Since the impersonal argument in the context under discussion is pronominal in nature, I suggest that it is a minimal pronoun, abbreviated here as *n*. This pronoun comprises [Gender] and [Number] features, which make it possible for the derivation to be interpretable at the C-I interface. Whether a derivation employing such a minimal pronoun can converge is further dependent on whether its presence in the structure can be licensed by verbal morphology.

3.3. Morphosyntactic properties of the impersonal subject

I suggest that the [Person] feature is lacking from the feature set constituting the impersonal subject in IN/TC.[11] This accounts for the arbitrary, non-specific interpretation of the subject on the assumption that the absence of [Person] is interpreted at the C-I interface as incompatible with (the possibility of) reference to the speaker or the hearer.[12] The following representation of the minimal pronoun representing the arbitrary impersonal argument in the syntax will thus be assumed:[13]

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[11] As noted in Cinque (1988), Burzio (1981, 1986) assumes that the Italian impersonal *si* does not bear the [Person] feature, whereas Belletti (1982) assumes an underspecified [Person] feature on this element. Even though in the present discussion the impersonal subject is taken to lack [Person], it cannot be excluded that the impersonal subject SE construction in Polish might require a different treatment, which would imply that both options may be needed to capture the interpretational properties of different types of impersonal constructions. Employing both the lack of [Person] and underspecified [Person] options in the representations of impersonal arguments might, for example, make it possible to capture the speaker/hearer-exclusive vs. the speaker/hearer-inclusive property, the former of which is a feature of IN/TC and the latter of the impersonal subject SE construction.

An anonymous SPL reviewer suggests that the lack of [Person] is potentially problematic in the light of the subject control data on the assumption made in Witkoś and Żychliński (2014) that control into participial gerunds (cf. (iii) in footnote 8) requires a high position of the controller derived by movement (e.g. to Spec,T), combined with the assumption that movement of an argument is contingent on it being specified for [Person] (not an uncontroversial problem, cf., e.g., subject PPs and clauses in Spec,T). If this line of reasoning is right, it might be the case that the subject in IN/TC needs to be assumed to contain underspecified [Person]. However, what the subject control data establish in separation from the particular theoretical assumptions made in Witkoś and Żychliński (2014) seems to be that adjuncts into which the subject, but not the object, can control need to be merged in a position c-commanded by the subject, but not by the object. As it is unclear to me that a position fulfilling this requirement cannot be found in the part of the tree structure below Spec,Voice (a position into which the subject is first merged on the current account, cf. below) and above the position of the object, and as analysing the argument as containing underspecified [Person] would not alter the main parts of the analysis as far as I can see, I continue treating the subject as lacking [Person] here.

[12] This contrasts with Sigurðsson and Egerland's (2009) analysis, in which the arbitrary interpretation is taken to follow from the [+ HUMAN, -speaker, -hearer] specification.

[13] This minimal pronoun could perhaps be equated with an intransitive nominal categorising *n* head, suggested to be the lowest head in the projection constituting a pronominal in Saab

(24) Features contained in *n* merged as the subject in IN/TC
[Gender], [Number], [Case]

Regarding the exact values of [Gender] and [Number] on *n*, subject-verb agreement in IN/TC being assigned by default, other properties of IN/TC need to be employed to determine the values of these φ-features. In addition to the plural number on the participle *obserwowanymi* 'observe$_{n/t.PL}$' in (20), evidence for the plural number of the impersonal argument is provided by the adjectival element modifying the subject-bound anaphoric object in (25) and by the predicative NP in (26):

(25) Tu zawsze faworyzowano siebie samych/ *samego.
here always favour$_{n/t.SG.N}$ self alone$_{PL.M.ACC}$ alone$_{SG.M.ACC}$
'Here they$_{ARB}$ always favoured themselves.'

(26) Nazywano siebie geniuszami/ *geniuszem.
call$_{n/t.SG.N}$ self genius$_{PL.M.INSTR}$ genius$_{SG.M.INSTR}$
'They$_{ARB}$ called themselves geniuses.'

The arbitrary subject in IN/TC in (25) and (26) triggers plural agreement, which is in line with the assumption that the [Number] feature of the subject is plural and aligns with interpretation, the subject having arbitrary people in its denotation.

As revealed by examples such as (25) above, where *samych* 'alone$_{PL.M.ACC}$' modifies the head of the object phrase *siebie* 'self', anaphoric to the impersonal subject, the [Gender] feature of the subject is valued as masculine. This is also in line with the interpretation of the subject, masculine being the unmarked value of [Gender] on human nouns, as indicated by the fact that masculine personal nouns can be used to refer to humans of either sex (cf. Laskowski 1998; Saloni 2009; Willim 2012b).

The representation of the arbitrary argument is therefore as shown in (27):[14]

(27) Features contained in *n* merged as the subject in IN/TC
[Gender: M], [Number: Pl], [Case:_]

(2010), especially on the assumption that *n* heads in Polish contain the [Gender], [Number], and [Case] features (cf. Willim 2012b).

[14] That the subject is specified as masculine plural in the construction under discussion is also assumed in Krzek (2010, 2014). Krzek (2014) suggests a different approach to the feature composition of the impersonal subject, employing a modified version of Harley and Ritter's (2002) feature-geometric approach to the representation of pronouns, combined with the assumption that features constituting pronouns are valued/bound by features merged in the CP area of clause structure (Frascarelli 2007; Holmberg 2010a, 2010b; Sigurðsson 2004, 2009).

The behaviour of predicate APs suggests that the [Case] feature of the subject in IN/TC is not valued in the course of the narrow-syntactic derivation. As shown above, the arbitrary subject in IN/TC is syntactically active. Even though subject noun phrases in tensed clauses in Polish are (usually) assigned nominative Case, this does not seem to be true of the impersonal subject in IN/TC. As direct morphological information is unavailable in this case, the subject being unrealised phonetically, the behaviour of predicate APs will serve as a diagnostic instead.[15]

As illustrated in (28), predicate APs in Polish are nominative or (less readily) instrumental when the argument they are predicated of is nominative (cf. Bondaruk 2013 and Witkoś 2010 for discussion). On the other hand, nominative is impossible on AP predicates describing the impersonal subject in IN/TC and instrumental is the only available option in this case (cf. (29)):

(28) Jak ludzie tu zabłądzili, to *pro* kończyli
if people$_{NOM}$ here get.lost$_{PERF.\textit{l}.M.PL}$ PRT *pro*$_{PL.M.NOM}$ end.up$_{IMPERF.\textit{l}.PL.M}$
martwi/ ?martwymi.
dead$_{PL.M.NOM}$ dead$_{PL.INSTR}$
'When people got lost here, they ended up dead.'

(29) Jak tu zabłądzono, to kończono *martwi/ martwymi.
if here get.lost$_{PERF.\textit{n/t}.SG.N}$ PRT end.up$_{IMPERF.\textit{n/t}.SG.N}$ dead$_{PL.M.NOM}$ dead$_{PL.INSTR}$
'When they$_{ARB}$ got lost here, they$_{ARB}$ ended up dead.'

Similar facts hold of cases of subject control, where, as discussed in Witkoś (2010: 194), either the nominative or instrumental Case is usually possible with predicative APs:

(30) Jan obiecał Marii zawsze przychodzić z pracy
Jan$_{NOM}$ promise$_{PERF.\textit{l}.SG.M}$ Maria$_{DAT}$ always come$_{INF}$ from work
trzeźwy/ trzeźwym.
sober$_{SG.M.NOM}$ sober$_{SG.M.INSTR}$
'Jan promised Maria always to come from work sober.'

Again, instrumental is the only option available in IN/TC:

(31) Obiecywano żonom zawsze przychodzić z pracy
promise$_{IMPERF.\textit{n/t}.SG.N}$ wives$_{DAT}$ always come$_{INF}$ from work
*trzeźwi/ trzeźwymi.
sober$_{PL.M.NOM}$ sober$_{PL.INSTR}$
'They$_{ARB}$ promised their wives always to come from work sober.'

[15] AP rather than NP predicates are used due to the fact that the former but not the latter usually at least allow (if not require) 'agreement' in Case with the NP they are predicated of in Polish. For discussions of predicate Case-related issues, cf., a.o., Bailyn (2001); Bailyn and Citko (1999); Bondaruk (2013); Citko (2008); Matushansky (2008, 2012); Witkoś (2010).

The behaviour of the semi-predicate *sam* 'alone' shows a similar pattern, as the semi-predicate can be nominative or dative in subject control structures, as shown in (32) from Witkoś (2010: 193), but it can only be dative with IN/TC, as shown in (33):

(32) Jan obiecał Marii naprawić radio sam/ samemu.
Jan$_{NOM}$ promise$_{PERF.1.SG.M}$ Maria$_{DAT}$ repair$_{INF}$ radio alone$_{SG.M.NOM}$ alone$_{SG.M.DAT}$
'Jan promised Maria to repair the radio himself.'

(33) Obiecywano żonom naprawić radio *sami/ samym.
promise$_{IMPERF.n/t.SG.N}$ wives$_{DAT}$ repair$_{INF}$ radio alone$_{PL.M.NOM}$ alone$_{PL.DAT}$
'They$_{ARB}$ promised their wives to repair the radio themselves.'

In this respect, the facts found with IN/TC pattern with the arbitrary PRO structures such as (34) from Witkoś (2010: 196), which are also found only with instrumental AP predicates and the semi-predicate *sam* 'alone' in the dative:

(34) a. [PRO zreperować radio samemu/ samej/ *sam] to żadna sztuka.
PRO repair$_{INF}$ radio alone$_{M.DAT}$ alone$_{F.DAT}$ alone$_{M.NOM}$ is no problem
'It is not a problem to repair the radio oneself.'
b. [PRO wracać trzeźwym/ trzeźwą/ *trzeźwy
[PRO return$_{INF}$ sober$_{M.INSTR}$ sober$_{F.INSTR}$ sober$_{M.NOM}$
w urodziny szefa] to wielka sztuka.
on birthday boss is great skill
'It is a great skill to return sober on boss's birthday.'

Witkoś (2010: 209) proposes that in control structures the dative and instrumental Case-marking on the semi-predicate and on predicative APs, respectively, are default Cases, an assumption that is also followed in Bondaruk (2013). I adopt this solution here and assume that the dative Case on the semi-predicate *sam* 'alone' with IN/TC in (33) and the instrumental Case on the APs in (29) and (31) are valued by default. This suggests that, descriptively speaking, the impersonal subject cannot pass nominative onto PRO. The most straightforward reason for this is that nominative is not valued on the impersonal subject in syntax. This assumption receives further support from work by Bondaruk (2013) and Witkoś (2010), who show that whenever there is no nominative NP in the same sentence as the predicate, the predicative AP is instrumental and the semi-predicate is dative (cf. (34)). It thus seems that the similarity between the arbitrary PRO non-finite clause in (34) and the finite IN/TC with respect to the unavailability of the nominative Case on the predicative AP and the semi-predicate warrants the assumption that no nominative NP subject is present in the representation of either of the two structures.

These data can thus receive an explanation if it is assumed that the assignment of nominative to the predicate is conditional on the assignment of nominative to the subject of the sentence and that in IN/TC the impersonal subject does not have its [Case] feature valued.[16] The failure of the impersonal subject to have its [Case] feature valued in narrow syntax follows straightforwardly from the conditions on syntactic Agree, as will be explained later on in section 4.3.

3.4. Quantificational variability of the impersonal subject

The interpretation of the impersonal subject can be influenced by quantificational adverbs (Q-adverbs):

(35) a. W X wieku często do-żywano sześćdziesiątki.
in 10 century often PREF-live$_{n/t.SG.N}$ 60
'In the 10th century, they$_{ARB}$ often lived to be 60.'

b. W X wieku rzadko do-żywano sześćdziesiątki.
in 10 century seldom PREF-live$_{n/t.SG.N}$ 60
'In the 10th century, they$_{ARB}$ seldom lived to be 60.'

The sentence in (35a), where the Q-adverb is *często* 'frequently', can be paraphrased as (36a), whereas the sentence in (35b), where the adverb is *rzadko* 'seldom', can be paraphrased as (36b):

[16] That the [Case] feature does not have a different, non-nominative value is suggested by the fact that examples such as (ii) are ungrammatical with any [Case] value on the AP but instrumental, even though in cases where the subject bears [Case] other than nominative in Polish, predicative APs can bear non-nominative [Case] in addition to instrumental, as shown in (i):

(i) Janowi nie chciało się przychodzić z pracy trzeźwym/ trzeźwemu.
Jan$_{DAT}$ not want$_{t.SG.N}$ SE come$_{INF}$ from work sober$_{SG.M.INSTR}$ sober$_{SG.M.DAT}$
'Jan didn't feel like coming from work sober.'

(ii) Obiecywano żonom zawsze przychodzić z pracy trzeźwymi *trzeźwi/
promise$_{IMPERF.n/t.SG.N}$ wives$_{DAT}$ always come$_{INF}$ from work sober$_{PL.INSTR}$ sober$_{PL.M.NOM}$
*trzeźwych/ *trzeźwym/ *trzeźwych/ *trzeźwych/ *trzeźwi.
sober$_{PL.GEN}$ sober$_{PL.DAT}$ sober$_{PL.M.ACC}$ sober$_{PL.LOC}$ sober$_{PL.M.VOC}$
'They$_{ARB}$ promised their wives always to come from work sober.'

The possibility that the instrumental Case on the AP results from the subject bearing [Case] valued as instrumental is excluded by the unavailability of instrumental on the semi-predicate, which can otherwise bear the same [Case] as the subject (cf. (32) above):

(iii) Obiecywano żonom naprawić radio *samymi/ samym.
promise$_{IMPERF.n/t.SG.N}$ wives$_{DAT}$ repair$_{INF}$ radio alone$_{PL.M.INSTR}$ alone$_{PL.DAT}$
'They$_{ARB}$ promised their wives to repair the radio themselves.'

Additionally, it is unclear what the [Case] valuator could be if the [Case] feature of the impersonal subject were valued as one of the non-nominative Cases. I thus continue assuming that the [Case] feature of the subject is unvalued (alternatively, the subject can be taken to lack the [Case] feature altogether; cf. also footnote 31).

(36) a. In the 10th century, many people lived to be 60.
b. In the 10th century, few people lived to be 60.

This phenomenon is referred to as the quantificational variability effect, by which the interpretation of a nominal is dependent on sentential operators and which is observed also with indefinite NPs (cf. Chierchia 1995), as illustrated by the paraphrases of (35) in (37), which likewise have the same truth conditions as the respective sentences in (36):

(37) a. W X wieku ludzie często do-żywali sześćdziesiątki.
in 10 century people often PREF-live$_{l.PL.M}$ 60
'In the 10th century, people often lived to be 60.'
b. W X wieku ludzie rzadko do-żywali sześćdziesiątki.
in 10 century people seldom PREF-live$_{l.PL.M}$ 60
'In the 10th century, people seldom lived to be 60.'

The similarity in interpretation of the impersonal subject and indefinite NPs is not unexpected under the present assumption that the former nominal is represented solely by *n*, containing the [Gender] and [Number] features, which are also part of the structure constituting lexical NPs in Polish. For the purpose of the present paper, I will assume that the impersonal subject, similarly to indefinites, introduces a variable which is bound by a sentential quantifier (for a more extensive discussion and different technical solutions to this problem, cf. Malamud 2012 and Rivero and Milojević Sheppard 2003 and references cited therein).

A similar interpretational effect can sometimes be observed with respect to the grammatical aspectual contrasts. The sentences in (38) show that the difference in aspect need not affect the interpretation of the subject, as the contrast between (38a) and (38b) lies only in the imperfective aspect in (38a) being inconsistent with a single occurrence of film-showing, requiring coercion to an iterated interpretation:

(38) a. Wczoraj wyświetlano w tym kinie jeden film.
yesterday show$_{IMPERF.n/t.SG.N}$ in this cinema one film
'They$_{ARB}$ kept showing one film in this cinema yesterday.'
b. Wczoraj wyświetlono w tym kinie jeden film.
yesterday show$_{PERF.n/t.SG.N}$ in this cinema one film
'They$_{ARB}$ showed one film in this cinema yesterday.'

However, consider (39):

(39) a. Wczoraj pito w tym pubie jedno piwo.
yesterday drink$_{IMPERF.n/t.SG.N}$ in this pub one beer$_{ACC}$
'They$_{ARB}$ drank one beer in this pub yesterday.'

b. Wczoraj wypito w tym pubie jedno piwo.
yesterday drink$_{PERF.n/t.SG.N}$ in this pub one beer$_{ACC}$
'Someone drank one beer in this pub.'

In (39a), where the predicate is imperfective, the impersonal subject is interpreted as quasi-universal, as the interpretation of the sentence is roughly 'For all x's, x in this pub, x drank one beer' or as 'For all x's, x in this pub, x's drank one beer.' On the other hand, the interpretation of the subject in (39b), where the predicate is perfective, is quasi-existential and could be paraphrased roughly as 'There is an x/there are x's such that x/x's drank one beer in this pub.' This is similar to what has been pointed out in Cinque (1988) with respect to the interpretation of the subject in the impersonal subject SE construction in Italian, which is influenced by the specific versus generic temporal reference rather than being influenced by aspect, as is the case with the subject in the Polish sentences above.[17] Cinque notes a comment attributed to Luigi Rizzi that the dependence of the interpretational properties of the impersonal subject on temporal distinctions could be captured by analysing the arguments as variables unselectively bound by the universal and existential tense operators in the case of the quasi-universal and quasi-existential subjects, respectively. For Polish, it could be assumed that the variables introduced by the impersonal arbitrary pronoun are unselectively bound by the perfective or the imperfective operators or by Q-adverbs, as pointed out above.

3.5. Interim summary

The previous sections have shown that IN/TC can be used with transitive, unergative, and unaccusative verbs in sentences with past temporal reference and in the irrealis mood. Some restrictions on the use of IN/TC follow from the interaction between the semantics of the impersonal argument and the semantics of aspect.

The arbitrary subject in the construction under discussion is syntactically active and can be represented in the syntax as a minimal pronoun *n*, containing the valued interpretable features of [Number: Pl] and [Gender: M], but having the [Case] feature unvalued (or absent altogether). The ultimate interpretation of the subject can be influenced by quantificational elements in the clause.

[17] As a reviewer notes, similar facts are discussed for the arbitrary PRO in Manzini and Roussou (2000: 427–428), who provide the examples in (i)–(ii), in the former of which PRO is interpreted generically and in the latter specifically:
(i) It is hard to work.
(ii) It was hard to work (on that beautiful sunny day).

The following section investigates in greater detail how the syntactic derivation of the construction proceeds.

4. IN/TC: the impersonal subject, Voice$_{n/t}$, and default agreement

4.1. -N/-T and the typology of Voice heads (Alexiadou and Doron 2012)

I propose that the sequence *-no/-to* should be treated as constituted by two morphemes, namely the realisation of the Voice head *-N/-T* and *-o*, spelling out unvalued agreement features of T by default at SM. Relevant to the discussion here are some theoretical assumptions regarding the nature of Voice.

A distinction between two non-active Voice heads, namely the passive and the middle Voice head, assumed in addition to the active Voice, is argued for in Alexiadou and Doron (2012). The middle Voice subsumes the anticausative, reflexive (and reciprocal), dispositional middle and medio-passive interpretations. Polish morphosyntax provides an intriguing set of data in this context. The distinction between the active (cf. (40)) and the two non-active Voices (cf. the passive in (41) and the anticausative in (42)) seems to receive clear support from the verbal morphological marking, the active Voice being unmarked, the passive using an auxiliary and the *n/t*-participle form of the lexical verb, and the middle voice being marked with the morpheme *się*:

(40) Active Voice
Dziecko złamało gałąź.
child$_{NOM}$ break$_{l.SG.N}$ branch$_{ACC}$
'A/the child broke a/the branch.'

(41) Non-active Voice: passive
Gałąź została złamana (przez dziecko).
branch$_{NOM}$ become$_{l.SG.F}$ break$_{n/t.SG.F}$ by child$_{ACC}$
'A/the branch was broken (by a/the child).'

(42) Non-active Voice: middle (anticausative)
Ta gałąź się (sama) złamała (*przez dziecko).
this branch$_{NOM}$ SE alone break$_{l.SG.N}$ by child$_{ACC}$
'This branch broke (on its own) (*by a/the child).'

However, the morphological distinction between the active and the passive non-active Voice is complicated by facts related to the construction which is the focus of this paper. IN/TC is composed with the *n/t*-marked verb form, similarly to the *n/t*-participle used in the passive, but, unlike in the passive,

the presence of the *n*/*t*-marking does not block the projection of the external argument position. It is also not restricted to transitive verbs. These facts complicate the picture of the parallelism between morphological marking and the properties of the Voice heads illustrated in (40)–(42).

Regarding the form of the verb in IN/TC, it should be noted that, as observed in section 2 and illustrated with (14), repeated here as (43), IN/TC cannot be used in the passive:

(43) *Tutaj byto krytykowanym/ krytykowanymi bez przyczyny.
here was$_{n/t.SG.N}$ criticise$_{n/t.SG.M.INSTR}$ criticise$_{n/t.PL.INSTR}$ without reason
'They$_{ARB}$ were criticised without reason here.'

Moreover, as noted above, the *n*/*t*-stem in IN/TC is identical with the stem used in the passive construction, as illustrated in (44):

(44) a. Tutaj ludzie byli krytykowa-n-i.
here people$_{NOM}$ were$_{l.PL.M}$ criticise$_{n/t\text{-}PL.M}$
'People were criticised here.'
b. Tutaj krytykowa-n-o ludzi.
here criticise$_{n/t\text{-}SG.N}$ people$_{ACC}$
'They$_{ARB}$ criticised people here.'

On the plausible assumptions that there is only one Voice head per clause and that the morpheme -*n*/-*t* is the morphological realisation of the Voice head in both the passive construction and IN/TC, the ungrammaticality of (43) follows from the fact that a sentence in which two verbal forms (i.e., the copula and the lexical verb) are marked with an exponent of the Voice head cannot be generated by the grammar.

In yet another construction employing the *n*/*t*-stem, the impersonal passive of unergative verbs discussed in Kibort (2001), the auxiliary is in the regular form found in the passive (the *l*-participle in the past, the present form *jest* in the present, and the auxiliary *będzie* in the future) and the lexical verb is the *n*/*t*-stem bearing the adjectival singular neuter agreement marker -*e*. As noted in Kibort (2011), this construction, unlike IN/TC, lacks a syntactically-projected subject which could participate in syntactic control or binding (cf. Kibort 2011: 382–383):

(45) *Było sprawdzane przejeżdżając przez Poznań.
be$_{l.SG.N}$ check$_{n/t.SG.N}$ pass$_{PARTICIPLE}$ through Poznań
'There was checking [the tickets were checked] while passing through Poznań.'

(46) *Było codziennie sprzątane we wszystkich swoich pokojach.
be$_{l.SG.N}$ every.day tidy$_{n/t.SG.N}$ in all self's rooms$_{LOC}$
'There was cleaning every day in all of one's own rooms.'

Another difference between this construction and IN/TC pertains to the interpretation of the impersonal argument. As noted above, the impersonal subject in IN/TC is interpreted as [HUMAN]. On the other hand, Kibort (2011: 383) shows that the default human agent interpretation can be overridden in the impersonal passive:

(47) Ptak sprawdza każdą próbówkę. W tej było już sprawdzane.
bird checks every test.tube in this be$_{l.SG.N}$ already check$_{n/t.SG.N}$
'The bird checks every test tube [for food]. In this one the checking has already been done.' (from a description of an experiment)

An analogous use of the *n/t*-participle can be found in the so-called possessive resultative, as noted in Kibort (2011: 361):

(48) Miał to pomieszczenie codziennie sprzątane.
have$_{l.SG.M}$ this chamber$_{ACC}$ every.day tidy$_{n/t.SG.N}$
'He had the room cleaned every day.'

These facts suggest that the impersonal passives share more with the regular passive structures than with IN/TC, one other fact being that, unlike IN/TC, they are never used with an overt object.

In addition to the passive(-like) structures and IN/TC, the morpheme *-N/-T* is also present in a subset of resultative and resultative-like adjectives derived from perfective intransitive verbs (the other group of adjectives in this class is derived with the suffix *-ł*, present also in the *l*-participle), such as *zaginio-n-y* 'lost$_{n/t\text{-}SG.M}$' and *uśmiechnię-t-y* 'smiling$_{n/t\text{-}SG.M}$' (cf. Cetnarowska 2012). Hence, not only in IN/TC and the so-called impersonal passive of unergatives, but also in this case the *-N/-T* marking does not enforce the canonical passive interpretation and is not restricted to transitive verbs.

The morpheme *-N/-T* cannot be treated exclusively as specified for the feature [Voice: Passive], IN/TC behaving as an active structure, as described in detail in section 2. Hence, even though the *n/t*-stem has traditionally been referred to as the passive participle, the terminology does not reflect the morphosyntactic features of the stem accurately. This is made clear by the fact that it is used also in IN/TC, among others, which has been shown to have a syntactically active subject and in which accusative Case is assigned to the internal argument with transitive verbs. Instead, I propose that the marker *-N/-T* is ambiguous and realises both the passive Voice head, triggering valency reduction, and the Voice head introduced into the derivation in IN/TC, abbreviated in what follows as Voice$_{n/t}$. The property which the two constructions have in common is that the highest argument of the verb is neither a full NP nor a fully-fledged pronoun and is at most deficient in that it is either unprojected in Spec,Voice, as in the passive, or it is a minimal pronoun, lacking the [Per-

son] feature and interpreted as a variable bound by a c-commanding operator. For transitive verbs, this means that when the minimal pronoun is merged in Spec,Voice$_{n/t}$, it is assigned the external theta-role, and the [Case] feature of the object is valued as accusative, in accordance with Burzio's generalisation. I assume that Voice$_{n/t}$ comes with the [HUMAN] restriction, limiting the possible set of the referents of the impersonal subject to humans (this restriction can perhaps be formalised with a [HUMAN] feature on Voice$_{n/t}$, restricting the subject via Chung and Ladusaw's 2004 predicate restriction along the lines proposed in Legate 2012, 2014a,b for her restrictive φ in agreeing agent passives).[18] Within the system proposed in Alexiadou and Doron (2012), these assumptions suggest that a two-way distinction may be needed not only for the non-active voice (i.e., passive and middle) but also for the active voice (i.e., the unmarked active structure and IN/TC) in Polish.

Going back to (44), in addition to illustrating the morphological similarity between IN/TC and the passive construction, it reveals a difference between them as far as the verbal form is concerned. Namely, unlike what is found with the passive construction, in IN/TC the [Number]/[Gender] marking surfacing on the verb is *-o* rather than any of the adjectival [Number]/[Gender] markers found in the passive.[19] The marker *-o* is formally identical with the singular neuter subject agreement morpheme found on the *l*-participle verb form and it is the only agreement marker surfacing on the *n/t*-stem in IN/TC.[20] That is,

[18] There are a number of differences between the structures analysed in Legate (2012, 2014a, 2014b) and IN/TC. For example, unlike the φ-restriction in Acehnese, the [HUMAN] restriction in IN/TC applies to arguments of unaccusative predicates. This may follow from a lexical difference between Voice$_{n/t}$ in Polish and Voice/*v* in Acehnese in that the [HUMAN] restriction of the former is not strictly external-argument oriented, but rather applies to the highest argument available.

[19] The [Number]/[Gender] markings found on the adjectives in the nominative and the *n/t*--stem in the passive construction are as shown in (i) and (ii):

(i) SG: three gender markings manifested
M: *-y*
F: *-a*
N: *-e*
(ii) PL: two gender markings manifested
If the head noun is a masculine personal noun (M1 class): *-i*
Otherwise: *-e*

[20] Having developed the analysis offered here, I learned that Krzek (2014) notes that there might be a connection between *-o* in *-no*/*-to* and *-o* on the *l*-participle and also assumes that it results from agreement by default. However, she suggests that *-no*/*-to* realises the Voice head and that the default marking is forced by the lack of a morpheme which could realise agreement with the impersonal subject found in IN/TC. The reason for this assumption is unclear to me, especially that the specification of the arbitrary *pro* subject, which would need to be somewhat similar to the specification of the impersonal subject in IN/TC on Krzek's account (cf. footnote 14), does not interfere with canonical agreement.

Additionally, Krzek (2014) treats *-ło*, a subpart of a singular neuter *l*-participle form, as a morpheme and suggests that the form *-nło*/*tło* should be expected in IN/TC. She does not develop these ideas further and suggests that Lavine's (2005) analysis might be adopted instead. All these suggestions differ significantly from what will be argued for here.

the verb in IN/TC is found only in a single morphological form. Additionally, as noted in section 2, in contrast to the *n/t*-marked stem in the passive construction, the lexical verb in IN/TC cannot be accompanied by overt auxiliaries.

The relevance of the link between the *l*-participle and the *n/t*-participle in IN/TC is further implied by the observation that this impersonal construction can be used only in contexts in which the verb surfaces in the *l*-participle form outside of IN/TC, except for the future time reference in the imperfective, in which case the use of the *l*-participle is optional and interchangeable with the infinitive. Hence, as noted in section 2, IN/TC can be used in the past tense and in irrealis contexts. The parallelism between the two forms can be seen by comparing the declarative examples in (49), where the subjectless weather predicate surfacing with the default agreement marking is used, with the respective examples in (50), and the subjunctive and conditional contexts in (51)–(52) and (53)–(54), respectively:[21]

(49) a. Dawno temu pada-ł-o.
a long time ago rain$_{l\text{-SG.N}}$
'A long time ago it rained.'

b. Teraz pada.
now rain$_{3SG}$
'It is raining now.'

c. W przyszłości będzie pada-ł-o/ padać.
in future be$_{NON\text{-}PAST.3SG}$ rain$_{l\text{-SG.N}}$ rain$_{INF}$
'It will rain in the future.'

(50) a. Dawno temu używa-n-o pergaminu.
a long time ago use$_{n/t\text{-SG.N}}$ parchment$_{GEN}$
'A long time ago they$_{ARB}$ used parchment.'

b. *Teraz używa-n-o pergaminu.
now use$_{n/t\text{-SG.N}}$ parchment$_{GEN}$
'Now they$_{ARB}$ are using parchment.'

c. *W przyszłości (będzie) używa-n-o pergaminu.
in future be$_{NON\text{-}PAST.3SG}$ use$_{n/t\text{-SG.N}}$ parchment$_{GEN}$
'In the future they$_{ARB}$ will use parchment.'

(51) Babcia chciała, żeby pada-ł-o.
grandma want$_{l.SG.F}$ that$_{SUBJ}$ rain$_{l\text{-SG.N}}$
'(My) grandma wanted it to rain.'

(52) Babcia chciała, żeby jej kupio-n-o motor.
grandma want$_{l.SG.F}$ that$_{SUBJ}$ her$_{DAT}$ buy$_{n/t\text{-SG.N}}$ motorcycle$_{ACC}$
'(My) grandma wanted them$_{ARB}$ to buy her a motorcycle.'

(53) Pada-ł-o by, gdyby wzros-ł-o ciśnienie.

[21] The example in (i) illustrates the non-default use of the marker *-o*:
(i) Dziecko pada-ł-o królowej do stóp.
child$_N$ fall$_{l\text{-SG.N}}$ queen to feet
'The child fell/kept falling at the queen's feet.'

rain$_{l\text{-SG.N}}$ COND if$_{\text{COND}}$ increase$_{l\text{-SG.N}}$ pressure$_{\text{N.NOM}}$
'It would rain if the pressure increased.'

(54) Nie używa-n-o by dzisiaj papieru, gdyby nie uważa-n-o,
not use$_{n/t\text{-SG.N}}$ COND today paper$_{\text{GEN}}$ if$_{\text{COND}}$ not consider$_{n/t\text{-SG.N}}$
że jest lepszy od pergaminu.
that is better than parchment$_{\text{GEN}}$
'They$_{\text{ARB}}$ wouldn't use paper today, if they$_{\text{ARB}}$ didn't consider it better than parchment.'

The similar distribution of the *l*-participle and IN/TC indicates that the marking *-o* in both contexts is the same morpheme. In IN/TC it always surfaces as the default form, whereas it can be either default or the agreeing singular neuter form on the *l*-participle.

4.2. Some assumptions about the tense system of Polish

As noted above, Polish expresses past tense with the use of the *l*-participle (cf. (55)), present tense with the finite verb form (cf. (56)), and future tense either with the finite verb form or with the auxiliary *będzie* accompanied by the *l*-participle or the infinitive verb form (cf. (57)). Whereas sentences expressing the past and future temporal reference are found with the imperfective and the perfective aspect, sentences expressing present reference cannot contain a perfective verb form, perfective aspect being incompatible with the situation being viewed as ongoing.

(55) a. Past imperfective
Pisa-ł-a-m list.
write$_{\text{IMPERF-}l\text{ -SG.F-1SG}}$ letter
'I was writing/have been writing the/a letter.'
b. Past perfective
Napisa-ł-a-m list.
write$_{\text{PERF-}l\text{ -SG.F-1SG}}$ letter
'I wrote/have written the/a letter.'

(56) Present
Piszę list.
write$_{\text{1SG}}$ letter
'I am writing the/a letter.'

(57) a. Future imperfective
Będę pisa-ł-a/ pisać list.
be$_{1SG}$ write$_{IMPERF\text{-}l\text{-}SG.F}$ write$_{INF}$ letter
'I will be writing the/a letter.'

b. Future perfective
Napiszę list.
write$_{PERF.1SG}$ letter
'I will write the/a letter.'

As the *l*-participle can be used in sentences with both the present and future temporal reference, I assume that it is not formally specified for tense (cf. also Błaszczak et al. forthcoming and Spencer 2001). Furthermore, I agree with Błaszczak et al. (forthcoming) that the auxiliary *będzie* is not formally specified as a [Future] auxiliary, the reasons being that it is not necessary for the future meaning to arise (cf. (57a) vs. (57b)) and that it bears the same type of inflection as the verb form used in the present tense. I treat the auxiliary as a [Non--past] form and assume it to be merged in T.

To account for the interactions between tense, aspect and voice, I suggest that the extended verbal projection contains the functional head sequence T-Asp-Voice.[22] Each head is the locus of interpretable features and selects for the lower head in the sequence. Each head, in turn, contains uninterpretable features. T contains *u(ninterpretable)*[Asp:_], Asp contains *u*[T:_], and Voice contains *u*[Asp:_] and *u*[T:_]. The unvalued uninterpretable features need to be valued in the course of syntactic derivation to be interpreted at the interfaces.

I assume further that the interpretable [T(ense)] feature on T can be valued either as [Past] or as [Non-past].[23] T also bears the [Person]/[Number]/[Gender] φ-probe.[24] Asp bears the valued interpretable [Asp] feature.

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[22] Thus, following Kratzer (1996), I assume that the Voice head is present not only in passive structures, but also in active ones. This differs, for example, from the treatment of the passive in Collins (2005), who assumes that Voice is present only in the passive structure and that the external argument is introduced below Voice (in Spec,v). Due to space limitations, I cannot discuss the possible modifications of Collins's analysis which would be necessary to implement his treatment of the passive voice in English under the current assumption (cf. Legate 2012, 2014b for a discussion of some problems with some of Collins's assumptions).

[23] It has been argued in the literature that some Slavic languages may lack the T head (cf., a.o., Bošković 2012 and Migdalski 2013, in press for a discussion including a range of facts from various Slavic languages). However, to the best of my knowledge, no argument to this effect has so far been presented with respect to Polish. As it is unclear to me how the relevant temporal relations could be derived without postulating T in Polish, I continue assuming its presence in the structure here.

[24] Note that separate morphemes are used to express the person/number and number/gender subject-verb agreement features in the past and future imperfective, the former not being necessarily realised on the verb, but also on any preverbal constituent in the past tense:

(i) a. (Ja) napisa-ł-a-m list.
I$_{NOM}$ write$_{l\text{-}SG.F\text{-}1SG}$ letter
'I wrote the/a letter.'

The approach employed here bears some resemblance to Pesetsky and Torrego's (2004) derivational system. In short, Pesetsky and Torrego (2004) propose to capture the relations between the heads in the extended verbal projection via the application of Agree for the tense-related aspects of the derivation and Mezhevich (2008) develops this approach for aspect.[25] In the representations in this paper, I follow also Borik's (2009) and Mezhevich's (2008) treatment of Russian in assuming that the verb bears the [Asp] feature, but, unlike them, I suggest that this feature is unvalued on the verb merged into the derivation.[26] Accordingly, the verbal root/stem bears the unvalued feature *u(ninterpretable)*[Asp], as well as an unvalued *u*[Voice] feature, which ensures that a link between V and Voice can be established. The Voice head bears a valued *i(nterpretable)*[Voice] feature and unvalued *u*[Asp] and *u*[T] features. The relevant features of the structure assumed for the past tense (cf. (55a)) are presented in (58):[27]

b. Ja-m napisa-ł-a list.
I$_{\text{NOM-1SG}}$ write$_{\text{l-SG.F}}$ letter
'I wrote the/a letter.'

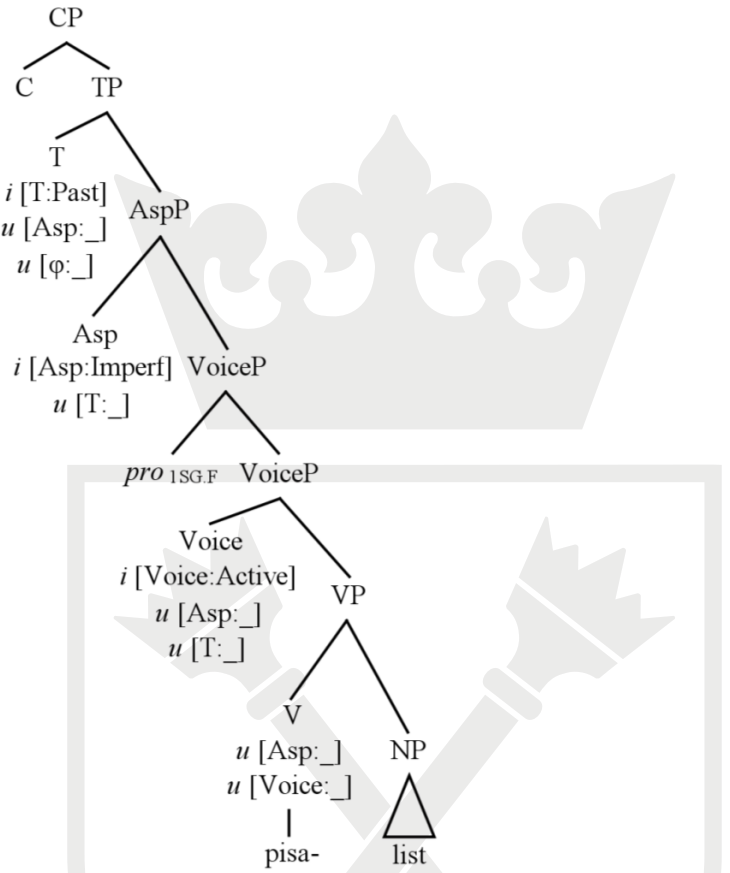
In the future imperfective structure, the person/number marking is obligatorily realised on the auxiliary, whereas the number/gender marking is either realised on the *l*-participle or is unrealised when the lexical verb is in the infinitive form. I tentatively assume here that this is due to a morphological process splitting the φ-feature-related information. An alternative approach could be to postulate two separate φ-probes (a person/number and a number/gender probe) in the extended verbal projection targeting the subject. I leave it for future research to consider issues raised by these facts in greater detail.

[25] Pesetsky and Torrego (2004) assume the dissociation between feature valuation and interpretability, assuming the existence of uninterpretable valued and interpretable unvalued features, differing in this respect from Chomsky (2000). Cf. Willim (2012b) for a discussion of the interdependence between feature valuation and interpretability.

[26] Polish has a small number of ambiaspectual verbs, such as *abdykować* 'abdicate', which do not show morphological distinction for the two values of [Asp]. I tentatively assume that such roots/stems nevertheless bear the [Asp] feature. However, the [Asp] feature that roots/stems have is a lexical property tied to the conjugation class and is spelled out at SM with aspectual suffixes. The syntactic Asp head is the locus of the semantic operators of aspect, interacting with the T and Voice heads, as well as other operators, e.g. negation.

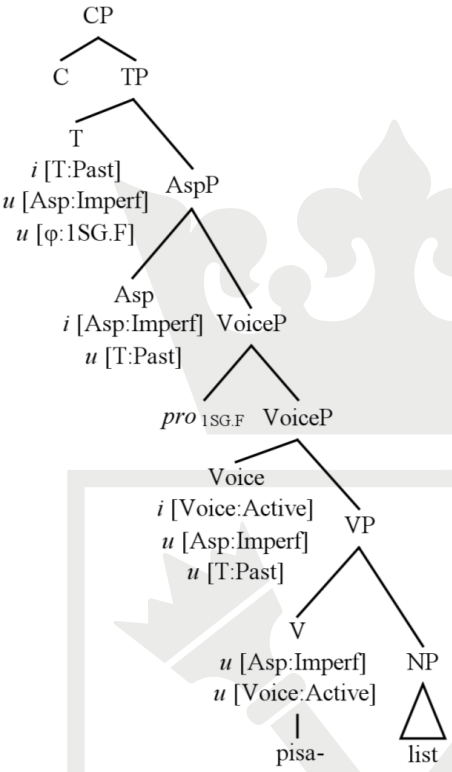
[27] The form *pisa-* in (58) consists of the root *pis-* and *-a*, which spells out the conjugation class feature/thematic suffix at SM (cf. Czaykowska-Higgins 1998). As it would not alter the relevant parts of the derivations, I abstract away from the v head here, treating V as possibly composed with v and the root (cf. Legate 2012, 2014b for arguments for separating Voice and v).

(58) Past imperfective before the valuation of unvalued features (cf. (55a))



When Voice is merged with VP, Agree between Voice and VP values *u*[Voice] on V and links *u*[Asp] on V and Voice. On the merge of the Asp head, bearing the valued *i*[Asp] feature and the unvalued *u*[T] feature, Agree between Asp and Voice applies, valuing the *u*[Asp] feature on the Voice and V heads by the *i*[Asp] feature on Asp. This application of Agree also links the *u*[T] feature on Voice and Asp, even though this feature remains unvalued. When T is merged, Agree between T and Asp values the unvalued *u*[Asp] on T and *u*[T] on Asp and Voice. A separate application of Agree values the φ-probe on T by the φ-features on the subject in Spec,Voice. The resulting structure is shown in (59):

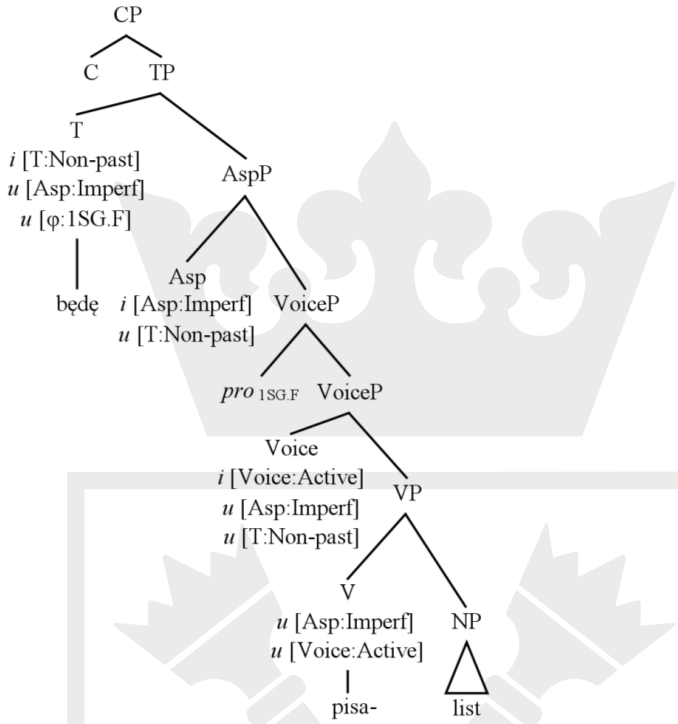
(59) Past imperfective after the valuation of unvalued features (cf. (55a))



The verb is realised at the SM interface as the *l*-participle form. When the value of *u*[T] is [Non-past], as illustrated in (60), the verb can be realised as either the *l*-participle form or the infinitive in the future. The derivation of the past and future perfective structures proceeds in a parallel manner.

As sentences with both the future and present temporal reference are assumed here to contain the feature [T:Non-past], a way to distinguish between the two is needed. I tentatively suggest that in sentences with present reference the Asp head is absent from the structure, unlike what has been assumed for the future. This suggestion is motivated by the fact that the present does not offer any choice as far as the value of aspect is concerned on semantic grounds, making the specification of aspect redundant and the introduction of the Asp head into the structure superfluous. A relevant example is provided in (61):

(60) Future imperfective after the valuation of unvalued features (cf. (57a))

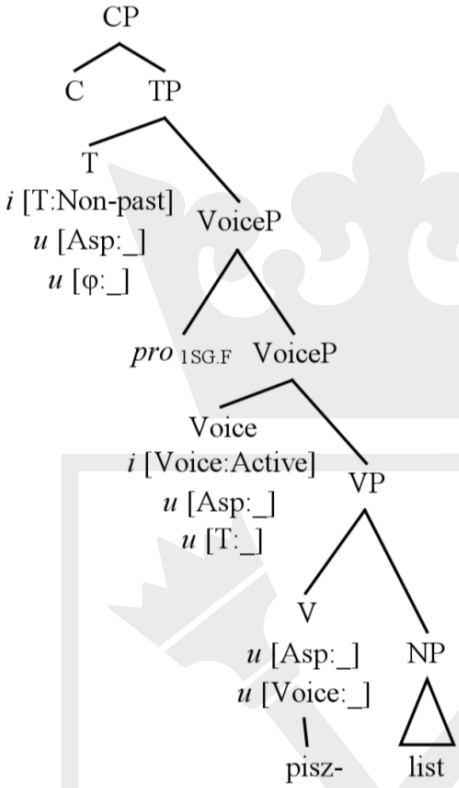


The unvalued *u*[Voice] feature on V is valued by Agree between Voice and V. The *u*[T] feature on Voice is valued by Agree between T and Voice. All instances of the [Asp] feature are uninterpretable in this case.[28] As a consequence of the absence of the Asp head, the *u*[Asp] feature on T, Voice, and V remains unvalued and is assumed here to be valued by default as imperfective at Spell-Out.[29]

[28] Sentences such as *On napisze książkę* 'He will write$_{PERF.3SG}$ a book', where the form *napisz-* 'write$_{PERF}$' is specified for *u*[Asp:Perf], cannot receive present temporal interpretation. I assume that, unlike the (semantically and morphologically) unmarked imperfective stems, the perfective stems need to be licensed in the structure by Agree with the Asp head. In the absence of Asp in the structure, the marked perfective stems are not licensed, preventing structures containing perfective stems from receiving present interpretation.

[29] This solution departs from Pesetsky and Torrego's (2004) approach in that all occurrences of the feature [Asp] are uninterpretable in present tense. An approach which would be compatible with their analysis and which would not require default valuation of [Asp] would need to postulate the Asp head in all derivations. The difference in interpretation between the present tense and future imperfective might then be attributed to future imperfective meaning being imposed by a property of the auxiliary *będę*, enforcing the interpretation in which eventuality time follows speech time. Błaszczak et al. (forthcoming) propose to derive this effect by assum-

(61) Present (cf. (56))



As far as interpretation is concerned, for concreteness, I adopt Borik's (2006) approach, employing the notions reference time (R), eventuality time (E), and speech time (S), capturing temporal interpretations as follows:

ing that the auxiliary is specified as perfective, requiring a shift to the future meaning. This solution seems problematic in the light of the fact that no semantic effects associated with perfectivity in Polish (e.g. event boundedness) are associated with the future imperfective. Another approach could be to assume that *będę* is a future auxiliary in that it bears an additional feature imposing the non-coincidence between speech time and eventuality time.

As the interaction between tense and aspect poses complex problems, a thorough investigation of all possibilities will require much more further research. Resolving this problem does not have a bearing on the main goal of the present paper, which is to show that Polish provides evidence for the postulation of an impersonal active Voice head, in addition to the canonical personal active Voice head.

(62) Past: eventuality described in the sentence occurs before the speech time (E < S)
a. $[_R$ E] < S (perfective)
b. $[_R$ E < S] (imperfective)

(63) Present: overlap between the speech time and the time in which an eventuality occurs ($S \cap E \neq \emptyset$)
$[_R$ S ∩ E]

(64) Future: eventuality described in the sentence occurs after the speech time (S < E)
a. S < $[_R$ E] (perfective)
b. $[_R$ S < E] (imperfective)

Borik (2006) treats the S-R relation in aspectual terms, such that S and R overlap ($S \cap R \neq \emptyset$) in the imperfective. The imperfective aspect is defined as non-perfective, which suggests that it can be considered the unmarked value. Pending detailed investigation of the consequences of the current syntactic analysis for the semantics of the interaction between tense and aspect in Polish, I tentatively assume the following:

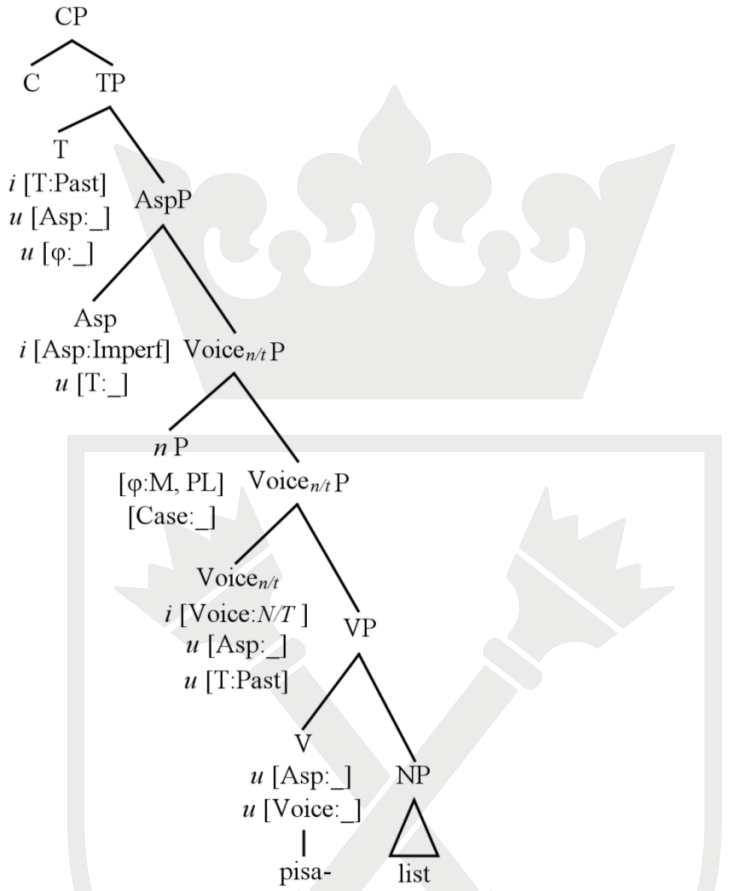
– T valued as [Past] contributes the interpretation E < S. It always selects for Asp, valued either as perfective or imperfective/underspecified (=imperfective), which contributes information on the S-R relation.
– T valued as [Non-past] contributes either $S \cap E \neq \emptyset$ (i.e., present) or S < E (i.e., future). When T selects for Asp, the Asp head contributes information on the S-R relation and, in this context, [T:Non-past] is interpreted as S < E. When Asp is absent from the extended verbal projection, information on the S-R relation is unavailable, which is interpreted in the system by assuming an overlap between all three notions, S, R, and E, resulting in the present temporal interpretation $[_R$ S ∩ E].

4.3. The syntactic derivation of IN/TC

As noted above, IN/TC can only have past temporal reference. This restriction cannot be semantic in nature, as other impersonals are compatible with present and future time reference. To capture this fact, I suggest that the construction is grammaticalised as a past/irrealis structure in that *u*[T] on $\text{Voice}_{n/t}$ is lexically valued as [Past]. Within the current set of assumptions, this means that the extended verbal projection composing the verb form in IN/TC contains the V, $\text{Voice}_{n/t}$, Asp, T, and C heads. The minimal pronoun *n*(P), representing the arbitrary argument, is merged in the specifier position of the $\text{Voice}_{n/t}$ head in transitive and unergative derivations and in the complement of V in unaccusatives, as is assumed for full NP subject arguments. For the purpose of illustration, consider the derivation of (65):[30]

[30] The perfective form *napisano* 'write$_{\text{PERF.}n/t.\text{SG.N}}$' is derived in the same way, but for the value of [Asp].

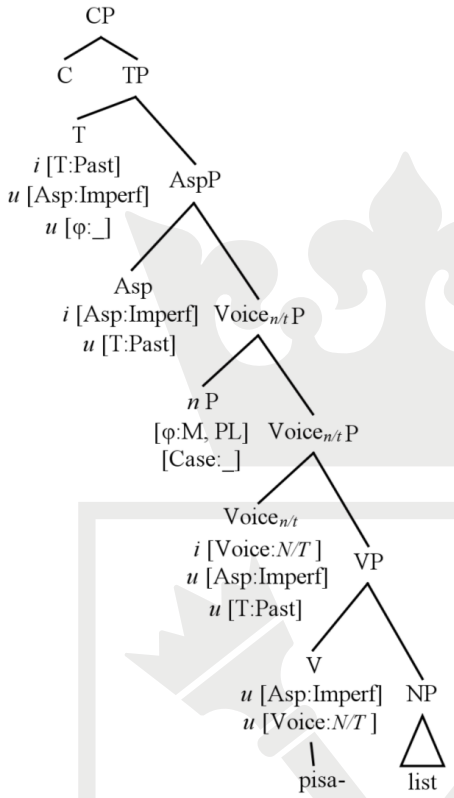
(65) Pisano listy.
write$_{\text{IMPERF}.n/t.\text{SG.N}}$ letters$_{\text{ACC}}$
'They$_{\text{ARB}}$ wrote/were writing letters.'



Similarly to the derivations described above, Agree between Voice$_{n/t}$ and V values *u*[Voice] on V and links *u*[Asp] on Voice$_{n/t}$ and V and Agree between Asp and Voice$_{n/t}$ values *u*[Asp] on these heads and, in this case, *u*[T] on Asp by the lexically-valued *u*[T] on Voice$_{n/t}$. Finally, Agree between T and Asp values the unvalued *u*[Asp] on T:

As Case valuation is considered as a reflex of φ-valuation rather than just match, it seems that assuming underspecified [Person] in the projection of the subject (cf. footnote 11) would not influence the way in which the derivation proceeds with [Case] on the subject remaining unvalued in accordance with the secondary-predication data from section 3.3.

(66) Pisano listy.



When *i*[T] on T is valued as [Non-past], the mismatch between the values of [T] on T and on Asp and Voice$_{n/t}$ leads to the crash of the derivation, capturing the fact that IN/TC is unavailable with future and present time reference.

Following Chomsky (2000) (cf. also Ussery 2009 and Willim 2012a), I assume that subject-verb agreement is driven by the [Person] feature. As the postulated minimal pronoun lacks [Person], it cannot value the probe on T. The φ-features on T are thus unvalued in syntax and are valued as [3SG.N] by default at Spell-Out. This is why the subject-verb agreement marking in IN/TC is *-o*, realising singular neuter features, rather than *-i*, found on the *l*-participle agreeing with plural masculine subjects. The resulting feature complex is interpreted at SM as the *n*/*t*-stem. Due to the failure of Agree between the probe on T and the subject, the [Case] feature of the subject remains unvalued in the narrow syntax, an assumption supported empirically by the secondary--predication data discussed in section 3.3.[31] Polish being a *pro*-drop language,

[31] A reviewer notes that the lack of valued [Case] on the subject of IN/TC makes the subject unusual from the point of view of Chomsky's (1981) Visibility Condition. However, as the

the minimal pronoun is unpronounced, in parallel with other pronominal subjects in unfocused positions.

4.4. Previous approaches to *-no/-to*

The key facts elucidated in this section have been the morphological form of the verb in IN/TC and the relation between IN/TC and the passive, given that the lexical verb in both contexts is based on the *n*/*t*-stem. The analysis developed here differs from the perspectives assumed in the previous approaches to the analysis of IN/TC, where the *-no/-to* sequence has been taken to constitute a single morpheme. For example, basing his analysis on the facts that there is no (overt) auxiliary in IN/TC and that only past temporal reference is possible here (irrealis contexts aside), Lavine (2001, 2005, 2013) proposes that the *-no/-to* morpheme is a past tense/passive auxiliary located in T and that the construction involves the regular active Voice head. However, as shown in section 2, no lexical NP can appear in the subject position in IN/TC (cf. (2)), and the subject has the [HUMAN] interpretation. It is hard to see how an auxiliary merged in T could impose restrictions on the subject merged within VoiceP. Also, in similar contexts in personal constructions the auxiliary is null, as Lavine (2005) also admits, and cannot be substituted with any of the overt auxiliaries.

In another recent study, Krzek (2013) treats *-no/-to* as a morpheme introducing the impersonal voice and inserted as the head of VoiceP. The incompatibility of the construction with the passive follows on the assumption that *-no/-to* occupies the same position as the passive auxiliaries.

This analysis leaves unexplained the derivation of the form of the lexical verb in the passive, as it would not be possible to assume that Voice is one of the heads building this verb form. It would also imply that the similarity between the verbal stems in the passive and IN/TC is accidental.

Additionally, in the descriptive framework, Tokarski (2001) analyses the *-no/-to* form as an adverbial form of the passive participle, noting that adverbs can function as predicates in Polish (cf., e.g., *Smutno*$_{\text{ADV}}$ *mi*$_{\text{DAT}}$ 'I am sad'). He suggests that the adverbial forms are related to the adjectival passive participle forms (e.g. *widziany* 'seen$_{\text{SG.M.NOM}}$' – *widziano* 'see$_{n/t.\text{SG.N}}$'), but admits that this

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purpose of the Visibility Condition was to deduce the Case Filter from more general properties of language in the 1981 system (rather than to capture Theta-Theory-related problems, as the reviewer seems to imply), the question comes down to how the current proposal (the lack of valuation of [Case] on the subject by the probe on T) can be reconciled with approaches to capturing the Case Filter effects under minimalism. I need to leave investigating the theory of Case in the light of the empirical data presented above for future research and merely note that a possible analysis avoiding this problem could stipulate that rather than having unvalued [Case], the subject in IN/TC lacks [Case], in addition to lacking [Person].

form can be constructed from verbs which lack an equivalent adjectival passive participle (**radzony* 'advised$_{SG.M.NOM}$' – *radzono* 'advise$_{n/t.SG.N}$').

Lastly, one more general remark seems to be in order. In the literature, IN/TC in Polish is usually compared with the impersonal *-N/-T* passive construction in Ukrainian (cf., e.g., Kučerová 2012; Lavine 2001, 2005; Legate 2014a, 2014b; Maling and Sigurjónsdóttir 2002) due to the superficial morphological similarity of the impersonal constructions in the two languages. However, the Polish and Ukrainian data should not be considered equivalent. For example, as noted in Maling and Sigurjónsdóttir (2002), the impersonal *-N/-T* construction in Ukrainian can appear with agentive *by*-phrases, does not make anaphoric binding or control of subject-oriented adjuncts possible, and is ungrammatical with unaccusative verbs. This suggests that this construction lacks a syntactically active subject argument in Ukrainian. Since the Ukrainian data are in line with a passive analysis rather than an active one proposed here for Polish, a detailed discussion of the Ukrainian facts lies beyond the intended scope of the present paper. It seems that what is found in Ukrainian is closer to the so-called new passive in Icelandic and could perhaps be analysed in line with one of the proposals presented in the literature on Icelandic (cf. Lavine forthcoming for a comparison and analysis of Ukrainian and Icelandic, Legate 2014a, 2014b for a wider cross-linguistic comparison, Jónsson 2009, Sigurðsson 2011 for analyses of Icelandic, and Ingason et al. 2012 for an analysis of the emergence of the new passive in Icelandic within a mathematical model of linguistic change).

4.5. Some typologies of Voice

In the previous literature, typologies of Voice have been proposed, for example, in Schäfer (2008) and Wood (2012), both of whom, however, focus on anticausative predicates, based on the investigation of (mostly) Germanic data. Their proposals relate transitivity alternations to the presence of a D-feature on Voice, requiring the projection of Spec,Voice, and the ability of Voice to assign a theta-role/the semantic contribution of Voice. Schäfer (2008) assumes two Voice types, a thematic and a non-thematic/expletive one. The former, assigning the external theta-role, can bear the D-feature, resulting in an active sentence, or not, resulting in a passive sentence. The second Voice type, lacking a theta-role to assign, likewise has an active and a passive variant, depending on the presence or absence of the D-feature. With this feature present, a reflexive is merged in Spec,Voice, resulting in an anticausative structure of the German *sich*-type. Without the D-feature on Voice, anticausatives in Albanian and Greek are derived according to Schäfer, with his third type of anticausatives, the morphologically unmarked one, derived when Voice is absent from

the structure (cf. Schäfer 2008 for further details).[32] In this restrictive system, there seems to be no room for the impersonal type discussed here, as Voice in IN/TC would need to contain the D-feature and be able to assign the external theta role, but this combination is associated exclusively with the regular active morphology on Schäfer's (2008) approach.

The point of departure in this section has been Alexiadou and Doron's (2012) distinction between the active and the non-active Voice heads, the second of which comprises two further distinct categories, namely the passive and the middle Voice head. The IN/TC data have been taken to suggest that there can also be more than one active Voice head in a language. In particular, Polish shows some evidence for the postulation of the personal active Voice head, unmarked at the level of morphology, and the impersonal active Voice head, referred to as Voice$_{n/t}$ in the present paper and realised with the *n*/*t*-stem. These findings are summarised in Table 1.

Table 1. (Non-exhaustive) typology of Voice in Polish

Voice type	Active		Non-active	
	personal	impersonal	passive	middle
Verb form	unmarked stem	*n*/*t*-stem	*n*/*t*-stem	*się*-marked
Spec,Voice (or complement of V in unaccusatives)	full NP	minimal *n*(P)	absent	absent

The personal active structure is exemplified in (40) above, examples for the impersonal active are presented throughout the paper, the passive is exemplified in (41) and the middle in (42).[33] One construction which is absent in Table 1 is the impersonal subject SE construction, which, similarly to IN/TC, can be shown to have a syntactically active subject. More research is needed to determine its exact nature, including the syntactic position of the morpheme *się* (e.g. Voice head vs. argumental), a characteristic feature of the construction. Thus, it is possible that, just as there are further subtypes of the non-active middle voice (e.g. anticausative, dispositional middle, cf. Alexiadou and Doron 2012), there may be further subtypes of the remaining active and non-active voices, depending on the lexical properties of the Voice head and the feature specification of the relevant argument.

[32] Wood (2012) also distinguishes two Voice types, Voice$_{\{D\}}$, requiring material in Spec,Voice$_{\{D\}}$, and Voice$_{\{\}}$, whose Voice$_{\{\}}$P lacks a specifier, both of which can form anticausatives as both have the option of being semantically vacuous. Voice$_{\{D\}}$ can in addition introduce an agent.

[33] I tentatively assume here that Spec,Voice is not projected in the non-active voice structures, even though alternative treatments have been suggested in the literature and determining this issue requires more investigation.

After this paper has been submitted, Legate's (2014b) monograph *Voice and v* appeared (cf. also Legate 2014a).[34] Legate focuses on two non-active voices, the canonical passive and the grammatical object passive voice, with special reference to Acehnese, even though she considers data from a variety of other languages as well. Legate (2012, 2014a, 2014b) discusses how the two structures differ not only from one another, but also from the active impersonal construction. She proposes to account for the properties of the constructions based on variation in the properties of the Voice head and the presence and syntactic position of φ-features, which appear either in Voice (canonical passive) or in Spec,Voice (grammatical object passive) and modify rather than saturate the initiator theta-role (cf. Legate 2012, 2014a, 2014b for more discussion). On Legate's approach, the active impersonal construction arises when the φ-features are embedded under D, with the DP being merged in Spec,Voice and saturating the predicate. In the former cases, a *by*-phrase adjunct is possible, in the latter case it is not.

The general approach pursued here seems compatible with Legate's (2012, 2014a, 2014b), but for the category of the impersonal argument in the impersonal active structure, argued here to be *n*, a set of [Number] and [Gender] (and [Case]), rather than a DP.[35] Assuming that languages differ in the category of their arguments, with the so-called DP-languages requiring the presence of D in the projection of (referential) argumental noun phrases and the so-called NP-languages making it possible for D-less NPs to be arguments (cf., a.o., Bošković 2008, 2012; Chierchia 1998; Corver 1990; Willim 2000 for discussion), I suggest that in addition to the properties of the Voice head, also some more general properties of the nominal system of a language may have a role to play in the formation of voice alternations in that in the NP-languages, the presence of the D head on top of the phrase merged in Spec,Voice is not required for theta-role saturation (note in addition that the impersonal argument in IN/TC is non-referential).

5. Conclusions

Taking the marker *-N/-T* to be an ambiguous morpheme rather than only the exponent of the passive Voice head, I have suggested here, contra previous approaches, that the marker *-no/-to* found in IN/TC is composed with two morphemes, the Voice marker *-N/-T* and the default singular neuter agreement

[34] I am grateful to an anonymous SPL reviewer for directing me to Legate's work.

[35] Another difference is that it is not exactly clear how Legate's analysis could account for the morphological difference between the impersonal and personal active voices in Polish, as she seems to assume an identical representation for the two (yet, note again that her main focus is on non-active constructions).

marker -*o*. The subject in IN/TC is represented in the narrow syntax as the minimal pronoun $n_{\{[\text{Num: Pl}], [\text{G: M}], [\text{Case:\_}]\}}$, whose quantificational properties parallel the properties of indefinite NPs. The fact that IN/TC involves the default agreement marker, resulting from the failure of syntactic Agree, constitutes an additional piece of evidence in favour of distinguishing between the specification of the minimal pronoun proposed here and the more familiar plural *pro*, which can participate in subject-verb agreement and which is compatible with a full range of interpretations, including definite, specific indefinite, and non-specific indefinite.

The results of the present analysis suggest that Polish does not have morphology dedicated exclusively to encoding the passive voice or dedicated to expressing the passive meaning. This finding provides some evidence that a functional approach to morphological analysis may lead to conflicting results and that morphological structure should rather be seen as a result of the interplay of the specification of heads manipulated in the narrow syntax and interpreted semantically at the C-I interface and the rules of the SM interface system, which need not build a morphophonological structure whose pieces stand in direct correspondence to the meanings encoded in the generated strings.

Finally, the discussion offered here has contributed to the literature investigating the typology of Voice heads, suggesting that in addition to the distinctions made for non-active Voice heads, more than one active Voice head may be available in natural language grammar.

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