AFFECTED ARGUMENTS CROSS-LINGUISTICALLY

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ABSTRACT

We argue that affected arguments, common cross-linguistically, are introduced by a syntactic head Aff(ect). Possible variation in the height of the attachment of this head as well as its (non-)assertive content explain language variation. We focus on Albanian and Japanese, with some remarks on Hebrew.

1. Introduction

Many languages allow sentences to include an NP that is not selected by the verb. This NP is optional and is interpreted as affected in some way by the verbal event. An Albanian example is given below, where the affected NP is marked with dative case.[1]

1. Agim-i   **i**-a   theu   [vazon   e   Ben-it]   **Dritan-it**.
    Agim-Nom   **3S.Dat**-3S.Acc   broke   [vase.Acc   AD   Ben-Gen]   **Dritan-Dat**
    'Agim broke Ben's vase on Dritan.'
    = 'Agim broke Ben's vase, and this matters to Dritan (negatively or positively[2]).'

In this paper, we propose a semantic and syntactic analysis of affected arguments that is able to account for cross-linguistic variation in their syntax and semantics based on two parameters of variation. First, the affected argument may be introduced at different places in the syntactic structure (attachment height), and second, languages may vary in how much of the semantics is included in the assertive content. In our analysis, the affected argument is introduced by a syntactic head, whose semantic contribution consists of part assertion, part presupposition. We contend that languages can vary in how much of the semantics is assertion and how much presupposition, with syntactic consequences following from the choice.

2. Background: Event Semantics

In the event semantics we assume, verbs are understood as properties of events, and they may take an internal argument. As an example, the denotation of the verb *hit* is as shown in (2).

2. $[\![hit]\!] = \lambda x.\lambda e.\ hit(e)\&Thm(e,x)$

Following Kratzer (1996), we assume that external arguments are not arguments of the verb, but are introduced by a higher functional head, Voice:

3. $[\![Voice]\!] = \lambda x.\lambda e.\ Agt(e,x)$

VP and Voice combine via Event Identification, as follows:

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4. $f_{<s,t>}$ $g_{<e,st>}$ → $h_{<e,st>}$
   $\lambda e.\ f(e)$ $\lambda x.\lambda e.\ g(x)(e)$ $\lambda x.\lambda e.\ g(x)(e)\&f(e)$

5. Sachi hit Karthik.

VoiceP   → $\lambda e.\ hit(e)\ \&\ Agt(e,Sachi)\ \&\ Thm(e,Karthik)$

Sachi   Voice'   → $\lambda x.\ \lambda e.\ hit(e)\ \&\ Agt(e,x)\ \&\ Thm(e,Karthik)$

Event Identification →

Voice   VP   → $\lambda e.\ hit(e)\ \&\ Thm(e,Karthik)$
$\lambda x.\lambda e.\ Agt(e,x)$

hit   Karthik
$\lambda x.\lambda e.\ hit(e)\ \&\ Thm(e,x)$
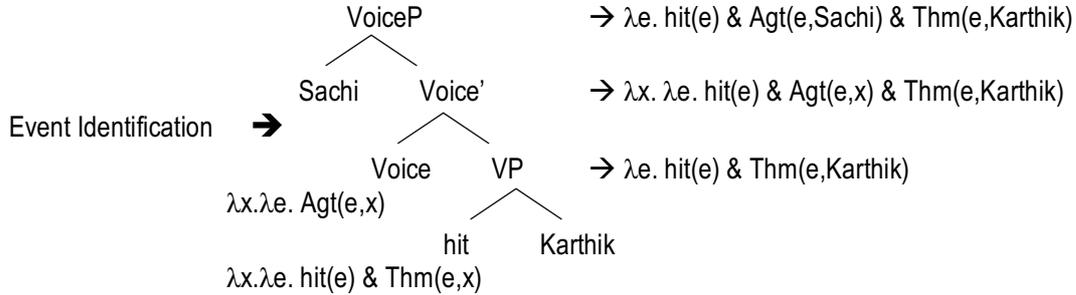
Thus, VoiceP denotes a set of hitting events whose agent is Sachi and whose theme is Karthik. This is the desired denotation of *Sachi hit Karthik*, ignoring tense and other higher functional elements.
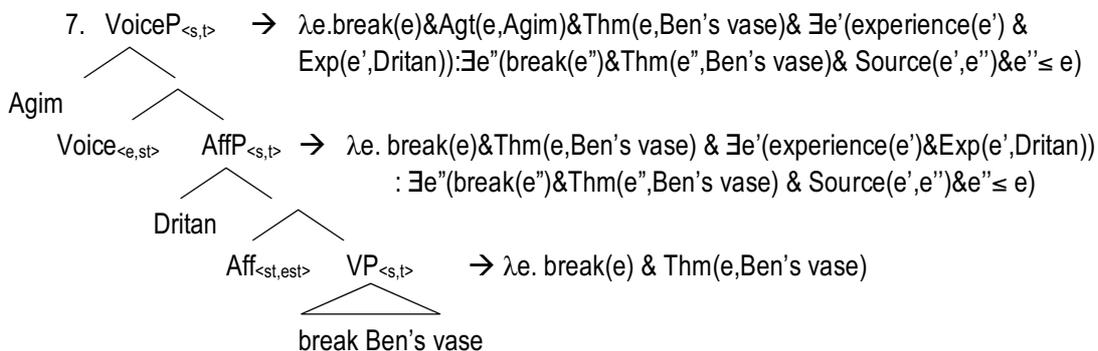
3. Analysis

We claim that the affected argument is introduced by a syntactic head *Aff(ect)*. This head does three things: (i) it is an identify function, passing up the predicate of events denoted by its sister; (ii) it introduces another event, namely a semantically bleached *experiencing* event, and takes an argument that is the *experiencer* of this event; (iii) and it introduces a presupposition that the *source* of the experience is the event denoted by its sister.

6. $[\![Aff]\!]= \lambda P_{<s,t>}.\lambda x.\lambda e.\ P(e)\&\exists e'(experience(e')\&Exp(e',x)) : \exists e''(P(e'')\&Source(e',e'')\&e''\leq e)$

The material to the right of the colon is the presupposition/conventional implicature.[3] What is presupposed is an event e'' that is identical to or a subpart of the event of the VP ($e''\leq e$), and this event is the source of the experiencing event e'. Thus, the experiencer of the event e' is in his/her cognitive state because of *e''*.

3.1. Albanian

Here, we show how Aff yields the desired interpretation of the Albanian sentence in (1). Aff is merged below the Voice head in Albanian (we motivate this below). Therefore, the derivation of (1) proceeds as shown in (7).

7. $VoiceP_{<s,t>}$ → $\lambda e.break(e)\&Agt(e,Agim)\&Thm(e,Ben's\ vase)\&\ \exists e'(experience(e')\ \&$
                $Exp(e',Dritan)):\exists e''(break(e'')\&Thm(e'',Ben's\ vase)\&\ Source(e',e'')\&e''\leq e)$

Agim

Voice$_{<e,st>}$ $AffP_{<s,t>}$ → $\lambda e.\ break(e)\&Thm(e,Ben's\ vase)\ \&\ \exists e'(experience(e')\&Exp(e',Dritan))$
                       $: \exists e''(break(e'')\&Thm(e'',Ben's\ vase)\ \&\ Source(e',e'')\&e''\leq e)$

Dritan

$Aff_{<st,est>}$ $VP_{<s,t>}$ → $\lambda e.\ break(e)\ \&\ Thm(e,Ben's\ vase)$

break Ben's vase

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[3] It is not clear whether it is a presupposition or a conventional implicature, or whether those are two different things. All that matters here is that it is not part of the assertion.

Thus, the VoiceP denotes a set of breaking events whose agent is Agim and whose theme is Ben's vase. Furthermore, there is another event, an experiencing event, of which Dritan is the experiencer. The presupposition says that the breaking of Ben's vase is the source of Dritan's experience.

Note that in this analysis, the existence of the experiencing event and the experiencer are part of the assertive content, but the source of the experience is not. This is because the presupposition of the source survives under negation and in yes-no questions (not shown):

8. Dritani-t   nuk   i   vdiq   Besa.
    Dritan-Dat   Neg   3S.Dat died   Besa.Nom
    'Besa didn't die on Dritan.'
    a.   Besa didn't die (and if she had, it would have mattered to Dritan);
    b.   *Besa died, but it didn't matter to Dritan.

But the experiencer is part of the asserted content, because it can be extracted or it can be a quantifier binding a variable elsewhere in the assertion:

9. **Kujt**   i-a   kafshoi   qen-i   mace-n   e   Bes-ës?
    who.Dat   3S.Dat-3S.Acc   bit   dog-the.Nom cat-the.Acc   of   Besa-Gen
    'On whom did the dog bite Besa's cat?'
10. I-a   theva   **çdo**   **djali-t**   saksinë   e   **tij**.
    3S.Dat-3S.Acc   I.broke   **every**   **boy-Dat**   vase.the.Acc of   **his**
    'I broke his$_1$ vase on every boy$_1$.'

An additional feature of this analysis is that sentences with affected arguments are bi-eventive. The VoiceP is a predicate of events, and the Aff head existentially introduces another event, an experiencing event. We therefore make predictions regarding adverbial modification, in a particular way. We assume that VP adverbs modify predicates of events (i.e. syntactic nodes of type <s,t>), so that *Gertie attacked Peedie violently* would be $\lambda e.$ *attack(e) & Thm(e,P) & Ag(e,G) & violent(e)* (see Parsons 1990). In our analysis, there is no predicate of events related to the experiencing event; that event variable is introduced by an existential quantifier. We therefore predict that VP adverbs will only modify the VP or VoiceP event, and not the experiencing event, which is correct:

11. Dritan-it   i   vdiq i   vëllai   **në Tiranë**.
    Dritan-Dat   3S.Dat   died his brother.Nom   **in Tirana**
    'Dritan's brother died on him in Tirana.'

In (11), the PP modifier necessarily modifies the dying event. The experiencing event need not take place in Tirana, though; Dritan could hear the news in some other location and be affected.

Although it cannot be modified by VP adverbials, the experiencing event is present in the semantics in our analysis and should be able to be modified in other ways. This is also correct, but we defer a demonstration of this to the section on Japanese below.

This bi-eventivity distinguishes our analysis from other possible ones, such as that of Pylkkänen (2002). In Pylkkänen's analysis, an Applicative head introduces a malefactive argument. This head combines with the VP in essentially the same way as Voice, above, by Event Identification. In Pylkkänen's analysis of (11), then, the locative modifier *in Tirana*, the applied argument *Dritan*, and *Dritan's brother's dying* all share one event variable bound by the same lambda-operator:

12. $[\![(11)]\!] = \lambda e.\ die(e)\ \&\ Thm(e, Dritan's\ brother)\ \&\ InTirana(e)\ \&\ Mal(e, Dritan)$

Pylkkänen's analysis therefore predicts that malefactive arguments should pattern with agents in how they are treated by adverbs that modify the event. Take a transitive sentence like *Dritan killed his brother in Tirana*. It is very difficult to conceive of this situation as not having Dritan in Tirana, whereas that is very easy in (11). The malefactive should also pattern like the goal of a double-object sentence in Pylkkänen's analysis (goals are also introduced by Applicative heads in her analysis), as in *I bought Dritan a car in Tirana*. Again, the default interpretation of this sentence has Dritan in Tirana (in contrast with *I bought a car for Dritan in Tirana*, which does not; compare #*While he was in London, I bought Dritan a car in Tirana* with *While he was in London, I bought a car for Dritan in Tirana*). Our analysis therefore captures intuitions about modification better than an analysis with just one event variable.

3.2. Japanese

We turn to Japanese, to further corroborate our analysis and to illustrate one of the points of variation. Japanese has a structure known as an *adversity passive* (Fukuda 2004, Kuno 1973, among others). Adversity passives also involve an affected argument, as shown below.

13. **Sachi-ga**   Karthik-ni   Sean-no   kabin-o   kowas-are-ta.
    Sachi-Nom Karthik-by Sean-Gen   vase-Acc   break-Pass-Past
    `Sachi had Sean's vase broken on her by Karthik.'
    = 'Karthik broke Sean's vase. This matters to Sachi, i.e. Sachi is affected by Karthik's breaking of Sean's vase.'

In Japanese, the affected argument receives nominative case (here: *Sachi-ga*). In our analysis, the affected argument is merged above VoiceP, rather than between VoiceP and VP as in Albanian. The derivation is shown below.

14. $\lambda e.$ broke(e)&Agt(e,K)&Thm$(e,$ Sean's vase$)$ & $\exists e'($experience(e')&Exp$(e',$Sachi$))$ ←AffP
     : $\exists e''($broke(e'')&Agt(e'',K)&Thm$(e'',$Sean's vase$)$ & Source(e',e'')) & $e'' \leq e)$

                                                                                  Sachi

     $\lambda e.$ broke(e)&Agt$(e,$Karthik$)$&Thm$(e,$ Sean's vase$)$ ←   VoiceP$_{<s,t>}$ Aff
                                                                                                    $_{<st,est>}$

                                                             Karthik broke Sean's vase

This high attachment in Japanese versus the low attachment in Albanian leads to a difference in what is interpreted as the source of the experiencing event. In the case of low attachment, the VP is the source of the experience. That is, the external argument is not included in the source. In the case of high attachment, VoiceP, including the external argument, is the source of the experience:

15. **Low attachment:** $\lambda e.$broke(e)&Agt$(e,$Agim$)$&Thm$(e,$Ben's vase$)$&$\exists e'($experience(e')&Exp$(e',$Dritan$))$
      : $\exists e''(\underline{broke(e'')\&Thm(e'',Ben's\ vase)}$ & Source$(e',e''))$&$e'' \leq e)$

16. **High attachment:** $\lambda e.$ broke(e)&Agt$(e,$Karthik$)$&Thm$(e,$ Sean's vase$)$ & $\exists e'($experience(e')&Exp$(e',$Sachi$))$
     : $\exists e''(\underline{broke(e'')\&\mathbf{Agt(e'',\ Karthik)}\&Thm(e'',Sean's\ vase)}$ & Source(e',e'')&$e'' \leq e)$

This is because what is interpreted as the source is the sister of Aff. In Albanian, only the VP is the sister of Aff; Voice is higher. In Japanese, the entire VoiceP is the sister of Aff.

Evidence for this difference comes from possible interpretations of the sentences. In low-attaching Albanian, it is impossible to attribute the source of the affectedness to the external argument (17). However, this is possible in high-attaching Japanese (18).

17. Bir-i   m'a   kafshoi   Bes-ën.   (Albanian)
    son-the.Nom   1S.Dat-3S.Acc   bit   Besa-Acc
    'The son bit Besa on me.'
    ='The son bit Besa and it matters to me because it was Besa/**#because it was the son**.'
18. Sachi-ga   Karthik-ni   Sean-o   kam-are-ta.   (Japanese)
    Sachi-Nom   Karthik-by   Sean-Acc   bite-Pass-Past
    'Sachi had Sean bitten on her by Karthik.'
    = 'Karthik bit Sean and it matters to Sachi because it was Sean/ **because it was Karthik**.'

This analysis also predicts different c-command relations in the two languages. In Albanian, the agent asymmetrically c-commands the affected argument, but in Japanese, it is the other way around. That this is correct can be seen from the possibility of variable binding by quantifiers. In Japanese, the affected nominative argument can bind a variable inside the agent, but the agent may not bind a variable inside the affected argument:

19. Japanese (HIGH)
    a. [Go-nin-ijoo-no   kodomo]$_1$-ga [sono-ko$_1$-no hahaoya]-ni   odor-are-ta.
       [five-CL-more.than-Gen   child]-Nom [it-child-Gen mother]-by   dance-Pass-Past
       'More than five children$_1$ had his/her$_1$ mother dance on him/her$_1$.'
    b. *[Sono-ko$_1$-no   hahaoya]-ga [go-nin-ijoo-no   kodomo]-ni odor-are-ta.
       [it-child-Gen   mother]-Nom [five-CL-more.than-Gen   child]-by   dance-Pass-Past
       Lit. 'His/her$_1$ mother had more than five children$_1$ dance on her.
       Intended: # 'More than five children$_1$ danced on his/her$_1$ mother.'

But in Albanian, our theory predicts that the agent can bind a variable inside the affected argument, but not the other way around.[4]

Just like Albanian (9,10), Japanese allows the affected argument to be questioned or to bind a variable within its scope, indicating that the experiencer is part of the assertive content:

20. **Dare**-ga   Karthik-ni   odor-are-ta   no?
    who-Nom   Karthik-by   dance-Pass-Past Q
    'Who had Karthik dance on them?'
21. [**Go-nin-ijoo-no   hito**]$_1$-ga   Karthik-ni   **jibun$_1$-no**   heya-de odor-are-ta.
    [**five-CL-more.than   person**]-Nom   Karthik-by   **self**-Gen   room-in dance-Pass-Past
    'More than five people$_1$ had Karthik dance on them in self's$_1$ room.'

But, again, the source of the experience is presupposed, as it survives under negation (and in yes-no questions):

22. Sachi-wa   Karthik-ni   odor-are-nakat-ta.
    Sachi-Top   Karthik-by   dance-Pass-Neg-Past
    'Sachi didn't have Karthik dance on her.' (presupposition: if he had danced, it would have mattered)

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[4] Albanian data is to be collected. Below are examples from German, which patterns with Albanian. A pronominal in the dative-marked affected argument *ihren Vorgesetzten* 'their superiors' in (i) can be bound by the quantificational agent *alle* 'everyone', while the quantificational affected argument cannot bind a variable inside the agent (ii).

i)   Alle$_1$ haben   ihren$_1$ Vorgesetzten   den Dienst   quittiert.
      everyone   have   their.Dat   superiors   the   service   quit
      'Everyone has quit the service on their superior.'
ii)   *Ihre$_1$ Arbeiter   haben   allen$_1$ den Dienst   quittiert.
      their   workers   have   everyone.Dat   the   service   quit

Thus, Japanese and Albanian differ only in the height of the attachment of the Aff head. The semantics of the head is identical; all that differs is the input to Aff: VP in Albanian, VoiceP in Japanese.

We now return to adverbial modification. As stated above, if VP modifiers can only modify predicates of events, then we predict that any VP modifier will only modify the VP/VoiceP event, and not the experiencing event. This is true in Japanese:

23. (*Totemo)   Sachi-ga   Karthik-ni   hageshiku   odor-are-ta.
    (*very.much) Sachi-Nom Karthik-by   enthusiastically   dance-Pass-Past
      'Sachi had Karthik enthusiastically dance on her (*affecting her very much).'
24. (*Osaka-de) Sachi-ga   Karthik-ni   Tokyo-de   shin-are-ta.
    (*Osaka-in) Sachi-Nom Karthik-by   Tokyo-in   die-Pass-Past
      'Sachi (*in Osaka) had Karthik die on her in Tokyo.'

In (24), Sachi does not have to be in Tokyo to be affected, as in Albanian, but a PP modifier cannot pick out just the experiencing event. However, a clausal modifier can:

25. Osaka-ni iru toki,   Sachi-ga   Karthik-ni   Tokyo-de   shin-are-ta.
    Osaka-in be when,   Sachi-Nom Karthik-by   Tokyo-in   die-Pass-Past
    'When she was in Osaka, Sachi had Karthik die on her in Tokyo.'

This follows in our analysis, because there is an experiencing event in the semantics. Clausal modifiers, we assume, do not need predicates of events, unlike VP adverbials and PPs. Note the contrast with an external argument:

26. #Osaka-ni iru toki,   Sachi-ga   Karthik-o   Tokyo-de   koroshi-ta.
    Osaka-in be when,   Sachi-Nom Karthik-Acc Tokyo-in   kill-Past
    Literally: #'When she was in Osaka, Sachi killed Karthik in Tokyo.'

Such sentences are distinctly odd. Another verb needs to be added, as in (27).

27. Osaka-ni iru toki, Sachi-ga Karthik-o   Tokyo-de koros-ootoshi-ta.
    Osaka-in be when, Sachi-Nom Karthik-Acc Tokyo-in   kill-manage.to-Past
     'When she was in Osaka, Sachi managed to kill Karthik in Tokyo.'

This follows, we contend, because there is only a single event in a simple transitive.

3.3. Hebrew

We turn now to our second parameter of variation, how much of the semantics of the Aff head is asserted. We suggest that affected arguments in Hebrew *ethical datives* are entirely presupposed and are not part of the assertive content at all. The denotation of Aff in Japanese and Albanian is repeated below:

28. $\llbracket \text{Aff} \rrbracket = \lambda P_{<s,t>}.\lambda x.\lambda e.\ P(e) \& \exists e'(\text{experience}(e') \& \text{Exp}(e',x))$: $\exists e''(P(e'') \& \text{Source}(e',e'') \& e'' \le e)$
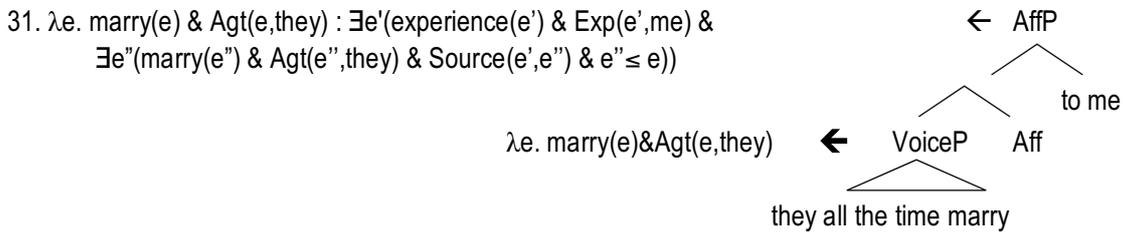
As we showed above, the experiencer is part of the assertive content: it can be extracted or it can be a quantifier binding a variable elsewhere in the assertive content. This is not true in Hebrew. As Borer and Grodzinsky (1986) showed, ethical datives may not be questioned:

29. a. Hem kol   ha-zman mitxatnim **li**.   (Borer & Grodzinsky 9a)
        they all   the-time marry   **to-me**
        'They are getting married on me all the time (and it bothers me).'
    b. ***lə-mi** hem mitxatnim   kol ha-zman?   (Borer & Grodzinsky 11)
        to-who they marry   all   the-time

In Hebrew, the experiencer is syntactically inert. We argue that in Hebrew the entire semantic contribution of Aff is a pressuposition, as in (30):

30. $⟦\text{Aff}_{Hebrew}⟧ = \lambda P_{<s,t>}.\lambda x.\lambda e.\ P(e)$: **∃e'(experience(e')&Exp(e',x)**&∃e"(P(e")&Source(e',e")&e"≤e))

We assume that Aff attaches high in Hebrew (like Japanese), although more data is needed to support this. (31) shows the derivation with Affect$_{Hebrew}$ for (29a).

31. $\lambda e.$ marry(e) & Agt(e,they) : ∃e'(experience(e') & Exp(e',me) &   ← AffP
        ∃e"(marry(e") & Agt(e",they) & Source(e',e") & e" ≤ e))   ⟨   ⟩
                                                                                                        to me
             $\lambda e.$ marry(e)&Agt(e,they)   ←   VoiceP   Aff
                                                    ⟨   ⟩
                                           they all the time marry

In Hebrew, the experiencing event, including the experiencer, is a presupposition, along with the source of the experience. It is not part of the assertive content at all. Hence it cannot interact with anything that is part of the assertive content of the sentence, to produce a wh-question, for instance. Thus, syntactic and semantic consequences follow from how much of the denotation of Aff is part of the assertion.

Although we have limited our discussion to Albanian, Japanese, and Hebrew, we believe that this analysis can extend to numerous other languages that have affected arguments.

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