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WAYS OF TRANSFERRING PARTIALLY WORD-FORMING AFFIXES IN THE NATIONAL CORPUS OF THE KAZAKH LANGUAGE

Abstract. Creating a linguistic corpus that can automatically set the word-formation markings in the Kazakh language texts requires conducting word-formation analysis in a linguistic system in a clear formal system. The reason is that the computer distinguishes language units depending on the formal markings embedded in the memory. Therefore, in our research work, we have considered the issues of word formation and described the ways of word-formation affixes transfer in the National Corpus of the Kazakh language. Our research work aims to create a linguistic basis for the inclusion of word-formation markers in the corpus of the Kazakh language. The scientific and practical significance of the work is that the linguistic markup will be introduced and implemented in the creation of the National Corpus of the Kazakh language. A brief description of the research methodology: in our research work we have used the descriptive method in reviewing the problems of word formation, word-formation markers, method of analysis, and systematization in determining the functions of affixes that perform partially word-formation functions. Main results and analysis, results of research work: To create linguistic corpora that can automatically put word-formation markings on texts in the Kazakh language, we have taken steps to translate word-formation analyses into a clear formal system, revealed word-formation functions of functional affixes (-лық/-лік, -дай/-дей, -ша/-ше, -сыз/-сіз, - лы/-лі, -ғы/-гі) that do not fully meet the requirements of word-formation. The value of the study: the results obtained in preparing the development of word-formation markers in the Kazakh language, contribute to the addition and development of theoretical problems in the areas of word-formation, morphology, and corpus linguistics of the Kazakh language. The practical importance of the results of the research work: they can be used in lectures and seminars which are held in higher educational institutions on the following subjects: "Modern Kazakh Language", "Word-Formation", "Corpus Linguistics", "Computer Linguistics".

Keywords: corpus, national corpus, word-formation, partially word-formation affixes, linguistic base.

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ЖАРТЫЛАЙ СӨЗЖАСАМДЫҚ ҚЫЗМЕТ АТҚАРАТЫН ҚОСЫМШАЛАРДЫҢ ҚАЗАҚ ТІЛІНІҢ ҰЛТТЫҚ КОРПУСЫНДА БЕРІЛУ ЖОЛДАРЫ

Аннотация. Қазақ тілінде мәтіндерге автоматты түрде сөзжасамдық белгіленім қоя алатын тілдік корпустарды жасау үшін тілдік жүйедегі сөзжасамдық талдауларды нақты формалдық жүйеге түсіру керек. Өйткені компьютер тілдік бірліктерді жадқа салынған формалдық белгіленімдерге қарай ажыратады. Сондықтан біз зерттеу жұмысымызда сөзжасам мәселелері қарастырылып, жартылай сөзжасамдық қызмет атқаратын қосымшалардың қазақ тілінің ұлттық корпусында берілу жолдары сипатталды. Зерттеу жұмысымыздың мақсаты – қазақ тіліндегі сөзжасамдық белгіленімдерді корпусқа енгізудің тілдік базасын жасау. Ғылыми және практикалық маңыздылығы: Қазақ тілінің ұлттық корпусын жасауда лингвистикалық белгіленім түрі ретінде енгізілетін болады, соған бастама болады. Зерттеу әдіснамасының қысқаша сипаттамасы: зерттеу жұмысымызда корпустағы сөзжасам мәселелері, сөзжасамдық белгіленімдер туралы шолуда сипаттама әдісі, жартылай сөзжасамдық қызмет атқаратын қосымшалардың қызметін айқындауда талдау, жүйелеу әдісі қолданылды. Негізгі нәтижелер мен талдау, зерттеу жұмысының қорытындылары: Қазақ тілінде мәтіндерге автоматты түрде сөзжасамдық белгіленім қоя алатын тілдік корпустарды жасау үшін тілдік жүйедегі сөзжасамдық талдауларды нақты формалдық жүйеге түсіруге қадам жасадық. Сөзжасам талаптарына толық сәйкес келе бермейтін функционалды қосымшалардың (-лық/-лік, -дай/-дей, -ша/-ше, -сыз/-сіз, - лы/-лі, -ғы/-гі) сөзжасамдық және

формажасамдық қызметтерін ашып көрсеттік. Зерттеудің құндылығы: Қазақ тіліндегі сөзжасамдық белгіленімдер әзірлемесін дайындауда алынған нәтижелер қазақ тілінің сөзжасам, морфология, корпустық лингвистика салалары бойынша теориялық мәселелерді толықтыруға, дамытуға өзіндік үлес қосады. Зерттеу жұмысынан алынған нәтижелердің практикалық мәні: жоғары оқу орындарында оқытылатын «Қазіргі қазақ тілі», «Сөзжасам», «Корпустық лингвистика», «Компьютерлік лингвистика» пәндері бойынша оқытылатын дәрістерде, семинар сабақтарында пайдалануға болады.

Тірек сөздер: корпус, ұлттық корпус, сөзжасам, жартылай сөзжасамдық қызмет атқаратын қосымшалар, тілдік база.

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СПОСОБЫ ПЕРЕДАЧИ ЧАСТИЧНО СЛОВООБРАЗОВАТЕЛЬНЫХ АФФИКСОВ В НАЦИОНАЛЬНОМ КОРПУСЕ КАЗАХСКОГО ЯЗЫКА

Аннотация. Создание лингвистического корпуса, способного автоматически устанавливать словообразовательные пометы в текстах на казахском языке, требует проведения словообразовательного анализа в лингвистической системе в четкой формальной системе. Это связано с тем, что компьютер различает языковые единицы в зависимости от заложенных в память формальных меток. Поэтому в нашей исследовательской работе мы рассмотрели вопросы словообразования и описали способы передачи словообразовательных аффиксов в Национальном корпусе казахского языка. Наша исследовательская работа направлена на создание лингвистической основы для включения словообразовательных маркеров в корпус казахского языка. Научно-практическая значимость работы заключается в том, что лингвистическая разметка будет внедрена и реализована при создании Национального корпуса казахского языка. Краткое описание методологии исследования: в нашей исследовательской работе мы использовали описательный метод при рассмотрении проблем словообразования, словообразовательных маркеров, метод анализа и систематизации при определении функций аффиксов, выполняющих частично словообразовательные функции. Основные результаты и анализ, итоги исследовательской работы: для создания языковых корпусов, способных автоматически проставлять словообразовательные пометы в текстах на казахском языке, нами были предприняты шаги по переводу словообразовательного анализа в четкую формальную систему, выявлены словообразовательные функции функциональных аффиксов (-лық/-лік, -дай/-дей, -ша/-ше, -сыз/сіз, - лы/-лі, -ғы/-гі), которые не полностью отвечают требованиям словообразования. Ценность исследования: результаты, полученные при подготовке разработки словообразовательных маркеров в казахском языке, способствуют дополнению и развитию теоретических проблем в области словообразования, морфологии и корпусной лингвистики казахского языка. Практическая значимость результатов исследовательской работы: они могут быть использованы в лекциях и семинарах, проводимых в высших учебных заведениях по следующим дисциплинам: «Современный казахский язык», «Словообразование», «Корпусная лингвистика», «Компьютерная лингвистика».

Ключевые слова: корпус, национальный корпус, словообразование, частично словообразовательные аффиксы, лингвистическая база.

Introduction

While the word-formation field was not recognized as a separate field of linguistics, all affixes, which are subdivided into suffixes and conjugations, became the subject of morphology, the aim of which is to determine the morphemic composition of words as an auxiliary morpheme. Both word-forming affixes and form-forming affixes have been studied as whole units. Considering word-forming suffixes, which are word-forming units, and form-forming affixes, which are non-word-forming units, at a single level is due to their common properties. First, the auxiliary morpheme includes both word-formative affixes and nonword-formative affixes, i.e., form-forming affixes. Secondly, both are not used separately without lexical units (root words), i.e., have no lexical meaning.

Since morphology dealt with the problem of creating a derivative word by attaching affixes, synthetic word formation, which is a derivative method of word formation, remained unrecognized as

a separate branch for a long time. However, in time it was paid attention to the fact that the word-formation process is a way of enriching the word combination of language, there are different ways of creating a new name and it is a certain system phenomenon that was formed as a separate branch of the Kazakh linguistics in the 90s.

Morphology studies the morphemic structure of a word, classes of a word, and its grammatical categories, studies the nature of the formation of word derivative words, word-forming methods, and ways of forming a new name. Morphology studies the word as a root morpheme and in terms of classes of words, which are divided according to the overall grammatical meaning of words, lexicology makes the object of lexical meanings of root and derivative words. And word formatting is based on the word-formation meaning in derived words. The main unit of language – a word is to be studied from various sides of linguistics. Depending on the variety of goals of this study they are differentiated by levels and designate specific objects of study. There are also independent objects of study of morphology and word formation, which in the past were constantly considered at the same level. But there are more complex, controversial issues of morphology and word formation, which are interwoven and intertwined in comparison with other levels of linguistics.

Materials and methods

Practically many affixes in our language have the property of creating new meaningful words while formative affixes within the grammatical categories of word classes, give a grammatical meaning to the connected word, expressing a word-formation or a form-formation function. Their activity can be clearly distinguished by the conditions of classification of affixes in a language. And some affixes, while not subject to the conditions of classification, have a bilateral function and exhibit an intermediate character. For example, in Kazakh, these affixes called "bifunctional affixes" (K. Shayakhmetov), and "functional affixes" (S. Isayev), have been the subject of special study. While Tatar scholar of Turkic languages Nasilov calls "inclusion affixes" and "intermediate affixes", Tatar scholars M.Z. Zakiev and F. Ganiev give some of these affixes in the paradigm of the case category. M.A. Khabichev, a researcher of the Balkar-Karachaev language, calls them "comparative form" (-дай/дей), "equivalent form" (-ша/ше), "area form" (-лы/лі), "negative form" (-сыз/сіз), etc. Determining the linguistic nature of such affixes, standing between word formation and morphology, is a complex and topical problem. Usually, these affixes are regarded as word-formation suffixes of adjectives and adverbs. Very often, however, these suffixes contradict the conditions for distinguishing between word-forming and form-forming affixes. Nevertheless, word formation includes moments in which the word-forming function of functional affixes in such an intermediate layer is visible, sometimes examples are given in which a purely grammatical meaning prevails. And their form-formative functions are not mentioned at all in the field of morphology. This is because they are not regarded as part of any grammatical category of the classes of words considered by morphology.

The affixes that perform this dual function are studied in dissertation works on Kazakh linguistics, and this problem, though repeated over and over again, remains unnoticed both in academic grammar and in individual monographic textbooks.

The composition of all words used in a language consists of root words and added grammatical forms. Therefore, we consider it necessary to clearly define the word-forming and form-forming functions of functional affixes, consider the situations generated by word-forming units in the field of word-formation, and give different grammatical adverbs in the speech act as a part of morphology. This two-way function of functional affixes was theoretically raised in Kazakh linguistics by the famous scholar Y. Mamanov (Mamanov, 1973: 89).

To clarify the reasons for solving the problem posed on this topic and identify ways to solve it, we shall analyze the thoughts and opinions expressed in the Turkic languages and scientific research in the Kazakh language about the linguistic nature of these affixes and justify the need to find one solution to this controversial issue, which so far remains unnoticed in the textbooks and grammars of

the Kazakh language. After revealing the problem, the word-formation services of functional affixes will be considered in the chapters concerning word formation of individual classes of words.

Words created with the help of these affixes performing word-formation functions are an independent lexical unit, so in explanatory dictionaries, they are presented in the register lines.

However, there are also frequent cases where these functional affixes are attached after word-forming, i.e. form-forming suffixes and adverbs of various grammatical shades. We must distinguish clearly between the word-formation and form-formation services of these functional affixes to determine in which cases they fulfill a word-formation function.

The suffix -лық/лік, by conjunction with the roots of nouns, fulfills the function of a noun producing nouns, of a superlative, relative meaning, producing adjectives (*адамдық, жақсылық, типографиялық, сындық,* etc.). Similarly, this suffix is also used after participles. For example, *сөйлегендік, сатқандық, жазғандық, айтарлық, берерлік,* etc. are units of speech in use. These words as independent lexical units are not listed in the register rows of the explanatory dictionaries. It is also because of their universal nature, which means that any participle can continue to produce tense substantives by attaching the suffix -лық/лік to the formal verb. Because this affix was so polysemous, at the beginning each word was shown as a separate part of speech, sometimes together and sometimes separately. For example, in early grammar, the suffix -лық/лік is considered part of an adjective as well as a noun. Because in this period, nouns and adjectives were not completely separated from each other as a separate class of words. One scholar refers to it only as part of the noun class, one group as part of adjectives, and another group as part of nouns and adjectives. Some works define it as the genitive case of a name.

The suffix -лық/лік is an adjective-multifunctional affix. It is an affix to root words and word forms with different word formations and grammatical meanings. Although there are various conflicting opinions among scholars as to the word-formation and class of words or form-formation functions of the suffix -лық/лік, it has mostly correctly defined the meanings it expresses.

In the works of scholars, the suffix -лық/лік is considered as part of both nouns and adjectives, and its meanings are taken in relation to these two classes of words, with a second group of scholars stating that its main function was mainly to create nouns, and later this person became an independent word from some related nouns, emphasizing the birth of new words, i.e., the main function is to create nouns and attributes. Few scholars recognize the suffix -лық/лік as a formant. In this group, N.A. Baskakov and Y. Mamanov are of particular note.

N.A. Baskakov shows the suffix -лық/лік as an attribute-forming noun in Karakalpak languages, in the historical-typological morphology of Turkic languages, written in 1979, he defined it as a morpheme-producing substantive form of the noun (Baskakov, 1952: 159). Therefore, the scientist considered the suffix -лық/лік as a morpheme producing either a substantive form or a form of attribute determination, depending on its function in a sentence.

In Kazakh linguistics, Y. Mamanov's conclusions are also similar to N.A.Baskakov's. He says: "In Turkic and Kazakh languages the suffix -лық/лік is considered one of the most productive affixes... But not all nouns with the suffix -лық/лік are derived root words included in the vocabulary of the whole language. Most of them refer to verb forms that are used only temporarily in speech. For example, in Kazakh, there are no normal ready-made words like үйлік, дәптерлік, терезелік but in speech, it is used in such collocations as *бір үйлік кірпіш, екі терезелік әйнек, столдық ағаш, дәптерлік қағаз.* Therefore, one group of nouns with the suffix -лық/лік refers to a lexical whole formed from a derivative root (тұздық, бастық, сулық, аудандық), and the second group is verbal forms temporarily used in sentences and word combinations (едендік, үйлік, құрықтық), they are not included in the language dictionary... The suffix -лық/лік is attached to nouns, adjectives, numerals, and past participle forms indiscriminately. Containing one-word class or several word classes is a characteristic feature of the morpheme that forms a grammatical form. If this is so, then naturally the phenomenon that the primary function of the suffix -лық/лік is to create the form, and later, as a result of continuous use of certain words in a particular concept, their meaning is clarified and they become derived root words" (Mamanov, 1973: 26-30).

It can be seen from Y. Mamanov's conclusions above that the scholar did not deny that the suffix *-лық/лік* has a word-creating function, but believed that it originally was an affix that had a form-creating function. Consequently, it is clear that this affix is an affix that has a word-creating function within nouns and adjectives. Irrespective of how the word formation is formed, the suffix *-лық/лік* is a compound noun and adjective. At the same time, its function of creating a form that is a unit of speech and does not create new words generates substantives and attributes has been duly recognized by scholars. Some scholars have emphasized both such functions and given them a name that corresponds to their linguistic nature. In Turkic languages V.M. Nasilov, F. A. Ganiev, M.Z. Zakiev, M. A. Khabichev, K. Shayakhmetov, S. Isayev, and other researchers have come to believe that the performer of the "double function" is the affixes. For example, in Uzbek. S. Usmanov represents a person in a group of affixes that have two functions. In addition to forming nouns and adjectives, this person defines that the word has a linking function in the sentence.

The Tatar scholar V.M. Nasilov includes it in a special group – *"introductory affixes"*, i.e. between the word-forming and form-forming systems. F.A. Ganiev shows that the suffix *-лық/лік* is both a word-formative and a grammatical element. According to the fulfillment of these two different functions, the suffix *-лық/лік* is considered a grammatical homonymic affix and is called a *"semi-functional affix"* (Ganiev, 1974: 49). M.Z. Zakiev considered the attachment function in two ways. M.A.Khabichev states that the suffix *-лық/лік* is in a row of syncretic affixes forming both words and forms (Khabichev, 1989: 137). According to K. Shayakhmetov, who did his Ph.D. thesis in Kazakh linguistics on "Dual functional affixes", the substantive-adjective derivative function of the suffix *-лық/лік* is its first function.

The suffix *-лық/лік* is a suffix that can be added to all nouns. But it cannot be an independent lexical unit where all related words are part of the same vocabulary. There are not many specific nouns in our language that are formed by adding these suffixes. For example: *инелік, орындық, түндік, кездік, өсімдік, сыйлық, базарлық, қалындық*, etc. It is indisputable that these words are created with the presence of the suffix *-лық/лік*. But we must consider these words as words not arising from the word-formation function of the suffix *-лық/лік*, but created by the semantic, rather than a synthetic way of word formation, that is, words that have reached the vocabulary through the development of meaning. The reason is that not all words with the suffix *-лық/лік* can be words in their own right, there are very many words that remain an attribute-defining meaning. For example, *үйлік, дәптерлік, көйлектік*, etc. word forms should not be taken together with the words given above. These words do not differ in structure from the preceding words, that is, in both cases, the suffix *-лық/лік* is added to the nouns, but the resultant meaning is different. These words are not derived words included in the vocabulary as the preceding ones, but only word forms used in the speech process. Y. Mamanov called them temporal words (Mamanov, 1973:33).

In Turkology the suffix *-дай/дей* is called declination by the Turkic scholar P.M. Melioransky, and the suffix -дай/дей gets the name "*comparative case*" in the scholar's works. In Kazakh linguistics, it was first shown as part of syllogisms by Professor K.Zhubanov. The scholar showed that the *related adverb* is the suffix -дай/дей (Zakharov, 2005:392).

The tendency to identify the suffix *-дай/дей* as case affixes have been continued by P.M. Melioranskii and K. Zhubanov. N.P. Dyrenkova calls it an "*equalizing case"* in the Oyrot language. F.A. Ganiev in his article on the synthetic and analytical cases in the Tatar language inserts the suffix -дай/дей in the paradigm of cases (Ganiev, 1974: 54-55).

In Kazakh linguistics, G. Musabaev has clearly shown that the suffix *-дай/дей* can serve as a case formant. In Turkic studies, I. Kenesbayev defined the suffix *-дай/дей* as a case-formant, which is the most convincing evidence that the definition is incorrect (Musabaev, 1973: 154). The Kuman languages researcher M.A. Khabichev considers *-дай/дей* a type of formative affixes. Assigning to it the name "*affixative form*", he separately describes the transformation of word classes into this form (Khabievich, 1989: 35).

Although he didn't assign the feature of case-formation to the suffix *-дай/дей*, the scholar Y. Mamanov stated: "Materials of Turkic languages, including Kazakh, show that prefixes *-сыз/сіз, -*

дай/дей, -ша/ше are mostly grammatical indicators forming functional forms of nouns. ... the words *дардай, құрттай, түймедей* and *Жәмиләдай, әкеңдей, столдай* are all derived affixes looking at the unity of their outward faces. These words (the latter) should be recognized as *an attributive form expressing the meaning of comparison of a noun*" (Mamanov, 1973: 33). And the preceding examples, i.e. the words *құрттай, түймедей, дардай* did not arise from the word-formation function of the suffix *-дай/дей*, they are recognized as gradually formed into a lexical whole by semantic means from the grammatical forms created by this suffix.

　　In Kazakh linguistics, the dual-functionality of the suffix *-дай/дей* is outlined in K. Shayakhmetov's Ph.D. thesis "Dual functional affixes". K. Shayakhmetov calls the word-formation function of the suffix *-дай/дей* to attach to singular nouns in nominative case its primary first function and expresses its formative function in 13 different ways. According to Shayakhmetov, the affix *-дай/дей* is attached to plural nouns (әкелердей), after the possessive form (үйіндей), after the *дағы/дегі* (намаздағыдай), after the form *-нікі* (қазақтікіндей), modal words (бардай), numerals (қырықтай), proper nouns (Шыңғыстай), participles (сағынатындай) and action nouns (Shayakhmetov, 1973: 51-91). K.Shayakhmetov thought that the suffix *-дай/дей* should be regarded as a derivative suffix only when attached to the root of singular nouns in the nominative case.

　　In Kazakh grammar, the suffix *-сыз/сіз* is mostly defined as a relative adjective suffix. However, in our language it is not uncommon for the suffix *-сыз/сіз* to be conjugated after a closed verb or to be conjugated before the roots of nouns, not creating an independent lexical unit, but giving rise to irrelevant tenses of negation. For example: *барусыз қал, кітапсыз, қаламсыз қалу, оқусыз қалу*, etc. M. A. Khabichev in Turkic languages refers to an absence, a negation form in such affixes *-сыз/сіз* (Khabievich, 1989: 62).

　　In Kazakh linguistics, K. Shayakhmetov says that this adjective serves as a direct adjective to the root of nouns – word-former and after form-forming suffixes – form-former. The researcher gives almost all the two-function affixes he has studied consistently with this system. However, the addition *-сыз/сіз* always gives a word when it is added to a noun root. This absence and negation also produce meaningful speech units. For example, if the suffix *-сыз/сіз* gave rise to derivative adjectives in *мейірімді, көңілді*, a phrase like *кітапсыз қалу, орамалсыз келу* creates word forms that are only used in speech and are not included in explanatory dictionaries as independent lexical units. Consequently, this additional form serves two different functions, not only when it is added after suffixes generate or transform a word, but also when it is added to the word root. In Turkology, it is called by the terms "semi-functional", "syncretic", "intermediate", "insertive", "bifunctional", etc.

　　There are also those in Turkology who recognize the suffix *-сыз/сіз* as an adverb similar to the suffix *-дай/дей*. M.Z. Zakiev introduces the suffix *-сыз/сіз* into the accusative case paradigm under the name of "deprivative case' (Zakiev, 1964: 102). F.A. Ganiev also divides the adverbial paradigm into synthetic and analytical adverbs and adds the suffix *-сыз/сіз* to the adverbial system under the name of "deprivative case" (Ganiev, 1970: 82).

　　There are also those in Turkology who recognize the suffix *-сыз/сіз* as a form of a noun. In particular, N.A. Baskakov calls the attribute-defining form of the noun. The Kumanian languages researcher M.A. Khabichev determines that absence common to all classes of words (lichen) is an indicator of the form.

　　In Kazakh, Y. Mamanov explains the suffix *-сыз/сіз*, which attaches to all noun roots, proper nouns, referential pronouns, plural forms, dependency, and pronouns, which initially served as a grammatical form generation and then gradually transitioned to word formation function (Mamanov, 1973: 31).

　　The suffix *-лы/лі* is an antonym to *-сыз/сіз* mentioned above and the multifunctional affix. The suffix *-сыз/сіз* is a negation to the dormant word, and has no grammatical meaning, *-лы/лі* has adjectival meaning to the ownership, dependency value. Opinions on the grammatical meaning of the opposition in all grammar are mostly consistent the moot point being in their word formation and form formation. In Kazakh grammar, this affix is recognized as a derivative suffix of the relative

adjective. And in Turkological works, this affix is considered not only adjective-forming but also as a grammatical formant with possessive meaning.

The suffix -лы/лі is defined as an adjective-forming affix in the grammar of the Tatar language (1969), the grammar of the Turkmen language (1970), the grammar of the Azerbaijan language (1973), the grammar of the Kazakh language (1967) and others. Therefore, in Turkic studies, one group of scholars defines the suffix -лы/лі as a one-way adjective-formant, while others define it as both an adjective-formant and a substantive-formant in the two classes of words.

In A. Iskakov's monography "Modern Kazakh", the suffix -лы/лі is defined as a productive adjective-forming suffix and the following examples are given. The scholar gives the words атақты, әсерлі, инабатты, пайдалы and сиырлы, балалы, гүлді, ағашты in one line.

N.A.Baskakov defines -лы/лі as the "*possessive form*" affix, which generates the attribute-defining form of names.

M. Z. Zakiev in his grammar of the Tatar language recognizes the suffix -лы/лі as a word transformer, which refers to the case endings. In the paper written by the Tatar scholar F. A. Ganiev to systematize the paradigm of cases, the suffix -лы/лі is built into the system of cases in a synthetic group of cases called "*possessive case*" (Ganiev, 1970: 77-79).

The suffix -ша/ше is considered one of the productive adverb-forming affixes in the Kazakh language. But the breadth of its collocations does not meet the condition of collocations of word-forming adjectives. In other Turkic languages, it has been defined as a case-forming or formative affix. And in Kazakh grammar, it is defined as an *adverb-producing suffix*. However, it is said not always to produce adverbs, that is, it has only a grammatical meaning. It is also considered *dual-functional*.

Both Turkological works and grammar of the Kazakh language give priority to considering it as a part of adverbs. In Kazakh linguistics, the overwhelming majority of scholars consider the suffix -ша/ше as an adverbial suffix. In textbooks and academic grammar, it is also indicated as an adverbial suffix.

Turkology also has a definition of the suffix -ша/ше as a case-forming affix. The suffix -ша/ше is first defined as case-forming in the 'Grammar of the Altai language'.

In Kazakh grammar and textbooks, the suffix -ғы/гі which is the most productive relative adjective formant is defined as word-forming. This affix may be joined to root words with the meaning of the season. In addition, the conjugation is joined indiscriminately to words in the genitive case, creating a grammatical abstraction. There are misconceptions in the textbooks that the suffix -ғы/гі serves as an adjective-formant joining after the genitive case.

For example, in A. Iskakov's monography "Kazirgi Kazakh tili": "Affixes with spatial concept join to some nouns, adverbs, as well as names in the genitive and original (rare) case forms, and make relative adjective whose meanings refer to their lexical content. For example *ауызғы, төргі, түпкі, ішкі т.б. баладағы, кітаптағы, сөйлегендегі, орталықтағы, заводтағы, цехтағы* etc." (Iskakov, 1991: 173). 'The academic grammar of the Kazakh language' (1967) the words to which the suffix -ғы/гі is attached are considered compound words.

Our research work applies the method of description in reviewing the problems of word formation, word-formation designations in the corpus, the method of analysis and systematization in determining the word-formation and form-formation activity of two-functional affixes, software method in preparing the development of automatic word recognition in the corpus.

Literature review

The works of Kazakh scientists A. Baitursynov, K. Zhubanov, I. Kenesbaev, S. Jienbaev, G. Begaliev, N. Sauranbaev, A. Iskakov, K. Akhanov, etc., and the works of Turkic scientists like M. Z. Zakiev, F. A. Ganiev, N.A. Baskakov, M.A. Khabievich have formed the basis of our research work. The works on word formation of the Kazakh language (N. Oralbayeva), academic "Kazakh grammar", textbooks for higher educational organizations (A. Iskakov), scientific and theoretical

works on corpus linguistics, the website "The corpus of Kazakh language texts" of the Applied linguistics department, etc. have formed the theoretical and methodological basis of the research.

One of the special objects of research were the terms "dual-functional" affixes by K. Shayakhmetov, "dual-functional" affixes, and "functional affixes" by S. Isayev. While Tatar Turkic language scholar Nasilov calls them "inclusion affixes" and "intermediate affixes", the Tatar scholars M. Z. Zakiev and F. Ganiev give some of these affixes in the paradigm of the case category. M.A. Khabichev, a researcher of the Balkar-Karachai language, calls them "comparative form" (-дай/дей), "equivalent form" (-ша/ше), "possessive form" (-лы/лі) "negative form" (-сыз/сіз), etc., and consider such form-forming functions a separate topic Determining the linguistic nature of such affixes, standing between word formation and morphology, is a complex and topical problem. In his monograph "The grammatical nature of words in the Kazakh language" S. Isayev called such affixes contextual, functional affixes, indicating them as a branch of word-formation affixes in the classification of affixes, and he calls the words to which these affixes are attached as "temporal words" (Isayev, 1998: 173). There are not many scholars who recognize the suffix -*лық/лік* as a formative formant. In this group, we did a self-analysis, highlighting N.A. Baskakov and I. Mamanov gave their thoughts on this complementary activity. In Turkic languages V.M. Nasilov, F.A. Ganiev, M.Z. Zakiev, M. A. Khabichev, K. Shayakhmetov, S. Isayev, etc. researchers have come to believe that the affix is the performer of the "double function". Thus, in the Uzbek language S. Usmanova faces -*лық/лік* in the group of affixes performing two functions. This person determines that in addition to forming a noun and an adjective, the word has a binding function in the sentence.

The textbook "Modern Kazakh Language" by A. Iskakov for high schools in all three editions published in 1964, 1974, and 1991 reflects all occurrences of attachment of the suffix *дай/дей* to nouns, pronouns, numerals, and pronouns and defines them as a relative adjective productive suffix. For example, in the textbook participles are attached form-forming suffixes and the following examples are given: жабысқандай, болжағандай, жылардай, өлердей, баратындай, оқитындай (Iskakov, 1991: 174).

The Kuman languages researcher M.A. Khabichev permanently excludes -*дай/дей* from the list of formative affixes. Although in Kazakh linguistics the scholar Y. Mamanov stated that the suffix -*дай/дей* is not a case forming affix, but a grammatical formative affix.
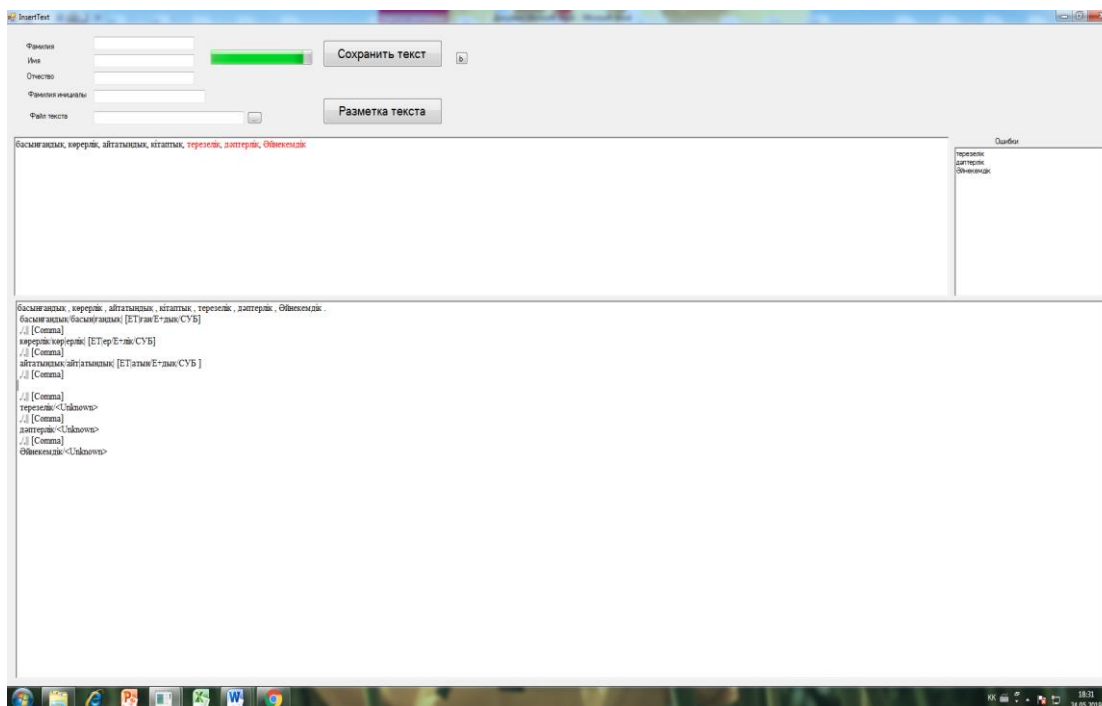
Results and discussion
Thus, the suffix -*лық/лік* firstly is joined to some roots of nouns at the time of the speech, creating an attribute-defining form denoting relative, dimensional meaning (*көйлектік мата, терезелік ағаш*, etc.). Also, when the suffix -*лық/лік* is attached after the form of the participle -*ар/ер* (*барарлық, көрерлік, айтарлық*), it does not substantiate nouns, but instead adds a relative, dimensional meaning, as if it were attached to the roots of nouns, creating an attributive form.

Secondly, it is the noun substantive form after the participles and names of action words (-*ғандық/гендік; -у+лық/у+лік, -атындық/етіндік*).

In the corpus, we considered the function of -*лық/лік* (жамандық, парақорлық, опасыздық, қалалық, аудандық) to make nouns/adjectives as a sign of word-formation. In this case, the -*лық/лік* affix is connected directly to the root. And when we consider the participles (*басынғандық, қорлағандық, көрерлік, айтарлық*, etc.), we add to the morphological denotation as we create the substantive form. We have already mentioned that in some cases of direct attachment of -*лық/лік* to the root, it does not produce words, but only units of speech (*көйлектік мата, терезелік ағаш, Әйнекемдік*).

One functional affix that requires a clear definition of word-formation and form-formation activity is the identity of -*дай/дей*. In the Kazakh textbooks, this affix is denoted by a suffix causing an adjective, including a relative adjective.
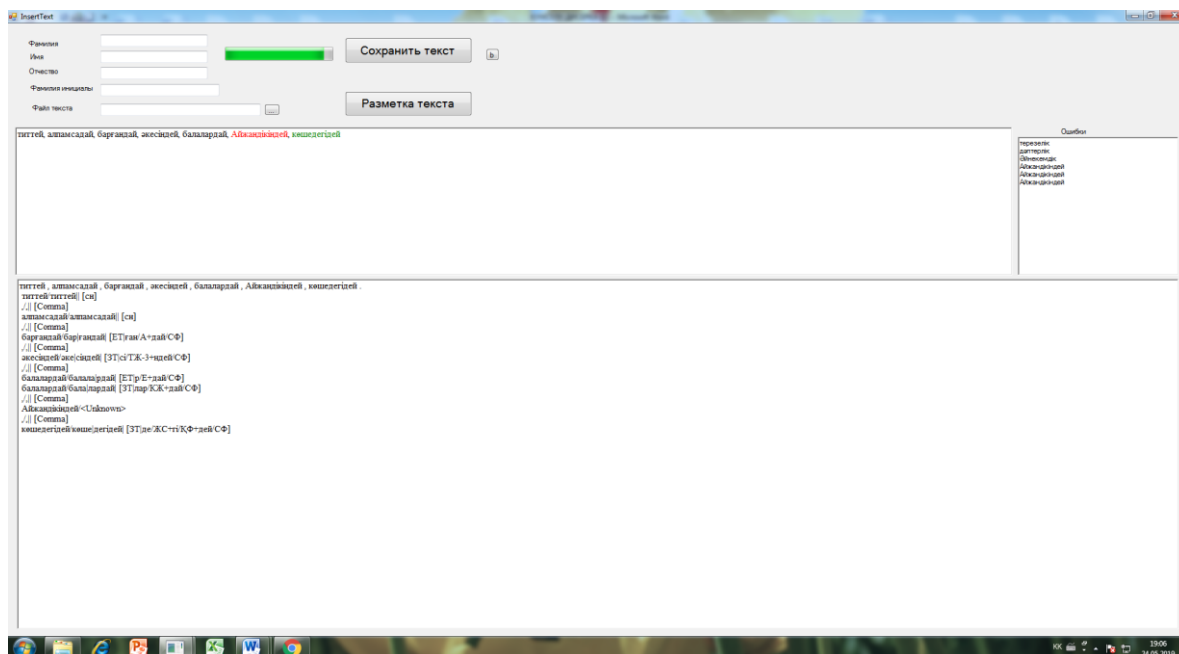
Figure 1 – Recognition of -лық/лік words in a corpus

The suffix *-дай/дей* is also joined to noun roots and is joined after verb forms, resulting in meaningful units of speech. It is not always the case that the suffix *-дай/дей* is directly connected to noun roots and has a derivational function. For example: *кітаптай, қаламдай, үстелдей, пердедей*, etc. Since nouns that are connected to *-дай/дей* are units of speech, it is impossible to list them all in the same register of explanatory dictionaries. Despite attaching to the root, it has the same meaning as case prepositions like "сияқты, тәрізді" used along with the roots, that is it supplements the meaning of the comparison to the adjective. When *-дай/дей* is joined to *-ған/ген, -ар/ер* affixes (-*ғандай/гендей)* and also when joined to possessive, plural forms (*-ымдай/імдей, -лардай/лердей; -дағыдай/дегідей*) it gives the meaning of comparison and has the form-forming function.

Based on such functional meanings, scholars have recognized this affix in every aspect. While one group of scholars recognizes it as an adjective-generating affix, the next group supports the idea that it is a purely formative suffix, and another group now considers it a 'two-functional' affix, suggesting that one group performs both this word-formation and form-formation function (Shayakhmetov, 1973: 101). All the scholars, though, underline that it attaches a comparison meaning.
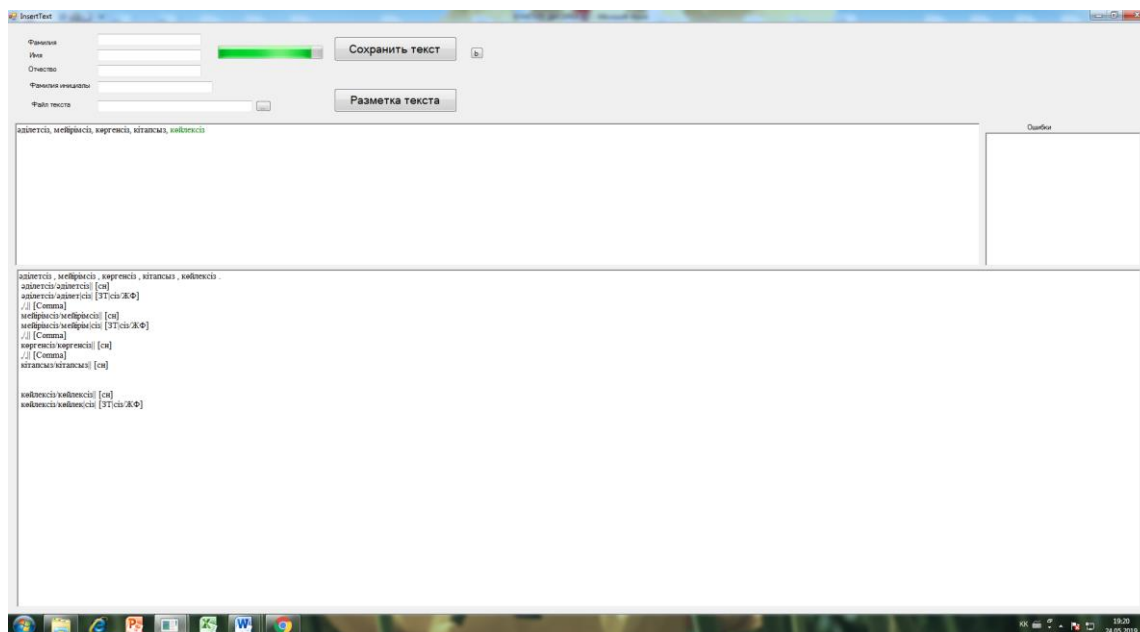
We have not a few derivative roots to which the suffix *-дай/дей* is adjoined. For example, алпамсадай, уыздай, соқталдай, титтей, etc. However, they were formed on the basis of the presence of the semantic approach rather than the synthetic approach of word formation, i.e., the constant joining of the suffix *дай/дей* and its gradual transformation into a lexical whole. Y. Mamanov believes that the natural phenomenon is that as a result of the constant use of some words in a particular concept, the meanings are clarified and it becomes a derivative root word (Mamanov, 1973: 30).

Derivative works (алпамсадай, уыздай, соқталдай, титтей, etc.), formed by transformation (lexico-semantic approach) with the suffix *-дай/дей* denotations in the corpus are not shown as word-formation suffixes and recognized as roots. This is because syntactic word-formation does not perform the main function in them. And in cases where the above form is not found in the register word list, it is morphologically designated as "comparison form" (CF), because it complements the meaning of comparison with words.

Figure 2 – Recognition of -дай/дей words in a corpus

When it comes to the adjective class of words, we should note its system of transformation, which may constitute a grammatical category, the adjective degrees. S. Isayev pointed out that the adjective degree is a system of speciation of qualitative adjectives only (Isayev, 1998: 138). It is known that the suffix *-сыз/сіз* is the suffix that generates a relative adjective, but one of the words formed with this affix may take adjective degrees. For example: *мейірімсіз - мейірімсіздеу - мейірімсізірек - өте мейірімсіз; әдепсіз - әдепсіздеу - әдепсізірек - тым әдепсіз - өте әдепсіз.* In this place the words *мейірімсіз, әдепсіз* are expressed at the very beginning a relative essence, i.e., dominated by lack of kindness, tact, and then moved on to qualitative criticism. That is why these words take on the suffixes of degrees of comparison. And we cannot convert words *пердесіз, қаламсыз* etc. with these suffixes. For example, we cannot say *пердесіз - пердесіздеу - пердесізірек - өте пердесіз; кітапсыз - кітапсыздау - кітапсызырақ - өте кітапсыз.* Words such as *мейірімсіз, әділетсіз, көргенсіз* and which have become qualitative adjectives mentioned in the corpus designation, and words used in speech such as *кітапсыз, көйлексіз* are shown by the morphological analyzer as homonymous suffixes, in one case – as a root adjective, in the other – as a noun + absence form (AF).

Figure 3 – Recognition of -сыз/сіз words in a corpus

There is a view in Turkicology that the suffix *-лы/лі* is functional, i.e., both an adjective-formant and possessive case-formant affixe. For example, turkologist E.I. Ubryatova said that the suffix *-лы/лі* served as a word developer and expressed grammatical relations, sometimes expressing grammatical relations and becoming a syntactic conjunction. MA. Khabichev pointing out that the main function of the suffix *-лы/лі* is formative, does not exclude its function evoking the adjective (Khabiyevich, 1989: 36). F.A. Ganiev calls the suffix *-лы/лі* a "semi-functional affix" that forms an adverb and an adjective (Ganiev, 1974: 52).

K.Shayakhmetov's candidate thesis "Dual functional affixes" says that in the Kazakh language *-лы/лі* affix performs two different functions (Shayakhmetov, 1973: 94).

The category of degree of adjectives is a system of transformation characteristic of qualitative adjectives. We identify the aforementioned *әдепті, ақылды, инабатты* words as relative adjectives. But these words can be transformed into a category of sadness, such as qualitative adjectives. Example: *инабатты-инабаттылау-инабаттырақ-өте инабатты; әдепті-әдептірек-әдептілеу-өте әдепті* etc. Thus, these words have reached the degree in which they are used in the concept of beginning with *әдебі бар, инабаты бар* (Mamanov, 1973: 138).

The words *жақсы, жаман, нашар, тәуір* can be seen as similar, which means qualitative criticism. Thus, these words should be recognized as qualitative adjectives. This similarity can be seen in terms of qualitative adjectives.

So, the suffix *-лы/лі* performs two different functions when attached to singular, nominative nouns: first, it creates new vocabulary units, and secondly, it gives rise to speech forms, i.e. *-лы/лі* is a two-functional affix whose first function is to give rise to form, i.e., it gives rise to the possessive (all) form of the noun. This is the second function of word formation through the lexical and semantic method of word formation.

P. M. Melioranski calls the affix *-дай/дей* a relative case affix and said that the meaning of this case can rarely be expressed in *-ша/ше*. We may say that Turkology has somewhat established a point of view defining the suffix *-ша/ше* as a case suffix. Professor K. Zhubanov was the first to consider it as a case ending in general Turkology, including Kazakh linguistics. The scientist calls the suffix *-ша/ше* the adverbial case suffix. Its most popular types include "неше, сонша, қанша, қазақша, меніңше" (Zhubanov, 1999: 379). A.M.Shcherbak in old Uzbek grammar, based on the limiting, dimensional meaning of the suffix *-ша/ше*, gives it a name a 'limiting case' (Shcherbak, 1987: 60). A. I. Rassadin points it out among the cases in the grammar of the Tofalar language. A

comparison of this voluminous continuation meaning of the affix shows that is used more than the liminal (Rassadin, 1978: 47). Tatar scholar M. Z. Zakiev incorporates this affix into the paradigm of cases under the name of the *"allegorical case"* in his paper dedicated to the systematization of case endings (Zakiev, 1964: 91). V.G. Guzev, describing the categories, the word transformative name, points to the suffix *-ша/ше* in the system of cases with the name *"equative"* (Guzev, 1987: 78).

In Turkology, there is also a point of view that regards the suffix *-ша/ше* as a *form-forming affix*. In Karakalpak Languages, N. A. Baskakov points out the adjective affix *-ша/ше* as an affix producing an attribute-modifier noun form. He does not state this adverbial suffix. M. A. Khabichev recognizes the suffix *-ша/ше* as an indicator generating comparison form common for all classes of words in Kuman languages grammar (Khabievich, 1989: 78).

In Kazakh linguistics, Y. Mamanov defines the suffix *-ша/ше* as a grammatical indicator giving rise to the *functional form* of a noun. The scholar gives the following examples: *"Жаумен Амангелдіше соғысыңдар. Жиналыста Бәйтеневше сөйлендер. Нәзкен біздің құдағиымызша шіренеді"*. The author emphasizes that the words *"Бәйтеневше", "құдағиша", "Амангелдіше"* in this sentence cannot be attributed to derivative words. It is also not a correct decision to consider the determinative form of nouns, such as *"ойша, қысқаша, түрліше, өзгеше* words, and *Жақаевша, ағаларыңша, тойғандарыңша"*, as a derivative root adverb in the same frame. And the *өзгеше, түрліше*, etc. words included in the derivational adverb cannot be understood as deriving from the word-formation activity of the suffix *-ша/ше*. We must recognize them gradually semantically formed into a lexical whole from the grammatical forms created by these affixes" (Mamanov, 1973: 33).
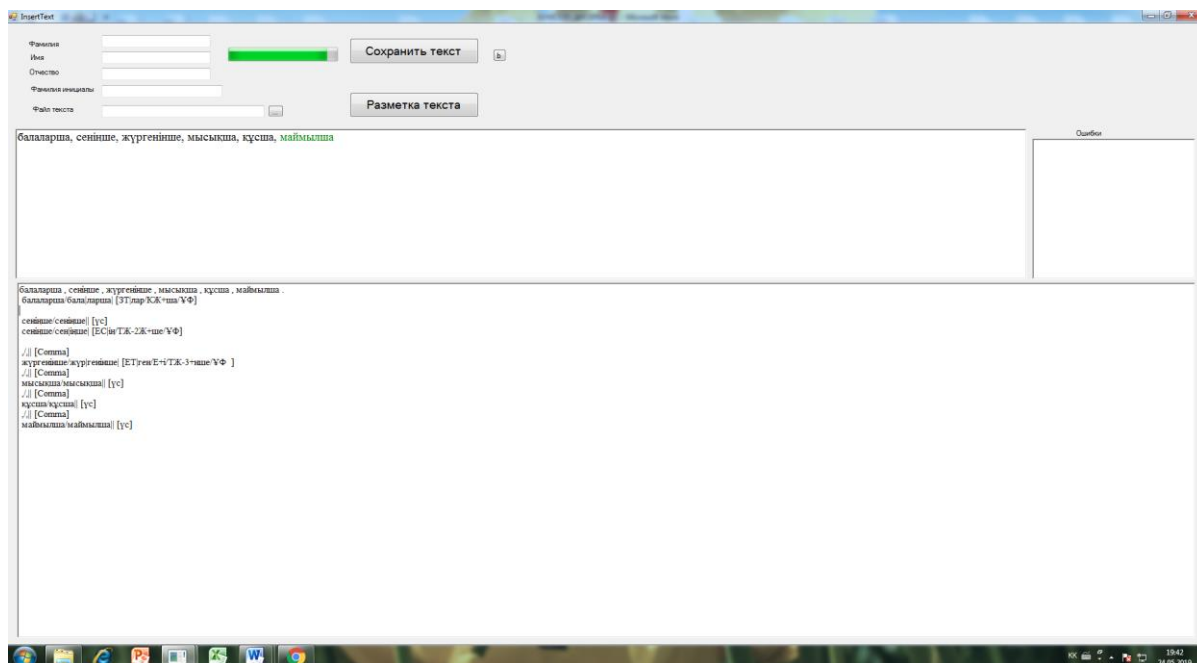
There is also a tendency in Turkic studies to recognize the suffix *-ша/ше* as *dual-functional*. Along with the definition of the suffix *-ша/ше* as a singular adverb, in some cases in Uzbek it generates a form, i.e., does not generate a word," says S. Usmanov.

B.M. Nasilov calls it *"insertional affixes"*, indicating a separate group (Nasilov, 1958: 31-34). The author believed that the affix *-ша/ше* performs the function of a word-former in direct conjunction without imposing any person on it. These groupings are also functional.

In Kazakh linguistics, K. Shayakhmetov defines the suffix *-ша/ше* as dual-functional. In his view, the suffix *-ша/ше* is neither a single word creator nor a single form-creator. The suffix *-ша/ше* is dual-functional. The affix *-ша/ше* performs a word-formation function by attaching it to a noun in the singular. This results in new words that belong to the adverbial category. For example, *ескі бише, ақынша, қазақша*. K.Shayakhmetov concludes: "The first function of the affix *-ша/ше* is to form adverbs, that is word-formation; a second function, parallel to it is to form-formation. If this is so, the affix *-ша/ше* is dual-functional".

In our opinion, words with new meanings in *-ша/ше* person were also used in a word-changing function. The above *маңдайша, белдемше, кеудеше*, etc., did not arise from the word-formation function of the suffix *-ша/ше* to the root word. They were generalized and transformed into words in their own right by the constant conjugation with the suffix *-ша/ше*. This phenomenon was not carried out from a synthetic word-formation approach but from a lexicographical approach.

The morphological analyzer of words to which the suffix *-ша/ше* is attached performs a bilateral analysis. In the root word registry, words like *осынша, қазақша, өзінше, қысқаша, басқаша* are recognized as adverbs. And children, in their own way, recognize such words as a form of word matching (WM).

Figure 4 – Recognition of -ша/ше words in a corpus

In Turkology, the suffix *-ғы/гі* is considered in three ways: word-former, form-former, and dual-functional affix, like the above-mentioned affixes. Many scholars consider this affix as adjective-forming both in Turkology and Kazakh linguistics.

A. Baitursynuly only defines the form *-дағы/дегі*, does not give any indication about *-ғы/гі* as part of adverbs (қысқы, жазғы). The scholar determined that *-дағы/дегі* are joined to the noun, and mean that something is located in that noun (Baitursynuly, 1992: 217).

Some of those who define the affix *-ғы/гі* as formative, recognize it as a case-formative, attribute-formative or grammar-formative affix.

The Tatar scholar M.Z. Zakiev has found that both the function of direct addition of the suffix *-ғы/гі* to the root and the function of direct addition after case affixes are expressed in the function of word conversion (Zakiev, 1964: 89). The scholar gives the form *-дағы/дегі* and *-ғы/гі* as the second type of adjective with the name *"local case"* among the adjectives.

N. A. Baskakov defines the suffix *-ғы/гі* as a relative form giving rise to the attributive-defining form of the names in the group of the functional-grammatical word-formation affixes. V.G. Guzev ascribes both the function of accession to the root of the suffix *-ғы/гі*, and the function of accession after case forms of the word transformation function (Guzev, 1987: 105).
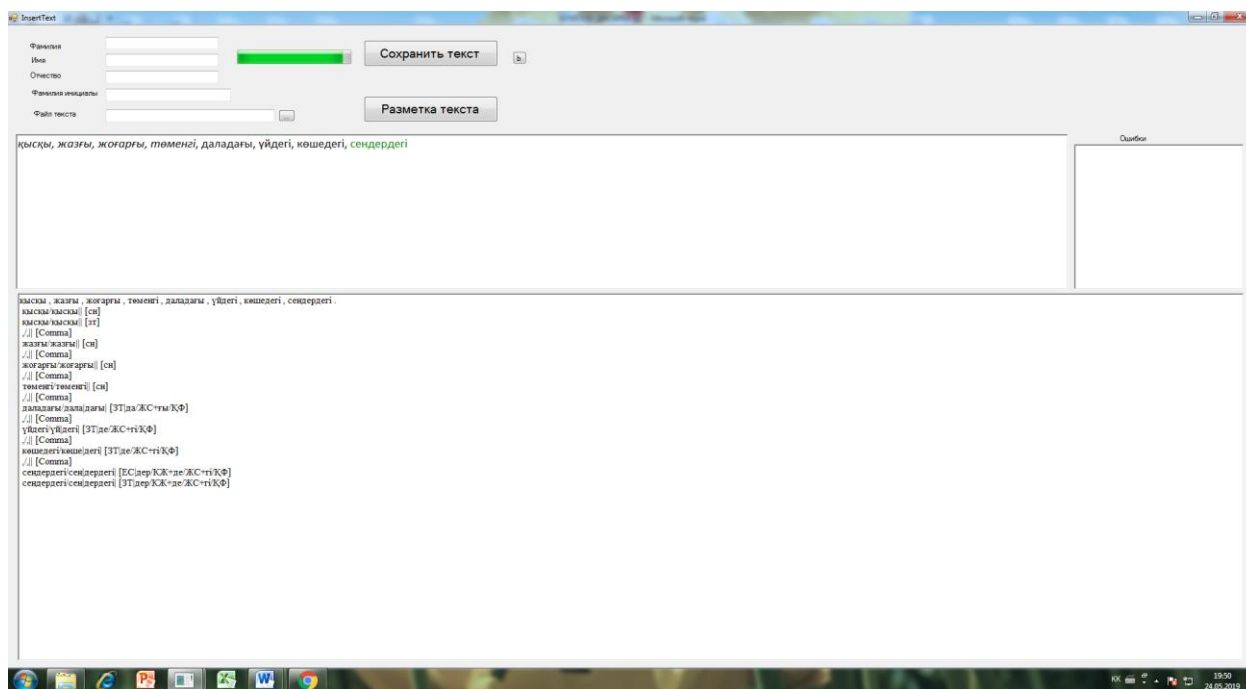
The determiners of the suffix *-ғы/гі* as *dual-functional* are ambiguous, that it fulfills the word-causing function when the base is directly attached to the form, i.e. to the root, and when compounded after the case affix it is a form-generator. MA.Khabievich according to the suffix *-ғы/гі* will both produce the word when joined to the root and will produce the form *-дағы/дегі*. The author calls this the participle form, common to all classes of words. Examples of the manifestation of the word-formation suffix *-ғы/гі* activity of the scholar: *бүгінгі, қысқы, күзгі, ертеңгі*, etc. (Khabievich, 1989: 181).

There are not many views on the fact that the suffix *-ғы/гі* has two different functions in Kazakh linguistics. Y. Mamanov defines the function of the suffix *-ғы/гі* to root words as performed by the word-formation function based on the possibilities of joining to main words that change the meaning of the appended word. For example, *кешегі, кешкі, төменгі*, etc. And conjugation after conjugation indicates that conjugation does not cause words (Mamanov, 1973: 21-25).

K. Shayakhmetov's definition of the activity of the suffix *-ғы/гі* agrees with Y. Mamanov's opinion.

Thus, the suffix *-ғы/гі* performs the function of creating the form in conjunction with grammatical forms.

In cases where the morphological analyzer in the corpus comes after the adjective number, it is taken to be a cognate form according to the term mentioned by the scholars above. And in cases of direct accession to the root, such as *қысқы, жазғы, жоғарғы, төменгі* denotes as an adjective.

Figure 5 – Recognition of -ғы/гі words in a corpus

Conclusion

In order to create linguistic corpora that can automatically assign word-formation marks to texts in the Kazakh language, word-formation analyses in the language system should be reduced to a specific formal system. In the Kazakh language, various phenomena are intertwined in the field of word formation and morphology. Especially in the synthetic way of word formation, problems of homonyms, homoform phenomena, and functionality, i.e., multi-functionality of additions cause difficulty in distinguishing word formation additions. That's why in our research work, to distinguish the underlying phenomena between word formation and morphology, we described the affixes, which are theoretically recognized as word formation affixes in linguistics, according to the criteria of word formation, and then the functional affixes that do not fully meet the requirements of word formation (-лық/лік, -дай/дей, -ша/ше, -сыз/сіз, -лы/лі, -ғы/гі). We have revealed word-forming and form-forming affixes. Thus, we have distinguished what should be taken into account in their acquisition of word-formative features and morphological features in the corpus.

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