

# Predicting syntactic distribution from morphological structure: The PP syntax of converb clauses in Uralic and Turkic

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## ABSTRACT

This paper deals with converb clauses in Uralic and Turkic languages. These clauses are often defined in the typological literature as featuring a special non-finite verb type. The Uralic and Turkic data show, however, that many of the alleged converbs are in fact morphologically decomposable into a non-finite verb (nominalization, participle, etc.) and a case suffix. For these clauses, I put forward an analysis couched in a generative syntactic framework. I propose that we are dealing with a postpositional phrase (PP), in which the morphologically bound P head (the case suffix) select a non-finite clause. The PP analysis is supported by two case studies. Furthermore, it is demonstrated that this analysis makes correct predictions about the syntactic distribution of these clauses. The present proposal has thus bearing on what counts as a converb cross-linguistically.

## KEYWORDS

converb, non-finite, nominalization, participle, case, postposition, PP, adjunct, adverbial clause, coordination, suspended affixation

## 1. INTRODUCTION

This paper discusses a type of non-finite clauses: the ones formed with so-called converbs. These clauses are widespread in the languages of the Uralic, Turkic/Altaic and Nakh-Daghestanian

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language families, among others. The term ‘converb’ comes from typology (see [Haspelmath & König 1995](#)), and various definitions exist (see [Haspelmath 1995](#); [König 1995](#); [Johanson 1995](#); [Nedjalkov 1995, 1998](#); [Ylikoski 2003](#); [Shagal, Rudnev & Volkova 2022](#); for a critical approach [Zúñiga 1998](#); [Auwera 1998](#)). According to [Haspelmath’s \(1995\)](#) definition, converbs are expected to be morphologically non-decomposable and their syntactic distribution should be limited to adjunct positions.

In this paper, I will take [Haspelmath’s](#) definition as a starting point of the discussion. It will be shown that converb suffixes in Uralic and Turkic fall into two types: morphologically decomposable ones and morphologically non-decomposable ones. An example of the former type is given in (1): the Mari converb suffix is comprised of the non-finite form *-mE*, used in participial relative clauses and nominalizations, and the illative suffix *-ške*; the combination of the two gives rise to the interpretation of a ‘before/until’-clause. The latter type is illustrated by the converb *-n* in (2). This non-finite form has several functions, e.g., it can encode manner or temporal adverbials ([Riese, Bradley & Yefremova 2022](#), 263–266). As can be seen, both types of converbs are attested in the same language. These examples clearly show that certain converbs are morphologically segmentable, which is not expected under [Haspelmath’s](#) definition.

- (1) [Una **tol-me-ške**], tort-ə̃m ida koč!  
 guest come-NMLZ-ILL cake-ACC PROH.2PL eat.CN  
 ‘Don’t eat cake before the guests come!’<sup>1</sup>

[Meadow Mari; [Riese, Bradley & Yefremova 2022](#), 271]

- (2) Me [maska deč **lūdə-n**] kurz-ə̃n-na.  
 1PL bear from fear-CVB run-PRF-1PL  
 ‘Scared of the bear, we ran.’

[Meadow Mari; [Riese, Bradley & Yefremova 2022](#), 264]

This paper is concerned with the type of converbs illustrated in (1). For those, I will put forward a syntactic analysis in a generative syntactic framework. Specifically, I will propose that the morphologically segmentable converbs should be analyzed as postpositional phrases (PPs). In a nutshell, the proposal is that a P head – which might be a syntactically independent adposition or a morphologically bound semantic case – takes a clausal complement (a non-finite clause). This account has several advantages: (i) it allows for one-to-one mapping between morphology and syntax, (ii) it makes correct predictions about the syntactic distribution of these clauses. Furthermore, it allows us to derive the semantics of these clauses in a compositional way, i.e., from the building blocks of the PP. I will also demonstrate that the (morpho)syntactic

<sup>1</sup>The translations of examples published in sources written in languages other than English are mine. Throughout the paper, capitalization indicates that the suffix in question is subject to vowel and/or consonant harmony. In some cases the transcription and/or glosses have been modified for consistency. The glosses used are the following: 1 = first person, 2 = second person, 3 = third person, ABE = abessive, ABL = ablative, ACC = accusative, ADD = additive, ADE = adessive, ADV = adverbial, AOR = aorist, CAUS = causative, CN = connegative, COMPR = comparative (case), CVB = converb, DAT = dative, DOMUS = domus (spatial case), ELA = elative, EVID = evidential, FACT = factive, FREQ = frequentative, GEN = genitive, ILL = illative, IMP = imperative, IMPF = imperfective, INE = inessive, INF = infinitive, INS = instrumental, INTR = intransitive, LAT = lative, LOC = locative, NEG = negative, NFIN = non-finite, NMLZ = nominalizer, NOM = nominative, PART = partitive case, PASS = passive, PL = plural, POSS = possessive, PRF = perfect, PROH = prohibitive, PRS = present, PRT = particle, PST = past, PTCP = participle, SG = singular, TERM = terminative, VN = deverbal noun.



properties of these clauses are missed if we treat the relevant suffixes as morphologically non-decomposable forms. The PP analysis puts great emphasis on the syntactic distribution of converbs, similarly to some existing typological approaches (e.g., Ylikoski 2003 on Uralic and Washington, Tyers & Salimzianov 2022 on Turkic), but supersedes them, as it makes very clear predictions about the syntax of converbs, which follow directly from the general properties of PPs. In my view, the findings, both in terms of the description of the relevant converbs and the predictions made, can prove particularly useful: the discussion in the typological literature shows that converb clauses are rather diverse in their syntactic properties and thus the present study can help to obtain a more accurate cross-linguistic picture. By focusing on a topic discussed predominantly in typological works but adopting the tools of generative grammar, the present study combines the insights of both frameworks in order to successfully account for the syntax of converbs. More broadly, this kind of approach hopes to foster dialogue between language typology and generative grammar. Finally, the present analysis methodologically relies on the application of certain language-specific diagnostics. Such diagnostics have been discussed for other non-finite forms of individual languages, e.g., for the Erzya infinitives (see Serdobolskaya et al. 2012) and the Udmurt *-(o)ńńa*-clauses (see Georgieva 2023), but the converb clauses in question have not been discussed in sufficient depth, especially from a comparative perspective. The present proposal aims at unifying the discussion of Uralic and Turkic languages, by highlighting the typological similarities between them.

The empirical coverage of the paper encompasses Mishar Tatar and Modern Standard Turkish (henceforth, Turkish) from the Turkic language family and Mari, Udmurt and Finnish from the Uralic language family. I present two detailed case studies that deal with alleged converbs in Turkish and Mari. The examples come from grammars and other sources as well as from elicitations with native speaker consultants. The paper makes a contribution on the empirical level, too, by presenting novel data. The two case studies contain extensive discussion of coordination and suspended affixation in the relevant converb clauses and present valuable empirical data on these two phenomena. Thus, the contribution of the present paper goes beyond the investigation of converbs.

The data presented in the two case studies were collected from four native speakers of Turkish (age groups: 20–30 (two speakers), 50–60 (one speaker), 80–90 (one speaker); three of them born/raised in Izmir, one of them in Izmir and Ankara; two of them currently residing in the USA) and four native speakers of Mari (age groups: 30–40 (two speakers), 50–60 (two speakers); two of them born/raised in the Mari El Republic and two in Bashkortostan; currently living in Hungary and Estonia). A remark is in order regarding the varieties of Mari investigated. Mari has two main varieties that have their own literary norms: Meadow Mari and Hill Mari, spoken in the eastern and western parts of the Mari El Republic, respectively. Two of the consultants represent Meadow Mari. The speakers from Bashkortostan speak the Eastern Mari dialect, which has no written form, and are also familiar with the Meadow Mari variety. Meadow Mari and Eastern Mari are sometimes together referred to as ‘Meadow-Eastern Mari’ in the literature, in this paper I will be using the term ‘Mari’; I will indicate if differences between the Meadow Mari and the Eastern Mari speakers are observed.

This paper is structured as follows. Section 2 presents an overview of the various definitions of converbs found in the literature. Section 3 takes a closer look at several converb clauses in Uralic and Turkic that challenge these definitions: it will be shown that these ‘converbs’ are morphologically segmentable. Section 4 spells out the main proposal of the paper, according to which these converb clauses are PPs; the analysis is supported by case studies on Turkish and



Mari. Section 5 discusses the predictions of the PP analysis. Section 6 addresses some further issues related to the PP analysis. Section 7 concludes.

## 2. BACKGROUND

In this section, I will present a critical assessment of the existing definitions of converbs. I will start with the ones proposed in the typological works. Then I will summarize the approaches to converb clauses advocated in the theoretical studies. Before we proceed with these definitions, let me make a clarification regarding the terminology: ‘converb’ is the term used in various typological and descriptive studies, but often these non-finite verb forms are referred to as ‘gerunds’, ‘verbal adverbs’, ‘adverbial participles’ or ‘conjunctive participles’, depending on the linguistic tradition of individual languages.

Several definitions of converbs have been proposed in the typological literature. What is common for all of them is that they revolve around the idea that converb clauses primarily express adverbial subordination. But these definitions also show important differences. In one strand of research (e.g., Haspelmath 1995), explicit statements are made regarding the morphological make-up of converbs, while other proposals put emphasis on the syntactic distribution of converbs rather than on their morphology (e.g., Nedjalkov 1995; König 1995). Below I summarize the main points of these definitions.

Haspelmath (1995, 3) defines converbs as follows: “a non-finite verb form whose main function is to mark adverbial subordination”. Essentially, Haspelmath’s typological definition has two subparts: a morphological one (stating that converbs are part of the verbal paradigm) and a syntactic one (specifying what the syntactic distribution of converbs is). As for the former, it is further argued that converbs are inflectional forms of the verb and “cannot be easily analyzed as a verb plus a complementizer or a subordinator” (Haspelmath 1995, 4). However, it is also mentioned *passim* that converbs are often diachronically related to inflected forms of deverbal nouns (Haspelmath 1995, 17).<sup>2</sup> Note, however, that his work, being couched in a typological framework, does not further discuss diachronic issues, e.g., when the relevant deverbal nouns should be considered to have reached the final stop in this change, that is, to have turned into a converb whose syntactic distribution no longer matches that of case-marked nominals. As will be shown in Section 3, though, some converbs in Uralic and Turkic can be decomposed morphologically even on the synchronic level.

Other typological works agree with the syntactic component of Haspelmath’s definition, namely, that the core function of converbs is the expression of adverbial relations. However, unlike Haspelmath’s definition, they are less strict about the morphological properties of converbs. I will refer to these as ‘distribution-based approaches’. The central idea in them is that converb clauses are not arguments (see Nedjalkov 1995; König 1995).

König (1995, 75–76), for instance, considers English adverbial clauses like *before coming to the pub* to be the combination of a converb clause, i.e., the *-ing* gerund, and what he refers to as ‘conjunctives’, i.e., prepositions and subordinators like *when*, *while*, *before*, *as if*, etc. Thus, in his

<sup>2</sup>As mentioned by Haspelmath, the other common source from which converbs may originate are the so-called co-predicative participles (see also Shagal, Rudnev & Volkova 2022). In this paper I do not discuss this in detail since converbs in Turkic and Uralic generally go back to deverbal nominals.



account converb clauses may be introduced by a subordinator (*pace Haspelmath 1995*). This rather broad definition is to be explained with the fact that König (1995) is primarily concerned with the semantics of converb clauses rather than with their morphology and syntax. At the same time, I would like to point out that treating the English gerunds as converbs faces difficulties as they may be adjuncts (this is the so-called ‘absolute construction’, see Stump 1985; Kortmann 1991), but they can also occur in argument position.

Nedjalkov (1995, 97) puts forward the following definition: “a canonical [...] converb can occupy (1) the position of an adjunct, i.e., an adverbial, but cannot occupy the positions: (2) of the only predicate of a simple sentence (without additional auxiliary elements); (3) of nominal attributes; (4) of a clausal actant (i.e., it cannot depend on verbs such as *begin*, *order*, etc.); (5) of a nominal actant (i.e., it does not occur in subject and object position)”. The positions listed in (2) to (5) distinguish converbs from main verbs, participles, infinitives and gerunds/deverbal nouns, respectively. In the course of the chapter, though, several overlaps, i.e., the same verb form being used with different functions, are presented. Nedjalkov (1995) discusses certain morphological aspects related to converb clauses, e.g., agreement, but these issues are only mentioned in connection with the syntactic properties under consideration. It is clear from the presentation that (non-)finiteness is not crucial in the definition of converbs, neither is morphological (non-)decomposability (cf. the discussion of what he refers to as ‘derived converbs’, i.e., converbs featuring a tense marker, Nedjalkov 1995, 124ff.).

Thus, there is no uniform definition of converbs in the typological literature, but the existing approaches can be grouped into two clusters: accounts, in which morphological aspects are taken to be decisive, on the one hand, and analyses that focus on the syntactic distribution, on the other. Additionally, it should be emphasized that the afore mentioned typological works present empirical data that is rather heterogeneous: it seems that the clauses discussed under the umbrella of ‘converbs’ show considerable variation in their (morpho)syntactic properties. This casts doubts on the general aim to provide a definition that covers all of the presented data.

As said above, the term ‘converb’ is used mostly in the typological literature, but it has been adopted in descriptive and theoretical works, too. Converb clauses have been investigated in theoretical studies couched in the Chomskyan generative grammar (e.g., Tóth 2000; Bartos 2009; Weisser 2015; Ótót-Kovács 2016; Grashchenkov 2017; Sugar 2019; Privoznov 2021, 2022, a.o.). To the best of my understanding, the term ‘converb’ is used as a descriptive shorthand in these works, either explicitly or implicitly.<sup>3</sup> The problem with this approach is that using a typological term that is not uniformly defined as a shorthand leads to more confusion – especially as far as the dialogue between typology and generative grammar is concerned. What should also be noted is that morphological criteria seem to be of less importance in the aforementioned formal studies. This is perhaps related to the fact that these works mostly focus on the morphologically non-segmentable converbs. Thus, unlike typological works, the formal studies cover much smaller pool of data, and the morphologically decomposable converbs illustrated in (1) are typically not discussed.

In sum, the typological definitions of converbs seem to face difficulties, for the reason outlined above, and need to be refined. As will be shown in the next section, the Uralic and Turkic data does not match the morphological aspect of Haspelmath’s (1995) definition. These findings will suggest

<sup>3</sup>This is probably to be partly explained with some standard assumptions of this framework, according to which such notions cannot be primitives of the grammar (Chomsky 1981).



that certain clauses that have been previously analyzed as converbs should be given an alternative analysis. As will be shown in this paper, generative grammar provides the right tools, with which the syntactic properties of these clauses can be captured in a more explanatory powerful way. The results of this investigation will be then beneficial for language typology, as the fine-grained analysis of this type of converbs can be informative for the cross-linguistic studies as well.

### 3. MORPHOLOGICAL SEGMENTABILITY

This section zooms in on the morphological make-up of converbs. In Section 1 it was already shown that there are two types of converb clauses in Mari based on their morphological decomposability. The picture that emerged from these empirical facts was that certain ‘converbs’ are morphologically segmentable into a non-finite verb form and a case suffix. The ultimate goal of this section is to demonstrate that this generalisation pertains to other Uralic and Turkic languages as well. In order to show this I will first discuss a wide range of converbs in Uralic and Turkic with respect to their morphological segmentability: the presentation is intended to highlight that the observed pattern is indeed general. I will also summarize the previous descriptions of these clauses: whether they have been treated as converbs in the existing (descriptive) literature and what arguments in favour of or against their converb status have been put forward. The empirical facts discussed below will lead to the PP analysis proposed in Section 4, which builds on the morphological segmentability of the non-finite verb forms in question. Note that in this section I will focus on the most clear-cut cases of morphologically decomposable converbs; some complications for the morphological segmentation will be discussed in Section 6. Below I first discuss the Uralic data and then move to the Turkic data.

#### 3.1. Morphologically segmentable converbs in Uralic

In Section 1, we saw an example of the morphologically decomposable converb in Mari (cf. (1)). As already said, this converb suffix contains the non-finite verb form *-mE*, which is productively used in participial relative clauses and nominalizations (see Serdobolskaya et al. 2012; Brykina & Aralova 2012; Volkova 2017; Voznesenskaia 2018; Pleshak 2022), and the illative case. There is one more converb that is clearly morphologically decomposable on the synchronic level (see Isanbaev 1961; Pengitov 1961; Alhoniemi 2010; Riese, Bradley & Yefremova 2022). This suffix is comprised of the participle *-šE* and the comparative case *-la*. Functionally, the *-šêla*-clauses express temporal overlap, as illustrated in (3). (The descriptive literature also lists the converb *-meke*; I will discuss it in Section 6.)

- (3) [Metro dene **kudal-šê-la**],      šukêñ kniga-m lud-êt.  
 metro with travel-PTCP-COMPR many book-ACC read-PRS.3PL  
 ‘Many people read books when they take the metro.’

[Meadow Mari; Riese, Bradley & Yefremova 2022, 272]

It is noteworthy that Isanbaev (1961, 71–72) argues that the suffix *-šêla* is not directly the combination of the present-day participial suffix and the comparative case but rather preserves the Proto-Uralic deverbal noun \*ś, which is the origin of the Mari participle *-šE*, and the old allative case, which later gave rise to the comparative case (Galkin 1964, 56, 163; but see also



Bereczki 2002, 36–37 on the origin of the case marker). It is also important to mention that the present-day participle *-šE* does not form non-finite argument clauses, unlike the suffix *-mE* in *-me-ške*. The case of *-šāla* highlights another problem that arises when one tries to determine the converb status of a given verb form, namely, diachrony. Specifically, the question is whether we find evidence that the relevant verb form, albeit having diachronically emerged from the combination of a non-finite verb plus a case marker, is to be analyzed synchronically as a morphologically non-decomposable converb. In the case of *-šāla*-clauses, Isanbaev (1961) points out that person agreement appears between the non-finite suffix and the case marker (4). This can be taken as evidence that we are dealing with a morphologically decomposable case-marked form rather than with a morphologically opaque converb suffix.

- (4) [Kužu žap košt-šā-št-la], jol-āšt noj-en.  
 long time walk-PTCP-POSS.3PL-COMPR leg-POSS.3PL get.tired-PRF.3SG  
 ‘As they were walking for a long time, their legs got tired.’  
 [Meadow Mari; Riese, Bradley & Yefremova 2022, 273]

Burukina (2024) discusses not only the position of agreement in these clauses but also the general parallelism between event nominals and the alleged converbs with respect to the use of agreement and the subject’s case marking (unmarked or genitive). She concludes that all three ‘converbs’, *-meške*, *-šāla* and *-meke*, are best analyzed as case-marked nominals, i.e., PPs. As said, her arguments come from the internal structure of these clauses. In Section 4, I will provide arguments that are related to their syntactic distribution.

Udmurt presents a similar picture: two of the converb suffixes discussed in the descriptive literature are clearly morphologically decomposable. These are the suffixes *-(e)m-en* and *-(e)m-īš*. They both contain the non-finite suffix *-(e)m*, the cognate of Mari *-mE*, which heads participial relative clauses and nominalizations (see Dékány & Georgieva 2020 and the references therein), combined with the instrumental and the elative cases, respectively. Both clause types function as cause/reason adverbials, as illustrated in (5) and (6).

- (5) Tolon [kuaž **zor-em-en**] busi-je ez vetle=no [...]
 yesterday weather rain-NMLZ-INS field-ILL NEG.PST.3 go.CN.PL=ADD  
 ‘Yesterday they did not go to the field because it was raining (lit. with the weather raining) [...]’ [Udmurt; Turku-Izhevsk Corpus, Kenesh/D/5:783, as cited in Georgieva 2018]
- (6) Kjšno-je, [eke-mj kematek skripka-ze  
 wife-POSS.1SG son-POSS.1PL long.time violin-POSS.3SG.ACC  
**kuti-le-mte-īštj-z**], kuddjŕ žurgete [...]
 touch-FREQ-NMLZ.NEG-ELA-POSS.3SG sometimes grumble.PRS.3SG  
 ‘Because our son hasn’t/doesn’t touch his violin for a long time, my wife sometimes grumbles (at him) [...]’<sup>4</sup>  
 [Udmurt Corpus, Udmurt Dunne 2008.05.06, as cited in Georgieva 2018]

<sup>4</sup>The example probably contains a typographic error: *kutiļemtejštjz* instead of *kutiļimtejštjz*.



The converb status of *-(e)m-en* and *-(e)m-ís* has been debated in the literature. They have been considered to be converbs (Kel'makov & Hännikäinen 1999; Winkler 2011), borderline cases between converbs and case-marked nominalizations, that is, an instance of an incomplete grammaticalization (Fokos-Fuchs 1958) or case-marked nominalizations (Georgieva 2018). Fokos-Fuchs's (1958) arguments are semantic rather than syntactic; we will return to the applicability of semantic criteria in Section 6. It should be noted that the position of agreement, i.e., whether it can interleave the two components of the alleged converb suffix, has been put forward as a diagnostic for Udmurt as well (Fokos-Fuchs 1958; Georgieva 2023). However, in the case of *-(e)m-en* and *-(e)m-ís*, this test is not applicable since the agreement always follows the instrumental and the elative cases, on both noun phrases and *-(e)men* and *-(e)mís*-clauses, cf. (6). In addition to the morphologically decomposable converbs, Udmurt also employs a converb type that is morphologically opaque, the one expressed with the suffix *-sa* (see Georgieva 2018 for discussion).

Finally, Ylikoski's (2003) study is also relevant, as he discusses the definitions of different non-finite forms in light of Uralic data. His proposal is couched in the typological approaches that take syntactic distribution to be the decisive criterion. Ylikoski (2003, 203–206, 211–212) discusses the suffixes of the non-finite forms that are referred to as 'third infinitives' in Finnish descriptive grammars. They are listed in (7). These non-finite forms are comprised of the non-finite suffix *-mA*, which goes back to the Proto-Uralic deverbal noun *\*-ma*, and a case suffix. The relevant case suffixes are the adessive (*-lla*), abessive (*-tta*), illative (*-An*), elative (*-stA*) and inessive (*-ssA*). Crucially, the forms in (7) are all morphologically decomposable. Illustrative examples of the clauses formed with them are provided below.

- (7) a. *-mA-lla*, *-mA-tta*  
 b. *-mA-An*, *-mA-stA*, *-mA-ssA*
- (8) Pekka tek-i rikokse-n [juo-ma-lla / juo-ma-tta olut-ta].  
 Pekka make-PST.3SG crime-GEN drink-NFIN-ADE drink-NFIN-ABE beer-PART  
 'Pekka committed a crime by/without drinking beer.' [Finnish; Ylikoski 2003, 203–204]
- (9) Pekka rupes-i / pysty-i [juo-ma-an olut-ta].  
 Pekka begin-PST.3SG manage-PST.3SG drink-NFIN-ILL beer-PART  
 'Pekka began / managed to drink beer.' [Finnish; Ylikoski 2003, 212]
- (10) Pekka lakkas-i / kieltäyty-i [juo-ma-sta olut-ta].  
 Pekka cease-PST.3SG refuse-PST.3SG drink-NFIN-ELA beer-PART  
 'Pekka ceased / refused to drink beer.' [Finnish; Ylikoski 2003, 212]
- (11) Pekka on / istuu [juo-ma-ssa olut-ta].  
 Pekka be.PRS.3SG sit.PRS.3SG drink-NFIN-INE beer-PART  
 'Pekka is / sits drinking beer.' [Finnish; Ylikoski 2003, 216]

Despite their morphological segmentability, Ylikoski argues that the adessive and abessive forms in (8) are to be treated as converbs and that the illative, elative and inessive forms in (9), (10) and





(11), respectively, are best analyzed as infinitives. He motivates this proposal with the different function and syntactic distribution of these non-finite clauses. The ones in (8) are used as clausal modifiers (adjuncts). In contrast, the ones in (9)–(11) occur in argument position. It should be mentioned that [Vainikka \(1989, Ch. 5.2\)](#) investigates the argumental ones ((9)–(11)) and argues that these are locative PPs. This is in line with the proposal of the present paper. Note, however, that [Vainikka's \(1989\)](#) account focuses on the *internal* syntax of these non-finite clauses.

In sum, the Uralic data clearly show that many converbs are actually morphologically segmentable. Next, let us now take a closer look at the Turkic languages.

### 3.2. Morphologically segmentable converbs in Turkic

Many of the Turkic languages employ morphologically opaque converbs, the most common being *-Ip*, but there are also several morphologically decomposable forms. A distinction similar to the one made in the present paper is proposed for the Turkic languages by [Johanson \(2021, Ch. 46\)](#), who lists ‘primary converbs’ and ‘secondary converbs’, the latter being morphologically complex. His classification is largely influenced by diachronic factors, though, and, importantly, it does not make predictions about the syntax of these clauses. [Washington, Tyers & Salimzianov \(2022, 717\)](#) argue that converbs (‘verbal adverbs’ in their terms) should not be transparent case-marked deverbal nominals, specifically, “a verbal adverb cannot appear to be composed of a verbal-noun suffix that occurs in at least one other case form (morphologically marked or not) and a case-like form that occurs productively in the language”. This study thus takes morphological criteria into account and excludes the morphologically decomposable forms from the discussion of converbs. However, [Washington, Tyers & Salimzianov \(2022, 729–731\)](#) make a remark on the diachronic changes, pointing out that it is not always easy to decide if a certain case-marked form has become a converb. Let us now discuss two Turkic languages, Turkish and Mishar Tatar, in more detail.

In Turkish, we find several adverbial clauses that feature non-finite forms: the factive nominalization *-DIK*, the action nominal *-mA*, and the infinitive *-mAk* (see [Kornfilt 1997](#)). They can combine with various semantic cases and syntactically independent postpositions; these uses are labelled as ‘converbial’ in [Göksel & Kerslake \(2005, 85–88\)](#). One such form is the combination of *-DIK* with the locative case, which is used as a ‘when’-clause, as shown in (12). Cause/reason clauses can be encoded by the combination of *-DIK* with the ablative case, as illustrated in (13).

- (12) [Uçak-tan **in-diğ-imiz-de**] kar yağ-ıyor-du.  
 plane-ABL go.down-FACT.NMLZ-POSS.1PL-LOC snow fall-IMPF-PST.3SG  
 ‘When we came out of the plane it was snowing.’  
 [Turkish; [Göksel & Kerslake 2005, 415–416](#)]

- (13) Hasan [kitab-ı san-a **ver-diğ-im-den**] çok kız-dı.  
 Hasan book-ACC 2SG-DAT give-FACT.NMLZ-POSS.1SG-ABL very angry-PST.3SG  
 ‘Hasan got very angry because I gave the book to you.’ [Turkish; [Kornfilt 1997, 74](#)]

To the best of my understanding, [Göksel & Kerslake \(2005\)](#) do not provide explicit arguments why these clauses should be considered to be ‘converbial’. [Kornfilt \(1997, 66ff.\)](#) treats (12) and (13) as case-marked forms and points out their similarity to postpositional phrases. At the same time, [Kornfilt \(1997, 72\)](#) lists another morphologically transparent form, *-DIKÇA*, as a converb



(‘gerund’ in her terms). This suffix also contains the factive nominalization, combined with the adverbializer *-ça* (Göksel & Kerslake 2005, 57–58, 191). As far as I can tell, this is because the *-DIKça*-clauses never show agreement (unlike (12) and (13)) and their subject, if overt, is unmarked rather than genitive-marked. (14) provides an illustrative example of *-DIKça*-clauses (on their meaning see also Göksel & Kerslake 2005, 413, 418).

- (14) [Burs-un devamet-tik-çe] yoksulluk çek-me-z-sin.  
 fellowship-POSS.2SG continue-FACT.NMLZ-ADV poverty suffer-NEG-NEG.AOR-2SG  
 ‘You won’t suffer poverty, as long as your fellowship continues.’  
 [Turkish; Kornfilt 1997, 72]

Mishar Tatar also employs a plethora of morphologically decomposable converbs. They contain the participle/nominalization *-GAn*. This non-finite verb form is used across the Turkic language family, and it can form argument, relative and adverbial clauses (see Sahan 2002; Kornfilt 2005, 2015; Asarina 2011; Ótött-Kovács 2018; Laszakovits 2019, a.o.; I gloss this non-finite form uniformly as *PTCP*). For example, *-GAn* can occur with the locative case; the combination of the two has the meaning of temporal overlap, as shown in (15).

- (15) [Riſat ʒyrla-gan-da] Zefâr kit-te.  
 Rishat sing-PTCP-LOC Zufar leave-PST.3SG  
 ‘When Rishat was singing, Zufar left.’  
 [Mishar Tatar; Tatevosov, Pazelskaya & Suleymanov 2017, 476]

Additionally, the same non-finite form can combine with the special marker of comparison *-daj* or the adverbializer *-ça*, giving rise to comparative clauses, as shown in (16). The same participle can also appear with the dative case (Tatevosov, Pazelskaya & Suleymanov 2017, 350). This clause type encodes cause/reason adverbial relations, as exemplified in (17).

- (16) Änä-se Riſat-nŕ, [patſa xatŕn-ŕ patſa-nŕ aſa-t-kan-daj] /  
 mother-POSS.3SG Rishat-ACC king woman-POSS.3SG king-ACC eat-CAUS-PTCP-COMPR  
 aſa-t-kan-ça] asa-t-a.  
 eat-CAUS-PTCP-ADV eat-CAUS-IMPF.3SG  
 ‘Rishat’s mother feeds him (lit. his mother feeds Rishat) the way the queen feeds the king.’  
 [Mishar Tatar; Tatevosov, Pazelskaya & Suleymanov 2017, 496]
- (17) [Änä-se a-nŕ çakŕr-gan-ga] Ilnur katj-tŕ.  
 mother-POSS.3SG he-ACC call-PTCP-DAT Ilnur return-PST.3SG  
 ‘Ilnur returned because his mother called him.’  
 [Mishar Tatar; Tatevosov, Pazelskaya & Suleymanov 2017, 473]

These non-finite forms are treated as converbs in Tatevosov, Pazelskaya & Suleymanov (2017), although their morphological segmentability is indicated in the glossary (Tatevosov, Pazelskaya & Suleymanov 2017, 20). Earlier grammars consider these forms to be based on *-GAn* (Zakiev 1992, 348–352) and list very few non-finite verb forms as converbs (Zakiev 1993, 223–230). But apart from the morphologically non-decomposable *-Ip*, the latter grammar mentions certain converbs



that diachronically go back to case-marked non-finites and are partly segmentable even synchronically, e.g., the suffix *-GAN-čA* ‘before/until’ (see also Section 6). Generally, these sources do not emphasize morphological segmentability as an important factor. The description of converbs in [Zakiev \(1993\)](#) focuses on the function of these clauses (adjunct modifiers of the main clause) as well as certain properties related to the internal structure of converb clauses, such as the absence of negation, voice distinctions and agreement, and the interpretive properties of the subjects of these clauses. In my view, however, these properties do not convincingly prove that the relevant non-finite forms are to be analyzed as converbs.

### 3.3. Interim summary

The take-away from the previous two subsections is that several ‘converbs’ in Turkic and Uralic are morphologically segmentable: they are case-marked non-finite verbs. Whether they are treated as converbs in the existing literature, largely depends on the criteria proposed by individual authors for individual languages. As mentioned above for Finnish, syntactic distribution might be such a criterion. Agreement is another – not only its availability, as in Turkish and Tatar, but also its position: whether it interleaves the non-finite suffix and the case marker, as in Mari. However, often no explicit criteria are proposed, in which case the term ‘converb’ is by and large equivalent to ‘non-finite adverbial clause’. The situation is further complicated by diachrony: whether or not a certain case-marked non-finite form has turned into a morphologically opaque converb suffix.

In my view, the discussion in the preceding two subsections highlighted that explicit criteria are needed in order to determine if the relevant non-finite forms should be considered to be converbs. These criteria would most likely be language-specific, but the cross-linguistic comparison may also be important: as the summary above reveals, certain diagnostics have been mentioned for different languages, thus, comparing both the methods and findings can be informative.

In the next section I will propose an analysis for the morphologically segmentable ‘converbs’. This analysis takes into account morphological segmentability but, importantly, it is also supported by additional diagnostics that focus mostly on the external distribution of the relevant clauses.

## 4. ANALYSIS: PP SYNTAX

Below I develop an analysis for the morphologically decomposable converbs discussed in the previous section. According to this analysis, these non-finite clauses are postpositional phrases (4.1). The proposal will be supported by case studies on Turkish and Mari (4.2).

### 4.1. Proposal

In Section 3, I showed that many of the ‘converbs’ utilized in Uralic and Turkic are morphologically segmentable into a non-finite verb form and a semantic case suffix.<sup>5</sup> It is received

<sup>5</sup>It is customary to distinguish between structural cases, which encode grammatical relations like subject or object, and semantic cases, which express semantic roles, e.g., spatial relations ([Blake 1994](#)).



wisdom in the literature that semantic cases are P heads, and differ from syntactically independent adpositions in terms of being morphologically bound. This view is shared by both typologists (see Malchukov & Spencer 2009; Moravcsik 2009) and generative syntacticians (see the contributions in Asbury et al. 2008; Cinque & Rizzi 2010, a.o.). Thus, PPs can be headed by either a syntactically independent P or a morphologically bound one, i.e., a case suffix. This has been proposed for some individual Uralic languages, too (see Asbury 2008; Dékány 2012; den Dikken & Dékány 2018; Dékány & Hegedűs 2021 on Hungarian, Finnish and Estonian; Usacheva 2012; Simonenko & Leontyev 2012; Arkhangel'skiy & Usacheva 2015; Pleshak 2019; Burukina 2023b on Udmurt and Meadow/Hill Mari). Further arguments can be brought up from a comparative perspective as well: for instance, in several Uralic languages, spatial adpositions and case suffixes show a tripartite division into Goal, Source, and Location (see Kittilä, Laakso & Ylikoski 2022 for general overview). An example of this is the triplet of the postpositions *elé* ‘to the front’, *elől* ‘from the front’, *előtt* ‘in front’ and the triplet of the illative, elative, and inessive cases in Hungarian. Similarly, in the Turkic languages, the Goal, Source, and Location semantics is expressed by the dative, ablative and locative cases, respectively; various postpositions, which consists of case-marked relational nouns, also show this tripartite division (see Kornfilt 1997, 242–256 on Turkish; some of these postpositions will be illustrated in Section 5.2 below). In Mari, on the other hand, case suffixes are utilized to express Location (inessive) and Goal (illative, see below in (20)), while the Source semantics is expressed with a postposition (*gəč* ‘from’). This supports the idea that adpositions and case suffixes are similar from yet another angle: the spatial element, being morphologically bound or syntactically independent, heads a postpositional phrase, whose function is to encode spatial semantics. Thus, the Uralic and Turkic languages utilize both types of P heads: the syntactically independent adpositions and the morphologically bound case suffixes.

Against this background, I propose that the converb clauses discussed in Section 3 are postpositional phrases headed by a morphologically bound P head. This P head combines with a non-finite clause. This is schematized in (18).

- (18) The structure of morphologically segmentable converbs  
 [PP [<sub>x</sub>VP ... V<sub>non-finite</sub>] P<sub>case sfx</sub>]

In this sense, converbs are structurally parallel to the non-finite adverbial clauses headed by syntactically independent Ps. This line of thinking is supported by the general patterns of adverbial subordination in the investigated languages. For example, we saw that cause/reason clauses can be expressed with the combination of a non-finite form and a case suffix: the instrumental or the elative in Udmurt, the ablative in Turkish and the dative in Mishar Tatar (see (5)–(6), (13) and (17), respectively). In all three languages, cause/reason clauses can also be expressed with syntactically independent postpositions selecting the same non-finite clauses. This is exemplified in (19) for Turkish. It seems plausible to assume that (13) and (19) are parallel both with respect to their function, i.e., expressing cause/reason adverbial relations, and their structure, i.e., being PPs.

- (19) Hasan [kitab-ı san-a ver-diğ-im için] çok kız-dı.  
 Hasan book-ACC 2SG-DAT give-FACT.NMLZ-POSS.1SG for very angry-PST.3SG  
 ‘Hasan got very angry because I gave the book to you.’ [Turkish, Kornfilt 1997, 74]



Two remarks are in order regarding the structure schematized in (18). First, throughout this paper I will remain agnostic about the precise structure of the P layer. It is well-known that PPs can have complex internal structure, comprising designated projections for path- and place-denoting elements and/or hosting elements that are at the intermediate stage between relational nouns and adpositions (see Jackendoff 1983; Zwarts & Winter 2000; van Riemsdijk & Huybregts 2002; Terzi 2005; Svenonius 2006, 2010; Cinque 2010; den Dikken 2010; Koopman 2010). We thus might expect to find variation across the languages under consideration with respect to the internal composition of the P layer. Second, the structure in (18) states that the complement of the P head is a non-finite clause, a term that I use pre-theoretically; I will not discuss the internal structure of these clauses in detail. This topic has received a lot of attention in the literature on the individual languages (see the references in Section 3). It is clear that there is a great deal of variation both within and across these languages in this respect. It seems plausible to assume, though, that the P head in (18) selects for a nominalized clause. However, its nominalized status is rather difficult to detect, as standard diagnostics like adjectival modification and pluralization are generally disallowed with event nominals in the languages under consideration. Thus, these diagnostics fail for independent reasons. Agreement and subject case assignment are not always reliable criteria either; but see Burukina (2024), who shows the parallelism between event nominals and the morphologically decomposable converbs in Mari, and suggests that converbs do contain a nominal projection.

For the reasons outlined above I consider it more fruitful to focus on the external syntax of the morphologically decomposable converbs, as it provides more straightforward evidence for the PP status of these phrases. Observe, for example, that distributionally, the relevant case markers can also select a nominal dependent. For instance, the illative case found on the Mari temporal ‘converb’ in (1) can take a DP complement (20). Likewise, the syntactically independent postposition *için* ‘for’, illustrated above in (19), can also combine with a noun phrase (21).

- (20) Me [Joškar-Ola-ške] kudal-êna.  
 1PL Yoshkar-Ola-ILL drive-PRS.1PL  
 ‘We’re driving to Yoshkar-Ola.’ [Meadow Mari; Riese, Bradley & Yefremova 2022, 82]

- (21) Bu kitab-ı [Ahmet için] al-dı-m.  
 this book-ACC Ahmet for buy-PST-1SG  
 ‘I bought this book for Ahmet.’ [Turkish; Kornfilt 1997, 67]

In what follows I will refer to the morphologically decomposable converbs as ‘clausal PPs’, since the complement of the P head is an extended verbal projection (cf. (18)). The aim of the next subsection will be to provide further evidence that clausal PPs show parallel behaviour to ‘phrasal PPs’, i.e., PPs, in which the P head selects a nominal dependent, as in (20)–(21).

## 4.2. Case studies

In this section I will present language-specific arguments supporting the PP analysis. I will zoom in on Turkish and Mari; specifically, I will discuss the non-finite clauses formed with *-DIK-DA* and *-DIK-ÇA* and with *-me-ške* and *-šê-la*, respectively.



The first diagnostic that will be applied is coordination. It will be tested whether the morphologically decomposable converbs, which I analyze as PPs, can be coordinated with phrasal PPs. The underlying assumption here is that coordination is possible between constituents of the same type. This idea is commonly referred to as the ‘Law of Coordination of Likes’ (LCL) in the generative syntactic literature (Chomsky 1957; Williams 1981); similar observations are also made in the typological studies (see Haspelmath 2007, 3). Since its original formulation, there has been a debate about the nature of the LCL: whether it is to be understood as a syntactic or rather as a semantic constraint (see Sag et al. 1985; Pullum & Zwicky 1986 and, more recently, Bruening & Al Khalaf 2020; Patejuk & Przepiórkowski 2023 for discussion). The empirical controversy is related to a limited number of well-defined classes of (apparent) exceptions to the LCL. For instance, it has been shown that PPs can be coordinated with *ly*-adverbs: *We walked slowly and with great care* (Sag et al. 1985, 140). Similar examples of coordination seem to be possible in the languages under consideration, too, as shown in (22) for Mari.<sup>6</sup>

- (22) Šokolad-əm tudo [pis-ən] da [kilogram dene] kočk-ən kert-eš.  
 chocolate-ACC 3SG quick-ADV and kilogram with eat-CVB can-PRS.3SG  
 ‘S/he can eat chocolate quickly and by the kilogram.’ [Mari; elicited 3/3]

It is unclear, though, whether such examples are genuine instances of coordination of unlikes. This is because of the morphological marking of adverbs in Mari. There are very few bare adverbs in Mari; the temporal ones, even the more lexicalized ones, contain a semantic case, the manner adverbs like the one in (22) are marked with the so-called instructive suffix *-ən*, which is formally identical to the genitive case (Riese, Bradley & Yefremova 2022, 304ff). In other words, it might turn out that these adverbs are underlyingly PPs, and there is thus no violation of the LCL. Therefore, in this paper I will go with the stronger hypothesis that a syntactic constraint on the types of the constituents in coordination is indeed operative in the languages under consideration; consequently, coordination can be used as a diagnostic to determine the PP status of the converbs in question. Coordination will also be shown to obey semantic constraints, in accordance with the cross-linguistic observations (see the discussion in Johannessen 1998, Ch. 7, for example).

The second diagnostic to be discussed is suspended affixation (SA). This is a process that deletes certain bound morpheme(s) on all conjuncts other than the final one, with the suspended affixes maintaining their semantic scope over all conjuncts. This is illustrated in (23): the locative case and the plural marker have been suspended on the first conjunct and appear only on the final conjunct.

- (23) ev ve dükkan-lar-da  
 house and shop-PL-LOC  
 ‘in houses and shops’ [Turkish; Kabak 2007, 335]

Starting with Lewis (1967), SA has attracted a lot of attention in the literature on Turkish: the phenomenon has been discussed extensively from both empirical and theoretical perspectives (see Orgun 1995; Kabak 2007; Broadwell 2008; Kornfilt 2012; Akkuş 2016, a.o.). Mari is also a

<sup>6</sup>Example (22) was modelled after Riese, Bradley and Yefremova (2022, 167).



language that has been argued to utilize SA; the phenomenon is much less investigated, though, with the only detailed study being Guseva & Weisser (2018).

SA can be used in order to show whether the case suffix on morphologically decomposable converbs realizes an independent functional head. If it is possible to suspend it to the exclusion of the non-finite suffix, this proves that the combination of the two is not morphologically opaque. As will be shown below, SA as a test is partly applicable to the two alleged converbs in Turkish. Nevertheless, the results make an interesting empirical contribution to the discussion of SA in Turkish, since, to the best of my knowledge, the two types of adverbial clauses have not been discussed in the studies on SA. As for Mari, it will be shown that this test is of limited applicability in the case of the two converb clauses. The purpose of reporting the findings is partly to highlight the issues related to SA that need to be further investigated: for example, it will be shown that much more interspeaker variation in SA is observed than previously discussed in Guseva & Weisser (2018). More generally, Mari is an endangered and understudied language and its morphosyntax is still a rather unexplored territory, thus, the results reported here can be informative for future studies, even though they did not prove particularly useful for the purposes of the present investigation.

**4.2.1. Turkish.** In this subsection, I will investigate the properties of *-DIKDA*-clauses and *-DIKÇA*-clauses. As was shown in Section 3, they are both morphologically segmentable. However, the two clause types differ with respect to agreement, which is available only in the former.

The first diagnostics I would like to discuss is coordination. Two examples are provided below. In (24), a *-DIKDA*-clause is coordinated with a phrasal PP, *öğleden sonar* ‘in the afternoon’. This example was accepted by one speaker and rejected by three. For the speakers who rejected it, the issue was rather semantic; these speakers preferred another non-finite clause instead. Importantly, the consultant who considered (24) to be well-formed also freely accepted similar sentences, e.g., (25). The latter example was judged as grammatical by one more speaker, on a slightly different reading: ‘after reading / having read a book’. Based on this evidence, I conclude that coordination with a phrasal PP is possible for *-DIKDA*-clauses, at least for some speakers.

(24) %[Öğle-den sonar] ve [antrenman yap-tığ-ım-da] ağrı hisset-ti-m.  
 noon-ABL after and training do-FACT.NMLZ-POSS.1SG-LOC pain feel-PST-1SG  
 ‘(The doctor asks when you experienced the pain.) I felt it in the afternoon and when I was exercising.’ [Turkish; elicited 1/4]

(25) [Uyku sıra-sın-da] ve [kitap oku-n-duğ-un-da] beyin-de  
 sleep time-POSS.3SG-LOC and book read-PASS-FACT.NMLZ-POSS.3SG-LOC brain-LOC  
 neler ol-ur?  
 what be-AOR  
 ‘What is happening in the brain during sleep and when/after reading a book?’ [Turkish; elicited 2/2]

Turning to *-DIKÇA*-clauses, we see that coordination with a PP is possible for all four speakers. These clauses can have a ‘whenever’ meaning (Kornfilt 1997, 72; Göksel & Kerslake 2005, 418), thus, semantically, they can be easily coordinated with phrasal PPs containing a universal quantifier, as in (26).



- (26) [Her kutlama-da / tatil-de] ve [misafir-ler gel-dik-çe] mutlu  
 every celebration-LOC holiday-LOC and guest-PL come.FACT.NMLZ-ADV happy  
 hissed-iyor-um.  
 feel-IMPF-1SG  
 ‘At every celebration/holiday and whenever guests come (to our place), I feel happy.’  
 [Turkish; elicited 4/4]

Next, let us move to suspended affixation. Example (23) illustrated the deletion of the locative case; this is relevant for the present discussion since the *-DIKDA*-clauses also feature the same case suffix. In (27), we find a sentence showing two coordinated *-DIKDA*-clauses. Three variants of this example were tested. The first showed no SA, i.e., the non-finite verbs in both conjuncts feature the following morphemes: Stem-Nmlz-Poss-Loc.<sup>7</sup> In addition, two types of SA were also tested. The first is when only the locative case is omitted, yielding Stem-Nmlz-Poss-Loc in the first conjunct. The second involves the deletion of both the case marker and the possessive morpheme, as a result of which we find Stem-Nmlz-Poss-Loc in the first conjunct. Importantly, unlike the former variant with SA, the latter was rejected by all four speakers. This means that SA can delete the case marker but not the possessive morphology in *-DIKDA*-clauses.

- (27) [Uçak-tan in-diğ-imiz-de / in-diğ-imiz /  
 plane-ABL go.down-FACT.NMLZ-POSS.1PL-LOC go.down-FACT.NMLZ-POSS.1PL  
 \*in-dik] ve [şehir merkez-i-ne arabay-la  
 go.down-FACT.NMLZ and city center-POSS.3SG-DAT car-INS  
 git-tiğ-imiz-de] kar yağ-ıyor-du.  
 drive-FACT.NMLZ-POSS.1PL-LOC snow fall-IMPF-PST.3SG  
 ‘When we came out the plane and when we were driving to the city center, it was  
 snowing.’ [Turkish; elicited 4/4]

I will now apply the same diagnostic to *-DIKÇA*-clauses. Example (28) illustrates two possibilities. The first one is to coordinate *-DIKÇA*-clauses without SA, i.e., the verbs in both conjuncts have the following shape: Stem-Nmlz-Adv.<sup>8</sup> Since *-DIKÇA*-clauses show no agreement, only one variant with SA is possible: the adverbializer *-ÇA* is suspended. The variant with SA was unanimously rejected by the speakers, though.

- (28) [Bursu-n devamet-tik-çe / \*devamet-tik] ve [alien  
 fellowship-POSS.2SG continue-FACT.NMLZ-ADV continue-FACT.NMLZ and parents  
 san-a (maddi olarak) yardım et-tik-çe] yoksulluk  
 you-DAT financial aspect help do-FACT.NMLZ-ADV poverty  
 çek-me-z-sin.  
 suffer-NEG-NEG.AOR-2SG  
 ‘As long as your fellowship continues and as long as your parents help you (financially),  
 you won’t suffer poverty.’ [Turkish; elicited 4/4]

<sup>7</sup>Example (27) was modelled after Göksel & Kerslake (2005, 415–416).

<sup>8</sup>Example (28) was modelled after Kornfilt (1997, 72).





Let us discuss these findings. First, the fact that the locative can be suspended in *-DIKDA*-clauses provides a strong argument in favour of the idea that the case marker realizes a separate functional head. However, two questions arise. First, one might ask why the second type of SA, i.e., deleting both the case and the possessive suffix, is ungrammatical. Second, given that SA is impossible with *-DIK-çA*, one might ask whether this constitutes evidence for treating it as a proper converb suffix.

Starting with the first question, there are two directions, from which one can approach the unacceptability of suspending both the possessive suffix and the case marker in (27). The first possible explanation is related to the general availability of SA with possessive morphology. This topic has been debated in the literature and interspeaker variation has been reported, too. For example, [Orgun \(1995\)](#) argues that suspending possessive morphology on plural nouns is ungrammatical, i.e., Stem-Pl-Poss-Case is disallowed on the non-final conjunct(s). This claim has been challenged by [Kabak \(2007, 337–339\)](#), though; [Kornfilt \(2012, 184\)](#) adds that suspending possessive morphology on singular nouns is perfectly fine. Another potential explanation for the ungrammaticality of Stem-Nmlz-Poss-Loe in (27) is the obligatoriness of agreement in *-DIKDA*-clauses. The two possible reasons might not be completely unrelated: one of the available analyses of SA in Turkish states that the output of SA should be a well-formed morphological word ([Kabak 2007](#)). In the same spirit, it could be proposed that SA should conform to syntactic well-formedness, too, and since *-DIKDA*-clauses obligatorily bear possessive morphology, its deletion results into ungrammaticality.

The second question is whether the unavailability of SA with *-DIK-çA* points to the conclusion that we are dealing with a morphologically opaque converb suffix. In my opinion, there might be independent reasons why SA fails. My data show that SA is unavailable with phrasal PPs headed by the adverbializer *-çA*. The adverbializer has several functions, e.g., it derives relational adjectives, which can also be used adverbially, as in (29), and it can be added to pluralized nouns to express a large amount, as in (30) (other functions of this suffix are illustrated in [Göksel & Kerslake 2005, 57–58, 191](#); the semantic differences between phrasal and clausal PPs with *-çA* will be discussed in Section 6). In both contexts, suspending the adverbializer leads to unacceptability (the speakers note that (30) is perhaps slightly better than (29), but they would not produce it).<sup>9</sup>

(29) Osman [çocuk-ça / \*çocuk] ve [aptal-ca] davran-ıyor.  
 Osman child-ADV child and idiot-ADV behave-IMPF.3SG  
 ‘Osman is behaving childishly and idiotically.’ [Turkish; elicited 2/2]

(30) Bu mektub-u [hafta-lar-ca / ??hafta-lar] ve [ay-lar-ca] bekle-miş-ti-k.  
 this letter-ACC week-PL-ADV week-PL and month-PL-ADV wait-EVID-PST-1SG  
 ‘We had waited weeks and months for this letter.’ [Turkish; elicited 2/2]

It is noteworthy that there has been some controversy whether SA is generally possible with derivational morphology in Turkish. For example, [Akkuş \(2016\)](#) presents attested examples obtained from internet searches that show SA with various derivational suffixes, including *-çA*. In contrast, [Kabak \(2007\)](#) and [Kornfilt \(1997\)](#) argue that SA applies to inflectional markers

<sup>9</sup>(29) and (30) were modelled after [Göksel & Kerslake \(2005, 191\)](#).



but is unavailable with derivational morphology. Given that the adverbializer  $-\zeta A$  is treated as a derivational suffix in the descriptive grammars (see Göksel & Kerlake 2005, 57–58, 191), the findings in (29) and (30) come as no surprise under these accounts of SA. I would like to emphasize two points here. First, as far as SA is concerned, according to my data  $-DIK\zeta A$ -clauses match the phrasal counterparts with  $-\zeta A$ . Second, although  $-DIK\zeta A$ -clauses do not show agreement interleaving the two suffixes and do not allow SA, they can be coordinated with PPs, in other words, their external distribution is PP-like.

To recap, we have seen that both clause types can be coordinated with phrasal PPs (with some interspeaker variation observed in the case of  $-DIK-DA$ ). SA is available with  $-DIKDA$ -clauses (it can only delete the case marker but not the possessive agreement) but not with  $-DIK\zeta A$ -clauses. The availability of agreement interleaving the non-finite suffix and the case marker as well as the availability of SA clearly suggest that the case marker in  $-DIK-DA$  is a syntactically independent head. In the case of  $-DIK-\zeta A$  such evidence is not available, though this is most likely due to independent factors (the general unavailability of SA with  $-\zeta A$ ).

**4.2.2. Mari.** This section focuses on the clauses formed with  $me\text{-}\check{s}ke$  and  $\check{s}\hat{a}\text{-}la$ . As already said in Section 3, both clause types can optionally show agreement. In the case of  $\check{s}\hat{a}\text{-}la$ , the agreement morphology interleaves the participial suffix and the case marker; this provides evidence that we are not dealing with a morphologically opaque converb suffix. At the same time, it was also noted that the morphological segmentability of  $\check{s}\hat{a}\text{-}la$  is slightly more problematic because the non-finite suffix  $-\check{s}E$ , unlike its counterpart  $-mE$  in  $me\text{-}\check{s}ke$ , cannot be used as an argument nominalization in present-day Mari. Below I will discuss the same diagnostics as in the previous case study: coordination and suspended affixation.

Let us begin with coordination. Mari employs two conjunctions with the meaning ‘and’, *den* and *da*. The division of labour between them is not fully understood. Pengitov (1961, 294) argues that *da* conjoins both clauses and phrases, whereas *den* connects phrases. Riese et al. (2017, 103) claim that *den* is used exhaustively for the coordination of noun phrases, while *da* can be used for all kinds of phrases, including noun phrases. According to my data, PPs are coordinated only with *da*, as shown in (31). On a par with phrasal PPs, ‘converbs’ can only be coordinated with this conjunction, as illustrated for *me\check{s}ke*-clauses in (32).

(31) Škol-ãšto [urok godãm] \*den / da [urok deč ßara] lud-aš kül-eš.  
 school-INE class during and and class after read-INF must-PRS.3SG  
 ‘At school, one must read in class and after class.’ [Mari; elicited 4/4]

(32) [Urok tũnal-me-ške] \*den / da [tunãktãšo tol-me-ške], klass-ãšte  
 class begin-NMLZ-ILL and and teacher come-NMLZ-ILL classroom-INE  
 doska-m üšt-sa!  
 blackboard-ACC wipe-IMP.2PL  
 ‘Before the class begins and the teacher comes, rub off the blackboard!’  
 [Mari; elicited 4/4]

Having presented the baseline of how coordination works in Mari, let us move to the question of whether it is possible to coordinate the two ‘converbs’ with phrasal PPs. Coordinating *me\check{s}ke*-



clauses is unproblematic: these clausal PPs can be easily coordinated with other temporal PPs. This is illustrated in (33).

- (33) [Paša deč̣ βara] da [una tol-me-ške], iziš kan-ena.  
 work after and guest come-NMLZ-ILL a.bit rest-PRS.1PL  
 ‘After work and before the guests come, we will rest a bit.’ [Mari; elicited 4/4]

The coordination of *šəla*-clauses with phrasal PPs proved to be slightly more difficult. The example that was judged grammatical by all four speakers is given in (34).<sup>10</sup> Coordination with temporal PPs like in (35) was only acceptable for the speakers of Eastern Mari. The speakers of Meadow Mari preferred to substitute the *šəla*-clause with a non-finite adverbial clause introduced by *godəm* ‘during’.

- (34) [Pl’až-əšte] da [metro dene kudal-šə-la] šukən kniga-m lud-ət.  
 beach-INE and metro with travel-PTCP-COMPR many book-ACC read-PRS.3PL  
 ‘Many people read a book on the beach and when travelling by metro.’ [Mari; elicited 4/4]

- (35) %[Omə-što] da [kniga-m lud-šə-la] βuj(torək)-əšto mo kaja?  
 sleep-INE and book-ACC read-PTCP-COMPR brain-INE what happen.PRS.3SG  
 ‘What is happening in the brain during sleep and while reading?’ [Mari; elicited 2/4]

Riese, Bradley & Yefremova (2022, 273) claim that, as far as their semantics is concerned, *šəla*-clauses and *godəm*-clauses can be used interchangeably. I would tentatively propose that despite being usually described as having a temporal meaning, *šəla*-clauses rather encode manner or circumstantial adverbials (which are contemporaneous with the matrix clause), at least for some speakers. This might explain why they cannot be coordinated with proper temporal PPs. I will leave this question as well as the question of interspeaker variation open for future research. The most important point for the present paper is that based on the coordination test, the syntactic distribution of both *meške*-clauses and *šəla*-clauses patterns with the one of PPs.

Next, let us move to the second diagnostic, suspended affixation. Mari has been shown to utilize SA, similarly to the neighbouring Turkic languages that has been influenced by (Luu-tonen 1997). In order to obtain a basis for comparison, I will first summarize the main empirical observations of Guseva & Weisser’s (2018) study. The authors claim that SA is possible only with *den* but not with *da*. Example (36) illustrates that SA can delete the plural marker, the possessive morphology and the illative case on the first conjunct. The most peculiar examples of SA in Mari are the ones like (37). This sentence violates one of the most robust generalizations about SA, according to which deleting only a subset of the affixes should always target the ones occurring at the right edge of the non-final conjunct(s). Crucially, in (37), the illative case is suspended, despite the fact that it is not the rightmost suffix.

<sup>10</sup>Example (34) was modelled after Riese, Bradley & Yefremova (2022, 272).



- (36) Nuno memnan [pört] den [sad-βlak-əškə-na] tol-ən-ət.  
 3PL 1PL.GEN house and garden-PL-ILL-POSS.1PL come-PRF-3PL  
 ‘They came to our houses and our gardens.’  
 [Meadow Mari; Guseva & Weisser 2018, 1099]
- (37) Pjotr kart-əm [məjən pərdəž-em] den [omsa-škə-že] pižəktə.  
 Peter map-ACC 1SG.GEN door-POSS.1SG and wall-ILL-POSS.1SG pin.PRS.3SG  
 ‘Peter pins maps to my door and his wall.’  
 [Meadow Mari; Guseva & Weisser 2018, 1100]

In order to apply this diagnostic to the converb clauses, I first discussed the baseline examples with my consultants. My preliminary data differ from the judgements reported in Guseva & Weisser (2018). First, regarding the conjunctions, one speaker accepts SA only with *den*, while the other three allow it with *da*, too (SA with *da* is also reported in Luutonen 1997, 26). What I also noticed is that the case suffixes do scope over all conjuncts, but the scope of the plural marker in SA shows variation across the speakers (it may or may not scope over the non-final conjunct(s)). This is most likely related to the interpretive properties of bare nouns in Mari and the general optionality of the plural marker (see Simonenko & Leontyev 2012; Shmatova & Chernigovskaya 2012). Finally, my consultants generally dispreferred examples like (37). Based on these findings, it seems that the empirical landscape of SA in Mari is yet to be fully explored.

Despite these uncertainties regarding the general properties of SA in Mari, below I report the findings regarding the possibility of suspending affixation in converb clauses. Recall that these clauses can only be coordinated with *da*; thus, testing SA with converbs is only possible with the three speakers who allow SA with *da* (unsurprisingly, the fourth speaker who allows SA only with *den* rejected the examples presented below). Among these three speakers, only one accepted the SA variant of (32) given in (38). However, SA in *šəla*-clauses is not well-formed even for this speaker; and the sentences do not improve depending on the presence or absence of agreement on the first conjunct, cf. (39). (The examples in (38) and (39) are accepted by all speakers if the verb forms in the first conjuncts are *tüŋal-me-ške*, *kij-šə-la* and *košt-š-em-la*, respectively.)

- (38) %[Urok **tüŋal-me**] da [tunəktəšo **tol-me-ške**], klass-əšte doska-m  
 class begin-NMLZ and teacher come-NMLZ-ILL classroom-INE blackboard-ACC  
 üšt-sa!  
 wipe-IMP.2PL  
 Intended: ‘Before the class begins and the teacher comes, rub off the blackboard!’  
 [Mari; elicited 1/4]
- (39) a. \*[P]’až-əšte **kij-še**] da [metro dene **kudal-šə-la**] šukən kniga-m  
 beach-INE lie-PTCP and metro with travel-PTCP-COMPR many book-ACC  
 lud-ət.  
 read-PRS.3PL  
 Intended: ‘Many people read books when they are on the beach and when they take the metro.’  
 [Mari; elicited 0/4]



- b. \**[Kužu žap košt-š-em] da [βelosiped dene kudal-š-em-la],*  
 long time walk-PTCP-POSS.1SG and bicycle with ride-PTCP-POSS.1SG-COMPR  
*jol-em noja.*  
 leg-POSS.1SG get.tired.PRS.3SG

Intended: ‘When I walk for a long time and when I ride the bicycle, my legs get tired.’

[Mari; elicited 0/4]

Given that the patterns of SA are not fully clear and that the interspeaker variation in this domain is far more extensive than reported in the existing literature, it is better to make very careful claims about the findings. Overall, the results are rather inconclusive. For three of the speakers, SA is impossible with both converbs. For the fourth speaker, there seems to be a contrast between *me-ške* and *šê-la*. This contrast might be related to the fact that the non-finite suffix *-mE* can be used as an argument nominalization, while *-šE* in *šê-la* is argued to go back to a nominalization diachronically but has no such use synchronically. Thus, one might tentatively suggest that suspending the case marker in *šê-la* would give rise to a phrase that is not well-formed. The detailed investigation of SA with converbs needs to be left for future research, which will also shed light on the more general properties of SA in Mari. Importantly, the coordination test has proven as a good diagnostic for demonstrating the PP status of both clause types.

### 4.3. Interim summary

To recap, the cases studies dealing with Turkish and Mari focused on two diagnostics. The first one was coordination. The results showed that the converb clauses formed with *-DIK-DA*, *-DIK-çA*, *-me-ške* and *-šê-la* can be coordinated with phrasal PPs. This constituted an argument for analysing them as PPs. The second test was suspended affixation. Together with the possibility of agreement interleaving the non-finite suffix and the case marker, SA can be used to determine whether the case marker spells out a separate functional head. This diagnostic proved to be less informative for the present study, though, mostly due to independent factors. The results are summarized in Table 1.

In the next section, I will explore some general predictions of the PP analysis.

## 5. PREDICTIONS OF THE PP ANALYSIS

The discussion of converbs in Uralic and Turkic started with the observation that many of them are morphologically segmentable, as was shown in Section 3. This led to the proposal, spelled

**Table 1.** The diagnostics applied to the converb clauses discussed in Case Study 1 and 2

	Turkish		Mari	
	-DIK-DA	-DIK-çA	-me-ške	-šê-la
Coordination with PPs	%	yes	yes	yes
Suspended affixation	yes	no	% (?)	no



out in Section 4.1, according to which these converbs are to be analyzed as PPs. This proposal was supported by two case studies. The present section focuses on the predictions of the PP analysis. The main pieces of evidence come from the parallelism between phrasal PPs and clausal PPs. Specifically, I will look into the syntactic distribution of the clausal PPs. Similarly to Section 3, the present section will also draw empirical support from various Uralic and Turkic languages. Additionally, it will present further evidence in favour of the PP analysis based on two of the clause types that were discussed in the case studies.

The point of departure will be the syntactic distribution of phrasal PPs. First, it is a well-known fact that although PPs are much more commonly used as adjuncts, they are not precluded from being subcategorized. These two types of PPs are illustrated in (40):

- (40) He decided on the boat on the train. (Chomsky 1965, 109)

The second PP, *on the train*, is an adjunct, whereas the first is subcategorized by *decide*. It is language-specific what kind of PPs can be subcategorized by the verbs. There are several types of selected PPs discussed in the literature, for example, complements of verbs like *decide (on)*, *count (on)*, *believe (in)*, etc., *to*-PPs encoding participants as well as locative/path arguments of complex transitive verbs (see Neeleman 1997; Cinque 2006; Merchant 2019; Rákosi 2021, a.o.). Based on this general property of phrasal PPs, we can formulate the following prediction regarding the syntactic distribution of clausal PPs:

- (41) *Prediction 1:*  
Clausal PPs can be subcategorized by the matrix verb.

Second, it is also widely accepted that PPs do not generally occur in subject position (see Neeleman 1997 for theoretical arguments). In connection with this it is important to discuss the so-called ‘honorary NPs’ in English (Safir 1983), a construction where a PP (seemingly) behaves like a subject (see also Stowell 1981; Levine 1989; Bresnan 1994, a.o.). As evidenced by (42a), the PP has the distribution of a noun phrase and appears in subject-auxiliary inversion structures. Another ‘nouny’ property of PP subjects is that they trigger plural agreement on the verb (42b). PP subjects have limited distribution, though: they are mostly attested with the verb *be* and are ruled out when the context does not impose a temporal or locative interpretation on the subject (42c). In light of this, Bresnan (1994) suggests that PP subjects are in fact noun phrases with ellipsis (43).

- (42) a. Is [under the bed] a good place to hide? (Bresnan 1994, 110)  
b. [Under the bed] and [in the fireplace] are not the best (combination of) places to leave your toys. (Levine 1989, 1015)  
c. \*[Under the bed] pleased the cat. (Safir 1983, 731)
- (43) [<sub>NP</sub> (A PLACE) [<sub>PP</sub> under the bed]] (Bresnan 1994, 110)

Thus, we see that PP subjects are exceptionally attested in English but their distribution is quite limited, and generally, PPs are not expected to occur as subjects. Based on this, we can formulate the second prediction regarding the distribution of clausal PPs:



- (44) *Prediction 2:*  
 Clausal PPs will not occur as subjects, unless the language in question allows for phrasal PP subjects.

In the following two subsections I will provide evidence that the clausal PPs in Uralic and Turkic do obey either of these two predictions.

### 5.1. Subcategorized PPs

*Prediction 1* states that the converb clauses analyzable as PPs can be subcategorized by the matrix verb, on a par with phrasal PPs. Below I will present two pieces of support in favour of this.

Let us first discuss the Udmurt *emen-* and *emjś-*clauses. We have already seen that they can be used as cause/reason adjuncts (see (5) and (6) above). But these clauses can also be arguments. For example, the verb *geržaškini* takes an instrumental-marked argument, which can be a clausal one, as shown in (45). In this example, the non-finite clause does not have a cause/reason meaning; rather, the sentence means ‘something is connected with/related to something’. Similarly, *emjś-*clauses can be selected by verbs that take an elative-marked argument, e.g., ‘something stems/arises/comes from something’ or ‘to be afraid of something’, the latter being illustrated in (46).

- (45) So geržašk-emjn [kivaltis-jos-mj-len ogkijis uža-nj  
 3SG connect.INTR-PASS authority-PL-POSS.1PL-GEN together work-INF  
 bigatj-mte-jenj-zj].  
 be.able-NEG.NMLZ-INS-POSS.3PL  
 ‘This is connected with the inability of our authorities to work together.’  
 [Udmurt Corpus, Udmurt dunne, 2009.01.16, as cited in Georgieva 2018]

- (46) [Nj]pi-os-sj-len udmurt lu-em-įstj-zj] čemges  
 child-PL-POSS.3PL-GEN Udmurt be(come)-NMLZ-ELA-POSS.3PL more.often  
 kįškalo, leša, anaj-ataj-os-sj.  
 be.afraid.PRS.3PL probably mother-father-PL-POSS.3PL  
 ‘It is probably more often [the case that] the parents are afraid of their children becoming Udmurts.’  
 [Udmurt Corpus, Udmurt dunne, 2007.03.13, as cited in Georgieva 2018]

The distinction between subcategorized and non-subcategorized *emen-* and *emjś-*clauses is not merely a semantic one. As was shown in my earlier work (Georgieva 2018, 78–80), corpus data reveal that there is a strong correlation related to the subject’s case-marking: adjunct *emen-* and *emjś-*clauses tend to have nominative subjects, whereas the argumental ones have genitive subjects (compare (5) and (6) with (45) and (46), respectively). It has also been shown that nominative case-marking is the common pattern in non-finite adverbial clauses; in contrast, the subjects of non-finite argument clauses have been argued to be genitive-marked (see Dékány & Georgieva 2020). Thus, the difference between (5)–(6), on the one hand, and (45)–(46), on the other, is very much in line with the observations regarding the subject’s case-marking: the



former are adjunct PPs and thus have nominative subjects, whereas the latter are argumental PPs and have genitive-marked subjects.<sup>11</sup>

This peculiar case-alternation raises at least two questions, as pointed out by the anonymous reviewers. First, as far as clausal PPs are concerned, one might wonder how to account for the subject's case-marking. It could be hypothesized, for example, that the raising to Spec,DP that the external argument undergoes in argument nominalizations (see [Dékány & Georgieva 2020](#)) is unavailable when the nominalization is used in adjunct position and so nominative is assigned lower in the verb phrase (as a default case) (see the discussion in [Georgieva 2018](#), Ch. 4 about the status of the nominative case (being default or structural case) in the Udmurt non-finite adverbial clauses). However, I would like to emphasize that in this paper I present the facts related to the subject's case-marking as a merely descriptive generalization, without making a specific claim about how case is assigned to the subject. Second, the question is whether we see the same case alternations in phrasal PPs in Turkic and Uralic. Indeed, the nominal dependents of Ps can be either nominative- or genitive-marked. However, this is most likely governed by other factors. Specifically, it has been shown that the nominal dependent can either sit in the complement position of P or be introduced as a possessor of a (silent) nominal complement (see the references listed at the beginning of Section 4). A recent analysis of phrasal PPs in Mari has tied the nominative/genitive alternation precisely to these two structural possibilities ([Burukina 2023b](#)). But since the case alternations in clausal PPs may be due to different factors (e.g., the (un)availability of movement to Spec,DP), it is not expected that phrasal and clausal PPs should show the same case alternations. As said above, the nominative/genitive alternation was brought up here primarily to support the distinction between subcategorized and non-subcategorized *emen-* and *emiš-*clauses and the present analysis does not predict that phrasal PPs should show the same case alternation.

I would also like to address two more general objections raised by anonymous reviewers. The first one is that the argument about the PP status of the clauses in (45) and (46) would be more convincing if the predicates in question selected only a PP, but not other types of arguments. To the best of my knowledge, this does hold for *geržáškini*. The verb *kjškanj* 'to be afraid', however, can select various types of arguments: nominalizations, infinitives or finite complement clauses (see [Serdobolskaya et al. 2012](#)), just like in English. But importantly, the clausal PPs in (46) differ from finite CPs and infinitives in their formal properties: from the former by lacking a complementizer and from the latter by showing agreement. Thus, it seems implausible that all of these complements are constituents of the same type. Moreover, there is compelling cross-linguistic evidence that even if a predicate can take various complements, they are not alike, both formally and semantically, e.g., *forget to* vs. *forget + -ing*, thus, they instantiate different complementation strategies (see [Wurbrand & Lohninger 2023](#) for discussion). Semantic differences between the various types of complement clauses have been reported for Udmurt as well: regarding their temporal orientation, factivity, and pragmatic properties ([Serdobolskaya et al. 2012](#); [Klumpp 2016](#); [Georgieva 2018](#)).

<sup>11</sup>The subject's case-marking in non-finite clauses has been discussed at length in the literature on Turkic languages, too, and it seems that the greatest deal of variation between nominative and genitive subjects is observed precisely in adverbial clauses (see [Kornfilt 2001](#), 70–78, 2003; [Sahan 2002](#); [Asarina 2011](#); [Ötött-Kovács 2016, 2018](#)). To the best of my knowledge, adverbial clauses have not been investigated in light of the distinction between subcategorized and non-subcategorized PPs, although this might be a relevant parameter. I leave this question open for future research.





The second objection concerns the morphologically non-decomposable converbs. Consider the Mishar Tatar converb *-Ip*, which was already mentioned in Section 3. Apart from its use as a manner/temporal adjunct, it can be selected, typically by phasal predicates, as in (47), and can also participate in various aspectual constructions (Tatevosov, Pazelskaya & Suleymanov 2017; Grashchenkov 2017).

- (47) Min pečän čaby-p beteräm.  
 1SG hay mow-CVB finish.IMPF.1SG  
 ‘I’m finishing mowing the hay.’

[Mishar Tatar; Tatevosov, Pazelskaya & Suleymanov 2017, 556]

The morphologically non-decomposable converbs in Udmurt and Mari, *-sa* and *-n*, respectively, can also be subcategorized (Serdobolskaya et al. 2012). Importantly, they can only be complements of certain phasal and modal verbs, e.g., *bidtini* ‘to finish’ in Udmurt. Obviously, this does not (necessarily) mean that the morphologically non-decomposable converbs are also PPs; the two predictions explored in this section focus on the morphologically decomposable ones, in the case of which we also found independent syntactic evidence for their PP status. But I would like to emphasize that selection highlights another difference between the two types of converbs. Specifically, unlike the morphologically non-decomposable converbs, the clausal PPs are arguments only of predicates standing higher on the complementation scale, e.g., emotives like ‘be afraid’.<sup>12</sup> Thus, the two types of converbs have distinct distribution. This fact does not directly provide support for the PP analysis of morphologically decomposable converbs but it can be thought to indicate differences in clause size comparing to the morphologically non-decomposable converbs. It is well-known that phasal and modal predicates take complements that are small in size, while emotives take bigger complements (a similar situation is also observed with the different types of English infinitives; see also Wurmbrand & Lohninger 2023, 212ff. for a broader discussion). In sum, the fact that morphologically non-decomposable converbs can also be selected is not problematic for the present proposal.

Finnish provides further support for the distinction between adjunct and argumental PPs. As was shown in Section 3, the so-called third infinitives in Finnish are non-finite clauses topped off by a semantic case. Nevertheless, based on their syntactic distribution, some of these infinitives were analyzed as arguments, while others were argued to be converbs (Ylikoski 2003). I suggested that all of these non-finite clauses are PPs. Furthermore, they can be subcategorized or non-subcategorized. Toivonen (1995) demonstrates that the two groups show different behaviour with respect to (sub)extraction.<sup>13</sup>

- (48) a. ??Mitä; Pekka elää [kitjoitta-ma-lla t<sub>i</sub>]?  
 what.PART Pekka live.PRS.3SG write-NFIN-ADE  
 ‘What does Pekka live on writing?’

<sup>12</sup>Finnish seems to be an exception to this because phasal verbs select for the morphologically decomposable non-finites, cf. (9) and (10). But these predicates do not combine with morphologically non-decomposable forms, so again, we see a very clear ‘division of labour’.

<sup>13</sup>Other types of movement (VP fronting, remnant movement) from the subcategorized PPs are discussed in Vainikka (1989, 256–258).



- b. \*Mitä<sub>i</sub> hän läht-i [syö-mä-ttä t<sub>i</sub>]?  
 what.PART 3SG leave-PST.3SG eat-NFIN-ABE  
 ‘What did s/he leave without eating?’ [Finnish; Toivonen 1995, 52–53]
- (49) a. Mitä<sub>i</sub> minä rupean [pese-mä-än t<sub>i</sub>]?  
 what.PART 1SG begin.PRS.1SG wash-NFIN-ILL  
 ‘What do I begin to wash?’
- b. Mitä<sub>i</sub> Pekka palas-i [osta-ma-sta t<sub>i</sub>]?  
 what.PART Pekka return-PST.3SG buy-NFIN-ELA  
 ‘What did Pekka return from buying?’
- c. Mitä<sub>i</sub> Pekka istuu [luke-ma-ssa t<sub>i</sub>]?  
 what.PART Pekka sit.PRS.3SG read-NFIN-INE  
 ‘What does Pekka sit reading?’ [Finnish; Toivonen 1995, 50–51]

These data show that (sub)extraction is banned from the adjunct PPs in (48), but it is allowed from the argumental ones in (49). In my view, the pattern observed cannot be satisfactorily accounted for if the non-finite forms in (48) are simply labelled as ‘converbs’ and the ones in (49) as ‘infinitives’; under such an account, the contrast would be stipulated at best. The unacceptability of (48) is rather to be explained as an adjunct island violation. In fact, the (im)possibility of extraction shown in (48)–(49) very much resembles the facts observed for English. Consider the contrast between (50) and (51):

- (50) a. ??Who<sub>i</sub> did you dance despite Betsy talking to t<sub>i</sub>?  
 b. ??What<sub>i</sub> did you buy it instead of Betsy selling t<sub>i</sub>?  
 c. ??Who<sub>i</sub> did you leave without Betsy talking to t<sub>i</sub>? (Johnson 1988, 596)
- (51) a. Who<sub>i</sub> did you bet on Mittie liking t<sub>i</sub>?  
 b. Who<sub>i</sub> did you talk about Liz visiting t<sub>i</sub>?  
 c. Who<sub>i</sub> did you approve of Betsy seeing t<sub>i</sub>? (Johnson 1988, 604)

What is puzzling is the acceptability of (51) – as it is well-known that extraction from PPs is generally not permitted – and it has been explained with the fact that the PPs are subcategorized. Thus, it seems that in both Finnish and English extraction is permitted from subcategorized PPs, as in (49) and (51), respectively, but it is banned from non-subcategorized ones, as evidenced by (48) and (50), respectively. The parallel with English is also important because the gerunds in (50) and (51) are complements of syntactically independent Ps; thus, the PP status of these constituents is indisputable. The difference is that the P head is occupied by a case suffix in Finnish. Further support for the PP analysis of the Finnish forms comes from the fact that the same verbs can subcategorize for either a phrasal or a clausal PP, as shown in (52) (see Vainikka 1989, 249–253 for more examples).



- (52) Pekka rupe-si työ-hön / teke-mä-än työ-tä.  
 Pekka start-PST.3SG job-ILL do-NFIN-ILL work-PART  
 ‘Pekka started the job / to do (some) work.’ [Finnish; Vainikka 1989, 252]

To recap, the existing literature has reported evidence for certain morphologically decomposable converbs of individual languages that suggests that they can be used as arguments. This conforms to the general behaviour of PPs and thus provides support for the PP analysis of the morphologically decomposable converbs.

## 5.2. PP subjects

In this subsection I will provide evidence that *Prediction 2* is also born out. According to this prediction, clausal PPs are not likely to occur as subjects, unless phrasal PP subjects are also allowed. Again, the parallelism between phrasal PPs and clausal PPs will play the key role here. We thus expect that if a language disallows phrasal PPs as subjects, it will also prohibit clausal PPs to appear in subject position.

The Uralic and Turkic languages do provide empirical support for this prediction. Specifically, I will discuss two of the morphologically segmentable converbs from the case studies on Turkish and Mari, *-DIK-DA* and *-šâ-la*, respectively. I will present further evidence that these two clause types have the syntactic distribution of PPs. It will be shown that they are disallowed in subject position, on a par with phrasal PPs. These two clause types are ideal candidates to test the validity of *Prediction 2* because they feature Ps with static semantics, which gives rise to the meaning of ‘at’, ‘as’, ‘during’ in temporal clauses – as was shown above for English, PP subjects are typically attested in copular clauses and the PP has locative/temporal meaning. Furthermore, I will also discuss some Finnish data that also align with *Prediction 2*.

Let us begin with Turkish. The baseline is that subjects must be noun phrases (in the nominative case); the locative case-marked PPs with locative or temporal semantics are disallowed. This is evidenced by the difference in grammaticality between (53) and (54). The unacceptability of (54) is also in sharp contrast with the English PP subject construction (cf. (42) above).

- (53) a. [<sub>NP</sub> Yatağ-in alt-ı] ve [<sub>NP</sub> şöinen-in yan-ı]  
 bed-GEN bottom-POSS.3SG.NOM and fireplace-GEN side-POSS.3SG.NOM  
 oyuncak-lar-ı bırak-mak için iyi yer-ler değil.  
 toy-PL-ACC leave-INF for good place-PL NEG  
 ‘The bed’s bottom and the fireplace’s side are not good places to leave the toys.’
- b. [<sub>NP</sub> Saat üç] buluş-mak için en iyi saat-ti.  
 three hour.NOM meet-INF for most good time-PST.3SG  
 ‘Three o’clock was the best time to meet.’ [Turkish; elicited 4/4]
- (54) a. \* [<sub>PP</sub> Yatağ-in alt-ın-da] ve [<sub>PP</sub> şöinen-in yan-ın-da]  
 bed-GEN bottom-POSS.3SG-LOC and fireplace-GEN side-POSS.3SG-LOC  
 oyuncak-lar-ı bırak-mak için iyi yer-ler değil.  
 toy-PL-ACC leave-INF for good place-PL NEG  
 Intended: ‘Under the bed and next to the fireplace are not good places to leave the toys.’



- b. \*<sub>[PP</sub> Saat üç-te] buluş-mak için en iyi saat-ti.  
 three hour-LOC meet-INF for most good time-PST.3SG  
 Intended: ‘At 3 o’clock was the best time to meet.’ [Turkish; elicited 4/4]

Similarly to the locative case-marked PPs in (54), *-DIKDA*-clauses are also banned in subject position (55). In order to express the intended meaning, the factive nominalization is used as a relative clause modifying the noun *zaman* ‘time’ (56), thus, we have a complex noun phrase in subject position.

- (55) \*<sub>[PP</sub> Uçağ-in deniz üst-ün-den uç-tuğ-un-da] fotoğraf çek-mek için en iyi zaman-dı.  
 plane-GEN sea over-POSS.3SG-ABL fly-FACT.NMLZ-POSS.3SG-LOC photo.ACC  
 take-INF for most good time-PST.3SG  
 Intended: ‘When the plane was flying above the sea was the best time to take photos.’  
 [Turkish; elicited 4/4]

- (56) <sub>[NP [RC</sub> Uçağ-in deniz üst-ün-den uç-tuğ-u] zaman] fotoğraf çek-mek için en iyi zaman-dı.  
 plane-GEN sea above-POSS.3SG-ABL fly-FACT.NMLZ-POSS.3SG time.NOM  
 photo.ACC take-INF for most good time-PST.3SG  
 ‘The time when the plane was flying over the sea was the best time to take photos.’  
 [Turkish; elicited 2: acceptable, 2: marked, but acceptable]

Next, I turn to the Mari *šəla*-clauses. Recall that they can encode temporal overlap (‘when’- or ‘as’-clauses) (cf. (3) and Section 4.2). The corresponding phrasal PPs with the comparative case mean ‘like/as’ (Riese et al. 2022, 87–90). According to the judgements of my consultants, neither phrasal nor clausal PPs with the comparative case can stand in subject position, as evidenced by (57) and (58), respectively.<sup>14,15</sup>

- (57) \*<sub>[PP</sub> Tulâk βatâ-la] da <sub>[PP</sub> pašamâdê-la] peš nele pürêmaš əl’əć.  
 solitary wife-COMPR and jobless-COMPR very difficult fate be.PST.3PL  
 (Context: Someone is telling about their life.) Intended: ‘As a widow/Widowed and without a job were very difficult fates.’ [Mari; elicited 3/3]

<sup>14</sup>(57) is similar in meaning to the examples with ‘honorary NPs’, in which the subject is an adjectival phrase: *Angry/unwanted is a terrible way to feel* (Safir 1983, 731).

<sup>15</sup>Testing whether the phrasal and clausal PPs with the comparative case can be subjects proved slightly more complicated, because Mari is a *pro*-drop language, thus, the speakers could in principle interpret the examples as containing a null subject, in which case the PPs are (clausal) modifiers. This potential problem was circumvented by coordinating two PPs and using 3PL inflection on the copula.



- (58) \* [PP Samolet-ən teŋəz ümbalne čonešt-en ertə-šə-la] da [PP puš dene  
 airplane-GEN sea on.top fly-CVB pass-PTCP-COMPR and boat with  
 kajə-šə-la] – foto-m βojz-aš en saj žap əl'əč.  
 travel-PTCP-COMPR photo-ACC record-INF most good time be.PST.3PL  
 Intended: 'When the plane was flying above the sea and when travelling by boat were  
 the best times to take photos.' [Mari; elicited 3/3]

Subjects in Mari need to be noun phrases in the nominative case and so the judgements improve if the intended meaning of (57) and (58) is rendered as (59a) and (59b), respectively. In these examples, the subject is a deverbal nominal modified by the phrasal PP (59a) or a complex event nominal (59b). These examples were judged as not perfectly natural by the speakers, though. The most natural ways of expressing the intended meanings is by using an infinitive, with a PP modifier, and an adjectival predicate, as in (60).<sup>16</sup>

- (59) a. ?[NP Tulək batə-la il-əme] – peš nele pürəmaš.  
 solitary wife-COMPR live-NMLZ very difficult fate  
 'The life as a widow is a very difficult fate.'
- b. ?[NP Samolet-ən teŋəz ümbalne čonešt-en ertə-mə-že] – foto-m  
 airplane-GEN sea on.top fly-CVB pass-NMLZ-POSS.3SG photo-ACC  
 βojz-aš en saj žap əle.  
 record-INF most good time be.PST.3SG  
 'The plane's flying above the sea was the best time to take photos.' [Mari; elicited 4/4]
- (60) a. [InfP [PP Tulək batə-la] il-aš] peš nele.  
 solitary wife-COMPR live-INF very difficult  
 'To live as a widow is very difficult.'
- b. [InfP [PP Samolet-ən teŋəz ümbalne čonešt-en ertə-mə-že godəm]  
 airplane-GEN sea on.top fly-CVB pass-NMLZ-POSS.3SG during  
 foto-m βojz-aš] en saj žap əle.  
 photo-ACC record-INF most good time be.PST.3SG  
 'To take photos when the plane was flying above the sea was the best time.'  
 [Mari; elicited 4/4]

Based on the Turkish and Mari data, I conclude that similarly to their phrasal counterparts, *-DIKDA*-clauses and *-šəla*-clauses cannot occupy the subject position. The anonymous reviewers correctly point out that this cannot be taken as direct evidence for the PP status of these clauses, as other types of constituents cannot be subjects either. Indeed, for languages, in which PP subjects are generally disallowed, *Prediction 2* clearly demonstrates the parallelism between the alleged converbs and the respective phrasal PPs but cannot be taken as a definitive argument

<sup>16</sup>The label 'InfP' in (60) is used for better visualization of the data, but I remain uncommitted regarding the categorial status of infinitives in Mari. Note also that the bracketing in (60) suggests that the PP is a modifier within the infinitival phrase, although based on the linear order it is not possible to exclude that it is adjoined higher, on the clausal level.





mixed A- and A'-properties. What is important for the present discussion is that locative and temporal PPs like the adessive-marked PP in (61b) move to Spec,FP similarly to subjects.<sup>17</sup>

With this in mind, we can test whether the clausal PPs, i.e., the non-finite clauses formed with the suffixes listed in (7), pattern with phrasal PPs. As shown below, the adessive-marked 'converb' in (62a) can appear preverbally, in Spec,FP, just like the adessive-marked phrasal PP in (61b). That the PP is in Spec,FP, and not higher, e.g., in Spec,CP where contrastive XPs are found, is confirmed by the fact that it follows the sentence adverbial *ilmeisesti* 'apparently' (sentence adverbials are argued to be adjoined to FP, see [Holmberg & Nikanne 2002](#), 85ff.). The subcategorized *-ma*-clauses, i.e., the ones inflected with the illative, elative, and inessive cases, can also undergo the same type of movement, as illustrated for the illative-marked one in (62b).<sup>18</sup>

- (62) a. *Ilmeisesti [juo-ma-lla olut-ta] tek-i Pekka-kin rikokse-n.*  
 apparently drink-NFIN-ADE beer-PART make-PST.3SG Pekka-PRT crime-GEN  
 'Apparently, Pekka, too, committed a crime by / without drinking beer.'
- b. *Ilmeisesti [juo-ma-an olut-ta] rupe-si / pysty-i Pekka-kin.*  
 apparently drink-NFIN-ILL beer-PART begin-PST.3SG manage-PST.3SG Pekka-PRT  
 'Apparently, Pekka, too, began / managed to drink beer.' [Finnish; elicited 1/1]

What these examples show is that phrasal and clausal PPs show parallel behaviour: they can both undergo the same type of movement and appear as non-canonical subjects. Together with the facts presented above for Turkish and Mari, these data provide support for the PP analysis of morphologically segmentable converbs proposed in the present paper.

### 5.3. Interim summary

To recap, this section explored two predictions of the PP analysis. According to the first one, clausal PPs can be arguments of the matrix verb. According to the second one, they are not likely to occur in subject position. The preceding two subsections gathered evidence from the existing literature and also presented new findings, confirming that many of the morphologically decomposable non-finites that earlier literature has treated as converbs conform to either of these two predictions. This means that these clauses pattern with phrasal PPs in terms of their syntactic distribution.

## 6. DISCUSSION AND FURTHER ISSUES

The aim of this section is two-fold. First, I would like to emphasize some more general points regarding the empirical findings and the theoretical claims of Sections 3–5 and especially their

<sup>17</sup>An anonymous reviewer is wondering if (bare) verb phrases can also satisfy the EPP in Finnish. Finnish has limited VP-fronting with the so-called first infinitives, but because of their contrastive interpretation they have been argued to move to a position higher than Spec,FP (see [Vilkuna 1989](#); [Schmidt 2016](#) for discussion).

<sup>18</sup>The examples in (62) were modelled after the ones discussed in [Ylikoski \(2003\)](#), cf. (8) and (9).



implications for typology. Second, I will address certain issues that might be viewed as problematic under the proposed analysis.

### 6.1. Implications for typology

Starting with the general discussion, I would like to once again stress the importance of morphological segmentability, which was the point of departure in the present paper. As was shown in Section 3, the Uralic and Turkic languages utilize ‘converbs’ that are morphologically decomposable into a non-finite suffix and a case marker. As these languages exhibit transparent syntax-morphology mapping, it seemed plausible to take morphological segmentability as an indication that we are not dealing with a morphologically opaque converb suffix. This initial finding needed to be further corroborated by additional evidence. Section 4 presented two case studies, on Turkish and Mari, in which two language-specific diagnostics were discussed at length: coordination and suspended affixation. The former dealt with the external distribution of the phrase, providing support for its PP status; the latter aimed at probing the syntactic independence of the case marker. Finally, Section 5 made two predictions based on the general properties of PPs: (i) they can be arguments and (ii) they are not likely to occur in subject position. This section also presented compelling evidence from several Uralic and Turkic languages, according to which the morphologically decomposable converbs indeed conform to either of these predictions. This confirmed that their syntactic distribution matches the one of phrasal PPs.

In the present paper I would like to emphasize the importance of the *cumulative evidence* based on the arguments discussed: morphological segmentability, language-specific diagnostics and conformity to either of the two predictions of the PP analysis. Hence, the first important take-away is precisely this methodology that helps to determine what kind of a syntactic phrase a given non-finite form corresponds to.

In my view, using the tools generative grammar offered a reliable and insightful way of exploring the (morpho)syntax of converbs. The findings of the present study can be fed into the typological studies dealing with converbs. As mentioned in Section 2, the empirical landscape of converb clauses seems to be quite diverse. The PP analysis proposed for morphologically decomposable converbs essentially removes them from the pool of data that should be discussed under label ‘converb’. The approach advocated here is partly aligned with Haspelmath’s (1995) definition, as it takes into account morphological evidence. At the same time, my analysis puts very strong emphasis on the syntactic distribution of the clausal PPs. Hence, it is also important to reflect on the other strand of typological research, namely, the approaches that define converbs based on their distributional properties (cf. Section 2). The question that arises at this point is the following: is the PP analysis proposed here similar/identical to the ‘distribution-based approaches’? Specifically, are the same predictions made in these typological works, too? As for *Prediction 1*, the answer is definitely ‘no’. Recall from Section 2 that the typological studies on converbs definite them as adverbial clauses, that is, adjuncts. Thus, the subcategorized clausal PPs discussed in Section 5.1 remain unexplained (or perhaps would be treated as ‘non-canonical uses’ of converbs). In the PP analysis proposed, however, the facts observed follow naturally from the general distributional properties of PPs. Recall that Nedjalkov (1995, 97), for example, has claimed that converbs are different from both infinitives and gerunds/nominalizations, as they do not occur as arguments, including in subject and object position. This means that in the case of *Prediction 2*, the distribution-based typological approaches and the PP analysis advocated here converge. However, I would





like to emphasize that unlike the distribution-based typological approaches, the PP analysis provides a principled explanation of why these ‘converbs’ do not occur as subjects – this follows from the general unavailability of PP subjects. More broadly, my understanding is that this strand of typological research does take syntactic distribution into account for the purposes of providing a *classification* of the relevant verb forms but it rarely makes predictions that follow from this classification. The present approach thus clearly differs from the ‘distribution-based approaches’ precisely because it explores the consequences of the proposed analysis.

## 6.2. (Apparent) counterevidence against the PP analysis

Next, I would like to discuss some issues that can be brought up as arguments against the PP analysis. They can be grouped into two bigger questions: one related to the semantics of converb clauses, and one related to phonological attrition and morphologization. I will argue, however, that these are not serious problems for the present proposal.

Let us begin with the consequences of the PP analysis for the semantics and the potential form-meaning mismatches. An important advantage of the PP analysis is that the meaning of clausal PPs is expected to arise compositionally from the building blocks of the PP. That is, morphological decomposability should go hand in hand with transparent semantics. This is born out by a large portion of the empirical data. For example, based on comparative data from the Turkic languages, [Johanson \(2021, 909\)](#) argues that ‘when’-clauses are often expressed with the locative case (cf. the Turkish and Mishar Tatar examples in (12) and (15), respectively). This is by no means surprising given that the locative case encodes Location (in space or time). Moreover, the phrasal PPs with the locative also had a similar meaning. As [Johanson \(2021, 914\)](#) further argues, cause/reason clauses are frequently encoded with the dative or the ablative (cf. examples (13) and (17)). This is also expected from the general meaning of these case suffixes. Some even more complex cases of how semantics can be derived from the subparts of the PP are discussed in [Georgieva \(2023\)](#). In this paper, I examined the *-(o)ńńa*-clauses in the Middle Cheptsá dialect of Udmurt and argued that they are not simply temporal clauses but have locative semantics: the events expressed by the main and adverbial clauses must be construed as one event, and thus they must match spatiotemporally. It is further proposed that this meaning can be accounted for based on the structure of the PP: the morphologically complex P layer consists of the inessive case plus the so-called DOMUS suffix, a place denoting spatial element (which is independently attested in this dialect), which takes a deverbal noun as its complement. This structure gives rise to the meaning ‘in the time and place of V-ing’, as in (63).

- (63) Muš-jos-mĭ      pegži-l'lam=ńi=no                      [baba-jeni-mĭ                      azbar-jn  
 bee-PL-POSS.1PL    escape-EVID.3PL=already=ADD    grandmother-INS-POSS.1PL    yard-INE  
 vĭr-oń-ń-a-mĭ].

be.busy-VN-DOMUS-INE-POSS.1PL

‘Our bees had (long) flown away while we/me and our grandmother were busy  
 (taking care of the chicks) in the yard.’

[Middle Cheptsá dialect of Udmurt; [Georgieva 2023, 36](#)]

The question that arises here is how to account for converbs that are morphologically decomposable but their meaning cannot be (straightforwardly) predicted or for cases where the meaning of



the clausal PP does not match the corresponding phrasal PP. The former scenario has been said to be observed in Udmurt *-emen*-clauses (cf. (5)). Fokos-Fuchs (1958, 287) argues that these non-finite forms are segmentable, but their meaning is not transparent: they are translated into German with *also* ‘causal since’ rather than with *mit* ‘with’, which he interprets as a sign of the grammaticalization of *-emen* into a converb suffix. However, English *with*-absolutives can also have causal semantics (cf. *With Peter the referee we might as well not play the match*, Aarts 1992, 42), thus, this argument is not entirely convincing (see Georgieva 2018, 99 for discussion).

The latter scenario can be argued to be instantiated by the Mari *-šâla*-clauses or the Turkish *-DIKÇA*-clauses. Recall that the comparative case in Mari means ‘as/like’ in phrasal PPs, but the clausal PPs encode a temporal overlap. This might be taken to indicate that we are dealing with different meanings. However, I propose that they can be seen as related to each other, especially in light of the fact that the comparative case is argued to go back to a spatial suffix (see Galkin 1964, 56). A similar argument can be made for Turkish as well: the adverbializer *-çA* has more lexicalized uses in phrasal PPs, while the respective clausal PPs have broader semantics and preserve the original spatial/temporal semantics of the P head. Similar mismatches are attested in English as well, cf. the meaning of *upon*, which is different when the P combines with gerunds and derived nominals (*upon arriving* = ‘as soon as’) compared to nominal dependents (*upon his head* = ‘on’). However, such mismatches are not really problematic for the analysis proposed. I would like to argue that while ‘converbs’ with compositionally derivable semantics clearly support the PP analysis, clausal PPs with less transparent meaning do not falsify it. Thus, the form-meaning argument is unidirectional and, more generally, semantics should not be the decisive criterion.

Let us now move to the second issue, namely, morphologization. In Section 3 we discussed converb suffixes that are fully decomposable. The question is how the proposed analysis deals with cases of *partial* segmentability. In light of the structure proposed for morphologically decomposable converbs (cf. (18)), potentially, two types of partial segmentability should be distinguished: (i) the non-finite suffix is no longer segmentable or productive, (ii) the case suffix is no longer used.

The former type of partial segmentability is attested in Udmurt, for example. The *-tož*-clause in (64a) contains the fully productive terminative case *-ož* but the segment *-t* is not transparent: it is argued to be a (fossilized) deverbal nominalizer (see Bartens 2000, 250, 254; Fokos-Fuchs 1958, 287, 299) or a caritive suffix (Georgieva 2018, 108–109). Given the parallelism with terminative-marked phrasal PPs (64b), though, it is safe to assume that the ‘converb’ is outwardly a PP.

- (64) a. Tunne mon [šundj pukšj-t-ož] uža-j.  
 today 1SG sun set-?-TERM work-PST.1SG  
 ‘Today I worked until the sun set.’ [Udmurt; Georgieva 2018, 91]
- b. kjk čas-ož  
 two hour-TERM  
 ‘until 2 o’clock’

A similar situation is observed with the Finnish non-finites *-ma*: they combine only with a few semantic cases (7), but not with the structural cases (genitive, partitive), unlike the nominalizations formed with the suffix *-minen*, for example. Ylikoski (2003, 203) mentions this fact as an



argument against analyzing the *ma*-forms as case-marked nominalizations. In my view, however, there might be independent reasons why *-ma*-clauses never combine with other cases. For example, this could be related to the structure and the size of these non-finite clauses: as discussed in Vainikka (see 1989, Ch. 5), they lack certain functional projections. Thus, the fact that *-ma*-clauses do not occur with all cases in Finnish does not necessarily present a counterargument against the PP analysis.

The reverse scenario of partial morphological segmentation arises when the case suffix is no longer (productively) used with phrasal PPs. Let us consider a few examples. The ‘until’/‘before’-clauses in the Turkic languages, illustrated for Mishar Tatar in (65), pose such a problem. This non-finite form clearly contains the participle *-GAN*, but is considered to be a converb (Tatevosov, Pazelskaya & Suleymanov 2017; Zakiev 1993, 223–230; see also Washington, Tyers & Salimzianov 2022). Although the combination of the P head and the participle is less transparent, based on comparative evidence (cf. Johanson 2021, 757, 910–911) we can argue that *-GANčA*-clauses are still clausal PPs.

- (65) [Kit-kän-če] Ilnur aša-dv.  
 eat-PTCP-? Ilnur eat-PST.3SG  
 ‘Before leaving Ilnur ate.’ [Mishar Tatar; Tatevosov, Pazelskaya & Suleymanov 2017, 474]

A further example of this kind of partial segmentability is the converb *-me-ke* in Mari, which was briefly mentioned in Section 3. This suffix contains the non-finite form *-mE*, also found in *-me-ške*, combined with the lative case (Isanbaev 1961, 60). This gives rise to an ‘after’-clause, as illustrated in (66).<sup>19</sup>

- (66) [Iziš kanê-me-ke], paša-m kâčal-aš tünjal-am.  
 a.bit relax-NMLZ-LAT work-ACC look.for-INF start-PRS.1SG  
 ‘After relaxing a bit, I will start looking for work.’  
 [Meadow Mari; Riese, Bradley & Yefremova 2022, 268]

The descriptive literature treats *-me-ke* as a converb alongside with *-me-ške* and *-šê-la* (Isanbaev 1961; Pengitov 1961; Alhoniemi 2010; Riese et al. 2022). The only exception is the diachronic study by Bereczki (2002, 123–124, 126, 136–137), who lists only *-me-ke* as a converb (*határozói igenév* ‘adverbial participle’ in his terms), and treats the other two as morphologically transparent forms – the decision is probably related to diachrony, no explicit arguments are given in his work. The question whether *-meke*-clauses should be classified as converbs seems to be rooted in the fact that the lative suffix is no longer used. It is still attested in some adverbs, though, e.g., *ümba-ke* ‘on top’ (< *ümbal* ‘surface’), *ĵêma-ke* ‘down, underneath’ (< *ĵêmal* ‘bottom, lower part’). Given that the lative case is attested in adverbs, it can be proposed that *-meke*-clauses are still PPs. As such, they can be coordinated with PPs (67).

<sup>19</sup>Muraviev (2019) shows that the cognate converb in Hill Mari has the meaning of immediate anteriority (‘when’, ‘upon’, ‘as soon as’).



- (67) [Iziš kanâ-me-ke] da [šoćmo keće-m deć βara] ekzamen-lan jamdôlalt-aš  
 a.bit relax-NMLZ-LAT and birth day-POSS.ISG after exam-DAT prepare-INF  
 tünjalam.  
 start-PRS.ISG  
 ‘After relaxing a bit and after my birthday I will start preparing for the exam.’  
 [Mari; elicited 4/4]

This type of partial segmentability may seem more worrisome for the present proposal, but I argue that the cases discussed above do not constitute a serious problem and shall be analyzed as PPs. First, it is often noted that diachronic processes like phonological attrition and morphologization may obscure morphological segmentability. I mentioned three pieces of support in favour of analyzing the partially segmentable converbs as PPs: the comparative evidence within the language family (cf. Johanson 2021, Ch. 46 on Turkic), the occurrence of the relevant P head in some lexicalized forms and the coordination test. More general arguments can be based on the structure of PPs, including their history. For example, it is well-known that P heads may grammaticalize not only from relational nouns but also from adverbs, the latter being exemplified by English *outside* which originates from the adverb *outen* (Waters 2009, 296). The diachronic changes in the structure of this preposition suggest that the P layer may undergo a substantial reanalysis with multiple steps involved. This is a further piece of (indirect) support in favour of treating the partially segmentable converbs as PPs: in light of the observations regarding the diachrony of P heads, it is not surprising to find a ‘frozen’ P head that occurs in some clausal PPs but is not attested with phrasal PPs or vice versa.

In sum, the aim of this section was to reflect on certain points of the PP analysis that I put forward for morphologically segmentable converbs and to emphasize the gains of the present proposal for the typological studies. I also addressed some issues that could appear to challenge the PP analysis, such as the morphologization of converb suffixes and the form-meaning mismatches, and argued that these issues do not falsify the proposed analysis.

## 7. CONCLUSION

In this paper I showed that the converbs used in the Uralic and Turkic languages fall into two major types with respect to their morphological shape: they can be morphologically decomposable or non-decomposable, the former type consisting of a non-finite clause selected by a semantic case. Focusing on the morphologically segmentable converbs, I argued that their morphological shape is indeed informative about the syntactic structure involved. I proposed that these clauses are best analyzed as PPs, with the semantic case being a (morphologically bound) P head. The PP analysis was supported by two detailed case studies, dealing with Turkish and Mari. I further argued that the PP analysis correctly predicts the syntactic distribution of these clauses: in parallel with phrasal PPs, these converbs can be subcategorized by the matrix verb, but are unlikely to occur as subjects. It was shown that these predictions indeed hold for the morphologically decomposable converbs in Uralic and Turkic. Thus, the proposed analysis accounts for the syntactic distribution of these clauses in a straightforward way.

The novelty of the present study is both empirical and theoretical. It is manifested in the comparative evidence from Uralic and Turkic, the application of language-specific diagnostics



and the careful exploration of the predictions made by the proposed analysis. Furthermore, this paper aimed at demonstrating how an analysis couched in a generative syntactic framework can contribute to the better typological description of this non-finite clause type. In this way, the approach advocated here has far-reaching implications for our understanding of what counts as a converb from a cross-linguistic perspective and, more generally, for our understanding of adverbial subordination. Finally, the present study touched upon the issues of morphologization of converb suffixes, which hopefully will be further investigated in future work. It also discussed phenomena like coordination and suspended affixation and presented valuable empirical data related to them that also await their in-depth analysis in future studies.

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