A morphological account of the compositionality and plurality of agentive compounds in
Palestinian and Standard Arabic

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Introduction:

This study has attempted to disclose underlying patterns and behaviors of agentive compounds in standard and colloquial Arabic used in central Israel. The data was based on 51 samples of agentive compounds analyzed according to their verb templates, thematic grids, compositionality, and plurality. Morphologically, verb templates generated various agentive compounds that were influenced by several factors, amongst which we can find ‘verb thematic grids’ (Laks, 2013). Some templates had larger thematic grids than others, but all templates had the common thematic roles of an agent and a patient. Semantically, Arabic agentive compounds reflected a large percentage of compositionality upon interpretation. Syntactically, the pluralization process taking place in standard Arabic forms strictly followed the Modern Arabic rules. Yet, when colloquial Arabic pluralization was prompted, there was great inconsistency with modern Arabic grammar rules. The majority of words examined in colloquial Arabic behaved as genitive, regardless of their syntactic function in the sentences examined. It seems as though the genitive case plural suffixation is the unmarked option used by native speakers of the specific dialect addressed.
1.2. Linguistic variation

Language speakers are capable of expressing meaning in multiple linguistic forms. Linguistic variation is a state in which there exists more than one way to produce a singular meaning, i.e. “overabundance” (Anttila 1997, 2007). This phenomenon is referred to as “doublets” by Kroch (1989, 1994), Taylor (1994), Acquaviva (2008), and Embick (2008), or “cell-mates” by Thornton (2011, 2012). The changes languages undergo over time are embraced within the grammar of the same language as Laks alleges (2013).

There are cases where verbs occur in two different binyanim (verb patterns or templates) while sharing the same stem, thematic grid, and denotation. This being the case, morphological variation is the result (Laks, 2013). An example of this is 'nigev' and 'hitnagev' in Hebrew (i.e. wiped, in accusative form and reflexive form respectively). The aforementioned variation occurs in the verbal system where the verb changes its form. Laks emphasizes that the addition of the binyan to the changing of the verb is due to morpho-phonological and thematic-syntactic factors. However, it is assumed that some variations of the verbs occur in the interaction of speakers due to the morpho-phonology in the lexicon and not in the syntax (Laks, 2013).

Adam (2000) suggests that the variation of speakers’ productions of speech is an indicator of their competence, which may be accounted for in the grammar. These varied productions can be treated individually in terms of grammaticality (Embick, 2008) or perhaps more than one production would be accepted to compete for surface use (Weinreich, et al.1968; Pintzuk, 1991; Yang, 2002).
Some forms of expressions are less acceptable for use than others. Laks (2013) suggests that some words’ older forms are no longer part of speakers’ vocabulary. He claims that these forms are acceptable by some speakers while others would consider them high register forms. Laks further proposes that the direction of the change usually occurs towards the less-marked binyan. Older forms of verbs or words in general pose some complexity on the inflectional paradigm in the language. Some researchers consider these forms as defective, something that results in their neutralization and alignment with other forms (van Marle 1985; Spencer 1988; Corbin 1989; Anderson 1992; Steriade 2000; Stump 2001; Burzio 1998, 2002; McCarthy 2005; Booij 1996, 2008; Dal & Namer 2010; Thornton 2012, etc.). Laks elaborates on the older forms, which pose some complexity on the inflectional paradigm, by stating that “the morphological system takes into account information not only about the actual verb that is formed but also about its inflection paradigm, avoiding paradigms that include alternation in the consonants”. This, in turn, may be viewed as an attempt grammar makes to avoid complexity (Laks, 2013). The formation of a grammatical expression is formed while being guided by two crucial constrains, according to Kiparsky (2005). These constraints highlight how “forms should maximize the information to be conveyed and be as economical as possible in their expression of information” (Kiparsky, 2005). Therefore, we would find these constraints favoring expressions with minimal morphemes, and words would be preferable over multilexemic expressions (Kiparsky, 2005). Laks proposes several factors which influence the morphological change verbs undergo. These factors are: (1) the transitivity of the verb, (2) verbs’ thematic grids, (3) verbs’ argument structure, and (4) verbs’ derivational status in the lexicon (Laks, 2013). Moreover, the thematic grid of the verb cannot be changed by the
syntax according to Siloni (2002). The syntax cannot cause a modification, elimination, or an addition of theta role (Siloni and Reinhart, 2005).

1.3. Comprehension and production of compounds

Compounds are formed and produced by speakers who are aware of the existing linguistic variations of the language and of possible varying structures and templates. The relation between compounds and linguistic variation becomes evident by examining relations between different nouns. Berman discusses children’s comprehension and production of compounds by defining compounds as constructions that serve several purposes, among which are “lexical labeling of previously unnamed entities and semantic expression of relations between two or more nouns such as possession, hyponymy, or class inclusion” (2011). Berman further discusses that compounding is not only a way of introducing new words to the language lexicon, but is also a substantial part of other disciplines, like morphology.

Various researchers have conducted studies on subjects with ranging that range from three-year-olds to school-age children in an attempt to elicit innovative and established compounds for labeling agents and instruments (English-Clark and Hecht 1982; Clark et al. 1986; Hebrew- Clark and Berman 1984; Icelandic- Mulford 1983). Some children, when asked to name a boy who likes to pull a wagon, produced ‘wagon-boy’ or ‘wagon-puller’ in English, whereas Hebrew speakers produced something like ‘mosex-agalot’ (i.e. puller + Genitive wagons). Older Hebrew-speaking children produced ‘maxsan-agalot’ (i.e. puller + Genitive wagons) while coining the derived noun head or ‘aglan’ (i.e. wagoner). Children with different languages vary in their practice of compounding. Berman argues that Hebrew-speaking children start using
compounds around the age of five and that children and adults generally prefer monolexemic affixation over compounding. Berman further claims that compounding is more prevalent in Hebrew than in English for instrument compounds; English surpasses Hebrew in the use of agent compounds (Berman, 2011).

Statistics show that Hebrew speakers do not produce compounds until the age of two, after which there is a slight increase, reaching no more than five compounds around the age of three. This is further supported by data percentages showing how only 0.2% of noun compounds are produced by these children (Berman, 1987). Adults do not differ greatly and produce at a percentage of 0.3. Studies also show that school children prefer the use of the genitive particle šel in experiments involving the ‘frog story’ picture book narrative (Berman and Slobin, 1994). These children tended to use construct case compounds while narrating stories instead (Gesenius 1910; Borer 1988).

Upon comparing Hebrew-speaking children’s reliance on, or use of, noun compounds to that of English-speaking children, Clark found that English-speakers aged XXX relied on noun compounding 80% of the time, while the older group aged YYYY relied on noun compounding 63% of the time (Clark 1993:148). In contrast to these findings, Berman showed a slightly different picture with the use of noun compounding of Hebrew-speaking children use of noun compounding. They had less than 5% noun compounds produced from the age of two to eight (Berman, 2000). Clark et al. (1986) explains these results by revealing that English-speaking children prefer compounding over affixation due to principles of formal simplicity, semantic transparency, usage productivity, and “the role of typological factors as interacting with frequency in the ambient language to account for these preferences” (Berman, 2011).
Studies have shown that children speaking different languages are able to comprehend compounds before producing them (Clark and Barron, 1988). For instance, in a study conducted on Hebrew-speaking children, it was found that in half the cases, three-year-old children correctly comprehended compounds once they could correctly produce them, only at around the ages of four to five (Berman, 1987). Similar patterns were found in studies involving English (Clark et al., 1985) and Swedish (Mellenius, 1997). The comprehension and production of compounds involves gaining familiarity of their phonological features on the part of the children. These features, as Berman notes, include “compound-specific prosodic contours, linking elements, and consonant clusters disallowed in single words” (Berman 2011).

Additionally, Ravid and Zilberbuch have found that compounds were used as a high-register style in more formal contexts by high school children (2003). They were preferred over the use of the genitive particle šel (Ravid and Zilberbuch ,2003a,b). Accordingly, compound constructions were repeatedly presented as a crucial step in the process of morphosyntactic acquisition and the access of formal linguistic expression (Ravid and Zilberbuch, 2003a; Berman 2004). Slobin even describes the use of these constructions as a “facet of the ‘rhetorical options’ selected or preferred by speaker-writers for meeting different discourse functions out of the range of available constructions in their language” (Slobin, 2004). In conclusion, it can be understood that compounds in Hebrew change in number and form as well as in the discourse function they serve in the process of language development (Berman, 2011).

Compositionality plays a crucial role in analyzing complex lexical items, like compounds, or pluralized words with regards to their internal structure. The compositionality of words is discussed in Borer’s 2011 article, where Borer presents intriguing arguments
concerning the importance of internal word structure in determining the compositionality and non-compositionality of certain words. Initially, Borer highlighted the criticism of defining words as “junctures of phonological, morphological, and syntactic properties” (Marantz 1997, and Borer 1994; 2003; 2005a; 2005b). Borer stresses that the complexity level of internal word syntax is not solely related to the syntactic and semantic features, but also to the predictability of the availability of the compositional meaning of the word. This means that the more complex the word is in terms of internal syntax, the more compositional its meaning would be, and vice versa (Borer, 2011). Consequently, when attempting to analyze lexical items based on their compositionality, one should consider accessing the encyclopedia for items that are more than simple roots or terminals, as Borer refers to them (Borer, 2011).

1.4. The plural system of Arabic

The plural system of Arabic is among the most complex systems in the language. Its complexity stems from the fact that it contains irregular patterns and usages not extensively explained in literature (Hussein, 1995-2002). A further complexity of the usage of the Arabic plural system appears when there is a need to use the plural suffixation in its nominative, accusative, or genitive cases. The Arabic masculine suffix in nominative case is ‘un’ and in accusative case is ‘en’, while the feminine suffix is ‘at’. Some speakers confuse these usages as they grapple to learn the syntax of the language. Consequently, spoken Arabic has “solved the problem of masculine plural by using one suffix ‘en’ for all cases: nominative, accusative, and genitive” (Hussein, 1995-2002).
To further highlight the complexity of the Arabic plural system, researchers like Dawdy-Hesterberg and Pierrehumbert (2014) have argued that the Arabic plural system has regular plural patterns in addition to thirty-one irregular ones (McCarthy & Prince, 1990a; Wright, 1896/1988). These plural patterns are called ‘broken plurals’ and 41% of nouns in Arabic have this kind of plural pattern (Boudelaa & Gaskell, 2002). This complex plural system makes it difficult for speakers and learners as well to achieve accuracy according until they reach a certain level of maturity (Albirini & Benmamoun, 2012). Many other researchers have further emphasized the difficulty of achieving this level of accuracy when studying the plural system in Arabic. Ravid and Farah (1999) found that 6-year-old children committed errors while pluralizing in the broken plural form. Omar (1973) also found speakers who were fifteen years of age and still committing errors in the broken plural.

Some researchers claim that the two semantic factors of gender and animacy can play a role in determining the choice of suffixation, ‘-uun’ or ‘-aat’, when pluralizing. Others propose that “transparently derived forms are more likely to take the sound plural, while more semantically opaque-derived forms are more likely to take a broken plural (Boudelaa & Gaskell, 2002; MaCarthy & Prince, 1990a).”

Once several stored lexical items share a particular pattern, there is a greater tendency that the pattern will be generalized morphologically. This process of organizing patterns into gangs is referred to as the ‘gang size effect’ (McClelland & Elman, 1986; Rumelhart & McClelland, 1982; Stemberger & MacWhinney, 1988). Dawdy-Hesterberg and Pierrehumbert (2014) found that plural selection is greatly influenced by the CV template and the gang size of the lexical item. In their discoveries, words with similar CV templates would have the same plural CV template. In addition, their research revealed that the plural [-aat] was accurately
produced 71%-82% of the time, [-uun] only 35%-52%, and the broken plural with the least accurate result of 30%-37%. They reported that the errors that were committed in pluralizing were due to speakers confusing the two types of plurals, sound vs. broken.

Below is a summary of the rules of sound and broken plural in Arabic:

1. Arabic has two sound plural suffixes: [-uun] (attaches to human masculine nouns) and [-aat] (attaches to human feminine and non-human nouns).
2. “[aat] deletes the stem-final feminine grammatical marker taa marbuta prior to suffixation.”
3. The surface form of broken plural can undergo changes such as:

   “consonant gemination (e.g. [tˤaːlib]→[tˤullaab], “student”→“students”; ... vowel lengthening (e.g. [rajul]→[ rijjaal], “man”→“men”), vowel shortening (e.g. [kitaab]→[kutub], “book”→“books”), glide deletion/substitution (e.g. [ʔaduww]→[ʔaːdaaʔ], “enemy”→“enemies”), glide insertion and metathesis (e.g. [baaβ]→[labwaab], “door”→“doors”).” (Dawdy-Hesterberg and Pierrehumbert, 2014).

2.5 The Arabic verbal system

The Arabic verbal system consists of prosodic shapes which indicate the structure of verbs, their vocalic patterns, and affixations. Every verb in the language system must follow these shapes.

The Arabic prosodic shapes are:

Table 1

<table>
<thead>
<tr>
<th>Prosodic Shape</th>
<th>Example</th>
<th>Gloss</th>
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<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>faʕal</td>
<td>Katab</td>
<td>He wrote</td>
</tr>
<tr>
<td>------------</td>
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<td>----------</td>
</tr>
<tr>
<td>ʔaʕal</td>
<td>Akmal</td>
<td>Completed</td>
</tr>
<tr>
<td>nʕal</td>
<td>nʕakas</td>
<td>He got reflected</td>
</tr>
<tr>
<td>ftaʕal</td>
<td>Ktasab</td>
<td>He gained</td>
</tr>
<tr>
<td>stfaʕal</td>
<td>Stktab</td>
<td>Attracted</td>
</tr>
<tr>
<td>ʕʕal</td>
<td>ʕʕallam</td>
<td>Taught</td>
</tr>
<tr>
<td>tafaʕal</td>
<td>Tafajjar</td>
<td>Exploded</td>
</tr>
<tr>
<td>faʕal</td>
<td>Raasal</td>
<td>Corresponded</td>
</tr>
<tr>
<td>tafaʕal</td>
<td>Takaatal</td>
<td>Fought</td>
</tr>
</tbody>
</table>

**Methodology:**

This paper presents data collected from native speakers of the Palestinian dialect of Arabic within Israel (especially of the Triangle area). The samples were collected by documenting cases of lexical items from free discourse recordings. In addition, samples of Standard Arabic data were collected from internet sites and online forums. Participants were young adults within the ages of 18 to 55.

The data is composed of fifty one agentive compounds of Standard Arabic and Colloquial Palestinian Arabic. These compounds were first analyzed with regard to their thematic grid, verb templates, agent templates, and the past form of the verb. This is done in an attempt to check if a correlation exists between the verb template and the thematic roles assigned in relation to the agent templates appearing within the specific lexical item examined. Secondly, agentive compounds were examined for the compositionality of their semantic meaning. Lastly, agentive
compounds were derived into their plural form in colloquial and standard Arabic for comparative purposes. Moreover, an analysis was conducted to address the issue of subject and object forms of plural agentive compounds. I presented each agentive compound in its subject and object form in colloquial and standard Arabic and differentiated between them morphologically in order to show which form is most prevalent among common speakers of Arabic.

**Analysis and results:**

My paper will examine cases of compounding in Palestinian Arabic, more specifically in cases where the compounds are agentive. This is demonstrated in the example below:

a. **haris-marma**

‘keeper goal’

Goal keeper

The agent above is derived from an existing verb in Arabic with the root h-r-s. However, after morphological derivation, the verb turns into a noun (specifically, an agent to signify the person who is conducting the action that is being carried out, or described, by the verb).

The agent in the given compound follows the prosodic structure “CaCeC” (Fa’el) in Arabic, yet the template of the verb is CaCaC. Another example of an agentive compound is:

b. **musammim- azyaa’**

‘designer fashion’

Fashion-designer
Again, the agent above is derived from an existing verb in Arabic with the root s-m-m. Similar to the previous case, after morphological derivation, the verb turns into a noun. The agent in the given compound follows the prosodic structure “mCaCiC” (Mufa’el) in Arabic, and the verb template is CaCCaC.

Section I:

Verb templates and corresponding agent templates:

In this section, I will review the verb templates of the data collected for the purpose of this paper. Five verb templates below will be reviewed.

1) CaCaC: this verb template produced six possible agent templates based on the analysis of agentive compounds collected in the study, both in the standard Arabic form and in the dialectical form. The agent templates were: CaCiC, CiCCaC, mCaCCiC, CaCi, CaCCaC, and MuCiC. Below are some examples of the agentive templates in standard and dialectical Arabic forms:

- CaCiC agent template: Haris marma (i.e. goal keeper). It appeared in the standard Arabic form in the sentence: *kaifa akun haris marma kurat al-kadam?* (i.e. *How would I become a football goal keeper?*). However, we are lacking this agentive compound in the dialectical use of Arabic within the triangle area due to the effects of bilingualism and the integration of Hebrew words into our everyday conversations.

- CiCCaC agent template: Simsar ard (i.e. lands broker). In standard Arabic, we have: *simsar aradi sahyoni yakshif asmaa filastiniyn ba’u aradi* ... (i.e. a
Zionist land broker reveals the names of Palestinians who sold land to Jews...). In dialectical Arabic we have the sentence: *kan wahad simsar aradi...kan yuxid ard min al-fallahin...* (i.e. *there was one land broker...who used to take land from villagers*...). Both forms present no change in the agentive compound used.

For the complete list of examples, you may refer to the appendix at the end of the research paper.

2) CaCCaC: five possible agentive templates were extracted from the collected data. The agentive templates were: mCaCCiC, CaCCaC, mCaCCi, CaCiC, and mCaCiC. Below are some examples of agentive templates in standard and dialectical Arabic forms:

- **mCaCCiC**: mu`alem siyaka (i.e. driving teacher). In standard Arabic we have the sentence: *Hamada kamal diab (22 `aman) min tamra asgar mu`alem siyaka fil-bilad* (i.e. *Hamada kamal dyab (22 years old) from Tamra is the youngest driving teacher in the country*). Whereas, in dialectical Arabic we observe a slight change in the complementary word of the agentive compound. Instead of the word *siyaka* we would find *swaka*. This change can be attributed to the fact that the second form is more convenient in pronunciation of spoken Arabic. The example from dialectical Arabic is: *ka`imat al-maktabat w-m`almi al-swaka* (i.e. *the list of libraries and driving teachers*).

- **CaCiC**: wakil ta`amin (i.e. insurance broker). This agentive compound is used in exactly the same form in standard Arabic and in spoken Arabic. In standard
Arabic: wa-kad sharaka fil-ijtimaa` wakil al-ta`amin al-ma`ruf suhel...(i.e. and the well-known insurance broker has participated in the meeting). The same item was used in dialectical Arabic: eza mumkin bidi a`arif raikum bi-wadifit wakil ta`amin b-sharikit al-ta`min al-amrikiyi(i.e. If possible, I would like to know your opinion of the job of an insurance broker in American insurance companies...).

3) aCCaC: there was only one form of an agentive template corresponding to this verb template in the data collected. The template was mCCiC.

- mCCiC: muntij aflam (i.e. movie producer). In the standard Arabic form, the example was: muntij film al-rasul al-musi`a asbah min al-hijjaj (i.e. the movie producer of the offensive movie of the prophet became one of the pilgrims). While in dialectical Arabic we have: baka fi muntij aflam mumtaz nasi ismu bas (i.e. there was an excellent film producer but I have forgotten his name). Again, we see that both forms are similar.

4) CaaCaC: this verb template was associated with one agent template which is muCaCiC according to the collected data.

- muCaCiC: murakib daraeb (i.e. assessor). In standard Arabic, there is the following example: mubara li-mal`a ba`d al-marakiz al-sagira li-wadifat murakib daraeb fi wizarat al-maliya (i.e. a competition to fill some vacancies of assessors in the ministry of finance). There was some difficulty in finding dialectical examples online of this form of agentive compound due to the compound’s infrequent usage in daily speech. Thus, I provided grammatical
and acceptable possible spoken words that include
this agentive compound in the dialectical form. The
eexample is: axuy baka yistgil murakeb daraeb (i.e. my brother used to work as
an assessor).

5) iCtaCC: this verb template produced one agent template in the form of aCICCai.

- aCICCai: axisa’e tagdiya (i.e. dietician). In standard Arabic the example is:
  man yatlub al-husul ala sihadat axisa’e tagdiya –himya fi Israel alayhi an
  yakun hamilan li-lakab al-awal… (i.e. he who seeks a certificate of a dietician
  in Israel must have a BA in nutrition...). On the other hand, this agentive
  compound is not widely used in dialectical Arabic. Instead, the Hebrew
  equivalent is used as a result of the influence of Hebrew on Arabic speakers
  within Israel.

It should be noted that the initial two verb templates CaCaC and CaCCaC had similar
overlapping agentive templates such as CaCiC, mCaCCiC, and CaCCaC. This is perhaps
because the verb templates have the same structure, except that the second one is stressed in the
middle.

Section II:

Verb templates and thematic roles:

The first verb template, CaCaC, has the minimal thematic roles of agent and patient, and
the instrument is optional. It produces six agentive templates.

Table 2
The second verb template, CaCCaC, produces five agent templates, which are similar, aside from differences in punctuation, like the gemination. The common thematic roles of this verb template are agent and patient, while instrument is optional.

Table 3

<table>
<thead>
<tr>
<th>verb template</th>
<th>thematic grid</th>
<th>agent template</th>
</tr>
</thead>
<tbody>
<tr>
<td>CaCCaC</td>
<td>agent, patient, instrument</td>
<td>CaCiC</td>
</tr>
<tr>
<td></td>
<td>agent, patient</td>
<td>CaCi</td>
</tr>
<tr>
<td></td>
<td>agent, patient, instrument</td>
<td>CaCCaC</td>
</tr>
<tr>
<td></td>
<td>agent, patient, instrument</td>
<td>mCaCCiC</td>
</tr>
<tr>
<td></td>
<td>agent, patient, instrument</td>
<td>CaCCaC</td>
</tr>
<tr>
<td></td>
<td>agent, patient</td>
<td>CiCCaC</td>
</tr>
<tr>
<td></td>
<td>agent, patient</td>
<td>CaCi</td>
</tr>
<tr>
<td></td>
<td>agent, patient, instrument</td>
<td>muCiC</td>
</tr>
</tbody>
</table>

The third verb template, aCCaC, produced one agentive template of a compound. The thematic roles agent and patient are obligatory, while an instrument is optional.

Table 4

<table>
<thead>
<tr>
<th>verb template</th>
<th>thematic grid</th>
<th>agent template</th>
</tr>
</thead>
<tbody>
<tr>
<td>aCCaC</td>
<td>agent, patient, instrument</td>
<td>mCCiC</td>
</tr>
</tbody>
</table>
The fourth verb template, CaaCaC, produced one agent template. The thematic grid consists of an obligatory agent and patient while the instrument being optional.

Table 5

<table>
<thead>
<tr>
<th>verb template</th>
<th>thematic grid</th>
<th>agent template</th>
</tr>
</thead>
<tbody>
<tr>
<td>CaaCaC</td>
<td>agent, patient, instrument</td>
<td>MuCaCiC</td>
</tr>
</tbody>
</table>

The fifth verb template produced one agent template and its thematic grid consists of an agent and a patient.

Table 6

<table>
<thead>
<tr>
<th>verb template</th>
<th>thematic grid</th>
<th>agent template</th>
</tr>
</thead>
<tbody>
<tr>
<td>iCtaCC</td>
<td>agent, patient</td>
<td>aCiCCai</td>
</tr>
</tbody>
</table>

Overall, it was reflected that the thematic grid of the five verb templates examined consisted of an obligatory agent and patient. The theta role of an instrument was optional when presented.

Section III:

Compositionality of agentive compounds:

The study is based on 51 samples of agentive compounds in Arabic. These samples were reviewed for compositionality and availability in the standard and dialectical form. The results reveal that the overwhelming majority (i.e. ≈78%) of the samples have compositional meaning.
There were only 11 cases out 51 (i.e. ≈21.56%) that were considered non-compositional in meaning. These cases are associated with the verb templates CaCaC and CaCCaC, with one exception in CaaCaC. Below is an example of one agentive compound with a compositional meaning and another one with a non-compositional meaning:

Table 7

<table>
<thead>
<tr>
<th>meaning</th>
<th>arabic transcription</th>
<th>template of verb</th>
<th>template of agent noun</th>
<th>compositionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>goal keeper</td>
<td>haris marma</td>
<td>CaCaC</td>
<td>CaCiC</td>
<td>Yes</td>
</tr>
<tr>
<td>post man</td>
<td>sa`ee barid</td>
<td>CaCaC</td>
<td>CaCi</td>
<td>No</td>
</tr>
</tbody>
</table>

In the examples above, *haris marma* is compositional and its semantic meaning is composed out of analyzing the meaning of its head noun and its complement. *Haris* is the person who serves the function of guarding the goal. On the other hand, in the agentive compound *sa`ee barid* the meaning is non-compositional, due to the semantic meaning of the compound elements not reflecting the semantic meaning of the compound as a whole. The meaning of the word *sa`ee* is either *the one who seeks something* or *the one who walks*. Combining the head noun with the complement would yield the infelicitous semantic meaning of someone who seeks the post or walks the post. Thus it is considered non-compositional.

See appendix for complete list of data.

Section IV:

*Plurality in accusative and nominative position of agentive compounds:*
Examining the 51 samples of agentive compounds in relation to plurality revealed an interesting pattern of head morphological behavior within each compound. The pluralization process taking place in the standard Arabic forms strictly followed the Modern Arabic rules. Nevertheless, when colloquial Arabic pluralization was prompted, there was great inconsistency with modern Arabic grammar rules. This is in addition to an overall pattern that was repeated throughout most of the examples given, regardless of their grammatical agent or verb template.

As mentioned previously in this paper’s literature review, Arabic pluralization is marked vividly by the morphology of the language. Among the complex and various morphological rules of pluralization we find that the position of the word in the sentence, whether it is nominative or genitive/accusative, will affect the suffixation added to the word. Words in nominative masculine positions are expected to be suffixed with –un and those with genitive function are expected to be suffixed with –in. It was shown that the overwhelming majority of items examined in colloquial Arabic favored genitive case suffixing regardless of any grammatical concerns taken into account. It seems as though the genitive case plural suffixation is the unmarked option used by native speakers of the specific dialect addressed. The statistics of this paper’s data show that 41 words out of 51 were pluralized with –in, which means that about 80% of the samples follow this pattern. An example of this is how muxrij aflam is pluralized as muxrij-in aflam in the colloquial form regardless of its position or grammatical function in the spoken sentence (see appendices for more examples). This trend may be attributed to the phonological aspect of the language. In other words, the articulation of –in in the spoken form is phonetically easier than –un at the end of the pluralized item. In addition, the –un suffix is perceived as a formal morphological addition when used in speech.
The literature supports the findings in showing that the broken plural forms were used in 41% of the nouns in studies made by Boudelaa & Gaskell in 2002. Many researchers (e.g. Albirini & Benmamoun, 2012) have also stressed the difficulty of producing accurate plural words in Arabic due to the system’s complexity (e.g. Ravid and Farah, 1999, and Omar, 1973). Omar, 1973 even showed that speakers who reach the age of 15 are still at the risk of committing errors while pluralizing. Consequently, this commission of errors at this adolescent age may be carried out within the language usage and becoming an accepted dialectical form. This is something that was reflected in the erroneous common usage observed in my data [i.e. pluralizing with the suffix –in regardless of the word’s position in the sentence]. Furthermore, the tendency to commit errors in a particular form may cause morphological generalizations dubbed ‘gang size effect’ (McClelland & Elman, 1986; Rumelhart & McClelland, 1982; Stemberger & MacWhinney, 1988). Thus, the unique pluralization pattern found in dialectical Arabic can be claimed to be a result of ‘gang size effect’ in addition to the original effect of the CV template in each word’s case.

**Discussion and Conclusion:**

This paper has attempted to reveal the underlying patterns and behaviors of agentive compounds in standard Arabic and colloquial Arabic used in the central area of Israel. The analysis was based on 51 samples of agentive compounds analyzed according to their verb templates, thematic grids, compositionality, and plurality.

The verb template results showed that the CaCaC template produced six possible agent templates based on the analysis of agentive compounds collected in the study, both in the
standard and dialectical Arabic form. The agent templates were: CaCiC, CiCCaC, mCaCCiC, CaCi, CaCCaC, and MuCiC. The CaCCaC template produced five possible agentive templates: mCaCCiC, CaCCaC, mCaCiC, CaCiC, and mCaCiC. The aCCaC template produced only one form of an agentive template: mCCiC. The CaaCaC template was associated with one agent template which is muCaCiC, according to the collected data. And lastly, the iCtaCC verb template produced one agent template in the form of aCiCCai (see section I in the analysis for details). The template CaCaC, which is the most common and basic one in the Arabic language, was prevalent in the possible variations produced in the data. This is consistent with Laks’ suggestion that the direction of the change usually takes place towards the less marked banyan (2013).

Verbs are influenced morphologically by several factors, one of which is the ‘verb thematic grids’ (Laks, 2013). Upon examination of the collected data, it became evident that some templates have larger thematic grids than others. However, all templates have the common thematic roles of an agent and a patient (see section II, tables 2-6). These thematic grids enable us to understand information about the expression being tested. As Kiparsky states, “forms should maximize the information to be conveyed and be as economical as possible in their expression of information” (2005).

Semantically, Arabic agentive compounds reflect a large percentage of compositionality when interpreted. An approximate ≈78% of agentive compounds were found to be compositional, whereas ≈21.56% of the samples was non-compositional in meaning. These cases are associated with the verb templates CaCaC and CaCCaC, with one exception in CaaCaC. We note that the ‘gang size effect’ (McClelland & Elman, 1986; Rumelhart & McClelland, 1982; Stemberger & MacWhinney, 1988) plays a role in having some templates prevail over others in
their compositional interpretation. In addition, the literature suggests that compositional words tend to be more complex in their internal syntactic structures (Borer, 2011). This can be related to the fact that these templates were the ones which produced more derivational agent templates once examined in section I of the paper.

Plurality was the last point addressed in analyzing the data of this paper. The pluralization process taking place in standard Arabic forms strictly adhered to Modern Arabic rules. Yet, when colloquial Arabic pluralization was prompted; there was great inconsistency with the modern Arabic grammar rules. The majority of items examined in colloquial Arabic behaved as genitive regardless their syntactic function within the sentences being examined. It seems as if the genitive case plural suffixation is the unmarked option used by native speakers of the specific dialect addressed. The statistics showed that 41 words out of 51 were pluralized with –in, which means that approximately 80% of the samples followed this pattern. For example: \textit{muxrij aflam} is pluralized as \textit{muxrij-in aflam} in the colloquial form regardless of its position or grammatical function in the spoken sentence (see section IV and appendices for further examples). This trend may possibly be attributed to the fact that, phonologically, it is easier to articulate an agentive compound suffixed with –in than with –un.

In addition, the complexity of the Arabic broken plural system was raised repeatedly, and perhaps supports the overabundance of genitive agentive compound usage in colloquial Arabic. Hussein suggested that this common usage of genitive form is a possible solution of all complex cases of the plural Arabic system (1995-2002). This ‘solution’ may consequently lead to what we call in the literature the ‘gang size effect’ (McClelland & Elman, 1986; Rumelhart & McClelland, 1982; Stemberger & MacWhinney, 1988). This effect embraces the morphological
generalization taking place by speakers of the language while not entirely eliminating the effect of the CV, as seen in sections I and II.

In conclusion, this paper has revealed the unique performance of the agentive compounds in Arabic and, more specifically, in dialectical Arabic. However, the results of the paper have raised more intriguing questions that seek to be answered in the future. Further research should be carried out in an attempt to examine the behavior of the agent and verb templates used in different dialects. In addition, future research may address the notion of compositionality in comparison to speakers’ judgments of different dialects and the standard Arabic semantics. Lastly, plurality complexity can be examined with regards to common usage among different age groups and be specified and categorized in order to check if there is a difference in the pluralization process of each age group.
Bibliography


