Linking Agreement and Anticausality:
Semantic Effects of Agreement on Exclusives in Serbian*

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1 Introduction

- In this presentation, we discuss morphosemantic differences between the standard focus operator *samo* 'only' in Serbian and its agreeing counterpart *sam(-a/o)* 'alone, by himself/herself':[1,2]

  (1) Non-agreeing:

  Ana je juče **samo** *plivala.*
  Ana is yesterday only swam

  'Only Ana swam yesterday.'

  (2) Agreeing:

  Ana je juče **sam-a** *plivala.*
  Ana is yesterday sam-N.S.F swam

  'Ana swam yesterday alone/(all) by herself.'

- We argue that agreement on the latter restricts its semantic domain of quantification to individuals and events which introduce those individuals, which accounts for its different interpretation/distribution

- A similar account has been proposed for English adjective *mere* in comparison with *only*, where the former takes scope only over the noun it modifies while the latter take sentential scope (Coppock & Beaver 2011)

- Our account differs in that it ties this behavior to the agreement mechanism and connects exclusivity with anticausality

  - We show that the agreeing *sam(-a/o)* is an exclusive operator which does not associate with a prosodically focused element in the prejacent (unlike *only/samo*)

  - It is in this sense similar to the 'unexplanatory' *just* (Wiegand 2017, 2018), which also exhibits anticausality

  - We also argue that agreement indicates low scope of the exclusive operator, which restricts its domain of quantification to individuals and events

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[1]To the best of our knowledge, everything we discuss here regarding Serbian also holds for Bosnian, Croatian, Montenegrin and other varieties of the area.

[2]We are not discussing the Serbian emphatic particle *sam* (Progovac 1998; Despić 2013), which also exhibits agreement and is clearly morphologically related to the exclusives we are discussing in this talk. It certainly appears that this use should ultimately be included in the discussion of exclusivity and agreement in Serbian, especially given the similarity to English emphatic reflexives and the presence of the English paraphrase 'by it/him/herself' we see with agreeing *sam-a/o*. See Wiegand (Forthcoming) for some discussion of how to merge accounts of emphatic *sam* (and English emphatic reflexives) with this account.

Roadmap

2 Exclusives in Serbian: Main facts and generalizations

2.1 *Samo and sam-a/o in Serbian*

- The non-agreeing *samo* 'only' behaves as a standard exclusive operator and associates with a prosodically focused element in the sentence it modifies

  - Focus gives rise to alternatives for the focused constituent, which depending on the location of prosodic prominence, may vary (Rooth 1985, 1992)

- In (1), repeated below, focus on *Ana* provides alternative for the subject position (*Only Ana swam yesterday, no one else did*). (Focus on the verb *plivala* would provide alternatives to the denotation of the verb itself, i.e., *Ana didn't run or exercise yesterday, she only swam*)

  (1) *[Ana]_F je juče* **samo** *plivala.*
  Ana is yesterday only swam

  'Only Ana swam yesterday.'

- However, the agreeing *sam(-a/o)* can only be interpreted as 'alone, by herself/himself', i.e., as a quantifier ranging over individuals

- In (2), repeated below, *sam(-a/o)* agrees with the subject *Ana* in case, number and gender:

  (2) *Ana je juče* **sam-a** *plivala.*
  Ana is yesterday sam-N.S.F swam

  'Ana swam yesterday alone/(all) by herself.'

2.2 *Three readings of the agreeing sam-a/o*

- We identify three independent readings of the agreeing *sam-a/o*: the **no-company reading** (A), the **no-help reading** (B), and the **no-other-cause reading** (C)

- Consider the following example with the agentive verb *jesti* 'eat':

  (3) *Ana je počela da jede* **sama**.
  Ana is started that eats sam-N.S.F

  'Ana started to eat by herself.'

A. **No-company reading:** Ana started eating alone (i.e., without anyone's company). Ana is performing the activity of eating without anyone's company. This doesn't seem to be limited to other eaters (i.e., it indicates the absence of some general company)

  – We will not focus on this reading today, since it's not in the scope of our presentation[3]

B. **No-help reading (agentive reading):** Ana started to eat without anyone's help (e.g., she's 4 years old now, so she can use utensils without anyone's help). On this reading Ana is executing or carrying out the act/activity of eating all by herself, without any assistance. That is, she is the *single agent* of eating

C. **No-other-cause reading (causal reading):** Ana needs no convincing; she *initiates* the activity of eating by herself

• A naturally occurring example exemplifying this reading is shown below:

(4)　*Context*: A mother is complaining on a blog that her son is too skinny and he never wants to eat. Another blogger replies:

Težina tvog sina je zdrava. Nemoj toliko　　da se　　opterećuješ vagom, on
Weight your son is healthy do-not that-much that REFL. worry　　scale he
*će početi da jede **sam**　　**od**　　**sebe** jednog dana.*
will start to eat sam-N.S.M from self one　　day

'The weight of your son is fine. Do not worry about the scale (about weighing him) that much, one day he will start eating by himself.'[4]

• Note that when *sam-a/o* is extended with *od sebe* 'from self', only the C reading is available. That is, *sam-a/o od sebe* unambiguously has the C reading

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[3]Note that when this version of *sam-a/o* is the main predicate it displays some interesting animacy restrictions:

(1)　*Ana je **sama**.*　　　　　　　　　　(2)　# *Lampa je **sama**.*
　Ana is sam-N.S.F　　　　　　　　　　　　　Lamp is sam-N.S.F
　'Ana is alone/by herself.'　　　　　　　　　'The lamp is alone/by itself.'

∗ Although we do not concentrate on this reading, our intuition about it is the following:

∗ As discussed in the next section, *sam-a/o* is an exclusive operator which in some sense singles out an individual. When it is the main predicate, it essentially says that the subject is "without company". It is then possible that *sam-a/o* is restricted to animate individuals here since only sentient beings may have "company" (i.e., it is a similar to *lonely*)

∗ However, when *sam* modifies another (verbal) predicate (i.e., when it is an adjunct), this restriction does not apply—only the restrictions of the main predicate apply

(3)　*Slika je na zidu visila **sama**.*
　Picture is on wall hanged sam-N.S.F
　'The picture was hanging on the wall by itself.'

[4]http://www.serbiancafe.com/lat/diskusije/mesg/140/16131993/bucmasto-ili-zdravo-dete.html?6

• According to (4) then, the boy will one day become *the only initiator/cause* of the event of eating

(5)　*Jer　　nije kontrolor došao **sam**　　**od sebe**, to je neko　　prijavio*
　Because didn't inspector come sam-N.S.M from self   that is someone reported
　pa su ga poslali iz direkcije.
　then are him sent   out main-office

　'Because the inspector didn't come by himself. Someone must have reported him and then he was sent from the main office.' (Selimović 1970: 16)

• (5) says that an inspector does not in general initiate the event of inspecting; this is usually caused externally (e.g., he is sent from the main office).

• This C-reading is very similar to the interpretation of English *just* in the 'unexplanatory' use (Wiegand 2017, 2018)

(6)　I was sitting there an the lamp just broke! (All by itself!)

  – Here, *just* expresses that the lamp broke with no apparent cause
  – The syntax and distribution of *just* in English is quite different from agreeing *sam-a/o*; however, both are exclusive markers that are able to target cause events for quantification

• This is in fact the only reading we have with the so-called "anti-caustaive" verbs in Serbian (Alexiadou & Schäfer 2006; Dowty 1979; Kratzer 2005; Levin & Rappaport Hovav 1995; Pesetsky 1995; Reinhart 2003)

(7)　a.　*Lampa se　　razbila **sam-a**　　**(od sebe)**.*
　　　　Lamp REFL broke sam-N.S.F from self
　　　　'The lamp broke by itself.'
　　b.　*Led se　　istopio **sam**　　　**(od sebe)**.*
　　　　Ice REFL melted sam-N.S.M from self
　　　　'The ice melted by itself.'

• At the same time, unaccusatives like *umreti* 'die' or *pasti* 'fall' also seem to lack the B reading:

A. **No-company reading:**

(8)　*Bivši　　predsednik je **umro sam**.*
　Former president is died sam-N.S.M
　'The former president died by himself.'

(9) *Juče   je **pala sama**   u kupatilu.*
     Yesterday is fell   sam-N.S.F. in bathroom
     'Yesterday she fell by herself in the bathroom.' (she was alone)[5]

C. ***No-other-cause reading*:**

(10) *Context from an online newspaper*: A handicapped convict died in prison, and some-
      one is making the following comment:

      *A   sada kažu kao čovek **umro sam**   od   sebe, nije   **umro sam***
      And now say   like man   died sam-N.S.M from self didn't die   sam-N.S.M
      ***od   sebe** — nije mogao sam   da uzima hranu i   vodu potrebna mu je*
      from self   didn't could sam-N.S.M that take food and water needed   him is
      bila osoba koja bi   se   brinula o   njemu.
      was person which would REFL. take care about him

      'And now they say that the guy died by himself, he didn't die (all) by himself, he
      couldn't take food and water, he needed a person that would take care of him.'[6]

(11) *Kakav amater: Drogba **pao sam**   od   sebe pa virio   na jedno oko.*
      What amateur Drogba fell sam-N.S.F. from self then peeked on one   eye
      'What an amateur: Drogba fell (all) by himself and then he peeked with one eye.'[7]

(12) *Bandera je **pala sama**   od   sebe.*
      Pole   is fell sam-N.S.F. from self
      'The pole fell by itself.'

- The question is why isn't there a B reading with *fall* or *die*?

- On the B reading *sam* says that someone is not helped in carrying out an activity; that s/he
  is the only agent who executes/carries out an activity

- But, dying or falling is not something that we actively carry out and where we can have help
  of other agents—these things happen to us.

  – We can have no company when these events occur (the A reading), or there might not
    be an identifiable other cause for these events apart from ourselves (C reading)

- *Questions that we address now*:

  – What is the core meaning difference between the non-agreeing *samo* 'only' and its
    agreeing counterpart *sam-a/o* 'alone, by itself'?

  – Why is there a variation in the availability of different meanings of *sam-a/o* among
   different types of verbs and how to account for it?

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[5]https://www.doktor.rs/forum/kardiologija/aritmija-t22517-840.html
[6]http://jugmedia.rs/preminuo-nepokretni-osudenik/
[7]http://forum.source.ba/clanak/Fudbal/282309/Kakav-amater–Drogba-pao-sam-od-sebe-pa-virio-na-jedno-oko

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3 OUR ANALYSIS: EXCLUSIVES, AGREEMENT AND ARGUMENT STRUCTURE

- We argue that the agreeing *sam*(-*a/o*) is semantically an exclusive operator and syntactically
  an adverb (ExclusiveP) adjoined within the verbal layers

- ExclusiveP agrees with the closest argument, which is the agent in the case of verbs that
  include the agent-introducing projection (e.g., VoiceP (Kratzer 1996))

(13) Syntax of agreeing *sam-a/o*
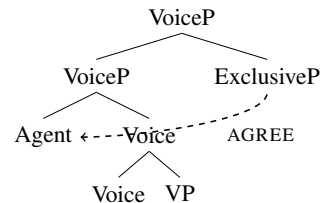
  – Non-agreeing *samo* 'only' will presumably adjoin higher in the tree, outside of the
    verbal complex

- We argue below that agreement here indicates that the exclusive must take low scope

  – As a result, the semantic domain of quantification is restricted to (i) *individuals*; i.e.,
    event participants, who stand in the thematic relation to the eventuality denoted by the
    verb, and (ii) *events* involving those individuals

3.1 Samo 'only' vs. sam-a/o 'alone, by itself'

- The following assumptions about semantics of the agreeing *sam*(-*a/o*) account for its inter-
  pretations:

  – *Sam-a/o*: the agreement operation requires that *the exclusive operator take scope within
    the event denoted by the predicate in question*

  – *Samo* 'only': the lack of agreement indicates that *the exclusive operator samo is scop-
    ing over the entire proposition*, with alternatives derived via Roothian association with
    focus

- Consider again the contrast again between (1) and (2), repeated below:

(1) *Ana je juče   **samo** plivala.*   (2) *Ana je juče   **sam-a**   plivala.*
     Ana is yesterday only swam   Ana is yesterday sam-N.S.F swam
     'Only Ana swam yesterday.'   'Ana swam yesterday alone/(all) by herself.'

- One useful way of conceptualizing this is utilizing a neo-Davidsonian event semantics which
  introduces events via existential quantification

- Thus, for the agreeing *sam*(-*a/o*) in (2), the interpretation (for the B reading) would be: there
  is an event e of swimming such that Ana is the only agent x of e, as given in (14)

– (14a) shows the relative scope of the exclusive, while the equivalent (14b) translates this into a quantification over individuals

(14) a. $\exists e[swim(e) \wedge only(agent(e, a))]$
      b. $\exists e[swim(e) \wedge \forall x[agent(e, x) \rightarrow x = a]]$

- Note that this formulization is compatible with there being separate swimming events involving individuals other than Ana

  – Therefore, this only states that Ana was the only agent in her swimming, not that she was the only person who swam

- Compare this to the non-agreeing form in (1), which in the case that it associates with an individual, results in the equivalent of the exclusive quantification occurring outside the scope of the event quantifier

- The interpretation here would be that Ana is the only individual x such that there is an event e of swimming such that the agent of e is x, shown below in (15)

  – As above, (15a) shows that the exclusive scopes over the event quantifier, while (15b) translates this in the case that there is focus on an individual (rather than, e.g., a VP)

(15) a. $only(\exists e[swim(e) \wedge agent(e, [a]_F)])$
      b. $\forall x[(\exists e[swim(e) \wedge agent(e, x)]) \rightarrow x = a]$

- Unlike (14), the interpretation for (15) is incompatible with a situation where multiple different people were swimming, resulting in the typical exclusive interpretation of 'only' for non-agreeing *samo*

- We argue that the agreement relationship is an indicator of the structural properties of agreeing *sam(-a/o)* keeping it from scoping out of the event quantifier and restricting the domain of quantification to individuals

3.2 Sam-a/o and the variation in meaning

- What factors govern the variation in meaning of *sam-a/o* we see with different verb types?

- Recall that the example in (3) (repeated as (16)) has three different readings, summarized below:

(16) *Ana je počela da   jede **sama**.*
      Ana is started that eats sam-N.S.F
      'Ana started to eat by herself.'

A. ***No-company reading***: Ana started eating alone (i.e., without anyone's company).
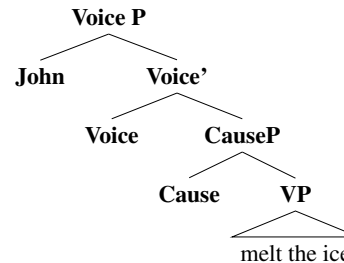   (we ignore this reading here)

B. ***No-help reading (agentive reading)***: Ana started to eat without anyone's help (e.g., she's 4 years old now, so she can use utensils without anyone's help). On this reading Ana is the *single agent* of eating

C. ***No-other-cause reading (causal reading)***: Ana needs no convincing; she initiates the activity of eating by herself

- First, we adopt the bieventive view of causative structures like *John melted the ice* from Pylkkänen (2002), which we believe is particularly useful for our purposes

- On this view, a sentence like *John melted the ice* has two relations that the corresponding noncausative (*The ice melted*) does not have:

  – a causation relation relating the causing event to the caused event, and

  – a thematic relation between the causing event and the individual expressed as the external argument

- Assuming that external arguments are introduced by Voice (Kratzer 1996), we get the syntactic tree (17) (Pylkkänen 2002: 88), where the predicate Cause first merges with the VP describing the caused event and where Voice then relates an agent to the event introduced by Cause

(17) a. Cause: $\lambda f_{\langle s,t \rangle}.\lambda e(\exists e')f(e')\&\text{CAUSE}(e, e')$
      b. Syntactic structure:

      c. Compositional semantics:

3.2.1 Agentive verbs

- If we apply this to the verb like *jesti* 'eat' (in *Ana started to eat by herself*), we would have two events: (a) the event of eating, and (b) the event that causes this event of event, which plausibly is the event of the agent deciding to perform some action—this would be true for all agentive verbs

- When *sam-a/o* agrees with the agent Ana there are two options:

- First, its domain of quantification may be individuals, which gives us the B reading

  - On this reading, Ana is the only agent of the event of eating—she is the only individual that executes the event of eating.

  - This is formally represented in (18) below for the intransitive verb *swim*

  (18)   a. $\lambda x \lambda e. \exists e'[swim(e') \wedge \mathrm{CAUSE}(e, e') \wedge only(agent(e, x))]$
         b. $\lambda x \lambda e. \exists e'[swim(e') \wedge \mathrm{CAUSE}(e, e') \wedge \forall y[agent(e, y) \rightarrow y = x]]$

- Second, its domain of quantification may be events, which gives us the C reading. This reading says that the decision making event e, which introduces the agent *Ana* with which *sam-a/o* agrees, is the only event which causes the event of eating e. This is formally represented below (19)

  (19)   a. $\lambda x \lambda e. \exists e'[swim(e') \wedge only(\mathrm{CAUSE}(e, e')) \wedge agent(e, x)]$
         b. $\lambda x \lambda e \exists e'[swim(e') \wedge \forall e''[\mathrm{CAUSE}(e'', e') \rightarrow e'' = e] \wedge agent(e, x)]$

3.2.2 Anticausative verbs

- Recall that these verbs have only the C reading (causative reading).

  (20)   a. *Lampa se   razbila* **sam-a**   **(od sebe)**.
             Lamp   REFL broke   sam-N.S.F. from self
             'The lamp broke by itself.'

         b. *Led se   istopio* **sam**   **(od sebe)**.
             Ice REFL melted sam-N.S.M. from self
             'The ice melted by itself.'

- We follow Alexiadou & Schäfer (2006), Levin & Rappaport Hovav (1995) etc. in assuming that anti-causatives are inherently causative. That is, a sentence like (21a) has the structure in (21b)

  (21)   a. The door opens.
         b. v-CAUSE [the door $\sqrt{\text{OPEN}}$]

- Alexiadou & Schäfer (2006), for instance, motivate the presence of a causative event in anti-causatives by the observation that cross-linguistically, anti-causatives license causer PPs (but not agent PPs)

  - One such causer PP is shown in the German example below:

  (22)   German

         Das Segel zerriss (durch   den starken Wind).
         the sail   tore   through the strong wind

         'The sail tore from the strong wind.'   (Copley & Martin 2014: 224)

- The B reading is excluded with these verbs because they simply lack the agent (i.e., VoiceP)

- The C reading is derived as below

  - In (20a), for example, *sam-a/o* agrees with the theme *lampa* 'lamp' and quantifies over events, shown below in (23b)

  (23)   a. $\lambda e. \exists e'[break(e') \wedge theme(e', lamp) \wedge only(\mathrm{CAUSE}(e, e'))]$
         b. $\lambda e. \exists e'[break(e') \wedge theme(e', lamp) \wedge \forall e''[\mathrm{CAUSE}(e'', e') \rightarrow e'' = e]]$

- As a result we have the interpretation that there is only the event of melting which introduces the theme with which *sam* agrees and no other (causer) events. That is, the meaning that we get essentially is that the causer event is missing—this is again very similar to the unexplanatory *just*

  - Wiegand (2017, 2018) argues for a covert cause morpheme to account for unexplanatory readings of *just*–the account presented here predicts the presence of exactly such an element in the form of the functional layer CauseP

- The same logic extends to unaccusative verbs like *umreti* 'die' or *pasti* 'fall' and explains why they also lack the B reading (i.e., they also lack VoiceP)

3.2.3 *Sam-a/o* and focus

- Unlike *samo* 'only', the agreeing *sam(-a/o)* does not associate with a prosodically focused element, which is consistent with the behavior of *just* in English (e.g., (Wiegand 2017, 2018))

- For instance, *samo* 'only' cannot associate with pro-dropped arguments, because such arguments necessarily lack prosodic prominence and thus cannot be focused. While in (24a), where the subject is overt, alternatives can be individuals (*Only Ana swims, not John or Mary*), this is impossible in (24b); here we only have alternatives to the denotation of the verb itself (*She only swims, she doesn't run or exercise*)

(24)   a. *Samo Ana pliva.*
          Only Ana swims
          'Only Ana swims.'

      b. *Samo pliva.*
          Only swims
          'She only swims.'

- There is no such restriction in (25), where the semantic domain of quantification of the agreeing *sam(-a/o)* is restricted to individuals denoted by the subject, regardless of whether the subject is overt, as in (25a), or covert, as in (25b)

(25)   a. *Ana pliva sam-a.*
          Ana swims sam-N.S.F.
          'Ana swims by herself.'

      b. *Pliva sam-a.*
          Swims sam-N.S.F.
          'She swims by herself.'

4   CONCLUSIONS

- In this presentation, we discussed morphosemantic differences between the standard focus operator *samo* 'only' in Serbian and its agreeing counterpart *sam(-a/o)* 'alone, by himself/herself'

- We proposed that agreement on the latter restricts its semantic domain of quantification to individuals and events which introduce those individuals, which accounts for its different interpretation/distribution

- In the case of the agreeing *sam-a/o* the agreement operation requires that the exclusive operator take scope within the event denoted by the predicate in question, while in the case of *samo* 'only' the exclusive operator is scoping over the entire proposition

- We discussed different readings of *sam-a/o* and we argued that their availability depends on the argument structure of the verb *sam-a/o* combines with (e.g., whether the verb in question has VoiceP and CauseP, or just the latter)

  - In particular, the differences between the B (no-agent) and C (no-other-cause) readings lies in where in the verbal projection layer agreeing *sam-a/o* takes scope: either at the VoiceP level or the CauseP level[8]

  - This provides support for bieventive analyses of causative structures, as arguments introduced by both VoiceP and CauseP are available for quantification by exclusives

- Finally, we showed that *sam(-a/o)* is an exclusive operator which does not associate with a prosodically focused element in the prejacent (unlike *only/samo*), and is in this sense similar to the 'unexplanatory' *just* (Wiegand 2017, 2018)

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[8]We did not formally discuss the derivation of the A (no-company) reading in this talk. There are several routes for analysis that could account for it. For example, we could posit an additional functional layer below CauseP which introduces states (presumably present with all nominals and stative predicates). This would explain why the A reading is available in such a wide variety of contexts, as well as why it is available for both subject and object agreement. Another similar option is to argue that in object agreement cases, we actually have a small clause structure involving the predicate *to be*, following the subject agreement pattern for quantification only over that small clause event/state. There are likely other options as well, all of which will need to take into account the animacy restrictions observed in footnote 3. We leave this to future research.

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