

Pashto-English Compound Words and Their Derivatives: A Comparative Investigation of Morphological and Semantic Patterns

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ABSTRACT

Cross-linguistic examination of global language systems demonstrates structural relationships across multiple linguistic domains, including phonological organisation, grammatical structures, syntactic arrangements, and morphological processes, exhibiting a spectrum from complete structural congruence to absolute divergence. This investigation employs theoretical frameworks grounded in Bauer's morphological theory, O'Grady and Archibald's word formation principles, and Haspelmath and Sims' typological morphology approach, which posits that cross-linguistic morphological patterns exist on a continuum from complete correspondence to total structural divergence. It utilises contrastive analysis theory to identify universal tendencies and language-specific patterns. The study systematically examines morphological similarities and distinctions in compound and derivative constructions between Pashto and English through qualitative and descriptive methodologies, analysing 38 lexical tokens extracted from Daryab, Taj-ul-lughat, and Oxford dictionaries via two-phase analytical procedures involving initial extraction followed by comparative semantic and morphological analysis. Principal discoveries indicate that compound and derivative phenomena demonstrate varying correspondence levels: perfect structural alignment where cross-linguistic equivalents exhibit semantic and morphological similarity, intermediate correspondence in specific constructions, and complete absence of morphological and semantic correspondence in others, providing valuable insights for comparative linguistics scholars, morphology specialists, translation practitioners, and second language learners.

Keywords: *Comparative linguistics, Morphological patterns, Pashto-English compound words, Semantic patterns, Word formation*

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INTRODUCTION

Word formation also known as morphological process refers to the creation of a new word by making changes in existing words or creating new words. According to O'Grady and Archibald (2015), in language word formation may take place through various processes. These processes include acronym, derivation, blending, coinage, backformation, borrowing, clipping and conversion. Like the rest of the processes, compounding is also a significant phenomenon through which words are formed. Compounding is the process of combining two separate words to form a new word with a meaning that differs from that of its individual components. In such process, words belonging to various categories like nouns and adjectives are combined to form new words. It is one of the word-formation strategies which languages employ to form new words out of the existing ones on order to enrich and update their lexicon. This lexeme can be written as multiple orthographic words, hyphenated words, or as a single orthographic word (Schmitt & Schmitt, 2020).

Compounds are classified on two bases: morphological and semantic basis. There are three types of compounds on morphological bases: Open compound which are spelled as two independent words e.g.,

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Ice cream. Closed compounds are joined together to form a single word, e.g., doorknob. Hyphenated compounds are two words joined by a hyphen, e.g., long-term. Moreover, semantically, there are four types of compounds—exocentric, endocentric, appositional, and copulative compounds (Bauer, 1983). When a compound is formed as the hyponym of the head of element, it is called endocentric compound e.g., black colour. The compound that is the hyponym of both its elements is appositional e.g., maidservant. In addition, the compounds that convey idiomatic meaning come under the category of exocentric compounds. If a compound is not a hyponym of both the elements of the compound but of an unknown head, then such a compound is called an exocentric compound e.g., white collar.

Copulative compounds are the ones which have two words that are couple or conjoined e.g., deaf-dumb and bitter-sweet. The process of derivation involves adding an affix to build a word with a meaning and or category distinct from that of its base or stem word (O'Grady & Archibald, 2015). For example, the free morpheme advertise is applied with a suffix -ment-, it becomes advertisement. The bound morpheme -ment- in the word advertisement has changed the word category from a verb into a noun. Like all languages, both English and Pashto exhibit compounding as a common word formation process. The purpose of this study is to compare compounds and derivatives in English and Pashto. It seeks to explore the extent to which the compounds and derivatives of one language correspond to those of the other, with a focus on morphological and semantic similarities and differences.

The linguistic comparison shows that processes of compound formation are very different in languages; although studies have been done on the structure of the Pashto language, English syntax, phonology, as well as inflexion, very little has been said of the semantic morphology of compounds. The following two questions are found in the study: What are the semantic and morphological patterns of compounds and their derivatives in Pashto and in English, and to what extent do the processes of compounding and of deriving demonstrate similarities and differences between the two languages? The study attempts to compare Pashto and English compounded terms about the semantic and morphological patterns and find similarities and differences using comparative analysis. The current work enriches the field of semantic and morphological studies since it provides a comparative systematic overview of compound formation across languages, demonstrates patterns of correspondence between analogous compounds, as well as, obtains cases of lack of correspondence between any morphological or semantic features of these compounds, all of which can be of benefit to second language learners of English or Pashto.

LITERATURE REVIEW

Introduction to Morpheme

Morphemes represent the fundamental building blocks of morphological analysis in linguistics. Language structures can be decomposed into these minimal meaningful units, which constitute the smallest elements carrying either semantic content or grammatical significance (Hashmi et al., 2025). Consider the lexical item “actor,” which demonstrates morphological complexity through its binary composition: the root “act” (conveying the concept of acting) combined with the agentive suffix “-or” (indicating an individual who performs the specified action). It is crucial to distinguish morphological segmentation from phonological syllabification, as these represent distinct analytical levels. Syllabic boundaries do not necessarily correspond to morphemic divisions within lexical items. The word “jumps” exemplifies this distinction, containing a single syllabic unit while encompassing two distinct morphemes: the lexical base “jump” (functioning as the verbal stem) and the inflectional marker “-s” (serving as a bound morpheme indicating third-person singular present tense). This analysis demonstrates that morphemes constitute the minimal meaningful components of lexical structure, with words potentially consisting of either standalone free morphemes or complex combinations incorporating both free and bound morphological elements (Yule, 2022).

Free Morpheme (Lexical and Functional Morphemes)

Morphological units are fundamentally divided into two primary categories: independent morphemes and dependent morphemes. Independent morphemes possess the capacity to function autonomously as

complete lexical items, such as “open” and “visit.” O’Grady and Archibald (2015) define independent morphemes as morphological elements capable of existing as standalone words without requiring additional linguistic components. These autonomous morphological units maintain semantic integrity and communicative function independently, eliminating the necessity for attachment to supplementary morphological elements to convey meaning. Consequently, independent morphemes demonstrate self-sufficiency in meaning expression without relying on morphological combination processes (Akmajian et al., 2017).

Independent morphemes undergo further classification into two distinct subcategories: content-bearing morphemes and grammatical morphemes. Content-bearing morphemes encompass major word classes including nominal, verbal, adjectival, and adverbial elements that carry the substantive semantic information speakers intend to communicate. Given their capacity for lexical expansion through neologism and borrowing, these morphological units are alternatively termed substantive words or constitute an open linguistic category. Conversely, grammatical morphemes primarily comprise structural elements such as determiners, relational words, connectives, quantifying expressions, and pronominal forms. Due to their resistance to lexical innovation and expansion, these elements form a restricted linguistic category. In essence, content-bearing morphemes possess inherent semantic transparency and interpretability, whereas grammatical morphemes acquire meaningful interpretation exclusively through contextual relationships within syntactic constructions (Çelik, 2007).

Bound Morpheme (Inflectional and Derivational Morphemes)

Dependent morphemes represent morphological elements requiring obligatory attachment to other linguistic units to achieve semantic coherence. These morphological components lack autonomous existence and are devoid of independent lexical content. Morphological affixes exemplify dependent morphemes, encompassing both post-positioned and pre-positioned elements. Post-positioned elements include nominal, verbal, adjectival, and adverbial markers. The morpheme “-ly,” for instance, functions as an adverbial marker conveying the sense of “possessing the characteristic of,” demonstrated in formations like “quickly” and “coldly.” Likewise, “-ness” operates as a nominal marker indicating “the condition of existing as,” exemplified in constructions such as “sadness” and “coldness.” The verbal marker “-fy” expresses the meaning “to cause to become,” as illustrated in “horrify.” These elements derive their grammatical significance through their capacity to transform word categories, such as converting the adjectival base “quick” into the adverbial form “quickly.” Beyond post-positioned elements, pre-positioned morphemes also constitute dependent units.

Pre-positioned elements typically function derivationally, generating lexical items with altered semantic content relative to their base forms, rather than merely creating inflectional variants. The prefix “dis-” conveys negation, as demonstrated in “disinterested” and “dislike.” Additionally, specific languages employ infixes—morphological elements inserted within existing morphemes. Infixation occurs frequently in Southeast Asian, Philippine, and various Native American linguistic systems. Linguistic scholars identify potential infixal aspects in English, including the connective “-o-” in “speedometer” and “barometer,” the relational “-in-” in “sister-in-law” and “mother-in-law,” and the temporal “-a-” in “nowadays.” Furthermore, the plural marker “-s” positioned internally in constructions like “mothers-in-law” or “passers-by” exhibits infix-like characteristics (Akmajian et al., 2017).

Morphological elements that function derivationally serve to generate novel lexical items or transform existing words into alternative grammatical categories relative to their base forms. Adjectival constructions such as “helpful” and “helpless” emerge through the incorporation of derivational elements “-ful” and “-less” onto the nominal base “help.” Correspondingly, the integration of the derivational component “-ize” transforms the adjectival form “normal” into the verbal construction “normalize” (Yule, 2022). The alternative category of dependent morphemes comprises inflectional elements that signal various dimensions of grammatical relationships within lexical items. These inflectional components indicate numerical distinctions between singular and plural forms, temporal relationships distinguishing past and present configurations, and comparative or possessive constructions. While inflectional processes

characterize numerous linguistic systems globally, English demonstrates comparatively minimal inflectional complexity when contrasted with other world languages (Çelik, 2007).

Compounding as a Word Formation Process

Word formation through compounding involves the systematic combination of multiple lexical units to generate novel linguistic expressions. This morphological process entails merging distinct lexical items to establish unified constructions. Compound formations manifest in various orthographic configurations: single unified words such as “halfway,” hyphenated constructions like “jewel-bright,” and spaced arrangements as in “white house.” Compounding represents one of the most prolific mechanisms for lexical expansion in English morphology. The process systematically combines pre-existing lexical elements to produce innovative word forms. English compound structures predominantly manifest as nominal, verbal, or adjectival categories. These formations may incorporate aspects from identical or diverse grammatical classes. Typical compound outputs include nominal constructions like “boyfriend,” adjectival forms such as “good-looking,” and verbal compounds like “tap-dance.”

English compound formation encompasses three primary structural patterns: head-dependent compounds, headless compounds, and coordinate compounds (Yule, 2022). Head-dependent compounds represent constructions where semantic interpretation derives from hyponymic relationships. According to Haspelmath and Sims (2013), these structures consist of primary semantic elements and modifying components, with the head element establishing hyponymic connections to the complete construction's meaning. In these formations, the compound's interpretation constitutes a subset of the head element's semantic domain. Illustrations include “airfield,” referring to specialized landing areas for aircraft, and “airplane,” denoting aerial vehicles. Headless compounds (alternatively termed Bahuvrihi constructions) lack dominant semantic elements and subordinate components.

These formations represent entities that do not constitute subcategories of their constituent elements, thus avoiding hyponymic relationships with parts. Notably, these constructions may employ unconventional plural marking strategies, applying plural suffixes to the head position. Examples include “Bigfoots,” referring to members of an extinct feline species, and “Maple Leafs,” designating Toronto's professional hockey organization (O'Grady & De Guzman, 1996). Coordinate or Dvandva compounds represent entities comprising multiple listed components. The Sanskrit-derived term “Dvandva” translates as “pair,” indicating constructions with dual semantic centres. These formations incorporate two primary semantic elements of equal status. English coordinate compound examples include “bittersweet,” “sleepwalk,” “player-manager,” “secretary-treasurer,” “father-daughter,” and “mother-son” (Bauer, 2003).

Derivation

Derivation involves adding an affix to a base word to create a new word with a different meaning or grammatical category. In the derivation, a word that is attached to an affix will change word meaning or the word category. For example, the free morpheme *advertise* when combined with the suffix *-ment*, it becomes *advertisement*. The bound morpheme *-ment* in the word *advertisement* has changed the word category from a verb into a noun. (O'Grady & Archibald, 2015).

Gap in Existing Literature

A review of literature reveals an existing gap in research on Pashto English compounds and their derivatives with specific focus on semantic and morphological patterns. While scholars have explored various structural patterns of global languages through cross linguistic examination, including examining the functions of inflectional morpheme by Khan et al., (2016). They assume that these languages demonstrate significant resemblance in the functions of inflectional morphemes. Another study in this domain was conducted by Israr et. al., (2023) who dealt with Pashto English bilingual hybrid words. Their findings reveal that bilingual compounds are formed through the process of morphological adaptation. Thus, a comprehensive analysis of compounds and their derivatives in these languages remains unexplored.

METHODOLOGY

The study is qualitative and descriptive comparative within the structural linguistics theory and cross-linguistic analysis of morphological structure of analysing the semantics and morphology of words and their derivatives compound words in Pashto and English. The theoretical framework is based on the research of Bauer (2003) morphological theory of compounding, the theoretical approach regarding the processes of word formation by O'Grady and Archibald (2015) and a typological perspective of morphological analysis by Haspelmath and Sims (2013) whereby it is established that languages can differ in the extent to which the phenomena of languages regarding morphology are similar or different to another due to gradual differences, that is, they are never exactly like each other or completely unlike. Contrastive analysis theory was used to base the study on the field of comparative linguistics, which assumes that the systematic comparison of linguistic structures in different languages shows general tendencies as well as other likenesses in morphological processes.

The research design method included both synchronic and cross-linguistic analysis in order to study compound formation and derivational processes that have different manifestations in typologically distinct languages. A total of 38 compound words and derivatives purposively sampled were provided as primary data in three lexicographical sources considered as authoritative sources: Daryab Pashto Dictionary (Momand & Sehrai, 1994), Taj-ul-loghat Pashto Dictionary (Majroh, 2015), and Oxford English Dictionary. This multi-source triangulation methodology gave to the authenticity of the lexicon and limited the possible bias of single-source sampling but left much more of the current use patterns in each language covered. The criteria used to select them were the availability of direct or nearly equivalent translations, the representation of heterogeneous morphological structures and the frequency of use in the system of contemporary discourse.

The analysis of data was carried out in the form of a two-stage systematic process based on a morphological decomposition theory and theory of semantic fields. First, they were marked down and checked in various sources of dictionary, and every example is recorded in the sense of morphological formation, semantic context, and grammatical class in both languages. The analytical model used morphemic analysis, i.e. the combination of free and bound morphemes, inflectional processes and derivational ones, and semantic patterns of correspondence. Structural decomposition of each token has been identified to determine constituent morphemes and their grammatical functions as outlined in the morphological analysis procedures conducted by Akmajian et al., (2017).

The stage of comparative analysis engaged systematic distribution of tokens into eight specific structural patterns by types of morphological appropriateness: perfect morphological harmony (free-free morphemes in both languages), asymmetric structures (single morphemes against the compound structures), structural inversions (free-bound against the bound-free patterns), and morphological reduction patterns. This classification scheme was theoretically based up on the principles of typological morphology, which acknowledges that cross-linguistic patterns of morphology comprise a continuum between morphological equivalence and structural incompatibility. The componential analysis theory was introduced into the practice of semantic analysis, in which the keeping, the expansion or alteration of meaning across linguistic boundaries was under analysis, and morphological analysis was concerned with the determination of whether the quasi-autonomous bound morphemes constituted inflectional or derivational morphemes (retaining or building the grammatical categories). This paper used the systematic comparison method with one or more independent features of correspondence, semantic equivalence and regularity of patterns by compartment of morphology, using principles of contrastive analysis to determine the instances of universal tendencies over preferences in word formation process.

The methodological design recognized the fact that there were potential limitations given that the purposive sampling method may be associated with selection bias, the small size of corpus would not allow statistical generalizability and that only forms that had been lexicalized and had at least been documented in dictionaries, would be taken into consideration. In contrast, there might also be productive and non-lexicalized formations. The systematic classification criteria, cross-verification of sources and a

theoretically informed analytical framework, however, offered a firm foundation on the identification and analysis of cross-linguistic morphological patterns without downgrading analytical culture within the limits of comparative lexical studies.

RESULTS & FINDINGS

The central focus of the present study is the comparison of compounds in English and Pashto. It explores the structural patterns and correspondence of compounds in both languages. The collected compounds are divided into eight categories based on various morphological patterns and structures. These categories range from perfect equivalence of compounds in both languages based on their morphological structures to complete disharmony in the pattern they follow. These compounds are sorted out under the short description, followed by their detailed description. The first category includes compounds formed by free-free morphemes in English, with structurally equivalent counterparts in Pashto. In this case, compounds in both languages show perfect equivalence. The second category comprises English compounds with free morphemes and their Pashto equivalents with free-free morphemes.

The third category consists of English compounds made up of free-free morphemes, while their Pashto equivalents contain a single free morpheme. The fourth category involves English compounds with free-free morphemes that include an infix, contrasted with single free morphemes in Pashto. In the fifth category, English compounds follow a free-bound morphological pattern, which aligns with a free-bound structure in Pashto. The sixth category includes compounds with free-bound morphemes in English and bound-free morphemes in Pashto. The next category involves bound-free morphemes in both English and Pashto. Finally, the eighth category features compounds with free-bound morphemes in English and a single free morpheme in Pashto. Each of these compound types is discussed in the following section, along with their morphological characteristics, analysis, and interpretation.

Free-Free Morphemes in English and Pashto

Comparative analysis of compounds in English and Pashto shows that some of these words in both languages are in perfect equivalence with each other. Yet, the researchers also found that some other compounds vary in their morphological description in both languages. Some words, for example, are made up of free- bound morphemes in English whereas their counterparts in Pashto are comprised of only a single free morpheme or vice versa. Similarly, there are other compounds which are categorized according to their morphological structures. In the table given below, the first set of compounds is compared and analysed. This section contains compounds containing the Free-Free morpheme in English and the Free-Free morpheme in Pashto.

Table 1

Compounds with Free-Free Morpheme Structure in English and Pashto

No	English	Pashto
1.	Barefooted	Khpialba-khpe
2.	Heartbroken	Zra-chawdai
3.	Mother tongue	Muranai-jaba
4.	Airport	Hawai-ada
5.	Grandparents	Nya-neka

This group contains compounds which follow the structure of free-free morphemes in English and free-free morphemes in Pashto shown Table 1. Hence, they are in perfect accord with each other. Mainly, these words are consisted of the nouns followed by adjectives or vice versa. To illustrate, “barefooted” demonstrates adjectival-nominal combination in English morphology. The Pashto equivalent maintains identical structural composition through adjectival-nominal integration. The element ‘Khpialba’ corresponds to the English term “bare,” functioning as an adjectival modifier in both linguistic systems. The concluding component ‘khpe’ represents the English lexeme “feet.” Consequently, the corresponding terms—“foot” in English and ‘khpe’ in Pashto—both operate as nominal elements within their respective morphological frameworks. The second instance i.e., heartbroken in the above table is in reverse order

of the first word in the table. In this word, the order is that a noun comes first which is followed by an adjective. Furthermore, the first two words listed in the table above barefooted and heartbroken contain the suffixes -ed and -en, which typically convert nouns into adjectives in English. The remaining words in the table consist of adjective-noun combinations. This same structure is maintained in Pashto, where the word order aligns with their English equivalents. The subsequent classification encompasses compounds constructed from individual independent morphemes in English. The corresponding Pashto equivalents demonstrate dual independent morpheme configurations. These morphological constructions receive comprehensive examination in the following analysis.

Table 2

Compounds having Free Morphemes in English and Free-Free in Pashto

No	English	Pashto
1.	Ugly	Bad-sorata
2.	Nervous	War-khata
3.	Sibling	Ror-o-khor
4.	Train	Oor-garai
5.	Parents	Mur-o-plar

The above table presents a list of compounds which are comprised of a single free morpheme in English while its equivalents in Pashto consist of two free morphemes. Since these words are free morphemes in English, thus, they are used either as nouns or adjectives. Similarly, their equivalents in Pashto are treated either as nouns or adjectives. Sometimes, they are also used as two nouns. For example, the first word in English is an adjective while its equivalent in Pashto is also an adjective. 'Bad' in Pashto is a free morpheme which is used as an adjective while 'sorata' is a noun in Pashto. 'a' is a case marker in this word. The second instance in the above table is an adjective in English while it is a noun followed by an adjective in Pashto. Nervous in English is an adjective while in Pashto 'war' is a noun and 'khata' is an adjective. In English both words i.e., ugly and nervous are same but unlike 'bad sorata' in Pashto which is an adjective followed by noun, 'war khata' is made up of a noun i.e., 'war' followed by an adjective 'khata'. Moreover, compounds in Pashto i.e., Ror-o-khor and Mur-o-Plar have an infix 'o' which stands for and in English. In the above table 'ugly' and 'nervous' are adjectives whereas the rest of the compounds are nouns. The equivalent of these nouns in Pashto are noun followed by a noun. For example, 'sibling' is a noun in English and Pashto 'ror' stands for brother and 'khor' for sister that denote the relation of brother and sister semantically. Similarly, 'parents' is a noun in English whereas in Pashto both words are nouns where 'Mur' stands for mother and 'plar' for father. In next section, the third set of compounds is analysed comparatively. In English, these compounds consist of free-free morphemes, while their Pashto equivalents are formed using a single free morpheme.

Table 3

Compounds Made Up of Free-Free Morphemes in English and a Single Free Morpheme in Pashto

No	English	Pashto
1.	Bathroom	Tashnab
2.	Graveyard	Adera
3.	Guestroom	Hujra/dera
4.	Airplane	Alwataka
5.	Eyebrow	Banra
6.	Forehead	Tanday

The tokens in this category are the opposite of the tokens given in the above table (3). Where the compounds are comprised of single free morpheme in English whereas their equivalents are in contrast with the examples given in the previous category. Compounds enlisted in the table are two free morphemes in English which are comprised of two separate nouns and again used as nouns in compounds. The equivalents in Pashto contain single free morpheme which are used as nouns. As discussed earlier, the first compound 'bathroom' is noun in English which is formed of two nouns i.e., bath and room. Its counterpart in Pashto 'Tashnab' is a noun. The other instances in the above table are same in which

each compound contains a noun followed by another noun in English and turn used as nouns in Pashto. For example, 'graveyard' in English is a noun followed by another noun. In Pashto the equivalent of graveyard 'Adera' has a single free morpheme. Furthermore, in English 'guestroom' is the combination of two free morphemes i.e. guest and room. The equivalent of graveyard in Pashto i.e. dera/hujra like other compounds is a single free morpheme which is used as a noun. The rest of the compounds in the present category also follow the same morphological pattern. In this section, the compounds having free-free morphemes structure with an infix in English while a single free morpheme in Pashto are compared and analysed.

Table 4

Compounds Made Up of Free-Free Morphemes (With Infix) In English and a Single Free Morpheme in Pashto

No	English	Pashto
1.	Son-in-law	Zum
2.	Father-in-law	Skhar
3.	Mother-in-law	Khwakhe
4.	Brother-in-law	Aokhai/Lewar
5.	Sister-in-law	Khena/wrandar

The compounds presented in the table above are comprised of free- free morphemes which are combined with an infix in English. The equivalents of these compounds in Pashto are composed of single free morphemes. The compounds enlisted in the above table are consisted of nouns followed by other nouns in English. In Pashto their equivalents are comprised of single free morphemes which are grammatically used as nouns. After including infix these nouns then become single compound nouns in English. All the instances in the above table are the terms used for naming relations. For example, the first compound in the above list is a noun followed by another noun i.e., 'son and law'. These two nouns are linked by an infix 'in'. so, the function of the infix is to combine two separate nouns to form a single compound noun. 'Zum' in Pashto stands for son-in-law in English. Like the first instance, the rest of the instances in this category follow the same morphological pattern in English and Pashto languages. This section contains the derivatives which are comprised of free-bound morpheme in English and free-bound morphemes. These words are in perfect accordance with each other as they follow the same morphological patterns. The table below contains such derivatives which are discussed in detail below.

Table 5

Derivatives Made Up of Free-Bound Morphemes in English and Free-Bound Morpheme in Pashto

No	English	Pashto
1.	Friendship	Malgartia
2.	Powerful	Zorawar
3.	Weakness	Kamzortia/Kamzory
4.	Sinful	Gonahgar
5.	Economist	Maeshatdan

Morphologically, these derivatives in English are formed of a free morpheme followed by a bound morpheme. The free morphemes in these compounds are either nouns or adjectives followed by a bound morpheme i.e., ship, ful, ist, hood, er and ness etc. The equivalents of these compounds in Pashto are also free morphemes which are used as nouns or adjectives when taken separately. A bound morpheme follows these free morphemes. 'Malgaray' for instance, stands for friend and 'tia' for ship in English. The second derivative i.e., potent in the table above is same instance of the first one. Analyzing morphologically, the order of the two parts is that a free morpheme which are used either as nouns or adjectives are followed by a bound morpheme. In tokens like friendship, powerful, sinful and economist, the first parts (free morphemes) are nouns followed by a bound morpheme. Comparing these derivatives in English with Pashto, their equivalents follow the same morphological pattern. 'Kamzoray and Samsor' in Pashto are adjectives followed by a bound morpheme in both words 'tia'. These words are changed from adjectives to nouns after adding a bound morpheme to these words. Moreover, these tokens in Pashto generally

have the markers ‘tia, gar, dan, war which turn some nouns into adjectives.

The bound morphemes in this category function either as inflectional or derivational elements. When used as inflectional morphemes, they do not alter the grammatical category of the compound. For example, the first word in the table above—friendship—includes the bound morpheme -ship. Since both friend and friendship are nouns, -ship in this context acts as an inflectional morpheme, leaving the word’s grammatical category unchanged. The equivalent of friendship in Pashto is ‘malgartia’ which is also comprised of a free morpheme and a bound morpheme i.e., malgaray and tia. While making the derivative from the free morpheme ‘Malgaray’, the ‘ay’ (æ) sound is omitted and is replaced by ‘tia’. Thus, like English bound morpheme ‘ship’ the bound morpheme in Pashto ‘tia’ is an inflectional morpheme which cannot change the category of the token ‘malgartia’ as both ‘malgaray’ and ‘malgartia’ are used as nouns. Therefore, bound morpheme i.e., tia is an inflectional morpheme as by adding it the grammatical category remains the same. Similarly, weakness is an adjective which is made up of an adjective i.e., weak and a bound morpheme ‘ness’. Therefore, the grammatical category remains the same though a bound morpheme is added to the stem word. In Pashto ‘kamzoray’ is an adjective which is followed by bound morpheme ‘tia’. In this word the last part of the free morpheme i.e., ay (æ) sound is replaced by ‘tia’. Like English compound ‘weakness’ the grammatical category of ‘kamzortia’ in Pashto remains the same i.e., adjective- though a bound morpheme is added to the root word.

Additionally, bound morphemes can sometimes alter the grammatical category of a word. Powerful for example is an adjective which is made up of a noun i.e., power, and is followed by a bound morpheme ‘ful’. So, a noun e.g., power becomes an adjective by adding a bound morpheme ‘ful’. Pashto equivalent of powerful is ‘zorawar’. In this compound, the stem word ‘zor’ is a noun. By adding a bound morpheme ‘awar’, it becomes an adjective. Hence, it is evident from the given examples that the same morphological pattern is used in both English and Pashto. Moreover, the same bound morpheme is used to form various words which denote qualities or conditions e.g., saritoob, shumtoob etc. In this category, derivatives having a free-bound morphemes structure in English and bound-free pattern in Pashto are discussed. Such tokens are analysed below in detail.

Table 6

Derivatives with Reverse Order

No	English	Pashto
1.	Helpless	Na-chara
2.	Careless	Be-ehteyata
3.	Foolish	Na-poha

In the present category those derivatives are given which follow the Free- Bound morphological pattern in English. The equivalent of these tokens in Pashto are in opposite order of the English words following the Bound-Free morphemes structure. In these derivatives, a free morpheme that is used as a noun or an adjective is followed by a bound morpheme in English. By the addition of the bound morpheme, the grammatical category of some words is changed. A noun, for example becomes an adjective i.e. Careless from care and helpless from help. The equivalents of these derivatives in Pashto are also formed of a free and bound morpheme but in reverse order from that of English. For example, ‘na’ in Pashto word ‘Na-chara’ stands for less and ‘chara’ for help. The second instance in the above table is same of the first one. Moreover, both [1] and [2] have the ‘less’ while the third token has ‘ish’ marker in English which make an adjective from noun. Like English derivatives, their corresponding equivalents in Pashto also follow markers like ‘Na and Be’ which makes adjectives from nouns. In English these derivatives have a free morpheme which are followed by bound morpheme. In Pashto their equivalents have the opposite combination of a bound and free morphemes. In Pashto ‘na and be’ in ‘Na-chara’ and ‘Be-ehtyata’ and are prefix which are followed by free morphemes ‘Chara’ and ‘Ehtyata’. Here ‘a’ in be-ehtyata is also a case marker. The table given below contains morphemes which are again in perfect harmony regarding morphological pattern in both languages. such tokens are discussed in detail below.

Table 7**Morphemes in Perfect Harmony Regarding Morphological Pattern**

No	English	Pashto
1.	Unknown	Na-balad
2.	Unhealthy	Na sama/na-jora
3.	Incomplete	Na-mokamal
4.	Unfair	Na-jayez
5.	Dislike	Na-khwakh
6.	Unmarried	Na-wada/be-wada

The free morphemes in the table above are adjectives or verbs when used separately in English. Some of these adjectives themselves are made up of nouns using 'y' marker. For example, the word healthy is made up of health (noun) by adding the 'y' marker. The Pashto equivalents of these derivatives align perfectly, as they also consist of a bound morpheme followed by a free morpheme. Further, the second part of Pashto equivalents are treated as adjectives or nouns. Like the selected token in English, the equivalents in also have 'A' marker which make them adjectives from noun. 'Amna' for example is a noun derived from 'Aman' by adding 'a' marker which is also used as a noun in Pashto.

The initial example, "Unknown," referenced in the preceding table demonstrates dependent morpheme construction followed by an independent morpheme (adjectival) in English morphology. The Pashto counterpart exhibits identical structural composition comprising dependent and independent morphemes, where the latter element functions adjectivally in Pashto, mirroring English patterns. Specifically, 'na' operates as a dependent morpheme in Pashto while 'ashna' corresponds to the concept of "known." The enumerated examples feature prefixal markers including 'un,' 'dis,' 'in,' and additional negation indicators preceding adjectival bases in English. Correspondingly, Pashto employs prefixal elements such as 'na,' 'be,' and 'bad' that precede adjectival constructions. These dependent morphological units function as prefixal elements in both English and Pashto linguistic systems. For example, 'un' in compound unknown is a prefix whereas known is a root word. Similarly, in Pashto 'na' in the token 'na-ashna' is a prefix and followed by 'ashna' which is like known in English a stem word. Thus, this category contains those derivatives which have a prefix which is followed by a stem word in both English and Pashto. In addition, these prefixes in both languages are used as markers of negation.

English: Free-Bound Morphemes and Pashto: Free Morphemes

In the last category, words comprised of free- bound morphemes in English and a single free morpheme in Pashto are presented and analyzed. In English a free morpheme comes first which is then followed by bound morpheme in these derivatives. Unlike the selected token in English, their equivalents in Pashto have only a single free morpheme. In the below tables the English derivatives which are adjectives or nouns are followed by bound morphemes 'ful, ity, able, ship' in English. In Pashto these words are used as nouns or adjectives.

Table 8**Tokens Made Up of Free-Bound Morphemes in English and a Single Free Morpheme in Pashto**

No	English	Pashto
1.	Cheerful	Bash/khoshal
2.	Respectable	Muhtaram
3.	Ownership	Malkiyat

In 'cheerful' cheer is a free morpheme which is followed by a bound morpheme 'ful' in English. Its equivalent in Pashto has only a single free morpheme 'Khoshal'. In the first instance Cheer is a noun which is followed by a bound morpheme 'ful'. The equivalent of this token in Pashto is a single free morpheme i.e., Khoshala which is an adjective. Likewise, the third instance 'respectable' have a free morpheme followed by bound morpheme in English. 'Respect' is a noun which followed by bound morpheme 'able'. In Pashto the corresponding equivalent of respectable is 'muhtaram' which has a single free morpheme in Pashto. Respectable in English and its equivalent in Pashto are used as adjectives. Similarly, ownership

in English is noun and its equivalent in Pashto i.e., *malkiat* is also used as a noun.

Results

The comparative study shows that morphological process of Pashto and English show a complicated continuum of correspondence patterns with complete structural harmony to absolute morphological divergence. Morphological and semantic perfection occurs when two identical morphemes specifically, a dual structure of independent morpheme is observed in compounds of both languages and with the same meaning. On the other hand, the asymmetric patterns appear where English makes use of single independent morphemes and Pashto uses dual independent morpheme structure and *_vice versa_*. Infixating complex constructions in the English language are matched by single morpheme constructions in Pashto. Similar variability is seen in the derivational process whereby, at least some of the derivatives keep the same pattern in the dependent- independent morphemes in both the languages, whereas others experience structural inversion where English forms the independent-dependent structures and Pashto the dependent- independent patterns. Notably, bound morpheme in both language systems serve inflectionally or derivationally depending on the application they are used. Moreover, some English derivatives with dependent-independent morphological structures are matched with single independent morphemes in Pashto, which implies the morphological complexity and crosslinguistic differences in word formation processes between the typologically different languages.

Discussion

The analysis section presents a comprehensive detail on the correspondence of English Pashto compounds and their derivatives. This correspondence is based on both morphological and semantic bases. The study reveals that there are compounds in both languages that are in complete harmony with each other based on morphological patterns as they are made up of free-free morphological patterns in both languages. Similarly, some compounds in English are comprised of single free morpheme whereas their equivalents in Pashto have free-free morpheme structure. Despite the difference in their composition, these words are treated as nouns or adjectives. This category also contains words that have infixes in Pashto (*Mor o Plar*). Since English words in this category are composed of single free morphemes, they are simply counted as nouns or adjectives while their counterparts in Pashto consist of two free morphemes each in which follow adjective-noun structure or vice versa. The third category contains words that follow the completely opposite description of the second category. Here, words follow the free-free morphological patterns in English while a free morpheme structure in Pashto. Next category contains words that also follow the free-free morphemes in English with an infix while their counterparts contain single free morphemes.

In addition, English contains compounds that are formed of a free morpheme followed by a bound morpheme. The free morphemes in these compounds function either as nouns or adjectives followed by a bound morpheme i.e., *ship, ful, ist, hood, er and ness* etc. The equivalents of these compounds in Pashto are also free morphemes which are used as nouns or adjectives when taken separately. A bound morpheme follows the free morphemes. Next group contains those derivatives that follow the Free-Bound morphological pattern in English. The equivalent of these tokens in Pashto are in reverse order of the English words, following the Bound-Free morphemes structure. In these derivatives, a free morpheme that is used as a noun or an adjective is followed by a bound morpheme in English. By the addition of the bound morpheme, the grammatical category of some words is changed. A noun, for example becomes an adjective i.e. *Careless* from *care* and *helpless* from *help*. The equivalents of these derivatives in Pashto are also formed of a free and bound morpheme but in reverse order from that of English. For example, 'na' in Pashto word '*Na-chara*' stands for less and '*chara*' for help.

Moreover, the researchers also sorted out some tokens that are again in perfect harmony regarding morphological pattern in both languages. These tokens follow the bound-free morphological sequence in both languages. When taken separately, the second components i.e. free morphemes of English words serve either as adjective or verbs, sometimes followed by an additional marker (y). The function of the

additional marker is to change the grammatical category of words. Similarly, their counterparts in Pashto adopts the same morphological order. Since these words are in complete harmony, the Pashto counterparts also adopt an additional marker (Schwa sound) that serve to change the grammatical category of words.

Finally, the researchers enlisted words comprised of free- bound morphemes in English and a single free morpheme in Pashto. In English a free morpheme comes first which is then followed by bound morpheme in these derivatives. Unlike the selected token in English, their equivalents in Pashto have only a single free morpheme. Thus, the independent morphemes in these words serve as adjectives or nouns in English while the dependent morpheme function to change the grammatical categories of the words. Respect, for instance becomes respectful. The Pashto counterparts are used grammatically as nouns or adjectives as well.

CONCLUSION

Following comprehensive examination of the assembled data through contrastive methodology, the investigators determined that morphological processes of word formation and affixation in Pashto and English demonstrate a continuum spanning from complete structural congruence to total morphological divergence. Specific lexical constructions across both linguistic systems exhibit identical characteristics in their respective languages. This structural alignment stems from consistent morphological configurations and semantic correspondence of the analysed tokens. Cross-linguistic comparison reveals that these formations contain independent morphological elements and maintain equivalent semantic interpretations. Additional compound and derivative constructions demonstrated intermediate correspondence levels concerning the morphological frameworks of their cross-linguistic counterparts. The investigation further established that numerous other compound and derivative formations exhibit complete absence of structural or semantic correspondence between English and Pashto manifestations.

Competing Interest

The author declared no conflict of interest.

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