 2013:fn. 1) [e.g., in a game setting]

(142) unâ$_1$ bachche-h-ro$_2$ be xod=eshan$_{1/*2}$ moarrefi kard-an.
they child-PL-RÂ to themselves introduction do.PST-3PL
'They introduced the children to themselves.'[60]

[60]Compare this with the reciprocal:

Other properties further corroborate the subjecthood status of the DP indexing the MP clitic, as opposed to bearing another grammatical role such as hanging topic or object. Controlled PRO, for example, is found as a subject cross-linguistically; this is illustrated for English in (141):

(141) a. They$_i$ expect [PRO$_i$ to defeat you].
b. *They$_i$ expect [you to defeat PRO$_i$].
c. cf. They$_i$ expect [PRO$_i$ to be defeated by you].

In Persian experiencers can also be controlled PRO, as shown in (142), just like other subjects, (143).

(142) soruš$_1$ ne-mi-xāst [PRO$_1$ xāb=eš be-bar-e].
Soroosh NEG=want.PST.3SG sleep=3SG.CL SBJV-carry.PRS-3SG
'Soroosh didn't want to fall asleep.' (adapted from Sedighi 2010:116,(261a))

(143) Kimea$_1$ tasmim gereft [PRO$_1$ be-r-e].
Kimea decision took.3SG SBJV-go-3SG
'Kimea decided to go.' (adapted from Karimi 2008:178,(4))

Furthermore, experiencers pass the conjunction reduction test (cf. Zaenen et al. 1985, discussed in 3.3), which allows the subject of a coordinated clause to be deleted under identity with the subject of a preceding clause. Experiencers can be omitted in case of clause coordination, if they are coreferent with the subject of the first clause. Consider (144).

(144) ki-ā$_1$ kot na-pušid-an$_1$ va sard=ešun$_1$ šod?
who-PL coat NEG-wear.PST-3PL and cold=3PL.CL become.PST.3SG
'Who didn't wear warm clothes and got cold?' (Sedighi 2010:115,(258))

In addition to arguing that the experiencer is structurally the same as a typical subject, Jügel and Samvelian (2020) propose that the MP clitic indexing the experiencer DP is produced by MS agreement, not MS Clitic Movement. Distributionally, the MP clitic must always cooccur with the subject. The MP clitic shows other MS-agreement properties. For instance, it can refer to an indefinite or negative polarity noun phrase, as in (145b). On the other hand, clitic pronouns which resume a (hanging) topic can only refer to definite/anaphoric noun phrases.

(145) a. **to** be in badbaxt rahm=*(**et**) ne-mi-ā-d?
2SG.pro to this miserable pity=2SG.CL NEG-IPFV-come-PRS-3SG
'Don't you have pity for this poor person?'

(i) unâ$_1$ bachche-h-ro$_2$ be hamdige$_{1/2}$ moarrefi kard-an.
they child-PL-RÂ to each.other introduction do.PST-3PL
'They introduced the children to each other.' (Karimi 2005:174,(25))

b. **hičkas**$_1$ xanda=**š**$_1$ na-gereft.
nobody laugh=3SG.CL NEG-take.PST.3SG
'Nobody laughed.'

Moreover, the MP clitic cannot alternate with a full pronoun in the Ezafe construction, as in (146a). In their genuine pronominal use, on the other hand, clitics can alternate with a full pronoun, as shown in (146b), where the weak pronominal clitic is substituted by an independent pronoun, usually when the possessor is focused (similar to the patterns in Kurdish).

(146) a. *xande=ye to gereft.
laughter=EZ 2SG.pro take.PST.3SG
Intended: 'You began to laugh.'
b. xande=ye to zibā=st.
laughter=EZ 2SG.pro beautiful=be.PRS.3SG
'Your laughter is beautiful.' (Jügel and Samvelian 2020:22a-b)

These properties confirm that the φ element indexing Experiencer subjects is MS Agreement realized as an MP Clitic. It is thus unlike other cases of MS Agreement in Persian, which are realized as MP Agreement morphemes on Tense. As an MP Clitic, the φ element realizing the experiencer's features and exhibits a second-position clitic effect. In all these respects, it patterns like the indexing of the Ergative argument in the Sorani Kurdish perfective. Although this behavior might look unusual in the context of the rest of Modern Persian, which is a Nominative-Accusative language, it is unsurprising once the historical background and the syntax of other Iranian languages are taken into account.

Turning now to the implementation of this analysis, Jügel and Samvelian's primary conclusions can be interpreted on our account as indicating that that there are two functional heads (T and $\mathcal{O}$) that function as MS Agreement probes in Persian. In the context of the present work, it leads to the conclusion that Persian has at least three cases: Nominative and Accusative, and, in addition, a case that we label 'Experiencer' which is the topic of this section:[61] Note that although we label it 'Experiencer', Jügel and Samvelian draw an explicit parallelism between these subjects and Ergative subjects, therefore it is very plausible to call it 'Ergative' as well, in line with the inherent ergative of non-canonical subject constructions in section 5.2.

(147) Persian cases

	Nominative	Accusative	Experiencer/Ergative
subject	+	-	+
oblique	-	+	+

[61] As noted in fn. 58, the morpheme *-rā* in Persian, which is typically associated with differential object marking, has also been analyzed as the realization of accusative case (Haig 2008; Karimi and Smith 2020). For the sake of simplicity we put DOM (and the genitive marking on possessors) to the side.

The behavior of typical Nominative/Accusative clauses indicates that indexation operates in the following way:

(148) a. T agrees with the highest [-obl] DP.
b. $\mathscr{O}$ attracts (Clitic Moves) [+obl] clitic pronouns.

The restriction to [-obl] in (148a) takes into account clauses with Experiencer subjects, which T does not agree with. As detailed above, in these clauses the head $\mathscr{O}$ agrees with the Experiencer. That is:

(149) $\mathscr{O}$ agrees with [+subj,+obl] arguments.

The identical realization of the φ bundles that bear [+obl] can then be analyzed along the lines of Sorani, where Ergative and Accusative are realized in the same form (recall 4.7 above).[62]

There are some further aspects of the analysis in (147) that could be examined in greater detail. For example, it could be asked how it relates to the idea that there are Dative subjects in many languages. As far as Modern Persian goes, it is interesting to note that both DOs and IOs can be realized as MP clitics that are identical to those that index Experiencers. As far as we have been able to determine, it is possible to hold that both of these types of arguments are assigned [-subj,+obl], and are thus treated the same by MS Clitic movement.

It remains to be seen if this aspect of the analysis will hold when other aspects of Persian are examined in detail. For present purposes, what bears emphasizing is that case must enter the picture in some form. Having statements along the lines of 'T Agrees with the highest DP argument' makes incorrect predictions for Experiencer constructions. To distinguish the two different types of subject in the language, reference to the [±oblique] feature in MS Agreement probes is needed.

[62] Another respect in which Persian resembles Sorani is the realization of weak pronominal clitics. In a simple transitive clause, these appear on the verb, (i).

(i) (Context: I said there was a sparrow on that wire)

hālā ne-mi-bin-am=**aš**.
now NEG-IPFV-see.PRS-1SG=3SG.CL

'Now I don't see it.' (Modern Persian, Roberts 2009: 256, cited in Haig 2018:16)

It turns out that the same clitic exhibits a property of placement that is reminiscent of second position clitics observed in Kurdish. For example, in a construction with complex predicate, it attaches onto the nonverbal part, as in (ii).

(ii) man davat=**esh** kard-am.
I invitation=3SG.CL did-1SG
'I invited him/her.'

Interestingly, negation does not serve as a licit host in Persian, as seen in (i). This is in fact a property Mohammadirad (2020b) notes for some Kurdish varieties that have mobile clitics. These observations suggest an interesting comparative project concerning the placement of clitics in different Iranian languages.

6
Discussion

In this chapter we examine some of the theoretical implications of the analyses developed earlier in this book. The larger points to be addressed fall under three headings; within each of these, we will be reviewing our main proposals, and considering theoretical alternatives to compare them with.

CASE FEATURES In 6.1 we review the way in which case is represented on our approach. We argued both for Sorani and in other case studies why case labels like *Nominative, Ergative*, etc. should be taken as short hand for sets of binary features. One question to be addressed concerns how this approach to case relates to those appealing to hierarchies of the type *unmarked* > *dependent* > *lexical*, which play a prominent role in the literature. We examine this question in the light of the Sorani system, and show how our treatment does the work attributed to such hierarchies. We consider in addition a type of case representation that differs substantially from ours in taking cases to be in a markedness-determined containment relation. Finally, we look at two aspects of our analysis of Sorani that have implications for how Ergative case is analyzed: first, the idea that Non-Canonical Subject constructions have Ergative Subjects; and second, the idea that IO passives in Sorani have derived Ergative Subjects.

CASE TARGETING It is crucial to our approach that MS operations target specific case features. We applied this kind of analysis to Sorani and several other languages, and showed how it produces the correct results. In 6.2 we examine an alternative to case targeting. As we noted at various points earlier in this chapter, some systems show clearly that MS operations are constrained by locality, so that they must target the closest argument of the correct type. The question addressed in 6.2 is whether it is possible to analyze Sorani with **only** a locality-based view of MS Agreement and Clitic Movement: what we refer to as a 'height-only' approach. We demonstrate that this kind of analysis is unable to make correct predictions for the Sorani system, and that attempts to fix it amount to introducing case targeting in some form. To drive these points home, we make the same points in an examination of certain varieties of Neo-Aramaic, some of which have been analyzed in the literature with a kind of height-only approach.

MS/MP MISMATCHES Our analysis of Sorani posits two mismatches between MS operations and their MP realization. The first is that MS Clitic Movement of DOs and IOs produces MP Agreement morphemes. The second is that MS Agreement with Ergative subjects is realized with an MP clitic. Mismatches of this type are not expected given certain

theories of MS/MP relations, and therefore warrant careful evaluation. In 6.3 we provide this by looking at ways of removing these two mismatches from the system. The first (directed at the first mismatch) holds that the MP Agreement is the result of MS Agreement, which is restricted so as to apply only to null pronominals. The second, addressing Ergative Subjects, holds that the MP clitic found in this situation is the result of MS Clitic Doubling, not MS Agreement. We demonstrate that both of these alternatives have serious difficulties in accounting for the facts of Sorani, and wind up begin unable to account straightforwardly for a number of generalizations. In the concluding part of this section we situate our view of MS/MP relations against the background provided by by morphosyntactic and morphophonological approaches that argue for the same conclusion.

Following these specific points of discussion, section 6.4 offers a general conclusion to this work.

6.1 Case features

The starting point of our general discussion looks at various aspects of case features. First in 6.1.1 we will review the way in which these function in our analysis of Sorani. The point of this review is to extract key points– things that are required for the analysis to work properly– so that comparisons can be made with alternatives that differ in essential ways.

The specific comparisons that we make are developed in 6.1.2. We look in particular at two different ways in which case has been discussed in the literature. The first involves an implicational hierarchy, of a type that figures prominently in Bobaljik (2008) (also 2017). The general question that arises here is what kind of work is done by such hierarchies, and how this might relate to the formal system that we have developed. The second comparison is with theories that represent case in *containment* relations: on this view, case features are unary, such that more marked cases contain less marked ones as subparts. This type of representation leads to problems with attested types of case targeting.

Finally, 6.1.3 turns to the question of case assignment. As we have stressed throughout the book, our goal is to make an argument about how case features relate to indexation operations, and this is compatible with several different views of how case is assigned. For this reason, we do not attempt to provide a fleshed out theory of how this works. At the same time, several aspects of the analyses that we propose have implications for theories of case assignment. Section 6.1.3 brings these together and provides a foundation for future work linking our proposals with this aspect of the theory.

6.1.1 Sorani in review: The nature and role of case features

The primary line of argument in Chapters 4 and 5 is that Sorani indexation requires an analysis in which probes are specified to target specific case features. We analyzed Standard Sorani Kurdish with four cases, defined by the two binary features [±subject] and

[±oblique] in the way shown in (1):[1]

(1) Sorani cases

	'Nominative'	'Ergative'	'Accusative'	'Objective'
subj(ect)	+	+	-	-
obl(ique)	-	+	+	-

The assignment of these case features is sensitive to clause type. In Sorani, this amounts to the presence or absence of the head Asp[+perf], which defines the alignment split. Case assignment produces Nominative/Accusative transitives when it is absent, and Ergative/Objective transitives when it is present.

Sequentially, the view we have argued for involves the following stages:

(2) Stages

Formation of basic clause type > Case assignment > MS Agreement/Clitic Movement > PF realization of φ bundles.

On this approach, the assignment of case features is syntactic, and must precede MS Agree and Clitic Movement operations. It is thus incompatible with theories in which the assignment of case is contingent on, or caused by, ϕ-agreement (as in Chomsky 2000, 2001). Taken as a whole, the present work thus strengthens the line of argument holding that MS Agreement is driven by case features; cf. Bobaljik (2008) and Preminger (2009:ch. 8.3.3) (although the former has a different view of where in the grammar agreement occurs).

As we saw in the preceding chapters, each of the probes on the heads T and $\mathscr{O}$ is specified to MS Agree or Clitic Move one type of argument:

(3) Properties of heads

a. T { AGREES with [+subj, -obl] arguments (Target: Nominative); MOVES [-subj, -obl] clitics (Target: Objective) }

b. $\mathscr{O}$ { AGREES with [+subj, +obl] arguments (Target: Ergative); MOVES [-subj, +obl] clitics (Target: Accusative) }

[1]The view in (1) contrasts with approaches like e.g., Kornfilt and Preminger 2015, where e.g. *Nominative* is taken to be the wholesale absence of case, as such it is simply the morphological spell-out of a DP whose case features are not valued in the course of the derivation. In this approach, "cases like nominative and absolutive (and within the DP, genitive) are simply the morphological form afforded to noun phrases whose case features have not been valued in the course of the derivation" (Kornfilt and Preminger 2015:5). This approach is not compatible with the overall approach we take for cases; as it relies on surface exponence of cases, as such it runs the risk of collapsing or overlooking distinct syntactic cases. For example, our analysis shows that Nominative and Ergative in Sorani form a natural class in being MS Agreement targets - which is also needed for Nepali (see Chapter 2). It is not clear to us how to reconcile these kinds of natural class behavior with the idea that Nominative is the absence of case value assignment. See also Legate 2008, which argues that the so-called "Absolutive" in fact corresponds to distinct cases: Nominative case on an intransitive subject, but Accusative case on a transitive object.

Two aspects of these probes call for further comment; the first is that they are *opportunistic*; the second is that they are *selective*.[2]

On the first point, we have hypothesized that T and $\mathscr{O}$ have the same probe structure in every type of Sorani clause. It is thus not the case that the alignment split results from perfective and imperfective clauses having different probe structures (see 6.2 for a more detailed discussion). Rather, it is case assignment that is sensitive to Aspect; probes behave as they do irrespective of this. Put differently, the probes seek a specific type of argument, and are not sensitive to the type of clause they are in. If they find an appropriate goal, an MS operation applies; if not, nothing happens. This is what we mean by saying they apply opportunistically. An implication of this view is that there are no consequences of 'probe failure' (cf. Preminger 2014): rather, the MS operation applies when its structural description is met; if it is not, nothing happens.[3]

The selectivity of these probes– i.e. the fact that each one targets one unique case– is a particular property of Sorani. As we saw in the analysis of different Indo-Aryan languages in Chapter 2, probes may also be specified for a single case feature, such that they are in principle capable of interacting with more than one type of case. Nepali agreement probes, for example, target [+subj] arguments, with the result that both Nominative ([+subj,-obl]) and Ergative ([+subj,+obl]) arguments are agreed with in that language.

While Sorani probes must be selective in the way that is shown in (3), there is nevertheless evidence for case decomposition from other parts of the grammar. In particular, even though each of the four cases in Sorani shows a distinct indexation behavior, there are syncretisms that result in two different types of φ realization: what we call *MP Clitics* versus *MP Agreement*. The syncretisms associated with each of these are defined by the feature [±oblique], as stated in (4):

(4) Sorani syncretisms

a. [+obl] φ bundles are MP Clitics	*Ergative, Accusative*
b. [-obl] φ bundles are MP Agreement	*Nominative, Objective*

The key idea that we will explore further in the pages to come is Case Targeting. For the immediate purposes of this section, the noteworthy point is that our use of this idea requires a certain type of representation for case features– one that allows for there to be different natural classes for different operations. With this in mind, we will look at some alternative

[2] A further aspect of the Sorani system that stands out is what could be called *Probe Consistency*: each of the probes on T target [-obl] arguments, while each of $\mathscr{O}$'s probes targets [+obl]. This does not appear to fall out of any theory that we aware of; which is to say, it would not surprise us to find a language with 'inconsistent' probes, with e.g. T having an Agreement probe targeting [-obl] subjects, and another that Clitic Moves [+obl] clitics. (It is not difficult to think of many familiar languages as instantiating this latter possibility).

In our view, the consistency of the Sorani pattern reflects the origins of the alignment split in Iranian, where the original Indo-European pattern (T agreeing with subjects) was supplanted in the perfective in a way that is tied closely to oblique clitics that appeared near the left edge of the clause; the latter eventually came to be reanalyzed in some languages as agreement with oblique subjects. See in particular Haig (2008) and Jügel and Samvelian (2020) for insightful discussion.

[3] So, for instance, on Preminger's (2014) account, failure produces default agreement morphology. In Sorani conversely there are no consequences (syntactic or morphological) of failure.

case representations in the following section. This discussion will also pave the way for 6.1.3, where we will examine some of the implications of our approach for theories of how case is assigned.

6.1.2 Case representation

The approach to case features that we have developed is 'flat': features are cross-classified, but they do not stand in any sort of hierarchical arrangement. Although we have not spoken of it specifically in these terms above, this part of the approach is what allows for indexation operations to make reference to natural class behaviors that partition cases differently within the same language.

A few examples from Sorani provide initial illustrations. Consider, for example, the idea that both Nominative and Ergative arguments are targets of MS Agreement. On our account this is encoded in the feature [+subj], which these two cases share. From the perspective of the [±oblique] feature, though, these cases take opposing values. On our analysis, this is responsible for the forms that their φ indexers take: MP clitics for [+oblique] Ergatives, and MP Agreement for [-oblique] Nominatives. The same kind of 'dual behavior' can be seen in the Accusative and Objective cases. These share the feature [-subj], which unifies the behavior of pronouns with these cases as targets of MS clitic movement. At the same time, Accusative and Objective differ with respect to [±oblique], in a way that accounts for why their MP forms are identical to those found with the Ergative and Nominative respectively.

This way of representing case features differs from some alternatives that have been discussed in the literature; in the remainder of this section we will examine two.

Implicational hierarchies One prima facie distinct way of talking about case appeals to *case hierarchies*, of a type that was first mentioned in our discussion of indexation in Indo-Aryan in Chapter 2. There we described the use of a case hierarchy that Bobaljik (2008) makes use of in his treatment of agreement. The hierarchy is implicational: agreement with a case-type implies agreement with the type(s) to its left:

(5) Implicational hierarchy

Unmarked case > Dependent case > Lexical case

For example, in Hindi agreement would target only the highest NP with unmarked case, while NPs bearing morphological cases to further right side of the hierarchy are invisible for the agreement operation. In this implicational hierarchy, parametric variation between languages could allow more cases in the hierarchy to be accessible for agreement. For example, Nepali would differ from Hindi-Urdu in including dependent case (Ergative) among the accessible cases. Under (5), this entails that unmarked cases (there, in Nepali, Nominative) must also be accessible.

On the face of it, the hierarchical arrangement of cases is incompatible with the type of representation we have posited. However, this appearance might very well be deceiving. It is important to observe that the labels in (5) are hybrid in nature: they pick out both specific cases (e.g. Ergative and Accusative are both Dependent, and hence must be represented

similarly), **and** ways in which cases are assigned (e.g. Dependent cases are by hypothesis assigned only under specific structural conditions). Crucially, there is nothing on our view which prevents case assignment from operating in ways that produces the effects of an implicational hierarchy through the manner in which case features are assigned. However, it is crucial that this question be addressed at the correct grain: in terms of decomposed cases, not case labels.

To illustrate, consider the feature [±oblique] in our analysis, and how it relates to (5). For our analysis to work, [+oblique] must be assigned to Ergative and Accusative arguments: both Dependent cases in (5). This makes them marked relative to Nominative and Objective, which are assigned [-oblique]. It might very well be an important desideratum for the theory of case assignment to encode this kind of effect (see 6.1.3) in a transparent way.

How does this relate to indexation, and the work that the hierarchy in (5) is supposed to do? It looks as if our approach is more permissive than (5) in terms of what it allows. It would be entirely possible, for example, for an MS operation to be specified for [+obl] alone:

(6) MS operation X targets [+obl]

This would target e.g. Ergatives and Accusatives but not Nominatives or Objectives, something that is not expected if (5) holds.

As far as we can tell there are reasons for allowing the less restrictive option. In Sorani, our analysis holds that there is a probe on $\mathscr{O}$ that targets [+subj,+obl] Ergatives. Crucially, this probe does not find Nominative (or Objective) arguments. This is the correct result for Sorani, but it is unexpected if (5) regulated how case-targeting probes function.

It turns out that this is one manifestation of a larger set of questions about what precisely hierarchies like (5) do (and how they are supposed to do it). Clearly something beyond (5) is required for the correct analysis of indexation patterns. In addition to specifying why less marked cases are not always targets of a probe, (5) also has nothing to say about why Accusative arguments– also by hypothesis Dependent– are not targets of MS Agreement.[4]

In any event, the kind of question that we are left with concerns what kinds of empirical generalizations can be identified in connection with (5). One could ask, for example, if our feature system leads us to believe that there will be probes that e.g. target unmarked and lexical cases, to the exclusion of dependent case. At present it simply is not clear to us if this is expected or not– it depends a great deal on the nature of the feature system; which in turn requires an explicit theory of case assignment. By this we mean that a notion like *dependent* is not a primitive in our approach. Rather, the question to ask is what this means at the level of decomposed case features and their values– and there exists no theory of that type at present.

On the theme of what is possible under Case Targeting, some natural restrictions suggest

[4]It could be objected at this point that hierarchies like (5) are supposed to define how agreement works in a language considered as a whole, not at the level of what a particular probe does. If this is how (5) is to be interpreted, then it is simply operating at a different level of analysis than our proposals are.

themselves as possibilities to be explored. Perhaps the most straightforward one requires probes to target feature-defined classes in a way that is not disjunctive. That is:

(7) NO DISJUNCTIVE TARGETING: Probes may target a specific feature and its value; not a disjunctive list of those.

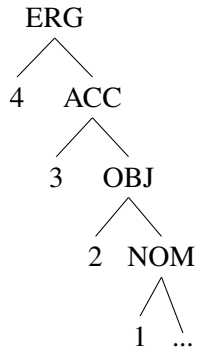
This restricts probes to targeting e.g. [+subj], or [-subj,+obl] and so on. It precludes them from targeting distinct combinations, so that a single probe could not be specified to target e.g. both [+subj,+obl] Ergatives and [-subj,+obl] Accusatives. We believe that investigating this and related ways of putting limits on Case Targeting will be valuable continuations of the work presented here.

For our account, the point about the need to augment (5) recapitulates why two features are needed in order to account for the Sorani indexation system. But they also serve to illustrate the kinds of questions that arise with respect to implicational hierarchies like (5). In short form, we believe that such hierarchies provide valuable insight into how case assignment functions, in ways that could in principle relate to markedness. However, we believe in addition that progress on this type of question requires a theory of the type we have advanced in this book: one in which case labels are decomposed into more basic features. For the reasons we have outlined above, it is only when notions like *unmarked*, *dependent*, and *lexical case* are broken down into more primitive features that questions of the type raised above can be investigated in detail.

Case containment hierarchies As we just saw, case hierarchies like (5) require further elaboration in order to be compared with the treatment of case features that we have proposed. In the end the further investigation of features might result in something quite similar to what we have worked with; it depends a great deal on how case assignment works.

By way of contrast, an alternative that takes a directly opposing stance to ours treats cases as arranged hierarchically, such that more marked cases contain less marked ones. An approach of this type is employed in Caha 2009 and related work, where the goal is to use the hierarchy to account for syncretism in morphological realization. For our purposes, and looking at the cases that we posited for Sorani, this kind of *case containment* approach might employ the hierarchy in (8):

(8) Hierarchical representation of cases



There are, of course, more possible ways of arranging for these case features. The particular choice in (8) makes some assumptions about markedness which could be done otherwise; it basically takes those cases that are typically regarded as oblique as more marked than direct cases are. We do not have a particular interest in the claim that there is only one way of arranging features along these lines; our main points can be established with reference to the general idea behind (8).[5]

Details of containment aside, the matter to focus on is how case targeting MS operations would work in a system that treats cases in the manner shown in (8). To illustrate, consider MS Agreement in Sorani, where T and $\mathscr{O}$ have probes specified to target Nominative and Ergative arguments respectively. With Nominatives, things go as expected: T's probe locates a Subject, and receives its features. With Ergatives, though, matters are more complex. The probe on $\mathscr{O}$ should function as desired, and index the Ergative Subject. But because Ergative necessarily contains Nominative, the probe on T should also succeed in agreeing with that same argument. It is thus expected that both $\mathscr{O}$ and T will agree with Ergative Subjects, contrary to fact.

The problem is due to the idea that cases contain others. This makes the features of the contained (less marked) cases active even when a clause does not contain an argument with that particular case. Thinking about things this way leads to a possible way of fixing the analysis based on (8), which is stated in (9):

(9) Probes can see only the highest case feature.

This restriction takes care of the problem that we identified with Sorani. In a clause with Ergative Subjects, only $\mathscr{O}$ is expected to agree; since the probe on T is looking for Nominative, which is hierarchically below Ergative, it will not agree.

Notably, this fix works for Sorani only because the probe structure of that language is very case-specific: each of the MS Probes is specified to target a single case. Other languages work differently, such that there are multiple cases that a particular probe might target. As we saw in Chapter 2, for example, arguments in Nepali are agreed with both when they are Nominative and when they are Ergative. With case features of the type we have employed, this is stated in terms of a class defined by [+subj]:

(10) T-probe in Nepali: Agree with the highest [+subj] argument.

The same kind of analysis cannot be made in a theory with (8) and the further assumption in (9). Presumably the probing head(s) would need to be specified with two distinct probes; one seeking an Ergative argument, and one seeking Nominative.

(11) Probes (hypothetical treatment of Nepali)

a. Probe 1: MS Agreement with Nominative.

b. Probe 2: MS Agreement with Ergative.

[5] For discussion of some specific proposals involving Ergative and Absolutive, see Zompì 2019 and references cited there.

This is certainly a possible move– after all, we have been making the point throughout this work that Case Targeting is required in some form. However, this kind of analysis potentially obscures certain types of generalizations that our representations are able to account for. Ported back into Sorani, there would be distinct probes on T and $\mathscr{O}$, as there are on our analysis:

(12) a. Probe 1 (on T): Agree with Nominative.
b. Probe 2 (on $\mathscr{O}$): Agree with Ergative

This specification produces the correct results for MS Agreement. But it fails to correlate behaviors in the way that the [+subj] feature does– i.e., the fact that MS Agreement in Sorani targets only the arguments that have other subject properties, and that are subject to *pro*-drop, is an accident on this approach. Moreover, one of the key tenets of theories adopting representations like (8)– that shared behaviors require contiguity in the case hierarchy– must be abandoned, since Accusatives and Objectives are not agreement targets.

The crux of the matter boils down to how to account for situations in which distinct cases behave similar for some process or processes. On our account, this work is done with features of the type [±subj] and [±obj]; and, as we have shown thoughout our case studies, the same feature specifications are employed in both syntax and morphological realization, even if there are sometimes mismatches between these two parts of the grammar. Though ultimately it might be possible to recast these in a worked out theory of case assignment, we speculate that the kind of work done by binary features will play a central role in any account that takes seriously both the morphosyntax of case and its realization.

To be fair, containment-based accounts like the one in (8) have (to our knowledge) only been explored in the domain of realization (the theory of syncretism in particular). Be that as it may, the way in which they represent cases provides a suitable comparison for the morphosyntactic theory that we have developed here; and on the basis of what we have presented above, it appears that such theories have difficulties on this side of the equation.

6.1.3 Implications for case assignment

Our goal in this book has been to show how MS operations target case features– in a way that is relatively neutral with respect to how case is assigned. At various points in the course of doing this, however, it becomes quite clear that the kind of analyses we have presented have certain implications for how case assignment works. In this section we will look in greater detail at two particular points of interest in this area. Both of these involve how Ergative case functions in our analysis of Sorani, and connect with case studies that are pursued in depth in Chapter 5.

The first concerns Non Canonical Subjects (NCSs). In Chapter 5 we took these to be Subjects that are assigned Ergative case by virtue of being introduced in the specifier of an applicative (Voice) head. As such, they show Ergative case in both aspects. NCSs in many languages have been studied under the label of *Dative Subjects*. For this reason, we consider an alternative treatment of Sorani in which these arguments are assigned Dative, and show why we believe the Ergative analysis is superior. The general question that this discussion

points to concerns how to distinguish different cases in an approach like the one that we have employed.

The second discussion point focuses on the idea that there are derived Ergative Subjects in Sorani. We argued for this point in Chapter 5, in our analysis of Indirect Object passives. The question of derived Ergatives connects with a substantial literature that compares the predictions of different theories of this case: inherent versus dependent case approaches in particular. We demonstrate here that while IO passives appear to provide evidence against the former type of view, the broader picture that emerges from Sorani is that Ergative can be assigned in more than one way– even within a single language.

Inherent Ergative Subjects In chapter 5, we investigated what are referred to as *non-canonical subject constructions* (NCS), which were unique in having Oblique subjects in both the perfective and imperfective aspects. We repeat below the two main types of constructions, the *want*-type (13) and the *clausal possession/have*-type, (14):

(13) a. min kitêb=**im** de-wê.
1SG.pro book=1SG.CL IND-want.PRS
'I want book/books.'

b. min kitêb=**im** wîst.
1SG.pro book=1SG.CL want.PST
'I wanted book/books.'

(14) a. ême kitêb=**man** he-(y)e.
1PL.pro book=1PL.CL exist-COP.PRS
'We have books.'

b. ême qalam-an=**man** ha-bû.
1PL.pro pen-PL=1PL.CL exist-COP.PST
'We had some pens.'

We argued that in both of these structures the argument indexed with MP clitic bears inherent Ergative case (modulo differences regarding the status of the other argument: the object is Objective in *want*-type, and the possessum is Nominative in *have*-type).[6] This conclusion is based on indexation behavior; in the system of cases we posit for Sorani repeated in (15), an argument that is the target of MS Agreement and indexed by an MP clitic is Ergative:[7]

(15) Sorani cases

[6]Recall that the inherent case account is clearest for *want*. For clausal possession, we hypothesized in 5.4 that there might be a connection with IO passives, where we believe that there are derived Ergative Subjects.

[7]Recall also that Persian also has the non-canonical subject construction, called *experiencer* construction by Jügel and Samvelian (2020), who show that the experiencers pattern like ergative subjects in Iranian languages with ergative-alignment. Therefore, we believe it is plausible to assume that the experiencer also bear inherent Ergative in Persian as well. See sect. 5.6.3 for more discussion.

	‘Nominative’	‘Ergative’	‘Accusative’	‘Objective’
subject	+	+	-	-
oblique	-	+	+	-

As already noted in Chapter 5, the study of NCS constructions in many language families is often framed as the study of *Dative* subjects. This raises the question of whether we should consider such an analysis for Sorani. We will address this question in two steps. First, we will show that while it is certainly possible to add an additional feature to the Sorani case system to define Dative case, there is little motivation for this move when the larger Iranian context is considered. When this latter point is paired with the absence of evidence for a distinct case internally to Sorani, it leads to the conclusion that the Ergative analysis is to be preferred.

In the abstract, what is needed for the introduction of Dative is an additional feature, given as [α] in (16):

(16) Extension of case feature system

	‘Nominative’	‘Ergative’	‘Accusative’	‘Objective’	‘Dative’
subj(ect)	+	+	-	-	+
obl(ique)	-	+	+	-	+
α	+	+			-

The idea here is to use [α] to (i) introduce a further type of [+subj,+obl] case, that is (ii) distinct from the Ergative.

Adding features in this way is always a possibility. On the face of it, there is little to motivate it given the specifics of the analysis that we developed in earlier chapters. In particular, there is first, no unique realization of this case morphologically, something which could surely motivate an additional feature; and second, the arguments in question do not display a unique indexation behavior. Within the boundaries that we have set for our analysis, this means that if the arguments in question wind up with [+subj,+obl], the correct results are produced, and there is no reason to modify the case system that we have been operating with.

The lack of motivation for positing additional features for Sorani becomes clearer when it is compared with other Iranian languages; we focus on Pamiri languages, which are spoken in the Pamirs region of Tajikistan, and parts of neighboring countries such as Afghanistan. Our illustration will proceed in a few steps. First, we will show that when there is a clearly Dative argument in an NCS-like construction, it fails subjecthood tests, and does not enter the indexation system. On the flip side of this, there are languages in which the situation is much like that in Sorani: the NCS behaves like a typical subject, and agrees in the way typical of Ergative arguments.

The first part of this– an NCS that does not behave like a typical Subject– is found both in languages such as in Rushani (which are split Ergative) , (17a), (Sergienko 2023), and in languages like Shughni (Parker 2023), as seen in (17b); the latter has a strictly Nominative-Accusative pattern of case-marking in both the present and the past tenses/stems. We see

that in both languages Dative-case marked arguments differ from other cases not just in terms of morphological realization, but also syntactic behavior.

(17) a. (a subset of) Rushani case patterns (from Sergienko 2023:11)

	1SG	2SG
NOM	az	tu
ERG	mu	tā
ACC	mu	tā
DAT	mu-ri	tā-ri

b. (a subset of) Shughni case patterns (adapted from Parker 2020)

	1SG	2SG	3SG.F
DIR (NOM)	wuz	tu/to	ya
OBL (ACC)	mu	tu/to	wam
DAT	mu-rd	tu-rd	wi-rd

Both of these languages have counterparts of Sorani NCSs in which the higher argument crucially bears Dative case, as opposed to the expected case: Nominative in Shughni; or split (Nominative in imperfective, and Ergative in the perfective) in Rushani. (18a) illustrates a typical transitive clause in Rushani, which has a double-oblique pattern. There is default (or no) agreement on the verb, which does not agree with obliques. On the other hand, in the Dative-construction in (18b), the ϕ-features of the non-Dative marked argument are reflected on the verb.

(18) Rushani

a. *Typical transitive*

tā mu wunt.
2SG.OBL 1SG.OBL see.PST
'You saw me.' (Sergienko 2023:7,(2))

b. *Dative-construction*

wóy-ri yiyó-āϑ xuš na sic.
3SG.M-DAT someone-NEG.INDEF good NEG become.PST.F
'He did not like anyone [of these women].' (adapted from Sergienko 2023:24,(38))

Another example is provided from Shughni, which shows a second-position clitic on the first constituent of the clause (see Parker 2020 for some discussion); this clitic always indexes an argument in Direct case. Note that in typical transitive clauses, the pronominal subjects bears Direct case as well as the second position clitic reflecting ϕ-features of this argument, with the object realized in Oblique case, (19a). On the other hand, a different case pattern arises in the Dative-construction (called *oblique-first construction* (OFCs) in Parker 2023)): The non-Dative argument bears Direct case, and additionally the second-position clitic reflects the ϕ-features of this argument, 'exam questions' in (19b):

(19) Shughni

a. *Typical transitive*

to=t mu wint.
you.DIR=2SG.CL 1SG.OBL see.PST

'You saw me.' (Parker 2020:(6))

b. *Dative-construction*

[tu-rd]=en [wað ikzamin sawol]-en qīni čud o?
you-DAT=3PL.CL [those.PL exam question]$_{dir}$-PL difficulty do.PST Q

'Were those exam questions difficult for you?' (Parker 2023:(12))

At this point, it is evident that the NCSc in Pamiri languages differ substantially from their counterparts in Sorani both in terms of their morphological realization and the overall agreement patterns. The significant question is whether the Oblique arguments in the *oblique-first construction* (OFCs) subjects or not. Parker (2023) provides a strong piece of evidence based on the subject-oriented anaphor *xu* 'self' that they are not. (20a) confirms that *xu* is subject-oriented. On the other hand, in the OFCs, *xu* cannot be co-indexed with the Dative argument, (20b).

(20) Shughni

a. wuz$_i$=um tu$_k$-rd xu$_{i/*k}$ čīd divišt.
I=1SG.CL you-DAT self house show.PST

'I showed you {my/*your} house.' (Parker 2023:(17a))

b. *Dative-construction*

[tu$_i$-rd] {tu$_i$ / *xu$_i$} čoy fort o?
you-DAT your / self tea be.desirous.3SG.PRS Q

'Do you want your tea' (Parker 2023:(18))

The same property holds in the split-Ergative Rushani language. While in typical clauses, the (Ergative) argument can bind the subject-oriented reflexive, (21a), this is not possible in the OFCs, (21b). In this regard, the oblique argument bearing Dative case does not display properties associated with subjects (whether Nominative or Ergative).

(21) Rushani

a. *Typical transitive*

mu xu det.
1SG.OBL self beat.PST

'I beat myself.' (Sergienko 2023:25,(42))

b. *Dative-construction*

*wóy-ri xu xuš na sat.
3SG.M-DAT self good NEG become.PST.M

'He did not like himself.' (cf. (18b))

Although more in-depth research is needed, the preliminary conclusion to be drawn is that the oblique-first constructions in Pamiri languages are most likely *intransitive* in nature, such that the Direct-case marked argument behaves as the grammatical subject, and the Dative-marked argument is an applied argument. In fact, the evidence for this again comes from the subject-oriented reflexive *xu* in Shughni. The example in (22b) shows that the direct-case bearing argument can bind *xu*.[8]

(22) Shughni: *Dative-construction*

a. mu-rd=en wāð mu gandagi-yaθ-ǰāt xuš nist.
me-DAT=3PL.CL they.DIR my badness-AUG-for pleasant NEG.COP
'I don't like them because of my badness.'

b. mu_{i}-rd=en wāð_{k} $\text{xu}_{\text{k/*i}}$ gandagi-yaθ-ǰāt xuš nist.
me-DAT=3PL.CL they.DIR self badness-AUG-for pleasant NEG.COP
'I don't like them because of {their/*my} badness.'

The patterns seen above suggest that within Iranian, it is possible to identify Dative arguments in clauses that are superficially similar to Sorani NCSs. However, these Dative arguments fail to show subject properties, and do not enter the indexation system. At the same time, there are other languages that behave more like Sorani, viz. in having NCSs with subject-like properties, and Ergative indexation patterns. Yazghulami, another closely-related Pamiri language, is instructive on this point. Yazghulami is a split-Ergative language, and exhibits double-oblique pattern in the perfective, just like Rushani.[9] Yazghulami also has the oblique-first construction, but the marking of this oblique is not Dative, which is also formed similar to Shughni and Rushani, i.e., via the oblique case plus an originally postposition which have grammaticalized into the case marker; rather, it is syncretic with the oblique found with Ergatives. Crucially, in this case, the oblique argument can bind a subject-oriented reflexive. Consider (23b). Jamison (2022) analyzes this oblique argument as Ergative, much as in our analysis of Sorani.

(23) Yazghulami

a. *Typical transitive*
tu ʒ=mon wint.
2SG.ERG DOM=1SG.OBL see.PST
'You saw me.' (Jamison 2022:36,(36))

b. *Non-canonical subject construction*

[8] Thanks to Clinton Parker (p.c.) for eliciting the Shughni data in (22).

[9] Yazghulami also shows a DOM marker on pronominal Direct Objects in both aspects, which is realized as a prefix. Some studies (Jamison 2022) treat this as an accusative form of the pronominal. If this latter approach is true, it would mean that Yazghulami differentiates Ergative and Accusative cases in terms of morphological realization as well. We have not been able to evaluate the full case system due to lack of access to complete data. We are also using ?? in the glossing for morphemes that are not clearly stated the literature, or at least are not clear to us.

dim na xi δoɣd manor ɣu.
3SG.F.OBL ?? self daughter much love.PRS
'She loves her daughter very much.' (Edelman 1974, as cited in Sergienko 2023:23,(36))

The discussion in this section is intended to highlight the fact that it is possible that there are reasons within the theory of case assignment to distinguish a Dative from an Ergative case under certain circumstances: this seems necessary for some Pamiri languages like Rushani or Shughni. Sorani, however, is unlike these languages, in that it lacks a morphologically distinct Dative. Sorani also fails to show the indexation behavior that accompanies these Dative marked arguments, which do not behave like subjects. Instead, the subject in Sorani NCSs behaves like a true subject, with Ergative indexing; from a comparative persective, this behavior is also found in Yazghulami where an Ergative analysis is also well-motivated.

Overall, then, the motivation for positing a Dative case in Sorani receives little motivation both from within the language, and when additional Iranian languages are considered.[10]

Derived Ergative A further theme involving Ergative case leads us back to the discussion of IO-passives of ditransitives from Chapter 5. There, we demonstrated that such passives are similar to NCSs in Sorani, in the sense that that the passivized-on IO behaves as a grammatical subject, and is indexed with the MP clitic in both aspects. The relevant data are repeated in (24) and (25), for the active and IO-passives clauses in the imperfective and perfective, respectively.

(24) a. Azad dyarî-ek-an pê=man de-d-at.
Azad gift-the-PL to=1PL.CL IND-give.PRS-3SG
'Azad will give the gifts to us.'

b. Azad dyarî-ek-an=î pê=man da.
Azad gift-the-PL=3SG.CL to=1PL.CL give.PST
'Azad gave the gifts to us.'

(25) a. ême dyarî-ek-an=man pê-de-d-rê-(n).
1PL.pro gift-the-PL=1PL.CL to-IND-give.PRS-PASS.PRS-PL
'We will be given the gifts.'

b. ême dyarî-ek-an=man pê-di-ra-(n).
1PL.pro gift-the-PL=1SG.CL to-give.PRS-PASS.PST-PL
'We were given the gifts.'

We took this behavior to indicate that the Subject in IO passives bears Ergative case. Crucially, though, the case assignment mechanism is different in these passives and NCS constructions, even though both show Ergative Subjects in both aspects. In the latter, we

[10]Of course, it is plausible that some languages could have morphologically distinct Dative case from Nominative (as in Icelandic) or Ergative (as in Nepali), which would still function as grammatical subject.

assume that it is a type of inherent Ergative, assigned by an Applicative Voice head. In IO passives, on the other hand, there appears to be derived Ergative– that is to say, Ergative on a derived Subject.

This last point– Ergative on a derived Subject– deserves some further remarks since it has significant theoretical implications. In order to appreciate it, it is important to remind ourselves of the case patterns in active clauses. Recall that when P-arguments (and possessors) are realized in situ, they are realized as MP clitics; on our analysis, as they are oblique, (24). These arguments also undergo clitic movement; and they are not agreed with. As such, in terms of the cases in (15) and what we saw in Chapter 4, they are assigned Accusative case. We accounted for this via the case rule in (26).

(26) CASE RULE 1: Possessors/P-arguments are assigned Accusative [-subj,+obl].

Chapter 5 also demonstrated that when possessors and P-arguments are realized as MP Agreement, they exhibit the properties that are otherwise shown by clitics assigned Objective [-subj,-obl] case in transitive clauses. Strikingly, they do this only when there is another argument local to them– a DO– that is assigned Objective case. We took this effect to be part of the generalization in (27):

(27) HYPOTHESIS: Possessors/P-arguments behave as if they have Objective case only in clauses where the DO has this case.

To account for this mechanically, we posited another case rule, (28):

(28) CASE RULE 2: Assign Objective case to moving [+m] pronouns when a local argument is also assigned Objective.

This rule is stated abstractly, since a precise statement can only be made in a worked-out theory of how case features are assigned. For our purposes here, the important point to focus on is the manner in which Case Rule 2 is *contextual* in a particular way: one type of case assignment may override another when specific conditions in the context of the assignee are met. In the specific case of (28) there is a kind of 'matching' (or attraction) effect, with one argument being assigned features that are similar to the another one in its local context. The basic intuition that the case of an argument is contextually determined fits well with the guiding intuitions behind configurational theories of case assignment. Within this type of theory, a P-argument could bear distinct cases that are dependent on the presence or absence of another argument in its local domain (usually characterized as *phase*, cf. Baker 2015).

The question then is how this kind of reasoning might be applied to the Ergative case found in IO passives. The reason to highlight this point is because a derived Ergative provides important evidence concerning the status of Ergative case cross-linguistically. In simple form, derived Ergative is not compatible with the inherent case view of ergativity (e.g., Woolford 2006a; Legate 2008; Massam 2001), which takes this to be impossible. This is referred to as the *Ergative Case Generalization* in Marantz (1991).

(29) **Ergative Case Generalization:** Even when ergative case may go on the subject of an intransitive clause, ergative case will not appear on a derived subject. (Marantz 1991:236)

Legate (2012) suggests two configurations that would allow the Ergative Case Generalization to be tested:

> "The reference [by Marantz] to the subject of an intransitive clause is to circumvent the confound of the transitivity restriction: in general, transitive verbs have a thematic subject that becomes the surface subject, making it impossible to test whether a derived subject could bear ergative case. An additional way around the confound would be a two-argument verb in which both arguments are internal, for example, *the passive of a double object verb*, or *the applicative of an unaccusative verb*. If the Ergative Case Generalization holds, the subject of such verbs would not bear ergative case, despite the presence of two DP arguments. (Legate 2012, 183, emphasis added)"

As we noted in Chapter 5, applicatives of unaccusatives have recently featured prominently in the literature on Ergative case, with an eye towards probing (29) (Baker 2014; Deal 2019). There are cases that appear to show that it is false. For example, in Shipibo, a language with Ergative-Absolutive alignment, applicatives of unaccusatives feature Ergative case on the theme argument - a derived (transitive) subject. In the basic unaccusative in (30a), the subject is Absolutive, whereas in the applicative unaccusative in (30b), the subject is Ergative.

(30) Shipibo

a. Kokoti-ra joshin-ke.
fruit.ABS-EV ripen-COMPL
'The fruit ripened.' (Baker 2014:345)

b. Bimi-n-ra Rosa joshin-xon-ke.
fruit-ERG-EV Rosa.ABS ripen-APPL-COMPL
'The fruit ripened for Rosa.' (Baker 2014:346)

However, the status of the derived ergative from the perspective of passivization of ditransitives has not been reported yet. This makes the Sorani IO passive somewhat unique at present.

Much discussion has been devoted to testing (29)– and even more to the debate between inherent and configurational approaches to ergativity.[11] The arguments presented in this study suggest that the latter is a false dichotomy. Taken together, our analyses point to Ergative case being assigned in what look like three different ways:

[11] Compare Baker and Vinokurova (2010) who argue for two methods of case assignment within the language Sakha (Turkic), but for different cases. Here we take it one step further and suggest that the same case features can be assigned in different ways.

(31) Ergative assignment in Sorani

a. INHERENT: For arguments introduced in the Applicative head in NCS.

b. CONTEXTUAL 1: For transitive Subjects in clauses that contain Asp[perf].

c. CONTEXTUAL 2: For the Subjects in IO passives.[12]

As we noted earlier in this chapter, all clauses have the same probe structure on T and $\mathcal{O}$. Differences in indexation properties follow from the differences in case assignment in perfectives and imperfectives. Since these differences make reference to a property of the clause in the local environment of the case-assignee, they are contextual in the broad sense that we intend here. Importantly, while both (31b) and (31c) are both contextual, one cannot be reduced to the other: one is aspect-sensitive, and the other is not.

We have emphasized these aspects of our treatment of Ergative in Sorani to focus attention on the ways in which it connects with **both** inherent and configurational theories of case. As far as the latter are concerned, we hope that the level of precision that we have reached– including but not limited to the speculations concerning IO passive/clausal possession structural links in 5.4– will prove important in formalizing a theory of case assignment that operates with decomposed features.

On this last point, the idea that case must be approached in a granular way makes it less surprising that debates like the 'Inherent versus configurational Ergative' one have not produced a clear outcome. If we are correct, discussions operating with labels like *Ergative* etc. might not be operating with the correct unit of analysis. Generalizing, the idea worth exploring in the future is that some of the particular points of disagreement in the literature on case assignment are contentious precisely because they operate in terms of case labels, not finer-grained case features. That is, for a case defined as e.g. $[+\alpha,-\beta]$, it is possible that the factors involved in assigning $[\pm\alpha]$ are different in kind from those involved in assigning $[\pm\beta]$ (e.g. one reflects a configurational property, the other whether or not there is a particular type of head in a local relation). It is also possible that one and the same set of features might be assigned in more than one way, as in our analysis of Sorani summarized in (31).

In summary, it remains to be seen what will emerge from an attempt to formulate principles of case feature assignment that uses the kinds of insights we have extracted from indexation systems as boundary conditions.

6.2 A 'Height-Only' alternative to Case Targeting

A central claim in our work is that MS operations may target specific case features in the ways illustrated above. In its essence, we can draw a parallelism between the so-called generalized vs. specified feature-probing (terms due to McGinnis 2008). In a language like English, uninterpretable ϕ-features generated on a syntactic head are generalized categories, such as person and number. This probe finds the closest constituent that bears the interpretable feature. However, in a specified probe, the feature specifications of a head are

[12] And possibly those in clausal possession; recall 5.4.

more 'articulated', as such it looks for an argument that bears the specific features on the head, which may or may not be the closest argument.[13]

As part of the argument that the grammar works in this way, we consider alternative proposals, and show where they have difficulties in accounting for the facts of Sorani. A type of analysis that is clearly very different from ours would be one that makes no reference to case in accounting for Sorani indexation. Thinking about this on a general level, one way to eliminate case from the equation is to make indexation behavior fall out from having probes target only the highest argument in their search domain. This kind of *height-only* approach is motivated by the fact that it appeals to a kind of locality that clearly plays a role in morphosyntax. For example, locality of this type is operative in our own analysis of Hindi in Chapter 2. Recall that in that language, both Subjects and DOs can be agreed with–on our analysis, because they can both be [-obl]. In clauses that contain two such arguments, it is the Subject that is agreed with. We accounted for this fact by appealing to locality in the statement of how the relevant probe(s) in Hindi function:

(32) Hindi probes: Agree with the highest [-oblique] argument.

The question at hand is whether the Sorani system could be analyzed with **only** a locality condition like that in (32); that is to say, without reference to case at all.

We will examine this alternative approach in two steps. First, we will look at height-only in the abstract, and show that it makes a number of incorrect predictions when the full range of Sorani facts are considered. One point of interest is that possible solutions to the problems we identify make reference to transitivity; this effectively introduces an argument's case into the picture: precisely the position we have argued for in the preceding chapters.

The second part of the discussion turns to a specific case-study. As it turns out, a height-only analysis has also been extended to alignment splits of a type that share many properties with the one found in Sorani. Kalin and van Urk (2015) in particular employ this kind of system to analyze indexation in certain Neo-Aramaic varieties. We show that while their approach is able to correctly account for the indexation patterns of the languages that they examine, there are other varieties for which it makes incorrect predictions. For these reference to case features is required, along the lines of what we have demonstrated for Sorani.

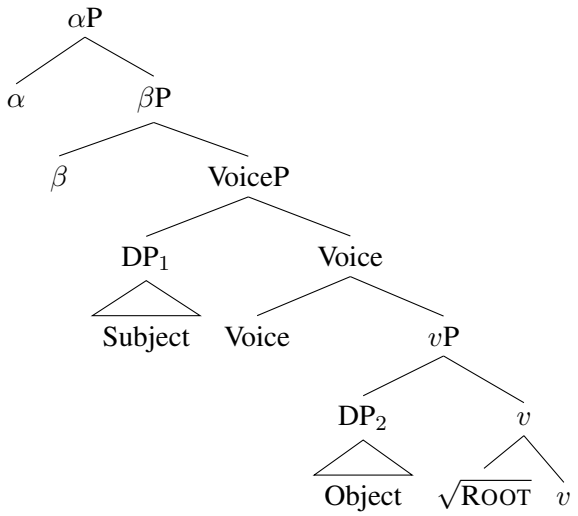
6.2.1 Height-only in the abstract

As we noted above, case targeting in Sorani does not exhibit hierarchy/superiority effects as long as the DPs in question are viable goals for the probes; but it nevertheless is subject to locality effects. By this, we mean that for example, both DPs are within the same clause such that a DP is not inside a CP complement of that verb, or a DP is not contained inside of another DP (see 6.3.1 for some discussion).

[13] Specified (or articulated) probes have been implemented for a family of restrictions named the Person-Case Constraint (PCC; Perlmutter 1970; Anagnostopoulou 2006; Preminger 2009; Deal 2021, a.o.) In PCC configurations (as well as direct/inverse systems), whenever two DPs are located in the domain of a single probing head, the result of Agree seems to depend not on the relative height of the arguments but on their relative ranking on a nominal hierarchy of ontological salience, e.g., a person hierarchy.

The question at hand is whether the system could be analyzed in a way that makes use only of locality, i.e., to the relative height of arguments in a clause. Abstractly, we will assume in exploring this initially that there are two heads α and β that are involved in indexation (like our T and $\mathscr{O}$). We will further assume that these are above the VoiceP in which the Subject and Direct Object are merged, as in the following structure:

(33) Structure



Beyond these assumptions, aspectual sensitivity has to be introduced in the picture in some form; we will simply stipulate that α and β possess probes whose behavior is determined by Aspect, without dwelling further on how this might be encoded formally.[14]

Anticipating the forthcoming illustration of Sorani Kurdish, the operations performed by the α and β probes could be stated as in (34-35):

(34) In Aspect 1 = Nom/Acc

a. α: Clitic moves DP2

b. β: Agrees with DP1

(35) In Aspect 2 = Erg/Abs

a. α: Agrees with DP1

b. β: Clitic moves DP2

This analysis dispenses with reference to case by making what probes operate in a way that is sensitive to height alone. For MS Agreement, each of α and β target the DP that is most local to them. MS Clitic movement does the opposite; it targets arguments that are lower than the Subject. Let us grant that further assumption(s) could be adopted to make the subject invisible for MS Clitic probes.

[14] See Akkuş 2020 for a concrete proposal.

Applied more concretely to Sorani Kurdish, α and β correspond to T and $\mathcal{O}$. Shifting now to focus on what the probes on these heads would do, the properties of transitive clauses could be accounted for by positing that these heads have the properties in (36-37):

(36) The probes on T

a. MS Agree with the highest argument in imperfective clauses;

b. MS Clitic Move the lower (=not highest) pronominal clitics in perfective clauses.

(37) The probes on $\mathcal{O}$

a. MS Clitic Move lower arguments in imperfective clauses;

b. MS Agree with the highest argument in perfective clauses.

In terms of morphology, the elements interacting with T would be MP Agreement; those with $\mathcal{O}$, on the other hand, would be realized in MP Clitic form.

This approach is able to produce the correct results for transitives. It might also be able to make other distinctions, e.g. in defining which arguments are eligible for *pro*-drop– recall earlier that this is possible only for Subject, i.e., the highest arguments in the clause.

It would be possible to ask how satisfying this analysis of transitive clauses is, i.e. how it (and the assumptions that it requires) compare with case targeting. But we will not do this, because the analysis at hand makes incorrect predictions when further facts are considered. In particular, consider intransitives– whether unergatives or unaccusatives, or passives– in the perfective . Given the specification of $\mathcal{O}$'s probes in (37), the sole arguments of these predicates should be targeted by this head, and their agreement should be in MP Clitic form. This is clearly false; as we saw in earlier chapters, intransitives of this type are indexed by MP Agreement (38):

(38) a. otombîl-ek-an=man be-ra-*n*.
car-the-PL=1PL.CL take.PRS-PASS.PST-PL
'Our cars were taken away.'

b. (ême) kewt-*în*.
1PL.pro fall.PST-1PL
'We fell.'

c. (ême) kok[î]-în
1PL.pro cough.PST-1PL
'We coughed.'

The problem arises from the fact that it is not simply aspect that determines indexation behavior: it is aspect along with the transitivity of the clause. An attempt to incorporate this sensitivity into the a height-based account would have to assume that the statements in (36-37) make reference to this aspect of clause structure so that they apply only in transitive clauses; an additional statement would be required to specify that T is the active probe in intransitive clauses (in an aspect-insensitive way). However this is done, it essentially undermines the premise with which we started, viz. that this alternative operates without reference to case features. Since transitivity plays a defining role in defining case-alignment,

referring to it in the statement of how probes operate is tantamount to holding that case features drive indexation behavior–the opposing position that we have argued for throughout this work.

As we said above, this assessment of height-only is designed with the particularities of Sorani in mind. We assumed, for example, that there are two different heads that are involved in the indexation, and not e.g. that imperfective and perfective clauses have different numbers of probes available in them.[15]

On this latter point, Kalin and van Urk (2015) employ a difference of this type in their analysis of Neo-Aramaic varieties, and show that it is able to account straightforwardly for the properties of transitive clauses. In order to further motivate the case targeting approach we will now review their arguments, and demonstrate that (as in the case of Sorani) case targeting is required when a wider range of facts (and varieties) are considered.

6.2.2 Illustration: Indexation in Neo-Aramaic

A solely height-based analysis runs into issues in languages beyond Sorani Kurdish as well. As an illustration, we examine the indexation patterns from some North-Eastern Neo-Aramaic (NENA) varieties. Many NENA dialects exhibit an aspect-based split between imperfective and perfective, in which the latter has ergative-absolutive morphology, and an alignment inversion that parallels the feature of the Iranian languages analyzed in this book (see Coghill 2016 for the role Kurdish varieties might have played in this development historically).

The verbal template of transitive verbs in Neo-Aramaic languages involves the presence of two sets of suffixes – traditionally called *S-suffix* and *L-suffix* – that appear on the verb stem in a fixed order in both imperfective and perfective aspects. This is schematized in (39).

(39) Verb $\text{Stem}_{\text{PERF/IMPF}}$ – S-suffix – L-suffix

The labels S-suffix and L-suffix correspond to different sets of φ markers (see e.g., Khan 1999, 2004; Doron and Khan 2012; Coghill 2016; Kalin and van Urk 2015). The S-suffix, which stands for *simple-suffix*, historically marked the subject agreement. The term L-suffix, named as such since all the markers start with an *l-*, was historically a dative/accusative preposition, and synchronically these φ elements pick out clitics (Doron and Khan 2012; Kalin and van Urk 2015). In terms we adopt in this study, the L-suffix is morphophonologically (MP) treated as a clitic, whereas the S-suffix behaves as an MP agreement. At least descriptively, the Oblique Case in Iranian is functionally equivalent to the L-suffixes in Aramaic, and Direct Case corresponds to the S-suffixes. Therefore, in keeping with our treatment of Sorani indexation patterns, we illustrate the S-suffix in *italics* and the L-suffix in **boldface** to reflect their morphophonological status.

Some dialects have the kind of 'mirror image' effect in indexation patterns that is found in Sorani: the same sequence of agreement markers index the opposite grammatical relations in the perfective and imperfective. This is schematized in (40):

[15] Or that probe structure differs in other ways by aspect; on this see 6.2.3.

(40) ‘Mirror-Image’ Neo-Aramaic

	S-SUFFIX		L-SUFFIX
IMPERFECTIVE	Subject		DO
		×	
PERFECTIVE	DO		Subject

So, for example, in both of the examples in (41), the *á*=lu sequence cross-references the Subject and the Object, but it does so inversely depending on aspect. In the imperfective, (41a), the morpheme *-á* indexes the Subject and the morpheme *-lu* indexes the Object. On the other hand, in the perfective aspect, (41b), the morpheme *-á* indexes the object and the morpheme *-lu* indexes the subject.

(41) Jewish Sanandaj (Doron and Khan 2012:4a-b)

a. baxt-ăke barux-ăwal-i garš-*á*=**lu**.
woman-DEF friend-PL-my pull.IPFV-NOM.3FS=ACC.3PL
‘The woman pulls my friends.’

b. barux-ăwal-i baxt-ăke gərš-*á*=**lu**.
friend-PL-my woman-DEF pull.PFV-ABS.3FS=ERG.3PL
‘My friends pulled the woman.’

The same property holds in Christian Barwar as well, as in (42). The morphemes in the sequence *í*=*le* cross-reference different arguments depending on the aspect.

(42) Christian Barwar (Kalin and van Urk 2015:5a-b, glossing maintained)

a. qaṭl-*í*=**le**.
kill.IPFV-S.3PL-L.3MS
‘They kill him.’

b. qṭil-*í*=**le**.
kill.PFV-S.3PL-L.3MS
‘He killed them.’

Kalin and van Urk (2015) provide an elegant height-based analysis that captures the agreement pattern in (41) and (42) (they focus on Christian Barwar, as well as what is referred to as a ‘partial’ agreement reversal in Senaya; we leave the latter to the side since it is orthogonal to the discussion here). In their system, both imperfective and perfective have an Aspect head, but this head ϕ-probes only in the imperfective. Since the Asp head is lower than Tense, and carries a ϕ-probe in the imperfective, it takes over the role of licensing the *highest* argument (subject). The T head is then related to the object in the form of an L-suffix (more precisely, MP clitic). Thus, the result is the indexation pattern of the sort in (41a)-(42a). On the other hand, in the perfective aspect, T is the only head that carries

a ϕ-probe; therefore it this probe that agrees with the subject, with this being expressed morphologically in the clitic form (i.e., L-suffix), yielding (41b)-(42b).[16]

This proposal derives the properties transitive clauses as well as the intransitive clauses in Christian Barwar and Senaya varieties, which are illustrated in (43). These show agreement with the subject realized as an L-suffix:

(43) a. axnii dmex=**lan**.
we sleep.PFV-L.1PL
'We slept.' (Senaya; Kalin and van Urk 2015:3)

b. kalba nwix=**le**.
dog bark.PFV-L.3MS
'The dog barked.' (Christian Barwar; Kalin and van Urk 2015:28b)

In the perfective aspect, since T is the only ϕ-probe bearer, it licenses the highest (sole) argument in the L-suffix form, regardless of whether that argument is generated in Spec,VoiceP (as in unergatives), or as the complement of the verb (as in unaccusatives).

Their system predicts quite generally that intransitives in the perfective should be indexed with L-marking. While this prediction is borne out for the C. Barwar and Senaya varieties, such a system cannot extend to Sorani Kurdish varieties; as we saw above, intransitives invariably behave as Nominative in Sorani.

Interestingly, given the parallels and possible connections between Kurdish and NENA, the same type of problem arises when additional NENA varieties are taken into consideration. We will first briefly introduce the classifications of the dialects according to their alignment behavior, and then examine the implications of the relevant patterns for a height-based account.

Doron and Khan (2012) classifies the NENA dialects according to the degree of ergativity they exhibit: (i) Extended-Erg(ative) dialects, (ii) Split-S dialects, and (iii) Dynamic-stative. Let us introduce each dialect type in turn and focus on the implications of the Split-S and potentially Dynamic-stative dialect groups.

Extended-Erg dialects In these dialects, the ergative marker has been extended to unaccusatives as well, thus all A and S arguments are cross-referenced with an L-suffix. The dialects discussed in Kalin and van Urk (2015) also fall into this category.[17]

(44) Aramaic: Christian Barwar (Doron and Khan 2012:16)

a. xawr-ăwaθ-i brat-i griš-*a*=**la**.
friend-PL-my daughter-my pull.PERF-ABS.3FS=ERG.3PL
'My friends pulled my daughter.'

[16] We will not review their analysis of the DO's indexation properties in the perfective, as this is tailored to some properties that are specific to Aramaic varieties (in particular, a type of PCC effect).

[17] See Doron and Khan (2012) for the discussion of why these dialects should still be considered ergative-absolutive, and not nominative-accusative. See also Kalin and van Urk (2015) for the same treatment.

b. kalba nwix=**le**.
dog bark.PERF=ERG.3MS
'The dog barked.'

c. brat-i qim=**la**.
daughter-my rise.PERF=ERG.3FS
'My daughter rose.'

Split-S dialects In these dialects, the ergative marker is found with *transitive* and *unergative* verbs, but not with *unaccusative* predicates.

(45) Aramaic: Jewish Sanandaj (Doron and Khan 2012:15)

a. barux-ăwal-i brat-i gərš-*a*=**lu**.
friend-PL-my daughter-my pull.PERF-ABS.3FS=ERG.3PL
'My friends pulled my daughter.'

b. kalba nwəx=**le**.
dog bark.PERF=ERG.3MS
'The dog barked.'

c. brat-i qim-*a*.
daughter-my rise.PERF-ABS.3FS
'My daughter rose.'

Dynamic-Stative As noted in Doron and Khan (2012), in this dialect group, the ergative marker is *optionally* found with unaccusative predicates.[18] The absolutive marking of unaccusative verbs survives in perfective statives (a kind of present perfect), as in (46a); ergative marking appearing in dynamic unaccusatives, (46b).[19]

(46) Aramaic: Jewish Urmi (Doron and Khan 2012:23)

a. brat-i qim-*a*.
daughter-my rise.PERF-ABS.3FS
'The daughter has risen.'

[18] Akkuş (2020) notes a very similar pattern for a Mutki subvariety of Zazaki.

[19] There is yet another type of alignment that is found in a small number dialects, in which both the A and O arguments are indexed with an L-suffix; this resembles the double-oblique pattern in Iranian languages.

(i) a. qṭ´əl=**la**=**le**.
kill.PERF=L.3FS=L.3MS
'She killed him.' (J. Urmi; Khan 2008:139-140, as cited in Coghill 2016:64)

b. pṭ´əx=**li**=**le**.
open.PERF=L.1SG=L.3MS
'I opened it.' (C. Bohtan; Fox 2009:53, as cited in Coghill 2016:64)

b. brat-i qəm=**la**.
daughter-my rise.PERF-ERG.3FS
'The daughter rose.'

* * *

Of the three dialect groups, Kalin and van Urk's (2015) system most straightforwardly captures the Extended-Erg type, which is indeed the focus of their study. Crucially, this system faces difficulties that are the same as those posed by Sorani Kurdish when we consider intransitives and passives from other NENA dialects. Under the conventional assumption in the Aramaic literature that basic clausal syntax is identical across these dialects in relevant respects (see e.g., Doron and Khan 2012), any intransitive clause that marks the sole argument with an S-suffix in the perfective, e.g., (45c), poses a challenge. The same issue arises in the case of passives as well. Coghill (2016) notes that the perfective verb base can be used with transitive verbs, but only with passivized (i.e. intransitive) function, as in (47c). The examples in (47a)- (47b) further illustrate the L-suffix on the transitive subject, and the S-suffix of the transitive object in the perfective.[20]

(47) Aramaic: Jewish Sulemaniyya (Coghill 2016:66)

a. šəql-*a*=**lox**.
take.PERF-ABS.3FS-ERG.2MS
'You (ms.) took her.'

b. qṭəl=**la**.
kill.PERF=ERG.3FS
'She killed *pro*.'

c. qṭil-*a*.
kill.PERF-ABS.3FS
'She was killed.'

Non-canonical subject constructions ('Verboids') Besides the issue raised by intransitives in the perfective of some dialects where they are indexed with an S-suffix, another challenge comes from certain predicates, called 'verboids' in the Aramaic literature. These are remarkable in showing an ergative alignment in both aspects– in this way they resemble

[20]The Dynamic-Stative dialect group might also be potentially problematic for a purely height analysis, in that the sole argument of unaccusative predicates may *optionally* bear S-suffix or L-suffix (cf. (46)). The complicating factor for a clear conclusion comes from the fact that the tense also differs in this dialect group.

This pattern can be captured by altering which head is involved in case assignment. If Voice[erg] is involved, this results in an L-suffix, presumably via an inherent ergative case. On the other hand, if T is the head that participates in case assignment, then this surfaces as an S-suffix. The analogy with the Kurdish varieties is evident in that it is the specifications of the functional head that plays a role. Crucially, in both cases the position of the sole argument is the same, and height is not at play (see also Akkuş 2020 for illustration of some Zazaki and Wakhi dialects).

the Non Canonical Subject constructions of Iranian languages. Although the exact list of verboids varies from dialect to dialect (thanks to Eleanor Coghill, p.c. for discussion), they are often stative, experiencer predicates, e.g., 'to have', 'to fear'; again, this is similar to what we saw in Iranian.

We provide some examples from the Jewish Neo-Aramaic dialect of Betanura (Mutzafi 2008), which exhibits properties of the Extended-Erg dialect group for the most part. In the imperfective, it exhibits nominative-accusative alignment, (48), whereas in the perfective Subjects of both transitives and intransitives are marked with the L-suffix for the most part, (49).[21]

(48) Aramaic: Jewish Betanura

a. bḥapq-*an*=**ne**.
embrace.IPFV-NOM.1SF-ACC.3SF
'I will embrace him.'[22] (Mutzafi 2008:85)

b. boδ-*an*.
do.IPFV-NOM.1SF
'I will do.' (Mutzafi 2008:61)

c. gṛoy-*a*.
grow.up.IPFV=NOM.3SF
'She grows up.' (Mutzafi 2008:85)

(49) Aramaic: Jewish Betanura

a. nšiq-*ā*=**le**.
kiss.PERF-ABS.3SF-ERG.3SM
'He kissed her.' (Mutzafi 2008:85)

b. unergative
... zəl=**le**
go.PERF=ERG.3SM
'[The one who] ... went.' (Mutzafi 2008:55)

[21] The restriction to 'for the most part' in the text is due to an additional property of Jewish Betanura: the S-suffix (referred to as E-suffix in the work) appears in the subjunctive mood, as well as in passive preterites (Mutzafi 2008:49).

(i) Aramaic: Jewish Betanura

a. gniw-*i*.
steal.PERF-ABS.3PL
'They were stolen.' (Mutzafi 2008:74)

b. koδənta lá-zwin-*a*.
mule NEG-buy.PERF-ABS.3SF
'The mule was not bought.' (Mutzafi 2008:68)

[22] The L-suffix undergoes full assimilation of *l* to a preceding *n, r* or *t*.

c. unaccusative

ṛwe=**le**.
grow.up.PERF=ERG.3SM
'He grew up.' (Mutzafi 2008:85)

While showing this alignment split (more precisely, Extended-ergative) for typical verbs, predicates such as *śad* 'fear', *gəbe* 'to be necessary', *ʕājəb* 'to wish, like' combine with the L-suffix regardless of the aspect (see Mutzafi (2008) for a more comprehensive list of the verboids in this dialect).[23]

(50) Aramaic: Jewish Betanura

a. k-śad=**le**.
IND-fear=ERG.3SM
'He fears.'

b. k-śadwā=**le**.
IND-feared=ERG.3SM
'He feared.' (Mutzafi 2008:88)

(51) Aramaic: Jewish Betanura

a. mād ʕājəb=**la** yəmm-a.
what IND-like=ERG.3SF mother-her
'whatever her mother likes.'

b. g-ʕājəbwā=**li** ...
IND-liked=ERG.1SG ...
'I liked ...' (Mutzafi 2008:88)

The behavior of verboids is also problematic for a purely height account. Recall that on an analysis like that developed in Kalin and van Urk 2015, the L-suffix appears in the perfective because it is there that T agrees with that argument. Since Aspect has the active probe in the imperfective, it is predicted that the highest argument there should always be index by an S-suffix. The behavior of the verboids falsifies this prediction. The aspect-invariance of their arguments calls for an analysis of the type developed in this book for Iranian languages (cf. section 5.2), in which certain predicates have inherently ergative subjects in both aspects.[24]

[23] It has been reported that some varieties that are Nominative/Accusative in both aspects show L-marking for verboids; see Coghill 2018 for verboids in the Telkepe (a town on the Mosul Plain) variety of Aramaic. Recall from Chapter 5 that this sort of pattern is also seen in Persian.

[24] A more comprehensive look at Aramaic would also consider another interesting pattern, which concerns the imperative forms of certain verb such as *ʔ-θ-y* 'to come'. In such cases, the verb is also attached with the L-suffix rather than the S-suffix. e.g., *θā=**lox*** '(you.m) come!', *θā=**lax*** '(you.f) come!' (Mutzafi 2008:79). The presence of such forms further highlight the role of multiple elements in determining the form of the agreement.

6.2.3 Further alternatives and summary

As we noted at the beginning of this section, an analysis based solely on height is essentially one in which generalized feature-probing targets the highest argument. This type of analysis produces the correct results for a certain type of alignment system that is found in Neo-Aramaic varieties, as we saw in our discussion of Kalin and van Urk (2015) above. However, a purely height account fails to capture the whole range of facts across dialects (and within the same a single dialect as well). In our view, the conclusion that must be drawn is the one that we have motivated in our analysis of Sorani: viz., that probes are specified with specific case-features, which may or may not be matched with the highest argument.

The arguments against a purely height-based approach above consider one way of implementing this view. There are of course other possibilities, which would differ in terms of (among other things) where probes are located, and when they are active. We will briefly address some further possible height manipulations, as a way of trying to make our central argument precise. The conclusion that we will draw is that the relevant alternatives make unmotivated assumptions about clause structure, and (crucially) are not able to account for the full range of Sorani facts.

Manipulating probe height In the abstract, another type of height-based alternative to consider situates probes in different positions in the structure in a way that depends on aspect.[25] With the 'mirror-image' property of Sorani indexation in mind, this would involve something like the following:

(52) Schematized probe reversal

a. IMPERFECTIVE: $P_1 > P_2$
   $\Rightarrow$ P_1 finds the Subject, and P_2 the DO = Direct/Oblique

b. PERFECTIVE: $P_2 > P_1$
   $\Rightarrow$ P_2 finds the Subject, and P_1 the DO = Oblique/Direct

The P_1 probe is associated with Direct cases, and P_2 with what we call obliques; this is what would account for φ realization as an MP clitic or MP agreement.

The intuition is that reversing the relative height of the probes in the structure produces the 'flip' between the two aspects. Various additional assumptions would be needed to make this work– concerning e.g. when these probes operate, and how this interacts with the position of the Subject and the Direct Object.

When we look closer at how the details of this analysis might work, it is difficult to see how it encodes the crucial difference between the two MS operations of Agreement and Clitic Movement. Specifically, there is a sense in which it might not make sense to call the

[25] Thanks to Tanya Bondarenko, p.c., for raising this possibility. Akkuş (2020) discusses something similar for probe structure in Northern Kurdish, and argues (as we do here) that having different probe structure in different aspects fails to explain the relevant facts.

The same study also argues against the existence of a phasehood asymmetry between perfective and imperfective stems in Iranian. In fact, it is easier to show that such a move is even less compelling for the Central Kurdish. Note that the "object shift" patterns remain constant in both aspects, with the Obl ($\mathscr{O}$) head serving as the locus of object shift as well as the locus of certain Agree/Move operations.

two probes the same in the two aspects, as they do different things: P_1 is MS Agreement in the imperfective, but MS Clitic Movement in the perfective; with P_2 the situation is reversed, since it must be for MS Clitic Movement in the imperfective, and MS Agreement in the perfective. The sense in which these probes are the **same** (and simply in a different configuration) is thus not at all clear.

It might therefore be more transparent to say that the imperfective has a probe P_3 for MS Agreement, which is higher than P_4 for MS Clitic movement. That is:

(53) Schematized probe reversal (revised)

a. IMPERFECTIVE: P_1 (Agreement) $>$ P_2 (Clitic Movement)
$\Rightarrow$ P_1 finds the Subject, and P_2 the DO = Direct/Oblique

b. PERFECTIVE: P_3 (Agreement) $>$ P_4 (Clitic Movement)
$\Rightarrow$ P_3 finds the Subject, and P_4 the DO = Oblique/Direct

A problem that then arises is how to relate these probes to their morphological expression: P_1 and P_4 are MP Agreement, and P_2 and P_3 produce MP clitics. But this does not follow from anything; since these probes are distinct, they could be grouped in any other way for the purposes of how their φ elements are realized. Put differently, there is no connection on this account between probe locus and form– something that follows on our account from the way in which MP Agreement or Clitic form is determined by a case feature that is also referred to by probes.

On this latter point– and concerning the MP clitic realizations in particular– one type of evidence that would provide evidence for probe reversal concerns clitic placement. Reversal of the probe might lead us to expect a difference in the positioning of clitic hosts: at least, if there were differences in clitic placement in the imperfective and perfective, the probe reversal account would have a straightforward explanation for it, since the probes in the two aspects are in different positions. However, there is no evidence of this type: in both aspects clitic placement functions in the same way.

Moving ahead, there are stronger arguments against something like (52), and they have been encountered before. In particular, reversing probes makes it difficult to explain the behavior of intransitives in a language like Sorani, which are uniformly indexed with MP Agreement. On a probe reversal account, the expectation is that the probe finding the Subject of transitives should be the same way that finds the Subject of an intransitive: it is therefore predicted that intransitive Subjects in the perfective should be in agreement with P_2 (or P_3) and be indexed with an MP Clitic; and this is not the case.[26] As noted earlier in this chapter, possible fixes to this kind of problem that we have conceived of– e.g. making the probe structure sensitive to transitivity– are tantamount to introducing case into the picture.

Manipulating argument height The second option to consider involves identical probe structure in the two aspects, but manipulates the relative height of arguments to produce the

[26] Along similar lines, it is also difficult for such an account to explain is the aspect-insensitive indexation seen in the *want*-type of verb and in IO passives.

alignment split. The key idea here is to have the Subject higher than the DO in one aspect, but the reverse configuration in the other.

Before getting into the details of the probes, it bears emphasizing that the Subject is clearly higher than the DO on the surface. This has been shown in various parts of the book, thus we illustrate it here only with two phenomena which are sensitive to the c-command relation. In (54), the subject binds the anaphor DO in both the imperfective and perfective aspects.

(54) a. ême xo=man de-bîn-*în*.
1PL.pro self=1PL.CL IND-see.PRS-1PL
'We see ourselves.'

b. ême xo=man**=man** bînî.
1PL.pro self=1PL.CL=1PL.CL see.PST
'We saw ourselves.'

Weak Crossover (WCO) can also be used to demonstrate that unless the DO ispassivized over, as such establishes a new binding relation permitting bound-variable interpretation, the subject is structurally higher than the DO. Crucially this pattern also holds in both aspects. Consider (55)-(56).

(55) a. dayk=î hemû qutabiy-êk de-bîn-ê(t).
mother=3SG.CL every student-a IND-see.PRS-3SG
'His$_{k/*i}$ mother sees every student$_i$.'

b. hemû qutabiy-êk de-bîn-rê(t) le layen
every student-a IND-see.PRS-PASS.PRS.3SG from side
dayk=î=yewe.
mother=3SG.CL-ITER
'Every student$_i$ is seen by his$_{i/k}$ mother.'

(56) a. dayk=î hemû qutabiy-êk=î bînî.
mother=3SG.CL every student-a=3SG.CL see.PST
'His$_{k/*i}$ mother saw every student$_i$.'

b. hemû qutabiy-êk bîn-ra le layen dayk=î=yewe.
every student-a see.PRS-PASS.PST from side mother=3SG.CL-ITER
'Every student$_i$ was seen by his$_{i/k}$ mother.'

Other observations point to the same conclusion, viz. that there is no evidence for DO being higher in the perfective than it is in the imperfective (or vice versa). As shown in Chapter 3, there is evidence from pseudo-incorporation that object DPs move out of the VP domain, yet we are not aware of any evidence in Sorani that would suggest that the moved DPs occupy distinct positions depending on aspect. One might expect that if the DO was higher in one aspect than it is in the other, then it would be outside of whatever the domain

is be a viable clitic host; yet this is not correct. DOs are licit clitic hosts in both aspects under the right conditions.

The upshot of these observations is that a manipulation of argument-height must appeal to an intermediate derivational stage when MS operations apply. Assuming for the sake of argument that the 'reversal' takes place in the perfective, the account at hand is as in (57):

(57) Manipulating argument height

When probes P_1 ("Direct") and P_2 ("Oblique") apply....

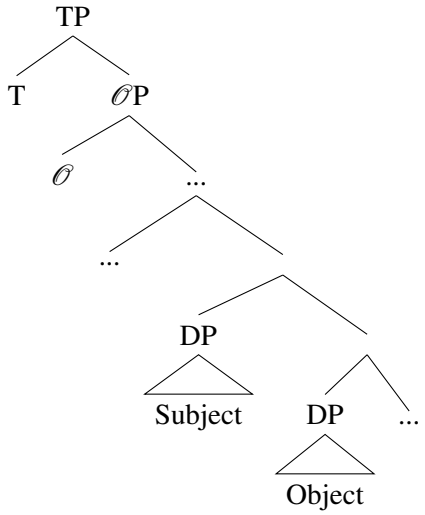
a. IMPERFECTIVE: S $>$ DO; P_1 finds the Subject, and P_2 the Direct Object.

b. PERFECTIVE: DO $>$ S; P_1 finds the Direct Object, and P_2 the Subject.

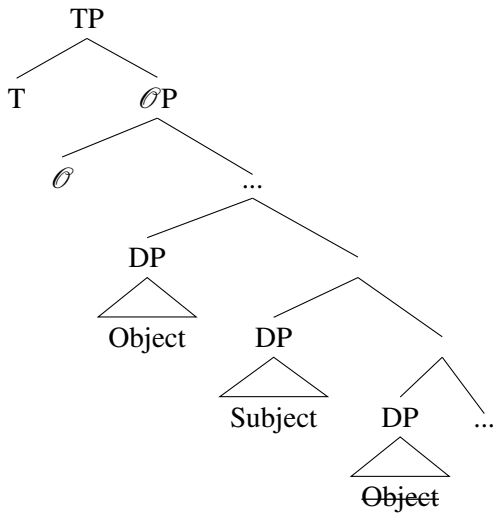
To be more precise; and thinking about this in terms of T and $\mathscr{O}$, so that it is as similar to our account as possible up to case targeting (showing all heads on the left for expository purposes):

(58) Schematization of (57)

a. imperfective



b. perfective



Mechanically, it has to be assumed first, that probes apply in a sequence– in this case, with T preceding $\mathscr{O}$; and second, that a goal that has already been probed is invisible for subsequent probing:

(59) Assumptions

a. Probes apply sequentially; in this scenario, T probes before $\mathscr{O}$.

b. A goal that has been probed becomes inactive for later probes.

With these assumptions it is then possible to say that T finds the Subject in the imperfective, with the subsequently probing $\mathscr{O}$ locating the Direct Object. In the perfective, movement of the DO produces the opposite results: T finds the DO, while $\mathscr{O}$ finds the Subject. Note that in both aspects $\mathscr{O}$ ignores a higher argument; this is where the second assumption in (59) plays a role.

The general principle at play in this analysis is stated in (60), where the qualification to *active* encodes the further assumption that arguments that have been found by a probe are invisible for subsequent probing:

(60) Probes apply MS Operations to the highest active argument in their search domain.

The reference to *MS Operations* is due to the fact that this analysis encounters difficulties when the distinction between MS Agreement and MS Clitic Movement is taken into account. We will look at these difficulties below, after first reviewing some advantages that this approach has over probe reversal.

At a certain level of abstraction, this account has some successes. For example, an account of this type can avoid the difficulties linking probes and form that affected the probe reversal approach. Both P_1 and P_2 can be specified with probes for MS Agreement and MS Clitic Movement, with P_1 determining realization as MP Agreement, and P_2 MP Clitic form. Manipulating argument height also avoids the difficulties with intransitives

that we discussed above with reference to probe reversal. Since it generates the alignment difference through an interaction between the Subject and the Direct Object, it predicts that intransitives should behave the same in both aspects.[27]

The kinds of difficulties that confront this approach become clear when we try to be more precise about probe structure than vague (60). The key question is how to distinguish MS Agreement from MS Clitic Movement. Allowing reference to pronouns with a feature [+m], which we used in Chapter 5 to single out those arguments that move as clitics, is part of the picture. In order to function properly it has to further be assumed that Subjects are never [+m] clitics. It is then possible to restate (60) as follows:

(61) Probes target the highest active argument in their domain and

a. MS Clitic Move it, if it is [+m];

b. MS Agree with it otherwise.

This is equivalent to saying (as we did on our account) that T and $\mathcal{O}$ each possess two probes. Unlike our account, though, the one under consideration has problems with what could be termed *probe overapplication*. To see this, consider first a type of example that works well for it: transitive clauses in which the Subject is a full DP and the Direct Object is a moving clitic. In the imperfective, T will (by (61)) MS Agree with the Subject, and $\mathcal{O}$ will Clitic Move the pronoun. In the perfective, the Direct Object is local to T, which MS Clitic Moves it; the highest active argument in $\mathcal{O}$'s domain is the Subject, which it MS Agrees with.

Consider now a scenario in which the Direct Object is **not** an [+m] clitic. In the imperfective, T will agree with the Subject, as in the scenario just considered. But $\mathcal{O}$'s probing creates a problem– the MS Agreement probe on this head should locate the Direct Object as the highest active argument in its domain, and agree with it. But this does not happen. Perfective clauses generate the same problem for T. The probe on this head should MS Agree with the highest argument in its domain, which is the Direct Object; again, this is not what is found.[28]

[27] For the *want*-class, this kind of account could hold that there is the movement schematized in (57b) applies in both aspects, not just in the perfective. It is not clear, though, that this account could be extended to intransitives with Ergative Subject in both aspects (recall 'be cold' from Chapter 5).

[28] One conceivable fix here actually produces a different kind of account. This would be to hold that there is only a single active Agreement probe per clause, and use the aspectual split to determine which of T or $\mathcal{O}$ possesses it. This is a possible move, but it is not an 'argument height' approach any more. By this we mean that if there is only one active agreement probe per clause, then it is not necessary to move the DO over the Subject to produce the difference between MP Agreement and MP Clitic indexation. Rather, Agreement is always with the Subject, which is always highest; the form taken by the φ indexer depends on whether the probe is on T or $\mathcal{O}$.

While able to account for the basic data concerning intransitive and transitive clauses, this alternative is problematic when further phenomena are considered. For example, it has no way to account for the aspect insensitivity of (what for us is) Ergative agreement in the *want*-class and in IO passives. In the imperfectives of these T should bear the agreement probe, and produce an MP Agreement morpheme, contrary to fact. This account also rules out clauses with double agreement, which (though optional) we have found with both clausal possession and IO passives.

To summarize, it is conceivable that further manipulations of probe structure might produce different results than those we have seen above. In our view, the Sorani system requires an analysis in which case features play a central role. While different variations on this idea could be investigated, we do not see at present how an analysis that does not refer to case can cover the full range of facts that we have analyzed.

6.3 Alternatives to MS/MP mismatching

A major theme of this book is that our approach allows MS Operations to be indirectly related to their MP realization. As we noted in section 1, this is something that has been argued for in different ways in different parts of the literature.

The position we argued against is the *direct* view, stated in (62):

(62) Direct MS/MP relations

a. Clitic-movement applies to $\varphi \Rightarrow \varphi$ is realized as an MP *clitic*;

b. Agreement operation produces $\varphi \Rightarrow \varphi$ is realized as an MP *agreement affix*.

In this section we consider different possible ways of saving the direct view in (62), and show why the move to an indirect view is required. Recall that a consequence of our analysis is that Sorani exhibits two kinds of MS/MP mismatch:

- **Mismatch 1** Our analysis holds that MS Clitic Movement attaches [-subj,-obl] pronouns to Tense, where they are realized as MP Agreement morphemes.
- **Mismatch 2** Our analysis holds that an MS Agreement probe on $\mathscr{O}$ targets [+obl,+subj] arguments, and realizes their features as MP Clitics.

If the φ elements in Mismatch 1 were the result of an MS Agreement operation, there would be no MS/MP mismatch. By the same token, if the φ elements in Mismatch 2 were actually MS clitics rather than the result of MS agreement, there would be no MS/MP mismatch.

The two alternatives examined in this section provide ways of exploring the consequences maintaining MS/MP. For Mismatch 1, it is possible that what we treat as MS Clitic Movement being realized as an MP agreement affix could be analyzed as MS Agreement with an obligatorily null pronominal (cf. Taghipour and Kahnemuyipour 2021; Nabors et al. 2019). Second, for Mismatch 2, what we treat as MS Agreement being realized with an MP Clitic could instead be *Clitic Doubling*.

We demonstrate that the facts of Sorani are better treated in the way that we have developed in this book, rather than with one of these alternatives. After looking at these alternatives in sections 6.3.1 and 6.3.2, we present some general conclusions concerning MS/MP connections in 6.3.3.

6.3.1 Agreement only with null arguments

The analysis developed in earlier chapters of this book takes the complementary distribution of DO/IO arguments and corresponding MP Agreement elements as an indication that the latter are MS Clitics. In this section, we entertain an alternative approach to this complementarity. The type of analysis that we have in mind holds that MS Agreement takes place with DOs and P-arguments, but only when these are null pronominals. This kind of analysis has been proposed in the literature on Celtic, where strong pronouns (or full DPs) and subject agreement do not cooccur (e.g., Jouitteau and Rezac 2006 for Breton and McCloskey and Hale 1984 for Irish). One type of analysis given for such patterns involves treating overt *agreement as occurring only with null arguments*– what we will abbreviate as *ANA*.[29]

As it turns out, the ANA view has been posited for SSK as well in Nabors et al. 2019 for SSK; see also Kahnemuyipour and Taghipour 2020 for an application to Laki.[30] The main motivation for the ANA hypothesis in Iranian languages is centered on direct MS/MP relations: φ-features of the arguments in question are realized realized as MP agreement suffixes, in terms of form and position. These φ elements are moreover identical to those found for agreement with Nominative Subjects. Why not then treat DO and P-Argument MP Agreement as the result of MS Agreement?

In answering this question, we will both review what we have proposed in previous chapters, and show how our proposals are able to account for the relevant facts in ways that go beyond what can be done with ANA. To be clear about the nature of the comparison to come, we will consider an analysis that is different from ours only in positing MS Agreement with null DOs and P-Arguments rather than MS Clitic Movement. We will allow this alternative to make use of other components that we have motivated in our analysis, such as the idea that MS operations may be Case Targeting, as this allows for a direct focus

[29] Other ANA analyses include McCloskey and Hale 1984, Stump 1984, and Legate 1999. Note that ANA is only one kind of analysis of this effect in the literature on Celtic languages. A salient alternative involves incorporation of the deficient pronoun into the verb (Anderson 1982, Ackema and Neeleman 2003) or preposition (Brennan 2009). It is not clear at this point which type of analysis is correct.

It is also worth noting that in many languages which have the same pattern of complementarity between the DO and its indexer (including the cases of external possession and P-arguments), this is taken to be the result of pronoun incorporation; see e.g., Arregi and Hanink 2022 on Washo and Yuan 2018 on Aleut.

[30] Haig (2008) provides a proposal that is potentially a version of ANA. Referring to examples like (i) in which the possessor is realized as MP agreement, Haig (2008:297) hypothesizes that it is "likely that there is no exponent of the O-past; rather the indirect participant is expressed through a Set 2 suffix, affixing directly to the verb". Abstracting away from the terminology, this suggestion amounts to a non-movement analysis, whereby the possessor or the P-argument (*the indexer of the indirect participant* in Haig's terms) is generated on the verb.

(i) Otombîl-eke**=yan** bird-*în*
car-the=3PL.CL took-1PL
'They took our car away.'

Besides the issue of how the agreement marker would relate to the preposition it is semantically associated with, this analysis also would face similar issues mentioned above. Among others, it would fall short of explaining why this is not possible with intransitives or passives as we saw in Chapter 5 (see particularly (40), (43) and others in Chapter 5).

on the contrast that is at issue. We will also grant that the null arguments targeted by MS Agreement have features that distinguish them from other arguments (our [+m]).[31]

With these assumptions at hand, we will now examine several different ways in which our mismatch-inducing analysis can be compared with the ANA approach.

(Non)complementarity and multiple versus single application The complementarity that is produced by ANA must be restricted: it is found with DOs and P-arguments, but not subjects. Thinking about how this observation relates to the broader motivation for ANA is instructive. On the face of it, ANA looks like it is able to maintain a kind of unity of process: it says that there is a single MS Agreement operation that produces MP Agreement φ bundles.

However, while this analysis unifies how MS and MP are connected, a closer look reveals that MS Agreement probing must be **non**-uniform for the exclusively MS part of the equation. As we have seen, Subjects stand out from all other arguments in terms of complementarity; they alone co-occur with a φ indexer. This kind of sensitivity can be encoded in terms of case properties. As seen in (63), the result is that T must possess two distinct probes:

(63) Probes required on T (ANA analysis)

[31] As noted earlier, our focus shifts emphasis away from the question of why exactly MS Agreement with DOs and P-arguments should be sensitive to phonological overtness of the goal, which is a separate question. The analysis of Laki in Kahnemuyipour and Taghipour 2020 relies on the form of the indexer being MP Agreement in Laki (which also holds in SSK), and tries to reduce the obligatory nullness of the pronoun to a 'clitic cluster restriction': one which prevents them from being realized on an element that already hosts another MP clitic. Since there will always be a clitic on the host– viz. the one indexing the Ergative subject– this stipulation ensures that agreeing pronouns must be null.

These reductions appear to be problematic on more than one front. For one, in GK, the indexer is realized as MP clitic. Secondly, this kind of condition on clitic-cluster appears to be incorrect as it stands: as we saw at various points in preceding chapters, multiple MP clitics can indeed be realized on a single host in both GK and SSK, the latter being identical to Laki in all relevant respects.

(i) a. ême bînî**=yan=man**
1PL.pro see.PST=3PL.CL=1PL.CL
'We saw them.'

b. Otombîl-eke**=man=yan** bird
car-the=1PL.CL=3PL.CL took
'They took our car away.' (GK)

(ii) pê**=man**=î dâ-*n*.
to=1PL.CL=3SG.CL gave-3PL
'S/he gave them to us.' (SSK; Samvelian 2008:47a)

The premise that an overt pronoun would be realized in clitic position in the first place is also suspect– this position is restricted to elements with a [+obl] case.

Finally, nothing about this account explains why there could not be agreement with an overt full DP Direct Object, or the argument of a preposition; this is expected to be possible, as these elements do not appear in the clitic cluster.

a. One that targets Nominative Subjects, irrespective of their form (DP, pronoun, *pro*); and

b. another that targets Objective DOs and P-arguments, but only if they are null.

There is nothing inherently undesirable about positing two probes on a head. It is part of our analysis, where each of T and $\mathscr{O}$ possess probes for MS Agreement and MS Clitic Movement. Rather, the point to be noted about (63) is that it precludes the account from capturing further generalizations in the indexation system.

To see this, consider a further aspect of Sorani, which concerns *multiple application*; whether an MS operation applies once, or can apply to multiple elements. In our approach, a natural distinction is that Agreement occurs only once per head with either T or $\mathscr{O}$, but multiple clitic movements may be triggered by the same head by either of these heads:

(64) Generalizations about Sorani probes (our account)

a. MS Agreement probes: Apply only once– whether targeting Nominative or Ergative.

b. MS Clitic probes: Apply in principle to more than one argument.

The second clause in each statement highlights the symmetry of the system: MS Agreement and MS Clitic Movement do the same things in both halves of the indexation split. The connection to complementarity is immediate; it is established by (65):

(65) a. Overt DP arguments always co-occur with subject indexers.
$\Rightarrow$ Subject φ indexers are the product of MS Agreement.

b. DO/IO indexers never co-occur with an overt DP argument.
$\Rightarrow$ DO/IO φ indexers are MS clitic pronouns.

That is, MS Clitic Movement, which can apply more than once, applies to pronouns which are by definition complementary in the required way.

These connections are lost in the ANA-based analysis. To produce the correct results, a clause must be added to (63) to take into account multiple application:

(66) Probes required on T (Modified ANA analysis)

a. One that targets Nominative Subjects, irrespective of their form (DP, pronoun, *pro*); and

b. another that targets Objective DOs and P-arguments, but only if they are null; *this probe may apply multiple times*.

The added condition does not follow from anything in the approach. But this stipulation is not the main point of concern. The larger observation concerns what this account could say in the place of (64), which generalizes across both aspects. Focusing in particular on multiple application, what is required is (67):

(67) a. A probe on T targets Objective DOs and P-arguments, but only if they are null; this probe may apply multiple times.

b. Multiple clitic movements can happen in a given clause.

Unlike (64), there is nothing in (67) that links the two clauses. That is, our account directly connects the fact that it is the indexers that are complementary with overt arguments that are involved in an MS operation that occurs more than once. The ANA alternative is not able to state this correlation directly. Instead, it splits the statements of multiple application, so that the properties that cluster together (complementarity and multiple application) do so only by stipulation.

P-arguments and locality Our analysis of external possession in Chapter 5 holds that possessors can be MS Clitic Moved out of possessed DPs under certain circumstances, (68). The arguments of prepositions can also be moved in this way, (69):

(68) a. Otombîl-eke=**man** de-be-*n*
car-the=1PL.CL IND-take.PRS-PL
'They take our car away.'

b. Otombîl-eke=**yan** bird-*în*
car-the=3PL.CL take.PST-1PL
'They took our car away.' (SSK)

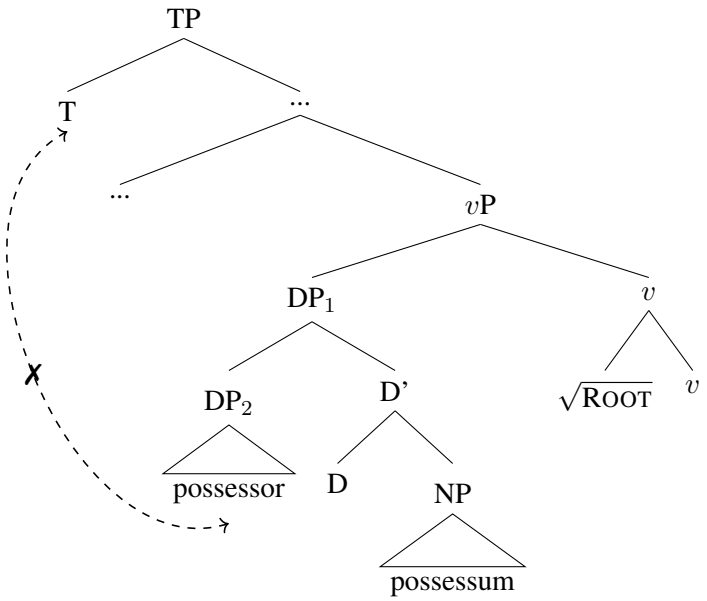
(69) a. ew ême=**y** bo=**yan** nard
s/he us=3SG.CL to=3PL.CL send.PST
'S/he sent us to them.'

b. ew ême=**y** bo nard-*in*
s/he us=3SG.CL to send.PST-3PL
'S/he sent us to them.' (SSK)

As we demonstrated, treating external possession as movement in this ways allowed us to make direct connections with the analysis of possessor raising in other languages. Within Iranian languages similar to Sorani, we showed in §5.6.1 that the type of syntactic and semantic variation found in closely related varieties (Standard Laki vs Aleshtar Laki) parallels neatly the range of variation found in the possessor raising literature.

At least the first of these types of example (and possibly the second) provides a further argument against ANA. An ANA approach is forced to analyze examples like (70) with T's probe finding a DP-internal null pronominal; schematically (with T on the left for exposition):

(70)



This analysis raises serious questions about locality. If it is correct, the probe on T must be able to target a possessor that is contained inside of another DP. This type of non-local agreement does not appear to be attested in the literature, suggesting that (71) holds:

(71) POSSESSOR AGREEMENT GENERALIZATION: Probes external to DP_1 cannot access DP_2 contained within DP_1.

This generalization can be made to follow from different ways of formalizing Agree. For our purposes, what is important is demonstrating that (i) there are apparent counterexamples to (71), but (ii) these can be shown on closer examination to involve only local probe-goal relations. Crucially, external possessor in Sorani does not have any of the properties to suggest that it is a language of this type.

Examples that appear to go against (71) have been reported for Maithili (Indo-Aryan; Alam and Kumaran 2021) or Nez Perce (Deal 2010) (see also Polinsky and Potsdam (2001) for the same property in cross-CP agreement). An example from Maithili is given in (72):

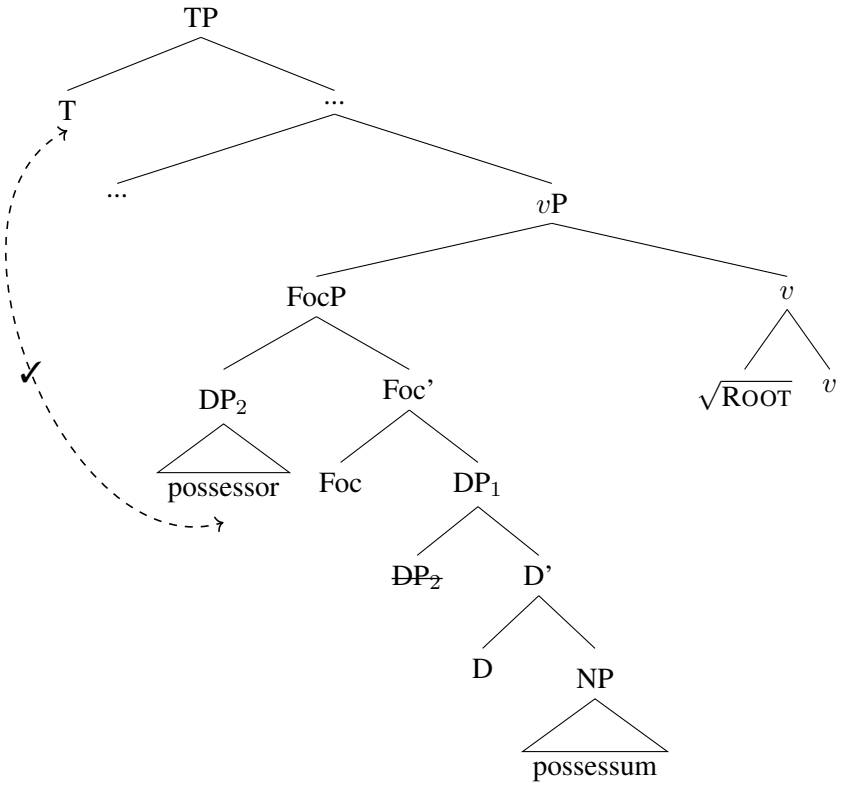
(72) tohər nokə ae -l -əu
2L.GEN servant come -PAST 2L.NN
'Your servant came." (Alam and Kumaran 2021:20)

In this example, the verb shows agreement with *your*, which is taken to originate inside the DP *servant*. Alam and Kumaran (2021) argue that in examples of this type, the possessor can agree with the verb only after it undergoes overt focus-driven movement to the phase edge. For them, this involves the possessor moving to the specifier of a Focus head that takes the DP as its complement.

This movement is detectable when overt demonstratives are present: when the possessor follows the demonstrative, it is unavailable for agreement; when it precedes it, it is

visible to Agree. Thus, this would look schematically as (73) in comparison to (70), where strikethrough is used for the lower copy of DP (glossing over Maithili-internal properties).

(73)



Possessor indexation in Sorani shows none of the properties that might be expected if it were the result of T agreeing with a focused pronominal. To start with, the putatively agreed-with pronoun is obligatorily null, which would be (to say the least) an unlikely element to bear focus. As noted in chapter 5.1 (see also fn. 34), when the possessor is focalized, it is realized as an independent pronoun, with the possessee bearing an Ezafe marker. Moreover, nominals do not have a structure in which the focalized possessor moves out of the phrase (recall chapter 5.6.2, particularly the structure in (127)). Crucially all this action involving the Ezafe construction takes place within the DP with no movement of the possessor, unlike Maithili. If Sorani Kurdish had possessor agreement, it is in this situation that one would expect agreement, i.e., co-occur with an MP-Agr on the verb. However, this is not what happens as shown in earlier chapters.

ANA also requires the T Probe to agree with the null argument of a preposition. Here again there is a question about the locality of the probe/goal relation. Maithili also proves instructive on this point. It allows the arguments of prepositions to be agreed with, but once again only if they are focussed.[32] As in the case of possession, an ANA account is faced

[32] Messick et al. 2022 presents a similar derivation for case-copying reflexives or P-wrapping reciprocals

with the challenge of motivating an analysis of Sorani in which only null pronouns can be focused in a particular context; or it has to abandon (71). The nature of these options indicates to us that ANA is on the wrong track.

Clitic Left Dislocation A look at Clitic Left Dislocation (CLLD) also provides support for the current account, and against an ANA approach. Put simply, the CLLD behavior in Sorani makes sense if MP Agreement is an MS clitic, but is puzzling under ANA, which requires CLLD to be linked to a **null** pronoun.

Recall that φ elements in Sorani can resume a topicalized/CLLDed object that is in the left periphery, in the form of an MP clitic, (74a), or MP agreement, (74b).. On the other hand, in GK, this indexer that resumes a CLLDed object in both aspects in the form of an MP clitic, (74a) and (74c). This behavior is unremarkable in light of the crosslinguistic behavior and analysis of CLLD, with the only difference being that in SSK, the resumptive pronoun is sometimes realized in the form of an MP-Agreement.

(74) CLLD with DOs

a. kitêb-ek-an, (min) hemû roj-êk de=**yan** xwên-im.
book-the-PL 1PL.pro every day-a IND=3SG.CL read.PRS-1SG
'The books, I read them every day.' (SSK/GK)

b. kitêb-ek-an, (min) dwene xwênd=im-*in*.
book-the-PL 1PL.pro yesterday read.PST-3PL-1SG.CL
'The books, I read them yesterday.' (SSK)

c. kitêb-ek-an, (min) dwene xwênd=**yan**=im.
book-the-PL 1SG.pro yesterday read.PST-3PL.CL-1SG.CL
'The books, I read them yesterday.'[33] (GK)

As expected from CLLD, arguments of prepositions and possessors can also resume a topicalized element, similar to the behavior of DO indexers. This is illustrated for P-arguments and possessors in (74) and (75), respectively.

(74) CLLD with P-arguments

a. minal-ek-an, ew ême=y bo=**yan** nard
child-DEF-PL s/he us=3SG.CL to=3PL.CL sent
'The children, s/he sent us to them.'

(i.e., configurations in which parts of a reciprocal wrap around a preposition). For example, in P-wrapping reciprocals, part of the reciprocal moves to the edge of PP where it probes for case features. What these constructions have in common is that for an otherwise inaccessible goal to be visible to a probe, the goal is needs to undergo movement of some type, which lacks in the Sorani context.

[33] In this regard, GK is similar to Persian in which a topicalized object is also resumed via a pronominal clitic on the predicate.

(i) un ketâb-ro, man be Kimea dâd-am=**esh**.
that book-RÂ I to Kimea give.PST-1SG=3SG.CL
'As for that book, I gave it to Kimea.' (Karimi 2005:82,(31a))

b. minal-ek-an, ew ême=y bo nard-*in*
child-DEF-PL s/he us=3SG.CL to sent-3PL
'The children, s/he sent us to them.' (SSK)

(75) CLLD with Possessors

a. minal-ek-an, to name-k-an=**it** bird-*in*.
child-DEF-PL 2SG.pro letter-the-PL=2SG.CL took-3PL
'The children, you.sg took away their letters.' (SSK)

b. minal-ek-an, to name-k-an=**yan**=it bird.
child-DEF-PL 2SG.pro letter-the-PL=3PL.CL=2SG.CL took
'The children, you.sg took away their letters.' (GK)

Furthermore, both forms of the object indexers – MP agreement in SSK and MP clitic in Garmiani – alternate with strong pronouns in focus contexts and coordination. This is also a natural behavior of pronouns.[34]

(76) a. ême bînî=man-*in*
1PL.pro see.PST=1PL.CL-2PL
'We saw you.pl.' (SSK)

b. ême bînî=**tan**=man
1PL.pro see.PST=2PL.CL=1PL.CL
'We saw you.pl.' (GK)

c. focusing
ême êwe=**man** bînî
1PL.pro you.pl=1PL.CL see.PST
'We saw YOU.PL (not someone else).' (SSK/GK)

d. coordination
ême [ewan u êwe]=**man** bînî
1PL.pro [them and you.pl]=1PL.CL see.PST
'We saw them and you.pl.' (SSK/GK)

This behavior is in accordance with the patterns of weak/strong pronouns in languages that have them (see e.g., Kayne 1975; Cardinaletti and Starke 1999; Pescarini 2021). For example, in Hijazi Arabic, a pronominal object is typically realized in the weak, bound form, (77a), unless the object is used contrastively, (77b), or in a coordinate structure (in broad focus), (77c).

[34]The same alternation is observed in possessive constructions as well. A pronominal possessor is normally realized as the MP clitic form, unless it is (contrastively) focused or emphasized. See e.g. Öpengin (2016:211) for the same observation, who notes: "A pragmatically neutral clause is probably always marked for its possessor by a clitic PM. But in a context where the possessor is focused, in contrast to other preceding candidates, the possessor is expressed by an independent pronoun (usually a weak form) while a clitic PM in this context would not be acceptable."

(77) Hijazi Arabic

a. ʔana shuf-ta-ha.
1SG.pro saw-1SG-her
'I saw her.'

b. BASS HIYYA, ʔana shuf-t.
only her 1SG.pro saw-1SG
'I saw ONLY HER (not him).'

c. (?) ʔana shuf-t hiyya w huwwa.
1SG.pro saw-1SG her and him
'I saw her and him.'

Note that an attempt to coordinate two weak pronominal clitics, as well as one pronominal clitic and one strong pronoun in any configuration, is disallowed in both Arabic, (78), and Kurdish, (79).

(78) Hijazi Arabic

a. *ʔana shuf-ta-ha w-uh.
1SG.pro saw-1SG-her and-him
'I saw her and him.'

b. *ʔana shuf-ta-ha wa huwwa.
1SG.pro saw-1SG-her and him
'I saw her and him.'

(79) Sorani Kurdish

a. can't coordinate two clitics
*ême bînî=tan=man u=yan=(man)
1PL.pro see.PST=2PL.CL=1PL.CL and=3PL.CL=1PL.CL
Intended: 'We saw you.pl and them.'

b. can't coordinate a full pronoun and a clitic pronoun object
*ême *ewan* u bînî=*tan*=man
1PL.pro them and see.PST=2PL.CL=1PL.CL
Intended: 'We saw them and you.pl.'

In short, MP Agreement in Sorani behaves like a typical pronoun for the purposes of Clitic Left Dislocation. ANA requires this phenomenon to pair a topic with a null pronominal, something that we have not seen cross-linguistically.

* * *

As we have shown above, ANA is a possible analysis of the Sorani system, but it turns out to fall short in several important ways. As far as we can tell, its only motivation is the desire to maintain direct MS/MP connections. As we will now see, the situation is similar for an alternative to the other mismatch that we posit.

6.3.2 "Clitic Doubling"

As we noted at the beginning of this section, the alternative under consideration– viz., that there are only direct MS/MP relations in Sorani– has two components. Having looked first at the mismatch involving MP Agreement, we now examine a possible way of eliminating the second mismatch, which says that MS Agreement produces an MP Clitic. This alternative holds that the MP clitic that indexes the Subject in past transitive clauses is an MS Clitic involved in *Clitic doubling*.

The discussion of this section produces less conclusive evidence against this alternative than there is in the case of ANA, which we believe to be problematic for the reasons advanced above. We will see that there is essentially no positive evidence in favor of the Clitic doubling view; moreover, to the extent that there are clear diagnostics and cross-linguistic generalizations to be applied and appealed to, the relevant indexer does not look like what is typically found with Clitic doubling.

Clitic doubling has been analyzed in a number of different languages; see e.g. Uriagereka 1995; Anagnostopoulou 2006; Nevins 2011; Harizanov 2014; Kramer 2014). It is likely that this term is a descriptive label for what are actually distinct phenomena, involving (at the least) something like MS Agreement in some languages, and MS Clitic Movement in others (see e.g., Preminger 2009; Baker and Kramer 2018; Yuan 2021 for attempts to make this distinction precise).

For our purposes, what is important is that the alternative must treat the MP clitic as an MS Clitic that is moved syntactically. Given the facts of Sorani concerning how Subjects are indexed in comparison with other types of arguments, what this amounts to is summarized in (80):

(80) MS Clitic Movement (alternative view)

a. The syntax of Ergative subjects obligatorily involves a clitic double that is MS Clitic Moved to $\mathscr{O}$.

b. Oblique arguments of any other type (DOs, P-arguments) may never be clitic doubled; however, if they themselves are clitics, they are moved to $\mathscr{O}$.

Splitting things up in the manner of (80) produces some effects similar to those discussed above in reference to ANA, where we saw that certain assumptions make it difficult to state larger generalizations. In the case at hand, an analysis based on (80) makes it impossible to state the generalization in (81):

(81) Subjects in Sorani are always agreed with.

Instead, this generalization is broken into the two components in (82);

(82) a. The syntax of Ergative subjects obligatorily involves a clitic double that is MS Clitic Moved to $\mathscr{O}$.

b. Nominative arguments are targeted by MS Agree.

Since these statements are not connected, the uniformity of the system– that is, the fact that Subjects are always accompanied by an indexer that is not complementary with it– is not explained. This is not necessarily a problem for the clitic doubling analysis, though; by appealing to Clitic doubling of Ergative Subjects, since it is in essence rejecting the idea that there is a generalization about agreement to be accounted for in the first place.

Moving ahead, we are not aware of any syntactic diagnostic in Sorani that can be used to determine conclusively how this kind of clitic doubling analysis fares against the MS Agreement approach that we have adopted. At the same time, to the extent that we are able to adapt some tests that have been used in the literature it appears that the MP Clitic behaves like MS Agreement, not a (pronominal) clitic doubled by an associate.

To take one example, Baker and Kramer (2018) argue that clitic doubling is not possible with e.g., quantified subjects or non-D-linked *wh*-phrases, as they are non-referential (see also Baker and Kramer 2016). For the case of Subjects in particular they illustrate this point with Colloquial French (see Culbertson 2010), which they conclude has an MP clitic as the result of MS Clitic Doubling, not MS Agreement:

(83) a. Jean (il) parle.
John he speaks
'Jean speaks.'

b. Personne (*il) n'a rien dit.
nobody he NEG-has nothing said
'Nobody said anything.' (Colloquial French; Culbertson 2010:1a-b)

Baker and Kramer contrast this behavior with what is seen in the Italian variety Piedmontese, where indexation with an MP clitic is necessary with quantifiers; this they refer to as 'pure agreement.' This is in fact what is found in Sorani, where a (negative) quantified subject must indexed by an MP clitic in the perfective, as exemplified in (84a) (and in a few other examples throughout the book). Similarly, with a non-D-linked *wh*-phrase, the indexer is also obligatory, (84b).

(84) a. hiç kes John=*(**î**) ne-bînî.
any person John=3SG.CL NEG-see.PST
'Nobody saw John.'

b. çî naxoş-eke=*(**y**) kuşt?
what patient-the=3SG.CL kill.PST
'What killed the patient?'

This makes Sorani Ergative indexation unlike typical CD (or for that matter, other operations that involve clitics, such as Clitic Left Dislocation), which is subject to certain definiteness (or animacy) restrictions crosslinguistically.

Treating the relationship between the Subject of a transitive and its MP-clitic indexer in the perfective as an instance of CD would also be unusual typologically: having only Subjects doubled (and not Objects) is unexpected to say the least. If anything, languages

have clitic doubling for objects or indirect objects, but not subjects, e.g., Greek, Arabic, Spanish. Furthermore, in CD languages, the clitics are mostly optional (Kramer 2014), as shown in (85) for Spanish, and not mutually exclusive with their associate, which is the case in Kurdish varieties.

(85) *(Lo)* vimos a Guille.
3M.SG saw.1PL to Guille
'We saw Guille.' (Rioplatense Spanish; Jaeggli 1982:14)

In short form, an attempt to reduce the patterns in Kurdish varieties to Clitic doubling faces a number of challenges: its indexation behavior does not readily fit with standard definitions or properties of Clitic doubling.

* * *

As far as we can tell, then, the MS Clitic alternative does not have a great deal going for it. The only clear motivation for it seems to be the insistence that only direct MS/MP relations are possible. As has been pointed out in the literature, though, relying on morphophonology for CD diagnostics is problematic (e.g., Baker and Kramer 2018; Yuan 2021; Akkuş 2022a). Moreover, in the larger context of the present work, retaining direct MS/MP for Ergative Subjects would have to go hand-in-hand with ANA; and we saw above that this type of analysis has very clear problems. We therefore conclude that the MP Clitic indexing Ergative Subjects is the result of MS Agreement.[35]

6.3.3 MS/MP: Conclusions

As we discussed in the opening chapters of this book, there are in principle two ways in which MS operations and their MP reflexes could be related. Our analysis of Sorani provides clear evidence in favor of an *indirect* view of MS/MP relations for φ elements, in which there can be mismatches. The specific MS/MP relations we argued for are as follows:

(86) MS/MP Relations in Sorani

a. MS Agreement can result in

i. an MP Agreement morpheme — *Nominative Subjects*

ii. an MP Clitic — *Ergative Subjects*

b. MP Clitic Movement can result in

i. an MP Agreement morpheme — *Objective DO/IO*

ii. an MP Clitic — *Accusative DO/IO*

[35]This conclusion is part of a convergence of different perspectives. For example, Haig (2017: 482) notes that "despite the evidently clitic nature of the marker itself, functionally, it is an agreement marker" (see also Samvelian 2007a; Jügel 2009; Öpengin 2019 for the same position).

As shown in this section, the analysis that posits the mismatches (86a-ii) and (86b-i) is superior to alternatives that maintain direct MS/MP. Sorani thus provides further evidence that the direct view of MS/MP must be abandoned.

To put this argument into context, moves toward the indirect view can be found in the literature both in work that looks at more morphosyntactic matters, and in work directed at the morphophonological.

On the morphosyntactic side, work by Preminger (2009) argues that different MP Agreement morphemes in Basque do not have the same MS provenance. In particular, while Absolutive Agreement morphemes receive their features via MS Agreement, the Ergative and Dative agreement morphemes are MS clitics, in a doubling relation with a full DP argument. Kramer (2014) argues for something similar in a study of Amharic verbal morphology; she concludes that what is referred to as 'object agreement' in that language is a doubled clitic, not the result of MS agreement. Yuan (2021) provides another illustration, arguing that two varieties of Inuit differ in terms of whether certain indexers are MS agreement morphemes, or doubled clitics. While these works share the idea that certain MP Agreement morphemes are actually MS clitics, there are arguments in the other direction as well: for example, there is also a line of literature that argues for MP clitics that are the result of MS agreement operations– see Di Tullio et al. 2019; Paparounas and Salzmann In press).

Our results both provide further confirmation for both of these lines of argument within an individual language, and extend them. The works cited above have almost always looked at cases that are analyzed as instances of clitic doubling, which introduces complexities of its own. The varieties of Sorani that we report on here do not have clitic doubling. And as we showed in 6.3.2, treating Sorani indexation with clitic doubling– a move that would maintain direct MS/MP– is entirely unmotivated.

On the MP side, many theories recognize a sharp *clitic/affix* distinction, the topic of a great deal of discussion in the 1980s onwards (see e.g. Zwicky and Pullum 1983) on account of its connections with the architectural premises of Lexicalist theories of different types.[36] For theories accepting a distinction of this type– versions of Lexical Phonology and Morphology, for example (Kiparsky 1982, 1983)– MP affixes are expected to behave in ways that exhibit 'close' phonological connections with the word in which they appear; i.e., interacting with the word-level (or Lexical) phonological rules. Clitics, on the other hand, are predicted to be less phonologically involved with their hosts.

In the light of these predictions, a subsequent literature examines MS clitics that behave like MP affixes– so-called *lexical clitics*. Elements with these properties were identified in a number of case studies in the 1980s and were brought together in Halpern (1995). Responses to the apparent mismatches are varied. Halpern, for example, argues that direct MS/MP relations must be maintained. His response to the observed lexical clitics is to treat them as "unusually placed inflectional affixes." In the opposite theoretical direction, Embick (1995) analyzes one apparent 'lexical clitic' (Polish auxiliaries) and argues that its behavior is unproblematic as long as syntactically distributed elements can show 'close' phonolog-

[36] See Nevis et al. 1994 for the treatment of *clitic* as an umbrella term, which encompasses 'mixed' properties.

ical interactions with their hosts, contra the predictions of a Lexicalist theory direct view of MS/MP relations. Embick and Noyer (2001) argue for something similar, and Shwayder (2015) provides a large overview of subsequent developments, examining MS/MP mismatches from the perspective of a uniformly syntactic approach to morphology as part of a general argument for a "contextual" determination of MP properties.

In summary, Sorani provides a clear illustration of a point that two lines of research have been moving towards: the MS status of a morpheme does not determine a unique type of MP behavior. Rather, MP behavior emerges as the result of a sequence of steps that take place in the syntax and at PF.

6.4 General conclusions and future directions

At the beginning of this book we pointed to the centrality of case and agreement in the study of morphosyntax, and in concluding we will take the opportunity to look back at our primary results, and see what kind of future research directions they point to.

The obvious place to begin (and end) is with case features. These are central to all of the analyses that we have developed. But thinking about them at the end of this book leads to an interesting kind of tension. On the one hand, something like Case Targeting appears to be necessary for Sorani (and other languages), as we have been at pains to demonstrate. On the other hand, the *nature* of the case features that are required for this is relatively unclear. We noted this in early chapters of the book, when we referred to the features that we posit as *abstract*. By this, we meant that while we made use of features like [±subject] and [±oblique], which have familiar connotations, our analyses do not connect these features to anything outside of the indexation system itself. Thinking about this in terms of Sorani, we motivated an analysis in which there are four distinct kinds of indexation behavior, which amounts to positing four different cases to be targeted. For this to be done, we could have been entirely abstract, with [$\pm\alpha$] and [$\pm\beta$], for example.

There are reasons we opted for [±subject] and [±oblique], and these point to the kinds of directions that we hope will be investigated in the light of what we have argued for here. For [±subject], we foresee connections with basic aspects of clause structure– throughout the Sorani system, the arguments that bear this feature are the highest in the clause. (The qualification to *almost* here takes into account two exceptions that have 'dual subject' properties– clausal possession and IO passives– both of which are remarkable in other ways.) Our use of [±oblique] is in many ways a continuation of a standard way of talking about certain cases within Iranian linguistics. But it also connects with structural matters in a clear way: it is found with both Ergatives and Accusatives, both of which are argued to be dependent cases. For both features, then, there is a possibility of linking them to a configurational theory of case assignment; bearing in mind the caveat from 6.1.3 that we believe that the same case features may be both inherently and configurationally assigned even in the same language.

Though we have discussed just these two features due to the role they play in this book, the more general question of interest is what case assignment looks like when it is

approached at the grain that we have argued for here. By way of concluding, then, we will offer a few thoughts on what our view of case might mean for the basic question at the center of comparative syntax, concerning what is universal, versus language-particular. Clearly our results argue that case assignment must precede agreement and clitic movement; we do not expect this to vary cross-linguistically. But what about the features themselves?

Here it is not clear what the space of possibilities looks like, because we have very little evidence about what case features might be sensitive to beyond what we reviewed for [±subject] and [±oblique] above. If we had to speculate, we would hypothesize that there are a limited number of configurations or configurational properties (of the type 'highest in domain', or 'local to another argument') that define the space of possible case features and their values. The focus of the theory of case assignment is on the question of how much variation is allowed within such domains, and how features are associated with them.

Only time will tell (in the course of detailed case studies involving more languages and more cases) whether this intuition is on the right track. Our hope is that the present work thus both provides insight into how the grammar operates, and pinpoints in addition some aspects of how it works that are simply not understood at present, and hence require further investigation.

A
Key tables

Figure A.1: SSK alignment patterns by aspect

	MP-CLITIC	MP-AGREEMENT
IMPERFECTIVE	DO	Subject
	×	
PERFECTIVE	Subject	DO

Figure A.2: GK alignment patterns by aspect

	MP-CLITIC	MP-AGREEMENT
IMPERFECTIVE	DO	Subject
	×	
PERFECTIVE	Subject; DO	–

Figure A.3: Adıyaman Kurdish alignment patterns by aspect

	OBL	DIR
IMPERFECTIVE	DO	Subject
	×	
PERFECTIVE	Subject	DO

Figure A.4: Muş Kurdish alignment patterns by aspect

	OBL	DIR
IMPERFECTIVE	DO	Subject
	×	
PERFECTIVE	Subject; DO	–

(87) Summary of SSK patterns

a. Imperfective

SSK: Imperfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	NOM	MP agr on T	MS Agree
S	NOM	MP agr on T	MS Agree
O	ACC	MP clitic on $\mathscr{O}$	MS Clitic Movement

b. Perfective

SSK: Perfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	ERG	MP clitic on $\mathscr{O}$	MS Agree
S	NOM	MP agr on T	MS Agree
O	OBJ	MP agr on T	MS Clitic Movement

(88) Summary of Garmiani patterns

a. Imperfective (same as SSK)

GK: Imperfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	NOM	MP agr on T	MS Agree
S	NOM	MP agr on T	MS Agree
O	ACC	MP clitic on $\mathscr{O}$	MS Clitic Movement

b. Perfective

GK: Perfective

Argument	*Case*	*Indexer*	*Indexation Operation*
A	ERG	MP clitic on $\mathscr{O}$	MS Agree
S	NOM	MP agr on T	MS Agree
O	ACC	MP clitic on $\mathscr{O}$	MS Clitic Movement

B

Verb paradigms

B.1 Standard Sorani Kurdish (SSK)

Here and below, 𝔙 is where the verb "stem" appears– note that the actual form will differ by the perfective imperfective distinction.

For the verb 𝔙 'see', we provide a few representative tense-aspect combinations as well as a negative context.

(89) Present tense

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	de-t 𝔙 -im	de-y 𝔙 -im	–	de-tan 𝔙 -im	de-yan 𝔙 -im
2s	de-m 𝔙 -î(t)	–	de-y 𝔙 -î(t)	de-man 𝔙 -î(t)	–	de-yan 𝔙 î(t)
3s	de-m 𝔙-ê(t)	de-t 𝔙 -ê(t)	de-y 𝔙 -ê(t)	de-man 𝔙 -ê(t)	de-tan 𝔙-ê(t)	de-yan 𝔙-ê(t)
1p	–	de-t 𝔙-în	de-y 𝔙-în	–	de-tan 𝔙-în	de-yan 𝔙-în
2p	de-m 𝔙-in	–	de-y 𝔙-in	de-man 𝔙-in	–	de-yan 𝔙-in
3p	de-m 𝔙-in	de-t 𝔙-in	de-y 𝔙-in	de-man 𝔙-in	de-tan 𝔙-in	de-yan 𝔙-in

(90) Simple past

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	𝔙-m-î(t)	𝔙-m	–	𝔙-m-in	𝔙-m-in
2s	𝔙-t-im	–	𝔙-t	𝔙-t-în	–	𝔙-t-in
3s	𝔙-m-î	𝔙-ît-î	𝔙-î	𝔙-în-î	𝔙-n-î	𝔙-n-î
1p	–	𝔙-man-î(t)	𝔙-man	–	𝔙-man-in	𝔙-man-in
2p	𝔙-tan-im	–	𝔙-tan	𝔙-tan-în	–	𝔙-tan-in
3p	𝔙-yan-im	𝔙-yan-î(t)	𝔙-yan	𝔙-yan-în	𝔙-yan-in	𝔙-yan-in

(91) Past Progressive

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	de-m 𝔅-î(t)	de-m 𝔅	–	de-m 𝔅-n	de-m 𝔅-n
2s	de-t 𝔅-m	–	de-t 𝔅	de-t 𝔅-în	–	de-t 𝔅-n
3s	de-y 𝔅-m	de-y 𝔅-î(t)	de-y 𝔅	de-y 𝔅-în	de-y 𝔅-n	de-y 𝔅-n
1p	–	de-man 𝔅-î(t)	de-man 𝔅	–	de-man 𝔅-n	de-man 𝔅-n
2p	de-tan 𝔅-m	–	de-tan 𝔅	de-tan 𝔅-în	–	de-tan 𝔅-n
3p	de-yan 𝔅-m	de-yan 𝔅-î(t)	de-yan 𝔅	de-yan 𝔅-în	de-yan 𝔅-n	de-yan 𝔅-n

(92) Past Progressive - Negative

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	ne-m de-𝔅-î(t)	ne-m de-𝔅	–	ne-m de-𝔅-n	ne-m de-𝔅-n
2s	ne-t de-𝔅-m	–	ne-t de-𝔅	ne-t de-𝔅-în	–	ne-t de-𝔅-n
3s	ne-y de-𝔅-m	ne-y de-𝔅-î(t)	ne-y de-𝔅	ne-y de-𝔅-în	ne-y de-𝔅-n	ne-y de-𝔅-n
1p	–	ne-man de-𝔅-î(t)	ne-man de-𝔅	–	ne-man de-𝔅-n	ne-man de-𝔅-n
2p	ne-tan de-𝔅-m	–	ne-tan de-𝔅	ne-tan de-𝔅-în	–	ne-tan de-𝔅-n
3p	ne-yan de-𝔅-m	ne-yan de-𝔅-î(t)	ne-yan de-𝔅	ne-yan de-𝔅-în	ne-yan de-𝔅-n	ne-yan de-𝔅-n

(93) Past perfect

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	𝔅-bû-m-î(t)	𝔅-bû-m	–	𝔅-bû-m-in	𝔅-bû-m-in
2s	𝔅-bû-t-im	–	𝔅-bû-t	𝔅-bû-t-în	–	𝔅-bû-t-in
3s	𝔅-bû-m-î	𝔅-bû-ît-î	𝔅-bû-y	𝔅-bû-yn-î	𝔅-bû-n-î	𝔅-n-î
1p	–	𝔅-bû-man-î(t)	𝔅-bû-man	–	𝔅-bû-man-in	𝔅-bû-man-in
2p	𝔅-bû-tan-im	–	𝔅-bû-tan	𝔅-bû-tan-în	–	𝔅-bû-tan-in
3p	𝔅-bû-yan-im	𝔅-bû-yan-î(t)	𝔅-bû-yan	𝔅-bû-yan-în	𝔅-bû-yan-in	𝔅-bû-yan-in

B.2 Garmiani Kurdish (GK)

(94) Present tense

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	de-t 𝔅-im	de-y 𝔅-im	–	de-tan 𝔅-im	de-yan 𝔅-im
2s	de-m 𝔅-î(t)	–	de-y 𝔅-î(t)	de-man 𝔅-î(t)	–	de-yan 𝔅-î(t)
3s	de-m 𝔅-ê(t)	de-t 𝔅-ê(t)	de-y 𝔅-ê(t)	de-man 𝔅-ê(t)	de-tan 𝔅-ê(t)	de-yan 𝔅-ê(t)
1p	–	de-t 𝔅-în	de-y 𝔅-în	–	de-tan 𝔅-în	de-yan 𝔅-în
2p	de-m 𝔅-in	–	de-y 𝔅-in	de-man 𝔅-in	–	de-yan 𝔅-in
3p	de-m 𝔅-in	de-t 𝔅-in	de-y 𝔅-in	de-man 𝔅-in	de-tan 𝔅-in	de-yan 𝔅-in

(95) Simple past

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	𝔅-t-im	𝔅-m	–	𝔅-tan-im	𝔅-yan-im
2s	𝔅-m-it	–	𝔅-t	𝔅-man-it	–	𝔅-yan-it
3s	𝔅-m-î	𝔅-t-î	𝔅-î	𝔅-man-î	𝔅-tan-î	𝔅-yan-î
1p	–	𝔅-t-man	𝔅-man	–	𝔅-tan-man	𝔅-yan-man
2p	𝔅-m-tan	–	𝔅-tan	𝔅-man-tan	–	𝔅-yan-tan
3p	𝔅-m-yan	𝔅-t-yan	𝔅-yan	𝔅-man-yan	𝔅-tan-yan	𝔅-yan-yan

(96) Past progressive

PAT⇒ / ⇓AG	1s	2s	3s	1p	2p	3p
1s	–	de-t-im 𝔅	de-m 𝔅	–	de-tan-im 𝔅	de-yan-im 𝔅
2s	de-m-it 𝔅	–	de-t 𝔅	de-man-it 𝔅	–	de-yan-it 𝔅
3s	de-m-î 𝔅	de-t-î 𝔅	de-y 𝔅	de-man-î 𝔅	de-tan-î 𝔅	de-yan-î 𝔅
1p	–	de-t-man 𝔅	de-man 𝔅	–	de-tan-man 𝔅	de-yan-man 𝔅
2p	de-m-tan 𝔅	–	de-tan 𝔅	de-man-tan 𝔅	–	de-yan-tan 𝔅
3p	de-m-yan 𝔅	de-t-yan 𝔅	de-yan 𝔅	de-man-yan 𝔅	de-tan-yan 𝔅	de-yan-yan 𝔅

(97) Past progressive - Negative

PAT⇒ / ⇓AG	**1s**	**2s**	**3s**	**1p**	**2p**	**3p**
1s	–	ne-t-im de-𝔙	ne-m de-𝔙	–	ne-tan-im de-𝔙	ne-yan-im de-𝔙
2s	ne-m-it de-𝔙	–	ne-t de-𝔙	ne-man-it de-𝔙	–	ne-yan-it de-𝔙
3s	ne-m-î de-𝔙	ne-t-î de-𝔙	ne-y de-𝔙	ne-man-î de-𝔙	ne-tan-î de-𝔙	ne-yan-î de-𝔙
1p	–	ne-t-man de-𝔙	ne-man de-𝔙	–	ne-tan-man de-𝔙	ne-yan-man de-𝔙
2p	ne-m-tan de-𝔙	–	ne-tan de-𝔙	ne-man-tan de-𝔙	–	ne-yan-tan de-𝔙
3p	ne-m-yan de-𝔙	ne-t-yan de-𝔙	ne-yan de-𝔙	ne-man-yan de-𝔙	ne-tan-yan de-𝔙	ne-yan-yan de-𝔙

(98) Past perfect

PAT⇒ / ⇓AG	**1s**	**2s**	**3s**	**1p**	**2p**	**3p**
1s	–	𝔙-bû-t-im	𝔙-bû-m	–	𝔙-bû-tan-im	𝔙-bû-yan-im
2s	𝔙-bû-m-it	–	𝔙-bû-t	𝔙-bû-man-it	–	𝔙-bû-yan-it
3s	𝔙-bû-m-î	𝔙-bû-t-î	𝔙-bû-y	𝔙-bû-man-î	𝔙-bû-tan-î	𝔙-bû-yan-î
1p	–	𝔙-bû-t-man	𝔙-bû-man	–	𝔙-bû-tan-man	𝔙-bû-yan-man
2p	𝔙-bû-m-tan	–	𝔙-bû-tan	𝔙-bû-man-tan	–	𝔙-bû-yan-tan
3p	𝔙-bû-m-yan	𝔙-bû-t-yan	𝔙-bû-yan	𝔙-bû-man-yan	𝔙-bû-tan-yan	𝔙-bû-yan-yan

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