EVENTS AND MULTI-VERB CONSTRUCTIONS IN ÈDÓ

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• **Introduction**

- This paper examines the issue of segmentation of events in multi-verb constructions in Èdó a Benue-Congo language spoken in Mid-Western Nigeria from the point of view of information packing and causality and the mapping between events and constructions.

- Multi-verb constructions are verbs in series that function as independent verbs in simple constructions with no overt marker of co-ordination or subordination. The verbs in series need not share objects as with serial verb constructions. Serial verb constructions are thus a subtype of multi-verb constructions.

- 11 constructions are examined in this paper and based on their syntactic and semantic properties, 7 are identified as multi-verb constructions and 4 as reanalyzed modifier constructions.
1) Construction Parameters: Positive-declarative -----accomplishment-
multiplePredicate_consequentialSVC
Construction labels: svSuObIDALLsuAgobAff-v1tr-v2tr-EVENTSEQ
Òzó lé izé ré
“Ozo cooked rice and ate”
Òzó  lé  izé  ré
ózó  lé  izé  ré
Òzo.SBJ.AGT/CR  cook.PAST.H  rice.AFF.DO  eat.PAST.H
PN  Vtr  CN  Vtr
Generated in TypeCraft.

2) Construction parameter: positive-declarative -----achievement-singlePredicate-
intransitiveVerb- V+modifier.
Construction labels: v-intr-suAg-ACHVMNT-MOTION_DIRECTED
Òzó rhùlé -rè kpàá
“Ozo ran away”
Òzó  rhùlé -rè  kpàá
ózó  rhùlé  rè  kpàá
Òzo.SBJ.AGT  run  PAST.RT  leave.V>ADV
PN  Vitr  ADV
Generated in TypeCraft
Introduction

- Events may be causal or non-causal and micro, macro or distinct.
- Properties used in the determination of causality include: mediation and contact and they have implication for the integratedness of events as micro or macro events.
- Sub-events composing micro and macro events share temporal spans and temporal markers must have scope over all the events in series. Distinct events do not share temporal spans and temporal markers need not have scope over the events in series. Pre-verbal adverbs have scope over the whole event for micro and macro events while for distinct events they have scope only over the VP they modify.

- Two schemas are posited for the constructions; Verb-serial-compl (ement)-phrase with a complementation structure; Serial-mod-phrase with an adjunction structure.
• Background assumptions are from the following sources; Hellan, Sæthero and Beermann (2003); implemented Head-Driven Phrase Structure Grammars for Norwegian (Hellan 2003); Ga (Hellan 2007); Kropp Dakubu and Hellan (2009); Èdó (Ogie 2009,2010).

• The data used in this paper is generated in an online documentation tool TypeCraft (Beermann et al 2006), a tool for typological analysis that allows for annotation, classification and search of data along different morphological, syntactic, semantic and pragmatic criteria.
Multi-verb constructions in Èdó: 11 constructions with no overt marking of coordination and sub-ordination

- Durational constructions: The event depicted by V1 is either delimited by V2 indicating the nature and type of ending of V1, and V2 specifies the duration of V1. V2 is predicated of the event expressed by V1. V1 and V2 are micro events.
- Directional constructions: V2 performs a deictic/aspectual function and specifies the direction of motion for V1 and is predicated of the subject of V1. There are two kinds of directional constructions: the deictic directional and the non-deictic directional that are differentiated by how the events expressed by V1-V2 unfold. Deictic directional constructions unfold at the same time while the event depicted by V1 in non-deictic constructions commences before that depicted by V2 with both ending simultaneously. V1 and V2 are micro events.
- Comitative constructions: V1 indicates group participation in an event. V1 and V2 are micro events.
- Instrumental constructions: V1 indicates the means by which the event depicted by V2 is carried out. V1 and V2 are micro events.
- Resultative constructions: V1 may cause the realization of the event depicted by V2. There are two types of resultative constructions: V2 is a degree verb and V2 is an achievement verb. V1 and V2 are micro events.
Negative resultative constructions: The event depicted by V1 causes a negative state which is contra to the expectation of the agent participant in the event depicted by V2. V1 and V2 are macro events.

Locational constructions: V1 combines with dynamic preposition constructions consisting of reanalyzed verbs. The re-analyzed V2 is predicated of the event depicted by V1. V1 and V2 are micro events.

Manner constructions: V1 depicts the body posture of the participant while performing V2. V1 and V2 are micro events.

Purpose constructions: The combination of V1 and V2 expresses a purpose of the participant which can be deliberate or non-deliberate. However unlike in languages like Nupe where the event depicted by V2 is in the irrealis mood, in Èdó, the event is in the realis mood. V1 and V2 are micro events.

Consequential constructions: Two or more verbs in series express a natural sequence of events and are temporally ordered in a precedence-consequence relationship. V1 and V2 are macro events.

Covert co-ordination constructions: Two or more separate and distinct events are coordinated without any overt marker of co-ordination between the verbs in series.
Identification of multi-verb constructions

- The following properties are applied in the identification of multi-verb constructions:
  - Extraction; Scope of tense, aspect and negation; Distribution of a floating quantifier tòbọ́rẹ́ “by pronoun self”; Adverbial modification; Argument sharing patterns.
- Based on the syntactic and semantic characterization of the 11 constructions, 7 multi-verb constructions are identified in Èdó as belonging to the following structural types:
  - **V (P) +V (P) constructions**: resultatives, negative resultatives, consequential and covert co-ordination constructions
  - **V + mood constructions**: purpose constructions
  - **V+ infinitival complement constructions**: comitative and instrumental constructions.
- Four of the construction types are identified as consisting of a verb and a reanalyzed verb:
  - **V+ modifier constructions**: durational, directional, locational, manner constructions
### Multi-Verb constructions in Ìdó: properties

<table>
<thead>
<tr>
<th>Construction type</th>
<th>Structure</th>
<th>-rV Suffix Licensed</th>
<th>Infinitival Marker yá Before V2</th>
<th>Floating anaphor before V2</th>
<th>VP Adjuncts After VP 1</th>
<th>Token Sharing of subjects</th>
<th>Switch Sharing</th>
<th>Covert reference sharing of subjects</th>
<th>Token Sharing of objects</th>
<th>Overt Reference Sharing of objects</th>
<th>Objects are not shared</th>
</tr>
</thead>
<tbody>
<tr>
<td>V+modifier: durational Locational</td>
<td>Adjunction</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>V+modifier: Manner</td>
<td>Adjunction</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>V(P)+V(P): Resultatives Conseq. Neg.result. Covert-coordination</td>
<td>Compl. Adjunction</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>V+ mood</td>
<td>Adjunction</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>V+ infinitival complement</td>
<td>Compl.</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
## Aspectual classes of multi-verb constructions

<table>
<thead>
<tr>
<th>V1 (Eventuality type)</th>
<th>V2 (Eventuality type)</th>
<th>Construction Type</th>
<th>Aspectual Type of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>State</td>
<td>Duration, resultative, direction, instrumental</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>Location, directional, commitative, durational, instrumental</td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td>Commitative, instrumental</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Accomplishment (Accompl.)</td>
<td>State</td>
<td>Durational, resultatives</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>Durational, consequential</td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td>Consequential, negative resultatives</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Achievement</td>
<td>Achievement</td>
<td>Purpose, resultatives, consequential, negative resultatives, instrumental</td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td>Purpose, consequential</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>State (temporal position state)</td>
<td>Event</td>
<td>Manner</td>
<td>Event</td>
</tr>
</tbody>
</table>
Two schemas are posited to account for the constructions:

- Verb-serial-compl (ement)-phrase with a complementation structure for the $V (P) + V (P)$ resultative and $V + \text{infinitival complement}$ constructions.
- Serial-mod-phrase with an adjunction structure for $V+mood$ constructions, $V+modifier$ constructions and $V (P) + V (P)$; consequential, purpose, and negative resultative, covert coordination constructions.
Event types and causation

• Events are classified into three different sorts based on their temporal characteristics: processes, states and transitions.
• A process or activity is a sequence of sub-events identifying the same semantic expression.
• A state is a single event which is evaluated relative to no other event. The opposition is left implicit.
• A transition is an event identifying a semantic expression that is relative to its opposition.
• Transitions are causative while processes and states are not. Transitions may consist of a process event and a result event and are of the event type accomplishment. Transitions consisting of only result events are achievements.
Combinations of eventuality types in Òdó multi-verb constructions

<table>
<thead>
<tr>
<th>V1 (Eventuality type)</th>
<th>V2 (Eventuality type)</th>
<th>CONSTRUCTION TYPE</th>
<th>ASPECTUAL TYPE OF CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>State</td>
<td>Duration, resultative, direction, instrumental</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>Location, directional, commitative, durational, instrumental</td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td>Commitative, instrumental</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Accomplishment (Accompl.)</td>
<td>State</td>
<td>Durational, resultatives</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
<td>Durational, consequential</td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td>Consequential, negative resultatives</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Achievement</td>
<td>Achievement</td>
<td>Purpose, resultatives, consequential, negative resultatives, instrumental</td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Accomplishment</td>
<td>Purpose, consequential</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>State (temporal position state)</td>
<td>Event</td>
<td>Manner</td>
<td>Event</td>
</tr>
</tbody>
</table>
• Transitions are causative while states are not. The following properties identify causative event-structures in Èdó:
  • A floating anaphor \( tòbó \) + 3singular pronoun 'by his/herself'.
  • Causative paraphrases (Rappaport and Levin 1999).

Example with floating anaphor

3) Construction parameter: Positive-declarative-----achievement-
multiplePredicate consequentialSVC

Construction label: svSuObIDALLsuAgobAff-v1tr-v2tr-EVENTSEQ

\( Òzò \ tòbòrè \ gbèn \ èbé \ khièn \)

“\( Òzò \) writes and sells books by himself”

\( Òzò \) \( \ tòbòrè \) \( \ gbèn \) \( \ èbé \) \( \ khièn \)

\( òzò \) \( \ tòbòrè \) \( \ gbèn \) \( \ èbé \) \( \ khièn \)

\( Òzò \).SBJ.AGT/CR by.selv.ANA.3SG.REFL write.PRES.L book.DO.TH/AFF sell.PRES.L

PN \( \ V_{tr} \) CN \( \ V_{tr} \)

Generated in TypeCraft.

In example (3), the subject \( Òzò \) performs the writing and selling events by himself.
4) Construction parameter: positive-declarative ------achievement-SinglePredicate-
V+modifier

Construction label: v-intr-suAg-ACHVMNT-MOTION_DIRECTED

Òzó tòbóré rhùlé-rè kpaá

“Ozo ran away”

Òzó  tòbóré  rhùlé-rè  kpaá
òzó  tòborè  rhule  rè  kpaá

Ozo.SBJ.AGT/CR by.selv.ANA.3SG run PAST.RT leave. V>ADV
PN Vitr ADV

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Causative paraphrases require combinations of process and result events. They are licensed by the \( V(P) + V(P) \) constructions; consequential, resultative (\( V_2 \) is degree verb and \( V_2 \) is an achievement), negative resultatives and covert co-ordination (example 5). They are not licensed by the \( V+\text{modifier}, \) the \( V+\text{mood} \) (example 6) and the \( V+\text{infinitival complements} \) constructions:

5) Construction parameter: positive-declarative -----achievement-causation

Construction label: cauSuIDALLsuAg -v1tr-v1obThincrem-v2intr-v3tr-v3ObAff
CAUSATION_WITH_CAUSEINGENITY

"It is Ozo that writes books that is why he sells them"

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Causative paraphrases

6) Construction Parameter: positive-declarative ---- achievement - causation
Construction label: cauv1v2SuIDsuCr-v1tr-v1obTh-v2intr-v3tr-v3suCeobAff-
CAUSATION_WITH_CAUSEINGENITY

* Ózó òré ó mién álímói òré ó zé né ó ná kpáλán ónrèn
“*It is Ozo that saw an orange that is why he plucked it.”

Ózó òré ó mién álímói òré ó zé né ó ná kpáλán ónrèn
ózó òré ó mién álímói òré ó zé né ó ná kpáλán ónrèn
Ozo.Cr.SB FOC PLUG see.PAST, orange.DO.T FOC PLUG.SB cause.PAST, CE.SBJ.3S SECM pluck.PAST!, Aff.DO.3S
J H H J H G H G
PN Vtr CN V COMP PRON Vtr PRON

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Mediation refers to the number of participants in an event and the roles they play in it. The roles are determined by the kind of event in which a participant is involved. Four roles are distinguished:

- **Causer (CR):** The participant that is the instigator of the event.
- **Causee (CE):** An animate participant who may or may not have some degree of control over the event.
- **Instrument (IN):** An inanimate participant over which the CR/CE has complete control.
- **Affectee (AF):** The participant that undergoes a change of state.

Bohnemeyer et al (in press) distinguishes four mediation types:

- **CR> AF:** A causer directly effecting a change on an affectee without involvement of a causee or instrument.
- **CR>IN>AF:** A causer effecting a change on some affectee with the help of an instrument.
- **CR>CE>AF:** A causer effecting a change on an affectee with the mediation of a causee.
- **CR>CE>IN>AF:** A causer affecting a change in an affecting mediated by a cause with the help of an instrument.
9) Construction parameter: positive-declarative ---accomplishment-multiplePredicate-instrument

Construction label: mvcSuIDALLsuAg-v1tr-v1obIn-v2tr-v2obThincrem-EVENTINSTR

"Ozo is using a pen to write a book"

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• Mediation type CR>IN>AF and type shift: complement clause determine event integratedness: micro event

• When the instrumental verb ye occurs with V(P)+ V(P) and V+ mood constructions a type shift occurs rendering the complex construction as an instrumental construction. The resultative construction where V2 is an achievement verb is used for illustration:

10) Construction parameter: positive-declarative ----- achievement-multiplePredicate-instrument
Construction label: mvc-v1tr-v2SuIDsuAg-v1obTh-v2tr-v2obIn-v3tr-v3suTh-EVENTINSTR

Ọzọ yè èvbàré yá kòkò Àzàrí mòsè
“Ozo used food to raise Azari to be beautiful”

Ọzọ ye évbàré yá kòkò Àzàrí mòsè
òzó ye évbàré yá kòkò àzàrí mòsè

Ozo.SBJ.AGT use.PRES.L food INF raise.PRES Azari.AFF.DO be.beautiful.PRES.L
PN V CN Vtr PN Vitr

Generated in TypeCraft
• Mediation type CR>IN>AF and type shift: complement clause determines event integratedness: macro-event

11) Construction parameter: positive-declarative — accomplished multiplePredicate instrumental

Construction label: mvcSuIDALLsuAg-v1tr-v1obIn-v2tr-v2Th-v3tr-v3obThincrem-EVENTINSTR

Ọzo yè ọbó dà èbé yí gbén

"Ozo held the book in his hands and wrote"

Ọzo yè ọbó dà èbé yí gbén

Ọzo yè ọbó dà èbé yí gbén

Ozo.SBJ.AGT use.PRES.L hand hold book.DO.TH particle write.PRES.L

PN V Vtr CN Vtr

Generated in TypeCraft.
Test for event integratedness

A test for event integratedness is the licensing of preverbal adverb before V2 and the scope of preverbal adverbs. Preverbal adverbs are licensed before V1 in all the construction types. They have scope over the verbs in series for micro and macro events and for distinct events they have scope only over V1. The micro event constructions V+modifier, V+infinitival complement and resultative constructions do not license preverbal adverbs before V2. The macro event constructions: consequential constructions, negative resultatives, purpose and the distinct event construction, the covert coordination constructions license preverbal adverbs before V2. For the macro events the preverbal adverb has scope over the verbs in series while for the distinct event it has scope only over the VP it modifies. The non-licensing of the preverbal adverb in example (12) shows that it determines the event integratedness of the events in series while for example (13) the accomplishment construction determines the event integration and the preverbal adverb is licensed.
Test for event intergratedness: Preverbal adverbs are licensed before V1 in all the construction types. They have scope over the verbs in series for micro and macro events and for distinct events they have scope only over V1.

12) Construction Parameter: positive-declarative -----achievement-
multiplePredicat instrumental
   Construction label: mvc-V1 tr-v2 SudsuAg-v1obTh-v2tr-v2obIn-v3 tr-v3suTh-EVENTINSTR

*Ózó yè évbàré yá kòkò Àzàri gélé mòsé
  "Ozo used food to raise Azari to be truly beautiful"

<table>
<thead>
<tr>
<th>Ózó</th>
<th>yè</th>
<th>évbàré</th>
<th>yá</th>
<th>kòkò</th>
<th>Àzàri</th>
<th>gélé</th>
<th>mòsé</th>
</tr>
</thead>
<tbody>
<tr>
<td>òzó</td>
<td>use</td>
<td>PRES.L</td>
<td>food</td>
<td>INF</td>
<td>raise</td>
<td>PRES</td>
<td>Azari.AFF.DO</td>
</tr>
<tr>
<td>PN</td>
<td>V</td>
<td>CN</td>
<td>Vtr</td>
<td>PN</td>
<td>ADV</td>
<td>Vtr</td>
<td></td>
</tr>
</tbody>
</table>

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13) Construction parameter: positive-declarative -----accomplishment-
multiplePredicat instrumental
   Construction label: mvcSuIDALL, suAg-v1 tr-v1obIn-v2tr-v2Th-v3 tr-v3obThincrem-
EVENTINSTR

Ózó yè óbó dà èbé yí giègié gbén
  "Ozo held the book in his hands and quickly wrote"

<table>
<thead>
<tr>
<th>Ózó</th>
<th>yè</th>
<th>óbó</th>
<th>dà</th>
<th>èbé</th>
<th>yí</th>
<th>giègié</th>
<th>gbén</th>
</tr>
</thead>
<tbody>
<tr>
<td>òzó</td>
<td>yè</td>
<td>óbó</td>
<td>dà</td>
<td>èbé</td>
<td>yí</td>
<td>giègié</td>
<td>gbén</td>
</tr>
</tbody>
</table>

Ozo.SBJ.AGT use.PRES.L hand hold book.DO.TH particle quickly.PRES write.PRES.L
| PN  | V   | CN  | Vtr | CN  | ADV   | Vtr |

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mediation type CR>CE>AF>: Not a multi-verb construction in Èdó and consist of distinct events.

14) Construction parameter: positive-declarative ---- achievement- causation
Construction label: cauv2v3SuIDsuCe-v1intr-v1suCr-v2tr-v2ObThincrem-v3tr-v3ObAff- CAUSATION_WITH_CAUSEINGENITY

Òó gi Èzáí giégié gbèn èbè fèkó khièn
"Ozo truly let Azari quickly write books and sell slowly."

15) Construction parameter: positive-declarative ---- achievement- causation
Construction label: cauv2v3SuIDCe-v1intr-v1suCr-v2tr-v2ObThincrem-v3tr-v3ObAff- CAUSATION_WITH_CAUSEINGENITY

Òó òré ó zé ighé Èzáí gbèn èbè khièn
"It is Ozo that caused Azari to write a book and sell"
16) Construction parameter: positive-declarative -----> causation-
Construction label: Cauv2objIDv3su-v1intr-v1suCr-v2tr-v2suCe_obAff-v3intr-v3suAff-CAUSATION_WITH_CAUSEINGENITY

Íràn gélé gi Òzó fèkó kòkò Àzári mòsè
“This truly let Ozo slowly raise Azari to be beautiful”

Íràn
gélé
gi
òzó
fèkó
kòkò
Àzári
mòsè

SBJ.3SG.A really.PRES. let.PRES Ozo.CE.S slowl raise.PRE Azari.AFF. be.beautiful.PR

GT
L.H
L
BJ
y
S.L
DO
ES.L

PRON
ADV
V
PN
ADV
Vtr
PN
Vitr

Generated in TypeCraft.

17) Construction parameter: positive-declarative -----> causation-
Construction label: cauv2v3v4SuIDsuCe-v1intr-v1suCr-v2tr-v2obInstr-v3tr-v3obThincrem-v4tr-v4obAff-CAUSATION_WITH_CAUSEINGENITY

Ózó gígí gi Ázárí yè èkòmpúti gbn èbé fèkó khrèn
 “it is Ozo that quickly let Azari use a computer to write books and slowly sell”

Ózó
gígí
gi
Ázárí
yè
èkòmpúti gbn
èbé
fèkó
khrèn

Ozo SBJ.AGT quickly.PRES let.PRES.L Azarí CE SBJ use.PRES.L èkòmpúti write.PRES.L book.DO.TH slowly sell.PRES.L

PN
ADV
V
PN
V
CN
Vtr
CN
ADV
Vtr

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Mediation type Contact

- The mediation type contact depicts integratedness between the events in series by the extent of contact between the participants in the events.
- Some verbs encode contact lexically. Examples are the verbs *khue* 'to bathe', *rhie* 'to take' and *kpee* 'to wash'. Examples (18) – (22) are of the type CR>AFF while example (23) is of the type CR>CE>IN>AFF. Examples (18)-(20) are micro events, examples (21) and (22) are macro events and involves direct contact between the agent/causer and the affected participants. Example (23) a distinct event, does not involve direct contact between the agent/causer and the affected participant. Contact is mediated by the cause and instrument participant.
Mediation type contact: CR>AFF

18) Construction parameter: positive-declarative — achievement — multiplePredicate_resultativeSVC

Construction label: sv-v1objIDv2su-v1tr-v1suAg-v1obAff-v2-int-v2obAff-caUSE RESULT

Òzó khué ómómó mòsé

“Ozo bathed the baby to be beautiful”

Òzó    khué    ómómó    mòsé
òzó    khué    ómómó    mòsé

Ozo.SBJ.AGT/CR bathe.PAST.H baby.AFF.DO be.beautiful.PAST.H
PN    Vtr    CN    Vitr

Generated in TypeCraft.
Mediation type contact: CR>AFF

19) Construction parameter: positive-declarative —— accomplishment-V+modifier
   Construction label: v-SuIDALLsuAg-v1tr-v1obTh-v2intr-ACHVMNT-MOTION_DIRECTED
   Òzó rhìé ómómó dëé
   “Ozo is coming with the baby”
   Òzó rhìé ómómó dëé
   òzó rhìé ómómó dëé
   Ozo.SBJ.AGT/CR take.PAST.H baby.AFF.DO come.PRES.PROG
   PN Vtr CN Vitr
   Generated in TypeCraft.

20) Construction parameter: positive-declarative —— achievement-V+modifier
   Construction label: v-SuIDALLsuAg-v1tr-v1obTh-v2intr-ACHVMNT-MOTION_DIRECTED
   Òzó mù ómómó dëé
   “Ozo is bringing the baby”
   Òzó mù ómómó dëé
   òzó mù ómómó dëé
   Ozo.SBJ.AGT/CR carry.PRES.L baby.AFF.DO come.PRES.PROG
   PN Vtr CN Vitr
   Generated in TypeCraft.
Mediation type contact: CR>AFF

21) Construction parameter: positive-declarative —— accomplishment — multiplePredicate SVC
Construction label: svSuObIDALLsuAgobAff-v1tr-v2tr-EVENTSEQ

Òózó kpé ízè lé

"Ozo washed the rice and cooked"

Òózó
òózó

Òózó kpé ízè lé
Òózó kpé ízè lé

Ozo. SBJ.AGT/CR wash.PAST.H rice.AFF.DO cook.PAST.H
PN Vtr CN Vtr

Generated in TypeCraft.

22) Construction parameter: positive-declarative —— accomplishment — multiplePredicate SVC
Construction label: svSuObIDALLsuAgobAff-v1tr-v2tr-EVENTSEQ

Òózó rriá ízè lé

"Ozo rinsed the rice and cooked"

Òózó
òózó

Òózó rriá ízè lé
Òózó rriá ízè lé

Ozo. SBJ.AGT/CR rinsed.PAST.H rice.AFF.DO cook.PAST.H
PN Vtr CN Vtr

Generated in TypeCraft.
Mediation type contact: CR>CE>IN>AFF

23) Construction parameter: positive-declarative —— accomplishment —— multiple predicate SVC

Construction label: Cauv3 obj IDv4 su v1 intr v1 su Cr v2 tr v2 su Ce ob Aff v3 tr v3 ob Aff v4 intr v4 su Aff — CAUSATION_WITH_CAUSEINGENITY

Ọzọ gi Àzàrì vè ọbó khué ọmómó mọsé

“Ozo let Azari use his hands to bathe the baby to be beautiful”

Ọzọ gi Àzàrì vè ọbó

òzọ gi àzàrì vè ọbó

Ozo SBJ. AGT/CR. let Azari CE use PRES. L. Hand. INSTR. DO. bathe PAST. H. baby. DO. AFF be beautiful PAST. H.

PN V PN V CN Vitr CN Vitr

Generated in TypeCraft
A head driven phrase structure analysis

- Edó GrammatMatrix (Ogie 2009)
- Norsource GrammarMatrix (Hellan 2003), Hellan and Haugereid 2004)
- Construction Labels (Kropp Dakubu and Hellan 2009, Ogie 2010).

   Construction label: svsuIDALLsuAg-v1tr-v1obThinrem-v2tr-v2obAff-EVENTSEQ
   Òzó gbèn èbè khièn
   “Ozo writes and sells books ”
   Òzó  gbèn  èbè  khièn
   òzó  gbèn  èbè  khièn
   Ozo.SBJ.AGT/CR  write.PRES.L  book.DO.TH/AFF  sell.PRES.L
   PN  Vtr  CN  Vtr
   Generated in TypeCraft.

26) Construction parameter: positive-declarative ----- achievement - multiplePredicate
   Instrumental construction
   Construction label: mvcvl v2suIDsu4g-v2obIDSuv3su-v1tr-v1obInstr-v2tr-v2obAff-v3tr-v3suAff-EVENTINSTR
   Òzó yè èvbàrè kòkò Àzàrí mòsè
   “Ozo used food to raise Azari to be beautiful”
   Òzó  yè  èvbàrè  kòkò  Àzàrí  mòsè
   òzó  yè  èvbàrè  kòkò  àzàrí  mòsè
   Ozo.SBJ.AGT  use.PRES.L  food  raise.PRES  Azari.AFF.DO  be.beautiful.PRES.L
   PN  V  CN  Vtr  PN  Vitr
   Generated in TypeCraft
• The construction parameter in examples (25) and (26) is explained as follows: the global tags *multiple predicate kernel -SVC-* provides information about constituent type, *achievement* provides information about situation and aspect types, *declarative* provides information about propositional types and *positive* about polarity.

• The construction labels have the following structure: Area1 (in italics for ease of exposition) gives the global labels, the number of verbs in series (*ie sv, sv3, sv4*) as well as argument sharing information (coded by the label *IDALL*) and information about thematic relations holding across the verb in series. Area 2 gives the valence information as well as information about grammatical function and thematic roles (italics and underlining are for ease of exposition). Information about the situation type of the construction is provided by Area 3 and is written in capital letters.
Linking of the templates to Attribute Value Matrix (AVM) used in HPSG and an example of the matrix grammar for example is as follows (example (25) is used for exemplification:}
• Linking of the templates to Attribute Value Matrix (AVM) used in HPSG and the matrix grammar for example is as follows (example (25) is used for exemplification:

```
EVENTSEQ →
  [sv
   SYNSEMLOCAL CONT EVENT1 EVENT 2 SITUATION eventsequential]
```

```
v1tr-v1obThincrem-v2tr-v2obAff →
```

```
 sy
 HEAD-DTR.SYNSEM.LOCAL CAT

 CATTval
 VAL SUBJ {I}
 COMP {II}
 qval
 QVAL SUBJECT [ ]
 OBJECT [I]
 CONT mrs
 ARG1 1& [ROLEthincrem]

 local

 CATTval
 VAL SUBJ {I}
 COMP {II}
 qval
 QVAL SUBJECT [ ]
 OBJECT [I]
 CONT mrs
 ARG1 1& [ROLEaffected]
```
This is represented formally in a grammar analysis by two schemas: (cf. Ogie 2009): Verb-serial-compl-phrase schemata.
Ogie 2009): Verb-serial-mod-phrase schemata

verb-serial-mod-phrase

<table>
<thead>
<tr>
<th>verb</th>
<th>HEAD [TONE high-or-low]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT</td>
<td>VAL [SUBJ &lt; [2]&gt;]</td>
</tr>
<tr>
<td></td>
<td>QVAL [SUBJECT [2]]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mrs</th>
<th>HOOK INDEX #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELS &lt;! [3],[4] b</td>
<td></td>
</tr>
<tr>
<td>CONT</td>
<td>SITPAIR-COND [sitmap-cond]</td>
</tr>
<tr>
<td></td>
<td>EVENT1 [3]</td>
</tr>
<tr>
<td></td>
<td>EVENT2 [4]</td>
</tr>
<tr>
<td></td>
<td>TEMP-REL temporal-relation</td>
</tr>
<tr>
<td></td>
<td>TEMPORAL time-span</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>cat</th>
<th>HEAD [6] [TONE high-or-low]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT</td>
<td>VAL [SUBJ &lt; [2]&gt;]</td>
</tr>
<tr>
<td></td>
<td>QVAL [SUBJECT [2] [np-synsem]</td>
</tr>
<tr>
<td></td>
<td>LOCAL.CONT.HOOK.INDEX ref-ind</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mrs</th>
<th>hook</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONT</td>
<td>HOOK INDEX #1 &amp; event [tense tense]</td>
</tr>
<tr>
<td></td>
<td>RELS &lt;! keyrel &amp; eventstruc-relation</td>
</tr>
<tr>
<td></td>
<td>[3] [ARG0 #1] b</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>cat</th>
<th>verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT</td>
<td>MOD &lt; [SYNSEM.LOCAL.CAT.HEAD [6]</td>
</tr>
<tr>
<td></td>
<td>SYNSEM.LOCAL.CONT.HOOK.INDEX #1</td>
</tr>
<tr>
<td></td>
<td>QVAL [SUBJECT [SYNSEM.LOCAL.CONT.HOOK.INDEX re]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mrs</th>
<th>hook</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONT</td>
<td>HOOK INDEX #1 &amp; [SORT semsort]</td>
</tr>
<tr>
<td></td>
<td>RELS &lt;! keyrel &amp; eventstruc-relation</td>
</tr>
<tr>
<td></td>
<td>[4] [ARG0 #7] b</td>
</tr>
<tr>
<td>SITPAIR-COND [5] list</td>
<td></td>
</tr>
</tbody>
</table>
The following subtypes inherit from these schemata:

30) A hierarchy of verb–serial-compl-phrase

Verb-serial-compl-phrase

Resultative verb-serial-compl-phrase

INF-complement-verb-serial-compl-phrase

31) A hierarchy of verb-serial-mod-phrase

Verb-serial-mod-phrase

V(P)+V(P)

V+modifier-verb-serial-mod-phrase

V+mood

V+INF-complement-verb-serial-mod-phrase

purpose-verb-serial-mod-phrase

comitative-verb-serial-mod-phrase

instrumental-verb-serial-mod-phrase

consequential

verb-serial-mod-phrase

durational-verb-serial-mod-phrase

neg-resultative-verb-serial-mod-phrase

directional-verb-serial-mod-phrase

covert-coord-verb-serial-mod-phrase

locational-verb-serial-mod-phrase

resultative2-verb-serial-mod-phrase
• Agheyisi, Rebecca. 1990. Edo grammar. Ms.UNESCO.
• Hellan, Lars. 2007. “Ga Grammar an Implemented HPSG Matrix grammar”. Trondheim: NTNU.
• Hellan, Lars. 2003. The NorSource Grammar- an introduction. Ms. NTNU.