


RESEARCH ARTICLE	 <b>Mind Mapping Strategy in Morphological Instruction: A Case Study on the Semantic Nuances of Augmented Verb Patterns in Arabic</b>
Boumeridja Abir	Doctor Laboratory of Phonetic and Lexical Studies University of Algiers 2 - Abu El-Kacem Saadallah Bouzareah, Algeria Email: boumeridja.abir@univ-alger2.dz
Laib Sihem	Doctor Laboratory of Phonetic and Lexical Studies University of Algiers 2 - Abu El-Kacem Saadallah Bouzareah, Algeria Email: sihem.laib@univ-alger2.dz
Doi Serial	https://doi.org/10.56334/sci/8.9.49
Keywords	Mind mapping; Morphology; Morphological verb patterns
<b>Abstract</b> Mind mapping constitutes an effective cognitive tool that enhances mental processing in general and facilitates learning in particular. In light of contemporary linguistic studies, the implementation of this strategy has become increasingly relevant within educational contexts. Among the foundational components of Arabic morphology are verb patterns—particularly augmented forms—whose semantic comprehension is essential to mastering word formation and meaning. This paper investigates a set of key questions related to the semantics of these morphological patterns: What are the principal augmented verb forms in Arabic? What secondary or inferred meanings can be derived from them? And can certain patterns serve in place of others in expressing notions such as reciprocity or causativity? The study thus aims to analyze the semantic scope of these forms while proposing a structured visualization through mind mapping to support learners' understanding.	
<b>Citation.</b> Boumeridja, A., Laib. S. (2025). Mind Mapping Strategy in Morphological Instruction: A Case Study on the Semantic Nuances of Augmented Verb Patterns in Arabic. <i>Science, Education and Innovations in the Context of Modern Problems</i> , 8(9), 547–557. <a href="https://doi.org/10.56352/sci/8.9.49">https://doi.org/10.56352/sci/8.9.49</a>	
<b>Issue:</b> <a href="https://imcra-az.org/archive/383-science-education-and-innovations-in-the-context-of-modern-problems-issue-9-vol-8-2025.html">https://imcra-az.org/archive/383-science-education-and-innovations-in-the-context-of-modern-problems-issue-9-vol-8-2025.html</a>	
<b>Licensed</b> © 2025 The Author(s). Published by Science, Education and Innovations in the context of modern problems (SEI) by IMCRA - International Meetings and Journals Research Association (Azerbaijan). This is an open access article under the <b>CC BY</b> license ( <a href="http://creativecommons.org/licenses/by/4.0/">http://creativecommons.org/licenses/by/4.0/</a> ).	
Received: 11.03.2025	Accepted: 02.05.2025 Published: 23.07.2025 (available online)

## Introduction

The study of morphological patterns stands as a cornerstone in understanding linguistic sciences and in uncovering the cognitive foundations of language. Despite the relative complexity of morphology and the limited number of advanced academic studies addressing it, this very challenge serves as an impetus for deeper scholarly exploration. Among the most effective instructional strategies for simplifying complex morphological concepts is the use of **mind mapping**, which enables learners to assimilate diverse morphological constructs in a concise and visually structured manner.

Accordingly, the present study poses the following central research question:

**How can the mind mapping strategy be effectively employed in teaching Arabic morphology in general, and augmented verb patterns in particular?**

This overarching inquiry is further subdivided into the following subsidiary questions:

- What are the most prominent morphological patterns of Arabic verbs?
- What implicit or secondary meanings can be inferred from these patterns?

- Can certain patterns functionally substitute for others, particularly in contexts involving reciprocity or causativity?

The main objective of this research is to explore and elucidate the semantic dimensions of augmented verb forms, clarify their syntactic and semantic functions, and transform their meanings into simplified cognitive maps. These maps are designed to promote a more accurate and contextually appropriate use of such forms by learners of Arabic, relying on a descriptive-analytical methodology aligned with the study's theoretical and pedagogical aims.

## 1. Mind Mapping

### a. Conceptual Definition

A mind map is defined as a high-level organizational thinking tool designed to stimulate and activate cognitive processes (Abdel-Raouf, 2015, p. 2821). It serves as an effective visual note-taking method that aids learners in acquiring and organizing knowledge efficiently.

### b. Key Features

Among its most salient features is the principle of multiplicity, incorporating the use of colors, symbols, and numerical sequencing. Mind maps are based on a system of interconnected ideas radiating from a central keyword, which serves as the nucleus for branching conceptual relations.

### c. Pedagogical Significance

The value of mind mapping lies in its status as a contemporary learning strategy that offers a comprehensive perspective on complex topics. Its primary educational benefits can be summarized as follows:

- Enhances cognitive capacities.
- Aids in the long-term retention of information.
- Elevates academic achievement.
- Stimulates creative thinking. (Buzan, 2006, p. 73)

## 2. Morphological Patterns

### a. Definition of the Term "Pattern"

In Arabic linguistic tradition, a morphological pattern (*ṣīgha*) is defined as the inflectional marker that conveys morphemic content (Shehata, 2015, p. 127). For instance, the morphological form *istaf'ala* signals the morpheme of request or demand. The term *ṣīgha* is considered synonymous with *nūẓān* (pattern) and *binyah* (structure), both of which are frequently employed in modern linguistic analyses (Al-Rajihi, 1973, p. 708).

### b. Functions of Morphological Patterns

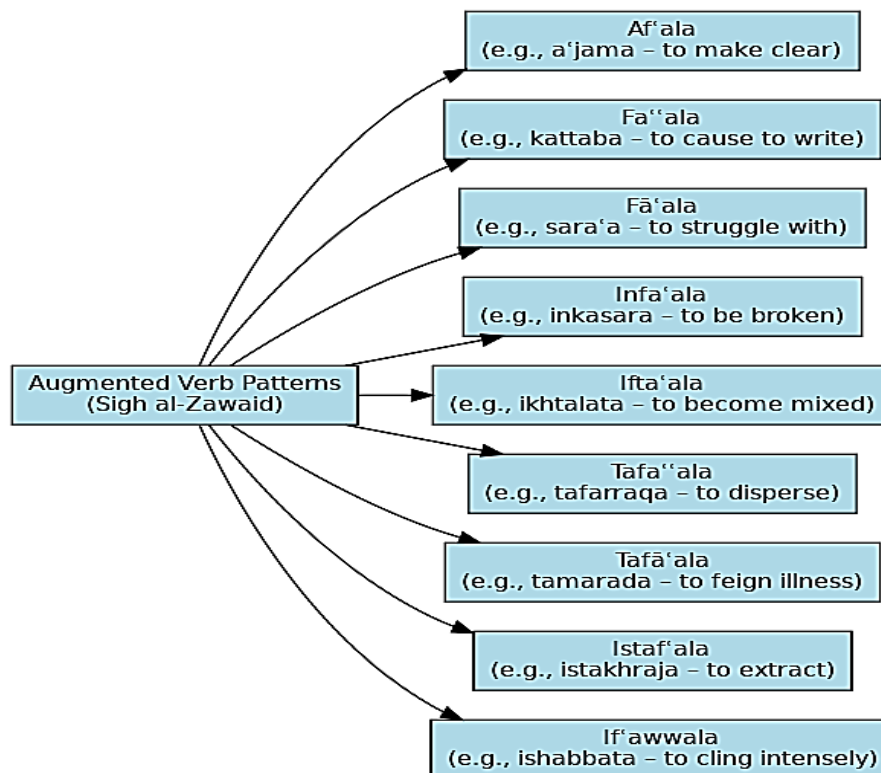
Morphological templates play a crucial role in enriching the lexical resources of the language and serve as a fundamental basis for classifying and selecting words in appropriate syntactic and semantic contexts (Al-Suyuti, 1998, pp. 275–276). Such patterns include the active participle, passive participle, comparative and superlative forms, as well as temporal and locative expressions, instrumental nouns, and adjectives resembling participles. Furthermore, morphological structures—particularly those involving derivation and augmentation—are essential for distinguishing between semantically related words derived from the same root, thereby eliminating ambiguity and clarifying nuanced meanings.

## 3. Utilizing Mind Mapping Strategy to Simplify the Semantic Dimensions of Augmented Verb Patterns

In Arabic morphology, each additional morphological element appended to the root verb structure introduces a new layer of meaning to the base form. Accordingly, the deployment of mind maps serves to visually and

cognitively facilitate learners' understanding of these nuanced meanings, especially when dealing with the complex system of augmented verb forms (*ṣīgh al-zawā'id*). The figure below (not included here) illustrates a typology of the most common augmented patterns, each associated with exemplary verbs that highlight their semantic shifts.

### Mind Map of Augmented Arabic Verb Patterns (*Ṣīgh al-Zawā'id*)



#### a. Semantic Functions of the Pattern *Af'ala*

##### 1. Indication of temporal or spatial entry

This function refers to denoting the entry into a specific time or place: e.g., *aṣḥaba al-rajul* (“the man entered the morning”) and *a'raqa al-musāfir* (“the traveler entered Iraq”).

##### 2. Causativity (*ta'diya*)

By prefixing a glottal augment (*hamzat al-ta'diya*) to an intransitive verb, it becomes transitive. For example:

○ *dakhala Muḥammadun* (“Muhammad entered”) → *adkhala 'Umarun Muḥammadan* (“Umar brought Muhammad in”), where *Muḥammad* shifts from subject to object.

○ This also applies to verbs originally requiring two objects, which can become ditransitive, taking three objects. For instance:

*ra'ā al-ṭālibu al-darsa muḥdan* (“the student considered the lesson useful”) → *arā al-mu'allim al-ṭāliba al-darsa muḥdan* (“the teacher made the student see the lesson as useful”).

##### 3. Adoption of the meaning of *ista'ala*

As seen in the Qur'anic verse: “*fa-lammā ra'aynahu akbarnahu*” (Yusuf 31), the verb *akbara* conveys the same intensity as *istakbara* (to be greatly impressed or astonished).

##### 4. Connotation of worthiness

For instance: *ajadda al-nakhl* ("the palm trees became worthy of harvesting") implies readiness or entitlement.

#### 5. Implicature of exposure

As in: *arahanta al-bayta* ("I mortgaged the house"), meaning that the house was subjected to being mortgaged. Sibawayh explains: "*aqtaltuhu* conveys subjecting someone to killing".

#### 6. Indication of removal

E.g., *a'jama al-kitāb* means "to eliminate the ambiguity of the script".

#### 7. Transformation (becoming something else)

For example: *a'sara al-rajul* ("he became poor"), *ajraba* ("he became afflicted with scabies").

#### 8. Facilitation or empowerment

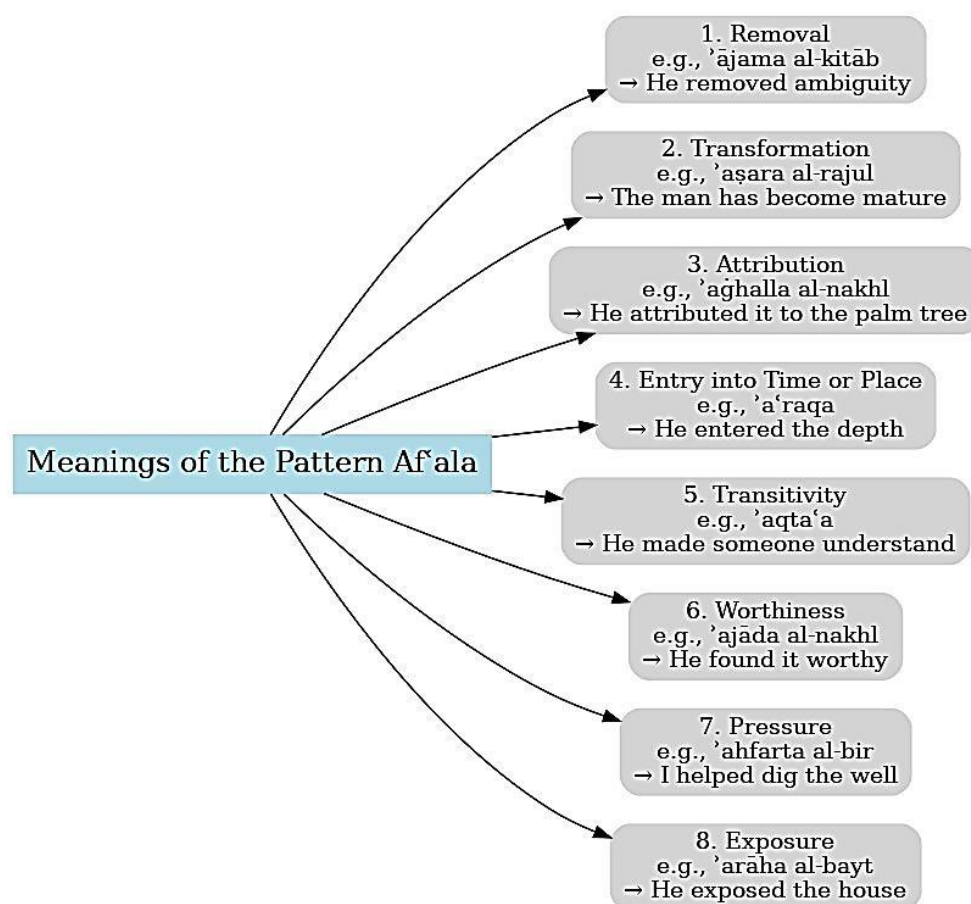
E.g., *ahfarta al-bi'ra* means "I helped dig the well".

#### 9. Attribution

This pattern can denote attributing an action or trait to someone or something, as in the verse:

"*wa-nā kāna li-nabiyyin an yaghulla*" (Āl 'Imrān 161), meaning "it is not befitting for a prophet to be accused of treachery".

### Mind Map of the Semantic Functions of the Pattern "Af'ala" in Arabic Morphology



### Semantic Functions of the Form *Tafa''ala*

#### 1. Reflexive Causativity (*mutāwa'a*):

This denotes the subject's undergoing of an action previously performed in a causative pattern (*fā''ala*), such as: "*rammantu al-binā' fa-taramanna*" (I renovated the building, and it got renovated), "*kassartu al-shay' fa-takassara*"

(I broke the object, and it broke down). It reflects the notion of the action being received or resulting from another agent's causative act.

## 2. Transformation / Ontological Shift (*ṣayrūra*):

Indicates a transformation into a new state or quality. Example: *"taḥajjara al-qalb"* (His heart turned to stone), indicating that the heart has become metaphorically stony—emotionally hardened.

## 3. Affectation / Pretension (*takalluf*):

Expresses a deliberate, and often strained, effort to adopt a quality or behavior not innately possessed. For example: *"taḥallama al-raḡul"* (The man pretended to be forbearing) implies an intentional self-imposition of forbearance; *"tashajja 'a al-ṭifl"* (The child forced himself to appear brave).

## 4. Gradualism / Progressive Action (*tadarruḡ*):

Indicates the gradual or incremental execution of an act.

Example: *"tajarra 'tu al-ghayṣ"* (I swallowed the rage bit by bit), where the verb signifies successive, deliberate phases of emotional suppression.

## 5. Adoption or Assumption (*ittikhāḍ*):

Conveys the meaning of taking or adopting something for a specific use.

For instance: *"talahḥafa al-raḡul al-shay'"* (He took the object as a cover), and

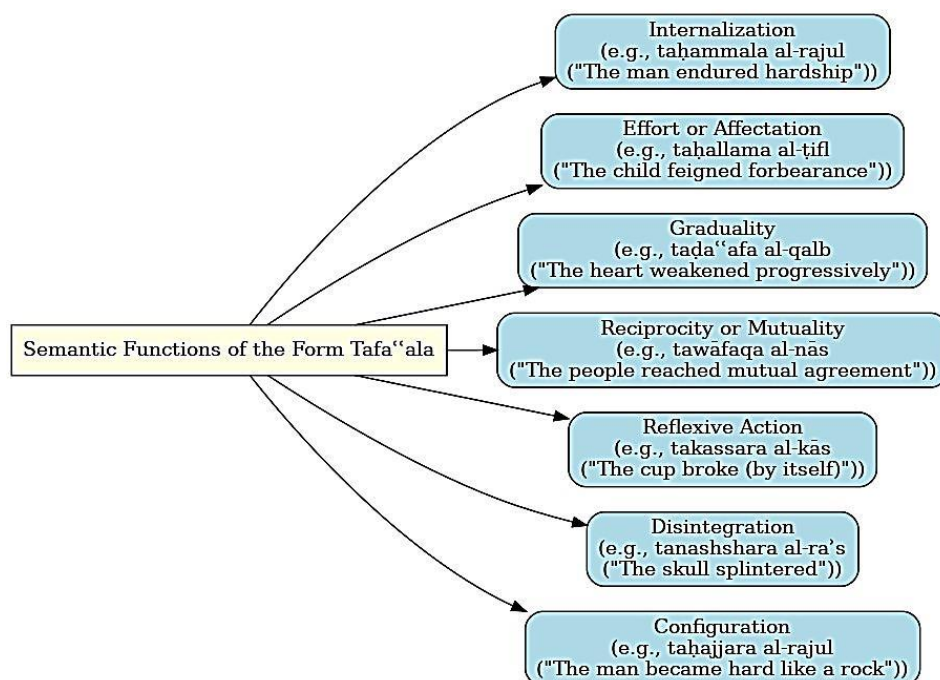
*"tafarra 'sha al-bā' is al-arḍ"* (The destitute man used the ground as a mattress).

## 6. Avoidance / Abstinence (*tajan-nub*):

Expresses deliberate abstinence or distancing from a state or act. Cited in the Qur'anic verse: {*Wa mina al-layli fatahajjad bihi nāfilatan laka...*} [Al-Isrā': 79],

where *"fatahajjad"* denotes *"to avoid sleep"* (i.e., *tahajjada* means voluntarily forsaking sleep for nocturnal prayer).

### Mind Map of the Semantic Functions of the Pattern "Tafa'ala" in Arabic Morphology



### Semantic Functions of the Form *Istaf'ala*

#### 1. Request or Seeking (*ṭalab*):

This form often denotes an explicit or implicit request. It may reflect a literal act of seeking, as in: *"ista'āna bi-ṣaḍīqihi"* (He sought his friend's help), or

"*istalhama 'an al-amr*" (He asked for clarification).

In a figurative sense, it implies symbolic request, as in:

"*istaraq 'a al-thawb*" (He patched the garment), where the act suggests an implicit appeal for mending.

## 2. Intensification or Empowerment (*al-quwwa*):

The form may express the intensification of a state or attribute, as in:

"*istakbara*" (He became excessively proud), indicating that arrogance has reached an intensified or dominant degree.

## 3. Synonymy with *Ifta'ala* (*muwāfaqa*):

In some cases, *Istaf'ala* functions interchangeably with *Ifta'ala*, as in:

"*ista'dhara*" meaning "*i'tadhara*" (He apologized), where both forms indicate the act of offering an excuse.

## 4. Transformation / Metaphorical or Literal Change (*taḥawwul*):

This form can indicate both real and metaphorical transitions:

- **Metaphorical:** In the proverb "*inna al-bughātha bi-arḍinā yastansir*" (In our land, even the weak buzzard becomes an eagle), the weak bird *al-bughāth*—known for poor flying ability—is metaphorically "transformed" into a mighty eagle. The expression critiques the undeserved elevation of the ignoble.

- **Literak:** "*istajhara al-ḥīn*" (The clay turned into stone), where a tangible physical transformation occurs.

## 5. Encountering or Finding a Quality (*al-muṣādafā*):

According to Ibn 'Aqīl, the form may express perceiving or finding a quality in something, as in: "*ista'zama al-amr*" (He perceived the matter as great) or

"*istaṣghara al-shay'*" (He found it to be small). The action reflects cognitive alignment with the attribute implied in the verb.

### Semantic Functions of the Form *Istaf'ala*

#### 1. Request or Seeking This can denote an explicit and literal request, as in:

- *ista'āna bi-ṣaḍīqihi* → "He sought help from his friend"
- *istalhama 'an al-amr* → "He asked for clarification about the matter"

It may also imply a figurative request, such as:

- *istarraqa al-thawb* → "He requested that the garment be patched"

#### 2. Intensity or Reinforced Meaning

- *istakbara* → "He intensified his arrogance" or "He became exceedingly proud"

#### 3. Equivalence to the Form *Ifta'ala* (Functional Synonymy)

- *ista'dhara* → equivalent to *i'tadhara*, meaning "He offered an excuse" or "He apologized"

#### 4. Transformation or Change of State This can reflect:

- **Figurative transformation**, as in the classical Arabic proverb:

*inna al-bughātha bi-arḍinā yastansir* → "Even the feeble hawk turns into a falcon in our land," symbolizing the elevation of the undeserving.

- **Literak transformation**, as in:

- *istahjara al-ḥīn* → "The clay turned into stone"

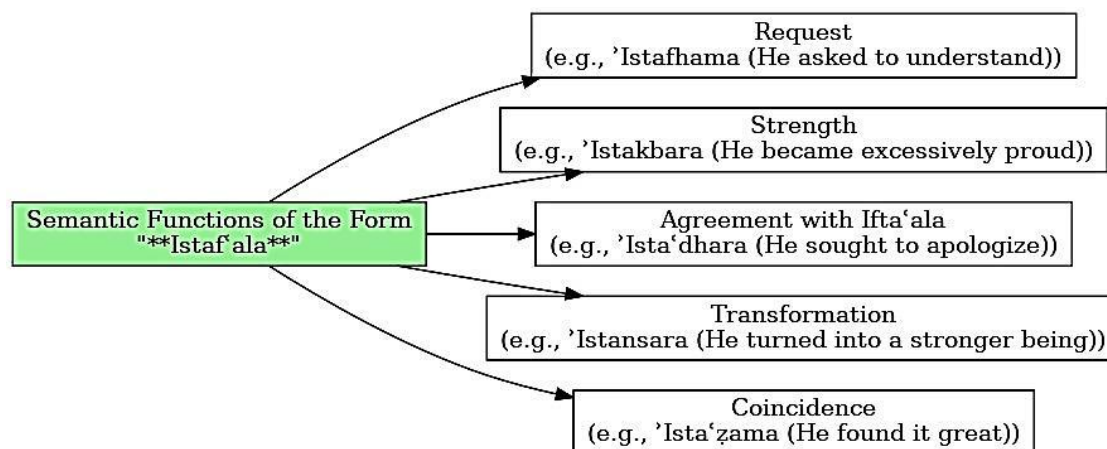
#### 5. Coincidence or Finding Something to Be So This involves experiencing or perceiving something in a particular way:

- *ista'zama al-amr* → "He found the matter to be grave"



- *istaṣghara al-amr* → "He regarded the matter as trivial"

### Mind Map of the Semantic Functions of the Pattern "Istaʿala" in Arabic Morphology



### Semantic Functions of the Form *Fāʿala*

#### 1. Intensification or Multiplication

- e.g., *ḍāʿafa al-ṭālib al-majhūd* → "The student intensified his effort."

#### 2. Rendering or Making Something Possess a Quality or Origin

- e.g., *ʿāfāka Allāh* → "May God grant you well-being" (i.e., made you possess health).

#### 3. Reciprocity or Mutual Action

- e.g., *qātala al-jundī al-ʿaduww* → "The soldier fought the enemy" (implying both sides engaged in combat).

#### 4. Continuity or Sequence (Serial Action)

- e.g., *wālaytu al-dirāsah* → "I pursued my studies successively without interruption."

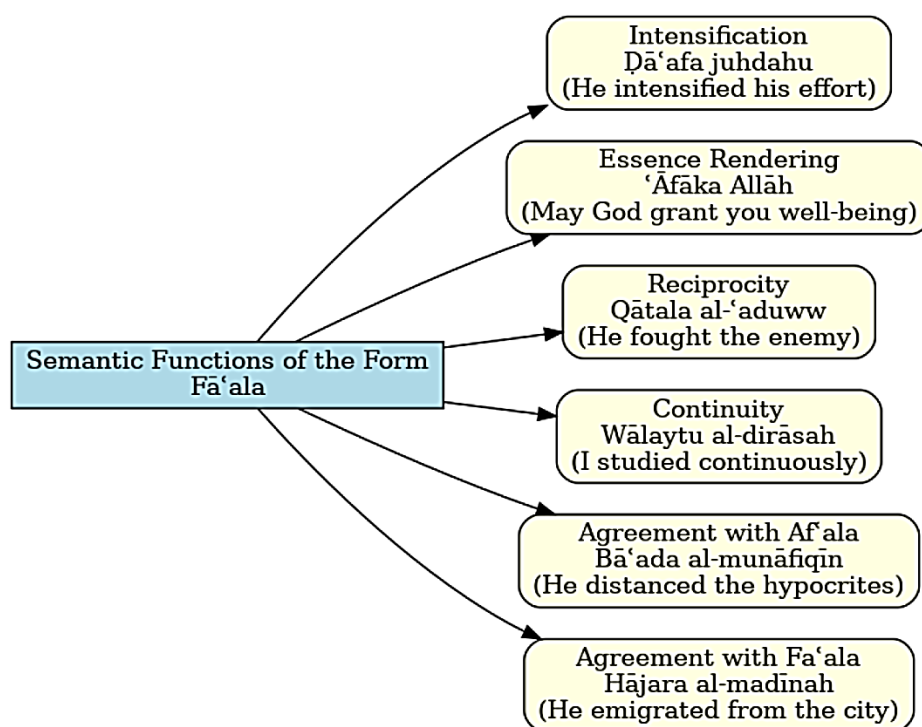
#### 5. Agreement with the Form *Afʿala*

- e.g., *bāʿada Allāh ʾahlu al-nifāq* → "May God distance the hypocrites" (same as *abʿada*).

#### 6. Agreement with the Form *Faʿala*

- e.g., *hājara* → "He emigrated" (synonymous with *hajara*).

### Mind Map of the Semantic Functions of the Pattern "Fāʿala" in Arabic Morphology

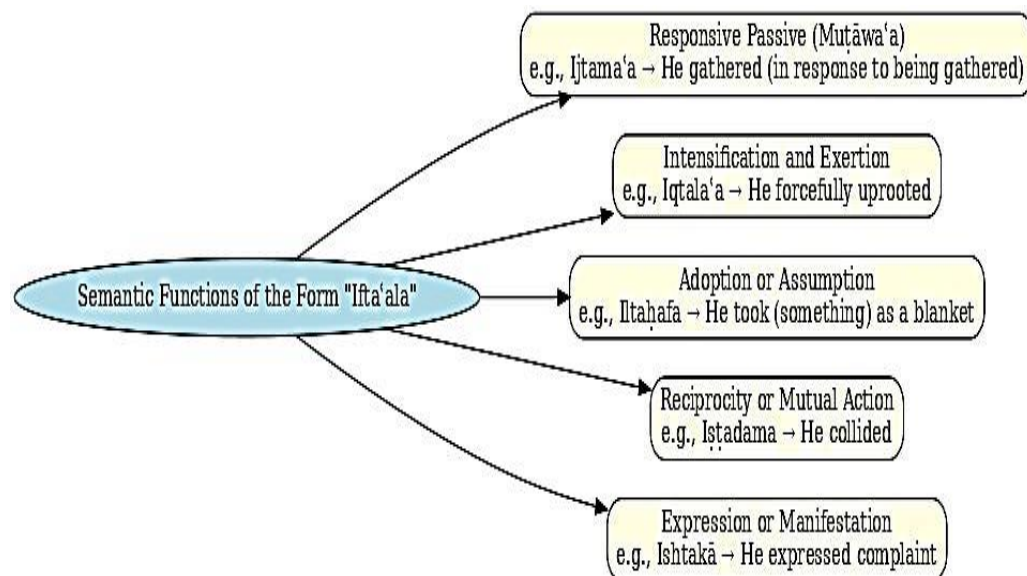


### Semantic Functions of the Form *Ifta'ala*:

1. Reciprocal Passive (Muṭāwa'a) of the Trilateral Verb: This usage reflects the reciprocal effect of a trilateral verb. For instance, "*Ijtama'a al-faṭīq*" ("The team gathered") is a responsive counterpart to "*jama'ahu al-mudarrīb*" ("The coach gathered them"). Similarly, from non-trilateral roots: "*addaltuhu fa'ta'adala*" ("I corrected it, so it became upright") and "*sawwītuhu fa-stawā*" ("I leveled it, and it became level").
2. Exertion and Intensification: The form may express striving or intensifying an action. For example, "*iktasaba al-mā'ārīl*" means "He strived to acquire knowledge," and "*iqṭala'a al-shajarah*" means "He forcefully uprooted the tree."
3. Adoption or Taking On: This usage denotes the act of adopting or assuming something. For example, "*iltahafa al-arḍ*" ("He took the earth as a blanket"), "*imtaṭā al-ḥiṣān*" ("He mounted the horse"), "*ikhtatama qawluhu bi-l-ṣalāti 'ala al-nabiyy*" ("He concluded his statement with a prayer upon the Prophet"), and "*iltahā al-rajul*" ("The man grew a beard" or "adopted a beard").
4. Participation (Reciprocal Action): The form indicates mutual or reciprocal action between two agents. For example, "*īṣṭadama 'Umar wa Ahmad*" ("Omar and Ahmed collided"), where the verb inherently implies interaction between two parties; hence, it cannot be meaningfully attributed to a single subject ("*īṣṭadama 'Umar*") without a counterpart.
5. Manifestation or Expression: This function relates to making something known or expressed. For instance, "*īshṭakā*" means "He expressed his complaint," and "*ī'tadhara*" means "He expressed an apology."

### Mind Map of the Semantic Functions of the Pattern "Ifta'ala" in Arabic Morphology





### Semantic Functions of the Verb Pattern Infa'ala:

1. **Passive Reactivity (Muṭāwa'a):** This function denotes the subject's reception of the effect of an external action. In other words, the subject undergoes a transformation as a result of the verb performed by the agent.

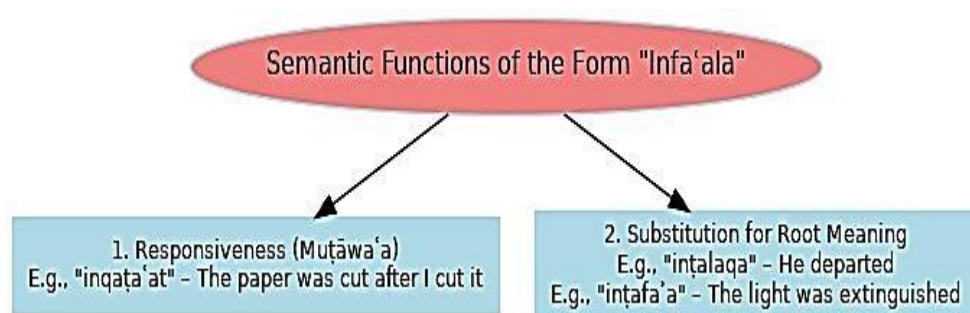
*Example:* "qaṭa' tu al-waraq fa-inqaṭa' at" → "I tore the paper, and it got torn."

The use of this pattern requires that the verb be therapeutic in nature (i.e., implying a physical or sensory act), and that it be intransitive, not transitive.

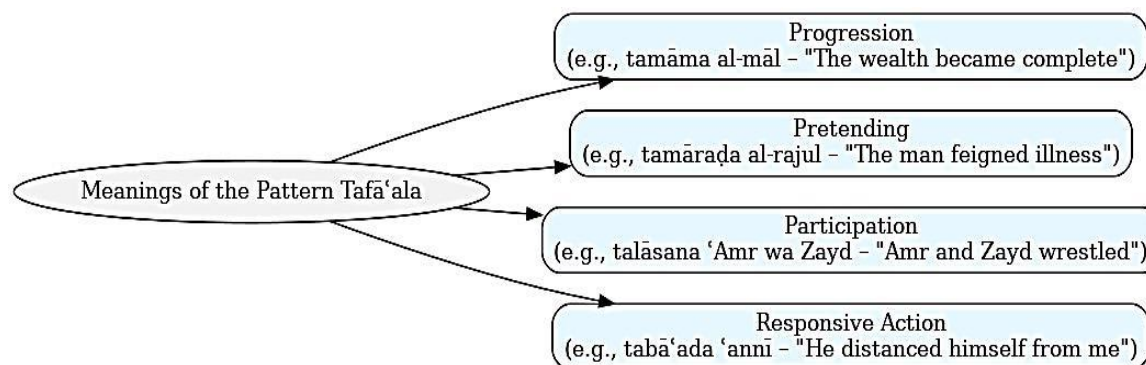
2. **Replacement of the Basic Verb's Meaning:** In this usage, *Infa'ala* does not convey the passive responsive function. Rather, it serves as a semantic equivalent of the root trilateral verb, effectively replacing it in use.

*Example:* "inṭalaqa al-rajul" → "The man departed" (i.e., *ḍahaba* - he went). *Example:* "inṭafa'a al-ḍaw'" → "The light went out" (i.e., *ṭufi'a* - it was extinguished).

### Mind Map of the Semantic Functions of the Pattern "Infa'ala" in Arabic Morphology



**Pretending or Feigning the Action:** This refers to cases where the action is not genuinely occurring, but merely claimed or simulated. For example, in the sentence "*tamāraḍtu wa nā bika 'illah*" ("I feigned illness, though you are not truly sick"), the verb *tamāraḍa* conveys the meaning of pretending to be ill, while in reality, no illness exists.



### Conclusion

This study has explored the morphological patterns of augmented verbs in light of contemporary linguistic inquiry and cognitive insights. It demonstrated how variations in morphological forms yield distinct semantic functions within the verb structure and highlighted the overlap between different patterns that may convey similar meanings. The core contribution of this research lies in its transformation of these semantic insights into simplified mind maps aimed at enhancing the pedagogical clarity of Arabic morphology and facilitating more efficient learner comprehension.

The study underscores the educational value of mind mapping as a strategic cognitive tool—particularly in the acquisition of morphological awareness. It reveals that each morphological pattern contributes uniquely to meaning construction, while a single pattern may also encapsulate a multitude of meanings. Without such semantic versatility, the language would require a vast number of unique forms to convey nuanced concepts.

### Recommendations

- It is essential to integrate the mind mapping strategy into the teaching of Arabic morphology, especially within the competency-based learning approach across all educational stages.
- Teachers and curriculum designers should utilize mind maps to simplify the semantic complexity of augmented verb forms.
- Linguistic researchers are encouraged to give greater scholarly attention to the field of morphology and to explore mind mapping as a pedagogical method.
- Arabic language educators should be trained and motivated to incorporate mind maps into classroom instruction as a means of enhancing morphological comprehension.

### Acknowledgements

The authors wish to express their sincere gratitude to the Laboratory of Phonetic and Lexical Studies at the University of Algiers 2 – Abu El-Kacem Saadallah for providing the academic environment and institutional support necessary for this research. Special thanks are also extended to the students who participated in the case study and contributed valuable insights through their engagement with the mind mapping strategy.

### Conflict of Interest

The authors declare that there is no conflict of interest regarding the research, authorship, or publication of this article.

### Footnotes

1. Al-Suyuti, J. al-D. (1998). *Al-Muzhir fi 'Ulum al-Lughah wa Anwa'iha* [The Radiant in the Sciences and Types of Language] (1st ed., pp. 275–276). Beirut, Lebanon: Dar al-Kutub al-Ilmiyyah.
2. Al-Rafi'i, M. S. *Al-Diwan* [Poetry collection]. (n.d.). No publication information available.
3. Al-'Abdi. *Al-Diwan* [Poetry collection]. (n.d.). No publication information available.
4. 'Abd al-Ra'uf, T. (2015). *Mind maps and learning skills: Your way to building smart ideas* (1st ed., p. 2821). Cairo: Arab Group.
5. Buzan, T. (2006). *Use your head at work* (1st ed., p. 73). Saudi Arabia: Jarir Bookstore.

6. Shehata, H. (2015). *The reference in cognitive psychology and teaching strategies* (2nd ed., p. 127). Cairo: Egyptian-Lebanese House.
7. Al-Rajhi, 'A. (1973). *Applied morphology* (p. 708). Beirut: Dar al-Nahda al-'Arabiyya.

## References

1. Abdullah, I. M. (2004). *Studies in morphology* (2nd ed.). Dar Saad al-Din.
2. Buzan, T. (2006). *Use your head at work* (1st ed.). Saudi Arabia: Jarir Bookstore.
3. Al-Suyuti, J. al-D. (1998). *Al-Muzhir fi 'Ulum al-Lughah wa Anwa'ila* [The Radiant in the Sciences and Types of Language] (1st ed.). Beirut, Lebanon: Dar al-Kutub al-'Ilmiyyah.
4. Shehata, H. (2015). *The reference in cognitive psychology and teaching strategies* (2nd ed.). Cairo: Egyptian-Lebanese House.
5. Al-Istarabadi, R. al-D. M. ibn al-H. (1975). *Sharh Shafia Ibn al-Hajib* (M. F. al-Zaffaf, Ed., Vol. 1, p. 86). Beirut, Lebanon: Dar al-Kutub al-'Ilmiyyah.
6. Sibawayh. (n.d.). *Al-Kitab* (Vol. 4, p. 55) ('A. al-S. Harun, Ed.). Beirut: Dar al-Jil. (Original work date unknown)
7. 'Abd al-Ra'uf, T. (2015). *Mind maps and learning skills: Your way to building smart ideas* (1st ed.). Cairo: Arab Group.
8. Al-Rajhi, 'A. (1973). *Applied morphology*. Beirut: Dar al-Nahda al-'Arabiyya.