Secondary imperfective is below Voice: Evidence from agent/instrument nominals and adjectival active participles
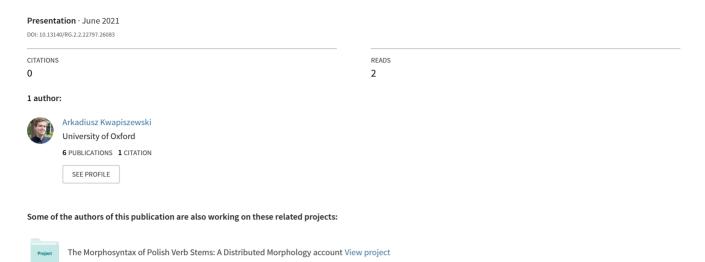
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6 PUBLICATIONS **1** CITATION

Some of the authors of this publication are also working on these related projects:

Project   The Morphosyntax of Polish Verb Stems: A Distributed Morphology account   View project

Secondary imperfective is below Voice:
Evidence from *-acz/-arka* nominals and adjectival *-ąc* participles

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1 Introduction

- Some "big" questions to keep in mind

  ◇ Is the verbal extended projection divided into a low domain of event and argument structure and a high domain of aspect and tense?

  ◇ What does the hierarchical position of a morpheme tell us about its semantics?

  ◇ How much verbal structure is contained in deverbal nominals and adjectives?

  ◇ How much verbal structure is needed to license event-related modification?

- The focus of this talk

  ◇ What is the function and position of secondary imperfective (SI) morphology?

- There are two main patterns of SI formation in Polish

  ◇ Suffixation with *-iw/-yw*[2]

  (1) a. wy- par   -ow -a -ć[P]
           out- vapour -*v* -TH -INF
           'to vaporise'
       b. wy- par   -ow **-yw** -a -ć[I]
           out- vapour -*v*   -SI -TH -INF
           'to vaporise'

  ◇ Ø + default theme vowel *-a(j)* + lowering of root-final /o/ to /a/

  (2) a. za-   top   -i -ć[P]
           behind- drown -*v* -INF
           'to drown'
       b. za-   ta**p**   -i **-Ø -a(j)** -ć[P]
           behind- drown -*v* -SI -TH   -INF
           'to drown'

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[2]List of abbreviations: CUM = cumulative prefix, [I] = imperfective stem, INF = infinitive, [P] = perfective stem, PRT = participle, SI = secondary imperfective suffix, TH = theme vowel

- The parse in (2b) follows the analysis of Czaykowska-Higgins (1998)
- The glide /j/ of *-a(j)* deletes before consonants, but it appears in imperatives, active *-ąc* participles and 3PL.PRES forms
- The lowering of /o/ to /a/ in secondary imperfectives is discussed in Rubach (1986:136) and Rowicka and van de Weijer (1994), among others

- **What is the structural height of SI morphology?**

  ◇ I assume that the external argument is introduced in the specifier of a functional projection VoiceP (Kratzer, 1996; Pylkkänen, 2008; Alexiadou et al., 2015)
  ◇ **Option 1:** SI > Voice
    - SI is outside the domain of event/argument structure
    - usually analysed as an exponent of outer aspect
    - Ramchand (2008), Biskup (2019) (but not Biskup 2021); cf. also Borer (2005)
  ◇ **Option 2:** Voice > SI
    - SI is inside the domain of event/argument structure
    - usually analysed as an exponent of inner aspect or an operator on event structure
    - Romanova (2004), Łazorczyk (2010), Tatevosov (2015, 2018)

(3)   a.   [**SI** [... [$_{\text{VoiceP}}$ **Voice** [$_{v\text{P}}$ ...] ...]   **SI > Voice**
      b.   [$_{\text{VoiceP}}$ **Voice** [... [**SI** [... [$_{v\text{P}}$ ...] ...]   **Voice > SI**

2   Outline of the Talk

- I will provide three arguments in support of the Voice > SI hypothesis in Polish

  ◇ the familiar argument from the scope of superlexical prefixes
  ◇ an argument from agent/instrument *-acz*/*-arka* nominals
  ◇ an argument from adjectival *-ąc* participles

- When it comes to *-acz*/*-arka* nominals and adjectival *-ąc* participles, I will show that these constructions contain SI morphology, but that they crucially lack VoiceP

(4)   a.   [$_{n\text{P}}$ *-acz*/*-arka* [... **SI** ... [$_{v\text{P}}$ ...] ...]]   AGENT/INSTRUMENT NOMINALS
      b.   [$_{a\text{P/PrtP}}$ *-ąc*   [... **SI** ... [$_{v\text{P}}$ ...] ...]]   ADJ. ACTIVE PARTICIPLES

- In the derivations in (4), the extended projection of the verb is nominalised/adjectivised below the level of Voice, embedding only the boxed constituent in (5)

(5)   [$_{CP}$ ... C ... [$_{TP}$ ... T ... [$_{VoiceP}$ **Voice** $\boxed{[\ ...\ \textbf{SI}\ ...\ [_{vP}\ ...\ ]\ ...\ ]}$] ...] ...]

- **Methodological assumption:** If a continuous subpart of the verbal extended projection includes SI while excluding Voice, then SI is structurally lower than Voice

    ◇ Note that a similar logic is used by Tatevosov (2011) to argue for the severing of lexical prefixes from aspect

3   The Argument from the Scope of Superlexical Prefixes

- This is the standard argument for the Voice > SI hypothesis

    - See e.g. Romanova (2004); Tatevosov (2015, 2018); Biskup (2021)

- In Polish, the cumulative *na-* and the distributive *po-* interact with the internal argument (6a)-(6b) to the exclusion of the external argument (6c)-(6d)

    ◇ The cumulative *na-* quantifies over and assigns genitive case to the internal argument

    ◇ The distributive *po-* distributes over the subparts of the internal argument

(6)   a.   Ale się tutaj kurzu   na-   gromadz -i -ł   -o^P!
          but *SE* here dust.GEN CUM- gather   -*v* -PST -3SG.N
          'A lot of dust has gathered here!'   UNACCUSATIVE SUBJECT
      b.   Chłopcy   na- łap -a -l   -i^P motyli.
          boys.NOM CUM- catch -TH -PST -3PL.VIR butterflies.GEN
          'The boys caught a lot of butterflies.'   TRANSITIVE OBJECT
      c.   *Chłopców na- łap -a -ł   -o^P motyle.
          boys.GEN CUM- catch -TH -PST -3SG.N butterflies.ACC
          Intended: 'A lot of boys caught the butterflies.'   *TRANS. SUBJECT
      d.   *Ale ludzi   na- prac -ow -a -ł   -o^P!
          but people.GEN CUM- work -*v*   -TH -PST -3SG.N
          Intended: 'A lot of people worked!'   *UNERGATIVE SUBJECT

- The asymmetry of scope suggests that *na-* and *po-* c-command *v*P (which hosts the internal argument) but **do not** c-command Voice (which hosts the external argument)

(7)   Voice > *na-*, *po-* > *v*P

- At the same time, *na-* and *po-* attach to secondary imperfective stems

(8)   a.   wy- par   -ow **-yw** -a -ć^I
          out- vapour -*v*   -SI -TH -INF
          'to vaporise'

    b.   **na-**   wy- par   -ow **-yw** -a -ć^P
        CUM- out- vapour -*v*   -SI -TH -INF
        'to vaporise a lot of something'

- This suggests that *na-* and *po-* c-command SI

   (9)   *na-*, *po-* > SI

- By transitivity of c-command, we conclude that Voice c-commands SI

   (10)   Voice > *na-*, *po-* > SI

- How good is this argument?

- **Alternative:** The privileged relationship with the internal argument is built directly into the semantics of *na-* and *po-*, regardless of their syntactic position

    ⋄ For example, *na-* and *po-* could be sensitive to the event role UNDERGOER

    ⋄ This solution is not particularly costly since only two lexical items are involved

   (11)   [***na-/po-*** [SI [DP$_1$ Voice [$_{vP}$ **DP$_2$** *v* ...]]]]]

    ⋄ There is a precedent for (11) in the recent literature on *licensing applicatives* (e.g. Myler 2021)

    ⋄ On this conception, the Appl head does not introduce an argument but rather licenses it at a distance, potentially across an intervening CausP projection

   (12)   [$_{ApplP}$ **Appl** [$_{CausP}$ DP$_1$ Caus [$_{vP}$ **DP$_2$** *v* ...]]]]]

- Conclusion

    ⋄ The argument from prefix scope is suggestive but not conclusive on its own

    ⋄ Additional evidence is needed to confirm that SI morphology is structurally low

4 *-acz/-arka* Nominals

- Polish has two semi-productive suffixes deriving agent/instrument nominals from verbs[3]

    ⋄ The suffix *-acz* derives agentive and instrumental nominals (i.e. [±ANIMATE])

    ⋄ The suffix *-arka* derives only instrumental nominals (i.e. [−ANIMATE])

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[3]Both of these suffixes derive unambiguously non-eventive *-er* nominals (in the sense of Rappaport Hovav and Levin 1992). This means that *-acz/-arka* nominals do not necessarily give rise to event entailments and cannot be modified by frequency adjectives.

⋄ Descriptively, both suffixes attach to imperfective stems (bare and secondary alike)

⋄ Examples (a)-(c) embed the SI suffix *-yw*, while examples (c)-(d) display the lowering of the root-final /o/ to /a/ (the theme vowel *-a(j)* is missing)

(13) *Agentive -acz Nominals*

a. wy-woł-**yw**-acz zdjęć
out-call-*v*-SI-*n*   photos.GEN
'a photo developer'

b. roz-ład-ow-**yw**-acz towaru
apart-load-*v*-SI-*n*   cargo.GEN
'a cargo unloader'

c. po-szuk-**iw**-acz skarbów
on-search-SI-*n*   treasures.GEN
'a treasure hunter'

d. roz-br**aj**-**Ø**-acz   bomb
apart-defend-SI-*n* bombs.GEN
'a bomb defuser'

e. u-zdr**aw**-i-**Ø**-acz dusz
at-heal-*v*-*n*   souls.GEN
'a soul healer'

(14) *Instrumental -acz/-arka Nominals*

a. z-maz-**yw**-acz
from-scribble-SI-*n*
'an eraser'

b. za-pis-**yw**-acz
behind-write-SI-*n*
'a recorder'

c. po-równ-**yw**-arka cen
on-even-SI-*n*   prices.GEN
'a price comparison website'

d. za-mr**aż**-**Ø**-arka
behind-freeze-SI-*n*
'a freezer'

e. wz-m**acn**-i-**Ø**-acz
up-strong-*v*-SI-*n*
'an amplifier'

- Previous syntactic analyses of *-er* nominals in English (and other languages) do not fully agree on whether these constructions contain VoiceP

  ⋄ **All *-er* nominals project VoiceP**

    – Alexiadou and Schäfer (2010)

  ⋄ **Some *-er* nominals project VoiceP, others do not**

    – van Hout and Roeper (1998); Roy and Soare (2013, 2014, 2020)

    – instrumental *-er* nominals are always assumed to be Voice-less

  ⋄ **No *-er* nominals project VoiceP**

    – Baker and Vinokurova (2009); Borer (2013); McIntyre (2014)

- There is general agreement in the literature that instrumental *-er* nominals lack VoiceP

  ⋄ The paper by Alexiadou and Schäfer (2010) is the only notable exception

  ⋄ But see Borer (2013:607ff.) and McIntyre (2014) for counterarguments

  ⋄ If this is correct, then at least some *-acz* and all *-arka* nominals are Voice-less

- In what follows, I adopt Baker and Vinokurova's (2009) position, according to which *-er* is in complementary distribution with Voice

  ⋄ Baker and Vinokurova (2009) start out with the following observation (which they take to be a good candidate for a linguistic universal)

◇ **Observation:** Unlike Complex Event Nominals, agentive nominals exhibit very few verbal properties, not only in English but universally across languages (15)

- no negation
- no adverbial modification
- no control into purpose clauses
- no aspectual phrases *for/in X time*
- no spatial/temporal/agent-oriented adjuncts
- no high aspectual suffixes or periphrastic aspects

(15) a. the induction of protein growth (in a test tube) (on Monday) (with a new technique) (for an hour) (in order to save the organism)
  b. the inducer of protein growth (*in a test tube) (*on Monday) (*with a new technique) (*for an hour) (*in order to save the organism)

◇ **Puzzle:** Why are there no *-er* nominals with (more) clause-like syntax?

◇ **Solution:** The agentive nominaliser *-er* is the nominal version of Voice

- Both heads introduce the event role Initiator (16)
- The only difference is their nominal vs. verbal category
- As nominal Voice, *-er* takes the same complements as verbal Voice (17)

(16) a. Voice $\leadsto \lambda x \lambda e.$**Initiator**$(x, e)$
  b. *-er* $\leadsto \lambda P \lambda x.\exists e\ P(e)\ \&\ $**Initiator**$(x, e)$

(17) a. $[_{\text{VoiceP}}$ (DP) [**Voice** $\boxed{[\ F_n\ [\ F_{n\text{-}1}\ ...\ [\ F_1\ [_{vP}\ ...\ ]\ ]\ ...\ ]\ ]}$]]
  b. $[_{n\text{P}}$ ***-er*** $\boxed{[\ F_n\ [\ F_{n\text{-}1}\ ...\ [\ F_1\ [_{vP}\ ...\ ]\ ]\ ...\ ]\ ]}$]

(18) *$[_{n\text{P}}$ ***-er*** ... $[_{\text{VoiceP}}$ (DP) [**Voice** $\boxed{[\ F_n\ [\ F_{n\text{-}1}\ ...\ [\ F_1\ [_{vP}\ ...\ ]\ ]\ ...\ ]\ ]}$]] ...]

◇ The merger of *-er* above Voice is ruled out on semantic grounds

- The derivation in (18) is either redundant (the same event role specified twice) or contradictory (one event with two different Initiators)

◇ *-er* nominals vs. Complex Event Nominals

- How to account for the contrast between (15a) and (15b) above?
- **Solution:** The structure below Voice is too small to host agent- and event- related modifiers such as aspectual phrases, purpose clauses, adverbs etc.
- While *-er* nominals do not contain VoiceP, Complex Event Nominals do (19) (see especially Alexiadou 2009 and Borer 2013)

(19) $[_{n\text{P}}\ n\ [$ (DP) Voice $\boxed{[\ F_n\ [\ F_{n\text{-}1}\ ...\ [\ F_1\ [_{vP}\ ...\ ]\ ]\ ...\ ]\ ]}$]]

◇ What about *-acz/-arka* nominals?

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- As predicted, *-acz/-arka* nominals are incompatible with spatiotemporal, aspectual and agentive modifiers

(20) po-szuk-iw-acz skarbów   (*lornetką)   (*konno)   (*ochoczo)
      on-search-SI-*n* treasures.GEN binoculars.INST horse.ADV eagerly
      (*w lutym)   (*przez dwa lata) (*żeby   spłacić długi)
       in February   for   two years in order to pay   debts
      'a treasure hunter (*with binoculars) (*on horseback) (*eagerly) (*in February) (*for two years) (*in order to pay back his debts)

- I conclude that all *-acz/-arka* nominals lack VoiceP
- Since *-acz/-arka* nominals embed SI morphology, SI must be lower than Voice
- Compare the structure in (21) with the abstract representations in (17)

(21) [*n*P *-acz/-arka* [... **SI** ... [*v*P ...] ...]] AGENT/INSTRUMENT NOMINALS

5 Adjectival *-ąc* Participles

- Active participles are derived from imperfective stems via suffixation with *-ąc*

(22) a. Adam   wziął^P głęboki oddech, stopniowo się u-spok**aj**-Ø-**aj**-ąc.
          Adam.NOM took deep breath.ACC gradually *SE* at-calm-SI-TH-PRT
          'Adam took a deep breath, gradually calming down.'   CLAUSAL
      b. U-spok**aj**-Ø-**aj**-ąc-y   Adama   mężczyzna jest lekarzem.
          at-calm-SI-TH-PRT-M.SG Adam.ACC man.NOM is   doctor.INST
          'The man calming Adam down is a doctor.'   ADNOMINAL

- Some *-ąc* participles have adjectival uses alongside verbal ones

  ◇ I will refer to these as ADJECTIVAL ACTIVE PARTICIPLES (AAPs)

- Two diagnostics:

  ◇ AAPs can be used predicatively with the copula *być* 'to be' (23a)
  ◇ AAPs can be used as adverbs (23b)

(23) a. Ta muzyka   jest bardzo u-spok**aj**-Ø-**aj**-ąc-a
          This music.NOM is very at-calm-SI-TH-PRT
          'This music is very calming.'
      b. Maria   poklepała^P Adama   po plecach   po-ciesz-Ø-**aj**-ąc-o.
          Mary.NOM patted   Adam.ACC on back.INST on-rejoice-SI-TH-PRT-ADV
          'Mary patted Adam on the back comfortingly.'

- **How big and productive is the class of AAPs?**

- ◇ *Experiencer Constraint* (Brekke, 1988)
  AAPs are productively derived from Object Experiencer (ObjExp) verbs
- ◇ *Stativity Constraint* (Meltzer-Asscher, 2010)
  Only stative verbs derive AAPs

- **Generalisation 1:** AAPs can be derived from virtually all ObjExp verbs (24)

  - ◇ The morphological markers of secondary imperfective are highlighted in bold
  - ◇ This includes the default theme vowel *-aj*, the lowering of root-final /o/ to /a/, and the suffix *-yw* (realised as *-uj* in active participles)

(24) Ten film był o-szoł**am**-i-**aj**-ąc-y / po-ryw-**aj**-ąc-y / prze-raż-**aj**-ąc-y /
      this film was stupefying   engrossing   frightening
      przy-gnęb-i-**aj**-ąc-y / roz-czar-ow-**uj**-ąc-y / wz-rusz-**aj**-ąc-y / za-skak-**uj**-ąc-y.
      depressing   disappointing   moving   surprising

- **Generalisation 2:** AAPs can be derived from many deadjectival change-of-state verbs

  - ◇ This class of AAPs is most felicitous in the *Adverbial Effect Construction*
    - – The verb *(po)działać* 'to have an effect' is modified by an adverbial AAP
    - – The CAUSER argument is in the subject position
    - – The UNDERGOER argument surfaces as an optional PP adjunct
    - – Cf. the English translation, where an adjectival AAP modifies the noun *effect*

(25) Ta maść podziałała[P] na moją skórę bardzo na-wilż-**aj**-ąc-o   /
      this cream had.effect   on my skin very   moisturising.ADV
      od-młAdz-**aj**-ąc-o / u-jędrn-i-**aj**-ąc-o / u-zdr**a**w-i-**aj**-ąc-o / wy-susz-**aj**-ąc-o.
      disinfecting.ADV   rejuvenating.ADV   healing.ADV   drying.ADV
      'This cream had a very moisturising / rejuvenating / firming / healing / dehydrating effect on my skin.

- Overall, the derivation of AAPs is systematic enough to warrant serious consideration

- **Hypothesis:** AAPs do not project VoiceP

  - ◇ **Argument 1**
    - – Most AAPs can be used as manner adverbs
    - – Adverbs modify an existing event rather than introducing a new one (26)
    - – As such, they cannot license event roles like INITIATOR and UNDERGOER
    - – Hence, adverbial AAPs do not project VoiceP

(26) a. Ania   spojrzała[P] na męża o-skarż-Ø-**aj**-ąc-o
          Anna.NOM looked   at Adam about-complain-SI-TH-PRT-ADV
          (*o   niewierność).
           about unfaithfulness
          'Anna looked at her husband accusingly (*of unfaithfulness).'
                                    ADVERBIAL AAP → ONE EVENTUALITY

b. Ania   spojrzała^P na męża,   o-skarż-Ø-**aj**-ąc   go
Anna.NOM looked   at husband, about-complain-SI-TH-PRT him
(o   niewierność).
 about unfaithfulness
'Anna looked at her husband, accusing him (of unfaithfulness).'

VERBAL PARTICIPLE → TWO EVENTUALITIES

◇ **Argument 2**

– Stative ObjExp verbs in Polish co-occur with optional DP adjuncts in the instrumental case (Biały 2005:73)

– These DPs are required to stand in a semantic part-whole relationship with the Stimulus/Cause subject, on which they are referentially dependent

(27)   Maria$_i$ po-ciąg-Ø-a   Marka   (swoją$_i$) osobowością.
Mary.NOM on-pull-SI-3SG Mark.ACC her   personality.INST
'Mary$_i$ attracts Mark with her$_i$ personality.'

– Crucially, AAPs are incompatible with this type of adjuncts
– There is no obvious semantic reason why (28) should be ruled out

(28)   Maria   jest po-ciąg-Ø-**aj**-ąc-a   {??swoją osobowością   /
Mary.NOM is   on-pull-SI-TH-PRT-F.SG her   personality.INST
*osobowością}.
personality.INST
'Mary is alluring (*with her personality)'

– A natural explanation is that the adjunct in (27) is licensed by VoiceP
– If this is on the right track, then AAPs lack the VoiceP projection

◇ **Argument 3**

– This is an extension of the previous argument
– AAPs do not license aspectual modifiers or assign accusative case

(29)   Ta muzyka   jest bardzo u-spok**aj**-Ø-aj-ąc-a (*Adama)   (*godzinę)
This music.NOM is   very   at-calm-SI-TH-PRT Adam.ACC hour.ACC
'This music is very calming (*Adam) (*for an hour).'

– Assumption 1: Event-related modifiers are licensed by VoiceP (see Section 4)
– Assumption 2: Voice assigns accusative Case to the object (Chomsky, 1995)
– In both cases, it follows that AAPs do not project VoiceP

• In conclusion, the structure of AAPs includes SI but excludes VoiceP

◇ This further confirms that SI is below Voice in the verbal extended projection

(30)   [$_{a}$P/PrtP -*ąc* [... **SI** ... [$_{v}$P ...] ...]]   ADJECTIVAL ACTIVE PARTICIPLES

6 Conclusion

- We now have converging evidence for the Voice > SI hypothesis in Polish

  ◇ the scope of cumulative *na-* and distributive *po-*

  ◇ the presence of SI morphology in *-acz/-arka* nominals

  ◇ the presence of SI morphology in adjectival *-ąc* participles

- Implications for the function of SI morphology

  ◇ The presence of SI is not sufficient for any event-related modification (spatiotemporal modifiers, aspectual phrases, adverbs and other verbal adjuncts)

    – This finding is surprising, especially in a syntactic model of word formation

    – It seems that event modification is licensed by verbal structure above the level of SI (minimally VoiceP or an equivalent functional projection)

  ◇ If perfective/imperfective aspect is above Voice, then SI cannot be an exponent of imperfective aspect (*pace* Borer 2005, Ramchand 2008, Biskup 2019)

- However, many other analytic options remain open

  ◇ SI is an exponent of inner aspect or an operator on event structure

    – SI as a homogeniser (Łazorczyk, 2010)

    – SI as an eventiser (Tatevosov, 2015, 2018; Mueller-Reichau, 2020)

  ◇ SI is a (re-)verbaliser (Arsenijević, 2018)

- My own view is that a key component of the perfective/imperfective opposition is encoded on an (inner) aspectual node below Voice, call it InnerAsp

  ◇ This head is realised by SI morphology if there is a prefix inside the vP projection (Kwapiszewski, 2021)

  ◇ Imperfective aspect ⇒ unmarked default

  ◇ Perfective aspect ⇒ Quantity (Borer, 2005)

    – Quantity is a second-order property of event descriptions

  ◇ Quantity modifies the event predicate prior to VoiceP (31)

(31) a. $[_{v\text{P}} \dots] \rightsquigarrow \lambda e.P(e)$

  b. $[\text{InnerAsp}_{[+\text{Q}]} [_{v\text{P}} \dots]] \rightsquigarrow \lambda e.P(e) \text{ \& Quantity}(P)$

  c. $[\text{DP} [\text{Voice} [\text{InnerAsp}_{[+\text{Q}]} [_{v\text{P}} \dots]]]]$
  $\rightsquigarrow \lambda e.P(e) \text{ \& Initiator}(x, e) \text{ \& Quantity}(P)$

  ◇ Semantic interactions between InnerAsp and (Outer)Asp are still allowed!

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