ISSN Online : 2709-4030
ISSN Print : 2709-4022
Vol.7 No.3 2023

DUAL DERIVATIONAL PRODUCTIVITY OF ADJECTIVAL-CUM-ADVERBIAL MARKERS IN URDU: A GENERATIVE ANALYSIS

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ABSTRACT

The present work analyzes the dual derivational productivity of the Urdu adjectival-cum-adverbial markers. The core purpose of the present work is to scrutinize the dual productive markers with structural, percolational, and functional perspectives. The significance of the study lies in the dual productivity of certain markers with one adjectival and other adverbial realization in morphology-syntax nexus. The adjectival-cum-adverbial markers are examined within the framework of Generativism and Lexical Functional Grammar (LFG) with purposive sampling technique. The present study uses morphological attribute value matrix (MAVM) to highlight functions of each morpheme. This work brings to the surface that the dual productivity is triggered from the prefixes as adjectival-cum-adverbial markers accompanying the nominal roots. The complex derivation captures the representative structures generalizable on the other derivatives. The dual derivational paradigm is expected to contribute to the derivative theory and may work equally for other Indo-Aryan languages, as their word structure contains similar formal properties as possessed by the Urdu complex derivatives.

KEY WORDS: *Adjectival-cum-adverbial markers, dual derivational productivity, complex derivatives, template, function, morphology-syntax nexus*

1. INTRODUCTION

Productivity of a marker is a widely read phenomenon in linguistic morphology. A productive marker plays a pivotal role in generating a number of complex derivatives. It is attached to various stems to accomplish the derivation of certain category. Its membership extends to numerous complex derivatives and productivity is viewed in multiple derivational outputs. In the study of productivity, the projection of dual productivity is unique perspective to explore. It is noted that markers are category-bearing and displays their realizations in the systematic and grammatical nominalization, adjectivization, verbalization, and adverbalization. In the derivational productive system, the markers appear to be either category-changing or category-maintaining. It is, however, catchy to trace distinct realizations of a marker in the morphological ecologies. Hussain and Mangrio (2021) highlight the dual productivity of nominal-cum-adjectival markers. They trace some markers with two distinct realizations: nominal and adjectival. In the construction of *hərəm**səra*** ‘a house for female gender’ (N), the marker ***-səra*** (N^{af}) is nominal, whereas in the morphological ecology of *həmḏ**səra*** ‘one who praises to God’ (A), the suffix ***-səra*** functions as adjectival marker. This probe reveals that the marker ***-səra*** is same but it demonstrates two distinct realizations accordingly. However, the prime focus of the study is to trace adjectival-cum-adverbial markers and highlight their formation in generative perspectives.

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ISSN Online : 2709-4030
ISSN Print : 2709-4022
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2. SIGNIFICANCE OF THE STUDY

Previously, the concept of productivity pertained to abundant output of certain markers. The more derivational output was produced, the more productive the marker was thought to be. The significance of the present work lies in the fact that it brings to the surface dual productivity of certain markers. Their one realization is adjectival, whereas the other one is adverbial. The dual productivity of certain markers is expected to make the study worth investigating. The study is conceived to be important as dual productivity of certain markers have never been presented with the lens of combined morphological and syntactic theories. The scanty literature on the dual productivity is expected to make the study fill in the research gap. The study may also be important to present the analysis of the adjectival-cum-adverbial markers with structural, percolational, and functional perspectives. Thus, the interlinked generative steps are expected to complement one another to extend the analysis from structure to function. English has significantly gone through the proposed perspectives (Siddiqi, 2009, Embick and Noyer, 2005) but there is lack of generative application on the Urdu language. The morphosyntactic protocols of each morpheme may lead to the prime significance of the study for Urdu and other Indo-Aryan languages.

3. RESEARCH OBJECTIVES

This paper sets the following objectives to determine the prime focus of the study:

i. To trace the structural patterns of the nominal-cum-adjectival markers in the morphological ecologies.
ii. To apply generative and functional conventions on the traceable structures.

4. RESEARCH QUESTIONS

The following research questions are designed to set a direction and meet the objectives of the study:

i. What are the structural patterns of the nominal-cum-adjectival markers in the morphological ecologies?
ii. How do generative and functional conventions work on the traceable structures?

5. LITERATURE REVIEW

The notion productivity is often discussed in the study of linguistic morphology. Aronoff (1973) states that the word productivity has long been described as an insolvable mystery of derivational morphology. Many theoretical morphologists including Schultink (1961), Bauer (2001), Dressler (2003), and many others have made an effort to define productivity as a property of the language system. Bauer (2001) takes productivity the extent to which a morphological category is actually used under the influence of extra-systemic factors. Schultink (1961) ascribes productivity to three elements: unintentionality, unlimitedness, and regularity. However, the aspect of regularity is a very important one for derivation and word formation processes. He states that productivity is a phenomenon for language users to coin unintentionally an unlimited number of new

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ISSN Print : 2709-4022
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formations, by using the morphological procedure that lies behind the form-meaning correspondence of some known words.

Plag (1999) states that the derivational productivity is a property of word-formation processes. Word-formation processes include coinage, antonomasia, borrowing, compounding, blending, clipping, backformation, conversion, acronym, derivation, and folk etymology (Yule, 2006; Barnhart et al., 2006; Doblhofer, 1990). Apart from these word-formation processes, modification of base and partial and full reduplication stand prominent in the word production mechanism. The present work is, however, delimited to the complex derivation with the adjectival-cum-adverbial markers. Bauer (2003) states that the derivational process is productive, and it generates a number of new words. Thus, the derivational productivity provides a huge lexical stock to facilitate the human communication.

Baayen (1992) and Baayen and Renouf (1996) point out some measures to gauge different aspects of the productivity. In mathematical formalizations of productivity, there is a focus on the size of the morphological category. A category with many members is found to be more productive, as it produces many complex words that are useful to the language community. Expanding productivity refers to the degree to which a category expands to exhibit the growth rate of the vocabulary in a corpus. It works by comparing counts of decomposed element in the morphological constituency. Potential productivity measure is highly sensitive to markedness relations. The marked entity has the greater potential productivity than the unmarked suffix.

Bybee (2001) maintains that the type frequency largely determines the productivity of a word-formation schema. It is the characteristics of certain markers that they have a growing membership. It is noted that the English past tense marker ***-ed*** is realized on thousands of verbs. Thus, it is found to be abundantly productive. Contrary to the previous depiction of productivity, the occurring of categories with fixed or declining membership is said to be unproductive. For instance, the adjectival marker ***-ni*** has a prominent feature of phonological change. In most cases, it is added to the nominal roots e.g., *ḏi:ḏni* ‘worth seeing’ (A). But it shows a phonological change, when it is attached to the nominal root *vəsṯ* ‘centre’. The attachment of the adjectival marker ***-ni*** with the nominal root *vəsṯ* ‘centre’ (N) adds a long vowel **ɑ:** between them. This feature generates the complex derivative *vəsṯa:**ni*** ‘intermediate’ (A), and *vəsṯni** is an ungrammatical word. The highlighted feature of phonological change is found to be extremely limited membership in other complex derivatives.

Baayen (1991) holds that the productive affixes accomplish the derivation for not only the present situation but they also generate the derivatives in the future framework. Di Scillo and Williams (1987) state that an affix is minimally productive when it generates new words. The identical argument is presented by Sterling (1982), Plag (2003) and Bauer (1983) who take the position that the essence of productivity is the ability to use an affix to form novel and new derivatives. The new words are primarily the product of an affix to trigger the formation of the derivatives. Coates (1999) traces the morphemic productivity with four characteristics: semanticity, grammatical category, recurrence with other roots, and interchangeability with other derivational morphemes. Plag (2003) upholds that morphological productivity is the morphemic property to give rise to new formations on a systematic basis. Adams (1973) points out the

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phenomenon that the productivity of morphemes unleashes patterns to form a model for other complex derivatives. In his study, Hussain (2023) proposes twenty-two representative derivational structures, which represent the thousands of derivatives. The proposed structures are the derivational productivity of two hundred and seven markers.

Bauer (2001) relates the notion of morphemic productivity to availability, profitability, and fertility. The derivational process is defined as available if it is used to produce derivatives. The second characteristic is profitability and fertility of a morpheme, which leads to the process of derivational recursion to create new pertinent forms. Recursion is the soul of syntactic structures where compatible phrases are put together directly or indirectly. Carnie (2010) states that recursivity is an ability to put structures iteratively inside one another. On this repeated configuring phrases, Fabb (2005) defines recursivity by pointing out that there is no upper limit on the length of a sentence. Thus, recursion triggers a productive and infinite system. On the morphological recursion, Selkirk (1982) asserts that a context-free system permits the recursiveness, as there is no principle upper bound on the length of words. Vajda (2005) highlights the morphological recursion with affixation. He ascribes this phenomenon to mild recursion by giving the examples of ***re-re-****write* and ***anti-anti-****war*. Besides the repetition of the same affixal forms, variant affixes also occur in suffixation e.g., *tigr-**ess-es*** and *cloud-**let-s***. Hussain (2023) points out the morphological recursion in the complex derivative ***bəd̪****əxla:q****ija:ʈi*** 'pertaining to immorality' (A). The decomposition of its internal structure is given below:

bəd̪- 'bad' (Neg^{af}) + [*əxla:q* 'disposition' (N) + ***-i*** (A^{af}) → *əxla:q****i*** 'moral' (A) + ***-ja:ʈ*** (N^{af}) → *əxla:q****ija:ʈ*** 'morality' (N) + ***-i*** (A^{af}) → *əxla:q****ija:ʈi*** 'pertaining to morality' (A)] = ***bəd̪****əxla:q****ija:ʈi*** 'pertaining to immorality' (A)

Productivity is also related to the quantitative perspectives of a particular morpheme in the process of complex derivative formation. The count of derivational frequency of derivatives gives rise to the notion of family size (Baayen, Dijkstra & Schreuder, 1997). The more frequent occurrence of a category marker is, the more productive it is. The demonstration of productivity is evident in the Urdu marker ***-i***. It turns nouns into adjectives and vice versa. It generates diminutive words. It is a feminine gender marker and a feminine adjectival marker. It also constitutes the second part of the circumfixes. Its various realizations are as follows:

5.1

i. *a:ʈiʃ* 'fire' (N) + ***-i*** (A^{af}) = *a:ʈiʃ****i*** 'made of fire' (A)
ii. *be:ma:r* 'ill' (A) + ***-i*** (N^{af}) = *be:ma:r****i*** 'disease' (N)
iii. *ʈəkəɽ* 'large balance' (N) + ***-i*** = *ʈəkəɽ****i*** 'diminutive of *ʈəkəɽ*, small balance' (N)
iv. *məkɽ****a*** 'male spider' (N), *məkɽ****i*** '***-i*** FG^{M}, female spider' (N)
v. *pəjas****a*** 'thirsty (m)' (A), *pəjas****i*** '***-i*** FA^{M}, thirsty (f)' (A)
vi. ***ʧo:-*** 'four' ($A^{circ.1}$) + *mʊkʰ* 'face' (N) + ***-i*** ($A^{circ.2}$) = ***ʧo:mʊkʰi*** 'four-sided' (A)

In addition to monomorphemic and bimorphemic constructions, the suffix ***-i*** is also attached to the trimorphemic and the tetramorphemic complex structures. This attachment results in adjectivization of nominals. Thus, the following patterns of the Urdu adjectivization are presented:

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5.2

$N^{r} + A^{af} + N^{af} + A^{af} = A$

hœva:n 'beast' (N) + ***-i*** (A^{af}) → *hœva:n**i*** 'beastly' (A) + ***-ja:ʈ*** (N^{af}) → *hœva:n**ija:ʈ*** 'zoology' (N) + ***-i*** (A^{af}) = *hœva:n**ija:ʈi*** 'pertaining to zoology' (A)

əxla:q 'disposition' (N) + ***-i*** (A^{af}) → *əxla:q**i*** 'moral (A) + ***-ja:ʈ*** (N^{af}) → *əxlaq**ija:ʈ*** 'morality' (N) + ***-i*** (A^{af}) = *əxlaq**ija:ʈi*** 'pertaining to morality' (A)

In both examples, the suffix ***-i*** adjectivizes nominals twice in each construction. In multimorphemic structure *hœva:n**ija:ʈi*** 'pertaining to zoology' (A), it adjectivizes *hœva:n* 'beast' (N) as *hœva:n**i*** 'beastly' (A) and *hœva:n**ija:ʈ*** 'zoology' (N) as *hœva:n**ija:ʈi*** 'pertaining to zoology' (A). Similarly, in the construction of *əxlaq**ija:ʈi*** 'pertaining to morality' (A), it adjectivizes *əxla:q* 'disposition' (N) as *əxla:q**i*** 'moral (A) and *əxlaq**ija:ʈ*** 'morality' (N) as *əxla:q**ija:ʈi*** 'pertaining to morality' (A). This is also a distinguishing feature of the Urdu derivational affixes to operate twice to generate the complex derivatives.

In both instances above, the same adjectival derivation occurs, but it also generates the nominal and the adjectival structures in the step-by-step derivation, as it smears in the structure of *pa:k**isəʈa:ni*** 'Pakistani' (A). In the complex derivative *pa:k**isəʈa:ni*** 'Pakistani' (A), the suffix ***-i*** shows both nominal and adjectival derivations. It converts *pa:k* 'holy' (A) to *pa:k**i*** 'holiness' (N). The other derivation with the same marker is adjectival i.e. from *pa:k**isəʈa:n*** 'Pakistan' (N) to *pa:k**isəʈa:ni*** 'Pakistani' (A) Thus, the bound morpheme ***-i*** demonstrates two different realizations according to the morphological ecologies.

Both qualitative and quantitative perspectives of productivity indicate the repeated occurrence of a marker actively in various morphological ecologies. In the study of productivity, the notion of dual productivity is a research gap needs to be filled in. Previously, Hussain and Mangrio (2021) highlight the dual productivity of nominal-cum-adjectival markers. However, the present work unpacks adjectival-cum-adverbial markers.

6. THEORETICAL FRAMEWORK

Within the framework of Generativism, this work scrutinizes the dual derivational productivity of adjectival-cum-adverbial markers. The theoretical underpinning probes some generative perspectives of the complex derivatives. Firstly, the study examines the structures embedded with the dual productive markers. The underlying patterns are expected to help highlight morphology-syntax nexus with respect to structural paradigm. The morphological complex trees are used to demonstrate hierarchical features of the complex derivatives. This structural interconnectivity leads to the assumption that the derivational process of the complex derivatives is syntactic. Secondly, the study uses feature percolation conventions (FPCs) to demonstrate how the features move from the lower node to the higher ones systematically. FPCs by Lieber (1980) are used to incorporate the percolational perspective in the study. Thirdly, the aspect of functional protocols pertains to functionality of each morpheme in the morphological ecologies of the complex derivatives. The proposed analyzer MAVM, originally proposed in Hussain (2023) derived from LFG, is used to highlight the embedded features of the derivatives with the

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adjectival-cum-adverbial markers. MAVM is designed to trace morphological, syntactic, and semantic features. It highlights features in f-structure in attribute-value pairs. In the present work, the multiple functions and features are analyzed and displayed by dint of attribute-value pairs in the main and inner sub-matrixes. Three proposed analytical steps are generative and are connected to each other in relation to morphology-syntax nexus. With these systematic theoretical procedures, the researcher aims to investigate the dual derivational productivity of the adjectival-cum-adverbial markers.

7. RESEARCH METHODOLOGY

In the paradigm of qualitative research, descriptive method is used to analyze the data in the present work. Purposive sampling technique is used to trace the adjectival-cum-adverbial markers in the Urdu complex derivatives. The inflectional aspects and compound derivatives are not the part of discussion. It is highlighted how dual productive markers give dual realizations in various morphological ecologies. From the print dictionaries *Feroz-ul-Lughat Jame New Edition*, and *Ilmi Urdu Lughat Jame*, the adjectival-cum-adverbial markers are ransacked and enlisted. Online dictionaries and a thesaurus including *Urdu Lughat*, (*http://www.udb.gov.pk/*), *Urdu Lughat* (*http://urdulughat.info/*) and *Urdu Thesaurus* (https://urduthesaurus.com/ are also consulted for meanings, transcriptions and etymology. International Phonetic Alphabet (IPA) symbols are used to transcribe the data. Syntax Tree Editor, version 0.9.0.3, is used to present the role of dual productive markers with the complex morphological trees.

8. DATA ANALYSIS

Productivity and fertility are pertinent features of certain markers. Under the umbrella of morphemic productivity and fertility, the notion of dual productivity is a distinguishing feature of the Urdu markers. This feature is previously examined as nominal-cum-adjectival markers in Hussain and Mangrio (2021). After analyzing the adjectival and the adverbial markers, another dual productive feature is found to be embedded in certain markers. This feature is captured and elaborated in adjectival-cum-adverbial markers. Their realizations are triggered from prefixation. This dual productivity is, however, traceable in the use of prefixes ***ba-, bıla-,*** and ***bə-***. A brief analysis of some adjectival-cum-adverbial markers is summarized in the following Table:

Table-: Some Adjectival-cum-Adverbial Markers

Prefixes		**Roots (N)**	**Complex Derivatives**	
bɑ-	(A^{af})	wəqɑːr ‘grace’	**bɑ**wəqɑːr ‘graceful’	(A)
bɑ-	(Adv^{af})	ənd̪ɑzɑ ‘guess’	**bɑ**ənd̪ɑzɑ ‘with guess’	(Adv)
bɑ-	(A^{af})	wəfɑ ‘loyalty’	**bɑ**wəfɑ ‘loyal’	(A)
bɑ-	(Adv^{af})	wədʒuːd̪ ‘existence’	**bɑ**wədʒuːd̪ ‘despite’	(Adv)
bıla-	(A^{af})	ʊdʒrət̪ ‘wage’	**bıla**ʊdʒrət̪ ‘unpaid’	(A)
bıla-	(Adv^{af})	zəruːrət̪ ‘need’	**bıla**zəruːrət̪ ‘unnecessarily’	(Adv)
bıla-	(A^{af})	nɑːɣɑ ‘off in routine’	**bıla**nɑːɣɑ ‘daily’	(A)

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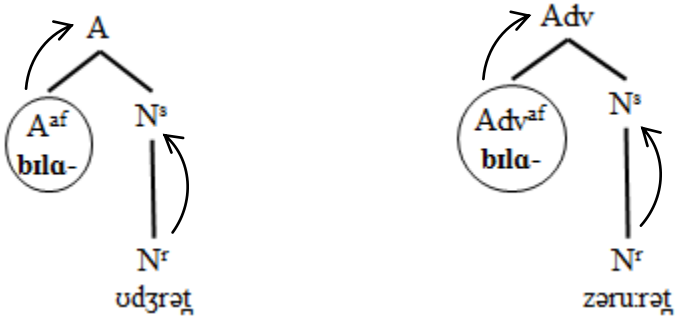
bɪlɑ-	(Adv^{af})	tʃu:k ‘mistake’	**bɪlɑ**tʃu:k ‘unmistakably’	(Adv)
bə-	(A^{af})	zɪd ‘stubbornness’	**bə**zɪd ‘stubborn, insister’	(A)
bə-	(Adv^{af})	zɑ:hir ‘appearance’	**bə**zɑ:hir ‘apparently’	(Adv)

The first left column of the above Table contains adjectival-cum-adverbial markers. Their first realization is adjectival and the second is adverbial. The second column comprises the nominal roots. The third column has the derivational output of adjectival-cum-adverbial markers and the nominal roots. From the above table, the adjectival-cum-adverbial marker ***bɪlɑ-*** is selected to trace structural, percolational, and functional perspectives for the complex derivation.

Tree diagrams are one of the effective tools to display the embedded features of the morphological constituency. After devising the configurational templates, the incorporation of the morphological trees is set as an analytical step in the present work to scrutinize the factorization of the complex derivatives. The complex derivatives ***bɪlɑ****ʊdʒrəʈ* ‘unpaid’ (A) and ***bɪlɑ****zəru:rəʈ* ‘unnecessarily’ (Adv) are presented below in the hierarchical trees to examine the dual productivity of the adjectival-cum-adverbial marker ***bɪlɑ-:***

8.1 a. b.



In both tree diagrams above, the adjectival-cum-adverbial marker is encircled to highlight its dual productive manifestation in different morphological ecologies. Two distinct realizations of the same marker trigger a great deal of debate in the derivational morphology. Both diagrams exhibit the dissimilar categories and the percolation process of the adjectival-cum-adverbial marker ***bɪlɑ-*** with the structural assistance of the complex derivatives ***bɪlɑ****ʊdʒrəʈ* ‘unpaid’ (A) and ***bɪlɑ****zəru:rəʈ* ‘unnecessarily’ (Adv). The seeping up category features of Diagrams 8.1a and 8.1b conform to FPC I and FPC II by Lieber (1980). The first feature percolation convention transfers the category features of both nominal roots (here, *ʊdʒrəʈ* ‘wage’ (N) and *zəru:rəʈ* ‘need’ (N)) to the non-branching nodes N^s and N^s respectively. The second feature percolation convention states that all features of an affix morpheme, including category features, percolate to the first branching node dominating that morpheme. The second left-handed percolation process is very important, as it is category-laden in both cases. It also leads to the point that the Urdu complex derivation is multidirectional. In the given morphological formation, out of two sister nodes A^{af} and N^s in 8.1a, and Adv^{af} and N^{af} in 8.1b, the first nodes A^{af} and Adv^{af} appear to be the governor nodes respectively. Thus, the feature percolation process is cyclic and it is traced from the roots to the mother nodes in both diagrams. The attachment of sister nodes follows locality principle in both tree diagrams. Merger of two different category morphemes *ʊdʒrəʈ*

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'wage' (N) and ***bıla-*** (A^{af}) and *zəru:rət̪* 'need' (N) and ***bıla-*** (Adv^{af}) generates the adjectival and adverbial complex derivatives ***bıla****ʊdʒrət̪* 'unpaid' (A) and ***bıla****zəru:rət̪* 'unnecessarily' (Adv) respectively. It is a distinguishing derivational feature to note that the same marker ***bıla-*** orientates to the readership two different realizations. Its one realization is adjectival and the other output is adverbial complex derivative.

It is noted that each morpheme of the complex derivatives demonstrates various grammatical functions. The formalism of MAVM is used to trace and highlight various syntactic, morphological, and semantic features of the complex derivatives. The multiplicity of functions attached to each morpheme of the complex derivatives ***bıla****ʊdʒrət̪* 'unpaid' (A) and ***bıla****zəru:rət̪* 'unnecessarily' (Adv) is presented in the following MAVMs:

8.2

DERIV	***bıla****ʊdʒrət̪* 'unpaid'		
CATEG	A	STR	complex
		COMP	bimorphemic
		NUM	singular
		TYPE	positive degree
		ORGN	Arabic
ROOT	*ʊdʒrət̪* 'need' (N)		
$AF_1(PREF_1)$	***bıla-***	CATEG	adjectival
		MORPHEME	bound
		C-CHANGING	+
		ORGN	native Urdu

The adjectival MAVM of the complex derivative ***bıla****ʊdʒrət̪* 'unpaid' (A) presents the adjectival realization of the dual productive marker ***bıla-*** through prefixation. It contains numerous functions in attribute-value pairs. The first function DERIV indicates the value of the complex derivative ***bıla****ʊdʒrət̪* 'unpaid' (A). Every MAVM starts with the value of the complex derivative under analysis. The function CATEG shows adjectival value of the derivative. The value A has a further inner f-structure to show multiple features. The derivative under analysis ***bıla****ʊdʒrət̪* 'unpaid' (A) has a complex structure. Its composition is bimorphemic: *ʊdʒrət̪* 'unpaid' (A) is the root and the adjectival-cum-adverbial maker ***bıla-*** is an adjectival marker according to the morphological ecology. NUM shows that it is singular. The function TYPE shows that the given derivative is of positive degree. The third function is displayed as ROOT. The root of the complex derivative ***bıla****ʊdʒrət̪* 'unpaid' (A) is *ʊdʒrət̪* 'wage' (N). It belongs to the Arabic origin. The fourth main function is the first affix ***bıla-***. Its values are given in attribute-value pairs in the sub-matrix. It indicates that it is an adjectival marker, bound morpheme, and category-changing prefix. It is of the native Urdu origin. In brief, the proposed formalism of MAVM minutely and comprehensively provides morphological, syntactic, and semantic features.

In the following matrix, the functional description of the adverbial complex derivative ***bıla****zəru:rət̪* 'unnecessarily' (Adv), diagrammed in 8.1 b, is elaborated through MAVM:

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DERIV	***bɪla****zəru:rəʈ* ‘unnecessarily’	
CATEG	Adv	STR: complex COMP: bimorphemic TYPE: manner ORGN: Arabic
ROOT	*zəru:rəʈ* ‘need’ (N)	
$AF_1(PREF_1)$	***bɪla-***	CATEG: adverbial MORPHEME: bound C-CHANGING: + ORGN: native Urdu

The adverbial MAVM unpacks various functions and features embedded in the adverbial complex derivative ***bɪla****zəru:rəʈ* ‘unnecessarily’ (Adv). The first function DERIV indicates the value of the given adverbial complex derivative. It is necessary to introduce the derivative first to start the functional description. The function CATEG has adverbial value. This adverbial value has a further sub-matrix with morphological and syntactic description. The adverbial complex derivative ***bɪla****zəru:rəʈ* ‘unnecessarily’ (Adv) has a complex structure. Its composition is bimorphemic: *zəru:rəʈ* ‘need’ (N) is a root and adjectival-cum-adverbial marker ***bɪla-*** is an adverbial marker according to the formative ecology. The function TYPE shows that the given derivative is an adverb of manner. The third main function is ROOT. It is *zəru:rəʈ* ‘need’ (N), and it belongs to the Arabic origin. The fourth function is indicated with $AF_1(PREF_1)$. It represents the value of the prefix ***bɪla-***. Its values are paired in attribute-value combinations in the sub-matrix to indicate that it is an adverbial marker, bound morpheme, and category-changing prefix. It is of the native Urdu origin. Thus, the function analyzer MAVM traces and highlights multifarious function and features hosted on each morphological node.

The present section unpacks the morphological dual productivity smeared in the same marker. The dual derivational role of the prefixes ***ba-, bɪla-,*** and ***bə-***, including others, is one of the significant parts of the present study. These prefixes are named adjectival-cum-adverbial markers. Their use in both categories unveils another distinguishing feature of the Urdu complex derivatives. The dual productive markers turn the nominal roots into adjectival and adverbial complex derivatives respectively. Some examples of adjectival roots are also pointed out e.g., ***bəʈəŋ*** ‘helpless’ (A). The root of this derivative is *ʈəŋ* ‘narrow’ (A). Due to the insufficient data, the configuration with the adjectival root is not highlighted strongly. The future researchers may explore the representative data to support the pointed out configuration. These markers are realized to be category-changing in both demonstrations. Thus, the distinct features of the adjectival-cum-adverbial markers distinguish them from the derivational morphemes of the other languages.

9. CONCLUSION

In the paradigm of productivity, the Urdu adjectival-cum-adverbial markers orientate to the readership the unique phenomenon of dual productivity. The dual derivational markers occur in the morphological configurations to represent certain patterns: a dual derivational prefix and a nominal root. In both realizations, the adjectival-cum-adverbial markers appear to be category-changing. In the proposed configuration, the adjectival roots are found with a few traces of occurrence. Besides structural perspective, other approaches to word syntax are found applicable on the proposed configurations. In the percolational perspective, FPC I and FPC II by Lieber (1980) are successfully applied on the morphological trees. The category features are elaborated from the root to the mother node through the curved arrows. The operations of merge and government and binding relations are highlighted to point out other syntactic features. Furthermore, the notion of endocentricity and binary projection are highlighted. The dual productive markers determine the category of the derivation so counts as the head of the representative constructions. Sensitive to the functional description, the mechanism of MAVM helps unpack the functions smeared in each morphological node. The syntactic, morphological, semantic, and etymological features are revealed with the proposed feature analyzer. Since plentiful features of the cognate languages are same, the present work is expected to contribute to the derivational theory of the Indo-Aryan languages. Besides major Indo-Aryan languages, a number of minor languages also thrive with large communities of users. According to Grimes (2000), Pakistan is a land of more than fifty-eight minor languages. Moreover, Urdu-Hindi is considered the second most spoken language of the world. Thus, the present work seems to represent a derivational feature of one of the largest linguistic communities of the world. This work may also contribute to comparative linguistics and Universal Morphology by highlighting various generative perspectives of the complex derivation with the adjectival-cum-adverbial markers.

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