Extraction in Edo

Dorothee Beermann
dorothee.beermann@hf.ntnu.no
Lars Hellan
lars.hellan@hf.ntnu.no
Ota Ogie
ota.ogie@hf.ntnu.no
NTNU, Trondheim, Norway

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 occurs. 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 questions 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 gbén
Ota  write+PRES INTR
*Ota writes

---

1 A word final –n indicates a nasalized vowel.
Past intransitive
(2). Òtà gbén rèn
   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 gbèn 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., è (high tone) – è (low tone)).

(1) – (4) instantiate 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+V² (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:

<table>
<thead>
<tr>
<th></th>
<th>present tense</th>
<th>past tense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitive</td>
<td>low tone on final vowel</td>
<td>high tone on final vowel</td>
</tr>
<tr>
<td>Intransitive</td>
<td>high tone on final vowel</td>
<td>-rV suffixation</td>
</tr>
</tbody>
</table>

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

(5) a Dè èmwi nè? Òtà dé-rè?
   INT.PRON thing COMP Ota buy -RT
   *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(elative) 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.
**Wh-question –present tense**

b  Dè èmwi nè Òtà dé⁵

INT.PRON thing COMP Ota buy+RT

*What is the thing that Ota buys?*

**Relativization-past-tense**

(6)a  Ì miè èbé nè Òtà dé-rè

I see+PAST book COMP Ota buy-RT

*I saw the book that Ota bought*

**Relativization –present-tense**

b  Ì miè èbé nè Òtà dé

I see+PRES book COMP Ota buy+RT

*I see the book that Ota buys*

**Focus-Extraction-past-tense**

(7) a  Èbé (òré) Òtà dé- rè

book F.M. Ota buy+RT

*It is a book Ota buys.*

**Focus-Extraction-present-tense**

(7) b  Èbé (òré) Òtà dé

book F.M. Ota buy+RT

*It is a book Ota buys.*

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

(8)  Èbé (òré) Òtà wéè⁶ nè írán 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 èmwi nè Òtà dé vbé  éki?

what thing COMP Ota buy at the market

⁶A 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  ômwá  nè  ó  lé  èvbàrè?
INT.PRON  person  COMPL  PLUG  cook+RT  food
Who is the person that cooked the food

(11)  Ôkhuò  nè  ô  fì  èmótò  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

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>person</td>
</tr>
<tr>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>subject</td>
<td>subject</td>
</tr>
<tr>
<td>I</td>
<td>U</td>
</tr>
<tr>
<td>object</td>
<td>object</td>
</tr>
<tr>
<td>(i)me,mwe</td>
<td>Uwe</td>
</tr>
</tbody>
</table>

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 (ôrè)  ó  tôt7â
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.
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 ő is the plug marking the position of the relativized subject:

(14)a  Āmè  Ʉ rɛ̀  òvbiálèkè  nè  ó  hòɛmwè  ònrɛ̀n
     Ame  I know+PRES.Lady  RC  PLUG  like+PRES TRANS  him
     As for Ame, I know the lady who likes him

b  *Āmè (órɛ̀)  Ʉ rɛ̀  òvbiálèkè  nè  ó  hòɛmwè
     Ame  FM I know+PRES.Lady  RC.  PLUG  like+PRES INTR
     *It is Ame that I know the lady who likes

In (14)a, ònrɛ̀n is the resumptive pronoun bound by Āmè. 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) *Āmè (órɛ̀)  Ʉ rɛ̀  òvbiálèkè  nè  ó  hòɛmwè  ònrɛ̀n
     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 ònrɛ̀n.

(16)a  Dè  èmwí nè  Îtà  mié  Āmè  èré⁹
     INT.PRON  thing  COMPL  Ota  receive+PAST TRANS  Ame  PLUG
     What is the thing that Ota received from Ame?

b  Dè  òmwá nè  Îtà  mié  ònrɛ̀n  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. imótò 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 ẹwé 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  İmọtò gbé ẹwé (oghè) Òtà.
car kill+ PAST goat POSS Ota

A car killed Ota’s goat.

b  Ota  ọrè  ńmọtọ gbé ẹwé  ẹrè
Ota FM car kill+PAST goat PLUG

meaning: It happened to Ota that a car killed her goat.

(18)a  İmọtò gbé Ota ẹwé.
car kill+ PAST Ota goat

A car killed Ota’s goat.

b  Ota  ọrè  ńmọtọ gbé ẹrè  ẹwé
Ota FM car kill+PAST PLUG goat

meaning: It happened to Ota that a car killed her goat.

c  Ëwé  ọrè  ńmọtọ gbé Ota  ẹrè
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  Ëwé Ota  ọrè  ńmọtọ gbèrè
goat Ota FM car kill+PAST INT.

It was Ota’s goat that a car killed.

b  *Òta  ẹwé  ọrè  ńmọtọ gbèrè
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 Ózó mú’ írán ègbé
Ozo V1+PAST them (N)body
Ozo dressed them up

(20)b Ìráù 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 vbé èbó 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 *nà*, generalizing over time and place. *Nà* 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 ěkì nódè
Ozo buy+PAST rice in market yesterday
*Ozo bought rice in the market yesterday*

b Dè ěkè nè Òzó ná dé ízè nódè?
INT.PRON place COMP OZO LM buy+PAST rice yesterday
*Where did Ozo buy the rice yesterday?*
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).

References
Ageheyisi, R. 1990. A grammar of Edo. ms, UNESCO