ASYMMETRIC COORDINATION IN LEGA

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0. Introduction*

Subject-verb agreement is typically governed by the NP functioning as subject. When more than one participant bear this thematic relation to the verb, they are commonly conjoined syntactically in a single clause by a coordinating conjunction "and". Thematic coordination expressed in this way is said to be syntactically symmetric. Schwartz, in several studies (1989a, 1989b, 1988a, 1985), and others (Black 1991; Aissen 1989) have noted that thematic coordination may also be expressed asymmetrically. In such cases, subject-verb agreement is determined jointly by the NP functioning as subject of the verb and a comitative phrase following the verb. Coordination grounded in asymmetric syntax has only attracted the attention of linguists in recent years, even though it is not particularly rare, isolated, or unusual. The purpose of this paper is to provide a contribution to the small body of literature on this topic by differentiating symmetric from asymmetric coordination in Lega, a Bantu language spoken in eastern Zaire (D.25 in Gurthrie's 1967-71 classification).

Lega is a rare example of an eastern Bantu language that permits asymmetric coordination—Ndali M.21 and Chewa N.31b may be two others—and illustrates how it functions in general. The description and analysis developed in this paper are organized as follows. Section 1 provides an overview of the general differences in thematic coordination as expressed through symmetric and asymmetric syntax. In particular, differences in two types of asymmetric structure, Plural Pronoun Constructions and Verb-Coded Coordinations, are presented. In section 2, symmetric and asymmetric coordinate structures, and comitative structures are described for Lega. Section 3 outlines the differences between symmetric and asymmetric coordination in Lega, while section 4 contrasts asymmetric coordinate constructions with simple comitative constructions. A syntactic analysis of these three structures is provided in section 5, a semantic analysis in section 6, followed by a summary and conclusion in section 7.

1. Coordination via symmetric and asymmetric syntax

In many languages, as in English, thematic coordination is expressed within the same constituent, in what Schwartz (1985) calls "symmetric syntax", as illustrated in (1). In (1a), *Jane* and *Suzy* are each considered to have the same thematic relation—agent—with respect to the verb *eat*. Syntactic coordination here involves two NPs. In (1b), *Sam* and *John* have the same thematic relation—patient—with respect to the verb *hit*. Again, NPs are syntactically coordinated in one constituent. "Symmetric syntax" is realized, then, when thematic coordination is expressed by a single, continuous, syntactic constituent.

(1)   a. [$_{NP}$Jane and Suzy] are eating.
        b. I hit [$_{NP}$Sam and John].

In "asymmetric syntax", thematic coordination is expressed by a discontinuous constituent. As seen in (2), *mun* and *Audu* constitute discontinuous members of a thematically coordinate subject. The only overt clue to this coordination is the plural morphology on the obligatory pronominal element *mun* which precedes the main verb. This NP is linked to *mun* by the connector morpheme *da* '&'. This *da* is not a coordinating connector in the same way that English 'and' is. Rather, it has a more general function, associating an NP with a pronominal NP. It may also function as a comitative, so it corresponds roughly, as well, to the use of English 'with', with the specific thematic relation dependent on the context.

(2)   Hausa (Chadic) [Schwartz 1989a]

        Mun   je kasuwa da Audu.[1]
        1P-PST go market & Audu

        'Audu and I went to the market.'

In general, comitatives differ syntactically from corresponding asymmetric coordinations in that the comitative participant—that is, the participant manifested as an NP appearing with a connector morpheme, such as Hausa *da*, above—is syntactically optional, and when absent does not function as an understood semantic participant. The examples from Tera of asymmetric coordination (3a) and comitative structure (3b) illustrate this difference. In (3a), the coordination of *woya* and *Ali* is syntactically asymmetric, the morphosyntactic elements

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[1] The following abbreviations are used in the paper:

AGR	agreement	IND	independent	PP	prepositional phrase
APP	applicative	INFL	inflection	PR	present
DET	determiner	NP	noun phrase	PST	past
DU	dual	PF	perfect	REC	reciprocal
EMPH	emphatic	P	plural	S or SG	singular
FV	final vowel	POSS	possessive	T/A	tense/aspect

corresponding to the participants constitute neither a single constituent nor have equal syntactic status. *Woya* is interpreted as thematically coordinate with *Ali* because of the plural emphatic reflexive marker *vanda*. When the emphatic reflexive is singular, as in (3b), the construction is understood as a comitative.

(3) Tera (Chadic) [Schwartz 1989b]

    a. *Ali wa d'ə vanda   ndə woya.*
        Ali PF go EMPH+P & boy+DET

       'Ali and the boy ran away.'

    b. *Ali wa d'ə varan   ndə woya.*
        Ali PF go EMPH+SG & boy+DET

       'Ali ran away with the boy.'

Asymmetric coordination, unlike the simple comitative construction, requires plural morphology, which may be coded in one of two ways. In the first type of asymmetrical coordinate construction, called Verb-Coded Coordination (henceforth VCC), there is no independent syntactic constituent corresponding to one of the members of the thematic coordination, as illustrated by the examples in (4). Instead, the coordinate interpretation is realized syntactically in the information about person and number of participants encoded in the verb and information about independent non-coordinate NPs elsewhere in the clause. In these coordinations, unlike in Plural Pronoun Constructions discussed below, the morphology crucial to the thematic coordination interpretation is not associated with an NP or sequence of NPs, but is part of the verbal complex.

(4) a. Hausa (Afroasiatic)

       Mun   jee kaasuwaa da k'aneenaa.
       1P-PST go market   & younger brother+1POSS

      'My younger brother and I went to the market.'

    b. Yapese (E. Oceanic)

       ka   ra   bow   Tamag.
       T/A 3DU come-DU Tamag

      'He and Tamag came.'

In the second type of coordinate construction, the Plural Pronoun Construction (PPC) (following Schwartz 1985), plurality is encoded in the pronoun. In Mokilese, for example, the second person pronoun *kamwa* is dual, whereas *koah* is singular, as shown in (5a) and (5b), respectively. In (5c), the pronoun occurs in a construction in which the second person referent must be interpreted as singular and where substitution of the singular pronoun is ungrammatical (5d).

(5) Mokilese (Austronesian) [Schwartz 1985]

    a. [NP *Kamwa*] *mwehuki kang rais.*
         2DU   like   eat rice

        'You two like to eat rice.'

    b. *Koah mwehuki kang rais.*
         2S   like   eat rice

        'You (Sg) like to eat rice.'

    c. [NP*Kamwa Davy*] *inla duhdu.*[2]
         2DU   Davy go swim

        'You (Sg) and Davy went swimming.'

    d. ?*[NP*Koah Davy*] *inla duhdu.*
         2S   Davy go swim

        'You (Sg) and Davy went swimming.'

A similar pattern occurs in Kpelle, as in (6). In (6b), *kwa* is used as a first person plural pronoun, contrasting with the singular *ŋa* in (6a). However, as shown in (6d), substitution for the singular pronoun of (6c) apparently results in an ungrammatical or unpreferred sentence.

(6) Kpelle (Niger-Kordofanian) [Schwartz 1988a]

    a. *ŋa pa.*
        1S come

        'I have come.'

    b. *Kwa pa.*
        1P   come

        'We have come.'

    c. [NP*Kwa ya*] *ku pa.*
        1P 2S 1P come

        'You (Sg) and I have come / We and you (Sg)....'

    d. ?*[NP *ʃa ya*] *ku pa.*
        1S 2S 1P come

        'You (Sg) and I have come.'

In PPCs such as those in (5c) and (6c), the initial pronoun is necessarily non-singular. In other contexts, such as (5b) and (6b), the pronoun would be interpreted as referring to more than one participant. Yet the dual or plural form of the initial pronoun of PPCs does not mean that the pronoun should be interpreted as having a plural referent by itself. Instead, the pronoun would be interpreted as having a singular referent. Thus, *you* (SG) is absorbed into the plural

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[2] In some languages, such as Mokilese or Kpelle, the overt connector, *with*, does not appear in PPCs.

representing the set whose members are *Davy* and *you*. In PPCs, then, the morphology which signals a thematic coordination interpretation is syntactically associated with an NP corresponding to one of the participants.

Based on data illustrated in (4), (5), and (6), an interpretation of the two asymmetric constructions may be proposed, as in (7). The comma between constituents indicates that the order of constituents is not fixed. Relevant pronominal information in VCC constructions as in (7b) is encoded in the NP. In contrast, PPC constructions are represented as $PRONOUN_{i+j}$, which gives information about NP_i and participants(j).

(7) a. Plural Pronoun Construction

$$[_{NP} PRONOUN_{i+j} (\&) NP_i]$$

  b. Verb-Coded Coordination

$$[_S[_V V, PRONOUN_{i+j}, X], [_{XP} (\&) NP_i], Y]$$

XP can be realized either as an NP or as a PP. Language-specifically, & may occur. If one language, such as Hausa (6a), prefers I&I, the XP is realized as a PP; whereas another language, such as Yapese (6b), does not prefer I&I, this XP is realized as an NP.

Aissen (1989) argues that the VCC is just the pro-drop version of the PPC. Her argument is based on the assumption that VCCs and PPCs share certain properties. First, VCCs and PPCs have an inherent restriction that one of the conjuncts must be a personal pronoun, since VCCs contain comitatives which are linked only to pronominal subjects and PPCs are by definition headed by personal pronouns. Second, the form of the adjunct in the VCC is generally the same as the form of the adjunct in the PPC. However, Lega, like Hausa, has VCCs but no corresponding PPCs from which VVCs may be derived. As a consequence, it is not adequate to posit simply that the VCC is derived from the PPC. Therefore, we will treat the two structures as separate structures, following a proposal in Schwartz (1989b).

2. Coordinate and comitative structures in Lega

Lega, like the languages mentioned above, exhibits asymmetric coordination. In Lega, there are three ways of coordinating NPs, of which asymmetric coordination is syntactically similar to symmetric coordination and to a comitative construction; all involve the presence of the free morpheme I&I occurring before an NP. Strikingly, however, the free morpheme I&I is realized differently according to construction type: as *no* in symmetric coordination, but as *na* in asymmetric coordination and comitative constructions.

In symmetric coordination, the two NPs are conjoined by *no*, which has essentially the same properties as 'and' does in English, and a plural verbal morpheme is used in the verbal complex, as illustrated by the examples in (8).

(8) a. *Zoola nw-inne to-ko-rabang-a.*[3]
    Zoola &-1S   1P-PR-walk-FV

    'Zoola and I are walking.'

  b. *Zoola no-ogwe mo-ko-romek-a   gamodzi.*
    Zoola &-2S   2P-PR-work-FV together

    'Zoola and you (SG) are working together.'

  c. *Amisi no Zoola be-ko-ko-kary-a.*
    Amisi & Zoola 3P-PR-2S-help-FV

    'Amisi and Zoola are helping you.'

Lega also has a comitative construction formed with *na*, which functions as an adjunct-phrase. The comitative phrase generally appears near the end of the sentence; it cannot contribute to plural agreement of the verb. That is, the singular verbal morpheme is employed in the verbal complex, as shown in (9). Subject-verb agreement is determined only by the nominative NP. Thus, in (9c), a singular verbal agreement prefix is required due to the fact that the nominative NP, *Amisi*, is singular.

(9) a. *ŋ-ko-rabang-a   na Zoola.*
    1S-PR-walk-FV & Zoola

    'I am walking with Zoola.'

  b. *O-ko-romek-a   gamodzi na Zoola.*
    2S-PR-work-FV together & Zoola

    'You (SG) are working together with Zoola.'

  c. *Amisi   a-ko-ko-kary-a   na Zoola.*
    Amisi 3S-PR-2S-help-FV & Zoola

    'Amisi is helping you with Zoola.'

Asymmetric coordination is illustrated by the examples in (10). The verb requires a plural subject prefix and is followed by an adjunct NP preceded by *na*, as noted previously for comitative constructions (9). Even though in (10c) the *na*-phrase does not form a constituent with the nominative NP, *Zoola*, the *na*-phrase is semantically associated with the NP. This

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[3] /o/ of *no-inna* becomes [w] by a phonological rule of glide formation, which states that non-low vowels change into glides before another vowel.

interpretation, therefore, strongly implies that it must function as something other than just a comitative adjunct.

(10) a. *To-ko-rabang-a na Zoola.*
      1P-PR-walk-FV & Zoola

      'Zoola and I are walking/ We and Zoola .....'[4]

   b. *Mo-ko-romek-a gamodzi na Zoola.*
      2P-PR-work-FV together & Zoola

      'You (SG) and Zoola are working together / You (PL) and Zoola ....'

   c. *Bɛ-ko-ko-kary-a na Zoola.*
      3P-PR-2S-help-FV & Zoola

      'He and Zoola are helping you/ They and Zoola .... '

   d. *Amisi bɛ-ko-ko-kary-a na Zoola.*
      Amisi 3P-PR-2S-help-FV & Zoola

      'Amisi and Zoola are helping you.'

As mentioned previously, languages which express thematic coordination in asymmetric coordinate structures can be divided into two groups, those having PPCs and those having VCCs. There is clearly a structural correspondence between PPCs and VCCs in that the pronominal information in both cases encodes the plurality of the thematic relation. In the case of PPC languages, this pronominal information is found in the coordinate NP; for example, in Mokilese (11), *you*, which is thematically, but not syntactically, independent, is absorbed into the NP. In VCC languages interpretation of thematic coordination depends not on information coded in an NP; rather, it depends crucially on plural information encoded in the verb phrase. Like Hausa and Yapese, Lega is a language characterized by VCCs, but VCCs only. The examples in (12) show that *I*, unlike the case of Mokilese, cannot be encoded in a plural pronoun (12a), but rather only in a plural verbal pronominal prefix (12b).

(11) Mokilese (repeated from (4)): Dual Interpretation

   [NP*Kamwa Davy*] *inla duhdu.*
      2DU   Davy   go swim

   'You (SG) and Davy went swimming.'

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[4] These constructions can mean either that two people participate in the event or that more than two participate in the event. Here, however, we focus only on the interpretation in which only two participants are realized in a sentence. Henceforth, we will ignore the interpretation of more than two participants in the event, realized syntactically with the plural pronoun and an NP.

(12) Lega

    a. *Iswɛ,   to-ko-gyɛk-a   idya   na mw-ana w-anɛ.*
       2P-IND 1P-PR-cook-FV 5-food & 1-child 1-1Poss

       'We and my child are cooking food.'
       *'My child and I are cooking food.'

    b. *To-ko-gyɛk-a   idya   na mw-ana w-anɛ.*
       1P-PR-cook-FV 5-food & 1-child 1-1Poss

       'My child and I are cooking food.'

3. Differences between asymemetric and symmetric coordination in Lega

Symmetric and asymmetric coordination differ syntactically in Lega in three significant ways. First, even though in both symmetric and asymmetric coordination the verb agreement prefix is plural, the coordinated NPs in symmetric coordination form a continous constituent coordinated through use of the connector *no* (13a), while in asymmetric coordination, they are not only discontinuous, but coordinated through use of *na* (13b).

(13) a. *Zoola no Amisi bɛ-ko-kar-an-y-a.*
       Zoola & Amisi 3P-PR-help-REC-AP-FV

       'Zoola and Amisi are helping each other.'

    b. *Zoolabɛ-ko-kar-an-y-a   na Amisi.*
       Zoola 3P-PR-help-REC-AP-FV & Amisi

       'Zoola and Amisi are helping each other.'

Second, there are differences in restrictions on the order of coordinated NPs, a condition which we will label "interchangeability". In symmetric coordination, there are no restrictions on the order of constituents, as illustrated in (14). That is, coordinated nouns or coordinated noun and pronoun may occur in any order.

(14) a. *Amisi no-ogwɛ mo-ko-konz-a belaro.*
       Amisi &-2 S   2P-PR-buy-FV 8-shoe

       'Amisi and you (SG) are buying shoes.'

    b. *Ogwɛ no Amisi mo-ko-konz-a belaro.*
       2SG   & Amisi 2P-PR-buy-FV 8-shoe

       'You (SG) and Amisi are buying shoes.'

The same is not true of coordinated elements in asymmetric coordination; noun and pronoun are not interchangeable, especially in cases where one of the elements is the first or second person pronoun, as illustrated in (15)-(16). The first and second person singular pronouns,

which refer to speech act participants, cannot occur in the *na*-phrase of an asymmetric coordination, nor can they occur even as a subject, as seen in (15b) and (16b). Third person pronouns, however, can occur in the *na*-phrase, as illustrated in (17a), even though they still cannot occur as a subject (17b). First and second person are encoded only in the plural subject prefix on the verb (15c)-(16c).

(15) a. **Mw-ana w-anɛ to-ko-gyɛk-a idya na-nnɛ.*
　　　　1-child　1-1Poss 1P-PR-cook-FV food &-1S.Poss

　　　　'My child and I are cooking food.'

　b. **Nnɛ to-ko-gyɛk-a idya mw-ana w-anɛ.*
　　　　1S　1P-PR-cook-FV food 1-child　1-1S.Poss

　　　　'My child and I are cooking food.'

　c. *To-ko-gyɛk-a idya na mw-ana w-anɛ.*
　　　　1P-PR-cook-FV food & 1-child　1-1S.Poss

　　　　'My child and I are cooking food.'

(16) a. **Zoola mo-ko-rɛnd-a na-ogwɛ.*
　　　　Zoola 2P-PR-talk-FV &-2S

　　　　'You (SG) and Zoola are talking.'

　b. **Ogwɛ mo-ko-rɛnd-a na Zoola*
　　　　2S　2P-PR-talk-FV & Zoola

　　　　'You (SG) and Zoola are talking.'

　c. *Mo-ko-rɛnd-a na Zoola*
　　　　2P-PR-talk-FV & Zoola

　　　　'You (SG) and Zoola are talking.'

(17) a. *Zoola bɛ-ko-kar-an-y-a　　　　na-agɛ.*
　　　　Zoola 3P-PR-help-REC-APP-FV &-3S

　　　　'He and Zoola are helping each other.'

　b. **Gwɛ bɛ-ko-kar-an-y-a　　　　na Zoola*
　　　　3S　3P-PR-help-REC-APP-FV & Zoola

　　　　'S/he and Zoola are helping each other.'

　c. *Bɛ-ko-kar-an-y-a　　　　na Zoola*
　　　　3P-PR-help-RCP-APP-FV & Zoola

　　　　'He and Zoola are helping each other.'

These examples exhibit what Schwartz (1988b) calls the "Person Hierarchy Effect constraint". Under this constraint, the person feature of subject NPs should be either higher or

the same as the person feature of comitative phrases, 1> 2 > 3. Following Ladusaw (1989), we propose that in Lega the *na*-phrase is a modifier which provides additional information about the subject's reference, thus entailing plural marking on the verb. The interpretation that the referent of the adjunct must be included in the reference of the nominatives also requires the Person Hierarchy Effect, due to the meaning of the subject prefix. Second person morphemes refer to a group which contains the hearer but excludes the speaker while third person morphemes exclude both the speaker and the hearer. Hence, a construction with a second person prefix could not have a first person adjunct, nor could a construction with a third person have either a first or second person adjunct.

In sum, we have shown that asymmetric coordination differs from symmetric coordination in three important ways: (1) it involves a discontinuous agreement controller, (2) it utilizes the connector *na* rather than *no*, and (3) it does not permit interchangeability of coordinate noun and pronoun. Consequenly, we must conclude that they differ in underlying syntactic structure.

4. Differences between asymmetric coordination and comitative constructions

Asymmetric coordination differs from the comitative construction in six significant ways. First, in spite of the fact that the subject NP and its *na*-phrase adjunct do not form a single continuous constituent, they, nevertheless, control agreement, as illustrated in (18a), while only the subject NP, without the *na*-adjunct, does so in a comitative construction (18b).

(18) a. *Amisi bɛ-ko-ko-kary-a na Zoola*
Amisi 3P-PR-2S-help-FV & Zoola

'Amisi and Zoola are helping you.'

b. *Amisi a-ko-ko-kary-a na Zoola*
Amisi 3S-PR-2S-help-FV & Zoola

'Amisi himself is helping you with Zoola.'

This difference in agreement control is also found when adverbial clauses are present. With an adverbial "when" clause, indicated by prefixal *ga-*, in asymmetric coordination the *na*-phrase adjunct is involved in the determination of verb agreement in both the matrix and adverbial clause, as in (19b). In the comitative construction, only the subject NP controls agreement (19c). If the *na*-phrase were a VP-adjunct in (19b) as it is in (19c), there would be no explanation for the observed difference in control. Hence, they must be considered structurally different.

(19) a. *Zoola nw-innɛ tw-a-bɛzag-ilɛ tw-a-korw-a   ga-rw-a-bas-ilɛ.*
Zoola &-1P   1P-PST-be-PF 1P-PST-be tired-FV when-1P-PST-arrive-PF

'Zoola and I were tired when we arrived.'

b. *Tw-a-bɛzag-ile tw-a-korw-a   ga-rw-a-bas-ile   na Zoola.*
   1P-PST-be-PF 1P-PST-be tired-FV when-1P-PST-arrive-PF & Zoola

   'Zoola and I were tired when we arrived.'

c. *n-a-bɛzag-ile n-a-korw-a   ga-n-a-bas-ile   na Zoola.*
   1S-PST-be-PF 3S-PST-be tired-FV when-1S-PST-arrive-PF & Zoola

   'I was tired when I arrived with Zoola.'

A second difference between asymmetric and comitative constructions is found in the use of the reciprocal suffix *-an-*. This suffix requires a plural verbal morpheme, as in the symmetric coordination, *Amisi no Zoola*, in (20). An asymmetric coordinate structure involving reciprocal *-an-*, like a symmetric one, always requires two participants in the event as subjects, as shown in (21). The comitative construction, on the other hand, cannot occur with reciprocal *-an-* when there is only a singlular NP subject, as the ungrammatical form in (20) demonstrates. That is, an asymmetric coordination acts like a single grammatical element in that the *na*-phrase is interpreted as part of the set which functions as the agreement controller.

(20)   *Amisi no Zoola bɛ-ko-kar-an-a.*
       Amisi & Zoola 3P-PR-work for-REC-FV

       'Amisi and Zoola are working for each other.'

(21)   *Amisi bɛ-ko-kar-an-a   na Zoola.*
       Amisi 3P-PR-wait for-REC-FV & Zoola

       'Amisi and Zoola are working for each other.'

(22)   **Amisi a-ko-kar-an-a   na Zoola.*
       Amisi 3S-PR-work for-REC-FV & Zoola

       *'Amisi is working for each other with Zoola.'

Third, location of a *na*-phrase when an object is present in a sentence shows that the *na*-phrase of an asymmetric coordination and that of a comitative construction differ in distributional restrictions. Simple symmetric coordination involving an verbal object is shown in (23). In both asymmetric coordination and comitative constructions, the *na*-phrase can occur following the object (24a)-(25a). However, only in asymmetric coordination can the *na*-phrase precede the object (24b); as a VP-adjunct in a comitative construction, the *na*-phrase must appear at the end of the clause, otherwise it is ungrammatical (25b).

(23)   *Zoola no Lokolo ba-(a)-li-(i)le   idya.*
       Zoola & Lokolo 3P-NEG-PST-eat-PF food

       'Zoola and Lokolo didn't eat the food.'

(24) a. *Zoola ba-(a)-li-(i)le   idya na Lokolo*
         Zoola 3P-NEG-PST-eat-PF food & Lokolo

         'Zoola and Lokolo didn't eat the food.'

     b. *Zoola ba-(a)-li-(i)le   na Lokolo idya.*
         Zoola 3P-NEG-PST-eat-PF & Lokolo food

         'Zoola and Lokolo didn't eat the food.'

(25) a. *Zoola a-(a)-li-(i)le   idya na Lokolo.*
         Zoola 3S-NEG-PST-eat-PF food & Lokolo

         'Zoola didn't eat the food with Lokolo.'

     b. **Zoola a-(a)-li-(i)le   na Lokolo idya.*
         Zoola 3S-NEG-PST-eat-PF & Lokolo food

         'Zoola didn't eat the food with Lokolo.'

This observation differs from the claim made in Schwartz (1988b) in which she states that
the [& NP] of asymmetric coordination has the same distribution as that of the adjunct [& NP]
of comitatives. As the data show, this is not the case in Lega. It is not clear to us why this
should be the case.

A fourth dissimilarity can be found in selectional restrictions, which provide further
evidence for the distinct status of the *na*-phrase of asymmetric coordination. In terms of
selectional restrictions—semantic or pragmatic restrictions on the choice of expressions within a
given category which can occupy a given sentence-position—the verb *kw-ɛndɛla* 'to go', for
example, requires animate subjects (26). The sentence in (26b) is odd because the subject,
kelongɛ, is inanimate. This restriction holds even when an animate subject occurs in
coordination with an inanimate (27).

(26) a. *N-end-ile   kw-isoko.*
         1S-PST-go-PF LOC-market

         'I went to the market.'

     b. *?Ke-longɛ ky-ɛnd-ile   kw-isoko.*
         7-gun   7-PST-go-PF LOC-market

         ?'The gun went to the market.'

(27)   *??Ke-longɛ nw-inne tw-ɛnd-ile   kw-isoko.*
         7-gun   &-1S   1P-PST-go-PF LOC-market

         ??'The gun and I went to the market.'

Since our claim is that the *na*-phrase of asymmetric coordination functions as part of the
argument (subject) to which selectional restrictions apply, while the *na*-phrase adjunct of

comitative constructions does not, we expect to find inanimate nouns in asymmetric coordination ungrammatical. The sentence in (28a) indicates that this is, indeed, the case. In contradistinction to the asymmetric coordinate structure, the comitative structure in (28b), in which the inanimate noun of the *na*-phrase adjunct is not an argument, is grammatically satisfactory.

(28) a. ??*Tw-ɛnd-ilɛ   kw-isoko   na ke-loŋge.*
    1P-PST-go-PF LOC-market & 7-gun

    ??'I and a gun went to the market.'

   b. *N-end-ilɛ   kw-isoko   na ke-loŋge.*
    1S-PST-go-PF LOC-market & 7-gun

    'I went to the market with a gun.'

In Lega, only the surface subject can be the antecedent of an emphatic reflexive (29). A fifth difference between asymmetric coordination and comitatives, then, is found in the ability of the NP and *na*-phrase to antecede an emphatic reflexive pronoun. In (30), it is clear that the reflexive has both the subject NP and the *na*-phrase as its antecedent; the ungrammatical examples in (31) demonstrate that the antecedent must be the subject NP and *na*-phrase. In comitative constructions (32)-(33), only the singular reflexive form is possible, reflecting the fact that the subject is singular and does not include the *na*-phrase. These antecedent-reflexive facts cannot be explained unless the NP and *na*-phrase of asymmetric coordination have the status of unitary grammatical relations, whereas the NP and *na*-phrase of comitative constructions do not. If the *na*-phrase of asymmetric coordination were a VP-adjunct, there would be no way for the PP to serve as part of the reflexive antecedent.

(29) a. *ŋ-ko-ko-kary-a   n-inɛnɛ.*
    1S-PR-2S-help-FV 1S-oneself

    'I, myself, am helping you.'

   b. *Amisi a-ko-ko-kary-a   gw-inɛnɛ.*
    Amisi 3S-PR-2S-help-FV 3S-oneself

    'Amisi, himself, is helping you.'

(30) a. *To-ko-ko-kary-a   bisw-inɛnɛ na Zoola.*
    1P-PR-2S-help-FV 1P-oneself   & Zoola

    'Zoola and I, ourselves, are helping you.'

   b. *Amisi be-ko-ko-kary-a   b-inɛnɛ   na Zoola.*
    Amisi 3P-PR-2S-help-FV 3P-oneself & Zoola

    'Amisi and Zoola themselves are helping you.'

(31) a. *To-ko-ko-kary-a   n-inɛnɛ   na Zoola.
     1P-PR-2S-help-FV 1S-oneself & Zoola

   'Zoola and I, myself, are helping you.'

   b. *Amisi be-ko-ko-kary-a   gw-inɛnɛ na Zoola.
      Amisi 3P-PR-2S-help-FV 3S-oneself & Zoola

   'Amisi and Zoola, herself, are helping you.'

(32) a. ŋ-ko-ko-kary-a   n-inɛnɛ   na Zoola.
     1S-PR-2S-help-FV 1S-oneself & Zoola

   'I, myself, am helping you with Zoola.'

   b. Amisi a-ko-ko-kary-a   gw-inɛnɛ na Zoola.
      Amisi 3S-PR-2S-help-FV 3S-oneself & Zoola

   'Amisi, himself, is helping you with Zoola.'

(33) a. *ŋ-ko-ko-kary-a   bisw-inɛnɛ na Zoola.
      1S-PR-2S-help-FV 1P-oneself & Zoola

   'I, ourselves, am helping you with Zoola.'

   b. *Amisi a-ko-ko-kary-a   b-inɛnɛ   na Zoola.
      Amisi 3S-PR-2S-help-FV 3P-oneself & Zoola

   'Amisi, themselves, is helping you with Zoola.'

A final difference to be noted is in omissibility of the *na*-phrase. In asymmetric coordination, the *na*-phrase is not omissable if the subject would then be singular (34)-(35). In comitative constructions, on the other hand, the *na* phrase is optional because it is simply a VP-adjunct (as evidenced by singular agreement on the verb).

(34) a. Amisi be-ko-ṛabang-a na Zoola.
      Amisi 3P-PR-walk-FV & Zoola

   'Amisi and Zoola are walking.'

   b. *Amisi be-ko-rabang-a.
      Amisi 3P-PR-walk-FV

   'Amisi and he/she/? are walking.'

(35) a. Mwana w-anɛ   be-ko-ṛend-a   na Zoola.
      1-child 1-1S.Poss 3P-PR-talk-FV & Zoola

   'My child and Zoola are talking .'

   b. *Mwana w-anɛ   be-ko-romɛk-a.
      1-child 1-1S.POSS 3P-PR-work-FV

   'My child and s/he? are working.'

(36) a. *Amisi ε-ko-rabang-a* (*na Zoola*).
   Amisi 3S-PR-walk-FV (& Zoola)

   'Amisi is walking (with Zoola).'

   b. *Mwana w-anε* *ε-ko-romek-a* (*na Zoola*).
   1-child 1-1S.Poss 3S-PR-work-FV (& Zoola)

   'My child is working (with Zoola).'

In sum, we have identified six ways in which asymmetric coordination differs from comitative constructions: (1) control of verb agreement, (2) co-occurrence with the reciprocal suffix-*an*-, (3) location of *na*-phrase with respect to an object of the verb, (4) separate selectional restrictions, (5) ability to antecede reflexives, and (6) omissibility of the *na*-phrase. Given these differences and those noted in the previous section, it becomes clear that asymmetric coordination in Lega does not superficially involve a single coordinate constituent. However, it behaves as if it has the status of a unitary grammatical relation. In section 5, we offer a syntactic analysis, in section 6 a semantic analysis, of each of the three constructions.

5. A syntactic analysis of coordinate and comitative structures

To explain the status of asymmetric coordination in Lega, we adopt the structural configuration of a comitative phrase as in (37), taken from Schwartz (1989a). The comitative phrase, i.e, the *na*-phrase in Lega, of asymmetric coordination is semantically connected with a plural argument internal to the head of the phrase to which it belongs. Based on the definition in (37), an IP tree-structure is proposed in (38). (SPEC in this configuration can be an NP, an independent pronoun, or pro. It triggers number agreement in INFL.)

(37) Given the configuration $[_X [_{X'} ...AGR [PL]], ...na NP]$, optionally absorb the features of NP into the feature set specified in AGR [PL].

(38) $[_{IP} SPEC [_{I'} [_{INFL} [_V ....]]]]$

Given this IP tree-structure, we propose an appropriate structural configuration for each construction, in (39) for symmetric coordination and comitative constructions, in (40) for asymmetric coordination. The dependent pronominal element corresponding to the subject is part of INFL, which contains tense/aspect and the pronominal subject argument. AGR stands for the pronominal elements.

(39) a. Symmetric Coordination

   $[_{IP} SPEC [_{I'} [_{INFL} TENSE/ASPECT, AGR] [_{V'} [V]]]]$

   b. Comitative Construction

   $[_{IP} SPEC [_{I'} [_{INFL} TENSE/ASPECT, AGR] [_V [V] ...... na NP]]]$

For asymmetric coordination, we propose a different syntactic structure, in which the *na*-phrase lies outside of *I'* in (40). In this structure, it is assumed that the comitative *na*-phrase contains the co-referential NP, which triggers number agreement, as an adjunct of IP. As a result, an NP of the comitative phrase controls agreement in conjunction with the subject NP.
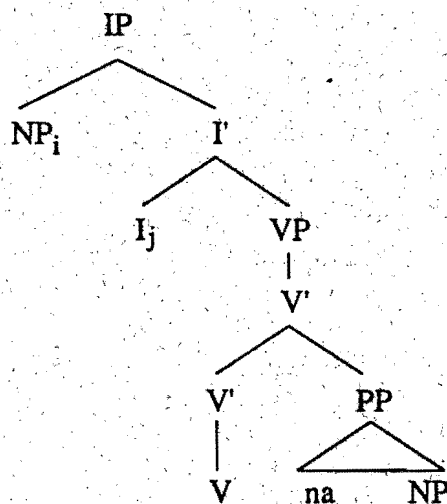
(40)   Asymmetric Coordination

$[_{IP}[_{IP}$ SPEC $[_{I'} [_{INFL}$TENSE/ASPECT, AGR] $[_V$ [V]]]]..... na NP]

Trees of each of the three constructions—symmetric, comitative, and asymmetric constructions—are presented in (41).
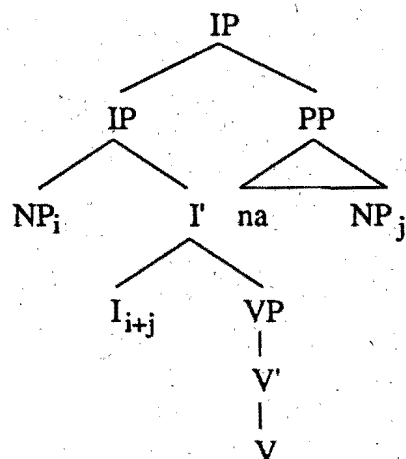
(41) a. Symmetric Coordination
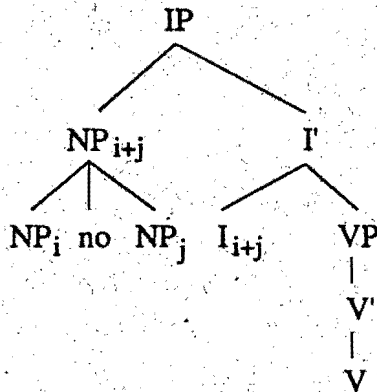
b. Comitative Structure

c. Asymmetric Coordination

```
                        IP
                     /      \
                  IP          PP
                 /  \        /  \
              NP_i    I'    na    NP_j
                     /  \
                 I_{i+j}  VP
                          |
                          V'
                          |
                          V
```
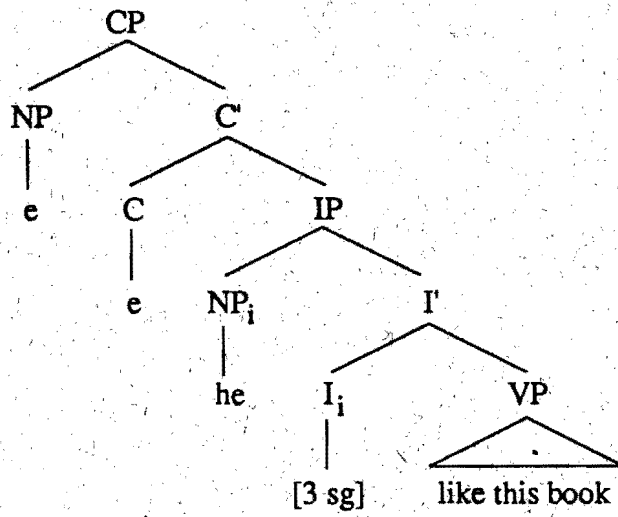
Black (1993) accounts for asymmetric coordination in terms of subject adjunct movement, which is also called conjunct union by Aissen (1988). However, in Lega, if conjunct movement were adopted, alternations of the connector *&* remain unexplained, because the connector *&* has two different realizations: *no* in symmetric coordination and *na* in asymmetric coordination and comitatives. For that reason, we posit that Lega has different constructions for each of the three different constructions.
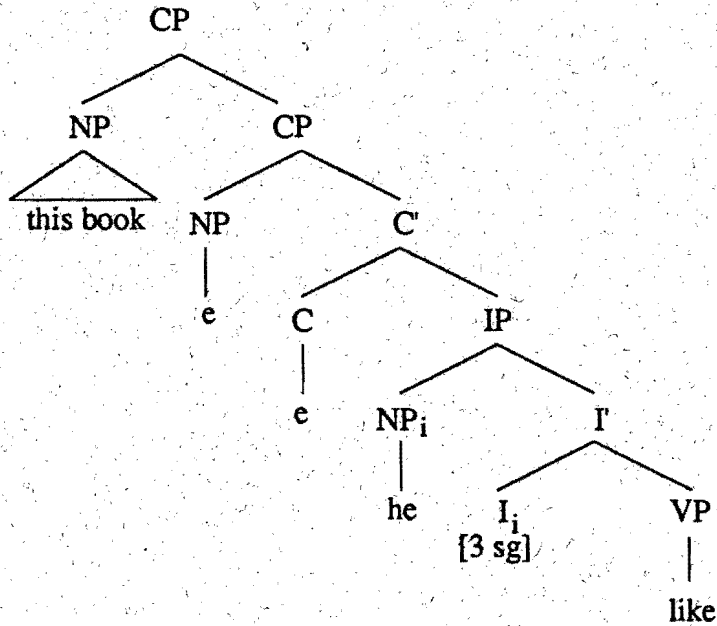
Given the tree structures in (41), we posit that agreement be subject to a Tree-structure Hierarchy as illustrated in (42). If there is a construction in which the verb agrees with a node within an IP, then any higher nodes than it within an IP also trigger agreement. Specifically, an NP which occurs higher than an IP in the tree structure cannot trigger agreement. This is shown in (42b), where verbs agree with subjects in English, but not with topics. It is assumed that topics in English are adjuncts of CP, which is located outside of that IP which immediately dominates a subject. This point is illustrated by the contrast between (42a) and its topicalized counterpart (42b). In (42b), the topicalized NP is not within an IP; therefore, it is excluded in subject-verb agreement. In contrast to (42), asymmetric coordination in Lega (41c) shows an NP in the comitative *na*-phrase that is licensed to control agreement, since it is at the same level as the subject NP, and is also within an IP. In a simple comitative structure (41b), however, an NP of the *na*-phrase lies within an IP, but is lower than the subject NP; therefore, it is not licensed to control agreement.

The Tree-structure Hierarchy exactly predicts the Case Hierarchy proposed by Croft (1988) —Subject < Direct Object < Indirect Object < Oblique. That is, if a language requires verb agreement with an indirect object, it is expected that it will also permit agreement with a subject and a direct object. If a verb agrees with only a subject NP, then the verb only agrees with NPs

(42) a. He likes this book.

```
                 CP
          ┌──────┴──────┐
         NP             C'
          │        ┌─────┴─────┐
          e        C          IP
                   │      ┌────┴────┐
                   e    NPᵢ         I'
                         │      ┌───┴───┐
                        he     Iᵢ      VP
                                │       △
                             [3 sg]  like this book
```

b. This book, he likes.

```
                 CP
          ┌──────┴──────┐
         NP            CP
          △        ┌────┴────┐
      this book   NP        C'
                   │    ┌────┴────┐
                   e    C        IP
                        │    ┌────┴────┐
                        e  NPᵢ        I'
                            │     ┌────┴────┐
                           he    Iᵢ        VP
                              [3 sg]        │
                                           like
```

which are the upper or equal nodes of the subject NP within an IP in the tree structure.
Therefore, as in (41c), an NP in a *na*-phrase agrees with the verb since the NP is located at the
same level as the subject NP. In addition, if a verb agrees with an object, the verb should agree
with a subject NP as proposed by Croft. In this case, the verb agrees with NPs which are the
upper or equal nodes of the subject NP in terms of subject-verb agreement, and also with NPs
which are the upper or the equal node of the object NP in terms of object-verb agreement.

However, what should be considered here is that NPs which already agree with the verb in subject-verb agreement are excluded in object-verb agreement.

6. Semantic analysis

In addition to syntactic structure, we propose that in Lega, semantics also plays an important role in agreement. The connector & of asymmetric coordination has a lexical specification under the condition that the head of a projection to which it is syntactically linked contains a plural AGR. Therefore, the features of the NP in the *na*-phrase are absorbed into the features of a plural argument dependent on the head of a projection (Schwartz 1989a). In Lega, the *na*-phrase of asymmetric coordination shares in the thematic role of the plural AGR and behaves as a member of the argument. In symmetric coordination, on the other hand, the *no*-phrase shares the thematic role of the subject NP of an argument position. Hence, we propose that the difference between the two forms of coordination also results from different semantic constructions. Following McNally (1993), we propose that the structure of asymmetric coordination semantically denotes a group that has the person feature of the head and the number feature of the group. In other words, the denotation of asymmetric coordination is a group, i.e., the adding of a further specification to the information structure of the set of participants occupying an argument position, whereas the denotation of symmetric coordinations is a sum, i.e., the adding together of individuals to form a set in an argument. The examples in (46)-(47) illustrate these different notions of "group" and "sum". In symmetric coordination (46), other people apart from the praticipants named—*Amisi* and *Zoola* and *Lokolo*—can participate in the event of buying shoes. Therefore, the total number of participants may be more than those identified, two in (a), three in (b). The subject participants coordinated with *no* are simply added together with no requirement of feature compatibility (Schwartz 1989a).

(46) a. *Amisi no Zoola bɛ-ko-konz-a   belaro*
Amisi & Zoola 3P-PR-buying-FV 8-shoes

'Amisi and Zoola are buying shoes,'

b. *Amisi no Zoola no Lokolo bɛ-ko-konz-a   belaro*
Amisi & Zoola & Lokolo 3P-PR-buying-FV 8-shoes

'Amisi, Zoola, and Lokolo are buying shoes.'

In asymmetric coordination (47), the members specified in the subject and in the *na*-phrase are the only participants, i.e., *Amisi* and *Zoola* are the only participants of the event in (a), *Amisi, Zoola* and Lokolo in (b). Hence, they are characterized by the notion "group". Thus, the

total number of participants is determined by the number specified, two in (a), three in (b).[5] In sum, the value for number agreement in symmetric and asymmetric coordination is semantically determined by its denotation.

(47) a. *Amisi be-ko-konz-a   belaro na Zoola.*
         Amisi 3P-PR-cook-FV 8-shoes & Zoola

         'Amisi and Zoola are buying shoes.'

     b. *Amisi be-ko-konz-a   belaro   na Zoola no Lokolo.*
         Amisi 3P-PR-cook-FV 8-shoes & Zoola & Lokolo

         'Amisi, Zoola, and Lokolo are buying shoes.'

The difference between asymmetric coordination and a comitative construction can also be analyzed in terms of semantics. In the comitative construction, unlike the asymmetric one, only the subject, *Amisi* in (48), for example, may be performing the action of buying shoes; the individual referred to in the comitative *na*-phrase may not be involved as an agent. In other words, there may be only one participant involved in carrying out the event. In asymmetric coordination, however, the individual referred to in the *na*-phrase must be involved as an agent.

(48) *Amisi a-ko-konz-a   belaro na Zoola.*
      Amisi 3S-PR-cook-FV 8-shoes & Zoola

      'Amisi is buying shoes with Zoola.'

We assume that semantics and syntax interact closely in asymmetric coordination. An NP marked by *na* in a non-argument position is interpreted as a member of any pragmatic clause in which a thematic role is available for the argument of the *na*-phrase. Only an NP outside of *I'* can convey group interpretation; therefore it may trigger plurality of the verbal complex.

7. Conclusion

In this paper, we have investigated the phenomenon of asymmetric coordination in Lega, differentiating it from similar constructions found in symmetric coordination and in comitative constructions. Of the two types of asymmetric coordination noted cross-linguistically—Verb Coded Coordination and Plural Pronoun Construction—Lega has been shown to be a VCC language, as have other African languages, such as Hausa, that have been described in the literature.

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[5] In this paper, we do not account for the following example.
         Amisi no Zoola bo-ko-konz-a   belaro   na Lokolo
         Amisi & Zoola 3P-PR-buying-FV 8-shoes & Lokolo
         'Amisi, Zoola, and Lokolo are buying shoes.'
For our informant, since two NPs are coordinated in the subject, the verbal morpheme is always plural regardless of whether the *na*-phrase controls agreement or not. Thus, she interpreted this sentence as characterized by only symmetric coordination.

As in symmetric coordination, the coordinated NPs in asymmetric coordination govern verb agreement. However, unlike the case in symmetric coordination, the coordinated NPs do not form a single syntactic constituent, are not interchangeable when one is a pronoun, nor are they coordinated in Lega by the same connector. Furthermore, not only do the two types of coordination differ syntactically, they also differ semantically; asymmetric coordination denotes a "group", symmetric coordination a "sum".

Asymmetrically coordinated structures superficially resemble comitative structures; both include prepositional *na*-phrase adjuncts. However, they differ significantly in the syntactic structure associated with the PP. In asymmetric coordination, we have proposed that the PP is an adjunct of IP, while in comitatives it is an adjunct of VP. Specifically, *na* is specified as a syntactic element under the condition that the head of a projection to which it is syntactically linked contains a plural AGR. The comitative *na*-phrase, then, shares in the thematic role of the plural AGR and functions as part of this argument in control structures. The different properties of the two structures fall out from this syntactic distinction.

Asymmetric coordination appears to be a typologically widespread phenomenon, yet relatively little work has been done in this area; much remains to be investigated, particularly in African languages that exhibit this phenomenon. One particular area of concern is semantic: what are the semantic properties of asymmetric coordination? In this paper, we have only begun to investigate this issue, but we suspect that answers to this question will be of significant interest to syntacticians and semanticists alike.