Resultative Serial Verb Constructions and Resultative V-V Compounds[*]

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ABSTRACT

This paper examines a construction called the resultative serial verb construction. The term 'resultative serial verb construction' refers to a construction in which two verbs form a complex predicate which denotes a single Davidsonian event. I focus on the two properties of resultative constructions which have been pointed out previously: resultative serial verb constructions must contain an unaccusative V2, and the two verbs of the construction must share a single object. I propose that one of the verbs of the construction (V1) undergoes lexical coercion and acquires a causative meaning. The causative meaning licenses the combination of the two predicates. I discuss various ways the object-sharing mechanism can be implemented, and conclude that the key element is that both verbs project their own phrase.

1. INTRODUCTION

In this paper, I examine a construction called the resultative serial verb construction. In doing so, I employ a set of criteria for defining what this construction is, and bring data from works which have paid attention to the subtle details which distinguish resultative serial verb constructions from other similar-looking constructions. Stringent criteria are necessary because the term 'serial verb constructions' is applied to a variety of phenomena found in Western African languages and Caribbean creoles. The general definition given in (1) picks out a variety of phenomena including the examples shown in (2).

(1) DEFINITION: serial verb construction
     There is one subject, which is interpreted as the subject of two (or more) verbs.

(2) a. Kofi san   to   bOl no.
       Kofi return throw ball that
       'Kofi throws the ball again.'   (Akan, Campbell 1996:87)
    b. Kofi firi   Kumase kO   Nkran.
       Kofi go.out Kumase go.to Accra
       'Kofi leaves Kumase and goes to Accra.'
    c. ɔde   sé!k"an twaa   nám nó.
       he-take knife   cut   meat that
       'He cut the meat with a knife.'   (Twi, Stewart 1963:146)

Due to its generality, the definition in (1) applies to various constructions, including coordination.[1] Given this variety, there is no reason to assume that the examples in (2) constitute a natural class, and that these phenomena can receive a uniform analysis. Instead of relying on the term 'serial verb constructions', I pick out a subset of serial verb constructions which show the properties in (3). By focusing on these properties, the exact mechanism which allows the combination of the two predicates in resultative constructions will be clear.

(3) a. Two predicates are in a relation which can be characterized as cause-result or
       manner-result. One predicate denotes an action which brings about the
       event described by the second predicate.
    b. The two predicates form a unit, which denotes a single Davidsonian event.

The property in (3a) describes a semantic relation between two events, and it does not entail a structural relation. A cause-result relation can be expressed in various ways, including a subordination, as illustrated in (4).

(4) a. John is sick since he ate a rotten apple yesterday.
    b. John ate a rotten apple yesterday, so he is sick today.

When a cause-result relation is expressed in a single clause (= vP), however, the structural relation between the cause-denoting predicate and the result-denoting predicate becomes more restricted.[2] In resultative constructions two predicates appear in a single clause without an overt marker of causal relation. The relation between the two predicates in resultative constructions is unlike the relation between overt causative verbs and the caused events because neither the cause-denoting verb nor the result-denoting verb in resultative constructions lexically selects for the other. This is why we need to develop a special mechanism which allows the concatenation of the two predicates in resultative constructions.

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[1] In some languages, including a number of languages in West Africa, clausal (IP, CP) coordinations and adjunctions are not morphologically distinguished from those involving smaller constituents (vP, VP). The definition in (1) thus picks out complex sentences such as the ones involving purpose clauses and clausal conjunctions.

[2] Mono-clausal expressions are always expected to show more restrictive patterns than bi-clausal expressions. Research on causative constructions has revealed a number of restrictions along this line, including the minimal event, and coherence restrictions. See e.g. Parsons (1990), Davidson (1967), Higginbotham (2002), and Bittner (1999).

The unity property in (3b) ensures the mono-clausalness of the construction. It has been pointed out that bi-predicate constructions can be divided into bi-clausal type and mono-clausal type and that these types differ with regard to adverbial modifications and voice/aspectual marking. In the context of causative constructions, for example, the clause-embedding and sub-clausal embedding differ exactly on these points (see e.g. Pylkkänen 2002:Chapter 3, Bittner 1999). In (5a), the causative verb *make* takes a clausal complement (= vP in Pylkkänen's (2002) analysis), and the adverb *slowly* can modify just the embedded event – Bill's eating of the pizza. The sentence in (5b), in contrast, represents a construction known as the lexical causative, which takes as its complement a sub-clausal element (= VP in Pylkkänen's analysis). In this context, the phonologically null causative verb and the embedded VP form an expression associated with a single Davidsonian event. A manner adverb such as *slowly* is a predicate of a Davidsonian event (see e.g. Higginbotham 1985 for a treatment of adverbs as predicates of events), and as such, it can only modify the entire event – John's melting of the chocolate. We can thus say that the sentence in (5b) exhibits the unity property, but the one in (5a) does not.

(5) a. John made Bill eat the pizza slowly.　→ bi-clausal construction
　　 b. John melted the chocolate slowly.　　→ mono-causal construction

(6) a. John made [Bill eat the pizza slowly]
　　 b. John CAUSE (ED) [the chocolate melt]

The unity property has been observed within a subset of serial verb constructions in Èdó in Stewart (2001). Stewart (2001) examines the behavior of adverbials and aspectual morphemes and notes that these elements treat a subset of serial verb constructions as a unit. An example of this construction is shown in (7), and I refer to this construction as a resultative serial verb construction, following Stewart (2001).

(7) Òzó sùá　Úyí dé.
　　 Ozo push Uyi fall
　　 'Ozo pushed Uyi down.'　　　　　　　　　　　　　　(Èdó, Stewart 2001: 8)

Since other works on serial verb constructions have not carefully examined the unity property, I mainly rely on Stewart's examples of Èdó for the empirical basis in this paper. Once I establish the construction to be examined, I review the traditional discussions on how this construction should be structurally represented. The properties of resultative constructions I focus on are: the causative meaning which arises in resultative serial verb construction, the unity property, and the object sharing restriction. I assume that voice head (v) takes as its argument a predicate that describes a (sub) event and forms a Davidsonian argument. I also argue that the V1 of resultative serial verb construction must undergo a lexical coercion to acquire a causative meaning. The lexical coercion analysis captures the emergence of the causative meaning in resultative constructions. The coercion mechanisms effectively license the head-complement relation between the V1 and the V2P.

Unlike resultative V-V compounds I have examined elsewhere (Tomioka 2003, 2005), resultative serial verb constructions involve the concatenation of two verb phrases. I show

that the empirical differences between the two constructions support this distinction.

2. RESULTATIVE SERIAL VERB CONSTRUCTIONS

Since the work of Baker (1988), it has become a common assumption that a phrasal construction may have a morphological counterpart. The most well-known examples of this assumption are causative constructions and object incorporation, shown in (8).

(8) CHICEWA CAUSATIVE EXAMPLES (Trithart 1977, cited in Baker 1988:148)
  a. Mtsikana ana-chit-its-a kuti mtsuko u-gw-e.
   girl   AGR-do-make-ASP that waterpot AGR-fall-ASP
   'The girl made the waterpot fall.'
  b. Mtsikana anau-gw-**ets**-a mtsuko.
   girl   AGR-fall-made-ASP waterpot
   'The girl made the waterpot fall.'
  ONONDAGA OBJECT INCORPORATION (Woodbury 1975, cited in Baker 1988:76)
  c. Pet wa'-ha-htu-'t-a'   ne' o-hwist-a'.
   Pat PAST-3MS/3N-lost-CAUSE-ASP the PRE-money-SUF
   'Pat lost the money.'
  d. Pet wa'-ha-**hwist**-ahtu-'t-a'.
   Pat PAST-3MS-money-lost-CAUSE-ASP
   'Pat lost money.'

These examples illustrate that two elements which appear as separate words in one context may appear as one morphologically complex word in another. In Chichewa, a causative verb *its* may appear as a free morpheme separate from the other verb, *gw* 'fall' (8a). In (8b), in contrast, the causative verb is a bound morpheme which suffixes onto the other verb. Similarly, in (8c), the logical object of a verb *hwist* 'money' appears as a separate word, but is part of the verb in (8d).

Given the phrase-word variation in (8), it has been proposed that the phrasal constructions represent the underlying logical relation between the two elements and that a movement operation can create the form in which the two elements appear as one word (Baker 1988). Following his approach, a number of researchers have proposed that serial verb constructions and V-V compounds share the same underlying structure. Both serial verb constructions and V-V compounds refer to phenomena in which there is one subject and two (or more) verbs which share the same tense and polarity (see Collins 2002, and Nishiyama 1998). As I have already mentioned, the term 'serial verb construction' is a descriptive one and it does not seem that all the phenomena which can be called serial verb constructions fit one analysis. Collins' (2002) and Nishiyama's (1998) analyses are meant to apply to serial verb constructions and V-V compounds in general, and thus suffer from the lack of cohesion in the set of data they attempt to capture. In this section, I focus on a subset of serial verb constructions called the resultative serial verb construction. I first provide an analysis of resultative serial verb constructions and then compare them to Japanese resultative V-V compounds. I argue that if any type of serial verb construction should be compared to Japanese resultative V-V compounds, it should be resultative serial verb constructions.

There are different types of serial verb constructions, and in Section 2.2, I briefly review the literature on serial verb constructions, with a focus on how to identify the resultative serial verb construction from other types. In particular, I focus on the work of Stewart (2001) because it provides the most detailed examination of the constructions, and it is one of the few studies of serial verb constructions which carefully distinguish and identify sub-types of serial verb constructions and identify resultative serial verb constructions from other similar-looking constructions.

Once the resultative serial verb construction is isolated, we can provide an analysis of the construction. I propose a mechanism which allows the combination of the two predicates in resultative serial verb constructions. I argue that the V1 of the construction undergoes lexical coercion to acquire a causative meaning. The coercion adds an event argument to the V1. This coercion is necessary to license the complement structure of the construction, which has been proposed in Collins (1997) and Larson (1992), though these authors do not discuss how the V1 may take the V2P as its complement. In Section 3, I provide the motivation for the lexical coercion analysis. In Section 4, I attempt to explain why researchers have sought a unified analysis of (resultative) serial verb constructions and V-V compounds. I review Collins' (2002) work to illustrate the success of this unification approach, in which he analyzes V-V compounds in +Hoan as having an underlying serial verb structure. The success of Collins (2002) indicates that a unification approach is workable, in principle. Collins' (2002) analysis sets a stage for the examination of Nishiyama (1998), which attempts to analyze Japanese V-V compounds as having an underlying serial verb construction. Nishiyama's (1998) analysis is less successful than Collins (2002). Given that both analyses essentially claim that V-V compounds have an underlying serial verb construction, and that Collins' (2002) analysis of +Hoan seems workable, the failure of Nishiyama's (1998) account of Japanese resultative V-V compounds must be due to some properties which are unique to Japanese resultative V-V compounds. I have argued elsewhere (Tomioka 2003, 2005) that these properties that make Japanese resultative V-V compounds special are the properties that are derived from the head-adjunct nature of the V1 of the compound. The contrast between Japanese resultative V-V compounds with resultative serial verb constructions reflects the difference between the M-Incorporation structure (of Japanese) and the predicate composition of resultative serial verb constructions.

2.1 RESULTATIVE SERIAL VERB CONSTRUCTIONS

As previously stated, the term 'serial verb construction' is a descriptive one. Researchers generally use the following definition, shown in (9), to identify the serial verb construction (taken from J. M. Stewart (1963)).

(9) i. The subject, which must be the same in each of the underlying simple sentences if they are to be eligible for co-ordination in a serial verbal sentence, is generally deleted in each sentence other than the first.

    ii. If two or more successive underlying sentences have the same direct object, this direct object is deleted in each of the sentences other than the first in which it occurs. (J. M. Stewart 1963)

Recently a more restrictive description is used to exclude coordination structures as shown in (10). The type of serial verb construction this definition applies to is sometimes called the object sharing serial verb construction (see e.g. Baker 1989, Campbell 1996, Collins 1997).

(10) [A] single clause in which two or more finite verbs occur without any marker of coordination or subordination, sharing a single structural (and semantic) subject and a single object. (O. T. Stewart 2001:12, parentheses in the original)[3]

The definition in (10) still picks out a variety of constructions, as shown in (11).

(11) a. *TAKE*-SERIAL VERB CONSTRUCTIONS[4]
          Kwesi yí-ì   atser   no   má-à   Ato.
          Kwesi take-COMPL   spoon   DEF give-COMPL Ato
          'Kwesi took the spoon for Ato.'
      b. CONSEQUENTIAL SERIAL VERB CONSTRUCTIONS
          Esi tɔ́-ɔ̀   paanoo   dzí-ì.
          Esi bu-COMPL   bread   eat-COMPL
          'Esi bought bread and ate it.'
      c. RESULTATIVE SERIAL VERB CONSTRUCTIONS (Stewart 2001:12)
          Òzó   kòkó   Àdésúwà   mòsé.
          Ozo   raise Adesuwa   be.beautiful
          'Ozo raised Adesuwa to be beautiful.'

Stewart (2001) provides convincing empirical evidence that the three constructions in (11) differ in various ways, such as the interpretation of adverbs and aspectual morphemes. Resultative serial verb constructions can be distinguished from covert coordinations and consequential serial verb constructions when they appear with adverbs and aspectual markers. These elements treat the two verbs of resultative serial verb constructions as a unit and cannot take scope over just one of the verbs. In contrast, these elements can scope over just one of the verbs constituting consequential serial verb constructions or covert coordinations. Resultative serial verb constructions, thus, are the only serial verb constructions which fall under the scope of the current study (due to the unity property in (3)). Before I provide a close examination of resultative serial verb constructions, I should first look at other

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[3] Stewart (2001) points out that excluding subordinate and coordinate clauses in the SVC languages is not easy, since they often do not have any morphological markers which identify these clauses.

[4] The *take*-serial verb construction is sometimes classified as an object-sharing SVC (e.g. Collins 1997) and sometimes not (e.g. Baker 1989, Stewart 2001). The difference in the classification reflects the different interpretation of the object-sharing restriction. The *take*-serial verb construction may involve object-sharing when it is used to license a certain type of direct object. It may also be used to introduce an instrumental argument. In this case, there is no object sharing. If one takes the position that object-sharing SVC *must* involve object sharing, *take*-serial verb constructions will not be classified as a type of object-sharing serial verb construction. If, however, one assumes that object-sharing serial verb constructions refer to types of serial verb constructions that *may* involve object sharing, *take*-serial verb constructions are included in this class. For the purpose of the current discussion, I examine the cases of *take*-serial verb constructions that involve object-sharing to show that even object-sharing *take*-serial verb constructions are different from resultative serial verb constructions.

well-known types of serial verb constructions so that there will be a clear idea of how we can identify the relevant type of serial verb construction, and what properties this relevant construction has. In general, there are two more types of serial verb constructions that are identified in the literature. In next section, I first examine *take*-serial verb constructions and point out how they can be distinguished from other classes of serial verb constructions. In Section 2.3, then, I compare and contrast consequential serial verb constructions with resultative constructions.

2.2 *TAKE*-SERIAL VERB CONSTRUCTIONS

Take-serial verb constructions involve a light verb, which often is morphologically related to a verb meaning 'give', 'take' or 'hold'. *Take*-serial verb constructions can be used to license a definite theme object in certain contexts. Examples of such *take*-serial verb constructions are shown in (12).

(12) *Take* serial verbs
    a. Me-de nwoma no maa Kofi.
       I-DE   book   that gave Kofi
       'I sold the book to Kofi.'   (Akan, Campbell 1996:93)
    b. Abena de   sika   no kyɛ́-ɛ̀   abofra no.
       Abena **take** money DEF give-COMPL child   DEF
       'Abena gave the child the money.'   (Akan, Osam 2003:33)

The verb *de* 'take' describes a taking event (i.e. really means 'take') when it is used as the sole verb of a sentence, as shown in (13).

(13) Okom   de   me.[5]
      hunger   take   me
      'I am hungry.'   (Akan, Campbell 1996:92, fn)

When this verb is used in a serial verb construction, however, the verb does not really mean 'take'. It has been argued that the sole purpose of the verbal element *de* in the sentences in (12) is to license a definite direct object of the verb *maa* 'give' and *kyɛ́* 'give,' since a definite direct object cannot appear in a regular non-serial verb construction (14).

(14)   a. *Me-maa Kofi nwoma   no.
         I-give   Kofi book   that   (Campbell 1996: 85)
    b. *Abena kyɛ́-ɛ̀   abofra no sika   no.
       Abena give-COMPL child   DEF money DEF   (Osam 2003:32)
    c. *Abena brɛ̀-ɛ̀   maame   no adaka no
       Abena bring-COMPL woman   DEF box   DEF

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[5] Campbell (1996) claims that this use of the verb *de* is idiomatic and that this verb is simply homophonous with the light verb *de* which appears in serial verb constructions.

The examples in (14) show that when a single verb appears with two internal arguments (i.e. in a double object construction), the theme object must be indefinite. The use of a definite marker *no* 'that' with the theme object of the double object construction is thus illicit. In order to license a definite object, the light verb *de* must be used in conjunction with the main verb, and then we have the *take*-serial verb constructions seen in (12).[6]

Take-serial verb constructions are very different from resultative serial verb constructions, although they both fall within the scope of the definition in (6). While both verbs in resultative serial verb constructions denote the same type of events that they would denote when they are used as the sole verb of the sentence, *take*-serial verb constructions involve a verb which is semi-functional in that this verb does not denote the same kind of event that it denotes when it is used alone. *Take*-serial verb constructions can also be distinguished from other types of serial verb constructions because they are used in this very specific context of licensing certain types of objects.

2.3 CONSEQUENTIAL SERIAL VERB CONSTRUCTIONS AND RESULTATIVE SERIAL VERB CONSTRUCTIONS

The other type of serial verb construction which has to be distinguished from resultative serial verb constructions is called the consequential serial verb construction. It must be noted here that not all researchers working on serial verb constructions distinguish resultative serial verb constructions from consequential serial verb constructions. Stewart (2001), and Campbell (1996) note two different types of serial verb constructions aside from *take*-serial verb constructions, and they classify them based on the transitivity of the second verb. Collins (1997) and Baker (1989), on the other hand, provide a single analysis regardless of the transitivity of the second verb. The differences between the two constructions are subtle, and these differences were not known before Stewart's (2001) careful investigation. The analysis in Baker (1989) and Collins (1997) captures the set of evidence which was known before Stewart's (2001) study, and their analysis captures the properties of the two-object sharing serial verb constructions.[7] Nonetheless, Stewart (2001) presents convincing

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[6] Similarly, in Twi, *take*-serial verb constructions are used to license a pronominal theme object. The take-serial verb construction in (i) thus contrasts with the sentence in (ii) in which the theme argument is a full nominal.

(i)   ɔde   nó   fɛmm   me.
      he-take it   lent   me
      'He lent it to me'   (Stewart 1963:145)

(ii)   ɔfɛmm me   ne   pɔnkɔ nó
      he-lent   me   his   horse that
      'He lent me his horse'

(iii) *ɔfɛmm   me   no
       he-lent   me   it

[7] It was known, even before Campbell's work, that some object-sharing serial verb constructions do not involve subject sharing. Some researchers have provided different labels for the two types of object-sharing serial verb constructions. The consequential serial verb construction under the Campbell-Stewart classification is referred to as the subject-sharing, object-sharing serial verb construction, and the resultative serial verb constructions is referred to as the switch-subject (because the subject of the V1 is not the subject of the V2), object-sharing serial verb construction. See Osam (2003) for the description of these terms for Akan serial verb constructions.

arguments that a unified analysis fails to capture a cluster of properties associated with each of the two types of object-sharing serial verb constructions. I follow in Stewart's (2001) footsteps and distinguish consequential serial verb constructions from resultative serial verb constructions.

Consequential serial verb constructions are first identified in Campbell (1996), who notes that serial verb constructions (of the non-*take* serial type) can be classified into two types based on the transitivity of the second verb as shown in (15):

(15) TRANSITIVE V2
      a. Kofi tOO   bayerE diiE.
          Kofi bought   yam   ate
          'Kofi bought an yam and ate it.'   (Akan, Campbell 1996: 85)
      UNACCUSATIVE V2
      b. Kwasi hwie e   nsuo   guu fOmho.[8]
          Kwasi poured water dripped floor surface
          'Kwasi poured water onto the floor.'

Stewart (2001) follows Campbell's (1996) classification based on the transitivity of the second verb, but he re-labels the two classes as consequential and resultative serial verb constructions. His study is based on Èdó examples, which are shown in (16) and (17).

(16) CONSEQUENTIAL SERIAL VERB CONSTRUCTIONS
      Òzó gbé ùzó   khién.
      Ozo kill antelope sell
      'Ozo killed the antelope and sold it.'   (Edo, Stewart 2001:13)

(17) RESULTATIVE SERIAL VERB CONSTRUCTIONS
      a. Òzó kòkó Àdésúwá mòsé.
          Ozo raise Adesuwa be-beautiful
          'Ozo raised Adesuwa to be beautiful.'   (Edo, Stewart 2001:12)
      b. Òzó sùá ágá dé.
          Ozo push chair fall
          'Ozo pushed the chair down.'

The main contribution of Stewart (2001) is that it provides convincing evidence that this classification is non-trivial. He shows that resultative serial verb constructions and consequential serial verb constructions indeed behave differently with adverbial elements and aspectual markers.

The following examples illustrate that adverbs and aspectual markers can take scope over just one of the two verbs in consequential serial verb constructions, but must take scope over both verbs in resultative serial verb constructions. In (18), a pre-verbal adverb *giégié* 'quickly' is placed right in front of the V2. In (18a,b), the serial verb construction contains an unaccusative verb *dé* 'fall' and *mósé* 'be beautiful' respectively, and therefore they are

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[8] Campbell (1996) claims that *guu* 'drip' is an unaccusative, double-object verb.

classified as the resultative serial verb construction, according to the Stewart-Campbell classification. With these serial verb constructions, the pre-verbal adverb placed in front of the V2 cannot just modify the V2, and the sentences are, in fact, ungrammatical (18a,b). In (18c), in contrast, the use of the same adverbial in the same surface position is grammatical. As the second verb in this sentence *khiénné* 'sell' is transitive, we know that this is an example of consequential serial verb constructions. These examples indicate that serial verb constructions with an unaccusative V2 (resultative serial verb constructions) and ones with a transitive V2 (consequential serial verb construction) are indeed different.

(18)   PRE-VERBAL ADVERB *GIÉGIÉ*
    a. *Òzó súá   ògó   **giégié**   dé.
       Ozo push bottle quickly fall   (Stewart 2001:26)
       (Expected interpretation: Ozo pushed the bottle and it fell quickly)
    b. *Òzó kòkó Àdésúwá **giégié**   mósé.
       Ozo raise Adesuwa quickly be-beautiful
    c. Òzó dúnmwún èmà **giégié**   khiénné.
       Ozo pound   yam   quickly sell+PL
       'Ozo pounded the yams and quickly sold them.'   (Stewart 2001:29)

Stewart (2001) also uses a post-VP adverb to demonstrate the same pattern – that the modification of just one of the verbs is impossible in resultative serial verb constructions, but it is possible with consequential serial verb constructions. The following examples illustrate the distributional restrictions of a post-VP adverb *ègìégìé* 'quickly'. This adverb appears at the right edge of a VP. So it follows the verb and its object which it modifies (Stewart 2001). (19a) shows how the adverb behaves with consequential serial verb constructions. The adverb *ègìégìé* 'quickly' modifies just the first VP – pounding of the yams – without modifying the second VP. With a resultative serial verb construction, in contrast, the adverb cannot modify just the first VP (19b). The use of a post-VP adverbial between the two VPs in this context, in fact, results in ungrammaticality.

(19)   a. Òzó dúnmwún èmà **ègìégìé** khiénné.
       Ozo pound   yam   quickly sell+PL
       'Ozo pounded the yams quickly and sold them.'   (Stewart 2001:29)
    b. *Òzó súá   ògó   **ègìégìé** dé.
       Ozo push bottle quickly   fall   (Stewart 2001:26)
       (Expected interpretation: Ozo pushed the bottle quickly and the bottle fell)

These examples presented in Stewart (2001) strongly suggest that resultative serial verb constructions and consequential serial verb constructions can and should be distinguished. In the following section, I review Collins' (2002) work on ǂHoan, in order to illustrate why one might seek a unified analysis for resultative V-V compounds and resultative serial verb constructions. I would, however, like first to detour a bit to look at more works on serial verb constructions in other languages. Not all researchers adopt the Campbell-Stewart classification, and it is worthwhile to speculate why this might be so.

Despite the success of the Campbell-Stewart classification in Èdó, this classification may not easily be adopted for other languages. In Èdó examples, the transitivity of the verb is unambiguous[9] and it makes it easy to use the transitivity-based classification of Campbell (1996) and Stewart (2001). In other serial verb languages, however, the transitivity of a verb is not morphologically marked, and some examples of serial verb constructions in these languages cannot be unambiguously classified as transitive V2 or unaccusative V2. The following examples illustrate this point (20). The verb *hyèw* can be used as a transitive verb (20a) or an unaccusative verb (20b).

(20) a. Kwame bɛ-**hyèw**   dua no.
        Kwame FUT-burn   tree DEF
        'Kwame will burn the tree.'   (Akan, Osam 2003:19)
     b. Kwame bɛ-**hyèw**
        Kwame FUT-burn
        'Kwame will get burnt'

When this type of verb is used as the V2, it can be analyzed as a resultative serial verb construction (= unaccusative V2) or a consequential serial verb construction (= transitive V2), as illustrated in (21).

(21) Ama twé-è   Ekua bɔ́-ɔ̀   famu.
     Ama pull-COMPL Ekua fall-COMPL ground
     'Ama pulled Ekua down.'
     or 'Ama pulled Ekua and toppled him(=Ekua).'
                                        (Akan, Osam 2003:31, cf. K. Osam p.c.)

In Akan, the verb *bɔ́* 'fall' can be transitive ('fell') or unaccusative ('fall'). If the verb is transitive, the sentence is an example of a consequential serial verb construction, and if it is unaccusative, it is an example of a resultative serial verb construction. As the interpretation may indicate, the semantic difference between resultative serial verb constructions and consequential serial verb constructions is very subtle. Applying the Campbell-Stewart classification to Akan, for this reason, is difficult. If we apply the adverbial test to (21) to see if an adverb can modify just one of the verbs, the sentence is expected to be grammatical; not because the behavior of adverbs are different in Akan, but because the construction can be analyzed as a consequential serial verb construction.

In other verb serializing languages, serial verb constructions involve two verbs that match in transitivity, and thus, the transitive-unaccusative form of serial verb constructions is not found (see Cummings 2001 for a transitivity-based cross-linguistic typology). Saramaccan is one of these languages. Veenstra (1996) notes that in Saramaccan, a Caribbean Creole language related to Akan, serial verb constructions always involve a transitive V2. It might be that Saramaccan only has consequential serial verb constructions, but it might be

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[9] Stewart's (2001) examples of resultative serial verb constructions contain a stative V2 which can only be unaccusative (Baker & Stewart 1997). In this way, he ensures that his examples cannot be re-analyzed as containing a transitive V2.

that in Saramaccan an independent constraint forces the transitivity matching between the two verbs. In order to see if these languages have resultative serial verb constructions, we need to see how adverbs behave in these constructions. I will leave the study of Saramaccan as a future project.
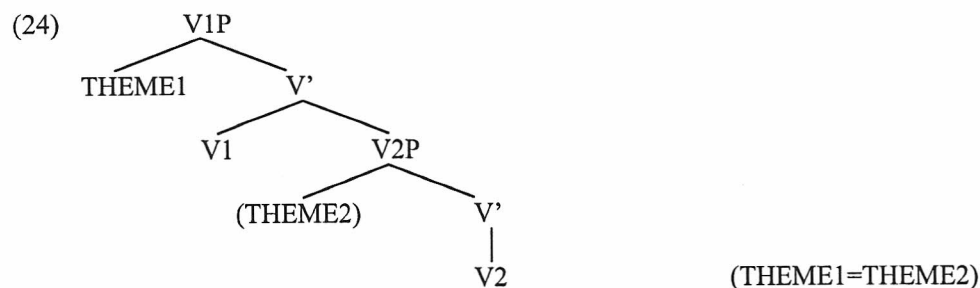
Leaving these minor drawbacks aside, we can see that resultative serial verb constructions in Èdó look very much like resultative constructions in other languages. As pointed out in Larson (1991), they are very similar to the English AP resultative construction. In resultative serial verb constructions, two verbs form a unit which describes a complex event. The first verb of resultative serial verb constructions denotes an activity event, and the second verb describes either a state (e.g. *mòsé* 'be beautiful' shown in (17a)), or a change of state (e.g. *de* 'fall' in (17b)) which occurs as a result of the activity described by the V1. Thus a serial verb construction formed with an activity V1 and a stative/achievement V2 describes an accomplishment event. Stewart (2001) provides the following examples to show that two verbs which individually denote atelic events can form a resultative serial verb construction, which has telic aspectual properties. The examples in (22) show that the verbs *kòkó* 'raise' and *mòsé* 'be beautiful' are incompatible with the time-span temporal phrase *vbè ùkpó ìsén* 'in five years', but compatible with the durational temporal phrase *là ùkpó ìsén* 'for five years'. This pattern suggests that these two verbs denote atelic events (see Vendler 1957, Dowty 1979). In contrast, the resultative serial verb construction formed with these two verbs, shown in (23) is compatible with the time-span phrase but incompatible with the durational one, which suggests that the construction denotes a telic event.

(22) a. Òzó   kòkó Àdésúwá   (*vbè ùkpó ìsén) / là   ùkpó ìsén.
          Ozo   raise Adesuwa   in   year five   for year five
          'Ozo raised Adesuwa for five years.'
          '*Ozo raised Adesuwa in five years.'
      b. Àdésúwá mòsé   (*vbè ùkpó ìsén) / là   ùkpó ìsén
          Adesuwa be-beautiful   in   year five   for year five
          'Adesuwa stayed beautiful for a period of five years.'
          '*Adesuwa stayed beautiful in five years.'

(23) Òzó   kòkó Àdésúwá mòsé   vbè ùkpó ìsén / (*là   ùkpó ìsén)
       Ozo   raise Adesuwa be-beautiful in year five / for year five
       'Ozo raised Adesuwa to be beautiful in five years.'

3. THE ANALYSIS OF RESULTATIVE SERIAL VERB CONSTRUCTIONS

The relation between the two predicates in resultative constructions in English is often described as causative. One predicate describes an action which causes the state described by the other predicate to come about. In the approach which focuses on this semantic relation between the predicates, resultative constructions are compared to lexical causative constructions (e.g. Bittner 1999, Lidz & Williams 2002, Kratzer 2004). Analyses within this approach make use of a causative predicate (CAUSE) which takes two event arguments, and this causative predicate is responsible for allowing the two predicates in resultative constructions to combine.

Traditional syntactic accounts, on the other hand, focus on the structural relation between the two predicates. Larson (1988) proposes that the result-denoting predicate is embedded under the action-denoting predicate. Larson (1991) extends this analysis to resultative serial verb constructions. Collins (1997) and Stewart (2001) adopt Larson's approach that the resultative serial verb constructions should be modeled after the resultative construction in English, and that the result-denoting phrase is embedded under the cause-denoting phrase. In other words, the result-denoting verb (V2) is treated as the complement of the action denoting verb (V1) as shown in (24).

(24)

```
                    V1P
             _____/    _____
          THEME1              V'
                          ___/  \___
                        V1         V2P
                               __/   \__
                          (THEME2)      V'
                                        |
                                        V2          (THEME1=THEME2)
```

In this approach, the exact mechanism which allows the combination of the two verbs is not defined. That is, the V2P is the complement of V1, even though V1 does not lexically select for the V2.

I propose to combine these two approaches, by adopting the structural representation of (24), and also assuming the relation between the two verbs as being mediated by a causative predicate. I propose that the V1 of a resultative serial verb construction acquires the causative meaning by lexical coercion, and it effectively turns the V1 into a causative predicate. In this analysis, then, the V1 is the causative predicate, in contrast to other analyses which postulate a separate causative predicate. I argue that in the spirit of modeling resultative constructions after (lexical) causative constructions, my analysis captures the similarity between the two types of constructions better than the analyses with a separate causative predicate.

In the following section (Section 3.1), I examine lexical causative constructions, which resultative constructions are modeled after. I then argue that the lexical-coercion analysis of V1 captures the similarity between the two constructions in a way alternative analyses cannot.

It must be noted that the nature of the shared object is greatly controversial. Some researchers argue that there is an anaphoric empty element in the result-denoting phrase (e.g. Collins 1997, 2002), and others argue that there is no empty category in the result-denoting phrase (Baker 1989, Stewart 2001). The representation in (24) contains a theme object within the V2P to make it explicit that the logical object of the V2 must be coreferent with the logical object of the V1. The analysis presented in this paper does not hinge on the outcome of this debate.

3.1 RESULTATIVES AS CAUSATIVES
As Larson (1991) argues, I start with the assumption that resultative serial verb constructions are essentially the same as AP resultative constructions in English. Like the two predicates in

English resultaive constructions, the two verbs in resultative serial verb constructions describe an action and its result, respectively. This relation between the two predicates can be seen as causational (Baker & Stewart 2002, Kratzer 2004). Like the relation lexical causative constructions denote, the two predicates in resultative constructions are in a direct causative relation (see Dowty 1979 for discussion on direct causation). The relation is more restricted than the causative relation seen in non-lexical causative constructions, involving verbs such as *make*, or *cause*. In addition, like lexical causative constructions, manner adverbs cannot modify just the caused event (i.e. the result phrase). This behavior of adverbs indicates that the resultative construction as a unit is associated with a single Davidsonian event. The relation is captured straightforwardly if we assume that the relation between the two predicates in resultative constructions is exactly like the relation between the predicates in lexical causative constructions. In order to examine this hypothesis, we need to examine both the structural representation and semantic relation of lexical causative constructions. In the next section, I examine lexical causative constructions and show that a lexical causative predicate has two functions: it introduces a causative relation between two events – causing event and caused event – and it denotes the causing event. In Section 3.3, I propose that the V1 of resultative serial verb constructions should be analyzed as the causative verb, similar to the causative predicate. I propose that the process of lexical coercion adds a causative meaning to the V1. I show that this analysis captures the parallel between causative constructions and resultative constructions, as well as maintaining the assumed structural relation in Larson (1991).

3.2 LEXICAL CAUSATIVE CONSTRUCTIONS

In this section, I show that, semantically, a causative relation is a relation between two events, but that, syntactically, a causative predicate combines with just one eventive predicate.

Within the causative construction, we must make a fine-grained distinction between the lexical causative construction and the non-lexical causative construction. In the lexical causative construction, the caused event is not associated with its own Davidsonian event, while in a non-lexical causative construction, it is. The following examples show that a manner adverb can modify just the caused event in a non-lexical causative construction, but not in a lexical one.

(25)   Kotaro made the ship sink slowly.

The adverb *slowly* can modify the embedded (caused) event in the example, which suggests that the embedded phrase *the ship sank* is associated with a Davidsonian event argument (Davidson 1967, see also Higginbotham 1985 for a formal treatment of the adverb modification using an event argument). In contrast, a manner adverb cannot modify just the caused event of a lexical causative construction, as shown in (26)

(26)   Kotaro sank the ship slowly.

The sentence can be true if Kotaro is a giant who pushes the ship down into the water slowly. If, on the other hand, Kotaro punctures a hole into the wall of the ship, thereby causing the ship to sink slowly, this sentence cannot be true. These examples illustrate that in lexical

causative constructions, the caused event is not associated with its own Davidsonian event predicate. At the end of this section, I will come back to the relation between the multiple sub-events contained in the lexical causative construction and the single Davidsonian event the construction is associated with.

The behavior of adverbs suggests that the construction closest to the resultative construction is the lexical causative constructions, since manner adverbs cannot modify just the caused event (result phrase) of resultative constructions.

Lexical causative relations are traditionally represented with a causative function which applies to event arguments. An example of formal representations of causative relations is shown in (27).

(27)   Cause (e1, e2) : e1 is in direct causation relation with e2

The cause relation of a lexical causative construction is different from the relation that the English verbs *cause*, and *make* denote. The semantic content of this function is discussed in detail in various works (Bittner 1999, Kratzer 2004, and Pylkkänen 2002). Here, it suffices to say that the relation is a causal relation like that which is denoted by the English verbs *cause* and *make*, but is more restricted in that there cannot be any intervening event which allows the causing event to eventually bring out the caused event (see Bittner 1999, Dowty 1979, and Kratzer 2004 for discussions on the notion of direct causation). If Mary sank the ship, the ship cannot be sunk by someone that Mary had asked. This is an example of a direct causation relation, which contrasts with a non-direct causation denoted in the sentence: Mary made the ship sink.

Another important aspect of the causative function in (26) is its valency. A causative predicate is assumed to take two eventive arguments. Semantically, it seems most intuitive that a causative sentence asserts that there is a causing event and a caused event. Syntactically, however, a causative predicate combines with just one predicate (VP), not two. That is, a causative verb must be analyzed as having two roles: it introduces a causative relation (Cause (e, e')), and it also denotes the causing event (e). That is, the syntactic representation of a causative predicate (e.g. Pylkkänen 2002) has the properties of a one place predicate, which takes a complement but no specifier.

This fact about the causative predicate is often downplayed in an approach which models resultative constructions after causative constructions. Lidz & Williams (2002), for example, postulates a CAUSE predicate to combine the two predicates in resultative constructions in Kannada. The verb that denotes the causing event (which they call 'manner') appears in the specifier position of the CAUSE verb, and the result-denoting predicate in the complement position. The CAUSE predicate postulated in this construction, thus, has to be a different predicate from the lexical causative predicate. In the next section, I argue that the lexical coercion analysis I propose, on the other hand, maintains the parallel between the lexical causative construction and resultative constructions by treating the V1 as the causative predicate.

In addition, an analysis of causative constructions must explain why the two sub-event arguments of the causative predicate are not accessible to adverbial modification (with manner adverbs). I explain this fact by using two assumptions: one regarding the function of the voice head and the other the function of the causative predicate. I propose that the voice

head is a function from a set of sub-events to a set of Davidsonian events. It has been independently argued that the presence of a voice head distinguishes non-lexical causative constructions from lexical causative constructions (Pylkkänen 2002). The behavior of manner adverbs (as a probe of Davidsonian events) thus suggests that the Davidsonian event is associated with voice phrase (vP) and not with Verb phrase (VP). Then, in the context of lexical causative constructions, we must ensure that this voice function applies to the combination of the two events, instead of just one of them, since neither the causing event nor the caused event can be independently modified. This can be attributed to the way a causative predicate works, as shown in (28).

(28)   cause (e1, e2) : cause is a function which applies to two events which are in a direct causal relation, and returns one event.

This definition of a causative predicate is potentially more complex than Parsons's (1990) because it treats a causative relation as a relation between three events (a caused event, a causing event and a complex event). It is, however, formally accurate because it is the complex event that can be converted into a Davidsonian event by the voice function. The definition of the causative predicate in (28) thus ensures that the voice function applies to the output of the cause predicate, and not the input of the causative predicate.

3.3 RESULTATIVE CONSTRUCTIONS AND CAUSATIVE CONSTRUCTIONS

The analogy that resultative constructions are like lexical causative constructions is not simply a descriptively useful tool. It captures several aspects of resultative constructions. The caused event of resultative constructions, like the caused event of lexical causative constructions, must be denoted by an unaccusative verb (in Èdó) or an adjectival element (in English). Resultative constructions, like lexical causative constructions, denote a single Davidsonian event. These similarities suggest that this analogy between resultative constructions and lexical causative constructions is on the right track. In order to complete the analogy, however, we must locate the source of the causative meaning. I propose that the V1 of resultative serial verb constructions acquires the causative meaning by lexical coercion.

In resultative constructions, a verb that would otherwise denote a simple, non-causative event is used to denote an activity, which brings about the event described by the V2. The examples in (29) contain verbs such as *hammer*, and *push*, which take a nominal, non-event complement. These verbs differ from verbs such as *try*, and *begin*, which lexically select for a clausal, event complement shown in (30).

(29)   a. Kotaro pushed the door.
       b. Kotaro hammered the nuts.

(30)   a. Kotaro **tried** [to bite me].
       b. Kotaro **began** [to sleep].
       c. Kotaro **wants** [to eat].

These bolded verbs in (30) lexically select for a clausal complement, and thus the relation between the clauses in bracket and the verbs can be treated as a predicate-argument relation.[10] The examples in (29), in contrast, suggest that the verbs in the examples do not lexically select for an event object, yet these verbs appear with the result-denoting phrase in (31)

(31) a. John **hammered** the metal flat.
      b. John **pushed** the window open.

The main verb in resultative constructions does not lexically select for the result denoting phrase, but it has been noted that the verbs in the resultative constructions acquire a causative meaning (Kratzer 2004). The same causative relation also plays a role in Èdó resultative serial verb constructions. The V1, which in other contexts would not select for an eventive argument nonetheless acquires a causative meaning. I propose that the causative meaning is forced onto the V1 by lexical coercion, as shown in (32)

(32) a. John **hammered** the metal flat.
          sùá: $\lambda x \exists e1$ [push(e1) theme (x)]
      b. The lexically coerced meaning of sùá
          sùá: $\lambda f \lambda x \lambda e1$ [push(e1), theme (x, e1) & $\exists e2$ [$f(e2)(x) = t$ & cause (e1, e2)]

This allows the V1 to combine with the result-denoting phrase (V2P), as shown in (33)

(33) $\lambda f \lambda x \lambda e1$ [push(e1) & theme (x, e1) & $\exists e2$ [$f(e2)(x) = t$, & cause (e1, e2)]]
      $\rightarrow \lambda x \lambda e1$ [push(e1) & theme (x, e1) & $\exists e2$ [fall (e2) & theme (y, e2) & cause (e1, e2)]]
      (x=y by the Uniqueness condition)
      $\rightarrow \lambda x \lambda e1$ [push(e1) & theme (x, e1) & $\exists e2$ [fall (e2) & theme (x, e2) & cause (e1, e2)]]

      cf. Òzó sùá ágá dé.
          Ozo   push chair fall
          'Ozo pushed the chair down.'

In addition, the causing event argument can be saturated as soon as the lexical coercion turns the V1 into a causative predicate. Syntactically, thus, the coerced V1 needs to combine with only one event predicate to saturate its caused event argument.

Having shown the composition of the complex predicate, I now turn to the behavior of adverbs we saw earlier. Èdó manner adverbs cannot modify just the V1, or just the V2. Instead, they modify the entire event, denoted by the combination of the V1 and V2. I have argued the entire event is the event first discovered by Davidson (1967), which I call the Davidsonian event. Sub-events, which are arguments of the CAUSE predicate, are not Davidsonian events. The causative predicate in resultative serial verb constructions take two

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[10] Interestingly, these predicates can combine with VP, or vP (Wurmbrand 2003). Their subcategorization seems more flexible than that of a lexical causative predicate.

sub-event arguments (one denoted by the V1, and the other by the V2) and return a single complex event argument. As previously discussed, the voice head, which combines with the V1, takes as its input the single complex event argument given by the causative predicate, and turns it into a Davidsonian event argument. Locality conditions ensure that the voice function does not see the two events that are arguments of the cause predicate. For the purpose of manner adverbs, which are predicates of Davidsonian events, there is only one event in a resultative serial verb construction. It is the complex event that is composed of two sub-events, but it is one Davidsonian event.

4. V-V COMPOUNDS AS VERB INCORPORATION
4.1 INCORPORATED V-V COMPOUNDS 1: COLLINS (2002)
Research on the internal structure of verb phrases usually assumes that the decomposed elements, which make up a verb, combine to form a verb at some point in derivation (usually at LF). It is thus not surprising that researchers often assume that the two verbs in serial verb constructions will undergo head movement to form a complex verb (V-V compound) at LF (Collins 1997). In this approach, it seems most natural that V-V compounds, such as Japanese resultative V-V compounds, and serial verb constructions should have the same underlying structure and that their difference should be attributed to when head movement takes place (e.g. overt vs. covert movement). In this section, I review an analysis of ǂHoan V-V compounds which assumes that they have an underlying serial verb structure, which suggests that this unification approach is in principle tenable. I then review an analysis of Japanese resultative V-V compounds within this approach (Nishiyama 1998) and argue that Japanese resultative V-V compounds cannot be analyzed as having the same underlying structure as resultative serial verb constructions.

Before I compare Japanese resultative V-V compounds with Èdó serial verb constructions, it must be pointed out that the difference between the two constructions should not be attributed to the compound/phrasal distinction. In the Strong Lexicalist Hypothesis, for example, the two constructions would be expected to be different (see Di Sciullo & Williams 1987), and nothing interesting will come out of pointing out the difference between the two constructions. I have argued that the separation between the morphology and the sentence is an arbitrary one, and that we should not a priori expect to see the differences. In this section, I review an analysis of resultative V-V compounds in ǂHoan, a Niger-Congo language, in order to emphasize that resultative V-V compounds, in principle, may be derived from a serial verb construction. In ǂHoan, resultative V-V compounds, indeed, seem to be derived from an underlying resultative serial verb structure. Such analysis, in turn, forces us to seek an explanation for the difference between Japanese resultative V-V compounds and Èdó resultative serial verb constructions, which would go beyond the phrasal/compound distinction.

Collins (2002) argues that verbal compounds (V-V compounds) in ǂHoan, which are shown in (34), are derived from underlying serial verb forms.

(34) Ma a-q‖hu   l'o   djo   ki   kx'u na.
      1sg prog-pour put.in water part pot   in
      'I am pouring water into the pot.'   (Collins 2002:1)

According to his analysis, a subset of serial-verb constructions is realized as V-V compounds due to a movement operation. He argues that the voice (v) in ǂHoan checks multiple verbal (V) features, which allows it to attract both V1 and V2. Collins (2002) thus assumes that the difference between Ewe (a serial verb language, like Èdó) and ǂHoan (a verbal compounding language) is similar to that between English and Bulgarian *wh*-movement. In Bulgarian all *wh*-words must move to C, but in English, only one *wh*-word moves to C. On the surface, Bulgarian may have a series of *wh*-words sentence initially, while in English, *wh*-words generally appear in separate positions in the sentence, as shown in (35).

(35) a. Koj   kogo   vizda?
         Who whom sees
         'Who sees whom?'   (Bulgarian, Rudin 1988:472)
      b. Who sees whom?

Analogously, in some serial verb languages, the two verbs in a serial verb construction may be separated by other elements of the sentence, but in others, the two verbs must appear adjacent to each other. Collins (2002) thus argues that in ǂHoan, all the verbal heads move to the light verb v, creating the compound structure, while in Ewe, only one verb moves to v. In Collins' (2002) analysis, Ewe and ǂHoan, are considered to be serial verb languages, in contrast to English, and Ewe and ǂHoan both allow the generation of more than one verb within a single clause.

(36) T licenses more than one V.   (Collins 1997, Stewart 2001[11])

However, unlike Ewe and all the serial verb languages, the value of v has the dimension that requires that all the V heads to move to adjoin to v, similar to the value of the C in Bulgarian.

     Collins (2002) presents two arguments in support of his attempt to treat V-V compounds with an underlying serial verb construction. He first points out that the definition of serial verbs in Collins (1997), shown below in (37) includes verbal compounds.

(37) A serial verb construction is a succession of verbs and their complements (if any)
      with one subject and one tense value that are not separated by any overt marker of
      coordination or subordination.   (Collins 2002:(9))

With this definition, the only difference between serial verb constructions and verbal compounds is in the word order. Moreover, Collins (2002) presents two similarities between the two constructions. First, verbal compounds in ǂHoan and serial verb constructions in West African languages range over the same range of meaning (directional, consecutive, and benefactive, in his terms). Second, the same verbs that are used in a verbal compound can also be used to form a serial verb construction.

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[11] Stewart (2001) proposes that serial verb constructions in Èdó are licensed because T in Èdó does not need to check the features on V. Both Collins (1997) and Stewart (2001) assume that serial verb constructions are licensed by some property of T.

In his analysis, Collins (2002) adapts multiple-feature checking theory and propose that when two verbs move to adjoin to the same v, the higher verb adjoins to v first (by superiority), and the lower verb then adjoins internally to the v.

(38)   [$_v$ V1 [$_v$ V2 v]]   (Collins 2002:12)

He then presents the transitivity-matching restriction in ǂHoan and argues that this property follows his analysis in which the two verbs have to agree with the same v. Thus, unlike Èdó resultative serial verb constructions, the two verbs in ǂHoan V-V compounds match in transitivity. The unification approach successfully captures the properties of ǂHoan V-V compounds. ǂHoan V-V compounds, like Èdó resultative serial verb constructions, require object sharing.

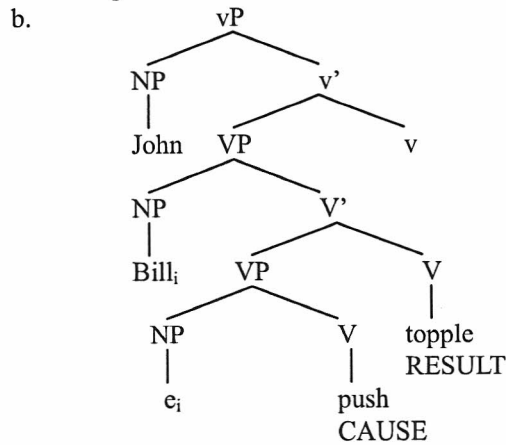## 4.2 JAPANESE RESULTATIVE V-V COMPOUNDS REVISITED

Nishiyama (1998) argues that Japanese resultative V-V compounds have an underlying serial verb structure, in which one VP is embedded within another VP. Nishiyama's (1998) approach is essentially the same as Collins' (2002), who, as we have seen in the previous section, argues that ǂHoan V-V compounds can be analyzed as being derived from a serial verb structure. Much like Collins (2002), Nishiyama (1998) argues that resultative serial verb constructions in West African languages seem so similar to Japanese resultative V-V compounds that a unified analysis is warranted. In this section, I review some of Nishiyama's (1998) arguments in order to clarify what must be done to extend the analysis of resultative serial verb constructions to Japanese. As pointed out in Nishiyama (1998), the relation between the two verbs in Japanese compounds is not exactly the same as the relation between the two verbs in resultative serial verb constructions. Contrary to Nishiyama (1998), I argue that generalizing the notion of 'resultative serial verb' to include Japanese resultative V-V compounds is costly because such a notion of resultative serial verb constructions would no longer follow the same pattern as the general resultative constructions. In addition, I show that the generalized resultative serial verb construction actually wrongly predicts that Japanese resultative V-V compounds will respect the object sharing restriction. I thus conclude that extending the analysis of resultative serial verb constructions to Japanese resultative V-V compounds is not tenable.

Nishiyama (1998) argues that Japanese resultative V-V compounds and resultative serial verb constructions seem so similar that they should receive a unified treatment. The two constructions are similar in two ways. In both resultative serial verb constructions and resultative V-V compounds, two verbs appear in a single clause. Because these constructions are mono-clausal, both constructions follow the uniqueness condition in that there is at most one agent, one theme and one goal argument in the constructions. The second similarity is that, like serial verb constructions, Japanese resultative V-V compounds follow the Temporal Iconicity Condition (originally noted in Greenberg 1966), which will be discussed later. Nishiyama (1998) thus proposes the following structure for Japanese resultative V-V compounds. Much like Collins' (1997) analysis of Ewe, there are two VPs – the projection of two verbs of the compound, and one vP, which determines the transitivity of the compound

and licenses an agentive argument.[12]

(39) a. John-ga Bill-o   osi-taosi-ta.
          J.-NOM   B.-ACC   push-topple-PAST
          'John pushed Bill down.'   (Nishiyama, 1998:175)

      b.

```
                              vP
                         ┌─────┴─────┐
                        NP           v'
                         |      ┌─────┴─────┐
                        John   VP           v
                           ┌────┴────┐
                          NP         V'
                           |    ┌────┴────┐
                          Bill_i VP        V
                             ┌───┴───┐     |
                            NP       V   topple
                             |       |   RESULT
                            e_i     push
                                    CAUSE
```
                                                              (Nishiyama, 1998:185)

In this structure, however, the structural relation of the two verbs is reversed. In resultative serial verb constructions, the structural relation between the two verbs is represented as $[V1_{CAUSE} [V2_{RESULT}]]$, where the VP denoting the result is embedded under the VP that denotes the causation (cf. Collins 1997, Stewart 2001). In Japanese resultative V-V compounds, in contrast, the verb describing the result of an event is analyzed as embedding the verb that describes the manner of the event. The treatment of the result as the main verb,[13] as Nishiyama (1998) argues, is empirically motivated because the V2 of Japanese resultative V-V compounds shows all the signs of being the main verb.

I have argued elsewhere (Tomioka 2003, in press) that the case-marking patterns and the selectional restriction of the compounds suggest that the V2 is the head of the compound, and that the V2 alone determines these properties of the compound. Nishiyama (1998) uses the following two verbs to illustrate the case marking properties of V-V compounds. The verb *ow* 'chase' takes an accusative-case marked object, and the verb *tuk* 'attach' takes a dative-case marked object as shown in (40).

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[12] Nishiyama (1998) uses the label Transitivity (and TrP) instead of voice in his analysis. I use the label voice to be consistent with other representations in this study. I also changed the label for the empty category to e, instead of PRO. In all analyses of resultative serial verb constructions, this element is assumed to be a bound nominal element which needs a local antecedent, but does not need case.

[13] The term 'main verb' in this context only implies that this verb is not embedded under another verb. Since both Nishiyama (1998) and I assume that resultative V-V compounds are mono-clausal, the term 'main' should not be taken to indicate that there is a verb in the main clause and another in the embedded clause. 'Embedded verb' similarly only indicates that this verb is embedded under another verb. It does not imply that there is an embedded clause (i.e. IP or CP).

(40) a. John-ga Mary-**o** ot-ta.[14]
          J.-NOM   M.-ACC chase-PAST
          'John chased Mary.'
      b. John-ga Bill-**ni**   tui-ta.
          J.-NOM   B.-DAT   attach-PAST
          'John attached to Bill.'
      c. John-ga Mary-**ni** oi-tui-ta.
          J-NOM   Mary-DAT chase-attach-PAST
          'John caught up with Mary.'

The data indicates that the compound has the same case marking pattern as the V2 and not the V1. Nishiyama (1998) concludes from this data that the V2 is the head of the compound.

The following examples, in addition, suggest that v (Transitive Head for Nishiyama 1998) is in a direct selectional relation with the V2, but not with the V1. The compound in (41) is made of a transitive V1 *ki* 'wear' and an unaccusative V2 *kuzure* 'get out of shape.' The compound does not allow an agent argument (41b), or an agent-oriented adverbial *wazato* 'deliberately' (41c).[15]

(41) a. Ko:to-ga   ki-kuzure-ta.
          coat-NOM wear-get.out.of.shape-PAST
          'The coat was worn and got out of shape.'   (Nishiyama 1998:189)
      b. *John-ga   ko:to-o   ki-kuzure-ta.
          J-NOM   coat-ACC   wear-get.out.of.shape-PAST   (Nishiyama 1998:189)
      c. *Wazato   ko:to-ga   ki-kuzure-ta
          deliberately coat-NOM wear-get.out.of.shape
          'The coat was deliberately worn and got out of shape.'

These sentences illustrate that a compound with an unaccusative V2 is unaccusative, even with a transitive V1. In other words, a transitive v selects transitive V2 and an unaccusative v selects an unaccusative V2. The transitivity feature of V1 does not interfere with this selection. Given these examples, Nishiyama (1998) concludes that the V2, which describes the result, must be in a direct selectional relation with the v, while the V1 is embedded under the V1. Nishiyama's (1998) conclusion is reasonable, if one assumes that the two verbs must project their own phrases and that one of the two phrases must be embedded under the other. Then, the headedness of the compound, indeed, forces one to treat the V1 phrase to be embedded under the V1 phrase.

The reverse embedding pattern, however, is problematic in two ways. First, there is a problem concerning Nishiyama's (1998) assumption that the interpretive mechanism of resultative serial verb constructions is reversible. Theories of resultative constructions in

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[14]   Japanese phonology does not allow a closed syllable unless the coda is part of the geminate, or a nasal agreeing with the following consonant in place. When the V1 of a V-V compound ends in a consonant, an epenthetic vowel [i] appears between the two verbs. In addition, Japanese lacks the onset-nucleus combination [wi]. The verbal stem *ow*, thus is realized as *oi* in a compound.

[15]   The use of the adverb 'on purpose' as the probe for the existence of an agent argument is originally reported in Roeper (1993) who credits Manzini (1983).

general assume that the relation between the two predicates in resultative constructions is non-commutative. If one were to modify this assumption so that Japanese resultative V-V compounds and West African resultative serial verb constructions can receive the same analysis, one must abandon the parallelism between resultative constructions in general and resultative serial verb constructions/resultative V-V compounds. Second, the phrasal projection of the V2, which necessarily includes an empty category, is empirically unsupported.

Nishiyama (1998) argues that the reverse embedding in Japanese is due to the Temporal Iconicity Condition (e.g. Greenberg 1966). The Temporal Iconicity Condition requires that the word order of the two verbs mirror the actual temporal sequence of the events. Since the causation event takes place before the resulting event, the verb denoting the causation must precede the verb denoting the result. Japanese is a head-final language, and a general embedding pattern of resultative serial verb constructions would yield the word order V_{RESULT}-V_{CAUSE}, which would violate the Temporal Iconicity Condition, as shown in (42).

(42)   *[$_{V(CAUSE)P}$ [$_{V(result)P}$ t_i]   Vresult$_i$-Vcause]
       TEMPORAL ICONICITY CONDITION (Carstens 2002)
       Let A and B be two subevents (activities, states, changes of states, etc) and let A' and B' be two verbal constituents denoting A and B, respectively; then the temporal relation between A and B must be directly reflected in the surface linear order of A' and B'.

Nishiyama (1998) argues that the reverse embedding pattern should be allowed in syntax because syntax in general allows various structures to represent the causal relations anyway. He points out the following examples, which show various structural relations representing the cause-effect relation.

(43)   John fell because Mary pushed him.
       (Adjunct clause = causation)
       Mary's pushing John resulted in his falling.
       (Complement phrase = result)

The weakness of this argument is that syntax shows more flexibility with the relations between two clauses than the relation between two phrases which constitute a single clause. A mono-clausal construction, such as resultative constructions, always shows the pattern in which the causing event appears to be the predicate that embeds the resulting event. Thus, the flexibility Nishiyama (1998) assumes is unwarranted, regardless of the question of whether a peri-linguistic condition such as the Temporal Iconicity Condition can affect the syntactic phrase building. In other words, the interpretive mechanism proposed for resultative serial verb constructions should not simply be extended to accommodate the reverse embedding pattern Nishiyama (1998) proposes. If one assumes that the LF mechanism which interprets resultative serial verb constructions is indeed flexible enough to accommodate the reverse embedding pattern proposed in Nishiyama (1998), it would entail that this interpretive mechanism is distinct from the LF mechanism which interprets the cause-result relation in resultative constructions in other languages – which shows a strict structural restriction that

the predicate describing the resulting event be embedded under the predicate describing the causal event. To conclude, the general semantic mechanism proposed for resultative serial verb constructions would not account for the relation between the two verbs represented in (39b). Interpreting the structural representation in (39b) as cause-result would require the stipulation of a special mechanism, which would be distinct from the mechanism used to treat other resultative constructions.

4.3 PROBLEMS WITH THE EMBEDDED V1P

In this section, I show that the embedding structure presented in (39) in fact wrongly predicts that the object sharing restriction holds for Japanese resultative V-V compounds. In resultative serial verb constructions, a phonologically empty element, which is referentially bound to the phonologically overt object, is projected as the object of the embedded verb (V2). The implicit object of the V1 in Japanese is not always referentially bound to the object of the compound. I thus conclude that the embedding structure is an inaccurate representation for Japanese resultative V- V compounds.

The following examples represent the non-object sharing possibility of Japanese resultative V-V compounds. (45a) shows that the theme argument *niwatori* 'chicken' cannot be an argument of the verb *shime* 'strangle', because the verb *shime* 'strangle' in Japanese selects for a long object like *kubi* 'neck', as shown in (45b). However, (45c) illustrates that *niwatori* 'chicken' can appear as the object of the V-V compound *shime-koros* 'strangle-kill'. This indicates that, unlike in serial verb constructions, the object of a V-V compound does not have to be shared.[16]
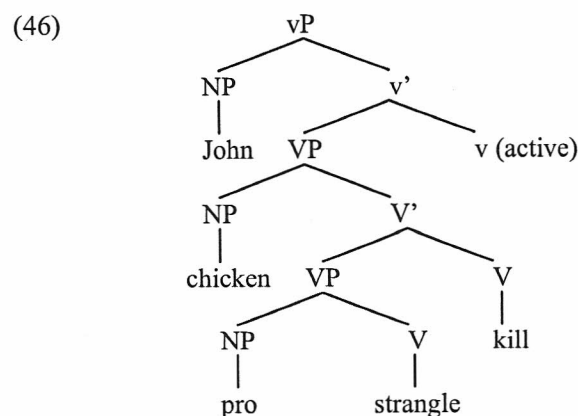
(44) a. *John-ga niwatori-o   shime-ru.
            J.-NOM   chicken-ACC strangle-PRES.
            'John strangles the chicken.'
     b. John-ga kubi-o   shime-ru.
           J.-NOM   neck-ACC   strangle-PRES
           'John strangles the neck.'
     c. John-ga niwatori-o   shime-koros-u.
           J.-NOM   chicken-ACC strangle-kill-PRES
           'John strangled the chicken to death.'

What this indicates is that when the selectional properties of V1 and V2 do not match, an argument that is compatible with only V2 can appear. The opposite is not true. An argument that is only compatible with V1 cannot appear, as illustrated in (46). This is consonant with the head final analysis of Japanese V-V compounds.

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[16] Object sharing is a crucial feature of resultative serial verb constructions, consecutive serial verb constructions, but there are other types of serial verb constructions in which object sharing does not hold. Empirically, this distinction is not problematic because the non-object sharing type serial verb construction involves a semi-functional V1 meaning 'take' or 'hold', and the properties of this type of serial verb construction differs substantially from resultative serial verb constructions. I follow Baker and Stewart (2002) in that these serial verb constructions can be distinguished from resultative serial verb constructions and that they should be treated as a different kind of construction.

(45) *John-ga niwatori-no kubi-o   shime-koros-u.
       J-NOM   chicken-GEN neck-ACC strangle-kill-PRES
      'John killed the chicken by strangling its neck.'

However, the pattern of selection illustrated in (45) is not expected given the structure (39b), in which the object-sharing is mediated by pro. The structure is repeated with new lexical items in (47).[17]

(46)

```
                        vP
               _____/ _____
             NP                   v'
             |              _____/ _____
            John          VP               v (active)
                    _____/ \_____
                  NP             V'
                  |         _____/ \_____
               chicken     VP            V
                      ____/ \____        |
                    NP          V       kill
                    |           |
                   pro       strangle
```

With this structure, the sentence should not be grammatical. In order to maintain that *shime* "strangle" selects for pro, we have to assume that pro is not co-indexed with the object – which goes against the major premises of the serial verb construction in Collins (1997). It is the very definition of the serial verb construction that the object is shared. Alternatively, pro is co-indexed with the overt object of *kill* – which means the selectional properties of the V1 *strangle* are violated. Nishiyama (1998) attempts to circumvent this problem by adopting Zubizarretta's mechanism of lexical saturation. He argues that the theme-argument of *shime* is saturated, letting V1 *shime* function as an intransitive verb. Unfortunately, this remedy does not rescue Nishiyama's structural analysis. The use of a mechanism such as lexical saturation is suspect, because such a process is not observed elsewhere in Japanese. Moreover, it is not clear if lexical saturation can ever rescue Nishiyama's structure. For one, Japanese does not have intransitive-transitive resultative compounds, indicating that an intransitive verb cannot function as a V1 of a compound. In addition, intransitive verbs are not expected to participate in resultative serial verb constructions either, since object- sharing is not possible with an intransitive verb, which by definition does not have an object.

   The mismatched selectional property seen in the *strangle-kill* example thus indicates that the absence of the object sharing property of the Japanese V-V compound is not what is predicted with the serial verb construction analysis. If the serial verb construction analysis were correct, we would not see an example of a shared object that is only compatible with

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[17] I have used pro for the implicit object of the V1P and v for the transitivity-determining head. Nishiyama (1998) uses PRO for the implicit object and Tr(ansitivity) head for the transitivity-determining head. I assume that these differences are notational, rather than meaningful.

one verb.

Having seen the problems of Nishiyama's (1998) structural representation for resultative V-V compounds, we may review and reconsider the arguments Nishiyama (1998) used for the existence of V_1P. The first argument is based on the data that V1 can license an adverbial element. The second argument is based on the data that V1 can have its own (non-shared) object. I will argue that the data Nishiyama (1998) presents are puzzling in both the M-Incorporation analysis and in his phrasal analysis. The second argument concerning the non-shared object is confusing because it seems to suggest that there is a special class of V-V compounds, which is neither resultative nor aspectual. I will leave these examples aside, and indeed treat them as a special class of compound. The behavior of the adverbial is also puzzling, since, the adverbial modification is associated with a structure larger than a mere VP. Given the pattern we have seen in Èdó resultative serial verb constructions, manner adverbs should not be able to modify just one of the verbs, even when these verbs are each analyzed as projecting their own phrase. I re-examine Nishiyama's (1998) examples and conclude that his examples do not show that the given adverbs modify just the V1.

Nishiyama (1998) presents the following examples, in which the adverb seems to modify the event described by the first verb (V1) of the compound. The adverbial *gaburi-to* in (48a) indicates the sound of biting, the adverbial *tururi-to* in (48b) the sound of slipping, and the adverbial *gorogoro* the sound of rolling (48c). Thus, they seem to modify the event described by the V1, and not the V2.

(47) a. Ookami-ga niwatori-ni **gaburi-to** kami-tui-ta.
         wolf-NOM   chicken-DAT mimetics bit-attach-PAST
         'The wolf bit at the chicken.'   (Nishiyama 1998:186)
      b. John-ga kaidan-kara **tururi-to** suberi-oti-ta.
         J-NOM   stairs-from   mimetics slip-fall-PAST
         'John slipped and fell from the stairs.'
      c. Bo:ru-ga **gorogoro** korogari-oti-ta.
         ball-NOM mimetics roll-fall-PAST
         'The ball rolled down.'

Nishiyama interprets this data as suggesting the presence of an embedded VP structure to which the adverbial element adjoins. I believe this interpretation to be misguided, since the adverbs do not *syntactically* need to be adjoined to the V2P, as the following examples indicate (49).

(48) a. Ookami-ga niwatori-o   **gaburi-to** yat-ta.
         wolf-NOM   chicken-ACC mimetic   do-PAST
         'The wolf bit the chicken.'
      b. Kotaro-ga   tururi-to oti-ta.
         K.-NOM   mimetic fall-PAST
         'Kotaro slipped and fell.'
      c. Bo:ru-ga gorogoro-to oti-ta.
         Ball-NOM mimetic   fall-PAST
         'The balls rolled down.'

In these examples, the mimetic elements appear in a sentence without the verbs that describes the exact event that is associated with them. In (49), the verb only denotes that the wolf did something to the chicken, and the mimetic element *gaburi-to*, which denotes the sound of biting, indicates that what the wolf did to the chicken was biting. Similarly, in (49b), the verb *oti* only denotes a falling event, and the mimetic element *tururi*, which is associated with the sound of slipping, indicates that Kotaro fell by slipping. These examples show that the presence of the mimetic elements does not require that the verbs that are associated with them be syntactically present in the structure. The use of these mimetic elements in (49), thus, does not support Nishiyama's (1998) argument that the V1 projects its own phrase.

The second argument presented in Nishiyama (1998) is problematic for any analysis of V-V compounds. These examples do not pattern with either of the two V-V compounds (aspectual or resultative). For the purpose of this study, it is sufficient to point out that the semantic relation between the two verbs in these compounds cannot be characterized as cause-result or manner-event, which suggests that they fall outside of the scope of my inquiry. In any case, these are the examples shown in Nishiyama (1998).

(49) a. John-ga kaban-o   moti-sat-ta.
        J-NOM   bag-ACC   hold-leave-PAST
        'John left with a bag (implying that John stole the bag).'
     b. John-ga sake-o   nomi-arui-ta.
        J-NOM   sake-ACC   drink-walk-PAST
        'John went around drinking (he visited a few drinking establishments).'

The presence of compounds like the following is puzzling to my analysis as well as to Nishiyama's. These examples do not conform to the generalization made in section 2.2.1, that the V2 determines the case-marking pattern of the compound. The object has to be licensed by the V1. They are problematic to Nishiyama because he would need to allow a larger structure (vP) to be embedded under the cause verb. The weakness of his analysis is that he does not have a means to restrict when this structure is possible and when it is impossible. Without this restriction, his analysis does not predict when object-sharing is necessary, and when it is not. Not only is the object of V1 licensed, the object of V2 is not licensed, as shown in (50).

(50) a. *John-ga kaban-o ko:en-o   moti-arui-ta.
         J-NOM   bag-ACC park-ACC hold-walk-PAST
         'John walked in the park with a bag.'
     b. (cf.) John-ga ko:en-o arui-ta.

The data shown above have to be treated as having a different structure from resultative V-V compounds, in which the argument structure of the V2 is preserved. The compounds in (50) do not conform to the headedness of the resultative V-V compounds established on the basis of the case-marking patterns and the selectional pattern. They are, in fact, more similar to the *take*-serial verb constructions observed in West African and Caribbean languages (e.g. Lefebvre 1991). Thus, I will treat them as being outside of the scope of my analysis. They

involve a special class of V1 (verbs meaning 'take' or 'hold'), and a special class of V2 (verbs describing motion).

To conclude, the phrasal embedding structure proposed for resultative serial verb constructions do not capture the properties of Japanese resultative V-V compounds. The embedding pattern is reversed in Japanese, and Japanese V-Vs do not seem to have an empty category in the embedded phrase.

5. CONCLUSION

In this paper, I reviewed a construction called the resultative serial verb construction. Despite the apparent similarities between Japanese resultative V-V compounds and resultative serial verb constructions, I have argued that the two constructions should receive different treatments. Resultative serial verb constructions are analyzed as involving the lexical coercion of the V1, which turns it into a causative predicate. I then reviewed Nishiyama (1998) to show that extending the phrasal predicate concatenation structure to Japanese resultative V-V compounds is untenable.

REFERENCES

Baker, Mark. 1988. *Incorporation.* Chicago: University of Chicago Press.

Baker, Mark. 1989. Object sharing and projection in serial verb constructions. *Linguistic Inquiry* 20: 513-553.

Baker, Mark & Osamuyimen T. Stewart. 1997. Unaccusativity and the adjective/verb distinction: Èdó evidence. In Kiyomi Kusumoto, ed., *Proceedings of the Twenty Seventh North Eastern Linguistics Society (NELS 27)*, 33-47. Amherst, MA: GLSA.

Baker, Mark & Osamuyimen T. Stewart. 2002. A serial verb construction without constructions. Ms., Rutgers University.

Bittner, Maria. 1999. Concealed causatives. *Natural Language Semantics* 7: 1-78.

Campbell, Richard. 1996. Serial verbs and shared arguments. *The Linguistic Review* 13: 83-118.

Carstens, Vicky. 2002. Antisymmetry and word order in serial constructions. *Language* 78: 3-50.

Collins, Chris. 1997. Argument sharing in serial verb constructions. *Linguistic Inquiry* 28: 461-497.

Collins, Chris. 2002. Multiple verb movement in ǂHoan. *Linguistic Inquiry* 33: 1-29.

Cummings, Constance. 2001. XP (remnant) movement and verb serialization in Yoruba. Doctoral dissertation, New York University.

Davidson, Donald. 1967. The logical form of action sentences. In Nicholas Rescher, ed., *The Logic of Decision and Action*, 81-95. Pittsburg: University of Pittsburg Press.

Di Sciullo, Anna-Maria & Edwin Williams. 1987. *On the Definition of Word.* Cambridge, MA: The MIT Press.

Dowty, David. 1979. *Word Meaning and Montague Grammar: the Semantics of Verbs and Times in Generative Semantics and Montague's PTQ.* Dordrecht: Reidel Publishing.

Greenberg, Joseph. 1966. Some universals of grammar with particular reference to the order of meaningful elements. In Joseph H. Greenberg, ed., *Universals of Language*, 73-113. Cambridge, MA: The MIT Press.

Higginbotham, James. 1985. On semantics. *Linguistic Inquiry* 16: 547-593.

Kratzer, Angelika. 2004. Building resultatives. Ms., University of Massachusetts, Amherst.

Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19: 335-391.

Larson, Richard. 1991. Some issues in verb serialization. In Clare Lefebvre, ed., *Serial Verbs: Grammatical, Comparative and Cognitive Approaches*, 185-210. Amsterdam: John Benjamins.

Lefebvre, Clare (ed). 1991. *Serial Verbs: Grammatical, Comparative and Cognitive Approaches*. Amsterdam: John Benjamins.

Lidz, Jeffrey & Alexander Williams. 2002. Reflexivity and resultatives. In Line Mikkelsen & Christopher Potts, eds., *The Proceedings of the Twenty-First West Coast Conference on Formal Linguistics (WCCFL 21)*, 250-263. Somerville, MA: Cascadilla Press.

Manzini, Maria Rita. 1983. On control and control theory. *Linguistic Inquiry*14: 421-446.

Nishiyama, Kunio. 1998. V-V compounds as serialization. *Journal of East Asian Linguistics* 7: 175-217.

Osam, Kweku E. 2003. Introduction to the structure of Akan: its verbal and multi-verbal system. Unpublished course package.

Parsons, Terence. 1990. *Events in the Semantics of English: a Study in Subatomic Semantics*. Cambridge, MA: The MIT Press.

Pylkkänen, Liina. 2002. Introducing Arguments. Doctoral dissertation, MIT.

Roeper, Thomas. 1993. Explicit syntax in the lexicon: the representation of nominalizations. In James Pustejovsky, ed. *Semantics and the Lexicon*, 185-220. Dordrecht: Kluwer Academic Publishers.

Rudin, Catherine. 1988. On multiple questions and multiple *wh* fronting. *Natural Language & Linguistic Theory* 6: 445-501.

Stewart, John M. 1963. Some restrictions on objects in Twi. *Journal of African Linguistics* 2: 145-149.

Stewart, Osamuyimen Thompton. 2001. *The Serial Verb Construction Parameter*. New York: Garland Publishing.

Tomioka, Naoko. 2003. Japanese V-V compounds as doubly headed VPs. *Proceedings of 2003 Western Conference on Linguistics*. Tucson: University of Arizona.

Tomioka, Naoko. In pres. *Resultative Constructions*. Doctoral dissertation, McGill University

Vendler, Zeno. 1957. Verbs and times. *Philosophical Review LXVI*: 143-160.

Veenstra, Tonjes. 1996. *Serial Verbs in Saramaccan: Predication and Creole*. Dordrecht: Holland Academic Graphics.

Wurmbrand, Susanne. 2003. *Infinitives: Restructuring and Clause Structure*. New York: Mouton de Gruyter

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RÉSUMÉ

Cet article examine une construction appelée construction verbale sérielle résultative. Le terme 'construction verbale sérielle résultative' se réfère à une construction dans laquelle deux verbes forment un prédicat complexe qui dénote un seul événement davidsonien. Je concentre mon attention sur deux propriétés des constructions résultatives qui ont été mentionnées dans la littérature: les constructions verbales sérielles résultatives doivent contenir un V2 non accusatif, et les deux verbes de la construction doivent avoir un seul et même objet. Je propose qu'un des verbes de la construction (V1) subit une coercition lexicale et acquiert un sens causatif. Le sens causatif permet la combinaison des deux prédicats. J'examine plusieurs façons selon lesquelles le mécanisme du partage de l'objet peut être réalisé, et je conclus que l'élément clef est que chaque verbe projette sa propre phrase.