

Extraction in Edo

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As a part of ongoing work by the authors, the following is a presentation of some salient facts about extraction constructions in Edo. No attempt of a formal analysis is included.

Introduction

Edo, a Niger-Congo language related to the Kwa languages of West Africa allows two distinct strategy of marking an ‘extraction site’, used in wh-constituent questions, under relativization, and for focus dislocation. These strategies are as follows:

- A pronominal item, with a constant form (normally the form of a 3rd person sg. pronoun, but cf. section 2), marks the ‘extraction-site’. We will refer to this type of item as a *plug*.
- A monosyllabic transitive verb (or preposition) subcategorizing for an extracted direct object, adopts the tonal (morphological) signature of an intransitive predicate.

Wh-constituent questions, relativization and focus dislocation respect the standard island constraints, and we therefore refer to them as *structural unbounded dependencies* or simply SUDs. They contrast with ‘left dislocation’ where the initial element has an ‘*as for*’-reading. and the relation between the initial element and a clause-internal pronoun may violate island constraints.

Although left-dislocation as well as SUD can reside in a pronominal strategy to indicate grammatical dependencies, we regard the binding relation under left-dislocation as a *semantic* dependency, not as a structural one, and hence not as a case of non-local realization of an argument. Instead, the pronoun is a pronominal argument and local satisfaction of subcategorization requirements obtains.

In work on extraction within the generative tradition, the notion of ‘resumptive pronoun’ is sometimes used to cover pronominal arguments, bound by a second exponent of the same referent, as in left-dislocation. We therefore refer to this usage of resumptive pronouns as its ‘sense 1’.

Another usage of the term , ‘sense 2’ may cover instances of a non-local dependency between an initial element and a pronoun, as in a SUD. Modulo the agreement, a *plug* might therefore be taken as an instance of a resumptive pronoun (sense 2).

In SUDs the distribution between the plug strategy and the tonal strategy is as follows. *Plugs* mark the position of extracted *subjects* and of both *indirect* and *direct objects* in *double object constructions*. The latter, however, seem to be part of a group of constructions with the following common property: Extraction of - or from- an NP occurs in the context of two adjacent nominal elements. In this group fall in addition to the double object constructions,

V+N-constructions, complex prepositions, consisting of a preposition and a noun plus their argument, and finally possessor constructions.

As another distinct type of extractions, also adjunct-extractions are marked by a plug. All constructions mentioned above will be described in the following.

Only in case of the extraction of the direct object of a monosyllabic transitive verb or a monosyllabic preposition, plugs do not occur. Instead, monosyllabic verbs as well as monosyllabic prepositions take the tone of an intransitive verb under extraction of their object, a phenomenon known as ‘relative tone’.

Both strategies raise interesting questions. What is the grammatical nature of a *plug*? It occurs in the canonical position of an extracted argument, where it seems to function as a ‘spelled-out trace’, but *plugs* may also occur under extraction of non-arguments, such as inherent complements, corresponding to semantically but not syntactically incorporated nouns, and under adjunct-extraction.

Moreover, since *plugs* do not agree with the extracted element, they do not establish a ‘identity-link’ between the ‘extraction-site’ and its ‘filler’.

Relative tone is a phenomenon interesting in its own right. It seems to signal a reduction of the verb’s (preposition’s) valency and the question is how one can formally represent this signaled identity between valency reduction and non-local realization of an argument.

The organization of the paper is as follows; In section 1 we will describe the relative tone strategy of extraction marking. In section 2 we describe the plug strategy and show how it is different from the resumptive pronoun (‘sense 1’) strategy used in left dislocation. Section 3 finally formulates descriptive generalizations summarizing the results of section 1 and 2. An analysis of the facts presented here will have to be left to future work.

Section 1 **Relative Tone in Edo**

It is a distinctive property of Edo that extraction constructions need to be openly marked. As stated above, extraction can be signaled in either of two ways: either an impoverished pronoun, a *plug*, marks the position of the extracted element (modulo adjunct extraction where the *plug* follows the subject), or the verb attaches a morpheme that is also found with intransitive verb. The same options apply for prepositions, as mentioned. We look at this latter option first and start by providing some general information about Edo.

In Edo, verbs in general do not agree with their arguments (plural marking is one exception that we will not discuss here). However, monosyllabic verbs signal their valency. This phenomenon is known as ‘relative tone’. Since relative tone interacts with lexical tone, tense marking and general constraints on vowel harmony, an intricate tonal system emerges. We have chosen simple present and past tense sentences to demonstrate the tonal marking of tense and valency information on the verb. Consider example (1) – (4)

Present intransitive

- (1). Òtà gbén¹
Ota write+PRES INTR
Ota writes

¹ A word final *-n* indicates a nasalized vowel.

Past intransitive

- (2). Òtà gbénrèn
 Ota write+PAST INTR
Ota wrote

Present transitive

- (3). Òtà gbèn èbé
 Ota write+PRES+TRANS book
Ota writes a book.

Past transitive

- (4). Òtà gbén èbé
 Ota write+PAST TRANS book
Ota wrote a book.

In examples (1) to (4), as in all the following examples, we have marked all lexical items for tone: ´ indicates high tone on the vowel, while ` indicates low tone (i.e., é (high tone) – è (low tone)).

(1) – (4) instantiates a general pattern for monosyllabic verbs: (valid not only when a given verb alternates between a transitive and an intransitive use) a transitive verb in present tense carries a different tone from an intransitive verb in present tense, that is low tone for the former and high tone for the latter. In addition tone reflects tense, so that a transitive verb in the past has a high tone on its final vowel while the intransitive verb gets marked by an additional suffix of the form *r+V*² (where the final vowel is determined by vowel harmony). As a result both verb classes are again marked distinctly. The whole pattern is illustrated in (1) – (4):

Figure 1 below sums up this pattern of tense and valency marking of Edo verbs:

Figure1 – *Relative tone marking for monosyllabic verbs in Edo*

	present tense	past tense
Transitive	low tone on final vowel	high tone on final vowel
Intransitive	high tone on final vowel	- <i>rV</i> suffixation

Turning now to direct object extraction, we observe the pattern shown in (5) – (8)

- Wh-question-past tense*
 (5)a Dè èmwí nè³ Òtà dé-rè?
 INT.PRON thing COMP Ota buy -RT⁴
What is the thing that Ota bought?

² The ‘r+V’ – suffix seem to express tense as well as aspect. It may signal completeness. The semantic contribution the suffix makes seem to be dependent on the property of the verb it attaches to.

³ Agheyisi (1990) glosses nè in relative clauses as relative complementizers (RC) and nè in questions as questions complementizers.

⁴ RT stands for R(egative) T(one) . RT is used when the tone/affix of a transitive verb changes under extraction. . As a consequence ‘r+V’ is transcribed as PAST, INTRANS for intransitive verbs, but as RT for transitive verbs in the past tense

b *Wh-question –present tense*
 Dè èmwí nè Òtà dé?⁵
 INT.PRON thing COMP Ota buy+RT
What is the thing that Ota buys?

(6)a *Relativization-past-tense*
 Ì mié èbé nè Òtà dé-rè
 I see+PAST book COMP Ota buy-RT
I saw the book that Ota bought

b *Relativization –present-tense*
 Ì miè èbé nè Òtà dé
 I see+PRES book COMP Ota buy+RT
I see the book that Ota buys

(7) a *Focus-Extraction-past-tense*
 Èbé (òré) Òtà dé- rè
 book F.M. Ota buy+RT
It isa book Ota buys.

(7) b *Focus-Extraction-present-tense*
 Èbé (òré) Òtà dé
 book F.M. Ota buy+RT
It isa book Ota buys.

The unbounded property of SUDs in general is illustrated in (8) for focus extraction.

(8) Èbé (òré) Òtà wéè⁶ né íràn dé
 Ebe F.M. Ota say+PAST COMPL. they buy+RT
It is a book Ota said that they should buy

Turning now to monosyllabic, or *simple*, preposition such as *nè* ‘for’, a change in valency is marked not only through a change in tone, in addition the quality of the final vowel changes. Consider examples (9)

(9)a Òtà dé èbé nè Àmè
 Ota buy+PAST book for+TRANS Ame
Ota bought a book for Ame

(9)b Àmè (òré) Òtà dé èbé ná
 Ame F.M. Ota buy+PAST book for+INTR
It is Ame Ota bought a book for

⁵The high tone on a present tense transitive verb with an extracted object does not result from the sentence final position of that verb. This is shown in the following example:

(i) Dè èmwí nè Òtà **dé** vbé èkí?
 what thing COMP Ota buy at the market

⁶ A verb like *wéè* ‘to say’, which takes a sentential complement, is not marked as a transitive past tense verb, but instead carries a final low tone. Agheyisi (1990) suggests that the low tone on the final vowel is a remnant of the intransitivizing –rV –suffix.

Section 2 **Pronominal Plugs**

Pronominal marking is the dominant strategy for signaling extraction and occurs in a number of different construction types, which we will now present one by one.

Extraction of Subjects

Under SUDs with subjects as the extracted element, the pronominal element *–o* – the plug – will appear in subject position. The examples below show subject extraction under wh-formation (10) and focus extraction (11):

- (10) Dè òmwá nè **ó** lé èvbàré?
 INT.PRON person COMPL PLUG cook+RT food
Who is the person that cooked the food
- (11) Òkhuò nè **ò** fi ímótò rré
 woman COMPL PLUG drive+PRES car come+PAST
The woman who drives a car came

Under subject extraction the *plug* is the third person subject pronoun. Figure 2 above gives the skeleton of the Edo pronominal system

Figure 2 *Basic Pronouns in Edo*

	Singular			Plural		
person	1 st	2 nd	3 rd	1 st	2 nd	3 rd
subject	I	U	O	(i) ma	(u) wa	iran
object	(i)me,mwe	Uwe	Ere	Ima	uwe	iran

Some of the pronouns shown in figure 2 have variants, which we have omitted. In addition, Edo provides a set of pronouns that are used in negative context, and another set that is used for emphasis.

The general lack of agreement that we claim is characteristic for *plugs* is illustrated in example (12) below. The filler *íràn* (they) is a third person plural pronoun, while the plug is again identical to the third person, single subject pronoun *–o*.

- (12) Íràn (òré) **ó** tót⁷â
 They F.M. PLUG sit+PAST

Only under relativization, the *plug* can take the form of the 1st person **singular** pronoun, signaling **plurality** of the extracted subject. Although a subject *plug* thus reflects number specification, it still does not agree with the extracted element. The subject plug has the form of a singular pronoun while its ‘binder’ **needs** to be plural. In (12), for example, the extracted element is a 3rd person, plural noun while its *plug* still corresponds to a 1st person singular pronoun.

⁷ â in (13) represents a low raising tone.

- (13) ikhuò nè [ì fi ímótò⁸ rré]
 women RC PLUG drive+PRES car come+PAST
The women who drive a car came.

To highlight the contrast between resumptive pronouns (sense 1) and plugs, let us consider the difference between left dislocation and SUD from a relative clause. While a noun phrase can be extracted from a relative clause under left dislocation, leaving behind a resumptive pronoun, focus extraction is ungrammatical. (14) illustrates this fact; notice that in both cases *ó* is the plug marking the position of the relativized subject:

- (14)a Àmè Ì rèn òvbiálèkè nè ó hòémwè ònrèn
 Ame I know+PRES.Lady RC PLUG like+PRES TRANS him
As for Ame, I know the lady who likes him
- b *Àmè_ (òré) Ì rèn òvbiálèkè nè ó hòémwé
 Ame FM I know+PRES.Lady RC. PLUG like+PRES INTR
**It is Ame that I know the lady who likes*

In (14)a, *ònrèn* is the resumptive pronoun bound by *Àmè*. Importantly, (14)b, the focus extraction cannot be ‘rescued’ by using a resumptive pronoun instead of a de-transitivized verb. Focus constructions generally exclude resumptive pronouns, as shown in (15):

- (15) *Àmè_ (òré) Ì rèn òvbiálèkè nè ó hòémwè ònrèn
 Ame FM I know+PRES. Lady RC PLUG like+PRES TRANS him
**It is Ame I know the lady who likes him*

Extraction from double object constructions

Edo has only a few verbs that enter into double object constructions; two of these verbs are *mién* ‘to receive’ and *há* ‘to pay’. However, the pattern that arises for double object constructions extends to possessor extraction, and V+N sequences, as we will see immediately.

Just as for subjects, the extraction of either one of the objects from a double object construction is marked by the presence of a *plug*; in this case, the plug corresponds to the 3rd sing **object** pronoun *èré*. Notice that in the environment of a nasalized vowel *èré* becomes *ònrèn*.

- (16)a Dè èmwí nè Òtà mié Àmè èré⁹
 INT.PRON thing COMPL Ota receive+PAST TRANS Ame PLUG
What is the thing that Ota received from Ame?
- b Dè òmwá nè Òtà mié ònrèn èbé
 INT.PRON person COMPL. Ota receive+PAST TRANS PLUG book
Who is the person that Ota received a book from?

⁸ Edo does not necessarily specify plurality. *ímótò* thus could mean ‘a car’ or ‘cars’.

⁹ The plug in this position is often abbreviated to *re*. This only occurs with the second NP in the construction [NP NP]. The plug in the first NP position is never abbreviated (as shown in example 18b below).

Possessor Extraction

Possessors in Edo may either follow or precede the head noun. If the possessor follows its head, only the possessor may be extracted, as shown in (17). Extraction of *ewe* is ungrammatical in this context. If, however, the possessor precedes the head noun, both the possessor and its head may be extracted, as shown in (18):

(17)a Ímótò gbé èwé (òghé) Òtá.
 car kill+ PAST goat POSS Ota
A car killed Ota's goat.

b Òtá òré ímótò gbé èwé èré
 Ota FM car kill+PAST goat PLUG
 meaning: It happened to Ota that a car killed her goat.

(18)a Ímótò gbé Òtá èwé.
 car kill+ PAST Ota goat
A car killed Ota's goat.

b Òtá òré ímótò gbé èré èwé
 Ota FM car kill+PAST PLUG goat
 meaning: It happened to Ota that a car killed her goat.

c Èwé òré ímótò gbé Òtá èré
 Ota FM car kill+PAST Ota PLUG
 meaning: It was a goat that a car killed depriving Ota of its possession.

Nominal phrase with initial possessors not only display a linear order, reminiscing of double object constructions, they also seem to possess the same constituent structure. Although the first noun is still interpreted as the possessor, it does not seem to form a constituent with the following noun, understood as the thing possessed. This is suggested by the contrast between (19)a and (19)b. While a nominal head and a following possessor can be focused together, this is not possible for an initial possessor and a following noun, expressing the thing possessed:

(19)a Èwé Òtá òré ímótò gbéré
 goat Ota FM car kill+PAST INT.
It was Ota's goat that a car killed.

b *Òtá èwé òré ímótò gbéré
 Ota goata FM car kill+ PAST INT.
It was Ota's goat that a car killed.

Given these facts it then seems that initial possessor constructions not only linearly but also structurally are like double object construction. Perhaps therefore not surprisingly, initial-possessor constructions behave under extraction just like double object constructions. As opposed to 'possessor-final' possessive constructions, the extraction of both of the nominal elements becomes possible, and, independent of which of the two nominal elements is extracted, a *plug* is inserted in the 'extraction site'.

Extraction from V+N-constructions

Edo, like other Kwa languages in general, has a construction type called *inherent complement verbs* (cf. Essegbey 1999), where (very roughly characterized) a verb plus a noun together constitute what in English would be expressed by a single verb. We refer to such constructions as ‘V+N-constructions’, and to the N part as a ‘**semantically** incorporated noun’

For a V+N sequence like *mù+ ègbé* ‘to dress’ extraction is also marked by inserting a plug in the extraction site. This is shown in (20)

- (20)a Òzó mú` írán ègbé
 Ozo V1+PAST them (N)body
 Ozo dressed them up
- (20)b Írán òré Òzó mú` èré ègbé
 Them FM Ozo V+PAST PLUG (N)body
It is the them Ota dressed up
- (20)c ègbé òré .Òzó mú` írán èré
 (N)body FM Ozo V+PAST them PLUG
It is dressing Ozo dressed them

In (20) it is the verb *mù* together with the noun *ègbé* that form the meaning of the syntactically discontinues predicate *mù+ ègbé*, that is to say that *ègbé*, although semantically incorporated remains syntactically independent. Together *mù+ ègbé* select a direct object as their argument, which in (20) is the pronoun ‘them’.

Although under this interpretation of the facts *ègbé* is not an argument, but a part of the predicate, it nevertheless demands the insertion of a *plug* under extraction.

Extraction of the object of complex prepositions

Complex prepositions like *vbè òbó* (literally ‘in hand’, meaning ‘from’) mark extraction through a plug:

- (21) Àmè (òré) Òtà dé èbé vbè òbó èré
 Ame F.M. Ota buy+PAST book in hand PLUG
It is Ame Ota bought a book from

Adjunct extraction

Adjunct extraction in Edo is marked by the occurrence of a locative marker *ná*, generalizing over time and place. *Ná* occurs directly after the subject, thus preceding the verb and its object. An illustration of adjunct extraction is given in (22) below:

- (22) a Òzó dé ízè vbé èki nóde
 Ozo buy+PAST rice in market yesterday
Ozo bought rice in the market yesterday
- b Dè èkè nè Òzó ná dé ízè nóde?
 INT.PRON place COMP OZO LM buy+PAST rice yesterday
Where did Ozo buy the rice yesterday?

c Dè èghè nè Òzó ná dé ízè vbé èki?
 INT.PRON time COMP OZO LM buy+PAST rice in market
What time did Ozo buy the rice in the market?

An exception is relativization. It proceeds unmarked, as shown in (23):

(23) Ì rré vbé èdé nè Òtà lé iyàn
 I come+PAST at day COMP Ota cook+PAST yam
I came on the day that Ota cooked yams

Whether *ná*, the locative marker, should be called a *plug* (which would require lack of agreement) or just a resumptive pronoun, is not clear at this point.

Summary

Edo is a language that consistently provides local additional marking of arguments, adjuncts and discontinuous nominal elements of verbal predicates. *Plugs* are non-agreeing pronominal markers that occur in the canonical position of the extracted element. The use of plugs leads to a pattern of multiple exponents of the same grammatical function.

Monosyllabic transitive predicates, on the other hand, adopt the tonal/morphological signature of intransitive verbs.

A possible common denominator for both strategies of extraction marking is to say that predicates ‘require’ open exponents to signal local satisfaction of their argument requirements. Equally phrases require open exponents of their leaf constituents. As a consequence every non-locally realized item will be signaled by a syntactic placeholder (plug strategy), or reported as not required for local satisfaction (relative tone).

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