



## Multiplicity of Nominal Derivational Forms in Arabic and Russian: A Contrastive Study

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### Abstract

This paper offers a comparative-systematic contrastive study of nominal derivation in Arabic and Russian in specific reference to derivational multiplicity phenomenon. Both languages have structurally elaborated morphological systems, but are based on radically different typological traditions: Arabic uses a non-concatenative root-and-pattern system, and Russian uses a largely concatenative affixation system. The study discusses how these incompatible formal mechanisms make it possible to come up with various nominal forms, that is agentive, patientive, locative, instrumental, and abstract nouns, out of one semantic base.

According to the results, Arabic derivation is characterized by a high level of formal regularity and semantic transparency because systematic templates (awzan) can allow predicting morphological form-semantic role correspondences. By contrast, Russian derivation is more productive, but has a higher degree of dependence on lexicalization, historical norm, and the context, which causes relative lack of predictability in semantic results. Irrespective of these structural differences, the lexical richness and functional differentiation of the two languages are similar.

### Key Words

Nominal Derivation; Derivational Multiplicity; Arabic Morphology; Russian Morphology; Cross-Linguistic Analysis.

تعدد الصيغ الاشتقاقية للاسماء في اللغتين العربية والروسية : دراسة تقابلية

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الملخص



تقدم هذه الورقة دراسة مقارنة منهجية تباينية لاشتقاق الأسماء في اللغتين العربية والروسية، مع التركيز بشكل خاص على ظاهرة تعدد الاشتقاق. تمتلك كلتا اللغتين أنظمة صرفية متطورة بنيويًا، لكنهما تستندان إلى تقاليد تصنيفية مختلفة جذريًا: تستخدم العربية نظامًا جذريًا غير تجميعي ونمطيًا، بينما تستخدم الروسية نظامًا تجميعيًا للزوائد.

تناقش الدراسة كيف تُتيح هذه الآليات الشكلية غير المتوافقة استنباط أشكال اسمية متنوعة، أي أسماء الفاعل، والمفعول به، والمكان، والأداة، والأسماء المجردة، انطلاقًا من قاعدة دلالية واحدة.

وفقًا للنتائج، يتميز الاشتقاق العربي بمستوى عالٍ من الانتظام الشكلي والشفافية الدلالية، لأن القوالب المنهجية (الأوزنة) تسمح بالتنبؤ بتطابق الشكل الصرفي مع الدور الدلالي. في المقابل، يُعد الاشتقاق الروسي أكثر إنتاجية، ولكنه يعتمد بدرجة أكبر على المعجمية، والمعيار التاريخي، والسياق، مما يؤدي إلى نقص نسبي في القدرة على التنبؤ بالنتائج الدلالية. وبغض النظر عن هذه الاختلافات البنيوية، فإن الثراء المعجمي والتمايز الوظيفي اللغتين متشابهان.

## الكلمات المفتاحية

الاشتقاق الاسمي، تعدد الاشتقاق، الصرف العربي، الروسية الصرف، التحليل اللغوي المقارن.

## مقدمة

### 1.1 الخلفية

توضح أرتيميس ألكسيادو أن "الاشتقاق الاسمي هو عملية اشتقاق اسم من فئة كلمات أخرى، عادةً ما تكون فعلاً أو صفة". وتبين كذلك أن "هي عملية تغيير فئة يمكن أن تحدث مع أو بدون إحداث تغيير في شكل العنصر الأصلي. وفي مختلف اللغات، كلا النوعين الصرفيين من الأسماء ممكنان" (2015، ص 1). وتقدم مثالاً على ذلك كما يلي: "في اللغة الإنجليزية، لدينا، من جهة، أسماء مشتقة من، على سبيل المثال، أفعال عن طريق إضافة لاحقة اشتقاقية، بالإضافة إلى ما يسمى بالأسماء المشتقة الصفرية التي تفتقر إلى أي تغيير صرفي واضح" (ص 1).

من الناحية النحوية، يُحدد علم الصرف المستوى البنيوي للعملية التي يعمل عليها الاشتقاق. ويُعرّف (بوبانازاروفا و نورماماتوف) مصطلح علم الصرف بأنه فرع من فروع النحو يدرس الكلمات بناءً على خصائصها النحوية (2022، ص 115).

وفي هذا التعريف، يمكننا التأكيد على الجانب المنهجي لتكوين الكلمات وأهمية علم الصرف في التحكم في التفاعل بين المعنى المعجمي والبنية النحوية.

## 1. Introduction

### 1.1 Background

"Nominal derivation," Artemis Alexiadou clarifies, "is a process that derives a noun from another word category, normally a verb or an adjective. She further shows that "it is a category changing operation which can take place with or without inducing a change on the form of the source element. Across languages, both morphological types of nominalizations are possible" (2015, p. 1). She gives an example as follows" "in English we have, on the one hand, nominals derived from, for example, verbs via the addition of a derivational affix as well as so-called zero derived nominals that lack any overt morphological change" (p. 1).

Grammatically, morphology gives the structural level of operation on which derivation works. Defining the term morphology, Bobanazarova and Nurmamatov say that it is the area of grammar that examines words on the basis of their grammatical characteristics (2022, p. 115). In this definition, we can emphasize the systematic aspect of the word



formation and the importance of morphology to control the interaction between the lexical meaning and the grammatical structure.

### 1.1.2. Derivational Multiplicity and Morphological Productivity

Derivational morphology is generally accepted as one area of derivational morphology in which semantic expansion and meaning variation are not coincidental but structurally entrenched. Instead of producing only one, fixed semantic result, numerous derivational processes produce several, systematically correlated semantic results, which indicates the flexibility and proliferation of morphological processes. This is typically addressed within the framework of derivational multiplicity, and provides a challenge to unitary approaches to affixal meaning, and in advance to the significance of semantic structure in the formation of words. In this theoretical framework, Andreou and Petitjean clearly locate derivation as a location of natural polysemy, and present a model of multiple reading as a principled consequence of morphological productivity rather than an exceptional case. "A characteristic property of the outcomes of word formation processes is polysemy. In this paper, we model and test the monosemy and polysemy approaches to derivational multiplicity of meaning, using Frame Semantics and XMG" (Andreou & Petitjean, 2017, p. 1).

This is particularly significant for studies of morphological productivity, as it reframes productivity not merely as the capacity to generate new forms, but as the capacity to generate structured semantic variation. By contrasting monosemy and polysemy approaches within a frame-semantic architecture, Andreou and Petitjean demonstrate that derivational productivity is constrained and guided by underlying semantic representations rather than by abstract, underspecified affixal meanings alone. Consequently, derivational multiplicity emerges as a theoretically motivated and empirically grounded phenomenon, reinforcing the view that productive morphological patterns are inseparable from the semantic architectures that license and delimit their interpretive range.

### 1.1.3. Morphological Architecture: Non-Concatenative and Concatenative Systems

To illustrate the two typologically different approaches to morphological structure, Arabic and Russian are used. Arabic is conventionally characterized as using a non-concatenative root-and-pattern system, where lexical meaning is represented in abstract consonantal roots, whereas grammatical and derivational meanings are represented in vocalic melodies and prosodic templates. By comparison, Russian is based on concatenative morphology, in which derivation is effected by the linear combination of prefixes and suffixes to an otherwise stable stem.

This typological contrast has been clearly maintained in the original work on non-concatenative morphology written by McCarthy. According to McCarthy, the Arabic language uses non-concatenative root-and-pattern system, but Russian is mostly based on concatenative affixation (1981, p. 373). This difference is not a formal one only; it does have significant implications on the way speakers structure, access, and generalize derivational meaning.



Arabic has one root, which is related to a general semantic net, and the provision of a range of nominal forms through the use of various morphological patterns, which add a relatively fixed semantic element. Their non-linear interdigitation creates dense patterns of derivational paradigms with a high level of internal coherence. Derivation in Russian is based on suffixation, prefixation and, in certain instances, zero derivation. Despite the possibility of several nominal forms being formed on the same stem, the semantic value input of particular affixes is not usually quite even and derived nouns can experience a semantic specialization or shift.

The Arabic system of nominal derivation has a very systematic morphological pattern where the meaning and form are closely bound together. Morphological structure, as Boudelaa and Marslen-Wilson (2015) claim, is a potent and cost-efficient tool of organizing the combination of lexicals in the dynamic language system (p. 978), enabling speakers to extract regularities that happen repeatedly in the language. The interaction between word patterns and consonantal roots is central to this system as when semantic core is expressed by the root and phonological and morpho-syntactic information is expressed by the pattern (Boudelaa and Marslen-Wilson, 2015, p. 956). The efficiency of this system allows one root to produce several related forms, and thus, derived nouns are morphologically and phonologically connected and semantically related to a larger degree (Boudelaa and Marslen-Wilson, 2015, p. 957).

Notably, although the word patterns of deverbal noun morphology are likely to provide a rather restricted and predictable meaning, the lack of transparency can still occur in some derivations, which means that the level is high but not absolute (Boudelaa and Marslen-Wilson, 2015, pp. 957-960). This non-concatenative approach is the opposite of concatenative systems, which are based on linear stem-plus-affix processes and provide reduced predictable regulatory qualities in derivational meaning (Boudelaa and Marslen-Wilson, 2015, p. 956). As a result, the Arabic system encourages semantic generalization within derivational networks which strengthens the central role of roots as structuring principles in the mental lexicon (Boudelaa and Marslen-Wilson, 2015, p. 981).

## • 1.2 Research Problem

Such contrastive studies have not been conducted with nominal derivation, although nominal derivation has been widely studied in both Arabic and Russian. The current literature is biased toward the language-only description, and the limited focus on cross-linguistic comparisons of derivational patterns and the semantic consequences of those.

## 1.3 Research Aim

The main purpose of this research is to compare methods of how Arabic and Russian could create several nominal forms of one root, bringing out the interaction of morphology and semantics of these two languages. Particularly, the study explores the structural processes in the Arabic language that use root-and-pattern templates and in the Russian language that use affixation-based derivation that allow the formation of agentive, patientive, locative, instrumental, and abstract nouns. In addition to structural description,



the research is aimed to determine the semantic correspondence of these derivational forms in both languages with regard to the possibility of the similar concepts being manifested using similar derivational patterns and typological variation being manifested by the different formal and semantic realizations. The study will make a contribution to the emerging knowledge of derivational multiplicity, cross-linguistic morphology, and the consequences of such disparities to translation, language teaching, and the use of such disparities in computational modeling of morphology by carrying out a systematic contrastive analysis.

#### 1.4 Research Questions

This paper aims at addressing the following questions:

1. Which are the patterns of nominal derivation prevalent in the Arabic and Russian languages?
2. In both languages, how is the derivational multiplicity obtained morphologically and semantically?
3. What is the influence of typological differences between the two languages in the scope and role of nominal derivational forms?

#### 1.5 Previous Works

Arabic nominal derivation has been substantively explained in the classical grammatical traditions, and the modern linguistic model. The new scholarly tradition has placed special emphasis on the root-pattern interaction in producing a noun that captures agency, instrumentality, location, abstraction, and other semantic roles (Watson, 2011). Such derivation is controlled by systematic templates (awzan), which block form and have meaning and allow the lexicon to grow substantially. Recent empirical and corpus-based studies have outgrown descriptive explanations to compute a model of Arabic derivation in a quantitative and computational way. The mapping of derivational relations in Modern Standard Arabic on a large scale shows how nominal forms are organized into integrated chains, which go much further than simple root manifestations (Taji et al., 2024). Other works involving secondary root and neologism formation emphasize the flexibility of Arabic derivational morphology in modern use and reiterate the existence of templatic principles behind it (Vavichkina et al., 2023).

A similar case is Russian nominal derivation which has been a topic of persistent scholarly interest, especially in the context of Slavic morphology and word-formation theory. To create nouns in the manifestation of agentive functions, abstract concepts, diminutive, and augmentative connotations, and even evaluating shades, Russian is strongly based on suffixation and prefixation. Derivational productivity has also been studied as the contribution of certain classes of suffixes to the semantic growth of lexicon varies and some suffixes are highly semantically transparent and frequent and others are more expressive or stylistically marked (Bauer et al., 2013). The word-based and paradigmatic approach to the Russian morphology also shows that the derivational processes are not



simple affixation operations, but systematic systems, which are sensitive to the semantic motivation, lexical competition, and patterns of use (Spencer, 2013).

Early descriptive studies on Russian morphology still shape the analysis of the present day with systematic descriptions of inflectional-derivational interaction and nominal structure.

In contrast to the extensive body of language-specific research, direct comparative studies between Arabic and Russian derivational systems remain relatively limited. Existing contrastive work tends to emerge within translation studies, where scholars investigate how derivational motivation affects equivalence between Russian and Arabic lexical items. Such studies show that the rich derivational resources of both languages often produce asymmetric correspondences, whereby a single derived noun in one language may require a paraphrastic or multi-word construction in the other (Raheem Ali, 2022). Studies of word-formation and neologism translation also prove that the morphological architecture can be either templatic or affixal and thus can play a crucial role in the formation and translation of newly coined lexical objects in languages (Al-Khafaji and Raheem, 2021). Although these studies provide some important information, they generally consider derivation as a subordinate issue in the context of a larger translation or contrastive systems.

Altogether, the available literature constitutes comprehensive descriptions of derivational processes in the Arabic and Russian languages, and some comparative information, which is mediated by the translation research. Nonetheless, an apparent gap in the studies exists that would comparatively analyze the number of derivational outputs that can be made between the two languages in a systematic manner. Most research investigations give more emphasis on inflectional categories or individual derivational processes instead of looking at the number of different nominal forms that are possible using one semantic base and how different derivational networks vary in size, structure and semantic distribution. To fill this gap, there is the need to have a coherent contrastive framework to foreground derivational multiplicity as an analytical dimension, which is what the present study attempts to achieve.

## 1.6 Research Gap

Available studies on Arabic and Russian morphology have yielded descriptions of nominal derivation in the two languages that are methodologically advanced and detailed. The root-and-pattern system, derivational templates, semantic categories of derivational nouns, have been widely recorded in Arabic language studies, and affixal productivity, suffix classes, and derivational motivation have been systematically studied in Russian research. Even in the light of this richness, these literatures have been more or less parallel as compared to intersecting with there being little direct interaction between the two languages.

The main area of research gaps is that there is no systematic contrastive structure which would offer the comparison of Arabic and Russian nominal derivation specifically in the context of derivational multiplicity- i.e. the degree to which one semantic base will



produce several different nominal forms in each language. The majority of contrastive studies of Arabic and Russian refer to the translation equivalence, case semantics, or general word-formation mechanisms, but not the quantitative and structural scope of derivational products. Consequently, derivation is generally studied as a process (the formation of nouns), and not as a network (a question of how many and what types of nouns are produced out of a single base).

Moreover, earlier research is inclined to give more preference to inflectional morphology (case, gender, number) as compared with derivational morphology, especially in contrastive situations. In the case of derivation, it is frequently considered in terms of individual categories (e.g. agent nouns or diminutives), or a single affix or template, but not in terms of the overall derivational capability of a lexical root or stem. This disaggregation clouds general cross-linguistic trends in lexical growth and semantic differentiation.

The other gap is that of typological asymmetry. Arabic and Russian have radically dissimilar morphological structures non-concatenative versus concatenative, but so far little effort has been made to capitalize on this difference by studying the way different formal structures can produce similar degrees of lexical profusion. As a result, the literature does not make a direct comparison of how morphological structure limits or facilitates multiplicity, productivity and semantic specialization in nominal derivation in typologically distant languages.

The existing research, *Multiplicity of Nominal Derivational Forms in Arabic and Russian: A Contrastive Study*, fills these gaps with the introduction of derivational multiplicity as the primary analytical concept. Instead of analyzing specific derivational processes, the paper discusses derivational systems that are created based on specific semantic roots in both languages, the derivational nominal forms, and counts, types and semantic distribution of the derived nominal forms. The methodology of a contrastive approach based on the morphological theory and corroborated by empirical evidence takes the research a step further than process-based descriptions and instead takes the form of a network-based conception of derivation.

## 2. Methodology

This paper follows the qualitative contrasting design, which deals with the study of nominal derivations Arabic and Russian. Both morphological patterns and semantic functions are also the focus of the research, which is to find out the similarities and differences between the two languages in terms of derivational multiplicity. By focusing on the derivational processes of each language as opposed to inflexion phenomena, the study aims to shed light on how each language stands to come up with several nouns out of a single root and how the two forms relate semantically to each other.

Arabic data was obtained based on the texts and the authoritative reference materials, including the dictionaries and grammar books like Ryding (2005) and Watson (2002). Nominal derivations of a productive type were chosen, which include patterns اسم الفاعل.



اسم المفعول, and صيغ المبالغة. The Russian data has been gathered on the basis of standard reference grammars and lexical corpora (Comrie et al., 1996; Štekauer et al., 2012), and the emphasis has been placed on the nouns of the suffixation, prefixation, and zero derivation. The two data sets were curated well to capture typical forms of attestation, and so the derivations under analysis were representative of real-world language use and could be cross-linguistically compared.

The sampling criterion was calculated in order to have a significant contrast analysis. Derivational forms were taken that are productively attested and those that are frequent enough and forms were also matched so as to base or root meaning so that a clear comparison of Arabic and Russian can be made. Derivational forms which conveyed forms of semantic roles like agentive, instrumental, locative and abstract nouns were accorded precedence hence embracing the plurality of sense that a single root can generate in both languages.

It was an analytical system of morphological, semantic and contrastive approaches. The morphological analysis was composed of the derivational patterns, affix and root/pattern correspondences. Semantic analysis that concerned the change in meaning in every form of derivation and the semantic functions across the two languages were compared. Finally, the same was contrastively analyzed between the Arabic forms and Russian ones to determine the convergence and divergence of the structure and meaning that indicates the existence of typological strategies that underlie the derivational multiplicity of the two languages.

It was broken down into several steps. First of all, derivational forms were extracted out of the dictionaries and corpora. Second, the forms were classified on the basis of the morphological type and the semantic function. Thirdly, the cross-linguistic analysis was conducted to demonstrate the tendencies of multiplicity where similarity and differences were evident in the Arabic and Russian. Finally, the typological and contrastive morphological theory were used to explain the findings providing a detailed explanation of the strategies of derivation in the two languages.

Several restrictions must be brought into reality. The study was also reduced to Modern Standard Arabic, not taking into account the dialectal variation, which, however, may possess other derivational patterns. Similarly, Russian data was made up of written and formal data and this might have understated the productivity of spoken language. In addition, it is a qualitative and descriptive study; at least there were no statistical frequencies involved and, therefore, one cannot quantitatively extrapolate the findings. Despite these weaknesses, however, the paper presents a comparative study of nominal derivational multiplicity in Arabic and Russian in a logical and profound way.

### 3. Results

#### 3.1 Nominal Derivational Patterns in Arabic



The study of Modern Standard Arabic shows a very systematic and prolific nominal derivational system which is based on the root-and-pattern morphology. The system allows producing numerous nouns of a single verbal root and encode subtle semantic differences. Among the most central types of derivation, there is the so-called *ism al-fā'il* (active participle), meaning the agent of action of the verb. As an illustration, the verbal form *كَتَبَ* is based on writing: the form *كاتب* means writer. In this accent, there is no vowel articulation but an unchanged consonant root and a constant vocalic pattern which produces semantically transparent and predictable agentive nouns on a large scale in a large number of verbs.

Conversely, *ism al-maf'ūl* (passive voice of the participle) refers to the recipient or target of the action in the verb, as illustrated by *مَكْتُوبٌ* → *كَتَبَ* “written (object).”. This derivational scheme shows a regular systemic correspondence of semantic roles and morphological form, the opposite pole of active participle and a vivid agent-patient opposition integrated into the morphological pattern. Morphological and not contextually determined such binary oppositions make the Arabic derivational system so transparent.

Beyond basic participant roles, Arabic employs *ṣīghat al-mubālagha* (intensive or exaggerated forms) to convey emphasis, repetition, or intensity of action or character. For instance, the root *صَجِبَ* “to accompany” yields *صَاحِبٌ*, denoting a close or intensive companion. These forms illustrate how Arabic derivational morphology extends beyond core argument structure to encode pragmatic and evaluative nuances, thereby enriching the semantic scope of nominal derivation.

*Ṣīghat al-mubālagha* (intensive or exaggerated forms) is used in Arabic to express a focus, repetition or intensity of action or character. As an example, the root *صَجِبَ* to accompany gives rise to *صَاحِبٌ*, which is a close or intensive companion. These examples represent ways in which Arabic derivational morphology is applied to the expand core argument structure and encode pragmatic and evaluative shades, thus enhancing the semantic range of nominal derivation.

### 3.2 Nominal Derivational Patterns in Russian

Russian nominal derivation operates primarily through concatenative morphology, relying on affixation and, to a lesser extent, zero derivation. Suffixation constitutes the dominant strategy for forming agentive, instrumental, and abstract nouns. For example, the verb *писать* “to write” derives the agent noun *писатель* “writer” through the suffix *-тель*. Russian suffixes such as *-тель*, *-ник*, and *-ание* encode semantic roles broadly comparable to Arabic participial forms; however, their productivity is less predictable, and semantic transparency often depends on conventionalized usage rather than formal regularity.

Prefixation also plays a role in Russian derivation, particularly when combined with suffixation, by introducing semantic nuances such as repetition, completion, or modification of the base action. For instance, *работать* “to work” yields *переработка* “rework” or “processing,” where the prefix *пере-* modifies the base meaning while the



suffix nominalizes the form. This interaction allows Russian to expand its lexicon without introducing new roots, though the resulting meanings are often lexically constrained.

In addition, Russian employs zero derivation, or conversion, whereby nouns are created without overt morphological marking. An example is лететь “to fly,” which yields лет “flight.” In such cases, interpretation relies heavily on syntactic position and contextual cues. Unlike Arabic, where morphological patterns encode semantic distinctions explicitly, Russian frequently encodes meaning implicitly, requiring interaction with grammatical features such as case and syntactic structure.

Russian derivational productivity is further shaped by gender and case morphology, which interact with derivational suffixes and can influence semantic interpretation. However, derivation in Russian is constrained by lexicalization and historical usage, meaning that some theoretically possible forms are either ungrammatical or semantically opaque. As a result, the derivational system, while rich, exhibits greater irregularity and conventionalization than its Arabic counterpart.

### 3.3 Comparative Analysis of Arabic and Russian Derivational Multiplicity

In terms of comparison, both Arabic and Russian have opportunities to derive several nominal forms out of the same verbal stem and produce agentive, instrumental, locative, and abstract nouns. Derivational morphology in both languages allows semantic differentiation, where speakers are able to indicate the functional or conceptual role of a noun as compared to its base verb. In addition, the two systems facilitate construction of derivational chains, albeit the formal processes of construction of the chains vary significantly.

Transparency of morphological features is the greatest difference. The Arabic derivation is very systematic as the root-and-pattern structure guarantees the principle of the constant correlation between the form and the meaning. Russian derivation, in its turn, is based on affixation and zero derivation, which are quite irregular and lexical convention sensitive. In Arabic, the encoding of semantic roles takes specific morphological form, e.g., the active and passive participles are contrasted, but in Russian, the encoding often takes the form of a lexicalized form or the use of grammatical clues to encode the same.

The variation also comes out in the productivity spectrum. Arabic permits one root to have many derivations with comparatively little irregularity to create rich derivational word nets. Russian derivation, though fruitful, is more strictly determined by the development of history and by the rules of lexicon and the variety of possible forms is smaller. Lastly, Arabic is characterized by complex and hierarchical derivational chains, which are moved to the roots to the participles and then to abstract nouns, whereas Russian derivational chains are more linear and not so semantically transparent. These differences highlight the typological importance of derivational multiplicity as one of the comparative parameters in the two languages.



A representative illustration of derivational multiplicity in Arabic and Russian can be observed through the verbal bases كَتَبَ “to write” and писать “to write,” respectively. In Arabic, the root كَتَبَ generates a set of derived nominal forms that systematically encode distinct semantic functions. These include كَاتِب “writer,” which denotes the agent of the action; مَكْتُوب “written (object),” expressing the patient or result; مَكْتَب “office/desk,” functioning as a locative noun; and مَكْتُوبِيَّة “writtenness,” an abstract nominalization. The semantic roles associated with these forms are morphologically encoded through established derivational patterns, resulting in a transparent and predictable mapping between form and meaning.

In Russian, a comparable range of derivational outcomes emerges from the verb писать. Derived nouns include писатель “writer,” which fulfills the agentive function; письмо “letter,” referring to the product or outcome of the action; and писанина, which conveys an intensive or evaluative abstract meaning related to the act of writing. Although these forms correspond functionally to those found in Arabic, their derivation relies on suffixation and lexicalized morphological processes rather than on a unified templatic system. Consequently, the semantic relationships among the derived nouns are less uniformly predictable and are more strongly conditioned by conventional usage and lexical norms.

#### 4. Discussion

The results of the research prove that Arabic nominal derivation is characterized by the high level of formal consistency and semantic clarity. In the root-and-pattern system, one verbal root could form a number of nouns, such as agentive, patientive, locative, instrumental, and abstract, by regular consonantal and vocalic changes. This multiplicity makes it possible to have semantic economy, whereby a single root expresses a web of related meaning, avoiding individual lexical entries. In addition, the existence of hierarchical derivational chains over root to participle to abstract noun that Arabic derivational morphology is recursive and productive and provides speakers not only with subtle semantic differences in colloquial language but also in formal language use. These findings are aligned with the results of previous studies, which point to the fact that Arabic derivational rules are very systematic and cognitively prominent (McCarthy, 1981; Watson, 2002; Ryding, 2005). According to psycholinguistic evidence, Arabic speakers are processing derived nouns through identification of the consonantal root and the internal template, which makes it easier to recognize all the related forms in a short time (Boudelaa and Marslen-Wilson, 2015). Derivational multiplicity therefore is not only a formal attribute of the Arabic language but also a part and parcel of lexical processing.

Conversely, Russian derivational morphology is based on concatenative derivational processes, where the prevailing process is suffixation and where incidences of zero derivation and prefixation are also infrequent. Even though Russian also has multiple forms of nouns being derived of the same verb, the semantic distinction is usually accomplished through contextual or grammatical gender, or through convention, making certain forms less predictable than their counterparts in Arabic. For instance, the agentive



suffix *-тель* produces a clear semantic function, whereas other derivations, such as *писанина*, require interpretation based on conventional usage. This pattern reflects a typological strategy in which semantic multiplicity is mediated by lexicalization rather than internal morphological templates. Thus, both Arabic and Russian accomplish the derivation of agentive, patientive, instrumental, locative and abstract nouns but the processes and predictability of derivations vary greatly. Arabic compresses several functional roles in one template, but Russian has to depend on sequential affixation and context decoding, and this serves to show that there is a variety of morphological strategies in typologically different languages.

These results have a number of implications on theoretical as well as applied linguistics. Typologically, the analysis supports the notion that morphologically divergent languages can fulfill the same functional requirements in the lexicon, albeit, by other formal means. It is the systematicity of Arabic derivation which offers a prototype of highly productive and transparent morphological processes at the same time that Russian demonstrates the importance of lexicalization and context in limiting derivational productivity. There are practical implications of the differences noted in translation and language learning in an applied context. The high semantic density that exists in the Arabic roots has to be considered by the translators between Arabic and Russian as the latter language may need several Russian words to express the full spectrum of the meaning of a single Arabic word as a noun. On the other hand, Russian nouns of the derived form might require close contextual analysis so as to be rendered with the correct Arabic counterpart.

In the case of second-language acquisition, the focus of pattern recognition and template-based processing in Arabic should be on teaching the derivational morphology, whereas affix combinatorics and context sensitivity in Russian should also be in the limelight of that in Russian. Moreover, these results can be used in the computational modeling of morphology, which implies that language-specific approaches are required by natural language processing systems that require root-pattern recognition in Arabic and affixal variability in Russian.

In the systematic analysis of derivational multiplicity in both the Arabic and Russian language, the study is a contribution to the small body of the available empirical contrasting research on the subject. The facts show that Arabic derivation is very high in terms of formal and semantic predictability, but Russian derivation is more flexible but contextually restrictive. The two systems have a similar functional role yet operate on different morphological mechanisms, which is positive indication of typological diversity in derivational processes. All in all, the findings highlight the need to develop language-specific forms of derivational strategies in the theoretical morphology, translation research, and language teaching, especially in typologically divergent language pairs.

Nominal derivation is one of the focal processes in the lexicon development, which allows languages to produce several nouns out of the same verbal base and encode different semantic positions including agent, patient, instrument, and location. The Arabic and Russian languages, which are typologically different, use quite different morphological



strategies to fulfil the role. Arabic is based on a non-concatenative root-and-pattern system, in which consonantal roots are joined with vocalic and affixal templates to produce a system of semantically related nouns. Russian, in contrast, uses concatenative derivation, mainly with the help of suffixation and, in rare cases, zero derivation; the meaning is usually defined by lexical convention or context. Regardless of these variations, both languages exhibit the derivational multiplicity, which produces more than one noun with the help of a single root word to express related semantic notions. The proposed study will offer a comparative analysis of Arabic and Russian nominal derivation in a systematic and contrastive manner, i.e. the mechanisms, productivity, and semantic mapping of the derived forms, which will fill a significant gap in the empirical research on cross-linguistic phenomena.

Root / Verb	Language	Derived Nouns	Semantic Function
ك-ت-ب ( <i>kataba</i> , “to write”)	Arabic	كاتب ( <i>kātib</i> )	Agent (writer)
		مَكْتُوب ( <i>maktūb</i> )	Patient (written document)
		مَكْتَب ( <i>maktab</i> )	Place (office, desk)
	Russian	писатель ( <i>pisatel'</i> )	Agent (writer)
		письмо ( <i>pis'mo</i> )	Patient (letter)
		писанина ( <i>pisanina</i> )	Abstract / low register writing
ع-ل-م ( <i>'alima</i> , “to know”)	Arabic	عَلِيم ( <i>'alīm</i> )	Agent / Knowledgeable person
		مَعْلُوم ( <i>ma'lūm</i> )	Patient / Known fact
		Russian	знающий ( <i>znayushchiy</i> )
знание ( <i>znanie</i> )	Abstract / knowledge		
ع-م-ل ( <i>'amila</i> , “to work/do”)	Arabic	عَامِل ( <i>'āmil</i> )	Agent (worker)
		مَعْمَل ( <i>ma'mal</i> )	Place (workshop)
		Russian	работник ( <i>rabotnik</i> )
работа ( <i>rabota</i> )	Abstract / work		

The results of this paper indicate that although the Arabic and Russian languages have similar functional performance in nominal derivation; the morphological strategies used are very different. The root and pattern Arabic language encourages high predictability, semantic transparency, and derivational chains of hierarchy, unlike the Russian language, which relies on concatenative processes, lexicalization and contextual clues to generate semantic multiplicity. These typological differences have far-reaching consequences in



translation, language pedagogy and computational modeling pointing to the need in the various use of language specific analysis of derived nouns or in processing derived nouns. It has a substantial contribution to the task of understanding the cross-linguistic derivational processes better by systematizing and documenting the patterns and semantic roles of the resultant forms in both languages and provides a launchpad to the future study of what it is that morphology, semantics, and language typology interface with.

## 5. Conclusion

A comparison of Arabic and Russian nominal derivation reveals that despite the fact that both languages have extremely rich morphological systems, which are capable of generating plural numbers of nouns with a single semantic base, they do so in structurally dissimilar ways. The Arabic language uses a non-concatenative root-and-pattern system, where consonantal roots are interlocked with vocalic templates (awzan), to form a pattern of derived nouns. In comparison, Russian has a greater number of nominal lexicon expanded by concatenative processes, such as suffixation, prefixation, and zero derivation. These contrastive processes demonstrate the typological variation of Semitic and Indo-European morphological systems and at the same time generate similar functional results, in respect to lexical abundance.

One of the major differences between the two systems is the predictability and transparency. Semantic roles (agent, patient, instrument, locative, etc.) are directly represented in morphological templates in Arabic, which makes them highly regularly structured and semantically transparent. The connection between root, pattern and derived noun is therefore more systematic where the speakers and the learners can easily predict the derivational result. Russian, on the contrary, is more variable in derivational construction. The derived nouns are frequently subject to the semantic interpretation that depends on lexicalization, historical convention, and context and makes mapping between form and meaning less predictable and more reliant on norms of usage.

Though these structural variations exist, there is still a great potential of derivational multiplicity in both languages. A single root in the Arabic language may produce chains of related nouns with hierarchical, dense structures, which include agentive, patientive, locative, instrumental, and abstract nouns. Russian derivational networks though widespread are more linear and limited to traditional patterns of lexicon. This relative viewpoint emphasizes the ability of typologically different morphological systems to provide similar functional results in the form of semantic differentiation and lexical proliferation even when the formal processes which generate these results are different.

Finally, the study contributes to the literature on linguistics, as it offers a change of mindset, which is quite specific to individual systems in which the word is made, as opposed to the variety of various forms that can be created out of the same base. Practical implications of these findings are into the fields of translation, language pedagogy and computer modeling. The density of semantics of the roots in the Arabic language is high, thus a translator needs to consider the same and, in certain cases, paraphrase using more



than one word in the Russian language to convey the same meaning. The strategies that integrate affixal and contextual knowledge are required in the teaching of the Russian language, but pattern recognition is achieved by the Arabic learners in teaching languages. The computer systems along with the natural language processing models would also need to be language-specific and capitalize on the root-and-pattern recognitions algorithm in the Arabic language and affixal parsing algorithm in the Russian language such that the nominal multiplicity could be implemented effectively.

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