

A Novel Architecture for Pseudo-incorporation

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Abstract Pseudo-noun incorporation stands as a phenomenon that has intrigued researchers since Massam (2001) first identified it as a phenomenon distinct from noun incorporation. There is a significant debate on the syntactic architecture of verbal complexes involving pseudo-incorporation as well as the semantic functions associated with this construction. On the syntactic side, this phenomenon, often characterized by the requirement of the theme argument to be adjacent to the verb and occur without case-marking, challenges traditional notions of argument structure and raises questions about the syntactic status of thematic arguments. One of the fundamental questions pertains to how pseudo-incorporation influences the transitivity of the clause. In this paper, we seek to contribute to the ongoing debate on the syntactic and semantic status of pseudo-incorporated arguments by delving into the interaction of agent pseudo-incorporation with two cross-linguistic reflections of transitive syntax: accusative case assignment and ϕ -agreement with objects, through an investigation of this phenomenon in Turkish and Laz, an endangered South Caucasian language. Drawing on dependent theoretic accounts of accusative case in Turkish (Baker and Vinokurova 2010) and object agreement in Laz (Bondarenko and Zoppi 2023), we argue for a unified analysis that postulates a null expletive subject in clauses with agent pseudo-incorporation. Our analysis builds upon a semantic view of pseudo-incorporation as an event kind-level argumentation process that occurs deep inside the VP (Sağ 2022, 2023). Extending the null expletive analysis to clauses with theme pseudo-incorporation as well, we build a two-layered verbal structure corresponding to argumentation at the level of event kinds (VP-internally) and canonical argumentation, which occurs at the level of event tokens (VP-externally). We position the null expletive as a semantically contentful ‘placeholder’ within the event token domain, substituting for the pseudo-incorporated argument of the event kind, thereby establishing it as a pivotal connection between the two dimensions of the event domain.

Keywords (agent) pseudo-incorporation · event kinds · event tokens · two-layered argument structure · dependent case · dependent ϕ -agreement

1 Introduction

The term *noun incorporation* is often reminiscent of a phenomenon attested in languages like Mohawk and Inuit, where an incorporated argument exhibits robust morpho-syntactic differences compared to argumentation within regular transitive constructions (e.g., Sadock 1980, Mithun 1984, Baker 1988, van Geenhoven 1998). An incorporated noun bears a strict relation with the verb, forming a morphological unit with it. This

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has consequences for the syntactic status of an incorporated argument, preventing it from being separated from the verb via movement and forcing any form of modification to stay outside of the verbal complex. Incorporation also has consequences for argument structure, transforming a transitive configuration into an intransitive one, which is reflected in case marking. To see this, consider a well-known contrast from Inuit:

- (1) a. Angunguu-p aalisagaq neri-v-a-a
 A-ERG fish.ABS eat-IND-[+TR]-3SG
 ‘Angunguaq ate the/a particular fish.’ (van Geenhoven 1998: 13)
- b. Arnajaraq eqalut-tur-p-u-q
 A.ABS salmon-eat-IND-[-TR]-3SG
 ‘Angunguaq ate salmon.’ (van Geenhoven 1998: 15)

The canonical transitive structure in (1a) involves an agent argument with ergative case and a theme argument with absolutive case. The structure in (1b), where the theme argument is fused into the verb, has the agent argument in the absolutive case form. The distinction in case marking illustrates that noun incorporation has an altering effect on the valency of a verb.

More recently, the scope of noun incorporation has expanded to include constructions where the incorporated theme argument is realized as, at the very least, a noun phrase and exhibits no apparent fusion with the verb. The central question revolves around whether this less rigid form of incorporation, referred to as pseudo-incorporation (PI, henceforth) in Massam (2001), has any impact on the valency of the verb, resulting in an intransitive construction, or if a pseudo-incorporated (PI’ed, henceforth) argument maintains its syntactic argument status.

Evidence from Turkish shows that transitivity remains intact in constructions with a PI’ed direct object (Taylan 1984, Öztürk 2005, see also Dayal 2011 for Hindi). In Turkish, the theme argument is assigned accusative case in a canonical transitive construction, but a PI’ed theme does not receive case marking, as shown in (2a) and (2b):

- (2) a. Ali kitab-**ı** oku-du.
 Ali book-ACC read-PST
 ‘Ali read the book.’ canonical transitive
- b. Ali kitap oku-du.
 Ali book read-PST
 ‘Ali read one or more books./Ali did book-reading.’ PI

While a PI’ed object is caseless on the surface, it seems to be still visible to the case assignment mechanism, as evidenced by its behavior in causative constructions (Taylan 1984). When an intransitive verb is causativized, the causee receives accusative case marking, as seen in (3a). However, when a transitive verb is causativized, the causee is marked dative possibly because accusative is already assigned to the direct object, as demonstrated in (3b). On the other hand, when a transitive verb with a PI’ed object is causativized, the causee still receives dative case even though the theme argument is not accusative-marked, as illustrated in (3c). This indicates that constructions with a PI’ed object retain a pattern with transitive constructions with respect to case calculus.

- (3) a. Sevgi Ali-**yi** koş-tur-du.
 Sevgi Ali-ACC run-CAUS-PST
 ‘Sevgi made Ali run.’ causativized intransitive
- b. Sevgi Ali-**ye** kitab-ı oku-t-tu.
 Sevgi Ali-DAT book-ACC read-CAUS-PST
 ‘Sevgi made Ali read the book.’ causativized transitive
- c. Sevgi Ali-**ye**/*-**yi** kitap oku-t-tu.
 Sevgi Ali-DAT/*ACC book read-CAUS-PST
 ‘Sevgi made Ali do book-reading.’ causativized construction with PI

Even though PI canonically targets the theme argument/the direct object of a verb, some languages allow PI of agent arguments as well (e.g., see Farkas and De Swart 2003 for Hungarian). Agent PI crucially differs from object PI in imposing a linear order that reverses the thematic hierarchy, and thus challenges UTAH,

which universally positions the agent argument above the theme. For example, in Turkish, a PI'ed agent occurs adjacent to the verb and thus is preceded by the theme of the clause, as illustrated in (4b) (Öztürk 2009). This contrasts with the order attested in a canonical transitive construction, where the agent precedes the theme argument, as in (4a).

- (4) a. Köpek Ali-yi ısırdı.
 dog Ali-ACC bite-PST
 'The dog bit Ali.' canonical transitive
- b. Ali-yi köpek ısırdı.
 Ali-ACC dog bite-PST
 'One or more dogs bit Ali./Ali got dog-bitten.' agent PI

There is also evidence that a PI'ed agent is caseless, as is the case with PI'ed direct objects. The difference between a canonical subject and a PI'ed one in case marking is not visible in matrix clauses, as in (4b), because the nominative/unmarked case in finite matrix clauses has no overt exponence. However, the caselessness of a PI'ed agent becomes evident in nominalized embedded clauses, where a canonical subject is necessarily marked with the genitive case, while a PI'ed subject remains caseless, as illustrated below (Johanson 1977, Kornfilt 1984, 1997, Heusinger and Kornfilt 2005, Öztürk 2005, Sağ 2019, 2022).

- (5) a. [Köpeğ*(-in) Ali-yi ısırdığ-ın-ı] bil-iyor-um.
 dog-GEN Ali-ACC bite-NMLZ-3SPOSS-ACC know-IMPRF-1SG
 'I know that the dog bit Ali.' canonical transitive
- b. [Ali-yi köpek(-in) ısırdığ-ın-ı] bil-iyor-um.
 Ali-ACC dog-GEN bite-NMLZ-3SPOSS-ACC know-IMPRF-1SG
 Without GEN: 'I know that Ali got dog-bitten.' agent PI
 With GEN: 'I know that the dog bit Ali.' canonical transitive

The question about the transitivity of PI constructions naturally extends to structures where an agent undergoes PI as well. When the agent is PI'ed in Turkish, the theme argument still receives accusative case marking, as seen in (4b). If we take the linear order to mirror the structural hierarchy between the thematic arguments, the fact that the theme NP is marked accusative poses a challenge to theories where accusative case assignment is dependent on the presence of a c-commanding NP, such as the Dependent Case Theory (e.g., Baker and Vinokurova 2010, Baker 2015).

- (6) Dependent Case Assignment (Baker and Vinokurova 2010: 595)
 If there are two distinct NPs in the same spell-out domain such that NP1 c-commands NP2, then value the case feature of NP2 as *accusative* unless NP1 has already been marked for case.

Assuming that the Dependent Case Theory is on the right track, then we predict that not only a transitive structure is maintained when the agent is PI'ed but also that the theme argument is c-commanded by another NP at some point in the derivation so that it is assigned accusative case.

In the Pazar/Atina dialect of Laz (Öztürk and Pöchtrager 2011), which differs from Turkish in exhibiting surface active-ergative case alignment (in the sense of Woolford (2015)), the consequences of agent PI are evident not only in the reversal of word order but also directly through case marking in matrix clauses.¹ In Laz, the subject of a transitive verb is marked with the ergative case suffix. However, with PI'ed agents, case marking is absent, as demonstrated in the following contrast:

- (7) a. Laç'i-k bere-s goyo-k'ap'-u.
 dog-ERG child-DAT over-attack-PST.3SG
 'The dog attacked the child.' canonical subject
- b. Bere-s laç'i goyo-k'ap'-u.
 child-DAT dog over-attack-PST.3SG
 'One or more dogs attacked the child.' PI'ed subject

¹ The third author of this paper is a native speaker of Laz besides being a well-trained linguist. The variety of Laz he speaks, from which the data reported here comes from, is spoken in Pazar. More comprehensive fieldwork is needed to see to what extent pseudo-incorporation is attested across different Laz varieties.

- c. *Laç'i bere-s goyo-k'ap'-u.
 dog child-DAT over-attack-PST.3SG

A notable sign of transitivity in clauses with agent PI comes from ϕ -agreement patterns. Laz exhibits prefixal person agreement, which prioritizes *m-set* markers for participant objects, otherwise, hosts *v-set* markers for subjects. Crucially, incorporating the subject does *not* eliminate canonical object agreement with the theme NP, as shown in (8a), contrasting with single argument verbs, i.e., unaccusatives and unergatives, which exclusively exhibit subject agreement, as seen in (8b). If PI were to demote the agent, resulting in an intransitive construction, we would expect subject agreement to emerge, akin to what occurs with single-argument verbs.

- (8) a. Ham oruba-s ma mtuti m'-ç'op-um-s.
 this river-LOC 1.SG bear 1.OBJ-catch-IMPF-PRS.3SG
 'In this river, I'd get *bear-caught*.' agent PI
- b. b-ğurur, *m-ğurur
 1.SBJ-die.IMPF, 1.OBJ-die.IMPF
 'I am dying.' unaccusative

The prefixal ϕ -agreement pattern in Laz has recently been analyzed within a dependent-theoretic framework of agreement in Bondarenko and Zompì (2023). In simplified terms, agreement with participant objects is *dependent* on the presence of two distinct NPs accessible to the probe (the *v* head), which is low in the structure and searches for a goal within its complement first and then its specifier. If the probe successfully copies features from two distinct NPs, we observe *dependent agreement* (*m-set* markers) realizing the features of the first target of the probe (i.e., the theme NP). In cases where the probe cannot find two NPs, it results in *unmarked agreement* (*v-set* markers).

This view, which shares similar insights with the dependent-theoretic account of the accusative case, raises questions similar to those arising from the preservation of accusative marking in clauses involving agent PI in Turkish. In other words, the availability of *m-set* agreement markers for the theme argument indicates that the probe finds a second NP in its specifier when the agent is PI'ed. The puzzle is what this NP is if the agent is incorporated below the theme.

In essence, the following questions emerge as pivotal based on the case and agreement patterns observed in clauses with agent PI in Turkish and Laz:

- i. What constitutes the underlying syntax of agent PI, and does it differ from other forms of incorporation or argument structure?
- ii. Is a PI'ed agent generated lower than the theme argument in the structure?
- iii. If so, how does the accusative case on the theme surface in Turkish and how does object agreement persist in Laz when the agent undergoes PI in these languages?

These will serve as our guiding questions in our investigation into the architecture of PI. Specifically, we aim to explore how a transitive structure is maintained in clauses featuring agent PI, with a particular focus on two crucial facets of transitive syntax in both Turkish and Laz: accusative case assignment and object agreement. Our ultimate objective is to establish a comprehensive understanding of the implications that the structure of agent PI holds for case marking and agreement mechanisms in these languages. Adopting a model wherein incorporated arguments are introduced lower inside the VP, we offer a straightforward analysis that sustains a transitive argument structure, which still satisfies the requirement of dependent case assignment in Turkish as well as ensuring object agreement with the theme argument in Laz. We argue that a null expletive pronoun occupies the canonical position of an agent argument (spec, *vP*) when the agent is PI'ed internally within the VP.

The motivation behind our analysis is driven by the semantics of PI proposed in Sağ (2023), which posits this phenomenon as an event-kind level argumentation process. Under this view, a verb that denotes at the level of event kinds takes a singular/taxonomic kind argument (in the sense of Dayal 2004) to yield a sub-kind of an event kind (cf. Sağ 2019, 2022). This deep-level argumentation happens VP-internally. Canonical argumentation, on the other hand, happens only after event kinds type-shift to event tokens, which occurs above the VP, indicating a two-layered alignment in argument structure. We maintain that UTAH operates within (but not between) the event kind and the event token domains, implying that the reversed thematic

order in agent PI does not violate this principle. Furthermore, in extending our null expletive analysis to include PI of theme arguments, we propose that an expletive is motivated on semantic grounds: its function is to forge a relation between the singular kind introduced as a thematic argument at the event kind domain and the object-level members of that kind, which maintain the corresponding thematic relation at the event token domain.

The outline of this paper is as follows: In Section 2, we begin by discussing the syntactic and semantic characteristics of PI in Turkish and Laz. Section 3 outlines the semantic analysis of PI adopted in this study, delving into its implications for adverbial modification and UTAH. In Section 4, we discuss how accusative case assignment in Turkish and object ϕ -agreement in Laz pose challenges to be addressed in our system. Section 5 presents our core analysis. Section 6 provides additional support for our analysis through the examination of passivization in Turkish and Laz, as well as oblique subject constructions in Laz. Section 7 extends the analysis to clauses with theme PI and reevaluates dative case assignment in Turkish from a dependent-theoretic perspective. Section 8 concludes the paper.

2 Pseudo-incorporation in Turkish and Laz

Turkish is one of the languages recognized in the literature for featuring PI. Öztürk (2005) shows that Turkish exhibits PI for both theme and agent arguments. In this section, we will begin by reviewing the syntactic and semantic characteristics of this phenomenon, drawing from previous literature on Turkish PI. Afterward, we will demonstrate that Laz is another language that allows PI of both theme and agent arguments.

2.1 Pseudo-incorporation in Turkish

Non-case-marked nouns occupying the direct object position, shown in (7c), are analyzed as PI'ed arguments in Turkish. One notable requirement of PI is an adjacency relation between the PI'ed noun and the verb. For instance, an adverb cannot intervene between the two, while this is possible with accusative case-marked direct objects:

- (9) a. Ali [hızlıca] kitab-ı [hızlıca] oku-du.
 Ali quickly book-ACC quickly read-PST
 'Ali read the book quickly.'
 b. Ali [hızlıca] kitap [*hızlıca] oku-du.
 Ali quickly book quickly read-PST
 'Ali read one or more books fast./Ali did book-reading fast.'

In Baker (1988), noun incorporation is argued to involve a movement process where the noun head moves from its base position inside the direct object phrase and adjoins to the verb head, resulting in a strict adjacency relation between the two elements of incorporation. The data in (9) at first sight suggests that Baker's head incorporation analysis can also be maintained for Turkish non-case-marked direct objects. However, Taylan (1984) and Öztürk (2005) argue against this view. Taylan shows that focus particles like the additive *da* 'also', the scalar particle *bile* 'even', and the question particle *mi* can cliticize on the PI'ed noun, implying that the verb and the noun do not form a single morphological unit:

- (10) Ali kitap da oku-du.
 Ali book also read-PST
 'Ali also did book_F-reading.'

Öztürk provides additional evidence against a head incorporation analysis based on ellipsis and coordination. First, it is possible to elide the incorporating verb, as illustrated in (11), and second, it is possible to coordinate the incorporated noun or the verb, as seen in (12) (Öztürk 2005: 39). These facts show that the incorporated argument cannot be considered a head forming a morphological complex with the verb.

- (11) Ali kitap oku-du, dergi değil.
 Ali book read-PST magazine not
 'Ali did book-reading, not magazine (reading).'

- (12) a. Ali [kitap ve dergi] oku-du.
 Ali book and magazine read-PST
 ‘Ali did book-reading and magazine-reading.’
 b. Ali kitap [al-dı ve sat-tı].
 Ali book buy-PST and sell-PST
 ‘Ali did book-buying and selling.’

Finally, Öztürk demonstrates that an incorporated noun allows certain types of modification (some adjectival or participial modifiers, but not relative clauses), as exemplified below (Öztürk 2005: 40):

- (13) Ali ekşi elma ye-di.
 Ali sour apple eat-PST
 ‘Ali did sour apple-eating.’

Crucial for our purposes, Öztürk further illustrates that Turkish allows PI of agent arguments with both transitive and unergative verbs, as exemplified in (14a) and (15a). The examples in (14b) and (15b) show the canonical/PI-less versions of these clauses (Öztürk 2005: 42).

- (14) a. Ali-yi arı sok-tu.
 Ali-ACC bee sting-PST
 ‘Ali got bee-stung.’ agent PI with transitive
 b. Arı Ali-yi sok-tu.
 bee Ali-ACC sting-PST
 ‘The bee stung Ali.’ canonical transitive
 (15) a. Ağaç-ta kuş ötü-yor.
 tree-LOC bird sing-IMPRF
 ‘Bird singing is happening in the tree.’ agent PI with unergative
 b. Kuş ağaç-ta ötü-yor.
 bird tree-LOC sing-IMPRF
 ‘The bird is singing in the tree.’ canonical unergative

PI’ed agents exhibit the same characteristics as those discussed for the PI of theme arguments. They only permit specific focus particles to occur between the incorporated agent and the verb. If an adverb intervenes between the two, the intended PI interpretation is no longer retained, and the agent is interpreted as a definite singular:

- (16) Ali-yi arı bile sok-tu.
 Ali-ACC bee even sting-PST
 ‘Ali even got bee-stung.’
 (17) a. Ali-yi fena arı sok-tu.
 Ali-ACC bee bad sting-PST
 ‘Ali got bee-stung awfully.’ agent PI
 b. Ali-yi arı fena sok-tu.
 Ali-ACC bee bad sting-PST
 ‘The bee stung Ali awfully.’ canonical transitive

Moreover, the ellipsis of the verb and the coordination of the incorporated agent or the verb are possible, and an incorporated agent can be modified, as illustrated below:

- (18) a. Ali-yi [arı ve akrep] sok-tu.
 Ali-ACC bee and scorpion sting-PST
 ‘Ali got bee and scorpion-stung.’
 b. Ali-yi köpek [ısırdı ve yaraladı].
 Ali-ACC dog bite-PST and injure-PST
 ‘Ali got dog-bitten and dog-injured.’

- (19) Ali-yi zehirli yılan sok-tu.
 Ali-ACC poisonous snake bite-PST
 ‘Ali got poisonous snake-bitten.’

To wrap up, these facts have led Öztürk to conclude that incorporation in Turkish is manifested as PI, rather than head incorporation, and that a PI’ed argument maintains a phrasal status, as is typical in other languages where this phenomenon is observed.

On the semantic side, among the signature characteristics associated with PI are number neutrality, obligatory narrow scope, and the so-called *name-worthiness* requirement (e.g., Mithun 1984, Bittner 1994, van Geenhoven 1998, Farkas and De Swart 2003, Chung and Ladusaw 2004, Dayal 2011). To see the case of number neutrality associated with PI first, take the contrast in (14), for instance. In (14a), we have a noun morphologically unmarked for number, *arı* ‘bee’, undergoing agent PI, which conveys a ‘one or more bees’ interpretation. This contrasts with the same unmarked noun that occurs as a canonical/non-PI’ed argument in (14b), which instead is strictly singular and definite, referring to a contextually salient unique bee individual. On the other hand, PI’ed nouns rather have a ‘weak indefinite’ interpretation in the sense that they obligatorily take narrow scope with respect to other scope-taking elements. This is exemplified in (20), which conveys that it is not the case that one or more bees stung Ali (i.e., that no bees stung Ali), and would be false in a situation where some bees stung Ali but some other bees did not.

- (20) Ali-yi arı sok-ma-dı.
 Ali-ACC bee sting-NEG-PST
 ‘Ali didn’t get bee-stung.’ (no bees, #some bees > not)

PI exhibits varying degrees of productivity across languages where this phenomenon is observed. This has been associated with a requirement called *name-worthiness* in the literature, which dictates that the combination of a PI’ed noun and the verb yield an enriched activity or state in Mithun’s (1984) terms or a canonical activity type in Dayal’s (2011) terms. Dayal illustrates this point with a contrast in Danish between ‘pig-butcher,’ which is a well-formed combination in terms of PI, and ‘ostrich-butcher,’ which is not. Given that butchering ostriches is not a common practice in Denmark, it is improbable that this activity can be considered a part of the culture, unlike the case with pig-butchering. Therefore, ‘ostrich-butcher’ does not emerge in the form of PI because it fails to yield a culturally significant activity in the community.

Dayal analyzes the name-worthiness requirement as a definedness condition that permits incorporation only when the resulting construction conveys a canonical activity or situation type (see Mithun 1984 and Dayal 2011). The name-worthiness presupposition has a direct impact on the modification of the PI’ed noun, restricting it to certain adjectives that contribute to describing a canonical activity type. Sağ (2022) shows that Turkish PI’ed arguments only allow modification that counts as ‘classificatory/sub-type denoting’ for the PI’ed noun in its combination with the verb in compliance with this requirement. As shown in (21), book-reading is available as a form of PI when the noun is modified with *religious* and *scientific*, for example, while the modification with adjectives like *old* meaning worn-out and *small* yield a result that is awkward at best (Sağ 2022: 745). In essence, while religious or scientific book-reading can easily be considered a canonical activity type, it is harder to imagine a context where this also holds for reading worn-out or small books.

- (21) a. Ali ev-e geldikten sonra, dini/ bilimsel kitap oku-du.
 Ali home-DAT having.come after religious scientific book read-PST
 ‘Ali read one or more religious/scientific books.’
 b. ??Ali ev-e geldikten sonra, eski/ küçük kitap oku-du.
 Ali home-DAT having.come after old small book read-PST
 ‘Ali read one or more old/small books.’

We also observe a similar contrast in modification in clauses with agent PI. As we have seen in (19), the PI’ed agent ‘snake’ is modified with the adjective *zehirli* ‘poisonous,’ resulting in a well-formed PI construction. In contrast, the modification with an adjective such as *yaralı* ‘wounded’ in a snake-biting context results in a strictly singular definite interpretation for the agent argument, yielding a canonical transitive construction instead, as illustrated in (22). The difficulty of obtaining the intended PI interpretation in this case is due to getting stung by wounded snakes not being a typical situation that is name-worthy out of the blue, in

contrast to being bitten by poisonous snakes, which could be quite dangerous and hence easier to be classified as a name-worthy situation.

- (22) Ali-yi yaralı yılan sok-tu.
 Ali-ACC wounded snake bite-PST
 ‘The wounded snake bit Ali.’
 Not: Ali got stung by one or more wounded snakes.’

In summary, Turkish permits incorporation of both theme and agent arguments, which, maintaining their phrasal status while exhibiting the significant characteristics associated with this phenomenon, thus represent typical cases of PI-ed arguments.

2.2 Psuedo-incorporation in Laz

Let us now discuss the facts of PI in Laz. As stated above, case alignment in the Pazar/Atina dialect of Laz is active-ergative and differentiates external arguments from internal arguments. The subject of a transitive or an unergative verb is marked with the ergative case suffix. The subject of an unaccusative verb and the object of a transitive verb are in null nominative form.² These patterns are exemplified below:

- (23) a. Laç'i-k ts'ari ş-um-s.
 dog-ERG water.NOM drink.IMPV-PRS.3SG
 ‘The dog is drinking water.’ transitive
 b. Bere-k k'i-am-s.
 child-ERG yell-IMPV-PRS.3SG
 ‘The child is yelling.’ unergative
 c. Ts'ari-k şışil-am-s.
 water-ERG burble.IMPV-PRES.3SG
 ‘The water is bubbling.’ unergative/emission verb
 d. Ts'ari kor-un.
 water.NOM get.cold-IMPV-PRES.3SG
 ‘The water is cooling down.’ unaccusative

Analogous to the case with Turkish, Laz allows PI of theme arguments, as demonstrated in (24). However, since canonical theme arguments are morphologically unmarked, there is no obvious morpho-syntactic indication at first sight when the theme undergoes PI. This contrasts with the case in Turkish, where we see the distinction directly through the absence of accusative case marking. Consequently, the sentence in (24) is ambiguous in being a clause with PI, where the theme gains a number neutral, non-specific/narrow scope reading, and a canonical transitive construction, where the theme is interpreted as a definite singular.

- (24) Atlasi-k çitabi i-k'itx-u.
 Atlasi-ERG book PV-read-PST.3SG
 ‘Atlasi read one or more books./ Atlasi did book-reading.’ PI
 ‘Atlasi read the book.’ canonical transitive

Nevertheless, the difference between the two constructions becomes evident when the order of the theme and agent arguments are reversed, in which case the PI interpretation becomes unavailable:

- (25) Çitabi Atlasi-k i-k'itx-u.
 book Atlasi-ERG PV-read-PST.3SG
 ‘Atlasi read the book.’ canonical transitive
 Not: ‘Atlasi read one or more books./ Atlasi did book-reading.’

What we are dealing with here is again PI, not head incorporation, because an incorporated argument maintains a phrasal status. More precisely, the diagnostic facts discussed above also hold for Laz. For example,

² We will not be talking about how case forms are determined in Laz, as it is orthogonal to our discussion. See Baker and Bobaljik (2017) for relevant discussion, comparing the two prominent views on ergative: dependent and inherent.

while the separation of the theme argument and the verb as in (25) disrupts the PI of the theme, focus particles can intervene between the two, as illustrated in (26a). Furthermore, it is possible to elide the verb, as in (26b), and both the incorporated noun and the verb can be coordinated, as seen in (27).

- (26) a. Atlasi-k çitabi ti i-k'itx-u.
 Atlasi-ERG book also PV-read-PST.3SG
 'Atlasi also did book_F-reading.'
- b. Ali-k çitabi i-k'itx-u, jurnali va(r).
 Ali-ERG book PV-read-PST.3SG magazine not
 'Ali did book-reading, not magazine (reading).'
- (27) a. Ali-k [çitabi do jurnali] i-k'itx-u.
 Ali-ERG book and magazine PV-read-PST.3SG
 'Ali did book-reading and magazine-reading.'
- b. Ali-k çitabi [e-ç'op-u do gama-ç-u].
 Ali-ERG book PV-buy-PST.3SG and PV-sell-PST.3SG
 'Ali did book-buying and selling.'

Given our primary focus on agent PI, we will now delve into the further details by discussing the properties of PI'ed agents. We argue that Laz allows the PI of agent arguments, direct evidence of which comes from its effect on ergative case. As first illustrated in Section 1, (28b) contrasts with (28a) in that the subject lacks the ergative case marker. Furthermore, the subject that is unmarked for case needs to occupy the immediately preverbal position, which is evidenced by its inability to be separated from the verb, as in (7c).³

- (28) a. Laç'i-k bere-s goyo-k'ap'-u.
 dog-ERG child-DAT over-attack-PST.3SG
 'The dog attacked the child.' canonical subject
- b. Bere-s laç'i goyo-k'ap'-u.
 child-DAT dog over-attack-PST.3SG
 'One or more dogs attacked the child./ The child got dog-attacked.' PI'ed subject
- c. *Laç'i bere-s goyo-k'ap'-u.
 dog child-DAT over-attack-PST.3SG

Caseless agents pass the diagnostics of PI by exhibiting the aforementioned syntactic properties associated with it. For instance, while the adjacency requirement is further evident in the inability of an adverb to intervene between the incorporated agent and the verb, as shown in (29a), focus particles can still cliticize on the incorporated noun, as seen in (29b). Additionally, an incorporated agent allows adjectival modification, as observed in (30), showing that agent incorporation in Laz is an phrase-level process rather than head incorporation:

- (29) a. Doktori*(-k) ğoma mi-yox-u.
 doctor-ERG yesterday 1.OBJ-call-PST.3SG
 'The doctor called me in yesterday.'
 Not: 'I got doctor-called yesterday.'
- b. Ğoma doktori ti mi-yox-u.
 yesterday doctor also 1.OBJ-call-PST.3SG
 'I also got doctor_F-called yesterday.'
- (30) Ma uça mzurzi me-m-o-mtsx-u.
 1SG black bee PV-1-VAL-sting-PST.3SG
 'I got European (black) bee-stung.'

Further evidence supporting the presence of agent PI in Laz is observed in the interpretation of caseless subjects that directly precede the verb. These subjects exhibit the semantic characteristics of incorpora-

³ Note that the object in (28) is lexically DAT-marked. We call this lexical case, for objects normally appear caseless (i.e., unmarked for case, nominative). These data are important in showing us that the requirement that the caseless subject occupy the immediately preverbal position is not a consequence of two caseless NPs being in the same clause.

tion discussed above for Turkish, including number neutrality, narrow scope indefinite interpretation, and compliance with the *name-worthiness* requirement.

To see the case of number neutrality first, let us compare the examples in (28) one more time. The subject noun *laç'i* ‘dog’ in the regular transitive construction given in (28a) refers to a unique dog that is familiar in the common ground and hence yields a definite singular interpretation. In contrast, the caseless subject in (28b) yields a number-neutral interpretation, referring to one or more dogs, the identities of which are not necessarily part of the common ground.

The narrow scope property is illustrated with the example in (31), where the caseless subject is interpreted under the scope of negation. That is, the sentence in (31) is judged true if no dogs attacked the child and false if some or other dog(s) attacked the child.

- (31) Bere-s laç'i var goyo-k'ap'-u.
 child-DAT dog NEG over-attack-PST.3SG
 ‘No dogs attacked the child.’ (#some dogs > not)

In short, while an agent NP that is unmarked for number yields a definite singular interpretation when occupying a case-marked argument position, a caseless agent NP that is (necessarily) immediately preverbal is construed number-neutrally and exhibits a narrow scope indefinite behavior.

Finally, agent PI in Laz is also subject to the name-worthiness requirement, much like in Turkish or other languages allowing PI, influencing the permissible types of modification. The modification of *mzurzi* ‘bee’ with *uça* ‘black’ yields a well-formed PI construction since this combination denotes a type of bees, the European (black) bee, yielding a name-worthy situation where what type of bees were involved matters (e.g., for treatment purposes). In contrast, it is much harder for the intended PI reading to arise when the noun is modified by a participle like ‘with a crushed wing,’ as seen in (32). This is because being stung by a bee or bees with a crushed wing does not, in any obvious way, contribute to the name-worthiness of the situation. As our consultant notes, (32) requires the ergative case on the agent NP to result in a well-formed structure, where the modified agent would refer to a familiar bee individual with a crushed wing.

- (32) ??Ma [msva me-zlap'-eri] mzurzi me-m-o-mtsx-u.
 1.SG wing PV-crush-PTCPL bee PV-1-VAL-sting-PST.3SG
 ‘I got stung by a bee or bees with a crushed wing.’

Having explored the syntactic and semantic properties of PI’ed arguments in Turkish and Laz, we are now ready to address the initial questions about the preservation of transitivity in structures featuring agent PI.

3 Pseudo-incorporation and Two-layered Verbal Structure

We have seen that clauses with agent PI yield a linear order where the theme argument precedes the agent. Assuming that the linear order is a reflection of the hierarchical relation among the arguments, this order is at odds with The Uniformity of Theta Assignment Hypothesis (UTAH) (Baker 1988: 46):

- (33) The Uniformity of Theta Assignment Hypothesis (UTAH):
 Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

UTAH universally requires that the verb and the theme NP form a constituent to the exclusion of the agent NP, which instead asymmetrically c-commands the theme. In clauses with agent PI, this relation seems to be reversed. The first step in our analysis is to show that this apparent violation is merely superficial and that clauses with agent PI do not contradict UTAH.

Following a neo-Davidsonian framework, where not only the agent argument but also the theme argument is severed from the verb, we adopt a two-layered verbal structure (Öztürk 2005 and Sağ 2019, 2022): (i) the lexical domain of VP, which hosts incorporated arguments, and (ii) the VP-external functional domain, where canonical arguments are introduced (themes via a little v_{Th} head projecting above the VP and agents via a higher little v_{Ag} head). We further argue that UTAH applies independently both in the VP-internal and

VP-external domains, and hence the reversed thematic order in agent PI does not violate UTAH, contrary to appearances. The rationale for these claims is rooted in the semantics of PI, which we turn to next.

3.1 Pseudo-incorporation and Event Kinds

The semantics of incorporation has been the focus of several studies (e.g., Bittner 1994, van Geenhoven 1998, Farkas and De Swart 2003, Dayal 2011, 2015). Among them, Dayal (2011, 2015) claims that singular nouns that undergo PI in Hindi and Hungarian denote atomic properties, and the number neutral interpretation is independently made available through atelic or habitual aspectual specification. In her view, an atelic interpretation involves the presence of multiple sub-events within a single event, while habituality necessitates a plural quantificational domain. In both cases, each sub-event within an iterative context or each sub-event making up the atomic part of a plural quantificational domain within a habitual structure features a singular individual as its theme argument. For instance, in an iterative context, ‘Anu mouse-caught,’ denotes that there is an event *E* comprising sub-events of mouse-catching, with Anu as the agent for each, and each sub-event of catching involving a mouse as its theme. Dayal’s evidence comes from the fact that in telic contexts — in particular, with telic adverbial modification — a PI’ed noun yields a strictly singular interpretation.

Sağ (2019, 2022) shows that in Turkish number neutrality of PI’ed singular nouns is not contingent on aspectual specification unlike the case with Hindi and Hungarian; instead, it stems from singular kind reference.⁴ The lack of sensitivity to aspectual specification is evidenced by the example in (34), where the PI’ed noun yields a number neutral reading in telic aspect (Sağ 2022: 755):

- (34) a. Ali yarım saat-te **adam** bul-muş/ topla-mış.
 Ali half hour-LOC man find-EVID/ collect-EVID
 ‘Ali did man-finding/collecting in half an hour.’
 b. Bir baktık, on kişiyle geliyor. Halbuki biz onun bir kişi bile bulabileceğinden emin değildik.
 ‘All of sudden, he came with ten people. In fact, we weren’t even sure that he could find a single person.’

To understand how the number neutrality of PI’ed singular nouns arises from singular kind reference, let us briefly overview the semantics of kind terms. In Turkish, both plural and singular nouns can refer to kind individuals, as evidenced by their ability to be arguments of a kind-level predicate like ‘evolve’:

- (35) **Dinozor(-lar)** 250 milyon yıl önce evrimleş-miş-tir.
 dinosaur-PL 250 million year ago evolve-PRF-GENERIC
 ‘The dinosaur/Dinosaurs evolved 250 million years ago.’

Sağ follows Chierchia (1998) in that plural kind terms are derived via the covert type-shifting operator *nom* \cap . The *nom* operator takes a plural property and returns the individual correlate of that property, a function from worlds *w* to the maximal entity satisfying the property in *w*. This intensional entity is a kind individual (e.g., the dinosaur kind) and it is derived from the corresponding property (e.g., the property of being a dinosaur), as illustrated below.⁵

- (36) \cap dinozorlar: = $\lambda w. \iota x. *dinosaur_w(x)$
 \rightsquigarrow a function from worlds *w* to the maximal entity satisfying the dinosaur property in *w*

On the other hand, building on Dayal’s view of English singular nouns, Sağ takes singular kind terms as primitive entities that directly refer to a kind entity in the taxonomic domain. In Dayal’s view, a singular noun is ambiguous in denoting an atomic property of object-level entities, as in (37), and an atomic property of kind-level/taxonomic entities, as in (38). In their taxonomic sense, singular nouns can either denote a singleton set containing a unique kind individual (e.g., the dog kind), as in (38a), or an atomic set containing

⁴ In other views of PI, such as the ‘Restrict’ analysis proposed in Chung and Ladusaw (2003), the number neutrality of PI’ed nouns can only be derived if these nouns have a number neutral property denotation. Sağ (2019, 2022) has shown that singular nouns in Turkish denote singular properties or singular kind terms, as discussed next, arguing against the number neutral view, which has been defended earlier in Bliss (2004), Bale et al (2010), and Görgülü (2012).

⁵ See also Carlson (1977), the kind literature builds on the Carlsonian view.

the sub-kinds of a kind individual (e.g., the bulldog, the poodle, etc.), as in (38b), depending on the context. (Following the convention in the literature taxonomic kind individuals are represented with capitals.)

- (37) $\llbracket dog \rrbracket = \lambda x. dog(x) = \{Fido, Max, Tommy...\}$ $\langle e, t \rangle$
- (38) a. $\llbracket dog_{k,c} \rrbracket =$ a singleton set containing the dog kind $= \{DOG\}$
 b. $\llbracket dog_{k,c} \rrbracket =$ a set of subkinds of dog salient in a context c
 $= \{BULLDOG, POODLE, GOLDEN.R, \dots\}$ $\langle e_k, t \rangle$

For example, in (39), the bare singular *köpek* ‘dog’ denotes at the ordinary object level, and in (40), it denotes at the taxonomic domain. In both cases, the singular noun is a definite description, referring to contextually salient unique dog individual in (39) and the unique dog kind in (40), through covert *iota* type-shifting due to the lack of a definite article in Turkish:⁶

- (39) a. Köpek bana saldır-dı.
 dog to.me attack-PST
 ‘The dog attacked me.’
 b. $\iota(\llbracket köpek \rrbracket) = \iota x. dog(x) = Fido$
- (40) a. Köpek insan-ın can dostu-dur.
 dog human-GEN life friend-GENERIC
 ‘The dog is the best friend of humans.’
 b. $\iota(\llbracket köpek_{k,c} \rrbracket) = \iota x_k. dog_k(x_k) = DOG$

Singular and plural kind terms differ in their ability to grant access to object-level entities they are associated with. Plural kind terms can be type-shifted to sets of object-level instances via $pred^\cup$. As shown in (41), $pred$ takes a plural kind term and returns a set of atomic and plural individuals that are object-level instances of the kind.

- (41) For any world w , where $\iota x. *dinosaur_w(x)$ is the plural individual that comprises all of the atomic instances of the dinosaur kind in w
 $\cup \cap \text{dinozorlar}: \lambda y. y \leq \iota x. *dinosaur_w(x)$
 \rightsquigarrow the set of singular and plural entities that are part of the maximal instance of the kind in w

In contrast, a type-shifting operator of this sort is not available for singular kind terms. In this way, they are akin to group terms like *team* and *committee*. Groups, though conceptually plural, are impure atomic entities and thus do not have parts, as defined by Landman (1989). Singular kind terms then contrast with plural kind terms, which instead denote pluralities and thus have parts, as reflected in the outcome of $pred$ in (41). An immediate consequence of this distinction becomes apparent when we consider the combination of singular and plural kind terms with distributive elements. In (42a), both the plural and the singular form of the noun *ayı* ‘bear’ convey a plural/number-neutral interpretation because (42a) describes a property attributed to the whole bear kind and kinds are conceptually plural entities. However, unlike plural kind terms, singular kind terms are not compatible with predicates that involve a reciprocal relation between individual members of the species, as in (42b), due to their grammatically atomic nature.

- (42) a. **Ayı(-lar)** genelde saldırgan ol-ur.
 bear-PL generally aggressive be-AOR
 ‘The bear is/Bears are generally aggressive.’
 b. **Kedi*(-ler)** birbiri-ne saldır-ır.
 cat-PL each.other-DAT attack-AOR
 ‘Cats attack each other.’
 *‘The cat attacks each other.’

⁶ The sub-kind denotation as in (38b) is evident in the example below, where *kuş* ‘bird’ denotes an atomic set of sub-kinds of the bird kind and the numeral quantifies over this set.

- (i) İki kuş-un nesli tükenmek üzere.
 two bird-GEN go.extinct about.to
 ‘Two birds are about to go extinct.’

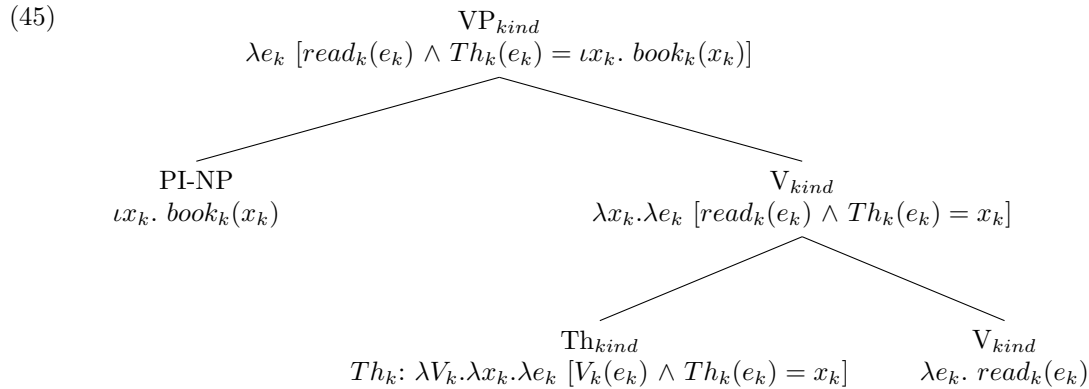
To frame it as described by Dayal, unlike plural kind terms, singular kind terms are grammatically singular but conceptually plural in that they hold a relation to atomic and plural object-level entities associated with kinds. However, this relation is not established in the grammatical component through a type-shifting operator, unlike the case with plural kind terms. Instead, Sağ argues that the conceptual relation between a taxonomic kind and the object-level entities associated with it, which she names *belong-to*, is operative in PI. That is, the argumentation process in PI forms a *belong-to* relation between a thematic argument of the verb and the referent of a singular kind term. PI, defined for singular kinds only, denotes a canonically recognizable type of event, a thematic argument of which is a member of (*belongs to*) a kind entity. Establishing this relation is what derives a number-neutral interpretation with PI'ed singular nouns in Turkish.

In a more recent study, Sağ (2023), building on the interaction of PI and the lexical aspect, argues that PI is an argumentation process that occurs at the level of event kinds, following the views positing event kinds (represented as e_k of type v_k), as a distinct category from event tokens (represented as e of type v) (Schäfer 2007 and Gehrke and McNally 2011; see also Schwarz 2014, Barwise and Perry 1983, Landman and Morzycki 2003, Ginzburg 2005, and references therein). In this view, verbs can denote properties of event kinds in addition to the general assumption that they can denote properties of event tokens:⁷

- (43) a. $\llbracket read_{kind} \rrbracket = \lambda e_k. read_k(e_k)$
 b. $\llbracket read_{token} \rrbracket = \lambda e. read(e)$

Expanding on this two-dimensional view of the event domain, we see that just as argument saturation occurs with event tokens, it is also possible with event kinds. The latter manifests itself in the form of PI in languages like Turkish (see also Espinal and McNally 2011, Sağ 2018 and Luo 2022). The argument position of an incorporating verb, which denotes at the level of event kinds, can only be filled by a kind-denoting argument, i.e., a singular kind term, and the outcome yields a sub-event kind interpretation.⁸ This deep-level argumentation happens VP-internally. Adopting a neo-Davidsonian framework, it is assumed that there are token-level and kind-level thematic functions (represented as θ_t and θ_k). Argumentation in the event kind domain occurs through a θ_{kind} head (e.g., theme introducing Th_{kind}), which denotes a thematic function defined on singular kinds and event kinds. The θ_{kind} head and the lexical V form a complex V head, which then takes the PI'ed NP as its complement. In light of this view, the PI construction *book-read* in (44) is derived as illustrated below:

- (44) Ali kitap oku-du.
 Ali book read-PST
 'Ali did book-reading.'



⁷ Event kinds can be derived in two ways: One approach is to assume that they are derived through a *nom* operator that applies to properties of event tokens, as proposed in Chierchia (1998), Schwarz (2014). Alternatively, we can consider event kinds as primitive entities, similar to singular kind terms in the nominal domain, as proposed in Schäfer (2007) and Gehrke and McNally (2011). Sağ (2023) argues that PI denotes taxonomic event kinds, as detailed below. Therefore, event kinds are analyzed as primitive entities, analogous to Dayal's analysis of taxonomic kinds in the nominal domain.

⁸ Sağ (2022) shows that plural kind terms do not undergo PI in Turkish. We remain agnostic regarding the cross-linguistic validity of this claim. See Dayal (2004), where Hindi and Hungarian are argued to allow PI with plurals.

The Th_{kind} head denotes a thematic function (Th_k) that operates at the level of event kinds. It takes the property of an event kind V_k of type $\langle v_k, t \rangle$ and a singular kind term to denote the property of an event kind with a theme argument that is a singular kind individual. The PI structure derived in (45) denotes the property of the reading event kind with the book kind as its theme. The outcome is the property of the book-reading event kind, which is a sub-kind of the reading event kind. More precisely, PI is a means of establishing the taxonomy of event kinds through their combination with kind-level thematic arguments (cf. Espinal and McNally 2011).

The next step is to combine this sub-event kind with the agent argument, i.e., *Ali*, to yield an interpretable sentence. To introduce an event-token level argument, we need a mechanism to shift from the event-kind domain to the domain of event tokens. This shift is ensured by Event Tokenizer (ET), as defined in (46).

$$(46) \quad ET: \lambda V_k. \lambda e. \exists e_k [belong\text{-}to(e, e_k) \wedge V_k(e_k)]$$

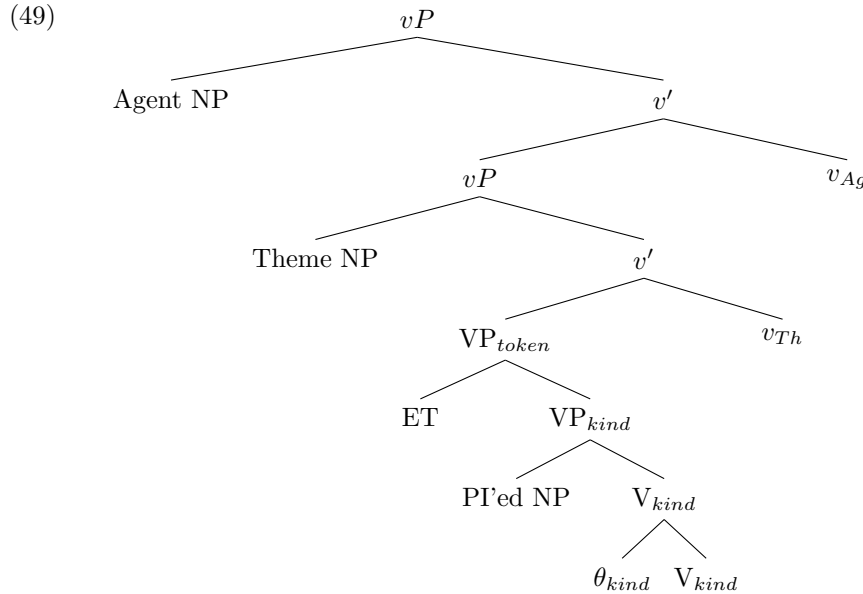
ET takes an event-kind property (V_k of type $\langle v_k, t \rangle$), existentially closes it, and returns a property of event tokens (V of type $\langle v, t \rangle$) that belong to the event kind. (As event kinds are taxonomic, they hold a *belong-to* relation with event tokens, akin to singular kinds.) For example, the VP ‘book-read,’ when shifted to the event token domain, as demonstrated below, denotes a property of reading event tokens that belong to the reading event kind whose theme argument is the book kind:

$$(47) \quad ET([\text{book-read}]) = \lambda e. \exists e_k [belong\text{-}to(e, e_k) \wedge [read_k(e_k) \wedge Th_k(e_k) = \iota x_k. book_k(x_k)]]$$

ET type-shifting entails that for any thematic kind argument that the event kind has (if any), there is an object-level individual or individuals that are members of that kind argument, which holds the same thematic relation in the event token domain with the corresponding event token. This is illustrated in (48), which is posited as a meaning postulate in Sağ’s analysis. For example, involvement in a book-reading event kind requires a reading event token with at least one book as its theme.

$$(48) \quad \exists e. \exists e_k [belong\text{-}to(e, e_k) \wedge \forall x_k [\theta_k(e_k) = x_k \rightarrow \exists y [belong\text{-}to(y, x_k) \wedge \theta_t(e) = y]]]$$

Canonical argumentation, as stated above, occurs only after event kinds type-shift to event tokens, which takes place at the level of the VP. Given that the event kind-level argumentation, i.e., PI, occurs in the VP-internal domain, event token-level theme arguments are introduced by a theme introducing little v head (represented as v_{Th}), and event token-level agent arguments are introduced by a separate agent introducing little v head (represented as v_{Ag}) projecting above v_{Th} , as schematized below:



Returning to the structure of (44), v_{Ag} projects above the VP to introduce the agent argument *Ali*, as shown below:

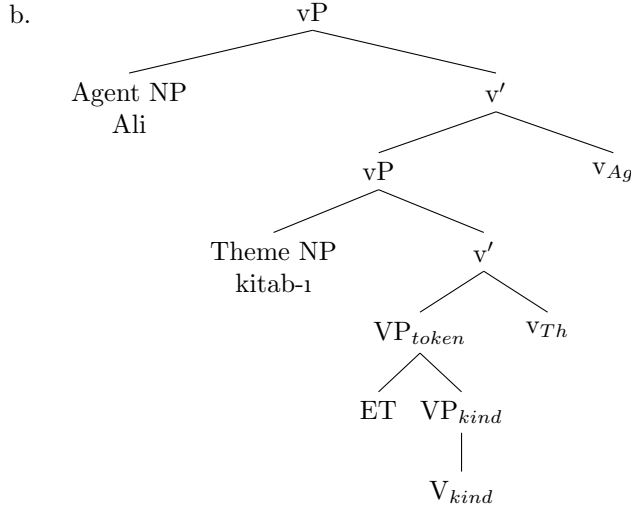
- (50) a. $\llbracket v_{Ag} \rrbracket = Ag_t : \lambda V. \lambda x. \lambda e [V(e) \wedge Ag_t(e) = x]$
 b. $\llbracket [v' [v_{Ag} [VP]]] \rrbracket = \lambda x. \lambda e. \exists e_k [belong\text{-}to(e, e_k) \wedge [read_k(e_k) \wedge Th_k(e_k) = \iota x_k. book_k(x_k)] \wedge Ag_t(e) = x]$
 c. $\llbracket [v_P Ali [v' [v_{Ag} [VP]]]] \rrbracket = \lambda e. \exists e_k [belong\text{-}to(e, e_k) \wedge [read_k(e_k) \wedge Th_k(e_k) = \iota x_k. book_k(x_k)] \wedge Ag_t(e) = Ali]$

Ignoring tense, the event variable eventually undergoes existential-closure, and thus the denotation of (44) is as shown below. ‘Ali did book-reading’ means that Ali is involved in an event token that belongs to the book-reading event kind as an agent. Being involved in an event token that belongs to the book-reading event kind entails that there is a reading event whose theme argument belongs to the book kind.

- (51) $\llbracket (44) \rrbracket = \exists e. \exists e_k [belong\text{-}to(e, e_k) \wedge [read_k(e_k) \wedge Th_k(e_k) = \iota x_k. book_k(x_k)] \wedge Ag_t(e) = Ali]$
 (entails: $\exists e. \exists y [read(e) \wedge belong\text{-}to(y, \iota x_k. book_k(x_k)) \wedge Th_t(e) = y \wedge Ag_t(e) = Ali]$)

For comparison, let us consider canonical argumentation, as in (52), where both the agent and the theme arguments are introduced VP-externally in the event token domain. Here, *kitab* ‘book’ is introduced in the specifier position of v_{Th} and denotes an atomic property at the ordinary object level, which subsequently undergoes *iota* type-shifting to denote a contextually familiar unique book individual. The agent NP *Ali* is merged higher in the specifier of v_{Ag} . The sentence then means that Ali was involved in a reading event token whose theme is a definite book individual.⁹

- (52) a. Ali **kitab-1** oku-du.
 Ali book-ACC read-PAST
 ‘Ali read the book.’

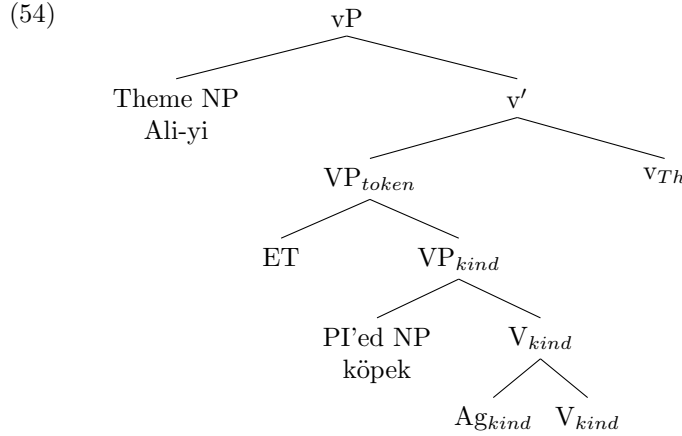


- c. $\exists e. \exists e_k [belong\text{-}to(e, e_k) \wedge read_k(e_k)] \wedge Th_t(e) = \iota x. book(x) \wedge Ag_t(e) = Ali]$
 $\Rightarrow \exists e [read(e) \wedge Th_t(e) = \iota x. book(x) \wedge Ag_t(e) = Ali]$

Clauses with agent PI differ from clauses with theme PI only in that the incorporating verb receives an agent argument at the level of event kinds, i.e., inside the VP, instead of a theme argument. The theme NP is introduced at the event token domain above the VP via v_{Th} head. Let us consider the example in (53), the structure of which is as represented in (54).

⁹ The question of whether verbs denote the property of an event kind in the absence of PI is a subject of debate. One could hypothesize that, in cases where no argumentation occurs in the event kind domain, a verb enters the derivation as a property of event tokens. This avoids the additional step of ET type-shifting but introduces a look-ahead problem. A similar question arises for non-PI languages: Do their verbs ever denote the property of event kinds? Building on this, in these languages, it is not immediately evident whether we should introduce a v_{Th} head or simply add the theme argument as a complement to the V head. Sağ (2022) argues that the so-called weak definites (e.g., ‘Lola read the newspaper’) are singular kind terms (following Aguilar-Guevara and Zwarts 2010) and instances of PI (following Carlson and Sussman 2005 and Carlson 2006), which exhibit limited productivity in English compared to Turkish. This suggests that a similar two-layered structural configuration exists at least in the English verbal domain.

- (53) Ali-yi köpek ısır-dı.
 Ali-ACC dog bite-PST
 ‘Ali got dog-bitten.’



The denotations of the VP before and after it undergoes ET type-shifting are illustrated below:

- (55) a. $\llbracket [\text{VP}_{\text{kind}} \text{ dog-bite}] \rrbracket = \lambda e_k [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k. dog_k(x_k)]$
 b. $\text{ET}(\llbracket [\text{VP}_{\text{kind}} \text{ dog-bite}] \rrbracket) = \llbracket [\text{VP}_{\text{token}} \text{ dog-bite}] \rrbracket = \lambda e. \exists e_k [belong\text{-}to(e, e_k) \wedge bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k. dog_k(x_k)]$

The incorporating verb ‘bite’ which denotes the property of the biting event kind takes an agent argument, i.e., the dog-kind, through its combination with the Ag_{kind} head, which denotes an agent introducing thematic function at the level of event kinds (Ag_k). As shown in (55a), the outcome is the property of a sub-kind of the biting event kind, i.e., the *dog-bite* event kind, which we roughly translate into English as ‘getting dog-bitten.’ This $\langle v_k, t \rangle$ type expression is then type-shifted to a property of event tokens, a $\langle v, t \rangle$ type expression, which denotes a set of event tokens that belong to the getting dog-bitten event kind. Consequently, the theme argument, *Ali*, is introduced to denote the following proposition:

- (56) $\llbracket (53) \rrbracket = \exists e. \exists e_k [belong\text{-}to(e, e_k) \wedge [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k. dog_k(x_k)] \wedge Th_t(e) = Ali]$
 $\Rightarrow \exists e. \exists y [bite(e) \wedge belong\text{-}to(y, \iota x_k. dog_k(x_k)) \wedge Ag_t(e) = y \wedge Th_t(e) = Ali]$

The formula in (56) informally means that Ali was involved in the getting dog-bitten event kind, which entails the existence of at least one or more dogs as the agent of the bite that Ali has experienced.

As we have seen, the number neutrality of PI’ed arguments stems from them being kind terms. In Sağ’s PI analysis, the narrow scope property of PI’ed arguments is predicted because the \exists -quantification over the object-level entities associated with the PI’ed kind term occurs as part of the quantification over event kinds as a result of ET type-shifting. The event kind quantifier itself is embedded under the event token quantifier. Since event quantification occurs under the scope of other quantificational elements, the PI’ed NP is necessarily interpreted low.

The name-worthiness requirement is a consequence of PI being an event-kind level process. More precisely, kind entities are name-worthy in the sense that they identify classes of objects with a sufficiently regular function or behavior in nature (Carlson 1977). Similarly, event kinds must correspond to some sort of well-established/typically encountered classes of events. Therefore, what counts as an event kind is highly culture and context-dependent. When we reconsider the ‘pig-butcher’ vs. ‘ostrich-butcher’ distinction, it is unsurprising that Danish speakers do not categorize ‘ostrich-butcher’ as an event kind due to the rarity or non-existence of ostrich-butcher in their culture, whereas this is plausible with the commonly attested event of pig-butcher.

The restriction in modification with PI’ed nouns is also tied to the kind-denoting nature of PI constructions. Since PI’ed nouns are singular/taxonomic kind terms, their modification is only possible via sub-kind denoting/taxonomic modifiers. Additionally, since the outcome of PI should denote an event kind, what

modifier counts as taxonomic also depends on the combination of the PI'ed noun and the verb. For this, let us reconsider a contrast in modification discussed above:

- (57) a. Ali-yi zehirli yılan sok-tu.
 Ali-ACC poisonous snake bite-ACCT
 ‘Ali got poisonous snake-bitten.’
 b. Ali-yi yaralı yılan sok-tu.
 Ali-ACC wounded snake bite-ACCU
 ‘The wounded snake bit Ali.’
 Not: Ali got stung by one or more wounded snakes.’

The modification of the PI'ed noun ‘snake’ with ‘poisonous’ is well-formed, while the modification with ‘wounded’ is not, in the intended PI interpretation. Under the event kind treatment of PI, this distinction arises for the following reason: The adjective ‘poisonous’ is considered a sub-kind forming modifier for the snake kind as the combination denotes the poisonous kind of snake.¹⁰ Additionally, ‘poisonous snake’ is a suitable agent argument for the biting event kind, as the result denotes a well-established/name-worthy sub-kind of the event kind of getting snake-bitten. However, ‘wounded snake’ does not correspond to a sub-kind/sub-category of snake out of the blue, and hence getting wounded snake-bitten does not yield a sub-event kind interpretation.¹¹

Before concluding this section, we briefly demonstrate that Laz (an articleless language) allows both singular and plural kind reference, as exemplified in (58) (cf. with (35) and (42a)). Additionally, singular kind terms in Laz, akin to Turkish, display a grammatically atomic nature, distinguished from plural kind terms by their incompatibility with reciprocals, as evident in (59) (cf. with (42b)).

- (58) a. Laç'i(-epe) mgeri(-epe)-şa mo-xt-u.
 dog-PL.NOM wolf-PL-FROM PV-come-PAST.3SG
 ‘The dog/Dogs evolved from the wolf/wolves.’
 b. Mtuti(-epe) p'anda mşk'omule on.
 bear-PL always hungry be.3SG
 ‘The bear is/Bears are always hungry.’
- (59) a. ***K'at'u-k** k'at'i k'at'i-s ko-n-u-k'ap-am-s.
 cat-ERG each other-DAT AFF-PV-APPL-attack-IMP.3SG.PRES
 ‘*The cat attacks each other.’
 b. **K'at'u-pe-k** k'at'i k'at'i-s ko-n-u-k'ap-am-an.
 cat-PL-ERG each other-DAT AFF-PV-APPL-attack-IMP.3PL.PRES
 ‘Cats attack each other.’

Given that kind reference is also available in Laz and shares similarities with kind reference in Turkish, we analyze PI in these languages uniformly.

To summarize, we have discussed and adopted an event-kind-based approach to the semantics of PI. In a nutshell, argumentation occurs at the level of both event kinds and event tokens, which happen VP-internally and VP-externally, respectively. PI is the argumentation process that happens in the event kind domain.

¹⁰ The poisonous kind/category of snake corresponds to the supremum of all the poisonous snake kinds in the taxonomic hierarchy. Therefore, Ali's getting bitten by any of these snake kinds would make the sentence in (57a) true.

¹¹ Taxonomic kinds are not necessarily only the biologically well-established kinds. Taxonomy is taken in Sağ (2023) as a mental classification/categorization that is context and situation-dependent. For example, being bitten by poisonous snakes is established as a remarkable category in a treatment situation, as the treatment might depend on whether the snake is poisonous or not. In contrast, imagining a situation where being bitten by a wounded snake can be sub-categorized under getting snake-bitten is a harder task. However, it is not impossible. Consider a culture where there is a tribe in which being bitten by snakes is a very common event and the tribe holds the belief that being bitten by wounded snakes marks a person as a member of the hunting team. In such a scenario, then wounded snakes would correspond to a well-established sub-category of the snake kind and consequently being bitten by wounded snakes could count as a name-worthy event, i.e., an event kind.

3.2 Implications of the Two-Dimensional Event Domain: Modification and Argumentation

Positing a two-dimensional event domain carries implications in two key aspects related to modification and argumentation within these domains. We start by demonstrating that VP modification at the event kind level differs markedly from VP modification at the event token level in Turkish. More critically, this framework forms the basis of our primary objective: offering a thorough explanation of UTAH within the proposed system.

3.2.1 Event Kind-Level Modification

In Section 2.1, we discussed a contrast between PI'ed and canonical, case-marked arguments in terms of adverbial modification. As reiterated in (60), while a case-marked argument can precede or follow an adverb such as *hızlıca* ('quickly'), a PI'ed argument must follow the adverb. We have interpreted this as evidence for the adjacency requirement imposed on PI.

- (60) a. Ali [hızlıca] kitab-ı [hızlıca] oku-du.
 Ali quickly book-ACC quickly read-PST
 'Ali read the book quickly.'
 b. Ali [hızlıca] kitap [*hızlıca] oku-du.
 Ali quickly book quickly read-PST
 'Ali read one or more books fast./Ali did book-reading fast.'

However, there is another form of verbal modification involving adjectives, such as *hızlı* 'quick', which differ from adverbs like *hızlıca* ('quickly') in lacking the morpheme that derives adverbs from adjectives (e.g., *-ca*). These adjectives, known as 'non-derived adverbs,' cannot precede case-marked arguments and thus directly precede the verb, as shown in (61a). In contrast, with PI'ed arguments, these non-derived adverbs must still precede the PI'ed argument, as demonstrated in (61b) (Taylan 1984, Aydemir 2004, Öztürk 2005, Kamali 2015, Sağ 2022).¹²

- (61) a. *Ali [*hızlı] kitab-ı [hızlı] oku-du.
 Ali quick book-ACC quick read-PST
 'Ali read the book quickly.' ✓ [NP-ACC [[*quick*] V]]
 b. Ali [hızlı] kitap [*hızlı] oku-du.
 Ali quick book quick read-PST
 'Ali did book-reading fast.' ✓ [*quick* [[PI'ed NP] V]]

We interpret the disparity between derived and non-derived adverbs as indicative of the distinction between event kind and event token domains in adverbial modification. Specifically, derived adverbs, such as *hızlıca* 'quickly,' modify the event token-level denotation of a VP, whereas non-derived adverbs modify at the event kind level. We view non-derived adverbs as performing a restrictive function on (sub-)event kinds, operating post event-kind level argumentation.¹³ For example, modifying the property of the book-reading event kind with *hızlı* ('quick') results in a sub-kind of this event kind, i.e., quick book-reading, distinct from slow book-reading, for instance. As this modification occurs at the event kind level, canonical arguments are introduced above it, thereby explaining why case-marked arguments cannot be preceded by non-derived adverbs.¹⁴

In conclusion, distinguishing between event kind and event token-level denotations of the VP aligns effectively with the two types of adverbial modification observed in Turkish.

3.2.2 UTAH and Two Domains of Argumentation

By adopting a two-dimensional event domain approach, which corresponds to a two-layered argument structure, we are now poised to tackle the apparent violation of UTAH in clauses with agent PI.

¹² We could not find a similar discrepancy in adverbial modification in Laz.

¹³ See also Sağ (2022, 2023) for evidence supporting the analysis of non-derived adverbs as event kind level modifiers, particularly in relation to a comparison of PI'ed arguments with bare plurals.

¹⁴ For an illustration of event kind-level modification in clauses with agent PI, consider example (17a). The contrast in (17) clearly shows that when the agent NP precedes the non-derived adverb (*fena* 'bad'), it cannot be interpreted as a PI'ed argument.

We argue that UTAH operates autonomously within the event token domain, irrespective of the argumentation within the event kind domain. In simpler terms, arguments inside the VP have no bearing on the argumentation occurring outside the VP when UTAH compliance is concerned. As a result, the fact that the theme argument is introduced above the agent argument in clauses with agent PI does not pose a challenge to UTAH. Take, for instance, the structure of *Ali-yi köpek ısırdı* ‘Ali got dog-bitten,’ in (54) above. Here, the agent NP *köpek* ‘dog’ undergoes PI within the VP as part of the event kind-level argumentation. The theme NP *Ali* is introduced outside the VP as part of the event token-level argumentation. UTAH is applicable in the event token domain independently of the event kind domain. Since there is no agent argument positioned below the theme argument above the VP, UTAH is not violated.

While we have cross-linguistic evidence that UTAH is applicable in the event token domain (see Baker 1988, 1997), it remains unclear whether it is also applicable in the event kind domain. In our view, the canonical theme and agent arguments of a transitive clause that does not involve PI are both introduced in the event token domain VP-externally, as illustrated in (52) above, which provides the basis for testing the applicability of UTAH in this domain. On the other hand, a PI’ed NP is introduced as a complement to the complex V head, and as there is only one complement slot, argumentation within the VP is limited to one argument (cf. Jo and Palaz 2022). This poses a challenge when testing whether UTAH applies in this domain. Since only one argument is introduced VP-internally, UTAH is technically never violated. For example, in clauses with agent PI, the VP-internal domain involves only the PI’ed agent NP, and there is no theme NP that asymmetrically c-commands it in this domain, thus there is no violation of UTAH.

While one could argue otherwise, there are compelling reasons to believe that UTAH might also apply independently at the event kind domain. Compounds like *apple-picking* in English have often been considered alongside noun incorporation in the literature due to their shared semantic characteristics. For example, just like incorporated nouns, the noun *apple* in *apple-picking* yields a number neutral interpretation; there could be one or more apples picked if one is engaged in an apple-picking activity. In fact, PI constructions are translated into English in a compound form (e.g., ‘Ali did book-reading’) for precisely this reason. The prevailing intuition is that incorporation and compounding are grammatically different manifestations of a single semantic phenomenon. We believe that all forms of incorporation, be it head-incorporation or PI, as well as their compounding alternates, serve the common purpose of establishing the taxonomy of event kinds, and they all involve argumentation at the event kind level, whether in the syntax proper or in the lexicon.¹⁵ Once we consider them as a whole, the desired evidence becomes apparent:

- (62) a. driver cell-phone use
 b. *cell-phone driver use

Some compounds in English allow for both a theme and an agent argument within the same structure, as illustrated in (62a). Crucially, in such compounds, we observe the effect of UTAH. While the agent-theme order is acceptable in (62a), reversing this order is ill-formed, as seen in (62b) (p.c. Jonathan Bobaljik).

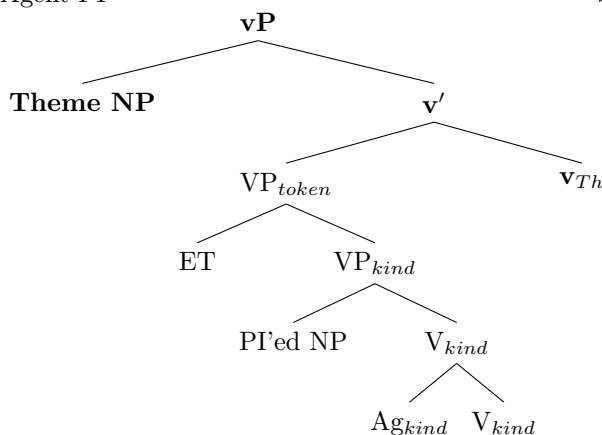
With this background in hand, we are ready to begin our theoretical investigation of the issues raised by agent PI concerning the case and agreement patterns in Turkish and Laz.

4 Agent Pseudo-incorporation and the Case and Agreement Puzzle

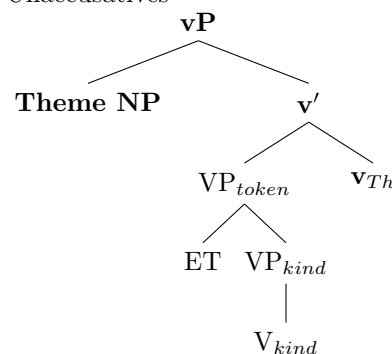
Under the two-layered verbal structure approach, clauses with agent PI result in an intransitive structure in the VP-external domain. In other words, there is only one argument above the VP, the theme NP. This renders the VP-external structure of clauses with agent PI identical to the one of unaccusatives, as schematized below:

¹⁵ This view is supported within Distributed Morphology-based frameworks (originally proposed in Halle and Marantz 1993). In particular, Harley (2012) provides an account that aligns with Baker’s (1988) head-incorporation analysis, treating compounding as a form of syntactic incorporation.

(63) a. Agent PI



b. Unaccusatives



Contrary to our predictions, we observe two indicators of transitive syntax emerging in clauses with agent PI: accusative case-marking on the theme NP in Turkish and object ϕ -agreement with the theme argument in Laz, as first shown in (4b) and (8a), which are repeated below in (64a) and (65a) respectively. As seen in (64b), the theme argument of an unaccusative form surfaces in the null nominative case in Turkish, and as seen in (65b), the prefixal agreement with an unaccusative verb is realized as *v-set* subject agreement in Laz, not *m-set* object agreement, in contrast to the pattern of agent PI.

(64) Turkish

- a. Ali-**yi** köpek ısır-dı.
 Ali-ACC dog bite-PST
 ‘Ali got dog-bitten.’ agent PI
- b. Ali(***-yi**) düş-tü.
 Ali-ACC fall-PST
 ‘Ali fell.’ unaccusative

(65) Laz

- a. Ham oruba-s ma mtuti **m**’-ç’op-um-s.
 this river-LOC 1.SG bear 1.OBJ-catch-IMPF-PRS.3SG
 ‘In this river, I’d get bear-caught.’ agent PI
- b. **b**-ğurur, ***m**-ğurur
 1.SBJ-die.IMPF, 1.OBJ-die.IMPF
 ‘I am dying.’ unaccusative

Within the analysis adopted here, the patterns identified in Turkish and Laz raise a non-trivial challenge for theories of case and agreement. To elucidate our underlying assumptions, we will delve into this puzzle from the perspective of dependent-theoretic accounts of accusative case and object agreement.

4.1 Accusative Case and Agent PI

There are two prominent views on how morphological case is determined, which both build on earlier proposals in the generative tradition. One view, often called the classical Chomskyan view, takes case to reflect a dependency between a head and an NP. Under the latest incarnation of this approach, case is assigned by a functional head to the most local NP under agreement, i.e. via the abstract linguistic relation (Agree) that holds between the two (Chomsky 2000, 2001). In particular, the T head is responsible for assigning nominative case, while accusative case is assigned by the agent introducing little *v* head. In contrast, the alternative view, the initial articulation of which can be attributed to Marantz (1991), argues that case can be a morphological reflex of a dependency between NPs. In this perspective, the case marking an NP receives depends on the presence of a second NP, which has not yet been marked for case in the same local domain (e.g., Bittner and Hale 1996, Baker and Vinokurova 2010, Kornfilt and Preminger 2015, Levin and

Preminger 2015, Barany and Sheehan 2015).¹⁶ For convenience, we adopt the dependent-case determination algorithm presented in Baker and Vinokurova (2010) (B&V, henceforth) as its main empirical focus, i.e. the case distribution of the Turkic language Sakha, is parallel to that of Turkish. In what follows, we will provide a brief overview of their account and subsequently discuss the implications for agent PI within our system.

4.1.1 The Dependent Case Theory

B&V’s analysis classifies accusative and dative case as *dependent case*, while positing that nominative (and genitive) case is assigned through the interaction with a functional category, the T (and D) head, via Agree.¹⁷ B&V’s Dependent Case Theory (DCT) draws on the following rules for dative and accusative case assignment (Baker and Vinokurova 2010: 595).

- (66) a. If there are two distinct argumental NPs in the same VP-phase such that NP1 c-commands NP2, then value the case feature of NP1 as *dative* unless NP2 has already been marked for case.
- b. If there are two distinct argumental NPs in the same phase such that NP1 c-commands NP2, then value the case feature of NP2 as *accusative* unless NP1 has already been marked for case.

This account, adopting the Chomskyan notion of phases, makes use of two phases: the VP and CP phases. It is assumed that the dative case is assigned within the VP phase, while the accusative case is assigned within the CP phase. Let us illustrate how dative and accusative case assignment happens via the example in (67), the structure of which is assumed as sketched in (68).

- (67) Ali Merve-ye kitab-ı ver-di.
 Ali Merve-DAT book-ACC give-PST
 ‘Ali gave the book to Merve.’

- (68) a. [_{VP} Ali [_{VP} Merve-DAT [book give]] v]
 b. [_{VP} Ali [_{VP} **book**-ACC [_{VP} Merve-DAT [t give]]] v]

The goal and the theme NPs are base-generated inside the VP, as shown in (68a). The theme NP is merged as the complement of the V head while the goal NP is merged in spec, VP. A crucial assumption in B&V’s account is that the rule in (66a) takes precedence over the rule in (66b) since it is more specific ((66a) applies to the VP phase, while (66b) applies to any phase). Therefore, the goal NP is marked with dative case given that there are two NPs within the VP phase, with the goal NP as the c-commanding one. The application of (66a) bleeds the application of the rule in (66b) within the VP phase since the NP1 has already been marked for case. As a result, the theme NP remains caseless in the VP phase.

Subsequently, the theme NP needs to undergo movement outside the VP to be interpreted as a referential (i.e., definite) expression, as illustrated in (68b). According to Chomsky’s (2000, 2001) Phase Impenetrability Condition (PIC), an NP can only move out of a phase and become part of a higher phase after moving to the edge of the lower phase. Therefore, the theme NP lands in the edge of the VP, becoming visible in the CP phase, and consequently, is assigned dependent accusative case, as it is c-commanded by the agent NP within this phase.¹⁸

For completeness, let us also mention that B&V argue that if the theme NP remains within the VP, it is interpreted non-referentially (i.e., undergoes PI) and receives no case. Having nothing like a Case Filter, the caselessness of the VP-internal theme NP tenable is legitimate under this theory.

¹⁶ Among these, Baker and Vinokurova (2010) stands out, presenting a synthesis of the functional and configurational perspectives. As it is orthogonal to our discussion, we do not take a stance on whether nominative can be analyzed as the morphological interpretation of caselessness, as argued in Kornfilt and Preminger (2015), Levin and Preminger (2015), or reflects a case assigned under agreement via T, as argued in Baker and Vinokurova (2010).

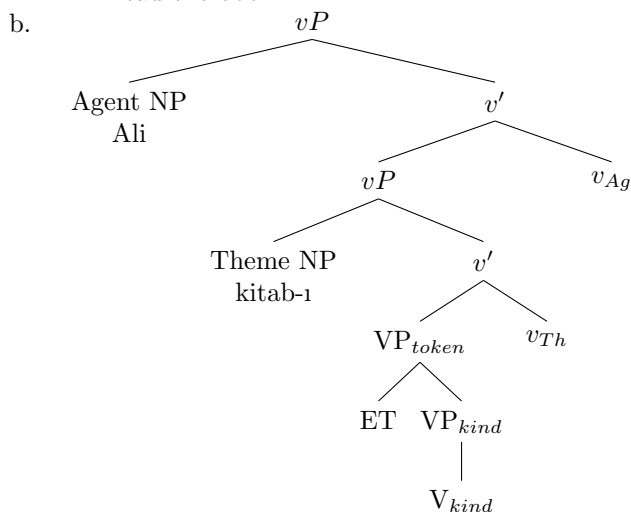
¹⁷ As exemplified in (5a), the subject of a nominalized embedded clause receives the genitive case, irrespective of whether there is a single or multiple NPs in the clause. Consequently, the genitive could arguably be the unmarked case within nominal domains. Alternatively, it could be a head-assigned case, in particular a case assigned under agreement with a D head. We do not take a stance on this as it is orthogonal to our point here. See Baker and Vinokurova (2010) for the latter view, and Levin and Preminger (2015) for a reply.

¹⁸ The word order in (67) could be derived from a subsequent movement of the dative-marked NP above the accusative-marked theme argument.

4.1.2 The Dependent Case Theory and Agent PI

We will now consider the DCT within the system that we adopted in Section 3.1 and discuss the problems raised by clauses with agent PI. Given that our primary focus is on accusative case assignment, we will temporarily set aside the discussion of dative case.¹⁹ To illustrate how accusative case is assigned in our system then, let us reconsider the canonical transitive clause that we have analyzed above as follows:

- (69) a. Ali **kitab-1** oku-du.
 Ali book-ACC read-PAST
 ‘Ali read the book.’

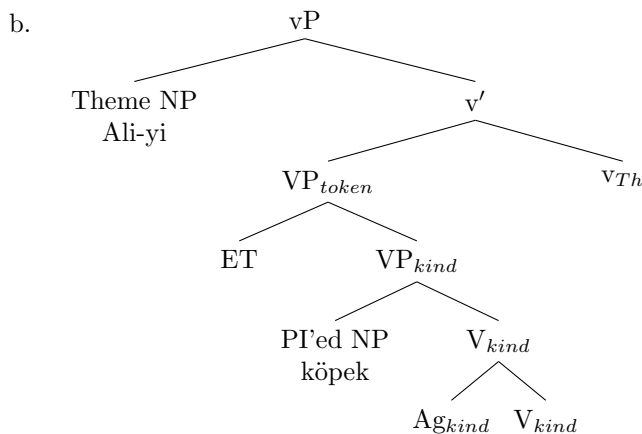


As stated above, the rule in (66b) mandates the presence of a c-commanding NP for the theme NP to be marked with accusative case, and these two NPs must maintain this hierarchical relation within the same phase. Recall that in B&V’s system, the theme NP starts as a complement to the verb and escapes the VP phase by moving to the edge of the VP, where it becomes visible in the CP phase. In order to transfer the core of this idea to our system, let us, for now, assume that $v_{Th}P$ is the phase that corresponds to B&V’s VP phase in our system. The theme NP, occupying the specifier position of $v_{Th}P$, is visible in the CP phase. Consequently, according to the rule in (66b), the theme NP, as the lower of the two NPs, is marked with accusative case.

Returning to our central puzzle, when the agent NP is PI’ed inside the VP, the hierarchical relation between the two NPs is reversed. As demonstrated in (70b), the agent argument now occupies a lower position than the theme NP. Consequently, we do not anticipate the theme argument to be marked with accusative case. Instead, we anticipate dative case on the theme NP and no case on the PI’ed agent NP as per the rule in (66a), because in B&V’s system, dative case assignment precedes accusative case assignment. Given that both the theme and the PI’ed agent are in the same $v_{Th}P$ phase (VP phase in B&V’s system), this prediction holds true; however, it is not borne out.

- (70) a. Ali-yi köpek ısır-dı.
 Ali-ACC dog bite-PST
 ‘Ali got dog-bitten.’

¹⁹ We will integrate dative case assignment into our system in Section 7.



One immediate solution that comes to mind, which we cannot adopt under our semantic account of PI, is to assume that the PI'ed agent is merged later than the theme (with a structure similar to (69b)), resulting in the theme NP being marked as accusative (see Dikmen et al 2023 for such a solution). However, under this approach, the theme NP needs to undergo obligatory movement above the agent NP, but there is no independent motivation for this. Such a movement would nevertheless be crucial in that the agent NP can only be understood as PI'ed if the theme precedes the agent as in (70a). Another important challenge arises in implementing the base order idea, as documented in Dikmen et al (2023). If one assumes, for example, that the theme NP and the PI'ed agent are both introduced in the VP-internal domain (e.g., the theme as a complement of the V and the agent in the specifier of V), in B&V's system, the dative case rule in (66a) takes precedence. Consequently, the PI'ed agent would be marked dative and leaving the theme NP unmarked for case in this phase.²⁰

As discussed in Section 3.1, the semantics of PI necessitates the introduction of event kind-level arguments before event token-level arguments. In a compositional semantic approach, this implies that the PI'ed agent should merge with the verb before any other canonical argument is introduced. Hence, adopting theme-movement approach would only be possible if we assume that its VP-internal base position has no impact on meaning composition. However, there is no compelling rationale to merge an event token-level argument with the event-kind denoting verb before incorporating an event kind-level argument, only to subsequently move it out of the event-kind level domain.

Given these problems, our initial move towards the analysis is to take VP_{token} as a distinct phase. This choice ensures that the PI'ed agent remains impervious to dependent case assignment (whether dative or accusative), regardless of any further structural assumptions. With only one argument slot inside the VP_{token} , no dependencies emerge, resulting in the caseless status of the VP-internal domain. As a result, our system will assume two phases: VP_{token} and CP phases.

To conclude, when we adhere to the order of argument introduction parallel to meaning composition, the issue of accusative case marking on the theme NP in clauses with agent PI becomes a challenge that needs to be addressed in our analysis.

4.2 ϕ -Agreement with Objects and Agent PI

Our primary puzzle arises from a discrepancy between the theoretical stance we adopt regarding PI and the observed empirical facts: the VP-external intransitive structure in clauses with agent PI posited by our analysis is at odds with the morphological indicators of transitivity attested in these clauses. We have discussed this discrepancy through accusative case-marking on the theme NP in Turkish. In Laz, however, the indicator of transitivity becomes evident through ϕ -agreement patterns. To be able to delve into this further, we will first briefly examine how the agreement mechanism operates in Laz in the following section.

²⁰ Dikmen et al (2023) present a technical solution to this problem which allows bypassing the dative case assignment rule. However, the problem of motivating the obligatory movement of the theme NP remains.

4.2.1 *Dependent ϕ -Agreement in Laz*

Laz exhibits ϕ -agreement in both prefixal and suffixal slots in a verbal complex. In particular, prefixal person agreement, which differs from suffixal agreement in being invariant to tense, exhibits a preference for participant objects (1st and 2nd person objects) through *m-set* markers. In other cases, it employs *v-set* markers for subjects. To maintain brevity, this paper does not delve into number agreement or suffixal person agreement, as these are largely tangential to the core puzzle. For further insights on ϕ -agreement in Laz, we refer readers to works by Atlamaz (2013), Demirok (2013), Blix (2021) and Bondarenko and Zompì (2023). That said, we exemplify the prefixal agreement pattern attested in Laz as follows:

- | | |
|---|--|
| <p>(71) <i>m-set</i> agreement</p> <p>a. m- dzir -am -s
 1.OBJ- see -IMPF -PRS.3SG.SUBJ
 ‘S/he sees me.’</p> <p>b. g- dzir -am -s
 2.OBJ- see -IMPF -PRS.3SG.SUBJ
 ‘S/he sees you.’</p> | <p>(72) <i>v-set</i> agreement</p> <p>a. b- dzir -am -\emptyset
 1.SUBJ- see -IMPF -PRS(.1/2.SG.SUBJ)
 ‘I see him/her/it.’</p> <p>b. \emptyset- dzir -am -\emptyset
 2.SUBJ- see -IMPF -PRS(.1/2.SG.SUBJ)
 ‘You see him/her/it.’</p> |
|---|--|

The prefixal agreement in Laz has been analyzed within a dependent-theoretic approach to agreement in Bondarenko and Zompì (2023) (B&Z, henceforth). In their view, the agent introducing little *v* head is the probe, which is insatiable in the sense that it agrees with all the NPs it can see. Assuming that Agree proceeds both downward and in a Spec-Head configuration, B&Z propose that the probe searches for a goal within its complement first and then its specifier. Furthermore, *v* only interacts with participant NPs and copies the entire ϕ -features of the NP. Under the assumption that 1st person includes [participant, speaker], 2nd person includes [participant] features, and 3rd person lacks person features, then *v* only interacts with 1st and 2nd persons and cannot copy the features of 3rd person.

Crucially, the copied features are organized within a hierarchical structure, creating a complex *v* head, with later-copied bundles being head-adjoined higher than those copied earlier. For instance, in cases where *v* agrees with two NPs, the resulting hierarchy will have ϕ_1 representing the features from the first NP that *v* interacted with, and ϕ_2 representing the features from the second NP. These feature bundles are organized as illustrated in (73a). When *v* agrees with one NP, then the complex *v* structure involves only the feature bundle of that NP, as demonstrated in (73b) (B&Z: 13).

- | | |
|---|--|
| <p>(73) a.</p> <div style="text-align: center;"> </div> | <p>b.</p> <div style="text-align: center;"> </div> |
|---|--|

Drawing from insights in dependent case theories, B&Z analyze the feature bundle adjoined to *v* as *dependent* if it is c-commanded by another feature bundle adjoined to *v*. In contrast, a c-commanding feature bundle in two NP structures or the sole feature bundle in one NP structure is considered *unmarked*. In (73a), ϕ_1 is dependent and ϕ_2 is unmarked, whereas in (73b), the only feature bundle ϕ is unmarked. Additionally, the dependent ϕ -feature bundles take precedence over unmarked ϕ -feature bundles during the spell-out process, as only one of them can be accommodated in the prefixal slot.

To provide a more concrete illustration, the agreement paradigm presented in (73a) aligns with the pattern observed in (71), where the prefixal slot is occupied by the spell-out of the dependent feature bundle, i.e., *m-set* markers. Agreement with participant objects is then realized as **dependent agreement**.

The *v-set* agreement pattern in (72) is also derived from (73a) as follows: As above, *v* is unable to copy the features of 3rd-person NPs. Nevertheless, these unsuccessful attempts to agree with 3rd-person NPs are still represented within the structure as ϕ -feature bundles as a null node. Crucially, the spell-out of dependent features is contingent on them having overt exponents. Therefore, in (72), although ϕ_1 corresponds

to 3rd person, dependent agreement does not arise due to ϕ_1 being null. Consequently, the prefixal slot is spelled out by the unmarked ϕ_2 corresponding to the participant subject NP through *v-set* markers.

Single-argument verbs, namely unaccusatives and unergatives, exclusively manifest *v-set* agreement, as exemplified in (74). In simpler terms, when it comes to ϕ -agreement, single-argument verbs and transitive verbs with a non-participant (3rd person) object are equivalent.

- (74) *v-set* agreement
- a. **b**-ğurur, ***m**-ğurur
1.SBJ-die.IMPF, 1.OBJ-die.IMPF
'I am dying.' unaccusative
- b. **v**-igzal, ***m**-igzal
1.SBJ-walk.IMPF, 1.OBJ-walk.IMPF
'I am walking.' unergative

The complex *v* structure in (73b) represents the pattern observed in (74), under the assumption that the probe is the highest thematic argument introducing head, which is v_{Th} in unaccusatives and v_{Ag} in unergative constructions.²¹ Since there is only one NP goal, which the probe finds in its specifier in both cases, only unmarked agreement arises in the prefixal slot, realized through *v-set* markers.

To simplify the discussion thus far, we summarize the prefixal agreement pattern in Laz as follows:

- (75) a. dependent agreement = *m-set* markers (realizes the non-null ϕ -feature bundle iff it is c-commanded by a second ϕ -feature bundle.)
b. unmarked agreement = *v-set* markers (elsewhere) (after Bondarenko and Zompì 2023)

We are now ready to discuss the agreement puzzle posited in clauses with agent PI.

4.2.2 Dependent ϕ -Agreement and Agent PI

In clauses with agent PI, we expect the prefixal agreement slot to host *v-set* markers, aligning with the agreement pattern observed with single-argument verbs. To illustrate this, let us consider the structure of the clause in (76a) within B&Z's analysis. (We do not show the locative adjunct in the structure.)

- (76) a. Ham oruba-s ma mtuti **m**'-ç'op-um-s.
this river-LOC 1.SG bear 1.OBJ-catch-IMP-PRS.3SG
'In this river, I'd get bear-caught.'
- b.
-
- ```

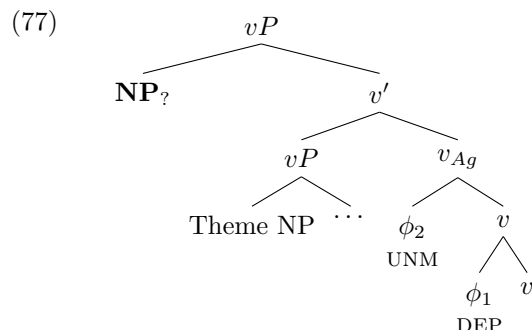
graph TD
 vP --> ThemeNP[Theme NP
ma]
 vP --> v_prime[v']
 v_prime --> VP_token[VP_token]
 v_prime --> v_Th[v_Th]
 VP_token --> ET[ET]
 VP_token --> VP_kind[VP_kind]
 VP_kind --> PI_ed_NP[PI'ed NP
mtuti]
 VP_kind --> V_kind[V_kind]
 V_kind --> Ag_kind[Ag_kind]
 V_kind --> V_kind[V_kind]
 v_Th --> phi[phi
UNM]
 v_Th --> v[v]

```

As proposed in Section 4.1.2,  $VP_{token}$  is a phase. Therefore, its complement is expected not to be visible to the probing  $v$ . Consequently, since there is only one NP goal, which the probe finds in its specifier (spec,  $v_{Th}P$ ), only the feature bundle of this NP is copied under the probe. As no dependency arises, the prefixal slot is predicted to be spelled-out by the unmarked *v-set* agreement marker.

<sup>21</sup> B&V assume that  $v$  (corresponding to our  $v_{Ag}$ ) still projects in unaccusative structures and hence the probe in unergative and unaccusative constructions is the same in their analysis. However, both approaches predict *v-set* agreement.

However, in clauses with agent PI, agreement with the theme NP in the prefixal slot is realized by dependent *m-set* markers, showing that the theme NP still counts as an object. Within B&Z's account of  $\phi$ -agreement that we adopt, the availability of *m-set* agreement markers for the theme NP suggests the existence of a second, higher NP in the structure that is visible to the probe, as illustrated below.

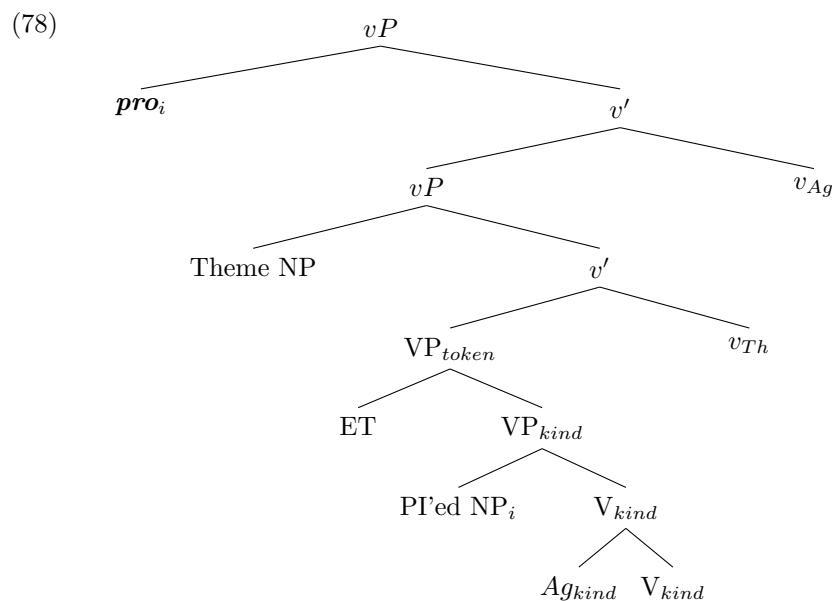


If the  $NP_?$  in (77) is the PI'ed agent itself, how do adjacency requirement, the caselessness requirement, and the underlying semantic considerations fit into the picture?

To zoom out, we must address two challenges in clauses with agent PI: the matter of accusative case marking on the theme NP in Turkish and the issue of *m-set* object agreement with the theme NP in Laz. Both puzzles indicate an NP that *c*-commands the theme NP for the dependent case and agreement patterns to manifest. Below, we demonstrate that adopting a fairly conservative syntax for incorporation is nevertheless possible. In particular, we argue that this *c*-commanding NP is not the PI'ed agent but an expletive *pro*.

## 5 The Analysis

In this section, we present our analysis to derive the transitive characteristics of a verbal structure involving agent PI. We propose that when an agent NP is PI'ed in the event kind domain VP-internally, a null expletive *pro* occupies the canonical position of an agent argument, i.e., specifier of  $v_{Ag}P$  in the event token domain. This is illustrated in (78):



It is crucial to note that we use the term ‘expletive’ in descriptive terms, reflecting the fact that *pro* is introduced as a ‘placeholder’ for a thematic argument that is introduced lower in the structure. However, we analyze *pro* as a category with semantic content. More precisely, we argue that the motivation behind the

merge of *pro* lies in the need to establish the *belong-to* relation between the PI'ed singular kind introduced as a thematic argument at the event kind domain and the object-level members of this kind that hold the corresponding thematic relation at the event token domain.

Recall that in Sağ's (2023) analysis, ET type-shifting comes with an entailment (see (48)) pertaining to the thematic arguments in the event token domain. For example, take (79), the clause with agent PI in Turkish that we have been discussing so far. Ali's involvement in the *dog-bite* event kind —the event kind whose agent is the dog kind —entails the existence of at least one or more dogs that *belong to* the dog kind as the agent of a biting event token.

- (79) Ali-yi köpek ısır-dı.  
 Ali-ACC dog bite-PST  
 'Ali got dog-bitten.'

We propose that this *belong-to* relation between the PI'ed singular kind and its object-level members is established by *pro*. For this, we take singular kinds to be associated with an index  $i$ . For example, assuming that the dog kind has the index 3, the bare singular *köpek* involves this information in its denotation —it refers to the unique dog kind which is equal to  $g(3)$  —as illustrated below:

$$(80) \quad \iota(\llbracket köpek_{k,3} \rrbracket) = \iota x_k [dog_k(x_k) \wedge x = g(3)] = DOG_3$$

The null expletive *pro*, bearing the same index  $i$  with the PI'ed singular kind term, takes an argument of  $\langle e, \langle v, t \rangle \rangle$  (i.e., the denotation of its sister,  $v'$ ) and returns an event property of type  $\langle v, t \rangle$  and forms a *belong-to* relation between the kind with index  $i$  and its object-level members by introducing a local  $\exists$ -closure:

$$(81) \quad \llbracket pro_i \rrbracket = \lambda Q_{\langle e, \langle v, t \rangle \rangle} . \lambda e . \exists y [belong-to(y, g(i)) \wedge Q(y)(e)]$$

Based on this, the denotation of (79) is composed as illustrated below:

- (82) a.  $\llbracket VP_{kind} \rrbracket = \lambda e_k [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k [dog_k(x_k) \wedge x_k = g(3)]$   
 (PI structure: the property of the *biting* event kind whose agent is the *dog* kind)
- b.  $\llbracket VP_{token} \rrbracket = \lambda e . \exists e_k [belong-to(e, e_k) \wedge [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k [dog_k(x_k) \wedge x_k = g(3)]]$   
 (The property of event tokens that belong to the *dog-bite* event kind)
- c.  $\llbracket [{}_{vP} \text{ Ali } [{}_{vP} VP_{token} v_{Th}]] \rrbracket = \lambda e . \exists e_k [belong-to(e, e_k) \wedge [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k [dog_k(x_k) \wedge x_k = g(3)]] \wedge Th_t(e) = Ali]$   
 (Ali, the theme of the event token, is introduced.)
- d.  $\llbracket [{}_{v'} [{}_{vP} \text{ Ali } [{}_{vP} VP_{token} v_{Th}]] v_{Ag} \rrbracket = \lambda x . \lambda e . \exists e_k [belong-to(e, e_k) \wedge [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k [dog_k(x_k) \wedge x_k = g(3)]] \wedge Th_t(e) = Ali \wedge Ag_t(e) = x]$   
 (The event token-level Agent thematic function is introduced.)
- e.  $\llbracket [{}_{vP} \text{ pro}_3 [{}_{v'} [{}_{vP} \text{ Ali } [{}_{vP} VP_{token} v_{Th}]] v_{Ag}]] \rrbracket = \lambda e . \exists y [belong-to(y, g(3)) \wedge \exists e_k [belong-to(e, e_k) \wedge [bite_k(e_k) \wedge Ag_k(e_k) = \iota x_k [dog_k(x_k) \wedge x_k = g(3)]] \wedge Th_t(e) = Ali \wedge Ag_t(e) = y]]$   
 (*pro* establishes the *belong-to* relation between the dog kind and its object-level members, the agent of the biting event token.)

Our motivation to analyze singular kinds associated with an index stems from their ability to behave like anaphoric definites, as shown in (83) for Turkish (example from Despić 2019: 282, see also Schoenfeld 2023).

- (83) Kel kartal Kuzey Amerika-da bul-un-ur. Güç ve hız-ın sembol-ü olarak  
 bald eagle north America-LOC find-PASS-AOR strength and speed-GEN symbol-3SGPOSS as  
 tanı-n-ır. Ancak küresel ısınma nedeniyle, kuş yakında tamamen  
 recognize-PASS-AOR however global warming because bird soon completely  
 yok ol-abil-ir.  
 disappear-ABIL-AOR  
 'The bald eagle is found in North America. It's the symbol of strength and speed. However, because  
 of the global warming, the bird may soon completely disappear.'  
 OK if *kuş* 'bird' is anteceded by *kel kartal* 'bald eagle'

In (83), the bare singular *kuş* ‘bird’ shown in bold refers to the bald eagle kind introduced in the first sentence. This shows that singular kind terms can be anaphoric definites, which we take to bear an index in their denotation, in the sense of Schwarz’s (2009) work on German ‘strong’ definites. Intriguingly, plural kind terms do not have this type of anaphoric behavior as evidenced by the inability of *kuş-lar* ‘birds’ in (84) to be anteceded by *kel kartal-lar* ‘bald eagles’ introduced in the first sentence (Despić 2019: 282). Instead, for this interpretation, the bare plural needs to be preceded by a demonstrative, e.g., *bu kuş-lar* ‘these birds,’ which would be the bearer of the index. While *kuş* ‘bird’ can also be accompanied by a demonstrative in (83), its ability to be an anaphoric definite without a demonstrative, in contrast to the plural kind in (84), shows that singular kind terms bear an index in their semantics.<sup>22</sup>

- (84) Kel kartal-lar Kuzey Amerika-da bul-un-ur-lar. Güç ve hız-ın sembol-ü  
 bald eagle-PL north America-LOC find-PASS-AOR-3PL strength and speed-GEN symbol-3SGPOSS  
 olarak tanı-n-ır-lar. Ancak küresel ısınma nedeniyle, **kuş-lar** yakında tamamen  
 as recognize-PASS-AOR-3PL however global warming because bird-PL soon completely  
 yok ol-abil-ir.  
 disappear-ABIL-AOR  
 ‘Bald eagles are found in North America. They are the symbol of strength and speed. However,  
 because of the global warming, birds may soon completely disappear.’  
 \* if *kuş-lar* ‘birds’ is anteceded by *kel kartal-lar* ‘bald eagles’, OK with *bu kuş-lar* ‘these birds’

The contrast in anaphoric definiteness between singular and plural kind terms is also observed in Laz kind terms, as exemplified below (*zerdava*: a dog breed native to the Black Sea region of Turkey and Georgia):

- (85) a. Zerdava Lazona-s i-dzir-en, msk’vanoba do nosi-şi semboli  
 Zerdava.NOM Lazona-LOC PASS-see-IMP.F.PRS.3SG beauty and wisdom-of symbol  
 on. Ama globaluri mçxvapa-şen **laç’i** viti-eçi ts’ana-şk’ule soti var  
 be.PRS.3SG but global hotness-ABL dog.NOM ten-twenty year-after anywhere NEG  
 sk’ud-asen.  
 live-FUT.3SG  
 ‘The zerdava is found in Lazona. It’s the symbol of beauty and wisdom. However, because of  
 the global warming, the dog won’t be found anywhere in ten to twenty years.’  
 OK if *laç’i* ‘dog’ is anteceded by *zerdava* ‘the zerdava’
- b. Zerdavape Lazonas idziren, msk’vanoba do nosişi semboli oran. Ama globaluri mçxvapaşen  
 \*(ham) **laç’epe** viti-eçi ts’anaşk’ule soti var sk’udanen.  
 ‘Zerdavas are found in Lazona. They are the symbol of beauty and wisdom. However, because  
 of the global warming, these dogs won’t be found anywhere in ten to twenty years.’  
 \* if *laç’epe* ‘dogs’ is anteceded by *zerdava-pe* ‘zerdavas,’ OK with *ham laç’epe* ‘these dogs’

It is crucial to emphasize that our system does not inherently prohibit *pro* from having an index distinct from that of the PI’ed kind term. In such a scenario, *pro* would simply operate on a kind different from the referent of the singular kind term PI’ed lower in the event kind domain. However, we conjecture that such a configuration would be independently ruled out, as it would conflict with the tokenization of the event kind whose singular kind argument must have object-level members bearing the corresponding thematic role in the event token domain. In essence, for the composition to yield a semantically coherent result, *pro* needs to be coindexed with the PI’ed singular kind term.<sup>23</sup>

<sup>22</sup> As mentioned in fn 8, Sağ (2022) shows that bare plurals cannot undergo PI in Turkish. The lack of index on plural kind terms could be the reason for this. As *pro* needs to be coindexed with the index of the PI’ed kind term in the event token domain to be able to establish the relation between the PI’ed kind and the object-level entities associated with it. PI of plural kind terms might be at odds with this requirement due to the lack of an index associated with them.

<sup>23</sup> In XXX, we initially analyzed *pro* as a true expletive devoid of semantic content, basing its merge on an EPP-like requirement of the probing  $v_{Ag}$ . However, this account requires that  $v_{Ag}$  still be merged in the structure, even though it does not introduce a thematic argument. While this leaves the implications for semantic composition unclear, in such an account, the semantic function we assign to *pro* could be maintained as a meaning postulate, as originally proposed in Sağ (2023). Nonetheless, the analysis presented here offers a potential advantage: it provides an independent rationale for the merge of  $v_{Ag}$ , motivated by the necessity to introduce a thematic agent argument in the event token domain, irrespective of argumentation that might take place in the event kind domain.

The establishment of the *belong-to* relation via local  $\exists$ -closure accounts for both the number neutrality and the narrow scope property of the PI'ed NP, aligning with insights from Sağ (2022, 2023). Our analysis diverges by attributing this role to an expletive *pro* introduced in an argument position at the event token level within the verbal structure.

This twist in our analysis proves useful in addressing the dependent case and agreement patterns in Turkish and Laz. Essentially, the presence of an expletive *pro* in the specifier of  $v_{Ag}P$  enables us to retain a transitive structure above the VP when the agent undergoes PI lower inside the VP. This, in turn, allows us to explain the fact that, under agent PI, the theme NP in Turkish is subject to dependent accusative case assignment. Given that *pro* and the theme NP are in the same CP phase, the theme NP being c-commanded by *pro* receives accusative case marking. Our analysis also explains that the theme NP in Laz continues to display *dependent* agreement through *m-set* markers. This follows from the fact that the probe  $v_{Ag}$  finds both the theme NP via downward-probing (i.e., in its complement) and the *pro* in upward-probing (i.e. in its specifier) and realizes the first set of  $\phi$ -features it finds using dependent *m-set* markers.

As a concluding note, while our analysis suggests a null category to account for the case and agreement patterns, there are languages where an overt expletive, which might even genuinely lack thematic content (unlike our *pro* which is semantically contentful), results in accusative case assignment on a lower NP. The German existential construction with *es gibt* serves as an example of this phenomenon, where the expletive *es* is accompanied by an accusative-marked object NP, as illustrated below (McFadden 2004: 193):

- (86) Es gibt einen Fußballgott.  
 it gives a football-god.ACC  
 'There is a god of football.'

McFadden (2004) argues that *es* in these constructions is introduced in the specifier of  $vP$  ( $v_{Ag}P$  in our analysis), aligning more closely with weather expletives than true expletives. According to McFadden, accusative case assignment depends on the existence of a c-commanding DP in this position. Therefore, the non-thematic nature of the expletive is irrelevant to dependent case. While the potential semantic connections between the two await further research, our analysis then draws a parallel between PI and such expletive constructions in terms of dependent case assignment, albeit with a covert and a semantically contentful expletive.

## 6 Further support

In this section, we present two sets of evidence supporting the expletive analysis, drawn from the passivization patterns in Turkish and Laz, as well as oblique subject constructions in Laz.

### 6.1 Passivization

Passivization affects case assignment in Turkish, aligning with the predictions of the DCT. The theme NP is precluded from receiving accusative case, as shown in (87b), in contrast to the active construction in (87a). This stems from the demotion of the c-commanding agent NP by passivization (Dikmen et al 2022: 1).

- (87) a. Korra biz-i kovala-dı.  
 Korra 1.PL-ACC chase-PST  
 'Korra chased us.'  
 b. Biz (Korra tarafından) kovala-n-dı-k.  
 1.PL Korra by chase-PASS-PAST-1PL  
 'We were chased (by Korra).'

Turkish also permits passivization of single-argument verbs, yielding impersonal passive constructions with both unaccusative and unergative verbs (Dikmen et al 2022: 1):

- (88) a. Bu çukur-a düş-ül-ür.  
 this hole-DAT fall-PASS-AOR  
 'One may fall into this fall.'  
 Lit. 'It is fallen into this hole.'

- b. Dün maraton-da koş-ul-du.  
 yesterday marathon-LOC run-PASS-PST  
 ‘There was running in the marathon yesterday.’  
 Lit. ‘It was run in the marathon yesterday.’

The facts are also similar in Laz. In a canonical passive form, the main morphosyntactic reflex of passivization is the pre-root vowel *i-* appearing on the verbal complex. Furthermore, agreement with the theme NP is no longer via *m-set* markers as the theme NP fails to trigger dependent agreement but exhibits unmarked agreement. Compare the passive construction in (89b) with the active construction in (89a).

- (89) a. Ma **m-dzir-am-s**.  
 1.SG 1.OBJ-see-IMPf-PRS.3SG.SUBJ  
 ‘S/he is seeing me.’ active: dependent agreement with the theme NP
- b. Ma **v-i-dzir-er**.  
 1.SG 1.SBJ-PASS-see-IMPf-PRS.NON3SG.SUBJ  
 ‘I am being seen.’ passive: unmarked agreement with the theme NP

Impersonal passivization is also possible in Laz, as exemplified in (90), where the only argument of the unergative verb is demoted through passivization.

- (90) Germa-pe-s **i-k’i-en**.  
 mountain-PL-LOC PASS-yell-PASS.IMPf-PRS.3SG  
 ‘One screams in mountains.’  
 Lit. ‘It is screamed in mountains.’

Drawing on these facts and the general perspective on the semantics of passivization in the literature, we take the passive markers on the verbal complexes of these languages to signal that the (highest) argument slot is existentially saturated (cf. Dikmen et al 2022 for Turkish and Taylan and Öztürk 2014, Eren 2021 for Laz).

Our analysis predicts that passivization should be unavailable in clauses with agent PI. This arises from the requirement for the highest argument slot to be occupied by *pro* to establish the *belong-to* relation between the PI’ed agent and its object-level members in the event token domain. The expletive already existentially saturates the agent argument slot in the event token domain, playing a role similar to passivization in a sense. This prediction is borne out in both Turkish and Laz, as evidenced by the ungrammaticality of the following passivized clauses with agent PI:

- (91) a. \*Burada ben köpek ısır-ıl-ır-ım.  
 here 1.SG dog bite-PASS-AOR-1SG  
 Intended: ‘Here, I would be dog-bitten.’ Turkish
- b. \*ham oruba-s ma k’oncolozi v-i-ç’op-er  
 this river-loc 1.SG koncolozi 1.SBJ-PASS-catch-PASS.IMPf  
 Intended: ‘In this river, I would be *koncolozi*-caught.’ Laz  
 (*koncolozi*: a witch-like creature in Anatolian folklore)

It is crucial to highlight that the unavailability of passivization in these constructions cannot be attributed to some sort of incompatibility of passivization with PI. While we discuss this in Section 7, it suffices to illustrate here that impersonal passivization in clauses with theme PI is possible in both languages:

- (92) Burada kitap oku-n-ur.  
 here book read-PASS-AOR  
 ‘One does book-reading here.’  
 Lit. ‘It is done book-reading here.’ Turkish
- (93) Hak oxori d-i-dg-en.  
 here house PV-PASS-put-PASS.IMPf-PRS.3SG  
 ‘One does house-building here.’  
 Lit. ‘It is done house-building here.’ Laz

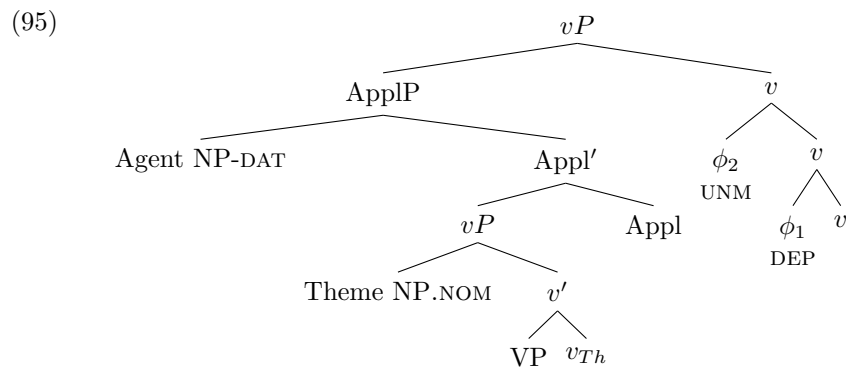
Having demonstrated that our analysis accurately predicts the unavailability of passivization in clauses with agent PI, we shift our focus to oblique subject constructions in Laz in the following section.

## 6.2 Oblique Subject Constructions in Laz

Oblique subject constructions (also known as *inverse* constructions) feature an applicative (Appl) head that licenses a dative-marked agent NP. The theme NP, on the other hand, is realized in the null nominative form. The Appl head surfaces as a prefix on the verb and the prefixal agreement always tracks the dative-marked subject via *m-set* dependent agreement, as exemplified in (94) (Öztürk 2013).<sup>24</sup>

- (94)   Şk'u iri-s   ham çitabi   **m-i-k'**itx-ap-ur-an.  
           we all-DAT this book.NOM 1.OBJ-1/2.APPL-read-CAUS-IMPF-3PL  
           ‘We all have read this book before.’

Adopting the analysis proposed in Bondarenko and Zompì (2023), we take the structure of oblique subject constructions to be as illustrated in (95), where the agent NP is introduced in the specifier of the ApplP, which is embedded under the projection of some *v* head, hosting the probe.<sup>25</sup> We refer the reader to B&Z for the justification of particular assumptions in this structure. What is crucial for our purposes is that the external argument has to be introduced by an Appl head, which is lower than the probe in the structure. The form of the APPL prefix on the verb depends on the  $\phi$ -features of the argument introduced in spec, ApplP, as evident in (94), where it is realized as *i-* for 1/2 person.



This structural alignment derives the desired agreement pattern as follows: The probe searches for its complement, where there are two  $\phi$ -feature bundles visible to the probe. The downward probing *v* first interacts with the  $\phi$ -feature bundle of the agent NP and then the  $\phi$ -feature bundle of the lower theme NP. Consequently, the copied features of the agent are c-commanded by the copied features of the theme under the probing head, which triggers dependent *m-set* agreement with the agent NP in oblique subject constructions.

It is essential to note that the analysis by B&Z, which generally addresses South Caucasian languages, predominantly discusses oblique subject constructions from the perspective of Georgian. However, Georgian differs from Laz in one crucial aspect regarding these constructions. In Georgian, if the agent argument is a 3rd person NP and the theme argument is a 1/2 person NP, the prefixal agreement manifests as *v-set* unmarked agreement, reflecting the feature bundle of the theme NP, as illustrated in (96a). In Laz oblique subject constructions, by contrast, the  $\phi$ -features of the theme NP cannot surface at all, as shown in (96b).

- (96)   a.   **v-u-ki-var**  
           1.SUBJ-3.APPL-be.1

<sup>24</sup> Laz exhibits omnivorous number agreement. If the probe on the structure successfully copies  $\phi$ -features of the most local NP in its complement and/or the NP in its specifier, we will see the plural feature of either of the DPs being realized as suffixal plural agreement. This is how we observe the plural marking in (94). See Bondarenko and Zompì (2023) more on plural agreement in Laz.

<sup>25</sup> In that respect, the structure proposed in Bondarenko and Zompì (2023) differs from the ones proposed in Öztürk (2013), Demirok (2013). However, the difference is orthogonal to the discussion at hand. The point we want to make in this section is concerned with the presence of an ApplP projection, which all accounts agree on.

- (S)he has praised me.’ (Georgian, Aronson 1990: 272)
- b.  $\text{\textcircled{S}ana-s}$   $\text{\textcircled{\text{ş}k'u}}$   $\text{\textcircled{iri}}$   $\text{\textcircled{u-mskv-ap-un}}$  / \* $\text{\textcircled{v-u-mskv-ap-ur-t}}$   
 $\text{\textcircled{Sana-DAT}}$   $\text{\textcircled{we}}$   $\text{\textcircled{all.NOM}}$   $\text{\textcircled{3.APPL-praise-CAUS-IMPF.3SG}}$  /  $\text{\textcircled{1.SUBJ-3.APPL-praise-CAUS-IMPF-PL}}$   
 ‘Şana has praised us all before.’

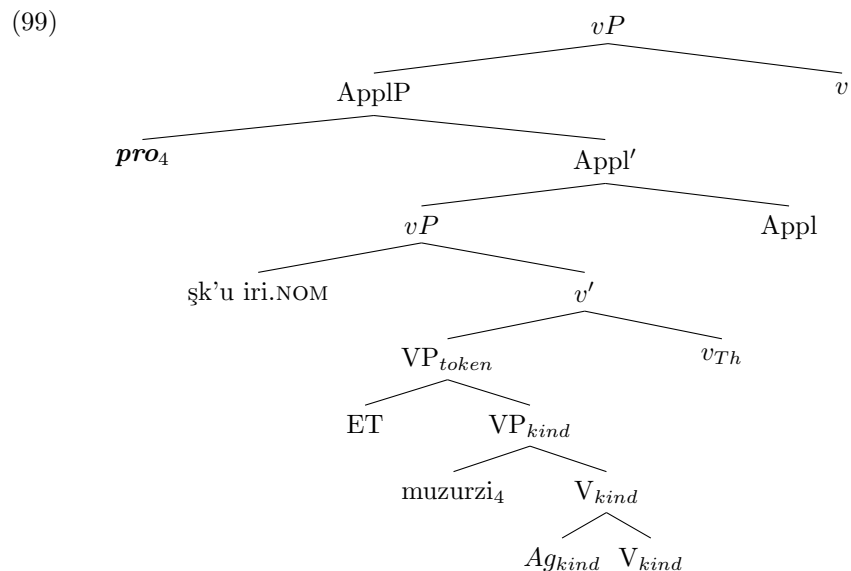
While we defer the explanation for this disparity between the two languages to future research, we tentatively propose that in this construction in Laz, the theme NP patterns like a 3rd person singular NP, with its  $\phi$ -features unable to value the probe. This is not an unusual pattern across South Caucasian. In some non-standard dialects of Georgian, whenever there is a dative subject, this is done overtly by using the reflexive form of the pronoun to express the theme NP, as illustrated in (97a), a phenomenon that Harris (1981) terms ‘object camouflage’ (cf. with (97b)). Hence, we assume that the theme NP in these constructions in Laz is also covertly *camouflaged* into a third person singular NP, with its  $\phi$ -features being invisible from outside.<sup>26</sup>

- (97) a.  $\text{\textcircled{Baghv-s}}$  **chemitavi**  $\text{\textcircled{u-q'var-s}}$ .  
 child-DAT myself 3.APPL-love-PRS.3SG  
 ‘The child loves me.’ (Non-standard Georgian, author fieldnotes)
- b.  $\text{\textcircled{Bavshv-s}}$  (**me**)  $\text{\textcircled{v-u-q'var-var}}$ .  
 child-DAT 1.SG.NOM 1.SUBJ-3.APPL-love-BE.1  
 ‘The child loves me.’ (Standard Georgian, author fieldnotes)

With this background in mind, we now turn to how oblique subject constructions lend support to our analysis. Crucially, oblique subjects can undergo PI, which is evidenced by the fact that the agent loses the dative marking and is immediately preverbal, as exemplified in (98). Notably, the verb is still inflected with the APPL prefix, which is realized in the 3rd person default form, *u-*.

- (98)  $\text{\textcircled{\text{Ş}k'u}}$   $\text{\textcircled{iri}}$  mzurzi  $\text{\textcircled{n-u-}}\text{\textcircled{mtsx-ap-un}}$ .  
 we all.NOM bee PV-3.APPL-sting-CAUS-IMPF.3SG  
 ‘We all have got bee-stung before.’

Extending the logic of the argument thus far, we propose that a null expletive *pro* is merged in spec-AppIP when agent PI occurs in oblique subject constructions. This results in the structure demonstrated in (99).



In the presence of *pro*, occupying spec, AppIP, we do not expect a prefixal agreement marker on the verb, since *pro* is in the 3rd person and is the first NP that the probe encounters. Crucially, in the event-token

<sup>26</sup> Demirok (2013) provides an alternative PIC-based account of the invisibility of the theme NP to the probe in these constructions. We leave a comparison to future work.



domain, argumentation takes place as usual, with *pro* occupying the spec of ApplP. The APPL prefix that surfaces on the verb, being realized in the 3rd person default form, constitutes evidence of that.

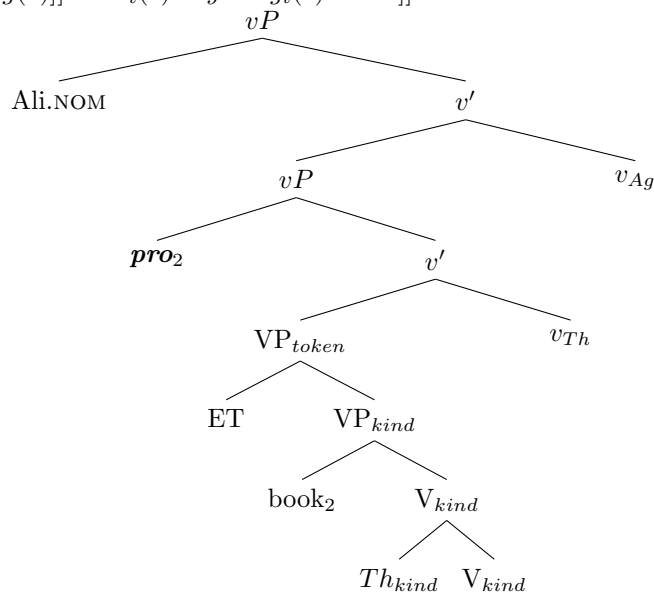
In summary, our evidence, drawn from the absence of passivization in clauses with agent PI in Turkish and Laz, along with the overt applicative marker surfacing in oblique subject constructions with agent PI in Laz, supports the claim that a null expletive *pro* occupies the specifier of the canonical position of an agent argument (spec,  $v_{Ag}P$  or ApplP) when the agent NP undergoes PI within the VP-internal domain.

## 7 Extending the Analysis to Theme Pseudo-incorporation

The motivation behind positing a null expletive *pro* as the placeholder of the PI'ed agent in the VP-external domain is grounded in the semantics of PI we adopted here. To reiterate, the role of *pro* is to establish a *belong-to* relation between the singular kind argument introduced in the event kind domain and the object-level entities associated with this kind, maintaining the same thematic role in the event token domain. By existentially saturating the argument slot of the agent introducing thematic function in the event token domain, *pro* functions as a bridge between the two domains of events. This logic naturally extends beyond the incorporation of the agent argument and should be applicable to clauses with PI in general. Therefore, in this section, we extend the analysis to PI of theme arguments and argue that when the theme NP undergoes PI in the event kind domain within the VP, the specifier of  $v_{Th}P$  is likewise occupied by a null *pro*. We then discuss the consequences of this move for passivization and dependent dative case assignment.

Let us illustrate our point with the structure of (100a), a clause with theme PI in Turkish, illustrated in (108). The denotation of (100a) is given in (100b).

- (100) a. Ali kitap oku-du.  
 Ali book read-PST  
 ‘Ali did book-reading.’  
 b.  $\exists e. \exists y [belong\text{-}to(y, g(2)) \wedge \exists e_k [belong\text{-}to(e, e_k) \wedge [read_k(e_k) \wedge Th_k(e_k) = \iota x_k [book_k(x_k) \wedge x_k = g(2)]] \wedge Th_t(e) = y \wedge Ag_t(e) = Ali]]$   
 c.



In a nutshell, the expletive *pro*, merged in the specifier of  $v_{Th}P$ , is coindexed with the PI'ed singular kind term bearing the theme role in the event kind domain and introduces a local  $\exists$ -closure over the members of the singular kind, which hold the theme role in the event token domain.

An immediate consequence of our analysis emerges in passivization of clauses with theme PI. We anticipate an interpretation equal to impersonal passivization because not only the agent argument is demoted through existential saturation via passivization but also the theme argument slot of the event token is ex-

intentionally saturated by *pro*. As evidenced by the examples in (92) and (93), this prediction is borne out in both Turkish and Laz. We repeat the example for Turkish below:

- (101) Burada kitap oku-n-ur.  
 here book read-PASS-AOR  
 ‘One does book-reading here.’  
 Lit. ‘It is done book-reading here.’

One other consequence of extending the null *pro* to clauses with theme PI concerns dependent dative case assignment in Turkish. Recall that in Baker and Vinokurova’s (2010) account, the DCT also extends to dative case assignment, as illustrated in the dependent case assignment rules repeated below (Baker and Vinokurova 2010: 595):

- (102) a. If there are two distinct argumental NPs in the same VP-phase such that NP1 *c*-commands NP2, then value the case feature of NP1 as *dative* unless NP2 has already been marked for case.  
 b. If there are two distinct argumental NPs in the same phase such that NP1 *c*-commands NP2, then value the case feature of NP2 as *accusative* unless NP1 has already been marked for case.

In an example such as (103), B&V take the goal and theme NPs to be in the VP phase, where the goal NP, *c*-commanding the theme NP, is marked dative due to the rule in (102a) being more specific than (102b).

- (103) Ali Merve-ye kitab-1 ver-di.  
 Ali Merve-DAT book-ACC give-PST  
 ‘Ali gave the book to Merve.’

The strongest support for the claim that dative is a dependent case in Turkish comes from the causativization of intransitive and transitive constructions, as illustrated in the contrast below, which we first introduced in (3). When an intransitive verb is causativized, the causee receives accusative marking, but when a transitive verb is causativized the causee receives dative case marking. This shows that the causative is marked dative only if it *c*-commands another NP in the structure.

- (104) a. Sevgi Ali-**yi** koş-tur-du.  
 Sevgi Ali-ACC run-CAUS-PST  
 ‘Sevgi made Ali run.’ causativized intransitive  
 b. Sevgi Ali-**ye** kitab-1 oku-t-tu.  
 Sevgi Ali-DAT book-ACC read-CAUS-PST  
 ‘Sevgi made Ali read the book.’ causativized transitive

We will now illustrate how dependent dative case patterns are derived in our system.

The semantics of PI we adopt here suggests a mapping to two-layered alignment of verbal structure: PI occurs VP-internally, a domain that is opaque to case assignment, and canonical argumentation occurs in the VP-external domain, where case assignment is operative. Aligning with this structure, our system employs two distinct phases: the VP<sub>token</sub> phase and the CP phase.

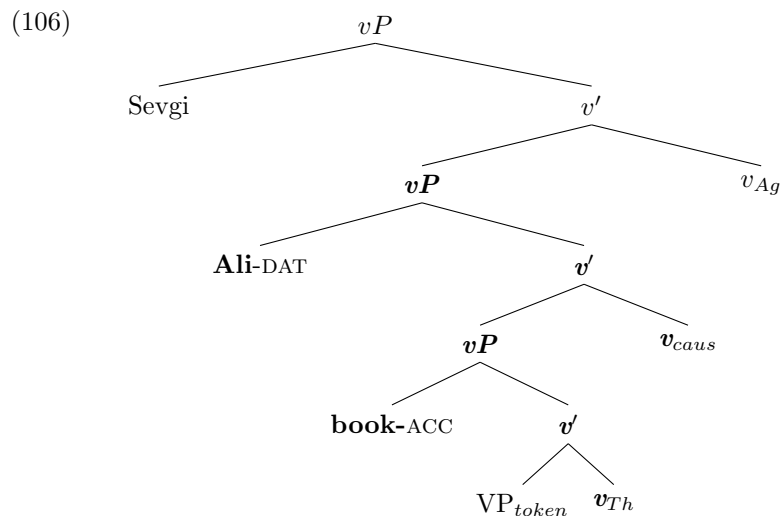
We propose that the VP-external structure (the CP phase) nevertheless involves a total of two domains for each cycle of case assignment.<sup>27</sup> The smallest domain is defined as the complement of the highest thematic argument in the structure. That is, in constructions involving  $v_{Ag}P$  as the highest thematic projection, the complement of  $v_{Ag}$  is a case domain. If this domain involves two NPs then, the higher one is marked dative and the lower one is unmarked for case. If the domain involves only one NP, no dependent case assignment takes place. When the highest thematic argument is merged, the smaller domain of case assignment is still visible, and therefore the lower NP that remained unmarked for case in the previous cycle receives dependent accusative case. Based on this, we revise the dependent case assignment rules as follows:

<sup>27</sup> The notion of cycle we are entertaining here is comparable to the notion of *soft phase* in Baker (2014).

## (105) Dependent Case Assignment

- a. If there are two distinct argumental NPs in the smallest case domain in the same phase —the complement of the highest thematic head —such that NP1 c-commands NP2, then value the case feature of NP1 as *dative* unless NP2 has already been marked for case.
- b. If there are two distinct argumental NPs in the same phase such that NP1 c-commands NP2, then value the case feature of NP2 as *accusative* unless NP1 has already been marked for case.

In ditransitive and causative constructions, the projections of goal introducing and causee introducing heads are the smallest domains for case assignment. As a result, the goal NP and the causee NP (if a transitive verb is causativized) will be marked dative as the higher NP c-commanding the theme argument. When the agent argument is merged, the agent NP and the lower theme NP, which remained unmarked for case in the previous cycle, will enter into a dependency relation, resulting with the theme argument receiving accusative case. Below, we illustrate this for (104b), where the smallest case domain is shown in bold:

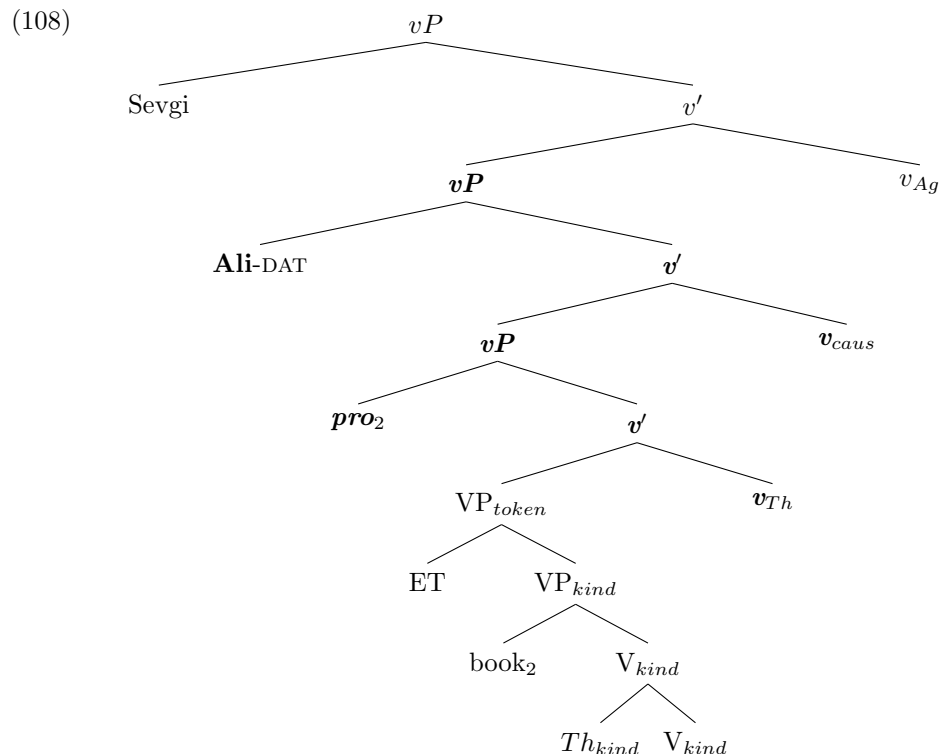


To complete the picture, when an intransitive verb is causativized (no  $v_{Th}$  projection), as in (104a), since the smallest case domain does not involve any other NP, the causee argument remains unmarked for case in the first cycle. With the merge of the agent NP though, it receives dependent accusative case in the second cycle of case assignment triggered within the larger case domain in the CP phase.

In causative constructions where the theme NP undergoes PI, the causee retains dative case marking, aligning with the causative structures with a canonical theme NP. The relevant example is repeated below:

- (107) Sevgi Ali-ye/\*-yi kitap oku-t-tu.  
 Sevgi Ali-DAT/\*ACC book read-CAUS-PST  
 ‘Sevgi made Ali do book-reading.’ causativized construction with PI

This pattern is correctly predicted in our analysis due to a null expletive *pro* occupying the specifier of  $v_{Th}P$  when the theme NP undergoes PI in the VP-internal structure. That is, although the PI’ed theme NP is situated within the lower VP phase and hence cannot play a role in the case assignment mechanism in the VP-external domain, *pro* as its placeholder in this domain ensures that the c-commanding causee NP is marked with dependent dative case, as illustrated below. Otherwise, we would expect the causee to receive accusative case marking, similar to the pattern observed with the causativization of intransitive structures.



To summarize, the analysis we developed for explaining dependent case and agreement patterns in clauses with agent PI in Turkish and Laz also extends to PI of theme arguments. The null expletive view has proven instrumental in effectively deriving impersonal passivization in clauses with theme PI, as well as dependent dative case assignment patterns in ditransitive and causative constructions.

## 8 Concluding Remarks

In this paper, we have examined the syntax and semantics of pseudo-incorporation, focusing on the pseudo-incorporation of agent arguments in Turkish and Laz and its impact on dependent case and agreement patterns in these languages. Informed by the semantics of PI as an event kind-level argumentation process, we developed a unified model for both agent and theme PI. By adopting a two-layered structure for the event domain, we have illustrated how this configuration provides a coherent explanation for patterns of accusative case assignment and object agreement.

At the heart of our analysis is the proposal of a semantically contentful null expletive pronoun occupying the canonical agent/theme argument position in the event token domain, serving as a placeholder for the PI'd argument within the event kind domain. This null expletive is pivotal for connecting argumentation across the event kind-level and event token-level verbal domains. Our approach not only deepens the understanding of PI but also sheds light on the nature of argument structure in general, particularly in relation to UTAH, which we suggest functions distinctly in both the event kind and event token domains. Additionally, our analysis extends to dependent dative case assignment in Turkish. Reconsidering dependent case assignment within a framework that derives observed patterns with arguments remaining in situ, we circumvent the need for potentially stipulative movement operations.

Looking ahead, our research paves the way for further exploration, particularly in relation to argumentation manifested through head-incorporation and compounding. For instance, head-incorporation, which impacts the valency of the verb and alters a transitive structure to an intransitive configuration, affects case marking as we have seen in (1a). This pattern, distinct from the PI constructions we have analyzed, warrants additional investigation. Specifically, it raises questions about whether and how argumentation in the event kind domain connects with the event token domain in languages featuring head-incorporation, akin to what we observe in clauses with PI. Given the valency-changing nature of head-incorporation, an initial

conclusion might be that our null expletive analysis does not readily extend to this phenomenon. However, further exploration is needed to understand how this fits with the semantic characteristics of incorporation as adopted in our current system.

Finally, we are left to ponder whether the two-layered argument structure we have outlined for Turkish and Laz also exists in languages that do not employ any form of incorporation. Should this be the case, the next step would be to investigate the cross-linguistic manifestations of the novel architecture we have proposed in this study.

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