

# A Minimalist Analysis of Scrambling in Central Kurdish

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**Abstract—** This study characterizes the descriptive and theoretical properties of scrambling in Central Kurdish. Scrambling denotes a phenomenon or a process by which constituents of a clause are displaced from their original and unmarked positions and are placed in other positions in the sentence. Following the tenets and concepts as currently assumed in work within the framework of the Minimalist Program, the study answers questions that are related to the types of constituents that may undergo scrambling in the language, the nature of the movement types and positions involved, and the semantic-discourse import of scrambled constituents. Arguments and adjuncts in Central Kurdish may undergo displacement as a result of scrambling, and the syntactic categories affected by scrambling are DP, PP, VP, and adjunct CPs. As the language displays all three of short-distance, mid-distance and long-distance scrambling, several diagnostic tests such as binding, crossover effects, and parasitic gaps were applied to find out the nature of movement for each type of scrambling. In terms of the semantic-discourse import, it was found that scrambling in Central Kurdish does not alter the compositional semantics of the sentences, but it gives rise to new discourse interpretations.

**Keywords —** A-movement, A'-movement, Central Kurdish, Information Structure, Scrambling.

## I. INTRODUCTION

Scrambling is a stylistic rule, which freely reorders constituents in the grammar of scrambling languages (Ross, 1967). The phenomenon is closely related to the fundamental issue of the “basic word order” in scrambling languages. This operation was first examined by Hale (1980) within the context of the configurational parameter. Based on the degree of flexibility in the arrangement of constituents, languages fall into configurational and non-configurational groups (Hale 1980). Configurational languages are languages in which the arrangement of constituents in the sentence is fixed; hence the basic order of words is usually taken to resist free rearrangement and any variation and change in the basic order would have syntactic and semantic/discourse consequences. Theoretically, in these languages, syntactic structures are

instantiated as asymmetric/hierarchical configurations, with arguments and adjuncts appearing in dedicated structural positions, and their syntactic characteristics and semantic interpretation being a function of their hierarchical positions. Western Indo-European languages (other than German) are classic examples of this group of languages. For instance, in English, the structural positions of the subject, object, and verb constituents are always fixed, with any change in this sequence yielding distinct semantic/verbal interpretations.

On the other side of the spectrum are non-configurational languages, in which the order of constituents is (relatively) free in such a way that the main constituents of the sentence can be expressed in any arrangement. Although the different (re-)arrangements of constituents of a sentence generate marked allosentences (in the sense of Lambrecht 1996), in these languages, the unmarked order of constituents can still be identified. In other words, in these languages, the various ordering of constituents is pragmatically marked. However, these marked sequences have a very high frequency from a statistical point of view, so much so that the most frequently used orders used in these languages are the marked ones rather than the unmarked ones.

In the relevant literature, these languages are called scrambling languages. Scrambling, in this sense, denotes a phenomenon or a process by which constituents of a clause are displaced from their original and unmarked positions and are placed in other positions in the sentence. This relatively free movement of constituents brings about a change in the structure of the sentence. Furthermore, displacement of constituents as a result of scrambling is semantically vacuous; in the sense that scrambling does not affect the compositional/analytical/cumulative/propositional meaning of the clauses within which it occurs.

Notwithstanding, the scrambled constructions at the syntactic-pragmatic interface are assigned new discourse interpretations. Accordingly, while scrambling does not affect the propositional/analytical meaning of the sentence, it affects the way information is molded in the clause. Languages such as Japanese, Korean, German, Persian, and Kurdish are among the languages with a relatively free word order, in which scrambling moves the constituents around.

Central Kurdish, with a relatively free word order, displays scrambling of constituents. The following examples illustrate the typical variation in the (re-)arrangement of constituents of a transitive clause in the language.

- 1)
- a. Hawžîn     kitêb-êk-î     křî.  
Hawžîn     book-INDF-3SG     bought.  
“Hawzhin bought a book.”
- b. kitêb-êk-î     křî     Hawžîn.  
c. kitêb-êk,     Hawžîn     křî.  
d. Hawžîn     křî     kitêb-êk.

The marked orders in examples (1b-d) are a function of the displacement of constituents due to the application of scrambling on the unmarked order in (1a). It is observed that in each of the marked arrangements, a distinct informational emphasis is placed on the displaced constituents. In the same way, constituents with informational emphasis display a prosodic pattern distinct from the unmarked pattern. Furthermore, imposing informational emphasis on one constituent induces a change in the information weight of other constituents. Specifically, in languages that employ scrambling, the pragmatic structuring of propositions, as currently perceived as variations in the information structure of sentences (such as focalization and topicalization) is achieved through the displacement of structures (i.e. scrambling). This is while in languages with fixed word orders, such as English, modifications in the information structure of sentences are represented either by distinct and dedicated constructions (such as clefting, passivization, etc.) or by changes in the prosodic makeup of the sentences without changing the arrangement of the constituents.

This paper is an attempt to investigate the patterns of scrambling in the syntactic structure of Central Kurdish, focusing specifically on the Sulaimani variety. Specifically, the questions that this study aims to address are what types of constituents can undergo movement as a result of scrambling, and what is the nature of the landing site of the scrambled constituents in terms of A versus A'-movement. Furthermore, the question arises as to what the information weight of the scrambled constituents is. Accordingly, the nature of the information structure of the sentences displaying scrambling will be investigated, as well.

## II. A HISTORICAL OVERVIEW OF SCRAMBLING

According to Ross (1967), scrambling is a stylistic rule applied freely in grammar, which Chomsky and Lasnik (1977) shared later. The phenomenon is closely related to the fundamental issue of the basic word order in scrambling languages. This operation was first examined in Hale (1980) within the context of the configurational parameter to determine its availability. Due to the absence of structural differences among the grammatical functions (such as subjects and objects), scrambling is only possible in non-configurational languages with flat phrase structures, such as Japanese. Several subsequent studies in the literature on scrambling have also

reflected Ross's intuition: they claim that scrambling occurs as a semantically vacuous movement operation in the syntax, which is subsequently undone by semantic interpretation (Saito 1985; 1989; Kuroda 1988; Fukui 1986).

According to the Government-Binding Theory (Chomsky 1981; 1986), scrambling is an instantiation of the Move-a operation, with any syntactic constituents being able to move anywhere, as long as their outputs meet independently motivated constraints. Despite this tradition, the Minimalist Program (MP) has become increasingly concerned with scrambling as a truly optional movement operation (Chomsky 1995). One of the basic assumptions of the Minimalist enterprise is that movement occurs only as a Last Resort as a result of morphosyntactic factors such as Case or wh-features. Thus, the very concept of optional movement, which scrambling has been traditionally regarded as a typical example, has been effectively eliminated under this framework. The idea of optional movement is accommodated with strict minimalist guidelines in two different strands of research. In one case (Fukui 1993; Saito and Fukui 1998), optional movement, such as scrambling, is defined as a costless operation, according to a parametric theory of comparative syntax. The other (primarily advocated by Boškovic & Takahashi 1998; Miyagawa 1997; 2001) proposes a new analysis of scrambling as an obligatory syntactic movement driven by independently motivated features (e.g., Q-features, Extended Projection Principle/EPP-feature, topic, and focus) in accordance with minimalist guidelines.

Scrambling has often been characterized as an instance of Move-a, but research has shifted from describing its exact syntactic properties to uncovering its precise semantics. In particular, researchers have examined scrambling patterns from Japanese (Saito 1992; Tada 1993), Persian (Karimi 1999), and Hindi (Mahajan 1990) to determine whether scrambling patterns with (1) A-movement, (2) A'-movement, (3) both A and A'-movement or actually (4) none of the above.

## III. DESCRIPTIVE PROPERTIES OF SCRAMBLING

Japanese, Korean, Dutch, German, Hindi, and Persian are typically known to have relatively free word order. These languages are also typical languages in which scrambling has been attested. While there are certain universal properties of scrambling cross-linguistically, there is, also, variation in the properties displayed by scrambling in individual languages. In what follows, a general sketch of the universal properties of scrambling is provided, drawing on data from Hindi, German, Japanese and Dutch. In Japanese, a simple transitive sentence can be instantiated either as SOV or OSV, as illustrated in (2) below (Hale, 1980: 87):

- 2)
- a. John-ga     hon-o     katta.  
John-NOM book-ACC bought  
'John bought a book.'
- b. Hon-o     John-ga     katta.  
book-ACC John-NOM bought  
'John bought a book.'

As mentioned earlier, Hale (1980) was the first to address this free word-order phenomenon. He classified languages into configurational and non-configurational and argued that non-configurational languages have a flat phrase structure with no VPs, which is non-rigid. Unlike most languages with VP constituents, this type of language exhibits no structural difference between subjects and objects. This flat structure, in turn, results in free word order in languages like Japanese.

Nevertheless, subsequent research (Saito 1985; Hoji 1985; Whitman 1986) has provided considerable evidence to support the configurationality of Japanese phrase structure. The degree of freedom a language allows for its constituents to get scrambled around differs; for instance, in Hindi-Urdu, according to Kidwai (2000), all logically possible permutations of the subject, object, indirect object, and verb in a single clause are attested. The total number of permutations of four elements will amount to 24, of which only 11 different word orders are given below (Kidwai, 2000: 3):

- 3)
- Nur-ne Anjum-ko kitab di.  
Noor(SU) Anjum(IO) book(DO) gave(V)  
‘Nur gave Anjum a book.’  
(basic order: SU-IO-DO-V)
- 4)
- Anjum-ko Nur-ne kitab di (IO-SU-DO-V)
  - kitab Nur-ne Anjum-ko di (DO-SU-IO-V)
  - Nur-ne kitab Anjum-ko di (SU-DO-IO-V)
  - Anjum-ko kitab Nur-ne di (IO-DO-SU-V)
  - kitab Anjum-ko Nur-ne di (DO-IO-SU-V)
  - Nur-ne Anjum-ko di kitab (SU-IO-V-DO)
  - Nur-ne di Anjum-ko kitab (SU-V-IO-DO)
  - Anjum-ko kitab di Nur-ne (IO-DO-V-SU)
  - Nur-ne kitab di Anjum-ko (SU-DO-V-IO)
  - Nur-ne di kitab Anjum-ko (SU-V-DO-IO)

As (3) shows, the basic word order in Hindi-Urdu is S-IO-DO-V. However, given discourse requirements, considerable flexibility is permitted in the grammar to meet those requirements (4). Hindi-Urdu, therefore, is a showcase of radical scrambling, where any constituent can scramble around within a clause.

Languages differ as to what distance they permit the scrambled constituents to get displaced. In some languages, scrambling can move around constituents below the subject (short distance), above the subject (mid-distance), and out of the finite clause (long distance.) The following data from Hindi-Urdu (Kidwai 2000: 3-4) illustrate these different kinds of scrambling, respectively.

- 5)
- Nur-ne kitab Anjum-ko di-i.  
Nur (SU) book (DO) Anjum (IO) gave  
Nur gave Anjum the book.’
  - Anjum-ko Nur-ne kitab di-i.  
Anjum(IO) Nur(SU) book(DO) gave  
‘To Anjum, Nur gave the book.’
  - Anjum-ko Yusuf soch-taa ha[ki Nur-ne kitab di-i].  
Anjum(IO) Yusuf thinks BE[that Noor (SU)  
book(DO) gave]  
‘Anjum, Yusuf thinks that Nur gave a book to.’

In German, however, scrambling is clause-bound (Putnam, 2007: 71).

- 6)
- dass den Leo<sub>i</sub> jeder <sub>t<sub>i</sub></sub> kennt.  
That the Leo<sub>ACC</sub> everyone<sub>NOM</sub> knows  
‘that everyone knows Leo.’
  - \*weil den Leo<sub>i</sub> ich glaube  
Because the Leo<sub>ACC</sub> I<sub>NOM</sub> believe  
[dass jeder <sub>t<sub>i</sub></sub> kennt].  
[that everyone<sub>NOM</sub> knows]  
‘because Leo I believe that everyone knows.’

As the final descriptive property of scrambling, the most widely attested constituents undergoing scrambling are NPs and PPs. Evidence from APs scrambling is either scarce or subject to a different analysis. In the following data from Dutch, it is evident that scrambling applies to NPs and PPs (7a, b), but not to APs (7c) (Thráinsson 2001: 156).

- 7)
- ... dat Jan niet de boeken koopt.  
that John not the books buys  
...dat Jan de boeken<sub>i</sub> niet <sub>t<sub>i</sub></sub> koopt.
  - ...dat Jan nauwelijks op mijn opmerking reageerde.  
that John hardly on my remark reacted  
...dat Jan op mijn opmerking<sub>i</sub> nauwelijks <sub>t<sub>i</sub></sub> reageerde.
  - ...dat Jan morgen de deur donkergroen verft.  
that John tomorrow the door dark-green paints  
\*...dat Jan donkergroen<sub>i</sub> morgen de deur <sub>t<sub>i</sub></sub> verft.

#### IV. THEORETICAL APPROACHES TO SCRAMBLING

Since scrambling has been found to behave differently across languages, it lends itself to different theoretical analyses. In recent years, scrambling has been studied with regard to discourse information factors such as focus and topic. Some authors have considered scrambling a base-generation phenomenon, while others consider it as the result of movement, both of which are explained below.

##### A. The Base-Generation Approach

This section examines two types of approaches to the theory of free word order variation within scrambling languages, based on the view that base-generation is responsible for the attested variation. In the following, an early version of base-generation theory, propounded in the 1980s and 1990s is discussed, along with some references to more recent versions of this theory. After that, a review of the MP approach to base-generation is provided.

##### 1) Early Generative Approaches to Base-Generation

Based on the assumption that Dutch and German have a configurational status, Riemsdijk (1989) proposes that free word order in these languages is engendered by the generation of hierarchical structures, in which arguments and adjuncts are

arbitrarily distributed. In a somewhat similar vein, Neeleman (1994) states that scrambling in German is the result of movement, while that in Dutch is ordinary scrambling. Bayer and Kornfilt (1994) concur with Neelman's view. In a similar manner to Neeleman, they criticize the A-and-A' analyses for the absence of ordering restrictions for multiple scrambled elements. According to both of these studies, constituents are inserted directly into an A-position when non-focal scrambling is conducted, and this direct insertion is possible in OV languages such as German but not in VO languages such as English. This is because scrambling interacts with other syntactic rules: for Neeleman, for example, this phenomenon interacts with the  $\theta$ -domain in an OV language, a domain where arguments and adjuncts can be licensed.

The base-generation theories view the D-structure of scrambling as identical to its S-structure, except in those cases requiring a focus interpretation. There have been several more refined base-generation theories in recent years, including those proposed by Neeleman and Reinhart (1998) based on role assignments and case checking at PF, and those proposed by Fanselow (2001, 2003). Chocano (2007) offers a detailed overview of the previous analyses, as well as arguments for an integrated base-generation approach toward all kinds of scrambling phenomena. This approach, however, is appropriate for situations where scrambling occurs within the strict limits of the maximal projection of the selected head; namely, scrambling within the verb phrase. It is important to note that in the next section, a new proposal (Chomsky 1995) has been proposed to support the base-generation approach in Japanese.

## 2) A Minimalist Approach to Base-Generation

Boškovič and Takahashi (1998) state that scrambling exists under two conditions. The language must allow arguments to be base-generated in IP adjoined positions, as well as allow them to move back into their  $\theta$ -positions at LF. The first requirement, as mentioned above, is demonstrated by the existence of multiple subjects in Japanese (see Kuroda 1988; Fukui and Saito 1992), whereas English does not. As for the second requirement, they argue that English requires full XPs or a copy of the full XPs to fill in the theta-slots in overt syntax, something that is absent in Japanese. According to these two authors, the scrambled elements are directly generated from their surface positions and are then moved at LF (lowering usually) to theta positions (following an LF movement). Based on the assumption that scrambling is semantically vacuous, they suggest that theta roles are formal features able to induce movement.

In addition, the authors suggest that when scrambling creates scope ambiguity, such as in (8), the verb moves to T(ense) at LF and can be marked.

- 8)
- |                          |             |                      |
|--------------------------|-------------|----------------------|
| daremo <sub>i</sub> -ni  | dareka-ga   | t <sub>i</sub> atta. |
| everyone-Dat             | someone-Nom | met                  |
| "Everyone, someone met." |             |                      |
- Boškovič and Takahashi (1998: 354)

According to Boškovič and Takahashi, the scrambled quantifier phrase in (8) can take scope over the subject, since the verb moves to T at LF and can mark the object from there. The scrambled quantifier phrase in (9), on the other hand, cannot take scope over the matrix subject, since V-movement to INFL is not possible across clause boundaries.

- 9)
- |   |             |  |
|---|-------------|--|
| daremo <sub>i</sub> -ni   | dareka-ga   | [Mary-ga t <sub>i</sub> atta to] omotteiru |
| everyone-Dat  | someone-Nom | Mary-Nom met that thinks                   |
| - for some x, x a person, x thinks that for every y, y a person, Mary met y.                |             |  |
| ≠ for every y, y a person, there is some x, x a person, such that x thinks that Mary met y. |             |  |
- Boškovič and Takahashi (1998: 354)

This analysis, however, has some problems cross-linguistically. For example, various Persian data cannot be accounted for by using this MP style base-generation. Firstly, an Long Distance Scrambling (LDS) of quantifier can have a significant impact on scope interpretation in this language. An example of this is the following contrast, cited by Karimi (2005).

- 10)
- |  |                         |         |                          |
|--|-------------------------|---------|--------------------------|
| a. har   | dāneshju-i              | fekr    | mi-kon-e                 |
| every  | student-ind             | thought | dur-do-3sg               |
| [CP Kimea ye pesar-i-ro dust dār-e]              |                         |         |                          |
| Kimea a boy-ind-rā friend have-3sg               |                         |         |                          |
| "Every student thinks that Kimea loves one boy." |                         |         |                          |
| $\forall > \exists$ ; * $\exists > \forall$      |                         |         |                          |
| b. ye  | pesar-i-ro <sub>i</sub> | har     | dāneshju-I fekr-mi-kon-e |
| [CP Kimea t <sub>i</sub> dust-dāre]              |                         |         |                          |
| $\exists > \forall$ ; $\forall > \exists$        |                         |         |                          |

(10a) is a case in which the universal quantifier has the scope over the existential quantifier, but not the other way around. Therefore, there is only one interpretation: every student believes *Kimea* loves one boy (arbitrary). (10b) results from LDS, in which the existential quantifier moves to the matrix clause, a clause-initial position, and may take scope over the universal quantifier from there. That is, in addition to the interpretation available for (10a), the following interpretation is also possible, and in fact, it is the primary reading for this sentence: *there is one specific boy such that every student thinks Kimea loves him*.

Therefore, Boškovič and Takahashi's (1998) claim that quantifier ambiguity can only occur within a simple clause because of V to INFL (or T in recent terms) raising, is challenged by (10b), a sentence created by LDS. Furthermore, Boškovič and Takahashi's theory is based on the assumption that scrambled elements return to their argument position at LF to check their  $\theta$ -roles, implying that only arguments are subject to scrambling. The sentences in (11) (drawn from Karimi 2005: 42), however, show that adjuncts may undergo LDS, and create ambiguity as well.

- 11)
- |  |       |            |                 |
|--|-------|------------|-----------------|
| a. cherâ <sub>i</sub>                    | fekr  | mi-kon-i   | [CP Kimea emruz |
| why                                      | think | dur-do-2sg | Kimea today     |
| bargasht t <sub>i</sub> ]?               |       |            |                 |
| returned                                 |       |            |                 |
| "Why do you think Kimea returned today?" |       |            |                 |

- b. key<sub>i</sub> Kimea goft [<sub>CP</sub> ke Sepide  
 when Kimea said that Sepide  
 xune xaride t<sub>i</sub> ]?  
 house bought  
 “When did Kimea say that Sepide has bought  
 a home?”

Like Kurdish, Persian is a wh-in-situ language. However, wh-phrases may scramble, as in (11) above. The scrambled wh-adjuncts in (11) can be interpreted either in the matrix clause or in the embedded clause. A theory that is based on LF lowering of elements motivated by  $\theta$ -features, therefore, cannot account for these data. Similar criticisms have been levelled against Bošković and Takahashi analysis by Bailyn’s (2001). (See also Johnson and Park (2001) who have shown that Korean, a scrambling language, does not support conclusions drawn from Japanese).

### B. The Syntactic Movement Approach

Movement has been espoused by many authors as the motivation for scrambling. According to movement theory, clause-bound scrambling is an instance of A-movement (Fanselow 1990, Mahajan 1990, 1994; Santorini 1991; Déprez 1994; among other authors), while LDS is considered an A'-movement (Mahajan 1990, 1994; Saito 1985, and subsequent work up to 1998). Finally, Webelhuth (1992) and Karimi (2005) propose a mixed landing site for scrambled elements, claiming that the target position displays both A and A' properties.

#### 1) A-Movement Approach

A-movement launches DPs from theta-positions to case-positions and is prompted by morphological attributes associated with agreement and case. The basic properties of A-movements are as follows:

- a) They are affected by local conditions.
- b) They may override Weak Crossovers (WCOs).
- c) It is impossible to reconstruct them (a copy of them is not left behind).

To examine the nature of scrambling, the syntactic properties of A-movement have been utilized as diagnostic tools. According to these tests, local scrambling is considered an A-movement into a functional head specifier triggered by Case. This assumption is based on several reasons. The first reason is binding facts in which according to Principle A of the binding theory, copies of A-moved elements must be bound by their antecedents within their local binding domains. The ill-formedness of (12) below is induced by the fact that the copy is not locally bound by its antecedent, thus violating Principle A of the binding theory.

12)

\*Mary appears [<sub>CP</sub> that it seems [<sub>CP</sub> Mary<sub>i</sub> to be smart]]  
 Scrambled clause-bound elements create new binding relationships, as shown in (13) (cited in Karimi 2005: 46).

13)

weil wir die Frauen<sub>i</sub> einander<sub>i</sub> t<sub>i</sub> vorgestellt haben  
 because we the women each other introduced have  
 ‘Because we have introduced the women to each other.’

In this sentence, *die Frauen* would be prohibited from binding the anaphor if it was in an A'-position. The grammaticality of the sentence implies that both objects are in A-positions. It is also suggested that reconstruction can only be performed from an A' position (Mahajan 1990). If we consider the example in (13) once again, it becomes evident that if clause-bound scrambling is in fact A-movement, reconstruction cannot occur at the LF landing site of the scrambled element. As a result of scrambling, binding is achieved in this example, which implies the scrambled DP is not reconstructed at the level of LF, so the reciprocal must be c-commanded from an A position at the level of LF.

Another test for determining the difference between A-movement and A'-movement is the Weak Crossover (WCO) test. An element in an A'-position triggers the WCO effect when it c-commands a bound variable in a DP, as well as its own trace at the same time. A bound variable is a pronoun bound by an element in an A'-position. WCO effects are triggered by wh-traces (A'-traces), whereas NP-traces (A-traces) do not induce WCO effects. Scrambling is supposed to be considered clause-bound A-movement since it does not trigger WCO effects. This assumption is illustrated in the following sentence (drawn from Déprez (1994: 128)).

14)

weil Maria [<sub>jeden</sub> Gast]<sub>i</sub> [<sub>ohne</sub> seinem<sub>i</sub> Partner e  
 because Maria every guest without his partner  
 vorzustellen ] allein t<sub>i</sub> lässt.  
 to introduce alone leaves  
 ‘Because Maria leaves each guest alone without  
 introducing (them) to his partner.’

As is evident from (14), the noun phrase *jeden Gast* must c-command the pronoun from an A-position. In other words, (14) manifests an anti-WCO property, which is often attributed to movements into an A-position.

In recent years, EPP has been associated with scrambling, as an instance of A-movement. Specifically, Chomsky (1995) suggests that EPP, a D feature specific to the head T, triggering the movement of XP into the specifier of TP, is responsible for clause-bound movement. In light of EPP, Holmberg and Nikanne (2002) and Bailyn (2003), for example, discuss clause-bound scrambling in Finnish and Russian, respectively. In Japanese, Miyagawa (1997) proposes two kinds of scrambling: A-scrambling, which is associated with certain features on T, and A'-scrambling, which is associated with focus. Consequently, Miyagawa (2001, 2003) propounds the idea that EPP is the feature triggering A-scrambling. To support this claim, he uses the scope interaction between negation and quantifier phrases.

15)

zen'in-ga sono tesuto-o uke-nakat-ta (yo/to omou)  
 all-Nom that test-Acc take-Neg-Past  
 ‘All did not take that test.’ (Miyagawa 2001: 303)

- a) all > not: It was the case that all did not take the test (nobody took the test)  
 b) \*not > all It was not the case that all took the test (some took the test and some did not).

### 2) A'-Movement Approach

It is commonly argued that A'-movement creates a chain with a tail and head of both case-marked. Accordingly, A' movements are held to be motivated by other syntactic features, such as a wh-feature, and not by Case. Two of the syntactic properties of A'-movements are described below.

- a) Elements in A'-positions license parasitic gaps.  
 b) A'-movement copies are subject to semantic interpretation at LF, i.e. reconstruction (Mahajan 1990).

In light of these characteristic features, scrambling has been regarded as an instance of A'-movement by some researchers (Saito 1985 and subsequent work until 1998; Mahajan 1990, 1994, similar to Dayal 1994, Mueller and Sternefeld 1994, Vikner 1994; and Miyagawa 1997). The application of these two properties as pertains to scrambling will be elucidated via both parasitic gaps and reconstruction. Firstly, a parasitic gap is a variable that is directly bound to an element outside the adjunct phrase in which it is contained (Chomsky 1982). Since variables must be A' bound, only A'-movement can provide an antecedent for parasitic gaps. Scrambling has been argued to be a form of A'-movement because it licenses parasitic gaps (Webelhuth 1992; Vikner 1994; among others). Consider the following example (cited in Karimi, 2005: 53).

- 16)  
 ...weil er den Patienten<sub>i</sub> [ohne PRO vorher e<sub>i</sub> zu  
 Because he the patient without first  
 untersuchen] t<sub>i</sub> operierte  
 to examine operated  
 'Because he operated on the patient without first to  
 examine (him).'

*Den Patienten* licenses the parasitic gap (denoted as 'e'); hence it can only be in an A'-position. Secondly, LDS is alleged to be an instance of A'-movement because binding from the landing site is not permitted (Saito 1989, 1992; Mahajan 1990, among others).

- 17)  
 \*?karera<sub>i</sub>-o [Masao-ga [otagai<sub>i</sub>-no sensei ]-ni [CP [IP  
 they-Acc Masao-Nomeach other-Gen teacher-to  
 Hanako-ga t<sub>i</sub> hihansita ] to ] itta ] (koto)  
 Hanako-Nom criticized Comp said fact  
 '\*Them<sub>i</sub>, Masao said to each other<sub>i</sub>'s teachers that Hanako  
 criticized'

In (17) (cited in Karimi, 2005: 54), the scrambled *karera-o*, undergoing reconstruction at LF, fails to bind the anaphor *otagai-bo*.

### 3) Webelhuth's Hybrid Approach

Some scrambled elements display both A and A' properties at the landing site. An example is the German sentence in (14), repeated here as (18).

- 18)  
 weil Maria [jeden Gast]<sub>i</sub> [ohne seinem<sub>i</sub> Partner e  
 because Maria every guest without his partner  
 vorzustellen ] allein t<sub>i</sub> lässt.  
 to introduce alone leaves  
 'Because Maria leaves each guest alone without  
 introducing (them) to his partner.'

While *jeden Gast* licenses the parasitic gap (designated as "e"), the scrambled object exhibits an anti-WCO property. From its landing site, *jeden Gast* is c-commanding the co-indexed pronoun in the adjunct clause, as well as its own trace simultaneously. This implies that the object must be in an A-position. According to Webelhuth (1992), scrambled elements exhibit mixed characteristics at their landing sites due to the peculiarities intrinsic to the so-called scrambling operation. According to Webelhuth, scrambling is a third type of movement, besides A and A' movements. Alternative proposals to Webelhuth's hybrid approach can be found in Saito (1992) and Karimi (2005), which will be the focus of the next section.

### 4) Karimi's (2005) Approach to Scrambling

Karimi (2005) represents by far the most detailed and elaborate analysis of scrambling in an Iranian language. Karimi's analysis of scrambling draws data from Persian. Her account of scrambling in Persian represents a well-articulated discussion of scrambling at the syntax-discourse interface. In addition, her study presents the following questions concerning scrambling, which she considers to be free word order resulting from movement: (i) What motivates constituent movement within clauses? (ii) Is this movement optional? (iii) Is it relevant to semantic interpretation?

Although Karimi's account explains several syntactic issues in the Persian language, the focus here will be mainly related to scrambling. Karimi distinguishes two types of extended projection principles (EPPs): the original Chomsky's (1981) extended projection principle that requires that every clause have a subject, designated as the EPPg (e.g. grammatical EPP). As an alternative to moving an XP into [Spec, TP] or moving V to T as a third alternative, Karimi suggests that the EPPg may be satisfied morphologically, that is, that the rich agreement on the verb can satisfy the EPPg.

Since the same argument was used for explaining null-subjects' licensing in languages that allowed them, there is a potential opportunity to investigate whether null-subject languages tend to lack the kind of EPPg that induces movement. Specifically, the EPPs (where s stands for syntactic) is the collective name for the set of strong features that cause constituents to move beyond vP and to the edge of vP. The specifiers of the projections in which these features appear correspond to discourse properties like [+topic] or [+focus] and attract constituents to them. As a general rule, TP specifiers host background topics, Focus Phrase specifiers host contrastively focused constituents, and higher Topic Phrase specifiers host shifted topics. This set of projections, CP, TopP, FocP, and TP, are collectively known as the operator/discourse phase. They rest on top of vP, which is the lexical phase. In light of this overall view, Karimi's questions can now be answered: (i) movement is motivated by strong features, (ii) movement is

mandatory when these features are selected, and (iii) movement to check EPP features affects the discourse-functional properties of a sentence, since the features themselves are semantically relevant.

According to Karimi (2005), scrambled elements in Persian may be interpreted as topic or focus, based on the stress patterns of the language.

19)

- a. Kimea goft [ke Rahjue ketâb-â-ro az  
Kimea said that Rahju book-pl râ from  
Parviz xaride].  
Parviz bought is

“Kimea said that Rahjue had bought the books from Parviz.”

- b. [ketâb-â-ro]<sub>i</sub> Kimea goft [ke Rahjue t<sub>i</sub> az Parviz xaride] –  
“As for the books, Kimea said that Rahjue has bought  
(them) from Parviz.” or,  
“It was the BOOKS that Kimea said that Rahjue had  
bought (them) from Parviz.”

- c. [az Parviz]<sub>i</sub> Kimea goft [ke Rahjue ketâb-â-ro t<sub>i</sub> xaride]  
“From Parviz, Kimea said that Rahjue had bought the  
books.” or,  
“It was from PARVIZ that Kimea said that Rahjue had  
bought the books.” (Karimi, 2005: 202-204)

It is important to note that the word order in (19a) is unmarked. In (19b) and (19c), the object and indirect object PP are, respectively, scrambled to the initial position of the matrix clause, expressing either topic or contrastive focus, respectively. In addition, consider:

20)

- a) Kimea diruz [<sub>VP</sub> ketâb-ro *be ki dâd*]?  
Kimea yesterday book-Acc to who gave  
‘Who did Kimea give the book to yesterday?’

- b) [<sub>FocP</sub> *be ki* [<sub>TP</sub> Kimea [<sub>VP</sub> ketâb-ro t dâd ]]]  
‘Who was it that Kimea gave the book to yesterday?’  
(Karimi and Taleghani 2007: 169)

Kiss (1998) submits that the wh-phrase in (20a) is interpreted as information-focused: *She gave Parviz the books by saying ketâb-ro be Parviz dâd*. It is difficult to interpret the wh-phrase in (20b), as it has been scrambled, so the speaker receives a contrastive interpretation (Karimi 1999, 2003, 2005). When a speaker is thinking of a group of people and wants to figure out which one received the book.

According to Karimi (2005), the scrambling of focus and topic elements represents A'-movement, which implies that scrambling is motivated by the left-peripheral C-domain discourse features. Hence, scrambled constituents receive their discourse-related interpretation by way of occupying dedicated C-domain positions that map into information structure.

## V. SCRAMBLING IN KURDISH

Few studies have attempted to explore the nature of scrambling in different dialects of Kurdish. Khanmohammadi and Tafakkori (2019) aim to shed light on the mechanism of scrambling in the Kalhouri dialect of Kurdish from a Minimalist

perspective. Salimi (2013) investigates the Ardalani variety (spoken in Sanandaj and neighboring regions) to come up with a structural characterization of scrambling. More recently, Afshar and Abbasi (2021) have studied scrambling in the Ilami variety of southern Kurdish, whose analysis shares some significant analytic commonalities with that of Khanmohammadi and Tafakkori's.

Salimi (2013) drawing data from the Ardalani variety, explores scrambling from a discourse/ information-structure perspective. According to Salimi, the elements that bear [+new] and [-prominent] features are not allowed to undergo scrambling, while elements that display contrastive emphasis and have the [+new] and [+prominent] feature makeup undergo scrambling. She also shows that elements that are referentially [+specific] but informatively [-new] are more likely to move around through scrambling than elements that are [-specific] but have [+new] informational load. Notwithstanding, while arguing for the relevance of syntactic principles in the occurrence of scrambling, Salimi (2013) fails to address some basic issues regarding scrambling in Central Kurdish. In addition, some of the data she adduces in running the diagnostic tests do not stand for empirical scrutiny. Specifically, her treatment of parasitic gap construction as a diagnostic test for the identification of the nature of movement types is not empirically well-attested.

Khanmohammadi and Tafakkori (2019) have investigated scrambling in Kalhori Kurdish, from a Minimalist perspective, suggesting that scrambling is a common feature of word order pattern in that dialect. They also observe that it exhibits short and long scrambling, in addition to multiple scrambling. Specifically, they show that direct object and indirect object can appear in both short and long scrambling, while Wh-words tend to scramble only short-distance positions.

In a more recent study, Afshar and Abbasi (2021), exploring the colloquial data drawn from the Ilami variety of southern Kurdish, state that Ilami is a free-word order language that allows different types of scrambling, a) short/long, b) leftward/rightward, c) argumental/non-argumental, and d) normal/multiple, each of which can occur in some specific situations. They also propose that scrambling is an optional mechanism invoked by the language speakers under different pragmatic and discourse situations. Scrambling according to them is a marked process that brings about some structural changes in the sentence, with the semantic structure intact.

### A. Scrambling Constituents in Central Kurdish

An observation of the basic facts of Central Kurdish indicates that both arguments and adjuncts can undergo scrambling. Arguments are constituents that are assigned a theta-role by a given predicate. On the other hand, adjuncts are optional constituents that do not bear a theta-role.

21)

- a. Hawrê xwênkar-eke-an-î be mamosta nasand.  
Hawrê student-DEF-PL-3SG to teacher introduced  
‘Hawre introduced the students to the teacher.’

- b. be mamosta, Hawrê xwênkar-eke-an-î nasand.  
to teacher Hawrê student-DEF-PL-3SG introduced  
‘To the teacher, Hawre introduced the students.’

- c. *xwênkar-êke-an-î* be *mamosta*, *Hawrê nasand*.  
 student-DEF-PL-3SG to teacher *Hawrê* introduced  
 ‘The students, Hawre introduced to the teacher.’

Given the basic unmarked SOV word order, where the direct object precedes the indirect object in (21a), the indirect object as the goal argument of the predicate *nasandin* ‘introduce’ can scramble to the initial position, preceding the subject position (21b). Moreover, the direct object bearing the patient theta role can also scramble to the beginning of the clause (21c). The following examples show that adjuncts are also subject to scrambling in Central Kurdish.

22)

- a. *Hawrê xwênkar-êke-an-î* **be pele** be *mamosta*  
*Hawrê* student-DEF-PL-3SG with haste to teacher  
*nasand*.  
 introduced  
 ‘Hawre introduced the students to the teacher hurriedly.’
- b. *Hawrê* **be pele** *xwênkar-êke-an-î* be *mamosta*  
*Hawrê* with haste student-DEF-PL-3SG to teacher  
*nasand*.  
 introduced  
 ‘Hawre introduced the students to the teacher hurriedly.’
- c. **be pele**, *Hawrê xwênkar-êke-an-î* be *mamosta*  
 with haste *Hawrê* student-DEF-PL-3SG to teacher  
*nasand*.  
 introduced  
 ‘Hawre introduced the students to the teacher hurriedly.’

In (22b), the adjunct PP moves to the left of the direct object, while in (22c), it moves to the initial position of the clause, preceding the subject. In terms of syntactic category, the data in (21-22) indicate that constituents undergoing scrambling can be DP and PP. In addition, VPs and CPs can marginally, under certain discourse circumstances, undergo scrambling. In (23), the VP has moved to the left of the subject, yielding a focal interpretation.

23)

- a. (itr) *ême* *ne-man-twanî* *bi-řo-în*.  
 we NEG-1PL-able SUBJ-go-1PL  
 ‘We were no longer able to go.’
- b. (itr) *ne-man-twanî* *bi-řo-în*, *ême*  
 NEG-1PL-able SUBJ-go-1PL we  
 ‘We were no longer able to go.’

CPs can only be selectively scrambled. While adjunct CPs can undergo movement leftward (24), argument CPs cannot (25):

24)

- a. *Hawkar* *na-twan-êt* *bi-řwat*, *ger-çî*  
*Hawkar* NEG-able-3SG SUBJ-go.3SG even-if  
*pê-î* *xoř-bêt*.  
 to-3SG pleasant-BE.PRS.IRR  
 ‘Hawkar will not be able to go, even though he likes to.’
- b. *ger-çî* *pê-î* *xoř-e*, *Hawkar*  
 even-if to-3SG pleasant-Be.PRS *Hawkar*

- na-twan-êt* *bi-řwat*.  
 NEG-able-3SG SUBJ-go.3SG  
 ‘Hawkar will not be able to go, even though he likes to.’

25)

- a. *Hawkar* *wî* *na-řw-at* *bo zanko*.  
*Hawkar* said NEG-go-3SG to university  
 ‘Hawkar said he would not go to university.’
- b. \**na-řw-at* *bo zanko*, *Hawkar* *wî*.  
 NEG-go-3SG to university *Hawkar* said  
 ‘Hawkar said he would not go to university.’

### B. Distance of Scrambling in Central Kurdish

As commonly assumed in the literature, scrambled elements can be short, mid, and long distances from their base positions. Accordingly, scrambling is described as being short-distance, mid-distance, and long-distance.

Short-distance scrambling describes a situation where the scrambled element moves within VP/vP (Mahajan 1990, Miyagawa 2001). Scrambling of the indirect object to the left of the direct object within vP represents short distance scrambling in Central Kurdish.

26)

- a. *Hawrê xwênkar-êke-an-î* **be mamosta** *nasand*.  
*Hawrê* student-DEF-PL-3SG to teacher introduced  
 ‘Hawre introduced the students to the teacher.’
- b. *Hawrê* **be mamosta** *xwênkar-êke-an-î* *nasand*.  
*Hawrê* to teacher student-DEF-PL-3SG introduced  
 ‘Hawre introduced the students to the teacher.’

Assuming that the indirect object follows the direct object in its base position (26a), the indirect object PP scrambles, short distance, to the left of the direct object within vP/VP, as shown in (26b).

Mid-distance scrambling refers to the movement of the scrambled elements to the clause-initial position which is widely referred to as the left-periphery of the clause. Examples in (21b-c) above represent mid-distance scrambling in Kurdish.

And finally, long-distance scrambling designates a situation where a constituent is scrambled out of its immediately dominating clause and to the higher up clause. While theoretically there is no bound on the number of clauses a scrambled element can move past, the long-distance scrambling is commonly illustrated by the movement of a constituent from inside a subordinate clause to the immediately dominating matrix clause, as exemplified below.

27)

- a. *wa* *bi-zan-im* *Hawkar* *xwênkar-êke-an-î*  
 thus SUBJ-know-1SG *Hawkar* student-DEF-PL-3SG  
 be *mamosta* *nasand-u-e*.  
 to teacher introduced-PERF-BE.PRS  
 ‘I think Hawkar has introduced the students to the teacher.’
- b. *Hawkar*, *wa* *bi-zan-im* *xwênkar-êke-an-î*  
*Hawkar* thus SUBJ-know-1SG student-DEF-PL-3SG

be mamosta nasand-u-e.  
to teacher introduced-PERF-BE.PRS  
“I think Hawkar has introduced the students to the teacher.”

c. xwênkar-eke-an wa bi-zan-im Hawkar,  
student-DEF-PL thus SUBJ-know-1SG Hawkar  
be mamosta-î nasand-u-n.  
to teacher-3SG introduced-PERF-BE.PRS.PL  
“I think Hawkar has introduced the students to the teacher.”

d. be mamosta, wa bi-zan-im Hawkar  
to teacher thus SUBJ-know-1SG Hawkar  
xwênkar-eke-an-î nasand-u-e.  
student-DEF-PL-3SG introduced-PERF-BE.PRS  
“I think Hawkar has introduced the students to the teacher.”

The subject, direct object and indirect object may undergo long-distance scrambling, as is evident from (27b-d), respectively.

To recapitulate the descriptive properties of scrambling in Central Kurdish, both arguments and adjuncts may undergo displacement as a result of scrambling. The syntactic categories affected by scrambling are DP, PP, VP and adjunct CPs. Central Kurdish displays all three of short-distance, mid-distance and long-distance scrambling. Short-distance scrambling primarily moves PP goal arguments to the left of the theme argument within the vP domain. Mid-distance scrambling affects both theme DPs and goal PPs. The landing site for the mid-distance scrambling is pre-subject position, also known as the left periphery of the clause. Long-distance scrambling moves constituents from inside the subordinate clause out to the left periphery of the matrix clause. This descriptive sketch provides the empirical grounds to offer a theoretical analysis of scrambling in Central Kurdish.

### C. Basic Word Order of Central Kurdish

To address the questions raised by the scrambling phenomenon in any language, and Central Kurdish for that matter, it requires formulation of the basic word order so that displacement of constituents out of their basic position is put into perspective. Therefore, this section will attempt to determine the basic word order in Kurdish.

Typologically speaking, Iranian languages fall into a mixed head-first-head-final type. NPs, APs and PPs follow a head-first pattern, as shown by (28a-c), respectively.

- 28)
- a. gul-î sur  
flower-EZ red  
“(a) red flower”
- b. jiwan-tir le gul  
beautiful-COMP from flower  
“more beautiful than (a) flower”
- c. le Slemani bo Hawler  
from Sulaimani to Hawler  
“from Sulaimani to Hawler”

However, VPs are considered head-final in the sense that the verb head always follows the direct object in the pragmatically unmarked cases.

- 29)
- Hawžin rožname de-xwên-êt-ewe  
Hawžin newspaper IND-read-3SG-REP  
“Hawzhin is reading a newspaper.”

Since scrambling as a syntactic phenomenon occurs within clausal domains, which are in turn built upon VPs, a closer exploration into the basic word order patterns inside VP proves indispensable. More specifically, while the order of the object before the verb inside VP is arguably well-established, the order of the direct object and indirect object with ditransitive verbs is much less so. To determine the basic word order of Central Kurdish, where the direct and indirect objects are present, it is important to appeal to Lambrecht (1996)'s yardstick in determining the pragmatically unmarked patterns. According to Lambrecht (1996), given a set of different word-order patterns, the pattern which displays less restrictions with respect to its usage in diverse pragmatic functions is considered unmarked (or less marked, in comparison). Diverse pragmatic functions are meant to represent neutral, focal or contrastive readings of word-order patterns. To demonstrate the point in case, consider the following questions:

- 30)
- a. Hawkar çi kird?  
Hawkar what did  
“What did Hawkar do?”
- b. Hawkar çi bo Hawžin hêna?  
Hawkar what to Hawžin brought  
“What did Hawkar bring to Hawzhin?”
- c. Hawkar rožname-î bo kê hêna?  
Hawkar newspaper-3SG to who brought  
“To whom did Hawkar bring a newspaper?”

The questions in (30a-c) each represents a request for information regarding the action predicated of the subject (30a), the object brought by the subject to the indirect object (30b) and the person to whom the object is brought (30c). The answer to each question represents assertion of new information which in turn marks the focal point of information conveyed. Interestingly, all the three questions above, requiring different focal constituents, can be answered felicitously by an SOV pattern. To be more specific, given appropriate prosodic prominence placed on the focal constituents representing new information, the SOV order represents a pattern that can accommodate all types of information required by the questions in (30). Therefore:

- 31)
- a. Hawkar **rožname-î** bo **Hawžin** hêna.  
Hawkar newspaper-3SG to Hawzhin brought  
“Hawkar **brought Hawzhin a newspaper.**”
- b. Hawkar **rožname-î** bo Hawžin hêna.  
Hawkar newspaper-3SG to Hawzhin brought  
“Hawkar brought hawzhin **a newspaper.**”

- c. Hawkar rožname-î **bo Hawžin** hêna.  
Hawkar newspaper-3SG to Hawzhin brought  
“Hawkar brought **Hawzhin** a newspaper.”

As is evident from (31 a-c), the answers to the questions in (30a-c) respectively, all follow an SOV pattern. In other words, following Lambrecht (1996)'s yardstick, a pattern which is capable of accommodating a maximal number of pragmatic functions is supposed to be the unmarked basic pattern in the language. To sum up, following Lambrecht (1996)'s procedure for determining the pragmatically unmarked word order in a given language, the following basic word order is proposed for Central Kurdish declarative clauses. The “>” symbol denotes linear precedence:

Subject > Specific/Non-specific direct object > Indirect object > Verb

#### D. Scrambling: A- or A'-Movement?

The question of whether scrambling is movement to an A- or A'-position, that is, whether scrambling is A- or A'-movement, has generated conflicting views within generative literature. Specifically, three views can be identified. One view takes scrambling to be A-movement, hence scrambled elements are launched to A-position. This view is most conspicuously advocated by (Deprez 1994, Fanselow 1990, Mahajan 1994, Miyagawa 2003, and Santorini 1991). Another view takes scrambling to be an instantiation of A'-movement, hence movement to an A'-position (Baylin 2001, Saito and Fukui 1993, Mahajan 1997). And yet a third view takes a mixed approach, treating scrambling as displaying both A and A' properties (Karimi, 2005). The choice of one view or another is ultimately an empirical issue. Evidence in favor of an approach or another comes from the observation of the scrambling phenomenon in a given language or set of languages.

To be more specific, arguments in favor of the A or A' status of scrambling as a syntactic movement operation come from standard tests in the generative literature which provide the relevant evidence. Running those tests will, therefore, determine whether the movements and the positions under investigation display A or A' properties. Accordingly, to determine whether scrambling in Central Kurdish is an A or A'-movement, it is significant to check the relevant Kurdish data against the standard tests for A versus A' movement. Before exploring the Central Kurdish data, in the following section, a sketch will be provided of the standard tests determining whether a movement has A or A' properties. Diagnostic tests commonly employed to distinguish A versus A' movement are 1) generating new binding relation 2) licensing parasitic gaps and 3) displaying cross-over effects. To illustrate how these tests are used to distinguish A versus A' movement, each of them is discussed as follows.

##### 1. Binding

Creation of new binding relations among NPs is a distinctive feature of A-movement. Therefore, A-movement but not A'-

movement generates new binding possibilities, providing new antecedents for NPs (at s-structure in GB terms).

- 32) John<sub>i</sub> seems to himself<sub>i</sub> [<sub>t<sub>i</sub></sub> to have broken the civil laws.]

In (32), a typical case of raising, the subject “John” of the embedded clause moves to the subject position of the matrix clause to receive nominative case (to check the EPP feature of the matrix T, in minimalist terms). “John” in its derived position is able to bind the anaphor “himself” which would otherwise be unbound. Therefore, “John” as an A-moved NP counts as a new antecedent for the anaphor “himself”. However, A'-movement does not display this property, as exemplified below.

- 33) \*Who<sub>i</sub> did himself<sub>i</sub> saw t<sub>i</sub> in the mirror?

Anaphors are barred from occurring in the subject position of finite clauses by Principal A of the binding theory. An example like (33) shows that an anaphor in the subject position of a finite clause cannot be bound by a c-commanding Wh-phrase in the A'-position. Hence, an element A'-moved to an A'-position will not be endowed with the ability to generate new binding relation in its new landing site.

##### 2. Parasitic Gaps

A parasitic gap denotes a trace, which is dependent on the presence of another (real) trace for its existence. The real trace has to be a wh-trace (Chomsky 1982, Engdahl 1983), as exemplified in (34).

- 34) What<sub>i</sub> did you write t<sub>i</sub> [without paraphrasing t<sub>PGi</sub> ?]

In (34), the real trace denoted by “t<sub>i</sub>” is left by the A'-movement of “what” to the CP domain. In the adverbial phrase, the trace denoted by “t<sub>PGi</sub>” is the parasitic gap, which is coreferent with the real gap and the wh-phrase. Generally, a parasitic gap is licensed under two conditions. First, the real gap has to be the trace of an A'-movement; second, neither the real gap nor the parasitic gap c-command the other. The example in (35) indicates that an A-movement trace is not able to license a parasitic gap:

- 35) \*The paper<sub>i</sub> was written t<sub>i</sub> [without paraphrasing t<sub>PGi</sub>]

The real trace in (35) belongs to the A-movement of the NP “paper”. Although the surface configuration of (35) is in many respects similar to (34), the parasitic gap in the adverbial phrase cannot be licensed. Therefore, in general, a real trace left by A'-movement, but not A-movement, is able to license a parasitic gap.

##### 3. Crossover Effects

Crossover effects designate restrictions on possible coreference among NPs. To be more specific, A'-movement of an NP across another coreferential pronoun is barred. The impossibility of crossover is traditionally attributed to the violation of Principle C of binding theory.

- 36)  
a. who<sub>i</sub> t<sub>i</sub> said he<sub>i</sub> was hungry?  
b. \*who<sub>i</sub> did he<sub>i</sub> say t<sub>i</sub> was hungry?

In (36a), the A'-moved operator "who" is able to bind the pronoun "he", turning the pronoun into a bound variable. However, in (36b), the operator "who" is not able to bind the pronoun "he". The structural difference between the two examples arises from the different launching site of the operators. In (36a), the operator "who" has moved from a position higher up than the pronoun, hence not crossing the pronoun. In contrast, in (36b), the wh-phrase has moved from a launching site lower than the pronoun, crossing the pronoun in its way up to the landing site. The ungrammaticality of examples like (36b) which displays crossover effects is attributed to Principle C of binding theory. According to this principle, an R-expression is always free (not-bound). Wh-traces are considered as R-expressions, hence subject to Principle C of binding theory. In examples displaying crossover effects like (36b), the trace of the wh-phrase is bound by the coreferent pronoun, hence violating Principle C. This is while A-movement does not induce cross-over effects, as can be exemplified below.

37) John<sub>i</sub> seems to his<sub>i</sub> advisor [ t<sub>i</sub> to be a genius.]

The matrix subject "John" has moved from the specifier of TP in the embedded clause, by way of raising which is a typical instance of A-movement. Along the way to its derived position, the matrix subject has crossed the coreferential pronoun "his advisor" without inducing any violations due to crossover effects. As such, A-movement does not feed crossover effects.

To sum up, the diagnostic tests for distinguishing A versus A' movement are standardly used to determine whether a moved element targets an A or A'-position. Establishing new binding relations, licensing parasitic gaps and inducing crossover effects are among the most reliable diagnostic tests to detect the A versus A' nature of syntactic movement, and syntactic position for that matter.

### E. A- or A'-Scrambling in Central Kurdish

Furnished with the diagnostic tests to distinguish A versus A' movement, in this section, the nature of scrambling in Central Kurdish is investigated. Specifically, the nature of movement in short-distance, mid-distance and long-distance scrambling is explored. It is recalled that in the literature there is a growing consensus that different kinds of scrambling do not lend themselves to a homogenous analysis where all types of scrambling are treated across-the-board. Hence, the nature of distinct scrambling types is studied, with each type receiving a separate treatment.

#### 1. Short Distance Scrambling in Central Kurdish

Short distance scrambling moves around a constituent within the vP domain. As shown above, the basic word order shows that the indirect object follows the direct object in Central Kurdish. Hence, the only possibility for short-distance scrambling in Kurdish is the leftward movement of the indirect object PP past the direct object. This type of movement is indeed attested. The discourse properties of such a movement will be elaborated on later on. Examples (26a-b) are repeated as (38a-b)

38)

a. Hawrê xwênkar-eke-an-î be mamosta nasand.  
Hawrê student-DEF-PL-3SG to teacher introduced  
"Hawre introduced the students to the teacher."

b. Hawrê **be mamosta** xwênkar-eke-an-î nasand.  
Hawrê to teacher student-DEF-PL-3SG introduced  
"Hawre introduced the students to the teacher."

In (38b), the indirect object PP has scrambled locally to the left of the direct object NP, within vP/TP. The nature of the landing site of the scrambled PP can only be determined by running the diagnostic tests introduced in the previous section. Let's look at the binding possibility of the short distance scrambling:

39)

a. min hawrê-ke-î<sub>j</sub>?i **be Ivan**<sub>i</sub> de-nasên-m.  
I friend-DEF-3SG to Ivan IND-introduce-1SG  
"I will introduce his friend to Ivan."

b. min **be Ivan**<sub>i</sub> hawrê-ke-î<sub>j</sub>?j t<sub>i</sub> de-nasên-m.  
I to Ivan friend-DEF-3SG IND-introduce-1SG  
"I will introduce his friend to Ivan."

In (39a), the indirect object occupies its unmarked post-object position. The direct object preceding the indirect object contains a possessive pronoun. The possessive pronoun is ambiguous in reference as between an extra-linguistic individual "j" or the indirect object "Ivan". Notwithstanding, the most natural interpretation of the possessive pronoun is when it refers to somebody other than "Ivan". However, in (39b), where scrambling has moved the indirect object to the left of direct object, the most natural interpretation of the possessive pronoun is one where "Ivan" binds the possessive pronoun. In other words, while in the pre-scrambling basic word order the possessive pronoun contained in the direct object freely refers to an extra-linguistic individual, in the structure resulting from the scrambling of the indirect object, the direct object has to be bound by the indirect object. As such, short-distance scrambling of the indirect object to the left of the direct object has established a new binding relation whereby the direct object is properly bound by the c-commanding indirect object. The result of the binding tests, therefore, shows that short-distance scrambling in Central Kurdish is an instance of A-movement. Consequently, the structural position occupied by the scrambled indirect object must be an A-position.

The second diagnostic test detecting the A-status of short-distance scrambling is the failure of the scrambled constituent to induce crossover effects. Interestingly, the example in (39b), additionally, presents a configuration where the effects of crossover can be observed. Since the indirect object has moved past a co-referential NP (direct object), and the resultant movement has not induced crossover effects i.e., the coreference of the indirect object, direct object and the trace is possible, the movement must be an A-type, hence A-movement.

The third piece of evidence in favor of the A-status of short-distance scrambling comes from parasitic gaps. It is recalled that parasitic gaps are only licensed where there is a real gap left by an A'-moved constituent. A-traces in general do not license parasitic gaps, as exemplified below.

40)

- a. min Hiwa<sub>j</sub>-m [OP<sub>ij</sub> bê agadar kirdnewe] **be**  
 I Hiwa-1SG [without aware making] to  
**mamosta<sub>i</sub>** nasand.  
 teacher introduced  
 “I introduced Hiwa to the teacher [without alerting him].”
- b. min **be mamosta<sub>i</sub>** Hiwa<sub>j</sub>-m [OP<sub>j/\*1</sub> bê  
 I to teacher Hiwa-1SG [without  
 agadar kirdnewe t<sub>PG</sub>] **t<sub>i</sub>** nasand.  
 aware making] introduced  
 “I introduced Hiwa to the teacher [without alerting him].”

In (40b), the indirect object PP has short-scrambled to the left of the direct object, leaving behind a trace. The possible indexing on the trace-operator inside the adverbial phrase shows that the object of “agadar kirdnewe” cannot be coreferential with the trace of the scrambled indirect object. In other word, the trace of the scrambled PP is not able to license the parasitic gap inside the adverbial phrase. The facts from parasitic gaps therefore are illustrative of the A-nature of short-scrambling of the indirect object in Kurdish.

To recapitulate, the diagnostic tests of binding, parasitic gap licensing and crossover effects all point to the A-nature of the movement involved in short-distance scrambling in Kurdish.

## 2. Mid-Distance Scrambling in Central Kurdish

Mid-distance scrambling in Central Kurdish is instantiated by cases where the direct object or indirect object move to a clause initial position. Although left periphery of the clause allows for scrambling of multiple arguments simultaneously, the analysis is restricted to cases where a single constituent scrambles to the left periphery. This is to ensure that the effects displayed by the diagnostic tests are controlled for.

41)

- a. mindal'-eke-î<sub>i</sub> **hemu bawk-êk<sub>j</sub>-î** xoš  
 child-DEF-3SG every father-INDF-3SG pleasure  
 de-wêt.  
 IND-want  
 “his/her child loves every father.”
- b. **hemu bawk-êk<sub>i</sub>** , mindal'-eke-î<sub>i</sub>  
 every father-INDF-3SG child-DEF-3SG  
 xoš-î de-wêt.  
 pleasure-3SG IND-want  
 “every father, his child loves him.”

In (41a), the subject contains a possessive pronoun which for its interpretation picks up an extra-linguistic referent. This is most conspicuously evident from its English translation where the possessive pronoun may refer to a masculine or feminine referent. The direct object is a (universal) quantifier phrase the range of which includes all fathers. The referent of the possessive pronoun contained in the subject is disjoint from the referents of the fathers, hence distinct indexing. However, in (41b), where the direct object has scrambled to a pre-subject domain, a new binding relation between the quantifier and the possessive pronoun inside the subject has been established. In particular, the possessive pronoun in (41b) now is a bound

variable which is bound by the universal quantifier of the scrambled direct object. In other words, the quantifier in the scrambled direct object restricts the range of the bound variable (possessive) pronoun. It is recalled that establishing new binding relations is a typical property of A-movement. Accordingly, mid-distance scrambling in Central Kurdish displays A-properties, at least, as far as binding relations are concerned.

The second diagnostic test to run involves crossover effects: 42)

- a. hemu bawk-êk<sub>i</sub> **mindal'-eke-î<sub>i</sub>** xoš  
 every father-INDF child-DEF-3SG pleasure  
 de-wêt.  
 IND-want  
 “every father loves his child.”
- b. **mindal'-eke-î<sub>i/\*j</sub>** , hemu bawk-êk<sub>i</sub> xoš-î  
 child-DEF-3SG every father-INDF pleasure-3SG  
 de-wêt.  
 IND-want  
 “his/her child, every father loves him/her.”

In (42a), the definite direct object contains a possessive pronoun which is naturally bound by the quantifier phrase in the subject position. Hence, the subject and the possessive pronoun are coindexed. In (42b), the definite direct object including the possessive pronoun has scrambled to clause-initial position, crossing over the coindexed quantified subject. However, as is evidently seen by the indexation in (42b), the scrambling of the possessive pronoun inside the direct object is licit only if it is disjoint in reference from the quantifier subject. In other words, the possessive pronoun cannot cross over the coreferential subject. The scrambling in (42b) leads to an acceptable interpretation only when the reference of the scrambled possessive pronoun is different from the crossed-over quantified subject. The result of crossover test gives credence to the view that mid-distance scrambling is an instance of A'-movement.

The third test to determine the A versus A' status of mid-distance scrambling involves licensing parasitic gaps.

43)

- a. Hêmin [bê xwêndinewe t<sub>PG</sub>] **kitêb-êk-î**  
 Hemin without reading book-INDF-3SG  
 fêrê da.  
 throw gave  
 “Hemin threw a book away without reading it.”
- b. **kitêb-êk<sub>i</sub>-î** , Hêmin [bê xwêndinewe t<sub>i</sub>] t<sub>i</sub>  
 book-INDF-3SG Hemin without reading  
 fêrê da.  
 throw gave  
 “Hemin threw a book away without reading it.”

The example in (43b) provides yet another evidence in favor of the A'-status of mid-scrambling in Central Kurdish. Mid-distance scrambling of the direct object to the pre-subject position licenses a parasitic gap inside a clause-medial adverbial phrase.

To sum up, running the diagnostic tests for mid-distance scrambling apparently yields contradictory results. Mid-distance scrambling of a constituent gives rise to new binding relations, a situation characteristic of A-movement. However, evidence from crossover effects and licensing parasitic gaps points to the A' nature of mid-distance scrambling. This situation is by no means a new one. Weleblhuth (1992), as well as Karimi (2005), citing data from German and Persian, respectively, argue that some instances of scrambling display hybrid A/A' properties.

### 3. Long Distance Scrambling in Central Kurdish

It is recalled from the descriptive sketch of scrambling that long-distance scrambling is a phenomenon in which a constituent from inside an embedded clause gets scrambled to a higher position in the matrix clause. NPs in the subject and direct object positions in an embedded clause may be subject to long-distance scrambling; however, indirect object PPs are less readily so.

44)

a. ew xwêndkar-e, pê-m wa-bêt [Hawkar be  
that student-DEF, to-me thus-be.3SG Hawkar to  
mamosta-î nasand-u-e]  
teacher-3SG introduced-PERF-BE.PRS  
“that student, it seems to me that Hawkar has introduced  
to the teacher.”

b. Hawkar, pê-m wa-bêt [ew xwêndkar-e-î  
Hawkar, to-me thus-be.3SG that student-DEF-3SG  
be mamosta nasand-u-e]  
to teacher introduced-PERF-BE.PRS  
“Hawkar, it seems to me that he has introduced that student  
to the teacher.”

c. !be mamosta, pê-m wa-bêt [Hawkar ew  
to teacher, to-me thus-be.3SG Hawkar that  
xwêndkar-e-î nasand-u-e]  
student-DEF-3SG introduced-PERF-BE.PRS  
“To the teacher, it seems to me that Hawkar has introduced  
the student.”

To characterize the nature of the landing site of long-distance scrambling, it is necessary, as before, to run the diagnostic tests of A versus A' movement. Consider the following examples:

45)

a. **pê-î** wa-ye [Hawkar ew **xwêndkar-e-î**  
to-him thus-be.3SG Hawkar that student-DEF-3SG  
be mamosta nasand-u-e]  
to teacher introduced-PERF-BE.PRS  
“It seems to him that Hawkar has introduced that student  
to the teacher.”

b. **ew xwêndkar-e, pê-î** wa-ye [Hawkar t<sub>i</sub>  
that student-DEF to-him thus-be.3SG Hawkar  
be mamosta-î nasand-u-e]  
to teacher-3SG introduced-PERF-BE.PRS  
“That student, it seems to him, that Hawkar has (him/her)  
introduced to the teacher.”

In (45a), the experiencer clitic of the *seem*-clause is disjoint in reference from the direct object NP in the embedded clause, hence disjoint indexes. However, the co-indexation in (45b) shows that the long-distance scrambling of the direct object to clause-initial position has made it possible for experiencer clitic to find a new binder. In other words, long-distance movement of the direct object has created new a binding relation. Interestingly, the creation of new binding relations is a property of A-movement.

The second test invoked is to observe crossover effects in the long-distance scrambling configuration.

46)

a. pê-m wa-ye [hemu bawk-êk<sub>i</sub> **mindal-êke-î**  
to-me this-be.3SG every father-INDF child-DEF-3SG  
xoş de-wêt].  
pleasure IND-want  
“It seems to me that every father loves his child.”

b. **mindal-êke-î**<sub>i/j</sub>, pê-m wa-ye [hemu bawk-êk<sub>i</sub> t<sub>j</sub>  
child-DEF-3SG to-me this-be.3SG every father-INDF  
xoş-î de-wêt].  
pleasure IND-want  
“his/her child, it seems to me every father loves him/her.”

In (46a), the possessive pronoun contained in the embedded direct object takes (in the most natural interpretation) the quantified NP in the subject position. However, long-distance scrambling of the direct object, crossing the coreferential quantifier subject NP, to the higher up clause bleeds the embedded clause coreference. This fact provides evidence that long-distance scrambling, crossing a coreferential element, induces crossover effects, a situation that is typical of A'-movement.

Finally, the long-distance scrambling of the constituents in Central Kurdish is scrutinized by observing whether scrambled elements license parasitic gaps, as shown below.

47)

ew xwêndkar-e<sub>i</sub>, pê-m wa-bêt [Hawkar  
that student-DEF to-me thus-be.3SG Hawkar  
[bê agadar kirdinewe t<sub>PG</sub>] t<sub>i</sub> be mamosta-î  
without alerting doing to teacher-3SG  
nasand-u-e  
introduced-PERF-BE.PRS

“That student, it seems to me that Hawkar has introduced to the teacher without alerting.”

As example (47) shows, an element scrambled long-distance, may license a parasitic gap inside an adverbial clause embedded in the subordinate clause. The ability of the scrambled element to license a parasitic gap from its landing position provides evidence that the moved element has operator-like properties, hence occupying an A'-position.

### F. The Motivation for Scrambling in Central Kurdish

In this section, the question of what discourse properties motivate scrambling in Central Kurdish is addressed. As explained above, Karimi (2005) takes scrambling in Persian to be syntactically motivated. However, given the cartographic view of syntactic structures she adopts (following Rizzi 1997)

such discourse properties as Topic and Focus to be formal features heading their own projections in the left periphery. On the other hand, the left-periphery of clause is assumed to be the syntactic space where operator and operator-like elements occupy dedicated positions in order to be visible to discourse semantics procedures of LF. Along the same lines, the discourse properties displayed by scrambling in Central Kurdish will be investigated.

### 1. Scrambling and Specificity

The interaction of scrambling and specificity has been a recurrent issue in studies on scrambling. Karimi (2005) represents one detailed work on how the concept of specificity comes to bear on the operation scrambling in Persian. In particular, Karimi (2005) posits two different structural positions for non-specific and specific direct objects in Persian. As stated before, Central Kurdish does not display such a dichotomy of positions for direct objects. However, specificity effects play a crucial role in determining which arguments are able to scramble in the clause. Direct objects in the following transitive clauses have been arranged from most specific to least specific:

48)

- a. Hawkar **xwêndkar**-eke be mamosta de-nasên-êt.  
Hawkar student-DEF to teacher IND-introduce-3SG  
“Hawkar introduces the student to the teacher.”
- b. Hawkar **yek-êk le xwêndkar-eke-an** be  
Hawkar one-INDF from student-DEF-PL to  
mamosta de-nasên-êt  
teacher IND-introduce-3SG  
“Hawkar introduces one of the students to the teacher.”
- c. Hawkar **xwêndkar-êk-î zîrek** be mamosta  
Hawkar student-INDF-EZ smart to teacher  
de-nasên-êt  
IND-introduce-3SG  
“Hawkar introduces a smart student to the teacher.”
- d. Hawkar **xwêndkar-êk** be mamosta de-nasên-êt  
Hawkar student-INDF to teacher IND-introduce-3SG  
“Hawkar introduces a student to the teacher.”
- e. Hawkar (nabêt) **xwêndkar** be mamosta  
Hawkar (shouldn't) student to teacher  
bi-nasên-êt.  
SUBJ-introduce-3SG  
“Hawkar should not introduce students to the teacher.”

The direct object in (48a) is definite, hence most specific in terms of the universe of discourse. In (48b), the direct object is definite, however, it is included in an indefinite partitive phrase. Partitive indefinite NPs are specific by virtue of representing one or more instances of a presupposed set of objects. The direct object in (48c) is indefinite, however it is made familiar through modification by a descriptive adjective, hence being specific. To sum up, definite NPs, and partitive and modified indefinites are specific. Example (48d) includes an indefinite direct object which conveys an existential reading. In other words, the

denotatum of the direct object is presentational in the sense of Lambrecht (1996), hence non-specific. And, finally in (48e), the bare direct object NP denotes a kind-level entity, lacking a referential index. Kind-level NPs are inherently non-specific. Let's now look into how specificity affects the mid-distance scrambling of direct objects. Elements in the left periphery of the clause receive either an identificational focus (in the sense of Kiss 1998) or topic reading; therefore, specificity effects have to be assessed with respect to both types of interpretations. To see these effects, consider the following examples corresponding to (48a-e):

49)

- a. **xwêndkar-eke<sub>i</sub>** , Hawkar **t<sub>i</sub>** be mamosta-î  
student-DEF Hawkar to teacher-3SG  
de-nasên-êt.  
IND-introduce-3SG  
“The student, Hawkar introduces to the teacher.”
- a'. **XWÊNDKAR-EKE<sub>i</sub>** , Hawkar **t<sub>i</sub>** be mamosta-î  
student-DEF Hawkar to teacher-3SG  
de-nasên-êt.  
IND-introduce-3SG  
“THE STUDENT, Hawkar introduces to the teacher.”
- b. **yek-êk le xwêndkar-eke-an<sub>i</sub>** , Hawkar **t<sub>i</sub>** be  
one-INDF from student-DEF-PL Hawkar to  
mamosta-î de-nasên-êt  
teacher-3SG IND-introduce-3SG  
“One of the students, Hawkar introduces to the teacher.”
- b'. **YEK-ÊK LE XWÊNDKAR-EKE-AN<sub>i</sub>** , Hawkar **t<sub>i</sub>**  
one-INDF from student-DEF-PL Hawkar  
be mamosta-î de-nasên-êt.  
to teacher-3SG IND-introduce-3SG  
“ONE OF THE STUDENTS, Hawkar introduces to the  
teacher.”
- c. **\*xwêndkar-êk-î zîreki**, Hawkar **t<sub>i</sub>** be mamosta-î  
student-INDF-EZ smart Hawkar to teacher-3SG  
de-nasên-êt.  
IND-introduce-3SG  
“\*A smart student, Hawkar introduces to the teacher.”
- c'. **XWÊNDKAR-ÊK-Î ZÎREK<sub>i</sub>**, Hawkar **t<sub>i</sub>** be mamosta-î  
student-INDF-EZ smart Hawkar to teacher-3SG  
de-nasên-êt.  
IND-introduce-3SG  
“A SMART STUDENT, Hawkar introduces to the  
teacher.”
- d. **\*xwêndkar-êki**, Hawkar **t<sub>i</sub>** be mamosta-î  
student-INDF Hawkar to teacher-3SG  
de-nasên-êt.  
IND-introduce-3SG  
“\*A student, Hawkar introduces to the teacher.”

- d'. **XWÊNDKAR-ÊK**<sub>i</sub>, Hawkar **t**<sub>i</sub> be mamosta-î  
 student-INDF Hawkar to teacher-3SG  
 de-nasên-êt.  
 IND-introduce-3SG  
 "A student, Hawkar introduces to the teacher."
- e. \***xwêndkar**<sub>i</sub>, Hawkar (nabêt) **t**<sub>i</sub> be mamosta-î  
 student, Hawkar (shouldn't) to teacher-3SG  
 bi-nasên-êt.  
 SUBJ-introduce-3SG  
 "\*\*Students, Hawkar should not introduce to the teacher."
- e'. \***XWÊNDKAR**<sub>i</sub>, Hawkar (nabêt) **t**<sub>i</sub> be mamosta-î  
 student, Hawkar (shouldn't) to teacher-3SG  
 bi-nasên-êt.  
 SUBJ-introduce-3SG  
 "\*\*STUDENTS, Hawkar should not introduce to the teacher."

The pairs of sentences in (49a-e) present interesting facts about the interplay of specificity and scrambling. (49a and a') show that a specific definite NP can freely scramble to the clause-initial position. In that position a specific definite NP can receive a topic-shift reading when unstressed. However, the same NP receives a contrastive/identificational reading when stressed. In (49b and b'), scrambling can move the specific partitive NP to the left periphery, rendering it as a topic or identificational focus of the proposition expressed by the sentence. Despite being specific, the modified indefinite direct object may not scramble to receive a topic reading (49c). The only possibility is to scramble the modified indefinite NP only if it is to be assigned a contrastive focus reading (49c'). Similarly, a non-specific indefinite NP can only scramble if it is assigned a contrastive focus interpretation. And, finally, a bare non-specific NP is not able to scramble into the clause-initial position, whatsoever.

A close inspection of the data reveals that specificity per se is not able to account for the observations in (49a-e). What seems to be playing a crucial role in determining what types of NPs can undergo scrambling is definiteness. Crucially, definite-marked NPs can undergo scrambling, forcing a topic or contrastive focus reading (49a-b). Indefinite-marked NPs can only scramble to render a contrastive focus reading. They cannot be scrambled to topic projections (49c-d). Note that while the direct object in (49c) is specific, it patterns like the indefinite object in (49d). And, finally, bare non-specific NPs, cannot be scrambled since they are neither definite- nor indefinite-marked.

The examples in (49) bring up the crucial question of why the definite and indefinite NPs behave the way they do with respect to scrambling. To address this question, it is necessary to delve into another topic which makes an answer more accessible. To be more specific, the information packaging of the clause is another crucial factor in determining what types of NPs undergo scrambling. In the next section, the issue of the interplay of information packaging and scrambling will be taken up.

## 2. Scrambling and Information Structure

Information structure refers to the way information is packaged by the grammatical apparatuses of a language (Krifka and Musan, 2012; Kratzer and Selkirk, 2020). For the purposes of this study, the discussion will be restricted to two pieces of information structure that will prove essential throughout the analysis, topic and focus.

Topic represents a relation that holds between a constituent bearing old information and the rest of the proposition. Grammars generally are so structured as to package information from the perspective of the topic. In other words, topichood is a relation through which the rest of the information flows in. In contrast, focus denotes a relation that a constituent bearing new information has with respect to the rest of the proposition.

Given the discourse primacy of topics as points of information departure, the syntactic structure of languages tends to designate the focus relation in such a way that focus is assessed with respect to the point of departure, i.e., topic. Hence, linearly, focus follows topic, or in more structural terms, focus is syntactically more embedded in the structure than topic. It comes, therefore, without surprise that structural subjects, as the highest arguments in the syntactic spin of clauses, typically encode the topic of propositions; moreover, direct objects, as the more embedded arguments, instantiate focus relations. The above considerations will engender a view of information packaging in Kurdish along the following lines (see Kahnemuyipour 2009 for similar views for Persian):

[CP..[TOP..[FOC..[TP subject [vP subject [VP object V]  
 Old Info..... → ..... New Info

TP is commonly assumed to be the domain where unmarked pragmatic restructuring takes shape (Kratzer and Selkirk 2020; Kiss 1998). Moving from left to right, which corresponds to moving from the highest to the most embedded structure, information flows all the way down to the structure in the order of increasing newness. Hence, the subject as the point of departure of information flow denotes the old information, whereas object as the most deeply embedded point of closure embodies new information. Importantly, object in the preverbal position (in Central Kurdish) is representing focus by default. In the pragmatically unmarked transitive clause, the main stress of the sentence is borne by the object, universally. It must be made clear that the type of focus interpretation read off of the object is informational focus. Informational focus represents new information which is simply absent from the universe of discourse, prior to its assertion. On the other hand, identificational focus picks up a referent(s) from a set of already known referents. Consider the following sentences:

50)

a. Question:

Hawkar xwêndkar-eke **be kê** de-nasên-êt?  
 Hawkar student-DEF to whom IND-introduce-3SG  
 "Whom does Hawkar introduce the student to?"

b. Answer

Hawkar xwêndkar-eke **be mamosta** de-nasên-êt.

c. Answer

?! Hawkar **be mamosta** xwêndkar-eke **t<sub>i</sub>** de-nasên-êt.

d. Answer

?! **be mamosta**, Hawkar xwêndkar-eke **t<sub>i</sub>** de-nasên-êt.

The question in (50a) elicits information as to whom *Hawkar* introduced the student. From the unmarked order of constituents in (50a), it is clear that preverbal position of the indirect object PP is by default the most natural position for new information, hence informational focus. Therefore, an answer to the question in (50a) requires providing new information by replacing the interrogative PP. The answer in (50b) is the most felicitous answer to the question (50a), because *be mamosta* as bearing new information and expressing informational focus is residing in its most natural position. However, let us see what happens if the answer to the question in (50a) is provided by (50c). In (50c), the PP *be mamosta* providing new information has scrambled to an A-position preceding the direct object, an instance of short-distance scrambling. This answer is most likely infelicitous because the answer elicited by the question in (50a) requires information as to who that person is to whom *Hawkar* introduces the student. The identity of the referent of the indirect object PP is wholly unclear. There is no set of possible entities from which some referent is to be picked out. Accordingly, *be mamosta* represents new information in terms of informational focus, and since by default, languages dedicate the most embedded positions to informational focus, the answer in (50b) is the default answer, whereas the one in (50c) which displays scrambling is infelicitous.

In the Minimalist Program (Chomsky 2000, 2001), Merge-over-Move represents the restrictions imposed by economy conditions on the computational component of language. Movement occurs as the last resort. Scrambling of an element has to yield some interpretational effect; otherwise, it is overriding the economy conditions. To get back to (50c), short-distance scrambling of the PP to a pre-object position renders an identificational focus reading of the PP. Since the answer to question (50a) requires disclosure of the identity of the PP, and not picking it up from a set, the most embedded position of PP satisfies that requirement by default. Any further movement of the PP higher up in the clause spine will provide further information which is un-solicited by question (50a). The same argument is true of (50d). Now, consider the question-answer pairs in (51):

51)

a. Question

Hawkar xwêndkar-eke **be kê** de-nasên-êt?

Hawkar student-DEF to whom IND-introduce-3SG

**be mamosta** yan **be karguzar**.

to teacher or to janitor

“Whom does Hawkar introduce the student to? the teacher or the janitor?”

b. Answer

?! Hawkar xwêndkar-eke **be mamosta** de-nasên-êt

c. Answer

Hawkar xwêndkar-eke **BE MAMOSTA** de-nasên-êt.

d. Answer

Hawkar **BE MAMOSTA** xwêndkar-eke **t<sub>i</sub>** de-nasên-êt.

e. Answer

**BE MAMOSTA**, Hawkar xwêndkar-eke **t<sub>i</sub>** de-nasên-êt.

The question in (51a) requires picking up an entity from a set of two entities already activated in the universe of discourse. Therefore, the answer elicited represents identificational focus, which requires prosodic prominence in the form of manipulating the unmarked prosodic structure of the sentence. Empathic stress/contrastive stress on the PP in its base-generated position (51c), short-scrambled position (51d) and mid-scrambled position (51e) all represent felicitous answers to the question in (51a). In contrast, (51b), which displays unmarked stress on the indirect object (informational focus) cannot satisfy the information requirements elicited by the question in (51a).

Furnished with these considerations, we are now in a position to provide an explanation for the specificity effects observed earlier. As the information packaging scheme in the basic order of the language shows, the more embedded a constituent is in the structure, the more likely it imparts new information. While the subject realizes old information, hence serving as the aboutness topic of the clause, the object holds new information, instantiating the informational focus of the clause. Therefore, it is logically possible to move an embedded object to a *pre-subject position* in order to make it the aboutness topic of the clause.

52)

a. [<sub>topic</sub> Hawkar] **xwêndkar-eke** be mamosta  
Hawkar student-DEF to teacher  
de-nasên-êt

IND-introduce-3.SG

“Hawkar introduces the student to the teacher.”

b. [<sub>topic</sub> **xwêndkar-eke**, Hawkar **t<sub>i</sub>** be mamosta  
student-DEF Hawkar to teacher  
de-î-nasên-êt.

IND-3SG-introduce-3SG

“Hawkar introduces the student to the teacher.”

In (52a), the subject is the unmarked aboutness topic of the clause. In (52b), leftward scrambling of the direct object past the subject forces a topic-shift from the subject to the scrambled indirect object. Therefore, one of the discourse functions of scrambling in Central Kurdish is to bring about a topic shift from the subject to an embedded constituent. Since topics by definition convey old information, only constituents which are already activated in the discourse are able to serve as the new topic. This way, the specificity facts in scrambling fall into place. Definite-marked constituents by definition convey presupposed information; hence, they are likely to be scrambled to the initial position of the clause to become new topics (49a-b). Indefinite NPs, on the other hand, being holder of new information may not serve as topics, hence defying scrambling (49c-e). It is recalled that scrambled NPs serving as new topics received levelled stress (unstressed).

Now, let's turn to cases where the same scrambled NPs to the left periphery receive primary stress of the sentence. As previously stated, scrambled NPs bearing contrastive stress yield an identificational focus interpretation. Identificational focus is the interpretation assigned to an entity which is picked out from a previously activated set of entities. Being present, already, in the set of potential candidates for focus, identificational focus presents old information, however, being subject to selection from a set of entities represents the newness of the identificational focus. Therefore, the set of constituents eligible for scrambling to receive identificational focus span both definite and indefinite NPs, provided they are assigned primary stress of the clause. Accordingly, the definite- (49a-b) and indefinite-marked NPs (49c-d) are all qualified to scramble to serve as the identificational focus of their corresponding clause. Bare non-specific NPs (49e), on the other hand, defy scrambling to receive identificational focus, because they don't denote a referential entity in the discourse, let alone being present in the set of potential candidates for identification.

To recap, scrambling in Central Kurdish, while not changing the compositional semantics of the sentences, engenders new discourse interpretations. In particular, elements scramble to receive new topic interpretation, when unstressed. When stressed, the scrambled elements force an identificational focus reading. The natural consequence of these interpretive considerations is that only definite-marked NPs can be scrambled to become new topics, while indefinite and bare NPs cannot. On the other hand, definite and indefinite NPs can scramble leftward to impart an identificational focus interpretation, whereas bare NPs cannot. This state of facts follows from the observation that only constituents bearing old information qualify as new topics, while new-information bearing constituents do not. On the other hand, identificational focus can be the quality of both definite and indefinite NPs.

#### CONCLUSIONS

Addressing the major research questions, the following results and conclusions were obtained. In the first place, both arguments and adjuncts may undergo displacement as a result of scrambling in Central Kurdish. The syntactic categories affected by scrambling are DP, PP, VP, and adjunct CPs. Central Kurdish displays all three of short-distance, mid-distance and long-distance scrambling. Short-distance scrambling primarily moves PP goal arguments to the left of the theme argument within the vP domain. Mid-distance scrambling affects both theme DPs and goal PPs. The landing site for the mid-distance scrambling is the pre-subject position, also known as the left periphery of the clause. Long-distance scrambling moves constituents from inside the subordinate clause out to the left periphery of the matrix clause. Secondly, the diagnostic tests of binding tests, crossover effects, and parasitic gap proved that short-distance scrambling is an instance of A-movement; whereas mid-distance and long-distance scrambling proved to be hybrid situations between A-movement and A'-movement. Thirdly, the scrambling in Central Kurdish does not alter the compositional semantics of the sentences, but it gives rise to new discourse interpretations. In particular, elements carrying old information scramble for

new topic interpretations when unstressed. When stressed, the scrambled elements force an identificational focus reading. Because of this interpretive consideration, only definite-marked NPs can be scrambled to become new topics, whereas indefinite and bare NPs cannot. On the other hand, definite and indefinite NPs can scramble leftward to impart an identificational focus interpretation, whereas bare NPs cannot. This state of facts follows from the observation that only constituents bearing old information qualify as new topics, while new-information bearing constituents do not. On the other hand, identificational focus can be the quality of both definite and indefinite NPs.

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