

The Construction Label Project: a tool for typological study

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Abstract

During the past year colleagues at the Universities of Ghana and Leiden and at the Norwegian Technical University (Trondheim) have been developing a system for labeling structures in such a way as to facilitate and enhance comparison of structures within and between languages.¹ In principle the system is universal, but it is also very specific, giving a fairly detailed encoding of language-specific syntactic and semantic features. The project has been developed so far using mainly material from Norwegian and from Ghanaian languages especially Kwa.

The paper will present and explain the general principles on which the descriptive labels are put together. It will then demonstrate the application of the tool with a preliminary discussion of constructions having the global semantic feature PROPERTY – or, constructions through which a property is attributed to an entity. Property constructions in Ga are described, followed by remarks on the typological relations revealed with other languages of the area.

1. Introduction

The main purpose of this paper is to introduce a tool that is currently being developed for arriving at precise but also concise descriptions of constructions, that some of us believe has a lot of potential for typology and typological comparison. We hope that some of you will be interested in participating, because obviously, such a system is most useful if data has been prepared in this format for many languages, thereby building up a database as a resource for comparison. A website for this purpose is currently in development at NTNU (Trondheim), where constructions and annotated example sentences can be entered for general consultation and use (www.typecraft.org).

The aim of the system is to devise descriptive labels that include both syntactical and semantic information, in order to facilitate detailed and precise typological comparison. It is intended that it should be valid both for the comparison of related languages or languages within the same contact area that can be expected to have a lot in common, and also for

¹ Developers of this version of the project currently include beside the present author, Lars Hellan of NTNU Trondheim, Felix Ameka of the University of Leiden, and Paul Agbedor, Yvonne Agbetsoamedo, Nana Ama Agyeman, Nana Aba Amfo, George Akanlig-Pare, Evershed Amuzu, Clement Appah, Maxwell Lamptey, Apenteng Sackey, James Saanchi, Elias Williams, Eric Ziem, Akua Agyei-Owusu, all of the University of Ghana.

comparison among less similar languages. The system is a tool for answering two very basic questions about languages, whether they are related or not: How do they express similar ideas syntactically, and are apparently similar syntactic constructions used for the same expressive purposes?

The scheme is intended to be theory neutral, although it is informed by such formal grammatical theories as HPSG and LFG, and the computation systems that implement grammars based on them. The terms used in the syntactic component of the label are essentially generative, but the semantic terminology is not. Tentatively, we suggest using the terms listed on FrameNet, but we have not yet done so consistently.²

2. The Construction Label

The label is built in two basic parts, a syntactic part followed by a semantic part. The most comprehensive part of the label is a semantic characterization of the whole construction, or label for the SITUATION TYPE, which is placed at the end of the label. It consists of five positions or slots, separated by hyphens. Moving from left to right, they are:

- (1) part of speech of the head of the construction (with diathesis information eg. passive where this applies)
- (2) valency, or specification of transitivity
- (3) specification of dependents, eg. comments on the syntactic and referential properties of the subject and objects
- (4) participant roles of the arguments
- (5) Situation Type, or global semantic interpretation.

2.1 The Syntactic Label

The contents of the first three slots constitute the syntactic part of the label. In building up the label, the syntactic component is on the left, the semantic on the right. The first slot, the left-most element, identifies the global syntactic type of the construction, ie. the part of speech of its head. In the majority of cases this will be “v” for verb, but many languages have clause constructions without a verb. For example in Ga there are presentative constructions headed by a particle, with no verb, and these will take a suitable label eg. “prt” for particle.

Assuming that the head is a verb, the second slot gives the necessary information on its valency. This is separated from the first slot with a hyphen, and has abbreviations such as “intr” for intransitive, “tr” for transitive, “ditr” for ditransitive. (Note that this specifies what obtains in the particular construction, not the generalized capability of the particular verb.) For the languages we have been working on it has also been found useful to indicate when the

² I am very much obliged to Lars Hellan and Felix Ameka for comments, criticisms and corrections concerning construction of the labels, and to Akua Agyei-Owusu for corrections and suggestions concerning the Ga data. All remaining shortcomings are of course my own responsibility.

verb, although intransitive, nevertheless requires a complement. In simple cases this is an adverb or an adjective, and is indicated thus:

- v-intrAdj construction headed by an intransitive verb that takes an adjective complement
- v-intrAdv construction headed by an intransitive verb that takes an adverb complement.

It could also be specified as having a prepositional phrase complement, a clause complement, etc. using a similar notation.

Sometimes this is all that needs to be specified about the syntactic structure. So far we have considered only SVO languages, where it can be assumed that an intransitive verb has a Subject, that the subject will precede it, and that a transitive verb will have a subject preceding it and an object following. In a ditransitive construction the order of the objects is indicated by the order of their roles in the semantic part of the label, as will be seen. However many languages are not SVO. We can take account of this by giving the head not simply as *v*, but as *vI* for “verb initial”, *vL* for “verb last”, or *vM* for “verb medial”. Normally, however, it seems best to stipulate the normal word order for the language outside the label, and only use these annotations when a construction involves an order that is not the normal one for that language. Otherwise there may be a lot of redundancy.

Another feature that can be encoded is the fact that some verbs have no lexical meaning without a specific object, or their lexical meaning is radically changed by the object. For this we use the concept of unification: the verb and the object (or subject) unify to produce a semantic category. In the following example, a PERCEPTION construction, the Ga verb *bo* does not mean “listen” except in the presence of *toi* “ear” as its object. The underline means that the information all belongs to the same “slot”, the second, that gives information about the head of the whole construction.

1 v-tr_unifobj

Ga: wò-bò tòi We listened
 1P-V ear

Sometimes it is necessary to further specify the syntactic structure of the subject or an object, and then the syntactic label needs a third component. In many of the Ghanaian languages examined, for example, the subject or the object or both is headed by a postposition. For example in Ga there is a PROPERTY construction in which the head of the subject is a postposition, and the entity to which the property is being attributed appears as the specifier of the postposition. This is shown as follows: (The postposition *mli* means literally “inside”, so that the sentence literally means “Tetty’s inside cooled”.)

2 v-intr-subjPostp

Ga: Tèté mli jò Tetty is kind.
 T. POSTP be.cool

The next example (which is not a PROPERTY construction) has a postposition as head of its object. The literal meaning of the postposition **nɔ̃** is “surface; on”.

3 v-tr-objPostp

Ga: **Kɔ̃fɪ tɛ̀ yàra nɔ̃** Kofi went to the funeral.
 K. went funeral POSTP

Yet another complication is that sometimes there must be identity of reference between two parts. In 4, the object has identical reference to the specifier of the postposition that heads the subject. The underline joins the comment on the subject to that on the object (showing that we are still in the same slot). The whole indicates that the construction is headed by a transitive verb, with a subject headed by a postposition and an object (*ℓ*) that has identical reference to the specifier (*e*) of the subject head (the postposition *hɛ*, “self”).

4 v-tr-subjPostp_objIDsubjSpec

Ga: **È- hɛ ɲɔ̃ lɛ̀** he is ticklish.
 3S₁ POSTP taste 3S₁

If a language, or at least a construction, has an OSV constituent order, this could also be shown using the third slot:

5 vL-tr-obj_subj

Many languages have a construction in which the verb head of the construction is not the semantically salient verb. The semantic “main” verb follows the head verb in a non-finite form, and is preceded, not followed, by its object. Often this is a kind of nominalization, as in the Ga expression

6 v-tr-objvLNom_ subjIDobjSubj

Ga: **È- bɔ̃ɪ̀ àmɛ̀ bɪ̀!mɔ̃** He began asking them.
 3S begin 3P ask-NOM

The label means that the verb, which is transitive and medial, takes an object that consists of a verb-last nominalization, and the subject of the head verb is identical with the subject of its object (the nominalized verb).

In Dangme and Ewe (among other languages, but not Ga) a comparable construction is used to express a number of non-perfective meanings, but the verb plus its preceding object is not strictly a nominalization, at least as nominalization is usually understood (Ameka and Dakubu (2008) suggest that it is a nominalization that does not constitute an NP). This is a difficult structure to generalize. One suggestion is the following. The finite verb is intransitive, but it takes a complement consisting of a verb-last nominalized verb. This verb in turn has an object that has identical reference to the specifier of the subject of the head verb.

(The latter is not a feature of all prospective constructions, but a feature of this particular subordinate verb.) “Aprosp” means that the (main) verb heads an analytic prospective construction. The sentence in 7 is more complicated than 6 because not only is the subject of the finite verb identical with the subject of the nominalized verb, but the subject is headed by a postposition, and its specifier has the same reference as object of the nominalized verb.

7 v_Aprosp-intrComp-subjIDcompSubj_compvLtrProspNom_subjSpecIDcompObj-

Dangme: **Í hēm̄ nē m̀ yú-ē** I am dizzy.

1S face be.at 1S black-PROSP

That is, the head of the analytic prospective construction in 7 is transitive, its subject is headed by a postposition which is also the subject of its object, the object is a verb-last transitive prospective-nominalized verb, and the specifier of the subject (**I**), is identical in reference with the the specifier of the object, its notional object, **mi**.

Many more complications could be introduced, but I hope the foregoing is sufficient to give the general idea of how the syntactic part of the label is constructed, and its inherent flexibility.³

2.2 The Semantic Label

This part of the label indicates the nature of the semantic relations among the constituents. It largely uses the standard argument type terms, but some additional specifications are found to be necessary. The last (rightmost) part of the label in most cases provides the global semantic feature or situation type, and we put it in capital letters.

We assume that the order in which the semantic features of each argument are given will match the order of their syntactic expression. Thus in the following example of a Ga MOTION construction it is not explicitly stated whether it is the subject or the object that is the ag(ent-)mover, because since it is given first it is automatically the subject. This is something that may have to be revised as we add languages with different word orders,⁴ but since all the languages dealt with currently are SVO we let it stand. Note that the two semantic roles are joined with an underline, while the Situation Type is joined to the rest with a hyphen.

8 v-tr-agmover_endpt-MOTION

Ga: **Kòfí bà bílé** Kofi came here.

K. come here

³ Hellan (2008) gives a list of all the specifications required to build a label (or as he terms it template) for Norwegian. We are not yet in a position to give such a list for Ga. It is certain to be very different from the Norwegian list, except for the most basic specifications on the left such as ‘v-tr’.

⁴ In that event the syntactic part of 8 could be more explicitly labelled as follows: v-tr-subjAgmover_objEndpt-MOTION.

Similarly, it is not necessary to indicate explicitly that the postpositional phrase expresses the endpoint argument in the following:’

9 v-tr-objPostp-agmover_endpt-MOTION

Ga: **Kòff tèè yàrà nǔ** Kofi went to the funeral
K. go funeral POSTP

In ditransitive constructions the order of the roles reflects the order of the objects, so it is not necessary (so far) to specify “first” and “second” or “direct” and “indirect” object:

10 v-ditr-ag_ben_th-TRANSFER

Ga: **È- há mì shíká** She gave me money
3S give 1S money

However in a ditransitive construction with a unified object, it seems necessary to specify which object the verb unifies with. We do this with a number reflecting the linear left-to-right order. In the EXPERIENCE construction that follows, the rightmost object is the one that unifies with the verb. We term it a “materializer” because its semantic function is to materialize the meaning.

11 v-ditr_unifobj2-agsens_ben_materialzr-EXPER

Ga: **Ò-nǎ lè mǒbò** You pitied him.
2S see 3S pity

The same is displayed in the following PERCEPTION construction. Notice that it differs from the foregoing only in its Situation Type, indicating that such differences in meaning can depend entirely on the lexical choice of the head of the construction, ie. the verb, despite its lack of “lexical” meaning.

12 v-ditr_unifobj2-agsens_ben_materialzr-PERCPT

Ga: **Wò bò lè tǒí** We listened to him.
1P V 3S ear

In constructions in which a transitive verb takes a clause complement, the clause complement is usually treated as a thematic situation. In the following PERCEPTION construction the verb is transitive with an object consisting of a declarative clause introduced by a complementizer, the subject is the senser, and the object clause beginning in **akɛ** is the thematic situation.

13 v-tr_objDECLcomp-sens_thSit-PERCPT

Ga: **Mí-nǎ á!ké è- yè jé!mé** I saw that he was there.
1S see COMP 3S be.at there

This is also true of constructions with a nominalized VP as complement, such as 6 above, which is completed below:

14 v-tr-objvLNom_subjIDobjSubj-ag_thSit-INCHOATION⁵

Ga: È-bôî àmè bí-!mó He began asking them.
3S begin 3P ask-NOM

The analytic prospective construction of 7 is completed in 15:

15 v_Aprosp-intrComp-subjIDcompSubj_compvLtrProspNom_subjSpecIDcompObj-
locus_exper-EXPERIENCE

Dangme: Í hēm ñē m̀ yú-ē I am dizzy
1S face be.at 1S black-PROSP

These labels can be rather confusing to read. The use of capital letters to mark the beginning of a modifying term in a label is an attempt to improve readability, and the standardization of the order of terms should also help. For discussion purposes we can also break them up, for example:

- (9) FRAME: v-tr-objpostp-
ROLES: agmover_endpt-
SIT.TYPE: MOTION
- (12) FRAME: v-ditr_unifobj2-
ROLES: agsens_ben_materialzr-
SIT.TYPE: EXPER
- (13) FRAME: v-tr-
ROLES: sens_thSit-
SIT-TYPE: PERCPT
- (15) FRAME: v_Aprosp-tr-subjIDobjSubj_objvLtrProspNom_
SECONDARY FRAME: subjSpecIDobjObj-
ROLES: locus_exper-
SIT.TYPE: EXPER

The system can also be extended to serial verb constructions. So far we have been interested in labelling the type of SVC that constitutes a single clause: both verbs have the same subjects, and the objects are distributed so that the total number of objects does not exceed those permitted in a single clause, and no role is repeated. In Ga, some SVCs of this type have a pronominal subject agreement prefix on the second verb. A construction of this type is shown in 16. Note that the head is indicated as sv, since the verbs count as joint heads of the construction. Since each verb also heads its own phrase, I call this a “superframe”. The elements common to both verbs are indicated in the frame for the first. The subjects have identical reference, indicated by ‘subjID’, and the fact that a pronominal element is required

⁵ Note that the role of the object of the nominalized verb is not given. This is because it depends entirely on the properties head by the nominalized verb *bi*, and has nothing to do with the construction headed by *bɔi*. For similar reasons labeling of the Situation Type reflects the semantics of the head verb, not the complement.

on the second verb is indicated by the label ‘subjIDpro’. They also have identical aspect marking. In this particular case the direct objects also have identical reference, but since the direct object of the second verb is not expressed, and this is the normal situation in this language, it is specified as ‘objID’ but not ‘objIDpron’, ie. no pronoun represents this object for the second verb. Specifications for the two verbs are separated by a double hyphen --.

16 sv-vtr-subjIDpro_aspID_objID-ag_th--vditr-ag_endpnt-PLACEMENT

SUPERFRAME: sv-

FRAME1: vtr-subjIDpro_aspID_objID-

ROLES: ag_th--

FRAME2: vditr-

ROLES: ag_th_endpt

SITUATION.TYPE: PLACEMENT

Ga: **Hĩĩ !lé !tsí mì àmè-gbèé !shí**
men DEF push 1S 3P-fell down

The men pushed me down.

An SVC similar to 16 except that no subject agreement element is required on the second verb is exemplified from Dangme below (17). In this case the first verb is intransitive. Since the role of the identical subject does not change, its role could perhaps be omitted after the second verb, but it is easier to keep track of the various elements if it is included. Also, there may well be constructions in which the role of the subject is different.

17 sv-vintr-subjID_aspID-th--vtr-th_endpt-EXPER

SUPERFRAME: sv-

FRAME1: vintr-subjID_aspID-

ROLES: th-

FRAME2: vtr-

ROLES: th_endpt-

SIT.TYPE: EXPER

Dangme: **Hwényū ɔ̄ ηḍ-ɔ̄ há-á mì**
soup DEF taste-HAB give-HAB 1S

The soup tastes good to me.

3. Expression of the feature PROPERTY in Ga

In this section Ga constructions that express the attribution of a property to an entity are discussed. The purpose is to extend the discussion of how the descriptive labels are constructed, and to show how they can be useful. The point is not that they solve any problems as such, but that, since they give a systematic and complete account of the head of the construction and its arguments, in the process of constructing and comparing them the investigator notices significant details in the typology of constructions that might otherwise go

unnoticed. It also forces us to think more carefully about the semantics of the situations expressed, and the relation for a given language between semantics and syntax.

3.1 Attribute Verbs

In the Ga language, several properties are attributed by means of an intransitive verb that in itself expresses the property. Some enter into simple constructions in which the subject is a bare NP and the verb occurs in the simple or Aorist aspect, which is essentially timeless, although the default interpretation is past.

18 v-intr-th-PROPTY

- | | | | |
|---|--|---|--|
| a | Té lè wà
stone the is.hard
The stone is hard. | b | Wó!nú lè ɲòɔ̃
soup the is.tasty
The soup is good. |
| c | Tó lè dà
bottle the big
The bottle is big. | d | Àmè-hĩ
3P-be.good
They are good. |

There are very similar expressions in which the verb is not in the Aorist, but Perfect or Habitual. This raises the problem of whether such cases are actually examples of a Property construction, or of some kind of event construction. Note however that these expressions are the normal linguistic strategy for attributing the property in question – in some cases a predicative adjective also exists, but its use has other implications.

- 19 a **Àtádé !lé é!-gbí**
dress DEF PERF-dry
The dress is dry; the dress has dried.
- b **Wó!nú !lé é-dò**
soup DEF PERF-hot
The soup is hot; the soup has become hot.
- c **Àmádàá é-tsù**
plantain PERF-red
The plantain is ripe; the plantain has turned red.
- d **Gbé!ké !lé é-dà**
child DEF PERF-grow
The child is big; the child has grown.
- e **Wó!nú !lé é-bè**
soup DEF PERF-ready
The soup is ready, cooked.

f **Mí-bí !lé é!-bé**
 1S.POSS-child DEF PERF-ready
 My child is smart.

Note that in the examples in 19, in each case the property is not a generic one, and indeed a past time in which it did not apply is implied. The Aorist expressions in 18 seem to be neutral in this regard. However for some verbs there is a contrast between an aorist expression meaning to acquire the property, and a perfect expression meaning to have it, as in the pairs of examples in 20.

20 a	È-dí	but	b	É!-dí
	3S-black			3S.PERF-black
	It became black.			It is black.
c	È-hí!nméí tsù	d	È-hí!nméí é-tsù	
	3S.POSS-eye red		3S.POSS-eye PERF-red	
	He became angry.		He is angry.	

When an attribute verb is used in the progressive aspect we also have a dynamic situation, in which the property is viewed as developing, see 21:

21 **Wòlò mù-yé**
 book PROG-white
 The book is turning white.

If the aspect is Habitual, on the other hand, it seems to indicate that the property is a generic attribute of the thing in question, see especially 22a.

22 a **Lá tsù-ò**
 blood red-HAB
 Blood is red.
 b **È-yé-ò**
 3S-white-HAB
 It is white.

I propose that use of an attribute verb in any aspect other than the aorist is to be taken as attributive not simply of a property but of a dynamic property, or in the case of the Habitual of a generic property. This can be reflected in the label by specifying the aspect in the third syntax slot and making the situation type more explicit. Thus for 19 and 21:

v-intr-PERF-th-PROPTY_DYN, v-intr-PROG-th-PROPTY_DYN

and for 22: v-intr-HAB-th-PROPTY_GEN.

Note that 20 c/d is a metaphor, and that the property attributed is literally redness, although in combination with “eye” it serves to attribute the property of being angry. This could be captured in a label like the following:

v-intr_unifsubj-subjSpec-poss-PROPTY

FRAME: v-intr_unifsubj-subjSpecPoss-
 ROLE: poss-
 SIT.TYPE: PROPTY.

This would mean that the verb and its subject (in this case **hiɲmei**) unify, so that together they attribute the property of being angry to the specifier of the subject, in this case its possessor (e). However there are problems with this, and in general it seems more useful for the label to describe the actual syntactic structure, while recognizing that the interpretation can deviate from the literal.

Regardless of aspect, an attribute verb can be completed by an adjective with the same lexical meaning as the verb, which serves to intensify the meaning. All the examples in 23 are in the Perfect aspect, hence the label PROPTY_DYN. Example 24 is distinguished by having an expletive or non-argument subject.⁶

v-intrAdj-th-PROPTY_DYN

23 a **Má!ŋó !lé é-tsù hèlùù**
 mango DEF PERF-red red

The mango is ripe, red.

b **É-dò klàklà**

3S.PERF-hot hot

It is very hot.

c **É-dà wàmàà**

3S.PERF-grow large

He has grown big.

v-intrAdj-subjNrg-PROPTY_DYN

24 **É-jò wúróúú**
 3S.PERF-cool cool

The weather is cool, calm: it (place) is quiet.

Quite often the subject of an attributive verb is a postpositional phrase. In a general way these expressions are clearly locative, the property being attributed to a locus, represented by the postposition, on an including entity. In Ga the including entity in a postpositional phrase is always possessive, and can be human or not. Aspect varies in the same way as in the examples above. The postpositions in 25 are underlined and given their approximate English glosses.

25 v-intr-subjPostp-locus-PROPTY

FRAME: v-intr-subjPostp-

ROLE: locus-

SIT.TYPE: PROPTY

⁶ “Non-argument subject” means that the subject has no semantic role.

a È-mî jò
3S-inside be.cool
She is kind.

b È-hîè jò
his-front be.cool
He is peaceful.

25 v-intr-subjPostp_PERF-locus-PROPTY_DYN

FRAME: v-intr-subjPostp_PERF-

ROLE: locus-

SIT.TYPE: PROPTY_DYN

a È-hè é-jò
3S.Poss-self PERF-cool
It [non-empty] is cool.

b Màmá lè hè é-jò
cloth DEF self PERF-worn
The cloth is worn out

c È-mî é-!fú
3S.POSS-inside PERF-swell
He is angry.

d Kòó lè mî é-jò tɪ̀nkòŋŋ
forest DEF inside PERF-quiet silent
The forest is dead quiet.

26 v-intr-subjPostp_HAB-locus-PROPTY_GEN

FRAME: v-intr-subjPostp_HAB-

ROLE: locus-

SIT.TYPE: PROPTY_GEN

Ìshó lè mî jò-ò
sea DEF inside cool-HAB
The sea is cool.

27 v-intr-subjPostpSpecPossp-locus-PWspecPossp-PROPTY

FRAME: v-intr-subjPostpSpecPossp-

ROLE: locus-pwBPspectPossp-

SIT.TYPE: PROPTY

È-tsùí nǎà wà
3SPoss-heart edge be.hard

His heart's edge is hard, ie. He is brave.

In 27, not only is the subject headed by a postposition, but the specifier of the postposition (**naa**) is a possessive NP, in which the possessum, a Body Part (“heart”) is part of the

possessor (in a Part-Whole relationship with it). It is that possessor to whom the property is ultimately attributed.

3.2 Predicative Adjective without a verb

Another very common strategy of property attribution in Ga is to simply juxtapose an adjective to the noun signifying the entity to which the property is attributed. However the expression is distinct from a noun-adjective NP because most if not all such adjectives are not used to modify a noun in an NP. In all the 18 examples collected the property was predicated of a body part belonging to the ultimate possessor, so it seems necessary to specify in the label that the subject is a body part, although it is not yet certain whether this is a rule. Many of them are insults, or at least unflattering, but not all. This is a case where the head of the construction is not a verb.

28 adj-subjPossp-pwBP-PROPTY

È-nànè	tábótábó	È-nàà	dókóbíí
3SPoss-leg	flat-footed	3SPoss-mouth	sweet
He is flat-footed.		She talks sweetly.	
È-kùè	tálíí	Ó-dáàṅ	fékè
3SPoss-neck	short	2SPoss-mouth	gap-toothed
He has a short neck.		You are gap-toothed.	
È-nàà	grógró	È-hè	tótóì lèkètèlèkètèè
3SPoss-mouth	talkative	3SPoss-self	scales broad
She is garrulous.		Its (fish's) scales are very broad.	
È-yíté!ṅ	kpátákpátá		
3SPoss-head	bald		
He is bald.			

3.3 Verb plus predicative adjective, adverb or noun

Two verbs commonly take a predicative adjective as their complement to attribute a property to their subject: **yè** “have; be at” and **feè** “do; make”. Neither is a copula verb, but **yè** is defective: it occurs only in the aorist and in an irregular habitual form **yóo**, which does not seem to occur in Property constructions, and has a suppletive negative form **bé**. **Fèè** on the other hand is fully conjugated.

Unlike what was found with attributive verbs, the subject is not generally headed by a postposition. Sometimes it may appear that it is, in an expression like 29a:

29 a v-intrAdj-th_mann-PROPTY⁷

È-nàà yè bléblé

3S-mouth be.at voluble

He is talkative out of turn.

b v-intrAdv-th_mann-PROPTY

È-yè díńń

3S-be.at quietly

He is quiet-mannered.

but in fact the property is being attributed to the head of the subject, here “mouth”, which in this particular instance is not a postposition. Note that the semantic type of the adjective is included in the Roles slot.

In general a particular adjective can be used with only one of these verbs, but it is difficult to see a firm principle underlying use with one rather than the other. However, although attributions with **feê** do not invariably refer to behaviour, it seems that process, behaviour or activity is usually implied, which is not the case when **yè** is used. As with the attributive verbs, the habitual aspect is used for generic properties, as the contrast within the pair between 30a and 30b shows. It should be noted however that in 30a the complement is an adverb, not an adjective.

30 v-intrAdv-ag_mann-PROPTY_DYN

a **É-feé díńń**

3S.PERF-do quietly

He is quiet (now).

v-intrAdj-ag_mann-PROPTY_GEN

b **È-fé-ð díoo**

3S-do-HAB quiet

He is quiet-mannered.

The complement of **feê** or **yè** can be a noun, as in 31. In 31a and d the object is an abstraction, but the subjects have different roles, arising from the different semantics of the verbs, while in 31c the object is a locus. Note that in 31b the subject is headed by a postposition, which is relatively unusual with **ye**.

31 a v-tr-poss_thAbst-PROPTY

FRAME: v-tr-

ROLES: poss_thAbst-

SIT.TYPE: PROPTY

È-yè hèwàlè

3S-have health

He is healthy.

⁷ An alternative syntactic label is proposed below.

b v-tr-subjPostp-locus_thAbst-PROPTY

FRAME: v-tr-subjPostp-

ROLES: locus_thAbst-

SIT.TYPE: PROPTY

È-hè yè fěó

3S-self have beauty

She is beautiful.

c v-tr-th_locus-PROPTY

FRAME: v-tr-

ROLES: th_locus-

SIT.TYPE: PROPTY

Sǎné lè yè mlĩ

matter DEF have inside

The story is true.

d v-tr-ag_th-PROPTY_GEN

FRAME: v-tr-

ROLES: ag_th-

SIT.TYPE: PROPTY_GEN

È-fé-ò hējó

3S-do-HAB laziness

He is lazy.

There is also a series of property attribution expressions headed by **yè** or its suppletive negative **bé** in which the object is a body part of the subject, with no postpositions. Since both the meaning and the syntax seem to be related to this fact the object is marked as a Body Part. The construction is exemplified in 32.

32 v-tr-poss_thBP-PROPTY

FRAME: v-tr-

ROLES: poss_thBP

SIT.TYPE: PROPTY

a **È-yè tsùí**

3S-have heart

He is patient.

b **È-yè yí!tsó**

3S-have head

She is clever.

c **È-bé nǐnè**

3S-not.have hand

She is busy.

d È-bé kùè
 3S-not.have neck
 She is eager.

As suggested above, the label for constructions with **yè** followed by an adjective complement needs revision. Intuitively, the adjective predicates the property of the subject. Further, the verb **yè** is inherently locative, and can occur intransitively with no complement to mean “exist in the world”, in an utterance like **Nyɔŋmɔ yè** “God exists”. A more satisfactory account of the construction recognizes the verb as intransitive and the adjective as a secondary predicate. In other words, an entity is said to exist, and to exist with a particular property. In 33 we give a revised template for 29a (repeated as 33f), with some additional examples. Since the information that there is a secondary predicate consisting of an adjective is related to the transitivity of the verb, it is included in slot 2 joined to the stipulation “intransitive” with an underline.

33 v-intr_secpredAdj-th-PROPTY

a È-yè blèdò 3S-be.at slow. It is slow.	d Nítsú!mó lè yè mlèdò work DEF be.at easy The work is easy.
b Shìkpó!h lè yè flòndòò ground DEF be.at soggy The ground is soggy.	e È-jàrà yè méléó 3S-selling be.at moderate Her prices are reasonable.
c È-yè míálóó 3S-be.at sickly He's sickly-looking.	f È-nàà yè bléblé 3S-mouth be.at voluble He is talkative out of turn.

Property attributions using **fèé** are analyzed in the same way. Example 34d, which unlike the other examples in 34 is not Perfect, attributes a property (non-dynamic) with respect to another entity. This seems to be a case of a secondary predicate, again consisting of an adjective, that has an oblique locative complement (the postpositional phrase). We can label it the type a DIRECTED PROPERTY.

34 v-intr_secpredAdj-th-PROPTY_DYN

a È-nànè é-fèé bòhkuu
3S-leg PERF-do huge
His leg is huge.

b Gbé !lé é-fèé búibúi
road DEF PERF-do holey
The road is full of potholes.

c **É-fèé** **dámádámá**

3S.PERF-do slim

He is very slim.

v-intr_secpredAdj-secpredOblPostp-th_loc-PROPTY_DIR

d **Àtádé lè** **fèé** **pápíi yè** **è-hè**

dress DEF do tight be.at 3SPoss-self

The dress is tight on her.

3.4 Other kinds of expressions

Determining which situation types are distinctive and relevant to the language, as well as cross-linguistically, is not always easy. For example, emotional states might seem at first to be properties, but they are clearly semantically different. For one thing, there is always a subjective element of judgement that is not at least in principle present in property attributions. In Ga they are interesting because although they share several characteristics with property attributions, such as frequent use of postpositions in the syntax and body parts in the semantics, at the present state of the research they seem to be clearly differentiated lexically, in the referential identity relations between subject and object, and in the participant roles. Here I call the situation type PSYCHOLOGICAL STATE. Another possibility is EMOTION. In 35a, the object is a possessive phrase (**e-tsui**), and the subject (**Kofi**) is identical in reference with the possessive specifier (**e**) of the object. In 35b, both subject and object (which in this case is a postposition) are possessive NPs, the body part is in the subject, not the object, and the specifiers (possessors) of the two NPs are identical. In 35c on the other hand the verb is intransitive, but the subject is again a possessive body part phrase. In all of them the possessor of the body part is the entity in the psychological state.⁸

35a v-tr-objPossp-subjIDobjSpec-ag_affBP-PSYCH.STATE

FRAME: v-tr-objPossp-subjIDobjSpec-

ROLES: ag_affBP-

SIT.TYPE: PSYCH.STATE

Kòfi mǐ̀-ye **è-tsùí**

K. PROG-eat 3SPoss-heart

Kofi is worried.

35b v-tr-subjPosspSpecIDobjSpec_objPostp-thBP_endpt-PSYCH.STATE

FRAME: v-tr-subjPosspSpecIDobjSpec_objPostp-

ROLES: thBP_endpt-

SIT.TYPE: PSYCH.STATE

⁸ The role ‘aff’ in 35a means ‘affected’.

È-mîî é-shè è-hè

3SPoss-throat PERF-arrive 3SPoss-self

He is happy.

35c v-intr-subjPossp-agBP-PSYCH.STATE

FRAME: v-intr-subjPossp-

ROLE: agBP-

SIT.TYPE: PSYCH.STATE

Mí-hiê mɛ̃

1SPoss-face stay

I was happy.

4. Ga and other languages

The account of Ga property attribution constructions given above may not be exhaustive, but I believe it is reasonably comprehensive. When we compare what is found in Ga with what occurs in Dangme, its only close relative, the available constructions seem (not surprisingly) to be much the same. Although the data available for other languages of the area is more limited, it seems that the same general uniformity holds.

It seems that all the languages of the area have intransitive attribute verbs, and that most of them also can take an adjective complement with the same or similar semantics. Most languages also use a verb meaning “do, make” or “have, be at” with a predicate adjective or a noun. Most languages deploy names of body parts in one way or another, and Akan has a construction with a series of expressions literally meaning “have a particular body part” which closely parallels what is found in Ga (32). A construction in Ewe that has not so far been found in Ga has a body part subject that has no possessor in its own NP, but only in the specifier (**dɛví-a**) of the postposition object (**si**), ie. is part of it:

36 v-tr-subjPARTOFspecObj_objPostp-thBP_locus-PROPTY

FRAME: v-tr-subjPARTOFspecObj_objPostp-

ROLES: thBP_locus-

SIT.TYPE: PROPTY

Ewe: **Dzi le** **dɛví-a** **sí**

heart be.at:PRES child-DEF hand

The child is brave.

Again as we might expect, the differences are greater between the southern, Kwa languages and the northern, Gur languages. Gur languages also have intransitive attribute verbs, for example:

36 v-intr-th-PROPTY

Buli: **Tan ni pagra**
stone DEF be.hard The stone is hard

Dagaare: **A zeere noma la**
DEF soup be.good AFFM The soup is good.

Kusaal: **Kuga la kwem**
stone DEF be.hard The stone is hard.

Zere la ma
soup DEF good The soup is good.

However, although the use of a copula verb is notably absent from the southern languages, where the verbs used to introduce a predicate adjective or noun are quite different from the copula verb(s) of identity, Gur languages have verbs that do not mean “do”, “make”, “have”, or “be at a place”, but occur with an adjective to attribute a property, much more like English “is”.⁹

31¹⁰ v_copAdj-th-PROPTY

Dagaare: **A kuuri e la kpěēŋaa**
DEF stone be AFFM hard
The stone is hard.

Gurene: **Kutaale de la sabelega**
coaltar be AFFM black
Coaltar is black.

Là ànì sùǰá
it be good
It is good.

Kusaal: **Gbana la ε sablug**
book DEF be black
The book is black.

5. Conclusion

In this paper I have outlined how a detailed but concise label for a construction taking account of the syntax and semantics of its argument structure can be built up. I have also attempted to demonstrate the value of this exercise in studying constructions from a particular angle, in this case from the angle of property attribution, within one language and then comparing that language with others.

Less directly, one thing that I believe this study has done is to reinforce our understanding that the English translation is a very bad guide to the nature of a construction. Almost all

⁹ Ga does have a copula verb, but it is used only in IDENTITY constructions, never PROPERTY.

¹⁰ Dagaare, Gurene and Kusaal are all Oti-Volta Central Gur languages.

English property attributions use a construction based on the verb “to be” plus an adjective, or sometimes a noun. This is far from being the case in Kwa languages. I think the tendency to depend on English to identify property constructions in the first place, to which I plead guilty, is a major source of the difficulty in determining what is a property construction and what kind of differences exist among them.

We have also raised questions as to what can be considered a property construction, in view of the disparity in many cases between the underlying semantics of the components and the eventual interpretation. Work on this matter is still on-going. Perhaps the alternative label given for examples 20c, d belongs to another, more strictly semantic or metaphorical level of analysis. I hope however that I have demonstrated the power of this system to raise questions that need to be answered.

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