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	RESEARCH ARTICLE 	
	<h2 style="margin: 0;">Non-Finite Verbs In Oghuz Turkic: A Dependency Grammar Approach To Participles And Adverbial Verbs In Uzbek Oghuz Dialects And Standard Oghuz Languages</h2>	
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<p>Abstract</p> <p>Non-finite verbs constitute a central category in Turkic languages in terms of form and function. This study presents a comparative analysis of participles and adverbial verbs in Uzbek Oghuz dialects and standard Oghuz languages, including Turkish, Azerbaijani, and Turkmen, from a dependency grammar perspective. The research demonstrates that non-finite verbs are not merely morphological derivations but function as both intermediate and secondary centers in sentence dependency structures. Participles depend on the nouns they modify while potentially containing their own dependencies such as subject or object; adverbial verbs attach to the predicate to establish relationships between actions, sometimes carrying objects or adverbial dependencies themselves. The suffix variants in Uzbek Oghuz dialects differ from standard languages, offering greater syntactic flexibility and reflecting historical language contact. Morphological parallels and the distribution of variant suffixes reveal both the historical continuity of Oghuz languages and regional divergences. These findings highlight the central role of non-finite verbs in the syntactic network and demonstrate that the dependency grammar framework is suitable for both theoretical and applied analyses in Oghuz languages. This study provides new data and methodological insights that are valuable for natural language processing, translation technologies, and comparative Turkology.</p>		
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Introduction

In Turkic languages, non-finite verb forms assume a decisive role in the establishment of the intra-sentential dependency structure, not only morphologically but also functionally. Although the contribution of participial adjectives and converbs to clause formation, phrase structuring, and information organization in the Oghuz domain has long been defined within the grammatical tradition, the manner in which these structures are positioned in terms of dependency relations between the standard languages of the Oghuz group and the Oghuz dialects spoken in Uzbekistan has still

been explained only to a limited extent in a systematic and comparative manner. In particular, the scarcity of independent studies on Uzbek Turkic dialects in Türkiye renders this gap in the field more visible.

The problem addressed in this article is the lack of a clear account of the conditions under which participial adjectives and converbs in the Oghuz dialects of Uzbekistan and in Turkish, Azerbaijani, and Turkmen assume an intermediate/secondary head function within head-dependent relations, as well as of how these functions can be modeled comparatively. Dependency syntax, by virtue of its focus on hierarchical relations between words, provides a suitable framework for rendering visible the multidirectional connections that non-finite verb forms establish both with the predicate and with the elements they modify or nominalize. (Melchuk, 1988:7).

The aim of the research is to develop a comparative account of non-finite verb forms in the four relevant Oghuz varieties, not only at the level of suffixation but also through the syntactic roles they assume within dependency schemata. The scope of the study is limited to the evaluation of dependency relations in examples selected from the Oghuz dialects of Uzbekistan documented through field data and from three standard Oghuz languages. The main limitation of the study lies in the regional and speaker-based variability of dialect data, as well as in the limited availability of existing comparative corpora and annotated datasets.

In this respect, the article aims to contribute to comparative Turkology and to terminological and analytical standard unity by supporting the goal of establishing a common descriptive framework among the Oghuz languages. In addition, it is expected to provide a basis for discussion toward the more consistent modeling of non-finite verb structures in language technologies.

2. Literature Review

Studies on non-finite verb forms in the Oghuz languages and in the Oghuz dialects of Uzbekistan have largely proceeded through traditional grammatical classifications and suffix-centered explanations. Particularly in the Azerbaijani grammatical literature, within the derivational system of the verb, *mesder* (verbal noun), *feli sifet* (participial adjective), and *feli bağlama* (converb/adverbial participle) are treated as fundamental categories, and the aspects in which these structures intersect both with the finite verb and with nominal/adverbial functional domains are emphasized (Huseynzade, 2007: 117). This approach clearly demonstrates that non-finite verb forms are not merely products of morphological derivation, but intermediate forms that carry syntactic functions.

In Azerbaijani Turkish, the participial adjective is defined as a verb form with a dual character; it simultaneously possesses both verbal and adjectival properties and performs a modifying function by expressing an “attribute associated with an action” (Huseynzade, 2007: 182).

The converb (adverbial participle), on the other hand, is described as a non-inflected verb form; in addition to explaining the action from various perspectives, it is evaluated as a structure that also incorporates the properties of adverbs (Abdullayeva, 2013: 86). Abdullayeva further classifies verbal constructions in general into a threefold grouping as *feli sifet*, *feli bağlama*, and *mesder tərkipləri*, thereby proposing a function-based framework for both the internal structure of non-finite verb forms and their intra-sentential functions (Abdullayeva, 2013: 162).

Field-based descriptions of the Oghuz dialects of Uzbekistan, on the other hand, are based on a limited number of studies that, alongside non-finite verb patterns shared with the standard branches of the Oghuz group, also reveal formal diversifications specific to contact zones (Hamidova, 2026). It is emphasized that this field offers an important observational domain for comparatively tracing the distribution and functional diversity of non-finite verb forms within the Oghuz languages (Eker, 2006: 114–115). Therefore, the systematic evaluation of non-finite verb data pertaining to the Oghuz dialects of Uzbekistan points to a research gap that may contribute to explaining historical continuity and regional differentiation within the Oghuz domain simultaneously (Hamidova, 2026).

In order for non-finite verb forms to be explained not only at the level of suffixation but also through intra-sentential linkage and dependency patterns, dependency theory offers a complementary theoretical foundation. The dependency-based approach, by treating syntactic relations as direct links between words, proposes a framework that can render more visible the intra-sentential position of non-finite verb structures which, although non-finite, are capable of hosting their own dependents (Melchuk, 1988: 37–39).

In this respect, a comparative analysis of the head-dependent relations of participial adjectives and converbs within the dependency structure of the Oghuz languages appears suitable both for clarifying the syntactic status of non-finite verb forms and for explaining the functional motivations underlying variant structures that emerge in contact zones.

3. Methodology

This study is designed as an applied and descriptive comparative investigation and aims to describe participial adjective and converb structures in the Oghuz dialects of Uzbekistan, as well as in Turkish, Azerbaijani, and Turkmen, on the basis of dependency grammar. The problem addressed by the study is grounded in the comparative examination of participial adjectives and converbs in the Oghuz languages not merely through an inventory of suffixes, but through the intermediate or secondary head roles that these structures assume within dependency relations.

Within the scope of the research, data consisting of natural and written usages containing non-finite verb forms were collected across four Oghuz language areas. The data pertaining to the Oghuz dialects of Uzbekistan were obtained through fieldwork conducted in July 2024, while for the standard languages, example sentences were selected from written texts and reference grammars. The sample was selected using a purposive sampling method so as to include balanced and representative examples of participial adjective and converb suffixes for each language and dialect (Johanson & Csató, 2021: 287; Eker, 2006: 263).

The data were collected through semi-structured interviews and free narratives in the Oghuz dialects of Uzbekistan, and from written sources in the standard languages. In identifying non-finite verb forms, the lists of suffixes established in the grammatical tradition of each language were taken into consideration, and verb forms bearing these suffixes were marked in the texts. In the analysis process, both qualitative analyses (modes of head attachment and dependency schemata) and quantitative analyses (types of suffixes and frequency distributions) were employed. In this context, rather than testing a predetermined hypothesis, the study offers a historical and typological perspective on the comparison of non-finite verb variants in the Oghuz dialects of Uzbekistan with those of the standard languages.

4. FINDINGS I: MORPHOLOGICAL AND SYNTACTIC FEATURES OF PARTICIPIAL ADJECTIVES

4.1. Participial Adjective Structures in the Standard Oghuz Languages

In the standard Oghuz languages, the participial adjective system is largely organized around a common core based on structures that modify nouns and, in certain contexts, are capable of establishing adjectival clauses with nominalized functions. In Turkish, Azerbaijani, and Turkmen, the basic participial adjective suffixes are to a great extent shared. The core inventory can be summarized approximately as follows:

- Turkey Turkish: -(y)An, -DIK, -(A)cAk, -mAz, -Ar/-(I)r, -mİş (Ergin, 2009:454)
- Azerbaijani Turkish: -(y)An, -DIK (dıq/dik/duq/dük), -(A)cAk, -mAz, -Ar/-(I)r, -mış/-miş/-muş/-müs (Huseynzade, 2007:183-190)
- Turkmen: -an/-ýan/-ýän, -dik, -jek, -maz, -ar/-er, -mys/-miş (Gray, 2022:21-23)

In these three languages, participial adjectives shift the verb root away from the domain of finite verbal inflection into a modifying position and form phrases together with the nouns they modify. At the same time, since the participial core in most instances can host its own dependents—such as subjects, objects, or adverbials—it exhibits a property of “local predicativity” at the syntactic level. Despite this shared functional core, the surface forms of the suffixes and the boundaries of certain subfunctional domains differ from language to language: the realization of *(y)An* as *-ýan/-ýän* in Turkmen, or the representation of the *(A)cAk* domain by *-acaq/əcək* in Azerbaijani Turkish and by *-jek* in Turkmen, constitute typical examples of this differentiation. (Huseynzade, 2007:183-190; Gray, 2022:21-23).

In summary, the participial adjective system in the standard Oghuz languages generates similar syntactic functions on the basis of a shared core of suffixes, while differentiation emerges primarily at the level of phonetic harmony, surface forms, and certain secondary domains of use.

4.2. Suffix Variants and Syntactic Flexibility in the Oghuz Dialects of Uzbekistan

Field data obtained from the Oghuz dialects of Uzbekistan indicate that the participial adjective system shares the same functional domains as those of the standard languages, but exhibits a richer profile in terms of suffixal forms and ordering properties. The main representatives of participial adjective suffixes in these dialects are presented in Figure 1.

As also noted in Suer Eker’s study on South Khwarezm Oghuz, the forms *-(g)an / -(k)an* emerge as the primary means of forming participial adjectives that convey both past reference and general attributive value; this situation is likewise confirmed by the field data (Eker, 2006: 124). In Esra Yavuz’s study examining Oghuz elements in Uzbek Turkish through literary texts, it is shown that these suffixes acquire different surface forms through vowel elision and consonant harmony, and the examples included in the corpus further demonstrate that these variants are systematic in nature (Yavuz, 2010: 1972).

In the same dataset, *-mAz* and *-AcAk / -EcEk* are also used regularly as participial adjectives; however, these suffixes may exhibit more flexible ordering patterns than those observed in the standard languages, as they combine with negation morphemes and modal-contributive elements. In some instances, the interchange of positions between the participial suffix and the negation marker is noteworthy, while in other cases the suffix with future-oriented value shifts toward meanings of probability or habituality. These structures bear traces of the contact process between the Oghuz varieties of South Khwarezm and the surrounding Turkic languages, a situation that is consistent with both the field data and the literature on contact typology (Johanson, 1998).

-(g)An, -(k)An, -(ğ)An → the Turkish participial suffix: **-(y)An**
 Boşka dillárdá işlámidí *ğon* sözlár boř (There are terms that are not used in other languages.) (K1)
 Hámámízín gápláşádi *ğán* delímíz Türk dilidá endi ð (In the end, we all speak Turkish.) (K3)
 Bu yárlárdá úlú insanla^r ót *kázıla^r* (These lands have been home to great figures)

-mAz, -mAs
 Sen dím dîⁿmas bálá ekánsan (You were quite a restless kid) (K2)
 Mán buní *bilmes* ekámmán (Apparently, I didn't know this.) (K8)
 Bu ómúr tógá *másdák* górinár ákán (It would seem as if this life would never end.) (K5)

-AcAk / -EcEk
 Qalacáq cáyınız bármı? (Do you have a place to stay?) (K4)
 Ót úrcáq nársá beráyın sizlárá (Let me get you something to sit on.) (K12)
 Gápirláccák gáplá kalmadı (There's nothing left to talk about.) (K3)

-Ar / -(I)r (In most cases, the suffix **-(y)AcAk** is used instead of this suffix.)
 Bâr *ár* cáylárinız bólasa giriqlár. (If you don't have anywhere to go, come in.) (K5)
 Qılár işim qalmadı. (I have nothing left to do.) (K8)

Figure 1. Participial Adjective Suffixes in the Oghuz Dialects of Uzbekistan

4.3. Dependency Schema of Participial Adjective Phrases and Their Intermediate / Secondary Head Function

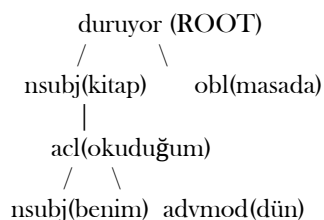
Dependency annotation reveals that participial adjective phrases systematically occupy an intermediate/secondary head position both in the standard Oghuz languages and in the Oghuz dialects of Uzbekistan. While participial adjectives are dependent on the nouns they modify, in most cases they contain within themselves an explicit or implicit subject, a direct object, and various adverbial complements; in the dependency tree, these elements cluster around the non-finite verb form. Particularly in genitive + **-DIK** type constructions, the genitive element is encoded as the subject of the participial adjective, and the nominal element as its object or complement; in the data from Uzbekistan, a similar internal dependency structure is observed in constructions formed with the **-(g)an / -(k)an** forms.

In some examples from the dialects, it is observed that genitive or possessive marking is weakened on the surface; nevertheless, subject-predicate relations can be re-established thanks to the position of the participial adjective within the context and the sequence of suffixes. This situation demonstrates that participial adjectives are not merely forms bearing modifying suffixes, but nodes that, together with their dependents, form a local domain of predication within the dependency structure (Tesnière, 1959: 40; de Marneffe et al., 2021: 257). Thus, sentence structure emerges not as an organization centered around a single finite verb, but as a multicentered configuration that also includes participial adjective cores (Ahmadov, 2026).

The position of participial adjective phrases within the sentence and the head-dependent relations they establish with other elements are schematically illustrated below by means of dependency trees.

Standard Oghuz language example (Türkiye Turkish, -DIK)

Sentence: (Benim) dün okuduğum kitap masada duruyor.



Duruyor: the main predicate, the root of the sentence (ROOT)

Kitap: nsubj → duruyor

Okuduğum: the participial head, acl → kitap (intermediate center)

Benim: the subject of the participial phrase, nsubj → okuduğum

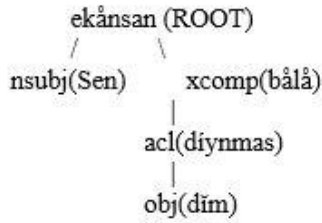
Dün: the adverbial modifier of the participial phrase, advmod → okuduğum

Masada: locative oblique, obl → duruyor

Within the dependency tree, the participial form okuduğum serves as an intermediate center, linked to the modified noun (kitap) via the acl relation, and internally hosts the dependents benim (subject) and dün (adverbial modifier).

Özbekistan Oğuz ağzı için temsili örnek (-mAz)

Cümle: Sen dım dıynmas bâlâ ekânsan. (Apparently, you were a disobedient child.)



Ekânsan: main predicate, (ROOT)

Sen: nsubj → ekânsan

Bâlâ: predicate complement / nominal element, xcomp → ekânsan

Dıynmas: participial nucleus, acl → bâlâ (ara merkez)

Dım: the object of the participial phrase, obj → dıynmas

Figure 2. Dependency Schema of the Oghuz Dialect of Uzbekistan

4.4. Cross-Linguistic Comparative Evaluation

The comparative perspective shows that the functional core of the participial adjective system is largely shared across the Oghuz domain, whereas morphological diversity and marking strategies increase markedly, particularly in the Oghuz dialects of Uzbekistan. While in the standard languages the participial adjective system is concentrated around a few basic suffixes defined by normative grammars, in the dialects it produces both functional and contact-induced variants through forms such as *-(g)an / -(k)an / -(g)An, -mAz*, and *-AcAk / -EcEk* (Eker, 2006: 125; Khalilov, 2018: 94-96). On the basis of the field data of the present study, participial adjective patterns based on *-DIK / -DÜK / -TIK / -TÜK*, which are widespread in Turkish, were not attested in the Oghuz dialects of Uzbekistan. This situation indicates that, in these dialects, the participial adjective system is organized primarily around the *-(g)an / -(k)an* domain.

At the syntactic level, a common structure emerges across all varieties in which participial adjectives form an intermediate center that is dependent on the noun they modify, around which subject, object, and adverbial dependents are clustered (Ahmadov, 2026). While genitive and possessive marking explicitly encode this internal structure in Turkish, Azerbaijani, and Turkmen, in the Oghuz dialects of Uzbekistan there are prominent cases in which such marking is weakened; in these cases, the sequence of suffixes and contextual information become more decisive in interpretation (Johanson, 2002: 15-17; Matthews, 2007: 112-114). Overall, the data demonstrate that participial adjectives assume a central role in the dependency organization of the sentence in the Oghuz languages, and that this center varies from region to region in terms of morphological forms, marking density, and traces of language contact.

5. Findings II: morphological and syntactic features of converbs

5.1. Converbs in the Standard Oghuz Languages and Interpersonal Relations

In the standard Oghuz languages, converbs function as fundamental linking elements that establish temporal, sequential, simultaneous, causal, conditional, and manner relations between two verbal cores. The core converb suffixes used in Turkish, Azerbaijani, and Turkmen are largely shared; however, they differ from variety to variety in terms of phonetic realization and certain semantic nuances (Goksel & Kerslake, 2005: 357-359; Karahan, 2011: 45-48; Musayeva, 2015: 78-81; Clark, 1998: 203-205).

Simple and productive converb suffixes have been taken as the basis, while compound/analytic structures (e.g. *-DIktEn sonra, -DIğI için, -DIğI halda*, etc.) have been discussed separately in the relevant subsections in accordance with their functions (see 5.2). The core converb inventory of the three standard written languages can be summarized approximately as follows:

Turkish (TR): *-(y)Ip* (gelip, bakıp.); *-(y)ArAk* (gülerek, konuşarak vb.); *-InçA* (gelince, bitince vb.); *-ken* (gelirken, uyurken vb.); *-mAdAn* (bakmadan, düşünmeden vb.); *-AlI* (geleli, başlayalı vb.)

For the functions of these suffixes and their adverbial subordinate clause-forming properties, see also Goksel and Kerslake (2005: 426-428) and detailed studies on converbial suffixes (Karahan, 2011: 78-81).

Azerbaijani Turkish: (AZ)

-Ib/-yIb/-ib/-yib (gəlib, yazıb vb.); -ArAQ/-ƏrƏk (qaçaraq, danışaraq vb.); -IncA/-IncƏ/-UncA/-ÜncƏ (gəlincə, başlayınca vb.); -AndA/-ƏndƏ, -dIqdA / -dIqdƏ (gələndə, gördükdə vb.); -mAdAn/-mƏdƏn (baxmadan, demədən vb.); -All/-Əll (gələli, başlayalı vb.)

A detailed list of the adverbial participle (converb) suffixes more frequently used in Modern Azerbaijani is provided in Musayeva (2015: 142-145) and in V. Aliyev's study entitled Verb Linking in the Azerbaijani Language.

Turkmen: (TKM)

-Ip/-ip/-yp (gəlip, baryp, etc.) functions as a basic converbial suffix expressing simultaneity and/or sequentiality; *-Ança/-änçe* (gələncə, barançə, etc.) is a temporal converb denoting the meaning 'until, up to the point when'; *-sA/-se* (gelse, barsa, etc.) is a core suffix which, in many descriptions, assumes a converbial function alongside its conditional value.

In negative constructions, the form *-män* is highlighted as fulfilling a function corresponding to the *-Ip* converb (e.g. *etmän* constructions) (Clark, 1998: 210-212; Ismayıl, 2014: 95-98; see also Ismayıl, 2014 for comparative data).

According to descriptions of Modern Turkmen, the primary means of forming adverbial participles in the literary language is the suffix *-Ip/-yp* attached to the verbal stem; the forms *-ança/-änçe* and *-sa/-se*, by contrast, are defined as secondary converbial suffixes expressing temporal and conditional relations such as 'until' and 'if' (Clark, 1998: 210-212; Musayeva, 2018: 67-70).

This shared inventory indicates that the converb system in the Oghuz languages is built on a similar morphological foundation, while at the same time each language preserves its own internal diversity, particularly through the phonological and functional variants of forms such as *-Ip/-ib* and *-IncA/-mca*. In Turkish, suffixes such as *-(y)IncA*, *-ken*, *-DIğIndA*, *-mAdAn*, and *-Ip/-yIp* encode temporal, conditional, and purposive relations by linking the subordinate action to the main predicate (Goksel & Kerslake, 2005: 357-359; Kornfilt, 1997: 345-348). In Azerbaijani Turkish and Turkmen, similar functions are represented through their respective language-specific variants, and converb phrases function as secondary cores directly dependent on the main verb (Abdullayeva, 2013: 94-96; Khalilov, 2018: 78-81).

These suffixes generally function, from a dependency perspective, as intermediate centers that are attached to the main predicate and are capable of hosting their own object or adverbial dependents. (Nivre, 2005:112-115; Eryiğit, 2014:45-47).

5.2. Converb Variants in the Oghuz Dialects of Uzbekistan

Field data from the Oghuz dialects of Uzbekistan indicate that the converb system is largely parallel to that of the standard Oghuz languages in functional terms, but exhibits local characteristics with respect to surface forms and distribution. The main representatives of converb suffixes in these dialects are as follows:

-b, -Ib

-b: Házir házir tárihiy cıyla **hóp** gətdi iná hámhá yer zäpreshonnıy zınák. (Now, now, having become historical sites, everywhere is covered with prohibition signs.) (K1)

Söráb girizädilä, söráb alädilä. (They enter by asking and take things by asking.)

-(I)b: Şi kızların issida káldıñızda. Bif çaynık çay damla**B** bärärädik, ámdllı (samimi, içten anlamında) bälám. (My girls, you were left in the heat; we would brew a teapot of tea and give it to you, my dear.) (K5)

-(I)p: Mäşinni alásiz, hudägä şükür, öyiñni zö'átásiz, hävvä, gálinni tüşirásiz hámhá nársanı bádásturát**ıp** kızzı ákkál**ıp** koyásiz toyátásızda, áşündin... (You buy a car, thank God; you fix the house nicely, yes; you bring the bride, bring the girl after completing everything, and you hold a wedding—like that...) (K6)

Bi kudá bi kudáni nátdi áñill**ıp** bärámámi? áñill**ıp** bärásán. (What does one in-law do to another—am I supposed to go by bowing? You will go by bowing.) (K9)

-mAsdAn:

Bálálár álmáni yüv **másdán** yemesin. (Children should not eat the apple without washing it)

Kış gál **másdán** burun ádi. (It was before winter came).

Qarı **másdán** durup kısañ kıldıñ (Do it before you grow old—otherwise, it won't get done)

-DIKÇA

Ona ú gel **dıyçe** azaldı, borınám bi gel **dıyçe** azaldı. (That is, as he continued to come, it diminished; even what already existed diminished accordingly) (K10)

Figure 3. Converb Suffixes in the Oghuz Dialects of Uzbekistan

The field data indicate that, in the Oghuz dialects of Uzbekistan, the converb system is concentrated primarily around the *-B/-IB*, *-mAsdAn*, and *-DIKÇA* axes. The forms *-B/-IB* occur in productive constructions that establish links between sequential or simultaneous actions and largely overlap functionally with *-Ip/-yIp* in Turkish. The suffix *-mAsdAn* corresponds to the functional domain of *-mAdAn*, conveying meanings of precedence or prevented action, while *-DIKÇA* displays a parallel profile to Turkish *-DIKÇA* in constructions expressing continuity and gradation.

The absence of patterns such as *-(y)ArAk*, *-DIktEn sonra*, *-DIğI için*, and *-DIğI halde* in the July 2024 corpus indicates that the formation of converbs in these dialects is organized around a more limited yet consistent set of suffixes. This profile is compatible with the historical status of Khwarezm as a contact zone between Turkic and Iranian languages and with its evaluation as one of the significant starting points of Oghuz continuity (Eker, 2006: 114-115). Moreover, the characterization of the Amu Darya basin as a multilayered contact area in which varieties such as Uzbek, Kipchak Uzbek, Oghuz Uzbek, and Turkmen intersect makes it possible to explain the observed patterns of selection and distribution within the framework of regional language contact (Johanson, 2021: 86).

5.3. Dependency Schema of Converb Clauses

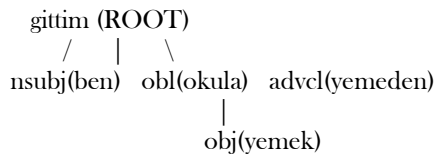
Dependency annotation demonstrates that, both in the standard Oghuz languages and in the Oghuz dialects of Uzbekistan, converb clauses can be systematically represented as secondary cores that are attached to the main predicate and are capable of hosting their own internal dependents (Asadov, 2026). Tesnière's conception of hierarchical word-to-word relations provides the theoretical grounding for positioning the verb node bearing a converb as a node dependent on the main predicate; together with object- and adverb-type internal dependents, this node may form a local structural domain (Tesnière, 1959: 89-91). Such a representation is also compatible with approaches in the modern dependency tradition that emphasize the definability of dependency relations on the basis of surface-syntactic criteria (Melchuk, 1988: 113-114).

In constructions formed with suffixes such as *-Ip/-yIp*, *-mAdAn*, and *-IncA* in the standard Oghuz languages, converb clauses often display the character of adverbial subordinate clauses that are directly attached to the main predicate, with an explicit or easily inferable subject. In the Oghuz dialects of Uzbekistan, examples formed with *-B/-IB*, *-mAsdAn*, and *-DIKÇA* follow a similar dependency pattern; however, the subject is more frequently weakened or omitted on the surface, while the position of the converb core and the sequence of suffixes support the interpretation of subject-predicate relations (Asadov, 2026). This situation demonstrates that converb clauses in the Oghuz domain are based on a shared dependency schema, yet may vary in terms of marking density under conditions of language contact and dialectal differentiation.

Standard Oghuz language example (Turkish, -mAdAn)

Cümle : (Ben) yemek yemeden okula gittim. (I went to school without eating)

Dependency tree:



Gittim: main predicate, the root of the sentence (ROOT)

(ben) : subject, in the dependency diagram nsubj → gittim

Okula: locative complement, obl → gittim

Yemeden: the head of the adverbial participle clause, advcl → gittim

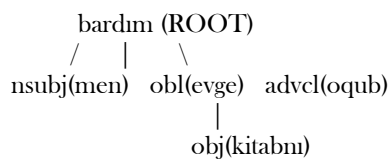
Yemek: the object within the adverbial participle, obj → yemeden

In the dependency tree, the adverbial participle (yemeden) functions as a secondary nucleus linked to the main predicate (gittim) and internally hosts its dependent obj (yemek).

Representative example for the Uzbekistan Oghuz dialect (-B/-IB)

(Men) kitabni oqub evge bardim. (I went home after reading the book)

Here, oqub functions as the participial (converb) core, bardim is the main verb, kitabni is the object, and evge is the locative complement.



Bardim: main nucleus

(Men): subject, nsubj → bardim

Evge: locative complement, obl → bardım

Oqub: the head of the adverbial participle clause, advcl → bardım

Kitabni: the object of the adverbial participle clause, obj → oqub

This diagram visualizes the three points discussed above: the converb node is linked to the main predicate (advcl → bardım); the converb internally hosts an object dependent (obj → oqub); and there is a configuration in which the subject is typically shared with the main clause and therefore may not be overtly marked on the converb side.

5.4. Cross-Linguistic Comparative Evaluation

The findings on converbs confirm the general profile of the Oghuz languages, showing that non-finite verb suffixes play a dominant role in establishing interverbal relations. In Turkish, Azerbaijani Turkish, and Turkmen, the converb system is concentrated around a limited set of core patterns such as *-Ip/-yIp*, *-mAdAn*, *-IncA*, *-ken*, and *-DIğIndA*; in Azerbaijani Turkish, this functional domain is represented by sequences such as *-ib/-yib*, *-mƏdƏn*, and *-ƏndƏ/dıqda*, while in Turkmen it is realized through forms such as *-ip/-yp*, *-mÄn*, *-ançA/-änçe*, and related variants (Abdullayeva, 2013: 86–90; Khalilov, 2018: 112–115; Gray, 2022: 27–29; Johanson, 2021: 57–58). An evaluation based on the field data shows that the same functional domains in the Oghuz dialects of Uzbekistan are primarily covered by the *-B/-IB*, *-mAsdAn*, and *-DIKÇA* axis; by contrast, compound converb patterns that are widespread in standard Turkish, such as *-(y)ArAk*, *-DIktEn sonra*, *-DIğI için*, and *-DIğI halda/halde*, do not appear to be productive in these dialects.

On the syntactic level, in all varieties, converbal (adverbial participle) cores are positioned as secondary centers dependent on the main predicate; within their own internal structure, they carry objects, adverbials, and place/time modifiers, thereby forming a multi-centered dependency network (Tesiñere, 1959: 63–75; Johanson, 2021: 57–58). This situation demonstrates that converbial constructions constitute a shared mechanism reflecting typological continuity across the Oghuz languages, while in the Oghuz dialects of Uzbekistan they have, under the influence of regional contact and selection processes, evolved into a morphologically narrower yet distinctive subsystem.

Conclusion

This study, conducted on the basis of data from the Oghuz dialects of Uzbekistan and from Turkey Turkish, Azerbaijani Turkish, and Turkmen, has comparatively demonstrated how participial adjective (verbal adjective) and converb (adverbial participle) structures are positioned within dependency relations, rather than being limited solely to inventories of suffixes. The analyses show that verbals, beyond being merely “products of derivation,” are capable of establishing relations both with the main predicate of the clause and with the elements they modify or nominalize, thereby gathering dependents around themselves; for this reason, in many instances they function as intermediate or secondary foci. Accordingly, it is concluded that, in the Oghuz domain, syntactic organization can be explained not only around a single finite verb, but through a more layered dependency structure that also incorporates verbal cores.

With regard to participles, it is observed that similar functions are produced in the standard Oghuz languages through a largely shared core set of derivational suffixes. By contrast, in the Uzbekistan Oghuz dialects, a pattern of structuring that is particularly concentrated around the *-(g)an/-(k)an* axis and displays an expanded range of use draws attention. The fact that some patterns common in the standard languages remain limited in the dialectal sample indicates that contact history and regional selection processes have influenced formal preferences in this area. Nevertheless, the establishment of participial phrases as units dependent on the nouns they modify, and their ability to host their own internal dependents in all four varieties, demonstrates that structural continuity has been maintained.

A similar tendency has also been identified with respect to converbs: in the standard Oghuz languages, converb constructions constitute one of the primary means of establishing relations such as temporal sequence, succession, condition, and cause between actions, and in dependency representations they can mostly be modeled as secondary heads dependent on the main predicate. In the Oghuz dialects of Uzbekistan, by contrast, the converb system is organized around a narrower set of suffixes; nevertheless, this does not result in a loss of function but rather gives rise to a coherent and consistent sub-system. Even in examples where the subject is less overtly realized on the surface, the suffixal sequence and contextual information support the interpretation of the interclausal relations.

As a result, verbals play a decisive role in the construction of the syntactic network in Oghuz languages, and the dependency grammar approach renders this role visible both at the level of description and comparison. The comparative framework put forward by the study, on the one hand, provides the Turkology literature with a function-oriented explanatory basis, and, on the other hand, offers a usable framework for the more consistent modeling of verbal structures in applied fields such as NLP/automatic parsing and translation technologies.

Ethical Considerations

This study is based exclusively on the analysis of linguistic data drawn from publicly accessible written sources, descriptive grammars, and field-recorded dialect materials used in accordance with academic research norms. No experiments involving human participants, personal data, or sensitive information were conducted. Therefore, ethical approval from an institutional review board was not required. The research was carried out in compliance with internationally accepted principles of academic integrity, transparency, and responsible scholarship.

Author Contributions

- Conceptualization, theoretical framework, and research design were jointly developed by Nargız Garayeva and Pulat Mamatkulov.
 - Data collection, dialectal material analysis, and comparative linguistic evaluation were primarily conducted by Nargız Garayeva.
 - Methodological application of dependency grammar, cross-language syntactic interpretation, and formal analysis were mainly carried out by Pulat Mamatkulov.
- Both authors contributed equally to the interpretation of findings, manuscript drafting, critical revision, and approval of the final version of the paper.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper. The research was conducted independently, and the findings were not influenced by any financial or institutional relationships.

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References

1. Abdullayev, E., Seyidov, Y., & Hesenov, A. (2007). *Modern Azerbaijani language. Part IV: Syntax*. Baku.
2. Abdullayeva, G. (2013). *Modern Azerbaijani language. Part II: Morphology and syntax*. Science and Education.
3. Ahmadov, H. (2026). A Historical and Comparative Study of Azerbaijani–German Scientific, Pedagogical, and Literary–Cultural Relations (19th–Early 20th Centuries): Education, Language, and Intellectual Exchange in the Caucasus. *Science, Education and Innovations in the Context of Modern Problems*, 9(2), 1-6. <https://doi.org/10.56334/sei/9.2.15>
4. Asadov, A.A. (2026). Reinventing Reality and the Self: The Evolution, Aesthetics, and Pedagogical Significance of Modern American Prose (1890–1960) in the Context of Narrative Experimentation, Psychological Realism, and Ethical Transformation. *Science, Education and Innovations in the Context of Modern Problems*, 9(1), 22–32. <https://doi.org/10.56334/sei/9.1.2>
5. Caferoğlu, A. (1958). *History of the Turkish language*. Istanbul University Faculty of Letters.
6. Ceferov, S. (2007). *Modern Azerbaijani language: Lexicon*. Baku.
7. Clark, L. (1998). *Turkmen reference grammar*. Harrassowitz.
8. Çöltekin, Ç. (2010). A freely available morphological analyzer for Turkish. In *Proceedings of the 7th International Conference on Language Resources and Evaluation (LREC 2010)* (pp. 820–827). European Language Resources Association.
9. Çöltekin, Ç., Doğruöz, A. S., & Çetinoğlu, Ö. (2023). Resources for Turkish natural language processing. *Language Resources and Evaluation*, 57(1), 449–488. <https://doi.org/10.1007/s10579-022-09587-2>
10. Comrie, B. (1985). *Tense*. Cambridge University Press.
11. de Marneffe, M.-C., Nivre, J., Zeman, D., & Manning, C. D. (2021). Universal Dependencies. *Computational Linguistics*, 47(2), 255–308. https://doi.org/10.1162/coli_a_00402
12. Eker, S. (2006). *Oghuz Turkic of the Southern Khwarezm region*. Turkish Language Association.
13. Ergin, M. (2009). *Turkish grammar* (23rd ed.). Bayrak Publishing.
14. Eryiğit, G. (2014). ITU Turkish NLP web service. In *COLING 2014: System Demonstrations* (pp. 1–4). Association for Computational Linguistics.
15. Göksel, A., & Kerslake, C. (2005). *Turkish: A comprehensive grammar*. Routledge.
16. Gray, A. (2022). *A short reference grammar of Turkmen*. Routledge.

17. Hamidova, K. (2026). Organizational, pedagogical, and health-preserving requirements for the implementation of a holistic health-oriented educational process in contemporary education systems. *Science, Education and Innovations in the Context of Modern Problems*, 9(1), 1451-1458. <https://doi.org/10.56334/sei/9.1.129>
18. Hüseyinzadə, M. (2007). *Modern Azerbaijani language. Part III: Morphology*. Baku.
19. Ismayil, E. (2014). *A study on adverbial participle constructions and the suffix -men in Modern Turkmen* [Unpublished manuscript].
20. Johanson, L. (1998). The structure of Turkic. In L. Johanson & É. Á. Csató (Eds.), *The Turkic languages* (pp. 30-66). Routledge.
21. Johanson, L. (2002). *Contact-induced change in a code-copying framework*. Mouton de Gruyter.
22. Johanson, L., & Csató, É. Á. (Eds.). (1998). *The Turkic languages*. Routledge.
23. Karahan, L. (2013). *Syntax of Turkish* (10th ed.). Akçağ Publishing.
24. Kazimov, Q. S. (2007). *Modern Azerbaijani language: Syntax*. Baku.
25. Kazimov, Q. S. (2010). *Modern Azerbaijani language: Morphology*. Baku.
26. Khalilov, B. (2018). *The verb in Azerbaijani*. Azerbaijan State Pedagogical University Press.
27. Kornfilt, J. (1997). *Turkish*. Routledge.
28. Matthews, P. H. (2007). *The concise Oxford dictionary of linguistics* (2nd ed.). Oxford University Press.
29. Mel'čuk, I. A. (1988). *Dependency syntax: Theory and practice*. State University of New York Press.
30. Musayeva, G. (2015). *Temporal converbial formations in Modern Azerbaijani*.
31. Musayeva, G. (2018). *Converbial forms in Modern Turkmen*.
32. Nivre, J. (2005). *Dependency grammar and dependency parsing* [Manuscript]. Växjö University & Uppsala University.
33. Tesnière, L. (1959). *Éléments de syntaxe structurale*. Klincksieck.
34. Xəlilov, B. (2017). *Modern Azerbaijani language: Syntax*. Baku.
35. Yavuz, E. (2010). Adverbial participles formed with the suffix -GAn in Uzbek Turkish based on Said Ahmad's novel *Ulq*. *Turkish Studies*, 5(3), 1234-1250.