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Dispositional middle constructions with accusative objects in Slovenian

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This paper provides a study of an impersonal type of dispositional middle construction that appears in Slovenian. This impersonal construction atypically contains an undemoted thematic external argument in syntax, but nevertheless ascribes a disposition to the internal one in semantics, which goes against previous assumptions about the way in which syntax and semantics interact in middles. On the basis of this Slovenian construction, the paper develops a new syntactic and semantic analysis of the modal phrase whose head contributes the dispositional interpretation and assigns it to the internal argument. The paper shows how such an analysis accounts for both non-canonical Slovenian middles with syntactically realised external arguments as well as the more prototypical middles without external arguments both in Slovenian and English. Finally, the paper proposes why the external argument in the Slovenian impersonal middle is – exceptionally – not an intervener for the dispositional assignment.

1 Introduction

Middle constructions, exemplified by the English sentences in (1), are interesting for linguistic theory from the perspective of the interaction between syntactic argument structure and modal semantics.

(1)   a.   This book reads well.
       b.   This car handles easily.
       c.   These clothes wash with no problem.

Semantically, such middles with transitive verbs involve a modal interpretation whose key characteristic is that a disposition is ascribed to the internal argument (Lekakou 2005), so that the interpretation of a sentence like (1a) roughly corresponds to the paraphrase 'This book is such that when people read it, they read it well.' Aside from this, such transitive middles are characterised by the following three properties that are taken to hold cross-linguistically (Lekakou 2005; Pitteroff 2015; Ackema & Schoorlemmer 2017; Lekakou & Pitteroff 2018).

(2)   *Cross-linguistic properties of transitive middles* (Lekakou & Pitteroff 2018: (9))
       a.   The syntactic subject is the argument that would normally be realised internally (the understood/notional object).
       b.   An otherwise eventive verb becomes a derived stative, and more precisely receives a generic interpretation.
       c.   The Agent is demoted and receives an arbitrary/generic interpretation.

Properties (2a) and (2c) are understood to be necessary prerequisites for the disposition becoming keyed to the internal argument (Lekakou 2005; Ackema & Schoorlemmer 2017; Lekakou & Pitteroff 2018). According to Lekakou, in middles the "Agent is […] syntactically suppressed for semantic reasons, in order to allow the dispositional property to be predicated of the understood object" (2005: 95). The idea, then, is that if the external argument were not demoted, or possibly even completely absent from the syntax, the disposition would instead be ascribed to the Agent rather than the Patient (*ibid.*), for reasons of minimality (Schäfer 2008: 233).

    In light of this, the present paper has two aims. The first is to show, on the basis of Slovenian data, that the syntactic demotion or suppression of the external argument is not a necessary condition for the internal-argument-oriented dispositional interpretation, in contrast to what has been previously assumed. In Slovenian, transitive middles with the dispositional interpretation equivalent to the meaning of the English sentences in (1) appear in two syntactic patterns – either in the form of a reflexively marked passive construction in which the internal argument is in nominative (3a), or as a reflexively marked impersonal construction in which the internal argument is in accusative (3b).

(3)   a.   *Reflexive passive construction*
Knjiga   se   bere   zlahka.
book.NOM REFL reads easily
'The book is such that it reads easily.'

        b.   *Reflexive impersonal construction*
Knjigo   se   bere   zlahka.
book.ACC REFL reads easily
'The book is such that it reads easily.'

Crucially, the impersonal construction (3b) is active in terms of grammatical Voice (Rivero & Milojević Sheppard 2003; Szucsich 2008; Fehrmann & Junghanns & Lenertová 2010), which means that the external argument is – as we will see – in no way suppressed or demoted, in contrast to (3a). In spite of this fact, however, the disposition is still ascribed to the internal argument *knjigo* 'the book', as shown by the paraphrase under the example.

The second aim is to propose an analysis of middles that derives both impersonal sentences with non-suppressed external arguments like (3b) as well as sentences with demoted or suppressed external arguments like (3a) and (1a)–(1c) as a unified phenomenon.

I will claim – building on a previous proposal by Lekakou (2005) and Lekakou & Pitteroff (2018) – that in all middles the disposition ascription is due to a modal operator which introduces universal quantification over all those possible worlds that are accessible on the basis of the properties of the internal argument. It will be claimed that the modal operator is located fairly high in the structure above TP, since middles show quantificational event variability that is independent of the dispositional modal interpretation (Condoravdi 1989). Importantly, the operator is able to ignore the external argument in (3b) and assign the disposition to the internal one instead.

A key ingredient of the syntactic part of the analysis will be that the external argument is an impersonal pronoun without φ-features (Rivero & Milojević Sheppard 2003; Ackema & Neeleman 2018; Fenger 2018). Consequently, the impersonal pronoun is not an intervener for the φ-probing on the basis of which the modal operator attracts and assigns the disposition to the internal argument (Lekakou & Pitteroff 2018), probing being relativised to the type of features being sought (Rizzi 2001; Preminger 2014).

The paper is structured as follows. Section 2 presents tests showing that impersonal examples like (3b) are syntactically active constructions with a thematic external argument occupying the usual grammatical subject position. Section 3 provides evidence showing that impersonal middles like (3b) display the same dispositional interpretation keyed to the internal argument as the canonical English middles in (1). Section 4 discusses middles from the perspective of their being a notional category rather than a unique lexical-syntactic phenomenon. Section 5 presents

the syntactic analysis of impersonal Slovenian middles like (3b) and a unified semantic analysis of the Slovenian impersonal, reflexive passive, and the canonical English structures. Section 6 concludes the paper.

2 The syntactic presence of the external argument

I begin by presenting three tests showing that impersonal middle constructions like (3b) contain a thematic DP that occupies the usual external argument position in syntax. These diagnostics concern (i) the binding of syntactic anaphors, (ii) the (in)admissibility of oblique Agent phrases, and (iii) the obligatory human interpretation of the event Initiator.

2.1 Syntactic anaphors

The internal argument in impersonal middles can be modified by the reflexive adjective *svoj* 'own' (4a).[1] In reflexive passive middles, the same adjective is illicit, as shown by (4b).

(4)   a.   (Svojo)   knjigo   se   bere   zlahka.
             own.ACC.F book.ACC.F REFL reads easily
             'The/one's own book reads easily.'

       b.   (*Svoja)   knjiga   se   bere   zlahka.
             own.NOM.F book.NOM.F REFL reads easily
             'The/*one's own book reads easily.'

The adjective *svoj* is a syntactic anaphor (Rivero & Milojević Sheppard 2003), so it must be bound by a c-commanding antecedent located in the same clause – that is, by the grammatical subject. Note that a similar observation has been made for English middles by Stroik (1992), who claims that *oneself* in (5) must also be bound by a c-commanding antecedent, which means that the external argument in English middles must also be syntactically realised, possibly as a null pronoun (1992: 135).

(5)   Books of oneself read easily.

However, Zribi-Hertz (1993) shows that *oneself*, at least when it complements the preposition *of*, is not an anaphor, given that it is licit in copular constructions like (6).

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[1] This diagnostic has previously been applied to non-dispositional impersonal examples like the one in (i) by Rivero & Milojević Sheppard (2003), Szucsich (2008) and Fehrmann & Junghanns & Lenertová (2010).

(i)   Svoje   starše   se   spoštuje.
       own.ACC.PL parents.ACC REFL respects
       'One must obey one's parents.'

See Section 4 for a discussion on how examples like (i) are related to dispositional middles like (4a).

(6)   Books of oneself are usually quite boring.

Crucially, the AP *svoj* 'own' – in contrast to the PP *of oneself* in the English examples – cannot be used in copular constructions in Slovenian (7), precisely because it cannot be syntactically bound in such constructions.

(7)   (Ta   / *svoja)   knjiga   je vedno dolgočasna za branje.
         this.NOM   own.NOM.F book.NOM.F is always boring.F   for reading
         '(This/*one's own book) is always very boring to read.'

2.2 External arguments as adjuncts

Second, impersonal constructions do not allow the external argument to be realised as an adjunct (8a). In this they differ from the reflexive passive construction, where such realisation is possible (8b).

(8)   a. Knjigo   se   bere   zlahka (*s strani otrok).
             book.ACC REFL reads easily   on part   children
             Impossible: 'The book is such that children read it easily.'

        b. Knjiga   se   bere   zlahka (s   strani otrok).
             book.NOM REFL reads easily   on part   children
             'The book is such that children can read it easily.'

In the impersonal construction (8a), the adjunct introducing the Agent is in complementary distribution with the syntactically realised external argument DP (Lavine 2005; Fehrmann & Junghanns & Lenertová 2010). The explanation in terms of the θ-criterion for instance is that a single thematic role – that of the Agent – is assigned to two DPs in (8a), thus violating said criterion (Chomsky 1981: 36).[2] (For the time being, I leave aside the question of what the external argument DP is exactly in example (8a); this will be addressed in Section 5.1.1.) By contrast, the external argument is syntactically demoted in the reflexive passive construction (8b), so it can surface as an adjunct, just like in canonical English passives modified by the *by* phrase.

2.3 The human interpretation

Third, in the case of causative verbs like *razbiti* 'to break', the Slovenian impersonal construction necessarily restricts the interpretation of the verbal event to one that involves a human Initiator (9a), as has already been observed by Rivero & Milojević Sheppard (2003) and Marelj (2004).

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[2] Note that English middles also do not allow *by* phrases (see Section 4.2), but in that case the inadmissibility is due to the fact that the Agent is not even implicitly present in the structure (Schäfer 2008), so a *by* phrase cannot saturate it in contrast to the *s strani* phrase in the reflexive passives, which contain the Initiator relation in semantics, at least with verbs that are not (anti)causatives (cf. example (9c) in Section 2.3). For the relevant structures and attendant semantics of the English canonical middles and Slovenian reflexive passive middles, see Sections 5.2.3 and 5.2.4.

Conversely, this human restriction is not present in the canonical passive construction, in which the Initiator can correspond to a PP such as *zaradi pritiska* 'because of pressure' in (9b). While the reflexive passive variant (9c) is, like the canonical passive construction (9b), also compatible with non-human Initiators, it additionally admits the anticausative interpretation, in which no Initiator is entailed (Alexiadou & Anagnostopoulou & Schäfer 2015). Such an anticausative interpretation is signalled by the *sam-od-sebe* 'by itself' phrase, which is allowed in the reflexive passive construction (9c), but not in the impersonal (9a) or canonical passive one (9b).

(9)   a.   *Reflexive impersonal construction*

Steklenico   se   razbije zlahka (*zaradi   pritiska / *samo   od
bottle.ACC.F REFL breaks easily   because-of pressure   alone.ACC.F by
sebe).
itself
'The bottle is such than *anyone* can break it easily.'
Impossible: 'The bottle is such that *anything* can break it easily.'

        b.   *Canonical passive construction*

Steklenica   je razbita zlahka (zaradi   pritiska / *sama   od sebe).
bottle.NOM.F is broken easily because-of pressure   alone.NOM.F by itself
'The bottle is easily broken (by the pressure / *by itself).'

        c.   *Reflexive passive construction*

Steklenica   se   razbije zlahka (zaradi   pritiska / sama   od sebe).
bottle.NOM.F REFL breaks easily because-of pressure alone.NOM.F by itself
'The bottle is such that it breaks easily (from the pressure / by itself).'

Ignoring the semantic contributions of the modifiers in the parentheses, let us assume that the interpretations of the impersonal (9a), canonical passive (9b), and reflexive passive (9c) constructions respectively correspond to the functions in (10a), (10b), and (10c) at the VoiceP level.[3]

(10)   a. $[\![\text{VoiceP}]\!]^g$ of (9a) $= \lambda e \exists x[\text{person}(x) \wedge \text{Initiator}(e, x) \wedge \text{break}(e, \text{bottle})]$

        b. $[\![\text{VoiceP}]\!]^g$ of (9b) $= \lambda e \exists x[\text{Initiator}(e, x) \wedge \text{break}(e, \text{bottle})]$

        c. $[\![\text{VoiceP}]\!]^g$ of (9c) $= \lambda e[\text{break}(e, \text{bottle})]$

The idea here is that a narrower interpretation reflects a richer argument structure syntax. The reflexive passive construction under the given anticausative reading contains a VoiceP whose head is semantically inactive (Schäfer 2017), so its denotation lacks the Initiator relation (10c).

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[3] While I follow Kratzer (1996) in assuming that the external argument is not a lexical argument of the verb, I diverge from her proposal in two respects: like Bruening (2021), I assume that (i) the internal argument is semantically an argument of the event description rather than a separate Patient/Theme relation and (ii) that Voice semantically combines with VP through regular functional application rather than a separate rule such as Event Identification.

The compatibility with the *sam-od-sebe* 'by itself' phrase follows from this, as what the use of this phrase entails is "that the event denoted is not caused by any entity" (Schäfer & Vivanco 2016: 20). On this definition, the English *by-itself* and Slovenian *sam-od-sebe* phrases are VP modifiers with the semantics in (11). (See also Schäfer 2007a: (70), who proposes a very similar denotation for such phrases.)

(11) $[\![by\ itself]\!]^g = [\![sam\ od\ sebe]\!]^g = \lambda f \lambda e \neg \exists x[f(e) \wedge \text{Initiator}(e,\ x)]$

In contrast to the reflexively marked anticausative construction (9c), canonical passives like example (9b) contain a thematic VoiceP whose head introduces the Initiator relation (Bruening 2013; Alexiadou & Anagnostopoulou & Schäfer 2015; Schäfer 2017; Bruening 2019). Consequently, adding a *sam-od-sebe* 'by itself' phrase with the semantics in (11) to a passive with the VoiceP semantics in (10b) would lead to a contradiction.

The impersonal is structurally even richer than a canonical passive – it not only contains a VoiceP whose head introduces the Initiator relation, but further restricts this relation with the person(x) property (10a). What is important is that causative verbs like *razbiti* 'to break' are built upon roots that are cause unspecified in terms of their encyclopedic meaning (Alexiadou 2010), which means that the event Initiator could in principle be interpreted either as a human or non-human entity, as is otherwise the case of the canonical passive construction (9b). But since the interpretation of the impersonal VoiceP obligatorily involves a human Initiator, and since this human entailment does not arise from the encyclopedic or lexical semantics of the verbal root of *razbiti* 'to break', it follows that the person(x) property in (10a) reflects the presence of additional structure in the impersonal construction that is absent from e.g. the passive one. This additional structure is found in the thematic external argument, which – as we will see in Section 5.1.1 – is a pronoun quantifying over human individuals (Rivero & Milojević Sheppard 2003).

2.4 Cross-linguistic comparison and summary

Cross-linguistically, not all impersonal constructions with accusative objects are necessarily active syntactically (i.e., have an external argument in the usual grammatical subject position). For instance, there is an impersonal construction in Ukrainian which also contains an accusative object but differs from the Slovenian construction in that it lacks the reflexive and shows passive marking on the verbal elements (12).[4] However, this construction is not active in terms of Voice,

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[4] Note that the passively marked VP also does not entail the passivity of Voice; in Polish, passively marked impersonals are, just like the Slovenian ones, active syntactically:

(i) *Polish impersonal -n/-t construction* (Ruda 2014: 206, 211)
   a. Przez   kilka   godzin przedstawiano (swoje) racje.
      through several hours   present.PASS.N own.ACC arguments.ACC
      'Some people have presented their arguments for a couple of hours.'

differing from the Slovenian construction in the fact that anaphoric modifiers are disallowed, as shown in (12a), and the fact that the external argument can be realised as an adjunct, as shown in (12b).

(12)   *Ukrainian impersonal -n/-t construction* (Lavine 2005: 83, 86)
   a.   Storoživ   bulo   pobyto   (*svojimy)   lancjuhamy.
        guards.ACC   was.N   beat.PASS.N   own.INS   chains.INS
        'The guards were beaten with (*their own) chains.'

   b.   Nemovlja bulo   znajdeno   u košyku (likarjami).
        baby.ACC   was.N   find.PASS.N   in basket   doctors.INS
        'The baby was found in the basket (by the doctors).'

Furthermore, such Ukrainian impersonals are semantically also passive-like in that they do not restrict the Initiator relation to a human participant, unlike the impersonal Slovenian construction (9a), as shown by the paraphrase under (13).

(13)   *Ukrainian impersonal causative construction* (Lavine 2013: 199)
        Šybku   bulo   rozbyto.
        window.ACC   was.N   break.PASS.N
        'Somebody or something broke the window.'

In sum, Slovenian impersonal middles (unlike Ukrainian impersonal constructions) are syntactically active with an external argument occupying the grammatical subject position (i.e., Spec, VoiceP). This external argument can bind syntactic anaphors and is in complementary distribution with the Slovenian equivalents of *by* phrases. Semantically, the external argument restricts the Initiator relation introduced by Voice to human participants.

3 The dispositional interpretation of the internal argument
3.1 The diagnostics – canonical English middles

That middles exhibit a dispositional interpretation of the internal argument has long been known in the literature (amongst others, van Oosten 1977; Condoravdi 1989; McConnell-Ginet 1994; Dowty 2001; Lekakou 2005; Ackema & Schoorlemmer 2017; Lekakou & Pitteroff 2018; Oya 2023). An early descriptive precursor to the dispositional semantics that will be formalised in Section 5.2.2 is van Oosten's (1977) Responsibility Condition (14).

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   b.   Czytano   list   (*przez siostrę).
        read.PASS.N letter.ACC   by   sister.ACC
        'A letter was (being) read (*by my sister).'

(14)   *Responsibility condition*
       The subject of a middle (the logical object) must have properties such that it can be
       understood to be responsible for the action expressed by the predicate.

Fagan (1992: 72), for instance, claims that the verb *buy* (15b) is – in contrast to *sell* (15a) –
interpretatively odd in a middle construction because it cannot fulfil the Responsibility Condition
(14).

(15)   a.   The new Ford sells well.
       b.   #The new Ford buys well.

The problem is that a buying event depends on the disposition of the person who does the buying
(so on the external argument, which is not syntactically realised here) rather than the thing being
bought, whereas the opposite state of affairs holds of the selling event in (15a).

Lekakou (2005) and Lekakou & Pitteroff (2018) show that the internal-argument orientation
of the ascribed disposition is made explicit in those middles that are modified by *in-virtue-of*
phrases or *because* clauses. Such phrases and clauses denote properties that restrict the operator
which introduces the possible-world semantics (Brennan 1993: 65).

Crucially, in middles, the properties introduced by such modifiers are necessarily subject
oriented. This is shown by (16) and (17), where only the continuations in the (a)-examples are
semantically coherent, precisely because they refer to properties of the internal argument in
contrast to the (b)-examples.

(16)   Crime novels read easily… (Lekakou & Pitteroff 2018: (20))
       a.   in virtue of the way they are written.
       b.   #in virtue of my reading skills.

(17)   The clothes wash with no trouble… (Lekakou 2005: 92)
       a.   because they're machine-washable.
       b.   #because I have lots of time.

Conversely, *because* clauses (or *in-virtue-of* phrases) in semantically similar constructions that are
not middles, like the extraposition construction in (18), are not subject oriented, which further
underscores the idea that the dispositional interpretation is unique to middles.

(18)   It is no trouble to wash these clothes… (Lekakou 2005: 92)
       a.   because they're machine-washable
       b.   because I have lots of time.

A middle also differs interpretatively from a habitual passive, so that conjoining the former with
a negated version of the latter does not result in a contradiction. This is shown by (19), in which
the first conjunct is syntactically a middle and the second a negated passive.

(19) This book reads easily, but it isn't easily read. (Lekakou 2005: 94)

Middles express different sorts of generalisations from habitual passives, in the sense that the generalisation made by the middle is necessarily tied to the internal argument whereas the generalisation of a habitual passive can be tied to other circumstances (Lekakou 2005: 94). Thus, example (19) can be uttered in a context where it is indeed the case that the book has properties such that anyone can read it easily in principle, but there exist external factors due to which the book is for instance not widely available so that not many people are actually reading it in such a manner. Note, further, that middles unlike habituals do not entail that the event has ever taken place (Lekakou & Pitteroff 2018), so (20a) unlike (20b) does not express a contradiction.

(20) a. This book reads easily, even though no one has actually read it.
b. #People read the book easily, even though no one has actually read it.

3.2 The diagnostics – non-canonical Slovenian impersonal middles

Even though the Slovenian impersonal construction contains an external argument in its usual syntactic position (Section 2), it shows the same dispositional interpretation keyed to the internal argument as the English middles in the previous section. When modified by the Slovenian equivalents of the *in-virtue-of* phrase or the *because* clause, such modifiers again need to refer to the properties of the internal argument (which, however, is not the grammatical subject here). Otherwise, the modifiers are semantically incongruous, as shown by the (b)-continuations under examples (21) and (22).

(21) Kriminalke   se   bere zlahka...
crime-stories.ACC REFL reads easily
'Crime stories read easily...'

a. zaradi   njihovega stila   pisanja.
in-virtue-of their.GEN style.GEN writing.GEN
'in virtue of their writing style.'

b. #zaradi   mojih   bralnih   zmožnosti.
in-virtue-of my.GEN   reading.GEN skills.GEN
#'in virtue of my reading skills.'

(22) To   obleko   se   opere brez   problema...
this.ACC dress.ACC REFL washes without problem.GEN
'This dress washes without a problem...'

a. ker   gre lahko   v pralni   stroj.
because goes allowed.ADV in washing machine
'because it can go into the washing machine.'

b. #ker   imam   veliko   časa.
   because have.1SG a-lot-of time
   #'because I have a lot of time.'

Just like in English, these phrases are oriented towards internal arguments in Slovenian middles only.[5] The interpretatively similar extraposition construction, in which the verb appears in its infinitival form, shows no such orientation. Compare the extraposition construction in (23) with the middle in (22).

(23)   Te   oblete   ni   problema   oprati...
       this.GEN dress.GEN is.NEG problem.GEN wash.INF
       'It is no problem to wash this dress...'

     a. ker   gre   lahko   v   pralni   stroj.
        because goes   allowed.ADV in washing machine
        'because it can go into the washing machine.'

     b. ker   imam   veliko   časa.
        because have.1SG a-lot-of time
        'because I have a lot of time.'

Again, just like in English (19), conjoining an impersonal middle with a negated habitual passive does not result in a contradiction (24).

(24)   Knjigo   se   bere   zlahka, ampak ni   zlahka brana.
       book.ACC REFL reads easily   but   is.NEG easily   read.PASS
       'This book reads easily but it is not easily read.'

Finally, impersonal Slovenian middles are just like their English counterparts in that they also do not entail that the verbal event has ever taken place in the real world. Thus, example (25a), in which the first clause is an impersonal middle construction, does not express a contradiction in contrast to (25b), in which the first clause is a regular active construction with a generic interpretation.

(25)   a. Knjigo   se   bere   zlahka, čeprav   je   nihče   nikoli ni   bral.
        book.ACC REFL reads easily   although it.GEN nobody never is.NEG read.PTCP
        'This book reads easily although no one has ever read it.'

     b. #Ljudje knjigo   berejo   zlahka, čeprav   je   nihče   nikoli ni
        people book.ACC read.3PL easily   although it.GEN nobody never is.NEG
        bral.
        read.PTCP
        #'People read this book easily although no one has actually ever read it.'

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[5] The same restriction holds for the reflexive passive variant:

  (i) Knjiga   se   bere   zlahka, #ker   imam   veliko   časa.
     book.NOM REFL reads easily   because have.1SG a-lot-of time
     'This book reads well #because I have a lot of time.'

In sum, Slovenian impersonal middles – even though they contain a syntactically realised external argument (Section 2) – are semantically oriented towards the internal argument. Just like in English middles, the internal argument in Slovenian middles imposes semantic control over modification in the form of *zaradi* 'in virtue of' phrases or *ker* 'because' clauses. Furthermore, both English canonical and Slovenian non-canonical impersonal middles express different generalisations from semantically related constructions such as habitual passives.

4 Middles as a notional category

4.1 Slovenian middle and non-middle impersonals

Before presenting my analysis of impersonal middles, I discuss the general grammatical as well as categorical differences between Slovenian sentences like (26a), which are considered middles on account of their dispositional semantics, and (26b), which refer to simple episodic events and are therefore not dispositional middles.[6]

(26)   a.   *Impersonal middle construction*
            Knjigo   se   bere zlahka.
            book.ACC REFL reads easily
            'The book is such that people in general can read it easily.'

    b.   *Impersonal non-middle construction*
            Zdaj se   bere   knjigo.
            now   REFL reads book.ACC
            'Some people are currently reading the book.'

Like Condoravdi (1989), Lekakou (2005), Schäfer (2008), and Lekakou & Pitteroff (2018), I am pursuing the idea that middle constructions correspond to a notional category rather than a lexical-syntactic one. This means that the "middle is a type of interpretation certain sentences receive" (Condoravdi 1989: 24), where such a middle interpretation is independent of the underlying syntactic properties of the construction (*ibid.*).

    What such a notional conceptualisation of middles means for the pair in (26) is that, at least up to a point, both sentences are syntactically derived and semantically composed in complete parallel. As we will see in Section 5.1.1, this means that in both sentences VoiceP is built up by the grammar in the same way, and that in both cases Spec, VoiceP is occupied by the same thematic external argument that syntactically corresponds to a nominative DP and semantically

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[6] As noted by an anonymous reviewer, sentence (26b) can also be potentially interpreted as a modal statement paraphrasable as 'Now is the time to read the book', which also does not refer to an actualised episodic event. However, the modality under such a paraphrase is different from the dispositional middle ascription, involving, possibly, a null deontic/directive modal. I leave it to future research to explore more precisely how such modality differs from the dispositional middle one.

to the human Initiator of the verbal event. There are, of course, apparent differences between the interpretation of the external argument, such as the fact that it is paraphrased as an indefinite in the non-middle impersonal (26b) and as a generic DP in the middle impersonal (26a), but these have to do with differences in the Tense-Aspectual system, which is the point at which the two constructions start grammatically diverging, as we will see in Section 5.1.2.

One obvious way to justify this assumption – that is, that a middle is just an interpretation an independently existing construction receives – is with the fact that both the middle and non-middle impersonals behave in the same way with respect to the tests probing into the syntactic realisation of the external argument. For instance, both are able to license the anaphor *svoj* 'own' (27), while the reflexive passive variants are invariably unable to do so (28), regardless if they are interpreted as dispositional middles or not.

(27)   a.   *Reflexive impersonal construction*
          Svojo   knjigo   se   bere zlahka.   (Middle)
          own.ACC.F book.ACC.F REFL reads easily
          'One's own book reads easily.'

        b. Zdaj se   bere   svoje   knjige.   (Non-middle)
          now   REFL reads own.ACC.PL books.ACC
          'People are now reading their own books.'

(28)   a.   *Reflexive passive construction*
          (*Svoja)   knjiga   se   bere   zlahka.   (Middle)
            own.NOM.F book.NOM.F REFL reads easily
          'The/*one's own book reads easily.'

        b. Zdaj se   berejo   (*svoje)   knjige.   (Non-middle)
          now   REFL read.3PL   own.NOM.PL books.NOM
          'Now, the/*one's own books are being read.'

Note that there is another accusative reflexive impersonal construction, called the *intensional feel-like* or the *involuntary state construction* (29), which contains a dative DP as a quirky grammatical subject (Marušič & Žaucer 2006).

(29)   *Involuntary state construction*
        Petru   se   bere knjigo.
        Peter.DAT REFL reads book.ACC
        'Peter feels like reading a book.'

Willim (2020) calls the Polish variants of these examples impersonal middles as well, but the feel-like semantics here is not keyed to the accusative argument, but the dative one, as shown by the paraphrase. Interestingly, even in regular impersonal middles without the feel-like

interpretation, the disposition can also be ascribed to a dative internal argument, such as the DP *Juliji* 'to Julija' in (30).

(30) *Impersonal middle construction with a non-selected dative DP*
Juliji   se   bere   knjigo   zlahka.
Julija.DAT REFL reads book.ACC easily
'Julija is such that one can read the book to her easily.'

There are two semantic differences between the involuntary state construction in (29) and the impersonal middle in (30). First, the dative DP in the impersonal middle is interpreted solely as the experiencer of the reading event, while the reader is someone else and corresponds to the external nominative argument. In the involuntary state construction, the dative corresponds to the (potential) reader as well. Second, there is a difference in the modal base, which is tied to the (involuntary) desires of the dative DP in the feel-like construction (29) and the stative properties of the dative in the middle (30). While I leave a precise analysis of involuntary state constructions like (29) aside for this paper,[7] I do note that examples (29) and (30) are semantically parallel in that the modality is predicated of an overt DP in both cases. In fact, in the middle, the disposition can be ascribed to either the dative or accusative DP (but not to the nominative external argument). I will show how the ascription in dispositional middle examples like (30) grammatically goes about in Section 5.3.2.

4.2 English middles – lexicalist and syntactic approaches

Fagan (1992) and Ackema & Schoorlemmer (1994) do not treat English middles as a notional category, but rather as the result of a special lexical rule that pre-syntactically derives a middle verb from an underlying transitive verb. To derive an English middle sentence, these authors assume a two-rule lexical operation like the one in (31).

(31) *Lexical Middle Formation*
a. Pre-syntactically assign ARB to θ_{AGENT}.
b. Externalise θ_{PATIENT} when mapping the verb's lexical argument structure onto the syntactic representation.

The assignment of ARB to θ_{AGENT} pre-syntactically saturates this role (Ackema & Schoorlemmer 1994), thus obviating the need for it to be projected into the syntax, as is otherwise dictated by the Projection Principle (Chomsky 1986: 84). This explains the fact that English middles do not allow Agent-oriented modifiers or *by* phrases, nor can they control into purpose clauses, as

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[7] While (29) and (30) superficially seem to be the same in terms of structure, Marušič & Žaucer (2006; 2014) provide a plethora of evidence showing that the feel-like construction is covertly biclausal, where the feel-like semantics originates in a null desiderative matrix verb while the overt verb is located in the embedded clause. See also Rivero & Milojević Sheppard (2003) and Rivero (2009) for a competing analysis that does not assume a biclausal structure.

shown by the set of examples in (32). In passives, θ_{AGENT} is syntactically realised but demoted (e.g., absorbed by the passive suffix according to Jaeggli 1986), so all of this is allowed, as shown by the set of examples in (33).[8]

(32)　*Middles* (Ackema & Schoorlemmer 1995: 175)
　　　a.　Walls paint easily (*on purpose).
　　　b.　Walls paint easily (*by Harry).
　　　c.　Walls paint best (*to protect them against the rain).

(33)　*Passives* (Ackema & Schoorlemmer 1995: 175)
　　　a.　The wall was painted (on purpose).
　　　b.　The wall was painted (by Harry).
　　　c.　The wall was painted (to protect it against the rain).

According to the second rule (31b), the internal argument is pre-syntactically externalised, so it already enters the syntactic representation as the grammatical subject rather than a deep-structure object which would raise to the clause-initial position by means of regular A-movement. Cross-linguistically, this explains the fact that middles pattern with unergatives (whose sole argument is an underlying subject) rather than unaccusatives (whose sole argument is an underlying object) with respect to morphosyntax; for instance, in periphrastic tense constructions in Dutch, middles select cognates of the auxiliary *have* rather than cognates of *be*, which is an unergative characteristic rather than an unaccusative one (for relevant examples, Ackema & Schoorlemmer 1995: 188). Relatedly in English, middle verbs cannot be built from unaccusative roots, as shown by Schäfer's (2008: 215) examples in (34).

(34)　a.　*Middle*
　　　　　Obedient children raise / *rise easily.

　　　b.　*Unaccusative*
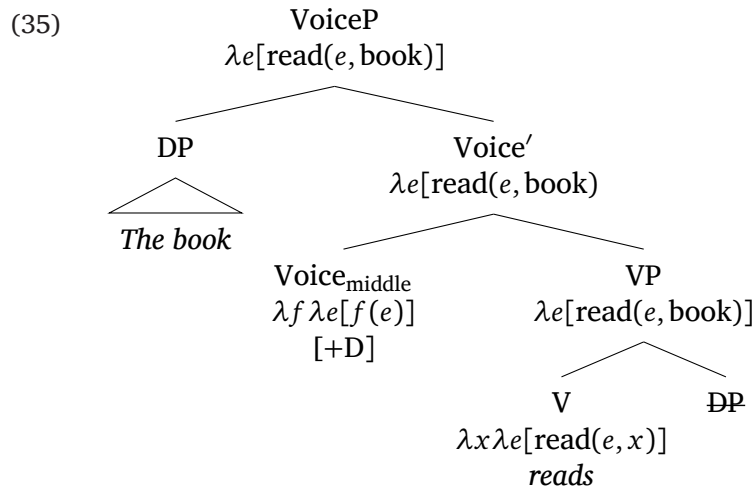　　　　　The sun *raises / rises in the east.

There is, however, a way to account for these facts without assuming a pre-syntactic operation like (31). Schäfer (2008: 235–238) proposes that English middles structurally correspond to

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[8]　In Slovenian impersonal middles, Agent-oriented modifiers like *zanalašč* 'on purpose' are not outright ungrammatical in contrast to English (32a), but they are semantically odd:

(i)　Knjigo　　se　　bere　zlahka　(#zanalašč).
　　　book.ACC REFL　reads　easily　　on-purpose
　　　'This book is such that anyone can read it (#on purpose).'

Since Slovenian middles pass other external-argument tests (Section 2), I assume that *zanalašč* 'on purpose' is odd precisely because it is semantically Agent-oriented, whereas middles denote dispositions that are internal-argument-oriented. In other words, this adverb is odd for the same reason as the Agent-oriented *in-virtue-of* phrases and *because* clauses in Section 3.

Voiced Anticausatives (see also Schäfer 2007b), which means the VoiceP of a sentence like *The book reads well* is syntactically derived and semantically composed as in (35).

(35)

VoiceP
$\lambda e[\text{read}(e, \text{book})]$

DP

The book

Voice$'$
$\lambda e[\text{read}(e, \text{book})$

Voice$_{\text{middle}}$
$\lambda f\, \lambda e[f(e)]$
[+D]

VP
$\lambda e[\text{read}(e, \text{book})]$

V
$\lambda x\, \lambda e[\text{read}(e, x)]$
reads

DP̶

In (35), the VP of middles merges with a Voice head. Such a Voice head semantically corresponds to an identity function, which means that – unlike in the case of regular active or passive sentences – the VP is not semantically expanded with an Initiator relation such as Agent. This accounts for the fact that middles fail all agentivity tests, as shown by the examples in (32). For instance, the *by* phrase, which is merged as a VoiceP adjunct, has the semantics in (36) (Bruening 2013; Alexiadou & Anagnostopoulou & Schäfer 2015), according to which it fills an open $\langle e \rangle$-type variable with the meaning of the embedded complement DP. However, Voice, being an identity function in the tree in (35), does not introduce an $\langle e \rangle$-type variable, hence the incompatibility of such phrases in English middles.

(36) $[\![by\ \mathrm{DP}]\!]^g = \lambda f_{\langle e, \langle s, t \rangle \rangle} \lambda e[f(e, [\![\mathrm{DP}]\!]^g)]$

Syntactically, Voice in English middles is stipulated to be an active head. This is formalised by the [+D] feature (Wood 2015; Schäfer 2017; Legate et al. 2020), according to which a DP needs to be merged as the VoiceP specifier. The [+D] feature is satisfied by the internal argument moving to Spec, VoiceP; see Schäfer (2008: 237) for motivation of this movement tied to the learnability of non-thematic Voice. Empirically, the postulation of such a syntactically active Voice layer in middles explains their morphosyntactic patterning with transitive roots rather than unaccusative ones (34). Additionally, since the internal argument is not pre-syntactically externalised, we also get a straightforward account of the fact that middles license resultative phrases (37c), which can only be predicated of DPs that are underlying objects (Levin & Rappaport Hovav 1995), as with unaccusatives (37b) but not unergatives (37a).

(37) a. *Unergative* (Levin & Rappaport Hovav 1995: 35)
Dora shouted (*hoarse).

b. *Unaccusative* (Levin & Rappaport Hovav 1995: 39)
The river froze solid.

c. *Middle* (Schäfer 2008: 214)
Such metal hammers flat easily.

The important takeaway of the analysis in (35) is that it does not assume any kind of independent grammatical rule, like (31), to derive English middles; rather, English middles more or less undergo the same derivation, at least up until VoiceP, as regular active sentences (while semantically they are composed like anticausatives), with the only stipulation needed being the assumption that the Voice head is – rather uniquely – semantically an identity function. This is in keeping with the idea that even English middles are a notional category that is "parasitic" on an existing syntactic structure (Lekakou 2005), which is VoiceP with a filled specifier in this case. Conceptually, this is a welcome result as it is in line with the idea that the only generative component of grammar is syntax (amongst many others, Marantz 1997; Alexiadou & Anagnostopoulou & Schäfer 2015; Bruening 2018), with the lexicon employing no word formational rules of its own.

When I return to English middles in my analysis in Section 5.2.3, I will be making use of the syntactic derivation and its attendant semantic composition in (35) as a building block for the dispositional assignment. One problem, however, in assuming that Voice in English middles is semantically vacuous lies in the fact that English middles do pass at least one agentivity diagnostic (Bruening 2013; Lekakou & Pitteroff 2018); that is, they allow the use of instrument PPs (38). In this they differ from anticausatives, which are taken to disallow such phrases precisely on account of the fact that there is no Initiator relation in their semantic representation.[9]

(38) a. *Middle*
The door opens easily (with a key).

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[9] Bruening (2013: 27, 30) explains the contrast in (38) by assuming that English middles are formed on the basis of an operator with the semantics in (i), while a *with* phrase is interpreted as in (ii).

(i) $\llbracket$Middle Operator$\rrbracket^g = \lambda f_{\langle e, \langle s,t \rangle \rangle} \lambda g_{\langle s,t \rangle} \text{GN} e \exists x [f(e, x) \Longrightarrow g(e)]$

(ii) $\llbracket with\ \text{DP} \rrbracket^g = \lambda f_{\langle e, \langle s,t \rangle \rangle} \lambda x \lambda e: f(e, x) \wedge \exists e' \le e[\text{using}(e', \llbracket \text{DP} \rrbracket^g) \wedge \text{Initiator}(e', x)]$

The Middle Operator (i) takes as its first argument a function of type $\langle e, \langle s,t \rangle \rangle$, which corresponds to the denotation of a thematic VoiceP with an unfilled specifier, and closes the $\langle e \rangle$-type variable with an existential quantifier. Because of this, English middles are incompatible with *by* phrases, as the latter also target a Voice projection with an open $\langle e \rangle$-type variable (36). By contrast, instrument phrases (ii) are compatible with the Middle Operator because they leave this variable open, while their unacceptability in English anticausative constructions follows from the fact that the latter either do not contain VoiceP at all (Alexiadou & Anagnostopoulou & Schäfer 2015) or possibly contain one whose head is semantically vacuous (Bruening 2019). See also (Bruening 2024) for a modification of the analysis in (i) that also explains the inability of English middles to control into purpose clauses (32c) and an alternative explanation of their patterning with resultative phrases (37c).

    b.   *Anticausative*
        The door opened (*with a key).

Furthermore, an issue with non-Lexicalist syntactic analyses is that they do not provide a straightforward account of the fact that English middles can host only particular subsets of verbs in relation to the *Aktionsart* classification (Vendler 1957) – that is, while English middles can host accomplishment and activity verbs, they cannot host achievement or state verbs, as shown by the example set in (39).

(39)   *Middles and Aktionsart* (Park 2009: 128–129)
     a.   The car drives easily.   (Activity)
     b.   The book reads easily.   (Accomplishment)
     c. *The poem understands easily.   (Achievement)
     d. *The answer knows easily.   (State)

On the lexical account, such limited productivity would be explained by the stipulation that middle formation must target an Agent θ-role rather than an Experiencer one (Ackema & Schoorlemmer 1994: 70), as per the rule in (31a). I leave this puzzle aside for future research.

5 The analysis

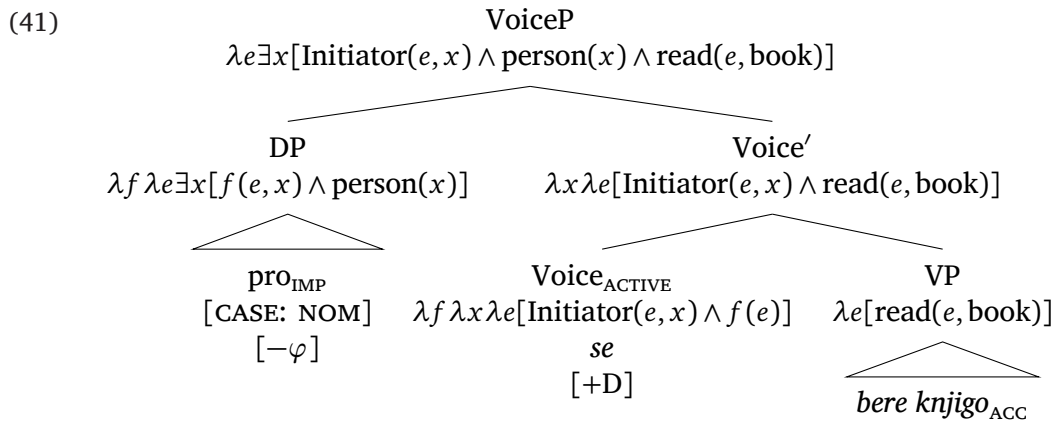## 5.1 The grammar of the underlying impersonal construction

5.1.1 The syntactic derivation and semantic composition of VoiceP

In Section 2, I have provided several pieces of evidence showing that Slovenian impersonal middles are syntactically active constructions, which means that in a sentence like (40) there is a syntactically realised external argument in nominative case aside from the internal one in accusative, that is, *knjigo* 'the book'.

(40)   Knjigo   se   bere   zlahka.
       book.ACC REFL reads easily
       'The book is such that it reads easily.'

I follow the strand of research in which the external argument is analysed as a null pronoun (among others, Rivero & Milojević Sheppard 2003; Marušič & Žaucer 2006; Fehrmann & Junghanns & Lenertová 2010; Krzek 2013; Lenardič 2020). The reflexive, on the other hand, corresponds to argument-manipulating morphology (Marušič & Žaucer 2006: 1110), which on our account is realised in VoiceP.

    I concretely propose that *se*, a functional element, structurally corresponds to a Voice head which introduces the Initiator relation in semantics. Syntactically, *se* is an active Voice head that – on account of the [+D] feature (Wood 2015) – selects for an external argument DP. This external argument is the null pronoun pro$_{IMP}$ that occupies Spec, VoiceP in the tree in (41).

(41)

$$\text{VoiceP}$$
$$\lambda e \exists x[\text{Initiator}(e, x) \wedge \text{person}(x) \wedge \text{read}(e, \text{book})]$$

DP   Voice$'$

$\lambda f \lambda e \exists x[f(e, x) \wedge \text{person}(x)]$ $\lambda x \lambda e[\text{Initiator}(e, x) \wedge \text{read}(e, \text{book})]$

pro$_{\text{IMP}}$ Voice$_{\text{ACTIVE}}$ VP

[CASE: NOM] $\lambda f \lambda x \lambda e[\text{Initiator}(e, x) \wedge f(e)]$ $\lambda e[\text{read}(e, \text{book})]$

$[-\varphi]$ *se*   *bere knjigo*$_{\text{ACC}}$

          $[+\text{D}]$

One can justify the analysis of the reflexive as a Voice head with the following restriction on verbal forms. In Slovenian, reflexive impersonals are incompatible with passivised verbs (Rivero & Milojević Sheppard 2003: 112),[10] as in (42).

(42)   *Poklicano   se   je bilo   (s   strani   župana).
       called.PASS.N REFL is be.PTCP.N on part   mayor.GEN
       Intended: 'Someone was called (by the mayor).'

What accounts for the ungrammaticality of (42) is that *se*, being a Voice head, stands in complementary distribution with other Voice heads, like the passive one, which syntactically does not contain the $[+\text{D}]$ feature and thus does not license the merger of the external argument in Spec, VoiceP (Alexiadou & Anagnostopoulou & Schäfer 2015). A VP merges either with *se* or it merges with a canonical passive Voice head, the latter of which would morphologically trigger the spell out of the passive *-n* morpheme (Schäfer 2017: 142); it cannot, however, merge with both.

As will be shown in Section 5.2.3, the analysis in which *se* is positioned as a Voice head can also be rather straightforwardly extended to account for the reflexive passives, in which the internal argument is in nominative. In such examples, *se* – like a canonical passive Voice head – lacks the $[+\text{D}]$ feature, so pro$_{\text{IMP}}$ is not merged and Spec, VoiceP thereby remains unoccupied. It is then the lack of pro$_{\text{IMP}}$ in the reflexive passives that allows for the Initiator variable to be saturated by the Slovenian equivalent of the *by* phrase.

5.1.2 The quantificational semantics of the pronoun

Notice the semantics of pro$_{\text{IMP}}$ in the tree in (41). The null pronoun is analysed as a (neo-Davidsonian) existential quantifier. As such, it existentially closes the *x* variable introduced by the active Voice head and assigns it the person property, which is in line with the fact that impersonal constructions invariably refer to human Initiators (Section 2.3).

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[10]   See also Ruda (2014) for a similar proposal for Polish *-n/-t* impersonals, which likewise resist passivisation.

The inherent quantificational nature of pro$_{\text{IMP}}$ can be justified in two ways. First, pro$_{\text{IMP}}$ differs from other null pronouns (Kratzer 2009), like null agreeing pro, in that it cannot have an indexical interpretation (Krzek 2014: 151), in which sense it is similar to the English indefinite *someone*. Compare (43a), in which the second clause is an impersonal construction with pro$_{\text{IMP}}$ as subject, with (43b), in which the second clause is a regular active construction with agreeing pro$_{\text{3SG.F}}$ as subject.

(43) a. Ko   je Urša kuhala   večerjo,   se   je poslušalo   glasbo.
           when is Urša cook.PTCP.F dinner.ACC REFL is listen.PTCP.N music.ACC
           'When Urša$_i$ was cooking dinner, *she$_i$/people were listening to music.'
           cf. *When Urša was cooking dinner, someone was listening to music.*

     b. Ko   je Urša kuhala   večerjo,   je poslušala   glasbo.
           when is Urša cook.PTCP.F dinner.ACC is listen.PTCP.F music.ACC
           'When Urša$_i$ was cooking dinner, she$_i$/some other woman was listening to music.'

The same holds for impersonals interpreted as dispositional middles, like the relative clause in (44), where pro$_{\text{IMP}}$ cannot refer to the subject of the matrix clause (cf. Lekakou & Pitteroff 2018: (22)).

(44) On išče   knjige,   ki se jih   bere zlahka.
      he searches-for books.ACC that REFL them.ACC reads easily
      'He is searching for books that *people in general* can read easily.'
      Impossible: 'He$_i$ is searching for books that *he$_i$* will read easily.'

Second, in a complex sentence where both clauses are impersonal, such as (45), the two null pronouns do not covary in interpretation. Rivero & Milojević Sheppard claim that if "the Indefinites in [(45)] were Heimian free variables and inherited force from the adverb, they would be bound to that adverb and be semantically forced to covary in this sentence" (2003: 130), contrary to fact.

(45) Če se   teorijo   razloži slabo, se je   navadno ne razume   dobro.
      if   REFL theory.ACC explains badly REFL it.GEN normally NEG understands well
      'If one$_i$ explains this theory badly, then one$_j$ usually won't understand it.'

5.1.3 The lack of φ-features

The other important characteristic of pro$_{\text{IMP}}$ is that it lacks φ-features (Rivero & Milojević Sheppard 2003). Following Ackema & Neeleman (2018) and Fenger (2018), I assume that φ-features are syntactically located in the head of a functional projection within DP, like this:

(46) *Inner syntax of DP* (Fenger 2018: 312)

$$\begin{array}{c} \text{DP} \\ \diagup\diagdown \\ \text{D} \quad \varphi\text{P} \\ \diagup\diagdown \\ \varphi \quad \text{N} \end{array}$$
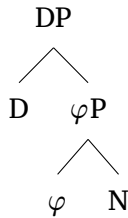
The φ-head takes as its complement the nominal head N, which denotes the set of individuals $D_{i,u,o}$ (Ackema & Neeleman 2018), this set being the domain of the x variable that pro$_{\text{IMP}}$ quantifies over. The indices *i, u, o* refer to the subsets of speaker (and possible associates), addressee (and possible associates), and other individuals, respectively. The features specified in φ then restrict the set $D_{i,u,o}$ in such a way that they remove the unspecified subsets (*ibid.*). To exemplify, the φ-features of a third person pronoun operate on N in such a way that they discard the sets D_i and D_u so that what is left is the set D_o, which corresponds to the fact that third person pronouns can only refer to other participants in the discourse, but not to the addressee or speaker (or their relevant associates).

The DP pro$_{\text{IMP}}$, being an impersonal pronoun, does not contain φP in contrast to (46) (Fenger 2018), so the set $D_{i,u,o}$ does not get narrowed down and remains as is. This explains the fact that pro$_{\text{IMP}}$ can potentially refer to any individual in the discourse, unlike pronouns specified for a particular person feature. Compare the regular active example (47a) with the impersonal construction (47b), both of which convey an existential interpretation of the Initiator, as shown by the paraphrases.

(47) a. Klicali   so   ga.
          call.PTCP.PL.M AUX.3PL him
          'Some people (but not you or I) just called him.'

      b. Klicalo   se   ga   je.
          call.PTCP.N REFL   him   is
          'Some people (possibly including you or me) just called him.'

The subject in (47a) is regular agreeing pro, whose 3rd person feature narrows N's domain of reference down to D_o. Consequently, the pronoun cannot refer to the speaker or the addressee. By contrast, pro$_{\text{IMP}}$ in (47b) lacks φ-features, so it can also refer to the speaker or the addressee.

There is another possible reason as to why pro$_{\text{IMP}}$ lacks φ-features, which has to do with its potential case values. Fenger (2018) shows that impersonal pronouns which can appear in episodic sentences, like German *man* (48) and Dutch *men* (49), only appear in syntactic positions where they get nominative case, as in the (a)-examples.

(48) *German* (Fenger 2018: 297, 300)

    a. Man hat für dich angerufen.
        IMP has for you called
        'Someone has called for you.'

    b. *Ich habe man auf der Strasse arbeiten hören.
        I   have IMP on the road work   hear
        Intended: 'I have heard people working on the road.'

(49) *Dutch* (Fenger 2018: 297, 298)

    a. Men heeft voor je   gebeld.
        IMP has for you called
        'Someone has called for you.'

    b. *Dit herinnert men aan de oorlog.
        this reminds IMP of   the war
        Intended: 'This reminds one of the war.'

The DP pro$_{\text{IMP}}$ is just like German *man* and Dutch *men* in that it cannot get accusative case. As pointed out by an anonymous reviewer, this is clearly observed in examples with verbs like *zebsti* 'to feel cold' (see also Grahek 2008: (40)), which only select for an accusative argument in Slovenian (50).

(50) a. Jureta   je zeblo.
        Jure.ACC is feel-cold.PTCP.N
        'Jure felt cold.'

    b. *Zeblo   se   je.
        feel-cold.PTCP.N REFL is
        Intended: 'Somebody felt cold.'

Fenger (2018), who adopts a syntactic dependent approach to case assignment (e.g., Preminger 2014; Levin & Preminger 2015), claims that accusative DPs are dominated by Kase Phrases, and that a K head can only combine with those DPs that contain φP. Since German *man*, Dutch *men*, and Slovenian pro$_{\text{IMP}}$ lack φP, they are incompatible with such a head and are thus precluded from clausal positions in which they would get accusative.

Relatedly, since pro$_{\text{IMP}}$ does not have φ-features, it does not undergo φ-feature agreement with the finite T head, which means that the third-person singular ending on the verb *bere* 'reads' in (40) corresponds to a default feature that arises in the absence of agreement (Rivero & Milojević Sheppard 2003). This poses a problem for models of case assignment where φ-feature agreement is a prerequisite for the assignment of nominative (e.g., Chomsky 2001), but is unproblematic for those models where case assignment is an independent grammatical process that takes place either during the syntactic derivation (Preminger 2014; Levin & Preminger 2015) or in a post-syntactic component of grammar (Marantz 1991; Bobaljik 2008).

For instance, in the model proposed by Preminger (2014) and Levin & Preminger (2015), structural cases – that is, nominative and accusative – are assigned independently to possible φ-feature agreement, as the result of a syntactic case-competition calculus. In this approach, a DP is assigned accusative within a local domain if and only if the following two conditions are met. First, the DP has not independently received lexical case under sisterhood with a lexical-case-assigning head like a preposition. Second, the DP occupies a syntactic position in which it is asymmetrically c-commanded by another DP that upon entering the derivation also does not immediately receive lexical case. This means that in the tree in (41), the internal argument receives accusative purely due to configurational reasons; that is, because it occupies a position where it is c-commanded by pro$_{IMP}$, which is initially caseless.

After accusative is assigned to the DP in VP, pro$_{IMP}$ is assigned nominative case, and this just so happens because pro$_{IMP}$ is neither asymmetrically c-commanded within the same finite clause by another DP without lexical or accusative case, nor does it receive a lexical case of its own under sisterhood (Levin & Preminger 2015: 233). (Notice that in this model it also necessarily follows that, despite appearances to the contrary, examples without thematic subjects like (50a) and the Ukrainian examples in (12) and (13) contain a nominative DP, given that the internal argument is in accusative. The nominative DP c-commanding the accusative one is perhaps a null expletive rather than an existential pronoun like pro$_{IMP}$ in such cases.)
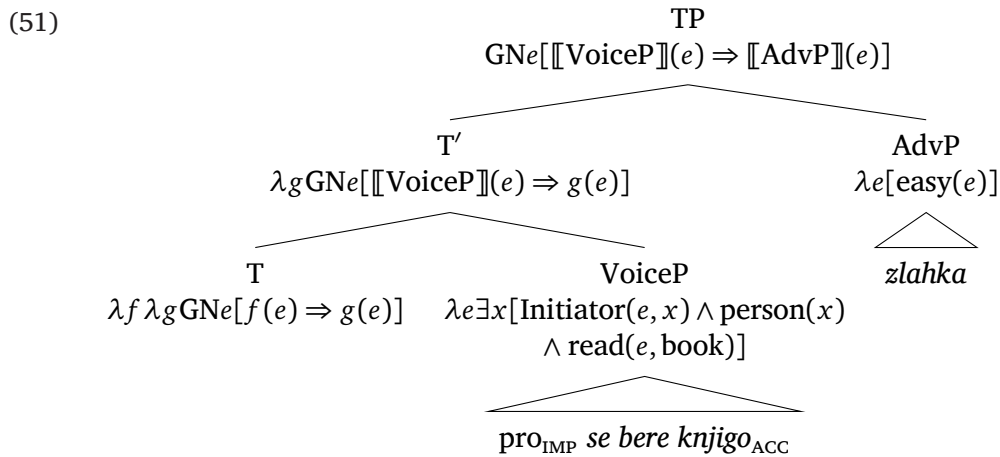
5.2 Beyond VoiceP and towards the dispositional interpretation

5.2.1 Quantificational event variability

In contrast to episodic examples like (47b), the subject in dispositional middles like (40) does not have an existential interpretation, but rather a generic one. I assume, following Heim (1990), that such a generic interpretation of pro$_{IMP}$ is a compositional effect, in that it arises from the combined interpretation of an existentially quantified individual variable and a generically quantified event variable that scopes over the existentially bound one.

Simplifying somewhat,[11] I propose that in a middle like (40) the head of TP binds the event variable, which is still open at the VoiceP level, with the operator GN, which is interpretatively akin to an adverb of quantification such as *usually* or *generally* (Steinbach 2004: 202).

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[11] I ignore the interpretation of tense, but note that Ramchand (2008) proposes that the event variable is bound by an operator in the head of an aspectual phrase sandwiched between VoiceP/vP and TP, whereas TP would then be the locus of tense semantics exclusively.

(51)

$$\text{TP}$$
$$\text{GN}e[\llbracket\text{VoiceP}\rrbracket(e) \Rightarrow \llbracket\text{AdvP}\rrbracket(e)]$$

        T′   AdvP

$$\lambda g\,\text{GN}e[\llbracket\text{VoiceP}\rrbracket(e) \Rightarrow g(e)]$$ $$\lambda e[\text{easy}(e)]$$

           T   VoiceP   *zlahka*

$$\lambda f\,\lambda g\,\text{GN}e[f(e) \Rightarrow g(e)]$$ $$\lambda e\exists x[\text{Initiator}(e,x) \wedge \text{person}(x)$$
$$\wedge\, \text{read}(e, \text{book})]$$

                              pro$_{\text{IMP}}$ *se bere knjigo*$_{\text{ACC}}$

The tree in (51) shows the derivation and composition of TP for sentence (40), where T takes the VoiceP from (41) as its complement. I also assume, partially following Bruening (2013: 30), that the AdvP *zlahka* 'easily' is merged with an intermediate projection of T and its semantic content is then mapped into the nuclear scope of the operator.

    The interpretation of TP is spelled out in (52) in full form. This LF actually corresponds to what, for instance, Condoravdi (1989) and Bruening (2013) have proposed to be prototypical truth conditions for a middle sentence.

(52) $\llbracket\text{TP}\rrbracket^g$ in (51) = GN$e\exists x[[\text{Initiator}(e, x) \wedge \text{person}(x) \wedge \text{read}(e, \text{book})] \Rightarrow [\text{easy}(e)]]$
        In prose: 'Generally, if some x, x a person, reads the book (i.e., is the Initiator of the reading event), then x does so easily.'

However, the LF in (52) is as it stands too general, since it does not distinguish between the interpretation of (53a), which is a middle, and (53b), which is not.

(53)   a.   The book reads easily.
        b.   People generally read this book easily.

What is at this stage semantically unaccounted for is the dispositional interpretation, which is keyed to the internal argument in the middle only, as (53b) can be expanded into *People generally read this book easily because people are smart*. Indeed, the dispositional interpretation seems to be independent of the event interpretation, as the latter varies with different adverbs of quantification (Condoravdi 1989: 19). For instance, the truth conditions (minus the disposition) of the middle in (54a), which is modified by the adverb *always*, correspond to the LF in (54b), in which the event variable is universally bound. (The same sort of variation in event interpretation is also observable in Slovenian impersonal middles; see example (56) in the next section.)

(54) a. The book always reads easily.

   b. $\forall e \exists x[[\text{Initiator}(e, x) \wedge \text{person}(x) \wedge \text{read}(e, \text{book})] \Longrightarrow [\text{easy}(e)]]$

      In prose: 'In all events, if some *x*, *x* a person, reads the book, then *x* does so easily.'

The LF in (54b) is congruent with the idea that (54a) has a stronger meaning than (53a), which is without an overt adverb of quantification. In this latter example without the adverb, the meaning of GN in the accompanying LF corresponds to 'generally' or 'usually', which allows for events in which someone does not read the book easily, in spite of its properties.

5.2.2 The dispositional modal semantics

Lekakou & Pitteroff (2018: (19)) propose that the dispositional interpretation in middles is contributed by a VP-level operator Disp, which they define (following Brennan 1993: 67) as in (55).

(55) Disp denotes that function v of type schema $\langle {}^{\wedge}\text{IV}, \text{IV}\rangle$ such that for any index *w*, any assignment *g*, any conversational backgrounds h_x, *j*, and any expression ${}^{\wedge}$P of type $\langle s, \langle e,t\rangle\rangle$,

   $[\![v({}^{\wedge}\text{P})]\!]^{w,g,h_x j} : D \Longrightarrow 2.$

   For any $d \in D$, $[\![v({}^{\wedge}\text{VP})(d)]\!]^{w,g,h_x j} = 1$ iff:

   $\forall w' \in W$ if

   i. w' is accessible from *w* for *d* given h_x

   ii. w' is maximally close to the ideal established by *j(w)*, then

   iii. $<w', d> \in [\![\text{VP}]\!]^g$

I take it that the assumptions about the conversational background h_x, the ordering source *j*, and the related conditions in lines i and ii are completely right, in that the internal-argument-oriented modal interpretation is basically the result of a necessity operator quantifying over all the maximally optimal possible worlds w'. Such worlds are accessible on the basis of the properties that the internal argument *d* has in (the actual world) *w*, as determined by the conversational background h_x.

    What cannot be the case, however, is that Disp is a VP-level semantic operator, in particular one that takes an expression of type $\langle s, \langle e,t\rangle\rangle$ (the intensional meaning of a VP with an open individual variable) as its semantic argument. This assumption turns on the fact that the Initiator in prototypical middles, like the English ones, is syntactically demoted/unrealised so that it does not intervene in Disp's ability to semantically relate the VP with the internal argument *d* and interpret both in the context of the possible worlds that are accessible on the basis of *d*'s properties (Lekakou 2005: 95). However, in Section 5.1.1, we have seen that both VP and VoiceP in Slovenian impersonal middles are semantically of type $\langle s,t\rangle$, that is, without an open $\langle e\rangle$-type variable, since both such variables are closed independently, the first by the internal argument in VP, and the second by pro$_{\text{IMP}}$ in VoiceP; see the tree in (41).
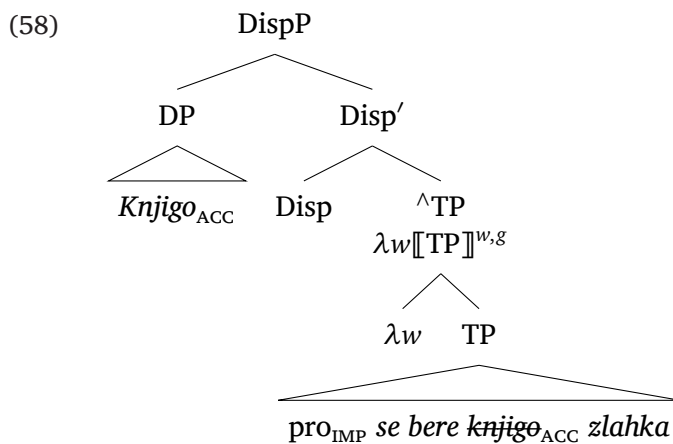
Furthermore, positing Disp to be a VP-level operator ignores the fact that middles show variation in event semantics that is independent of the dispositional interpretation, as shown in example (56), where *vedno* 'always' quantifies over all reading events in contrast to the weaker generic quantification in examples without such an adverb. The interpretation of the event variable comes about above VoiceP; that is, in TP, as in the tree in (51).

(56) Knjigo   se   vedno bere   zlahka.
      book.ACC REFL always reads easily
      'The book is such that it always reads easily.'

To account for such impersonal middles, I propose that Disp has the semantics of a regular necessity modal with a circumstantial modal base (Kratzer 2012). The proposed denotation, which is based on Stegovec's (2019: 64–65) semantics for subject-oriented modals, is given in (57).

(57) $[\![\text{Disp}]\!]^{f,\,g,\,h} = \lambda p\lambda x\lambda w\forall w' \in O(f_x, h_x, w)[p(w')]$
   a. f_x is the modal base consisting of properties that characterise x in w
   b. h_x are the criteria that decide between the worlds compliant with f_x in w
   c. $O(f_x, h_x, w)$ is the set of worlds conforming to f_x at w (i.e., in $\cap f_x(w)$) that are the best according to h_x at w

The key characteristic, which is retained (with very slight modifications) from Lekakou & Pitteroff's (2018) original proposal in (55), is the fact that the modal base f_x (along with the ordering source h_x) is relativised to the individual x, which is the second semantic argument of the operator. The way in which Disp interacts with the structure of an impersonal middle is shown by the tree in example (58), where TP corresponds to the one in the tree in (51).

(58)

```
                    DispP
          ┌───────────┴───────────┐
          DP                     Disp′
       ┌──┴──┐              ┌──────┴──────┐
    Knjigo_ACC           Disp            ^TP
                                  λw[[TP]]^{w,g}
                                   ┌─────┴─────┐
                                   λw         TP
                              ┌────────────────┴────┐
                         pro_IMP se bere knjigo_ACC zlahka
```

As its first semantic argument, Disp takes the intensional meaning of TP, which is given here in full form:

(59) $[\![^\wedge TP]\!]^g = \lambda w \mathrm{GN} e \exists x [[\mathrm{Initiator}(w, e, x) \wedge \mathrm{person}(x) \wedge \mathrm{read}(w, e, \mathrm{book})] \Rightarrow [\mathrm{easy}(w, e)]]$

Afterwards, Disp takes an individual x as its argument. This is the accusative internal argument *knjigo* 'the book', which raises from within VP, skips over the external argument i.e. $\mathrm{pro_{IMP}}$, and lands in Spec, VoiceP. The interpretation of DispP is then as follows:

(60) $[\![\mathrm{DispP}]\!]^{f, g, h} = \lambda w \forall w' \in O(f_{\mathrm{book}}, h_{\mathrm{book}}, w) \mathrm{GN} e \exists x [[\mathrm{Initiator}(w', e, x) \wedge \mathrm{person}(x) \wedge \mathrm{read}(w',$
$e, \mathrm{book})] \Rightarrow [\mathrm{easy}(w', e)]]$

In other words, DispP denotes the characteristic function of the set of worlds w, where in all worlds w' it generally holds that if someone reads the book, then she does so easily. Crucially, what accounts for the fact that the dispositional interpretation is oriented towards the internal argument is the modal base f along with the ordering source h, both of which are relativised to the properties that the argument in Spec, DispP – that is, *knjigo* 'the book' – has in (the actual world) w.

Because of this, Slovenian impersonal middles, just like canonical English ones, restrict the use of *zaradi* 'in virtue of' phrases to those that denote properties of the internal argument, as in example (61), repeated without glosses from (21).

(61)   Kriminalke se bere zlahka...
         'Crime stories read easily...'
         a.   zaradi njihovega stila pisanja.
              'in virtue of their writing style.'
         b.   #zaradi mojih bralnih zmožnosti.
              #'in virtue of my reading skills.'

Let us see how this goes about compositionally. Brennan (1993: 95) proposes the interpretation of such subject-oriented phrases corresponds to the definition in (62).

(62)   The meaning of *in virtue of P* will be that function f from $W \times D$ into the power set of $W \times D$, which assigns to any world-individual pair $<w,x>$ the set of all those (relevant) properties P that x has in w.

This definition can be easily made to work with the proposed structure of DispP in (58). What is required is identity between the world-individual pair of the *zaradi* 'in virtue of' phrase and the corresponding pair in DispP, so *zaradi* 'in virtue of' phrases must have the semantics in (63). (This denotation is of course simplified; for instance, I abstract away from the label of *zaradi*'s syntactic complement, such as *njihovega stila pisanja* 'their writing style' in (61a) – while this phrase is syntactically at least a DP on account of the possessive determiner, semantically it takes as its arguments the variables w and x, in which sense it is similar to an intensionalised predicative NP.)

(63) $[\![zaradi \; \text{XP}]\!]^g = \lambda f_{\langle e,\langle s,t\rangle\rangle}\lambda x\lambda w[f(w, x) \land [\![\text{XP}]\!]^g(w, x)]$
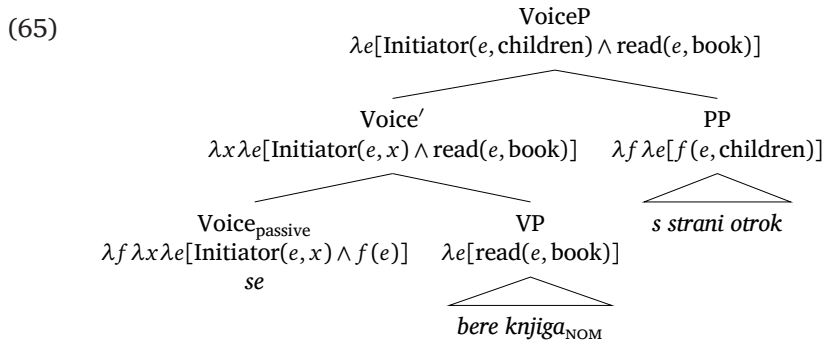
It follows from this definition that such phrases enter our proposed structure by merging with the node Disp′ in (58). This node is of type $\langle e,\langle s,t\rangle\rangle$ and is thus an appropriate argument for the function in (63).

5.2.3 The dispositional interpretation of Slovenian reflexive passive middles

In contrast to the impersonal construction, a Slovenian reflexive passive middle like (64) does not contain an external argument in Spec, VoiceP (Section 2).

(64)   Knjiga   se   bere (s   strani otrok)   zlahka.
       book.NOM REFL reads on   part   children.GEN easily
       'The book is such that it can be easily read (by children).'

I propose that *se* in (64) occupies the same structural position as in the impersonals – that is, it is still a Voice head. However, in contrast to the variant in the impersonals (41), *se* in reflexive passives lacks the [+D] feature and therefore does not license the merger of a DP in Spec, VoiceP. The reflexive still introduces the Initiator relation in semantics,[12] which can be saturated by a PP like *s strani otrok* 'by children', as shown by the following tree.

(65)

VoiceP
$\lambda e[\text{Initiator}(e, \text{children}) \land \text{read}(e, \text{book})]$

Voice′
$\lambda x\lambda e[\text{Initiator}(e, x) \land \text{read}(e, \text{book})]$

PP
$\lambda f \lambda e[f(e, \text{children})]$

Voice$_{\text{passive}}$
$\lambda f \lambda x\lambda e[\text{Initiator}(e, x) \land f(e)]$
se

VP
$\lambda e[\text{read}(e, \text{book})]$

s strani otrok

bere knjiga$_{\text{NOM}}$

---

[12] Note that in such nominative constructions the introduction of the Initiator relation seems to be dependent on the verbal root (Alexiadou 2010). As discussed in Section 2.3, with (anti)causative roots, the nominative construction can also lack the Initiator relation, as in those examples that contain the *sam-od-sebe* 'by itself' phrase (i).

(i) Steklenica   se   razbije zlahka (sama   od sebe)
     bottle.NOM.F REFL breaks   easily   alone.F by itself
     'The bottle is such that it breaks easily (by itself).'

I tentatively assume that *se* is subjected to contextual allosemy (Marantz 2013; Schäfer 2017) in such examples. This means that *se* gets reinterpreted into an identity function if it combines with (anti)causative VPs, as in (i).

(ii) $[\![se_{\text{passive}}]\!]^g = \lambda f\lambda e[f(e)]$ (When merging with (anti)causative VPs)

Under such a reinterpretation of *se* in the reflexive passive construction, no Initiator is introduced and merging the *sam-od-sebe* phrase does not result in a contradiction.

The interpretation of the corresponding TP, which contains the VoiceP structure in (65), is as follows:

(66) $[\![TP]\!]^g$ = GNe[[Initiator(e, children) $\wedge$ read(e, book)] $\Rightarrow$ [easy (e)]]

When Disp (57) enters the derivation, it takes the intensional variant of (66) as its first argument. As its second argument, it attracts the nominative DP *knjiga* 'the book', as in (67). I assume, as is standard, that prior to the merger of Disp the nominative DP will independently have moved to Spec, TP to undergo agreement with the T head or possibly to satisfy an EPP-like feature (Chomsky 2001).

(67)

$Knjiga_{NOM}$ *se bere* $knjiga_{NOM}$ *s strani otrok zlahka*
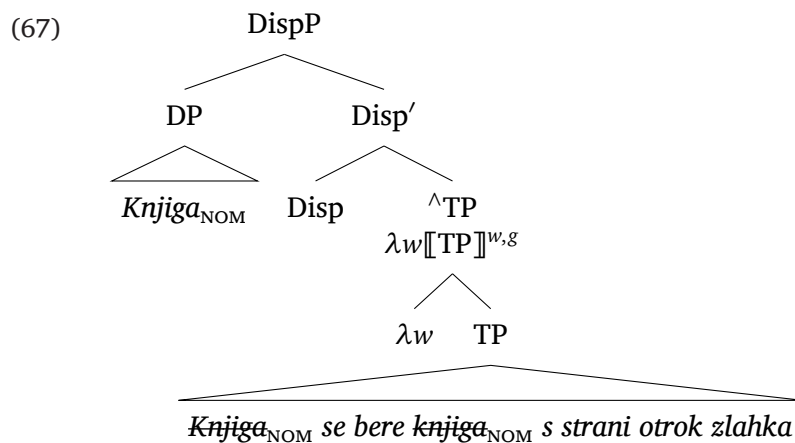
DispP in (67) is interpreted as follows:

(68) $[\![DispP]\!]^{f,\,g,\,h}$ = $\lambda w \forall w' \in O$ (f_{book}, h_{book}, w)GNe[[Initiator(w', e, children) $\wedge$ read(w', e, book)] $\Rightarrow$ [easy(w', e)]]

According to (68), DispP denotes the characteristic function of the set of worlds w, where in all possible worlds w' children generally read the book easily. As before, the worlds w' are accessible on the basis of the properties the moved DP *knjiga* 'the book' has in w.

Of course, if no PP such as *s strani otrok* is present in a reflexive passive middle, then the *x* variable in the Initiator relation gets to have a default existential interpretation. The DispP of such a reflexive passive middle without the PP would then be semantically equivalent to the one in the impersonal construction (60).

5.2.4 The dispositional interpretation of English middles
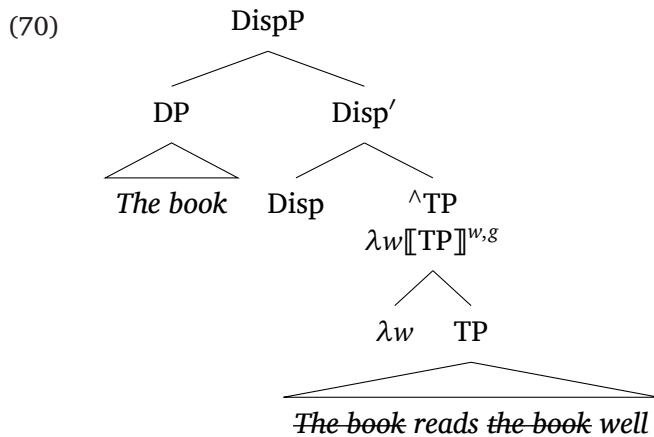
Let's recall from Section 4.2 (and the tree in (35) in particular) that – if Schäfer (2008) is right – English middles do not contain a thematic external argument either in syntax or semantics, and

that no constituent in VoiceP makes any semantic contribution to the overall composition. In other words, VoiceP is semantically just like VP, lacking the Initiator relation.

On these assumptions, the TP of the English middle *The book reads well* semantically corresponds to the following LF:

(69)   GNe[read(e, book) $\Rightarrow$ well(e)]

The derivation and semantic composition of DispP (which, again, dominates TP) proceeds as before. This is shown in (70), where the head Disp takes the intensional variant of (69) as its first semantic argument, while the internal argument – that is, *The book* – raises from within TP to land in Spec, DispP, where it is fed as the second argument to the dispositional operator and thereby relativises the accessibility of the possible worlds.

(70)

```
                    DispP
                   /     \
                 DP       Disp′
                /  \      /    \
         The book  Disp    ^TP
                         λw⟦TP⟧^{w,g}
                           /    \
                         λw      TP
                      /              \
              The book reads the book well
```

The interpretation of DispP in (70) is as in (71):

(71) $⟦DispP⟧^{f, g, h}$ = $\lambda w \forall w' \in O(f_{\text{book}}, h_{\text{book}}, w)GNe$[read($w'$, e, book) $\Rightarrow$ well(w', e)]

The key semantic difference between canonical English middles and Slovenian middles is that the latter contain the additional Initiator relation contributed by the thematic Voice head (i.e., *se*), along with the additional individual variable that is either existentially bound (always in the impersonals) or optionally saturated by the DP in a *s strani* phrase in the reflexive passives.

Pragmatically, however, English middles, Slovenian middle impersonals, and reflexive middle passives without Initiator PPs are all interpretatively equivalent, in spite of the formal lack of an Initiator relation like Agent in the LF of the English construction. According to Schäfer (2008: 232–234), the agentive inference in English middles still arises even though it is not lexically encoded, and it does so because of the ordering source, which is based on a stereotypical conversational background. Such an ordering source prioritizes those worlds that are aligned with our world knowledge, which extends to our conceptual understanding of the

encyclopedic meaning of verbal roots (*ibid.*). What this means concretely is that a verb like *read* is conceptually associated with an Agent even if the latter is not lexicalised in any way. Because of such conceptual understanding of the verb *read,* all the worlds *w′* in (71) that are the closest to the stereotypical (i.e., normal) state of affairs in (the actual) world *w* are just those where reading events also involve Agents, that is, readers.

In sum, the only grammatical difference between English and Slovenian middles lies in the syntactic and semantic realisation of the underlying argument structure. The dispositional modal semantics remains the same cross-linguistically, which is on the present proposal structurally captured by the fact that DispP is built high in the structure; that is, above TP. Crucially, the dispositional modal interpretation is invariably tied to the internal argument, which is why both canonical English structures like the one in (70) and non-canonical Slovenian impersonal structures like in (58) notionally correspond to middle constructions. In this respect, the puzzling construction is the Slovenian impersonal one, since Disp skips pro$_{IMP}$, the non-demoted thematic external argument, in apparent violation of minimality (Lekakou 2005; Schäfer 2008; Lekakou & Pitteroff 2018), and attracts the internal one to Spec, DispP instead. In will now try to provide an explanation for this.

5.3 Skipping over the external argument in Slovenian impersonal middles

5.3.1 Relativised probing

The reason as to why Disp ignores the nominative DP pro$_{IMP}$ is simple – it is because pro$_{IMP}$ lacks *φ*-features (Section 5.1.3). Lekakou & Pitteroff (2018: (27)) propose that the Disp head is syntactically furnished with unvalued *φ*-features, so it is an active probe searching down the structure for an appropriate DP to enter into an Agree relationship with. What is crucial, though, is that probing is relativised to the features that are being sought (Rizzi 2001; Preminger 2014), which means that all XPs that do not bear the requisite features are ignored by the probe.

As an obvious example, this is what happens in the formation of *wh*-questions, as in (72a). Preminger (2014: 41) points out that in this example, the C head has unvalued *wh*-features, so it probes down the structure in search of an appropriate goal. The closest potential phrasal targets for Agree are the subject DP *John* and the object DP *this dish*, but both are summarily ignored by C precisely because they do not have valued *wh*-features. By contrast, (72b) is ungrammatical because *who* has valued *wh*-features so it is a closer visible goal for matrix C than *how* (Rizzi 2001: 90).

(72) a. Who did John give this dish to who?
      b. *How do you wonder who could solve this problem how?

Such relativised probing is not only restricted to the domain of *wh*-features, though, and extends to *φ*-features as well, sometimes even their subsets. For instance, Preminger (2014) claims that

in the so-called *agent-focus* construction found in the Kichean language family, person probes are relativised to seek out only 1st and 2nd person features, and ignore 3rd person features. This is why in the two examples in (73), agreement is invariably established with the 2nd-person argument, even if this argument is structurally farther from the probe than the 3rd-person one, as in (73b).

(73) *Kichean* (Preminger 2014: 40)

    a. ja   rat   x-at/*Ø-ax-an   ri   achin
        FOC you.SG COM-2SG/*3SG.ABS-hear-AF the man
        'It was you that heard the man.'

    b. ja   ri   achin x-at/*Ø-ax-an   rat
        FOC the man   COM-2SG/*3SG.ABS-hear-AF you.SG
        'It was the man that heard you.'

In Slovenian, φ-probing is relativised to the entire φ-feature set, though see Stegovec (2020) for a proposal where person and number probe separately in the case of direct and indirect object clitics. In impersonal middles, I suggest that φ-probing by Disp goes about as in (74).

(74)
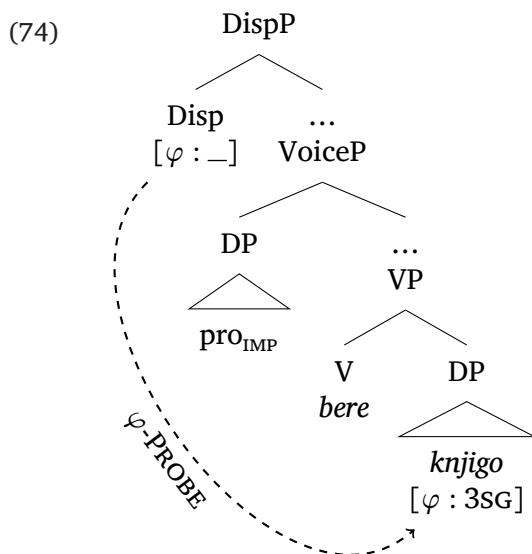
What is crucial is that pro$_{IMP}$ does not have φ-features, so it is not an intervener for φ-probing by Disp, nor is it visible to it.[13] In contrast to pro$_{IMP}$, the internal argument DP does have φ-features

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[13] A similar suggestion has already been put forward by Schäfer (2008), but for German *sich*-middles, such as the following example.

(i) Das   Buch liest sich leicht.
    the.N book reads REFL easily
    'The book reads easily.'

(that is, 3SG in this tree), so it is an appropriate goal for Disp. After the DP *knjigo* 'the book' is successfully probed, it moves to Spec, DispP (in an analogous fashion to the *wh*-movement in the examples in (72)) and is there fed as an argument to the modal operator. (I ignore Chomsky's 2001 Activity Condition – i.e., the supposition that a goal has to have an unvalued feature of its own to be a viable agreement target; see Bošković 2007 for a refutation of this condition.)

5.3.2 Dative DPs and the dispositional ascription

As already shown by example (30) in Section 4.1, the accusative object is not the only possible semantic argument for Disp. If the impersonal construction contains a dative DP, which also has φ-features, then the disposition can be ascribed to such a dative as well. This is shown in example (75), in which the *ker* 'because' clause refers to properties of the dative DP *Juliji* 'to Julija', to which the disposition is ascribed.
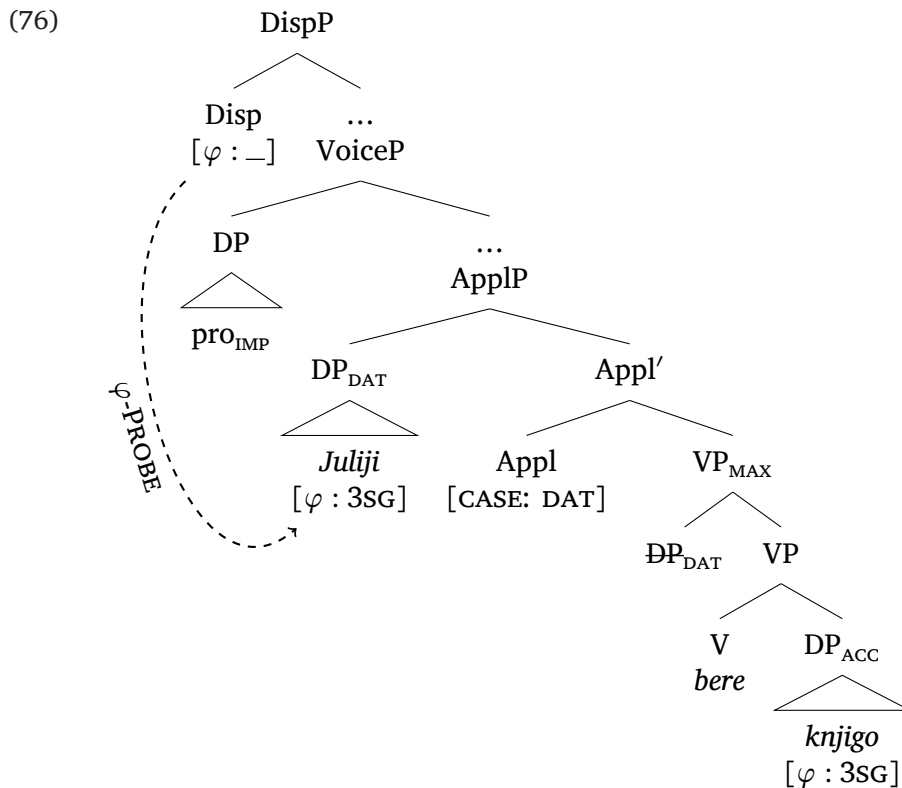
(75) Juliji   se   bere   knjigo   zlahka, ker   rada   posluša.
     Julija.DAT REFL reads book.ACC easily   because like.ADV.F listens
     'Julija is such that one can easily read the book to her, as she likes to listen.'

Following Stegovec (2024: 208, (40)), I assume that the dative DP is initially merged as a second internal argument within the VP. This DP then subsequently moves to the specifier of an Appl(icative) phrase (Pylkkänen 2008), whose head licenses its dative lexical case. Since the dative DP asymmetrically c-commands the accusative DP in such a structure, it is an accessible goal to the Disp probe, which again ignores the φ-featureless external argument pro$_{IMP}$ higher in the structure. All of this is shown in (76).

Schäfer (2008: 176) claims that *sich* is a DP that is initially merged in Spec, VoiceP, but unlike in our analysis of pro$_{IMP}$, *sich* is not a thematic argument. Rather, it is an expletive pronoun that semantically corresponds to an identity function (ii), making no semantic contribution to the overall composition.

(ii) $[\![sich]\!]^g = \lambda f \lambda e [f(e)]$

Since *sich* is a dummy, it is also ignored by an operator such as Disp (Schäfer 2008: 233). By contrast, I will claim in the next subsection that dummies do in fact have φ-features (Ackema & Neeleman 2018) and are viable targets for Disp. One reason why I hesitate to agree with *sich* occupying Spec, VoiceP is that this requires one to assume a very particular sort of dependent case assignment, where *sich*, although it is in Spec, VoiceP, ends up with dependent accusative case while the internal argument ends up with nominative, although it is in VP and c-commanded by *sich*; see Schäfer (2017) for details on how such a model of dependent case assignment is implemented. This is, however, a complete configurational reversal of the usual dependent case approach, where it is the argument in Spec, VoiceP that gets nominative and the one inside VP that gets accusative (Preminger 2014; Levin & Preminger 2015). Such a reversed dependent case system would also seem to be limited only to reflexively marked sentences like (i).

(76)

```
                          DispP
                         /     \
                      Disp      …
                     [φ : _]   VoiceP
                        ╵      /      \
                        ╵    DP         …
                        ╵   /  \      ApplP
                        ╵  pro_IMP   /      \
                        ╵        DP_DAT     Appl′
                 φ-PROBE        /   \      /      \
                        ╵   Juliji  Appl    VP_MAX
                        ╵  [φ : 3SG] [CASE: DAT]  /    \
                        ╵                      DP_DAT   VP
                        ╵                            /    \
                        ╵                           V     DP_ACC
                                                   bere   /    \
                                                        knjigo
                                                      [φ : 3SG]
```

Interestingly, even in such double-object constructions, the disposition can also be assigned to the accusative argument, as shown in (77), so the dative DP is not necessarily an intervener for the probing by Disp.

(77) Knjigo   se   bere Juliji   zlahka, ker   je napisana na berljiv   način.
      book.ACC REFL reads Julija.DAT easily because is written   on readable style
      'The book is such that it can be easily read to Julija because it is written in a
      readable style.'

I assume that this is possible because the two internal arguments can be internally reordered, which happens before and independently to their possible movement to Spec, DispP. Notice that in addition to the order where the dative DP linearly precedes the accusative one (78a), the order in which the accusative DP precedes the dative one is also equally possible in Slovenian (78b).

(78) a. Kristina je brala   Juliji   knjigo.
          Kristina is read.PTCP.F Julija.DAT book.ACC

      b. Kristina je brala   knjigo   Juliji.
          Kristina is read.PTCP.F book.ACC Julija.DAT
          'Kristina was reading Julija a book.'

Crucially, such reordering occurs early on in the derivation, before VoiceP is even built. I again follow Stegovec (2024: 209, (42)), who proposes that the order of the two arguments in sentences like (78b) is derived by movement of the lower segment of VP that contains V and the accusative DP into Spec, ApplP, as shown in (79). Movement of this VP segment has thereby "smuggled" the accusative DP over the dative one and with that avoided a Relativised Minimality effect (Collins 2005).[14]

(79)
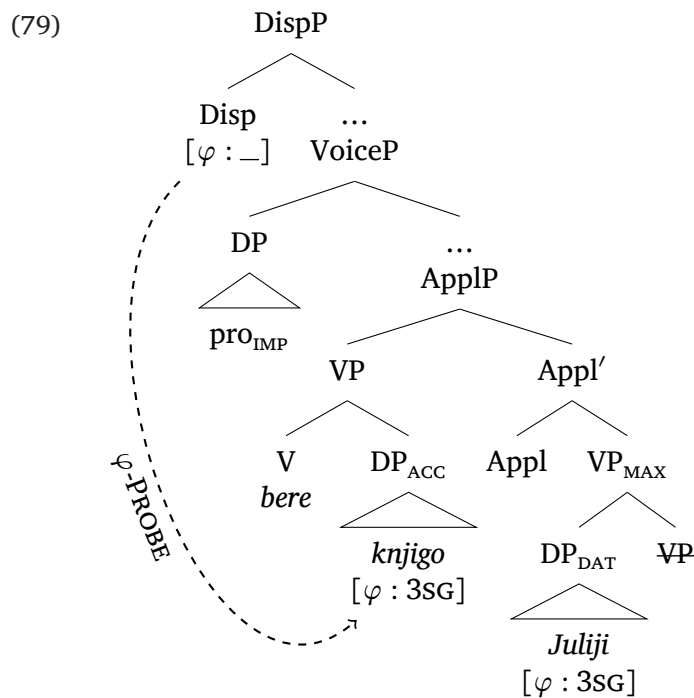
Such movement happens before VoiceP and the higher phrases like DispP are even built, so when Disp starts probing down the structure, the highest internal argument is the accusative one.[15]

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[14] In (79), DP$_{DAT}$, which has not undergone movement in contrast to what happens in the tree in (76), still receives dative case from Appl, but this is only possible because DP$_{DAT}$ is the sole constituent within VP$_{MAX}$ that is not a copy/trace. See Stegovec (2024: 209–210) for a formal account of such case assignment cast in the framework of Chomsky's (2013) Labelling Algorithm, which I abstract away from.

[15] An anonymous reviewer notes that the analysis in (79) is problematic for deriving word orders in which DP$_{DAT}$ additionally moves across the verb, as in example (i), which also has the dispositional middle interpretation.

(i) To   knjigo   se   Juliji   bere   zlahka.
    this.ACC book.ACC REFL Julija.DAT reads easily
    'This book is such that it can be read easily to Julija.'

The issue is as follows. Moving DP$_{DAT}$ to the left of the verb would cross DP$_{ACC}$ within the moved VP, which would be a Relativised Minimality violation (Stegovec 2024: 191). But even if DP$_{DAT}$ were to move in this manner, then such movement would again yield a derivational stage in which DP$_{DAT}$ would be closer to the Disp probe than DP$_{ACC}$.

This explains why the accusative DP can be ascribed the disposition even when a dative DP is present in the structure.

5.3.3 Intransitive impersonal middles and expletive pronouns

So far the discussion has focussed exclusively on middle constructions that contain transitive verbs like *read*. But there are also middles with intransitive verbs (Ackema & Schoorlemmer 2017), as exemplified by Slovenian (80).

(80) *Intransitive impersonal middle*
      Udobno   se   sedi na tem stolu.
      comfortably REFL sits on this chair
      'One sits comfortably on this chair.'

Lekakou & Pitteroff (2018) discuss at length the German (81a) and Dutch variants (81b) of such intransitive middles, showing that such constructions also involve disposition ascriptions in semantics. Crucially, however, the disposition is not ascribed to the DP within the PP (German *diesem Stuhl* or Dutch *deze stoel*), but rather to the verbal eventuality. Consequently, the examples in (80)–(81) are not statements about chairs but about sitting events that take place on chairs; see the discussion by Lekakou & Pitteroff (2018: Sections 3–4) for evidence that this is so.

(81) a. *German* (Lekakou & Pitteroff 2018: (1a))
          Es sitzt sich angenehm   auf diesem Stuhl.
          it sits REFL comfortably on this   chair
          'One sits comfortably on this chair.'

      b. *Dutch* (Lekakou & Pitteroff 2018: (1b))
          Het zit gemakkelijk op deze stoel.
          it sits easily   on this chair
          'One sits comfortably in this chair.'

Implementationally, Lekakou & Pitteroff (2018) propose that the key ingredient for the dispositional interpretation becoming tied to the eventuality lies in the expletive; that is, *Es* in German and *Het* in Dutch. In these examples, it is the expletive that occupies Spec, DispP, as in (82).

I am unable to offer a principled solution for this – perhaps the key lies in the timing of movement, where what needs to be assumed is that DP_{ACC} is the first to move out of the moved VP to Spec, DispP (or first to some other intermediary projection), only after which DP_{DAT} moves across the verb in an acyclic fashion (Stepanov 2001: 99–100). Note, however, that word orders parallel to (i) are commonplace in Slovenian and can be found in sundry constructions (e.g., the so-called "short" *wh*-movement in questions; see Mišmaš 2017 for discussion and examples).

(82)   *DispP in intransitive impersonal middles* (Lekakou & Pitteroff 2018: (49))

```
              DispP
             /     \
           DP      Disp′
           /\       /  \
          /  \    Disp   …
         Es_i  Disp    VP_i
```
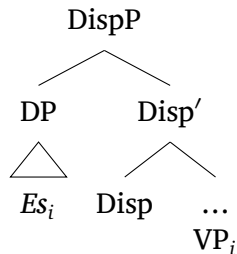
The expletive ends up in Spec, DispP so that it is fed into the Disp operator. This establishes an association relation (shown in the tree by coindexing) between *Es* and the c-commanded VP (*v*P for Lekakou & Pitteroff 2018), which is the locus of event semantics. On the basis of this association relation, Disp is able to ascribe the disposition to the verbal eventuality.

What is crucial, though, is that *Es* does have φ-features (see also Lekakou & Pitteroff 2018: (10)), namely 3SG, so it is also a syntactically appropriate argument for Disp whose [φ:__] set needs to be valued.[16] Ackema & Neeleman (2018) show that cross-linguistically it is always the case that dummy pronouns have 3rd person features, since only such features are capable of returning an empty set from the domain of individuals *D*, their reason being that participants other than the speaker and addressee (whose subsets are discarded by the 3rd person feature) are never obligatory in the discourse (2018: 37–38).

By contrast, impersonal pronouns like pro$_{IMP}$ are not dummies but have an arbitrary reference, which means that they are referentially compatible with any discursive participant, be they the speaker, addressee, or anyone else. The reason as to why they are arbitrary in meaning is because such pronouns lack φ-features so the set of participants $D_{i,u,o}$ does not get narrowed down in any way (Section 5.1.3). At the same time, the obligatory referentiality of an impersonal pronoun like pro$_{IMP}$ follows from the fact that the subsets $D_{i,u}$ contain two obligatory members – the speaker and the addressee (Ackema & Neeleman 2018: 25).

But because pro$_{IMP}$ lacks φ-features and therefore has an arbitrary interpretation, it is – in contrast to a dummy pronoun like *Es* – a morphosyntactically irrelevant target for the Disp head. This is why even Slovenian impersonal middles, which do not syntactically suppress the external argument, still ascribe the disposition to the internal one.

6 Conclusion

The paper has discussed a lesser-known syntactic subtype of the transitive middle construction that appears in Slovenian, in which the dispositional modal meaning is keyed to the internal

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[16] Since Slovenian is a pro-drop language, I assume the third person expletive that ends up in Spec, DispP in examples like (80) is phonologically null.

argument in spite of the fact that the external argument is not syntactically demoted and is thus a potential intervener for the dispositional ascription. On the basis of this Slovenian construction, the paper has presented a new syntactic derivation and semantic composition of the phrase that in all middles is the locus of the modal semantics. The operator, located in the head of this phrase, has been analysed as a necessity modal with a circumstantial modal base that is relativised to the properties of an individual-type argument. Syntactically, this operator is not located at the VP-level, as has been previously assumed, but rather above TP. It has been proposed that the head of the modal phrase is furnished with a set of unvalued φ-features, on the basis of which the modal head attracts a DP from its c-command domain. Crucially, the external argument in the Slovenian construction does not have φ-features, so it is ignored by the modal head in favour of the internal argument. Because of this, Slovenian middles with syntactically realised external arguments are a potentially unique exception to the cross-linguistic generalisation that middle constructions can only assign the dispositional interpretation to the internal argument if the external argument is either syntactically demoted (as in passives) or completely absent from the syntax (as in anticausatives).

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References

Ackema, Peter & Neeleman, Ad. 2018. *Features of person: From the inventory of persons to their morphological realization.* Cambridge, MA: MIT Press. DOI: https://doi.org/10.7551/mitpress/11145.001.0001

Ackema, Peter & Schoorlemmer, Maaike. 1994. The middle construction and the syntaxsemantics interface. *Lingua* 93(1). 59–90. DOI: https://doi.org/10.1016/0024-3841(94)90353-0

Ackema, Peter & Schoorlemmer, Maaike. 1995. Middles and nonmovement. *Linguistic Inquiry* 26(2). 173–197. https://www.jstor.org/stable/4178895.

Ackema, Peter & Schoorlemmer, Maaike. 2017. Middles. In *The Wiley-Blackwell companion to syntax, second edition.* Wiley Online Library. DOI: https://doi.org/10.1002/9781118358733.wbsyncom091

Alexiadou, Artemis. 2010. On the morphosyntax of (anti)-causative verbs. In Hovav, Malka Rappaport & Doron, Edit & Sichel, Ivy (eds.), *Lexical semantics, syntax, and event structure*, 177–203. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199544325.003.0009

Alexiadou, Artemis & Anagnostopoulou, Elena & Schäfer, Florian. 2015. *External arguments in transitivity alternations: A layering approach.* Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199571949.001.0001

Bobaljik, Jonathan David. 2008. Where's phi? Agreement as a post-syntactic operation. In Harbour, David & Adger, David & Bejar, Susana (eds.), *Phi-theory: Phi-features across interfaces and modules*, 295–328. Oxford University Press Oxford. DOI: https://doi.org/10.1093/oso/9780199213764.003.0010

Bošković, Željko. 2007. On the locality and motivation of move and agree: An even more minimal theory. *Linguistic Inquiry* 38(4). 589–644. DOI: https://doi.org/10.1162/ling.2007.38.4.589

Brennan, Virginia. 1993. *Root and epistemic modal auxiliary verbs.* University of Massachusetts dissertation.

Bruening, Benjamin. 2013. *By* phrases in passives and nominals. *Syntax* 16(1). 1–41. DOI: https://doi.org/10.1111/j.1467-9612.2012.00171.x

Bruening, Benjamin. 2018. The lexicalist hypothesis: Both wrong and superfluous. *Language* 94(1). 1–42. DOI: https://doi.org/10.1353/lan.2018.0000

Bruening, Benjamin. 2019. Passive do so. *Natural Language & Linguistic Theory* 37. 1–49. DOI: https://doi.org/10.1007/s11049-018-9408-1

Bruening, Benjamin. 2021. Implicit arguments in English double object constructions. *Natural Language & Linguistic Theory* 39(4). 1023–1085. DOI: https://doi.org/10.1007/s11049-020-09498-4

Bruening, Benjamin. 2024. English middles and implicit arguments. *Glossa: a journal of general linguistics* 9(1). DOI: https://doi.org/10.16995/glossa.9377

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris Publications. DOI: https://doi.org/10.1515/9783110884166

Chomsky, Noam. 1986. *Knowledge of language: Its nature, origin, and use*. Westport, CT: Greenwood Publishing Group.

Chomsky, Noam. 2001. Derivation by phase. In Kenstowicz, Michael (ed.), *Ken Hale: A life in language*, 1–52. Cambridge, MA: MIT Press. DOI: https://doi.org/10.7551/mitpress/4056.003.0004

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130. 33–49. DOI: https://doi.org/10.1016/j.lingua.2012.12.003

Collins, Chris. 2005. A smuggling approach to the passive in English. *Syntax* 8(2). 81–120. DOI: https://doi.org/10.1111/j.1467-9612.2005.00076.x

Condoravdi, Cleo. 1989. The middle: Where semantics and morphology meet. *MIT Working Papers in Linguistics* 11. 18–30. https://web.stanford.edu/~cleoc/mid.pdf.

Dowty, David. 2001. The semantic asymmetry of 'argument alternations' (and why it matters). *GAGL: Groninger Arbeiten zur germanistischen Linguistik* 44. 171–186.

Fagan, Sarah M. B. 1992. *The syntax and semantics of middle constructions: A study with special reference to German*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.2307/416892

Fehrmann, Dorothee & Junghanns, Uwe & Lenertová, Denisa. 2010. Two reflexive markers in Slavic. *Russian Linguistics* 34(3). 202–238. DOI: https://doi.org/10.1007/s11185-010-9062-7

Fenger, Paula. 2018. How impersonal does *one* get? A study of *man*-pronouns in Germanic. *The Journal of Comparative Germanic Linguistics* 21(3). 291–325. DOI: https://doi.org/10.1007/s10828-018-9101-0

Grahek, Sabina. 2008. Middles in Slovene. *Leeds Working Papers in Linguistics and Phonetics* 13. 44–75.

Heim, Irene. 1990. E-type pronouns and donkey anaphora. *Linguistics and Philosophy* 13. 137–177. DOI: https://doi.org/10.1007/BF00630732

Jaeggli, Osvaldo A. 1986. Passive. *Linguistic Inquiry* 17(4). 587–622. https://www.jstor.org/stable/4178510.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In Rooryck, Johan & Zaring, Laurie (eds.), *Phrase structure and the lexicon*, 109–137. DOI: https://doi.org/10.1007/978-94-015-8617-7_5

Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40(2). 187–273. DOI: https://doi.org/10.1162/ling.2009.40.2.187

Kratzer, Angelika. 2012. The notional category of modality. In *Modals and conditionals: new and revised perspectives*, 27–69. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199234684.003.0002

Krzek, Malgorzata. 2013. Interpretation and voice in Polish się and –no/–to constructions. In Chahine, Irina Kor (ed.), *Current studies in Slavic linguistics*, 185–198. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/slcs.146.11krz

Krzek, Malgorzata. 2014. The structure of null subject DPs and agreement in Polish impersonal constructions. In Bondaruk, Anna & Dalmi, Gréte & Grosu, Alexander (eds.), *Advances in the syntax of DPs: Structure, agreement, and case*, 129–163. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.217.06krz

Lavine, James E. 2005. The morphosyntax of Polish and Ukrainian -no/-to. *Journal of Slavic linguistics* 13(1). 75–117. https://www.jstor.org/stable/24599548.

Lavine, James E. 2013. Passives and near-passives in Balto-Slavic: On the survival of accusative. In Alexiadou, Artemis & Schäfer, Florian (eds.), *Non-canonical passives*, 185–211. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.205.09lav

Legate, Julie Anne & Akkuş, Faruk & Šereikaitė, Milena & Ringe, Don. 2020. On passives of passives. *Language* 96(4). 771–818. DOI: https://doi.org/10.1353/lan.2020.0062

Lekakou, Marika. 2005. *In the middle, somewhat elevated: The semantics of middles and its crosslinguistic realization*. University College London dissertation. http://ling.auf.net/lingbuzz/000122/current.pdf.

Lekakou, Marika & Pitteroff, Marcel. 2018. This is personal: Impersonal middles as disposition ascriptions. *Glossa: a journal of general linguistics* 3(1). 1–59. DOI: https://doi.org/10.5334/gjgl.487

Lenardič, Jakob. 2020. A syntactic re-analysis of the Slovenian impersonal *se*-construction. In Marušič, Franc & Mišmaš, Petra & Žaucer, Rok (eds.), *Advances in formal Slavic linguistics 2017* (Open Slavic Linguistics 3), 151–178. Berlin: Language Science Press. https://doi.org/10.5281/zenodo.3764855.

Levin, Beth & Rappaport Hovav, Malka. 1995. *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: MIT Press. https://hdl.handle.net/2027/heb08443.0001.001.

Levin, Theodore & Preminger, Omer. 2015. Case in Sakha: Are two modalities really necessary? *Natural Language & Linguistic Theory* 33(1). 231–250. DOI: https://doi.org/10.1007/s11049-014-9250-z

Marantz, Alec. 1991. Case and Licensing. In Reuland, Eric J. (ed.), *Arguments and case: Explaining Burzio's generalization*, 11–30. Amsterdam: John Benjamins Publishing Company. DOI: https://doi.org/10.1075/la.34.04mar

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. *University of Pennsylvania Working Papers in Linguistics* 4(2). 201–225. https://repository.upenn.edu/pwpl/vol4/iss2/14.

Marantz, Alec. 2013. Locality domains for contextual allomorphy across the interfaces. In Matushansky, Ora & Marantz, Alec (eds.), *Distributed morphology today, festschrift for Morris Halle*, 95–116. 2013: MIT Press. DOI: https://doi.org/10.7551/mitpress/9701.003.0008

Marelj, Marijana. 2004. *Middles and argument structure across languages*. Utrecht: LOT Publishing.

Marušič, Franc & Žaucer, Rok. 2006. On the intensional feel-like construction in Slovenian: A case of a phonologically null verb. *Natural Language & Linguistic Theory* 24(4). 1093–1159. DOI: https://doi.org/10.1007/s11049-005-4996-y

Marušič, Franc & Žaucer, Rok. 2014. The involuntary state/feel-like construction: What aspect cannot do. *Journal of Slavic Linguistics* 22(2). 185–213. https://www.jstor.org/stable/24602139. DOI: https://doi.org/10.1353/jsl.2014.0010

McConnell-Ginet, Sally. 1994. On the non-optionality of certain modifiers. In Harvey, Mandy & Santelmann, Lynn (eds.), *Proceedings of SALT 4,* 230–250. DOI: https://doi.org/10.3765/salt.v4i0.2458

Mišmaš, Petra. 2017. Slovenian questions with short wh-movement and the low periphery. *Slovenski jezik / Slovene Linguistic Studies* 11. 111–125. https://ojs.zrc-sazu.si/sjsls/article/view/7346.

Oya, Toshiaki. 2023. On the subject-orientation of the dispositional middle construction. *Linguistics* 61(3). 547–592. DOI: https://doi.org/10.1515/ling-2020-0271

Park, Kabyong. 2009. Explaining English middle sentences. *Journal of Pan-Pacific Association of Applied Linguistics* 13(2). 125–140.

Pitteroff, Marcel. 2015. Non-canonical middles: A study of personal let-middles in German. *The Journal of Comparative Germanic Linguistics* 18(1). 1–64. https://www.jstor.org/stable/43549730. DOI: https://doi.org/10.1007/s10828-015-9072-3

Preminger, Omer. 2014. *Agreement and its failures*. Cambridge, MA: MIT Press. DOI: https://doi.org/10.7551/mitpress/9780262027403.001.0001

Pylkkänen, Liina. 2008. *Introducing arguments*. Cambridge, MA: MIT Press. DOI: https://doi.org/10.7551/mitpress/9780262162548.001.0001

Ramchand, Gillian C. 2008. Perfectivity as aspectual definiteness: Time and the event in Russian. *Lingua* 118(11). 1690–1715. DOI: https://doi.org/10.1016/j.lingua.2007.03.008

Rivero, María Luisa. 2009. Intensionality, high applicatives, and aspect: Involuntary state constructions in Bulgarian and Slovenian. *Natural Language & Linguistic Theory* 27. 151–196. DOI: https://doi.org/10.1007/s11049-008-9059-8

Rivero, María Luisa & Milojević Sheppard, Milena. 2003. Indefinite reflexive clitics in Slavic: Polish and Slovenian. *Natural Language & Linguistic Theory* 21(1). 89–155. DOI: https://doi.org/10.1023/A:1021841517604

Rizzi, Luigi. 2001. Relativized minimality effects. In Baltin, Mark & Collins, Chris (eds.), *The handbook of contemporary syntactic theory*, 89–110. Wiley Online Library. DOI: https://doi.org/10.1002/9780470756416.ch4

Ruda, Marta. 2014. The impersonal subject -n/-t construction in Polish and the typology of voice heads. *Studies in Polish Linguistics* 9(4). 203–243. DOI: https://doi.org/10.4467/23005920SPL.14.009.3136

Schäfer, Florian. 2007a. By itself. Manuscript. https://amor.cms.hu-berlin.de/~schaeffl/papers/by%20itself.pdf.

Schäfer, Florian. 2007b. Middles as voiced anticausatives. In Kusumoto, Kiyomi (ed.), *Proceedings of NELS*, vol. 27. Amherst, MA: Graduate Linguistic Student Association. https://ling.auf.net/lingbuzz/000400.

Schäfer, Florian. 2008. *The syntax of (anti-)causatives: External arguments in change-of-state contexts*. Amsterdam: John Benjamins Publishing Company. DOI: https://doi.org/10.1075/la.126

Schäfer, Florian. 2017. Romance and Greek medio-passives and the typology of voice. In D'Alessandro, Roberta & Franco, Irene & Gallego, Ángel J. (eds.), *The verbal domain*, 129–152. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/oso/9780198767886.003.0006

Schäfer, Florian & Vivanco, Margot. 2016. Anticausatives are weak scalar expressions, not reflexive expressions. *Glossa: a journal of general linguistics* 1(1). DOI: https://doi.org/10.5334/gjgl.36

Stegovec, Adrian. 2019. Perspectival control and obviation in directive clauses. *Natural Language Semantics* 27. 47–94. DOI: https://doi.org/10.1007/s11050-019-09150-x

Stegovec, Adrian. 2020. Taking case out of the person-case constraint. *Natural Language & Linguistic Theory* 38. 261–311. DOI: https://doi.org/10.1007/s11049-019-09443-0

Stegovec, Adrian. 2024. The third way: object reordering as ambiguous labeling resolution. *The Linguistic Review* 41(1). 187–223. DOI: https://doi.org/10.1515/tlr-2024-2007

Steinbach, Markus. 2004. Unaccusatives and anticausatives in German. In Alexiadou, Artemis & Anagnostopoulou, Elena & Everaert, Martin (eds.), *The unaccusativity puzzle: Explorations of the syntax-lexicon interface*, 181–206. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199257652.003.0008

Stepanov, Arthur. 2001. Late adjunction and minimalist phrase structure. *Syntax* 4(2). 94–125. DOI: https://doi.org/10.1111/1467-9612.00038

Stroik, Thomas. 1992. Middles and movement. *Linguistic Inquiry* 23(1). 127–137. http://www.jstor.org/stable/4178759.

Szucsich, Luka. 2008. Evidenz für syntaktische Nullen aus dem Burgenlandkroatischen, Polnischen, Russischen und Slovenischen: Merkmalsausstattung, merkmalshierarchien und morphologische defaults. *Zeitschrift für Slawistik* 53(2). 160–177. DOI: https://doi.org/10.1524/slaw.2008.0012

van Oosten, Jeanne. 1977. Subjects and agenthood in English. *Chicago Linguistics Society* 13. 459–471.

Vendler, Zeno. 1957. Verbs and times. *The Philosophical Review* 66(2). DOI: https://doi.org/10.2307/2182371

Willim, Ewa. 2020. Polish impersonal middles with a dative as syntactically derived experience events. In Rozwadowska, Bożena & Bondaruk, Anna (eds.), *Beyond emotions in language: Psychological verbs at the interfaces*, 245–318. DOI: https://doi.org/10.1075/la.263.07wil

Wood, Jim. 2015. *Icelandic morphosyntax and argument structure*. Dordrecht: Springer. DOI: https://doi.org/10.1007/978-3-319-09138-9

Zribi-Hertz, Anne. 1993. On Stroik's analysis of English middle constructions. *Linguistic Inquiry* 24(3). 583–589. https://www.jstor.org/stable/4178831.